

Pension Trust

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



AGENDA

PENSION TRUST BOARD OF TRUSTEES

Monday, November 25, 2019 9:30 AM

Board of Supervisors Chambers
County Government Center
San Luis Obispo, CA 93408

*Materials for the meeting may be found at
<http://www.slocounty.ca.gov/Departments/Pension-Trust/Board-of-Trustees>*

A) PUBLIC COMMENT

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

B) CONSENT

2. Minutes of the Regular Meeting of September 23, 2019 (Approve Without Correction).
3. Reports of Deposits and Contributions for the months of September 2019 and October 2019 (Receive and File).
4. Reports of Service Retirements, Disability Retirements and DROP Participants for the months of September 2019 and October 2019 (Receive, Approve and File).
5. Monthly Investment Report for September 2019 (Receive and File).
6. Post-Employment Health Plan (PEHP) – Pension Trust Staff (Recommend Approval).
7. Indemnification – Authorization pursuant to Section 16.02(j) of the Retirement Plan – Pathway Fund 10 (Recommend Approval).
8. Annual Pensionable Compensation Limit for 2020 pursuant to the Public Employees Pension Reform Act (Tier 3) (Receive and File).

C) ORGANIZATIONAL

None

D) APPLICATIONS FOR DISABILITY RETIREMENT

22. Application for Ordinary Disability Retirement – Case 2019-04 (Recommend Approval).

E) OLD BUSINESS

None

F) NEW BUSINESS

9. Resolution Number 2019–05: A Resolution Establishing the Rate of Interest to be Paid on the Normal Contributions of Members (Recommend Approval).
10. Resolution Number 2019-06: A Resolution Establishing the Rate of Interest to be Paid on the Additional Contributions of Members (Recommend Approval)
11. SLO Regional Transit Authority Contracting Agency Recommendation (Recommend Approval)

G) INVESTMENTS

12. Quarterly Investment Report for the 3rd Quarter of 2019 – Presentation by Scott Whalen, Verus (Receive and File).
13. Monthly Investment Report for October 2019 (Receive and File).
14. Investment Program Overview – Presentation by Scott Whalen, Verus (Review, Discuss, and Direct Staff as necessary).
15. Real Estate – Core / Value-Add Strategy Rebalancing (Review, Discuss, and Direct Staff as necessary).
16. Asset Allocation - (Review, Discuss, and Direct Staff as necessary).

H) OPERATIONS

17. Staff Reports

18. General Counsel Reports

19. Committee Reports:

- i. Audit Committee No Report
- ii. Personnel Committee No Report
- iii. PAS Replacement Committee No Report

20. Upcoming Board Topics (subject to change)

- i. December 16, 2019 (planned as a non-meeting month)
- ii. January 27, 2020
 - a. Election of officers
 - b. Committee appointments
 - c. Resolution honoring Will Clemens for service as a Trustee
 - d. Disability cases
 - e. Annual cashflow analysis
- iii. February 24, 2020
 - a. Retiree COLA – effective 4/1/20
 - b. Quarterly Investment Report
 - c. Capital Market Assumptions
 - d. Asset Allocation Policy
- iv. March 23, 2020
 - a. Actuarial Experience Study & Valuation planning (with GRS)
 - b. Employer prefunding agreement and discount rate
 - c. Fiduciary Refresher Training
 - d. FY20/21 SLOCPT administrative budget - preliminary
 - e. Asset Allocation Policy
- v. April 27, 2020 (planned as a non-meeting month)

21. Trustee Comments

I) CLOSED SESSION

None

J) ADJOURNMENT

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BOARD OF TRUSTEES**

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MINUTES

September 23, 2019
Regular Meeting of the Pension Trust
Board of Trustees

- Board Members Present:** Will Clemens President
Guy Savage Vice President
Jim Hamilton
Jeff Hamm
Michelle Shoresman
Gere Sibbach
- Board Members Absent:** Matt Janssen
- Pension Trust Staff:** Carl Nelson Executive Director
Jennifer Alderete Financial Accountant
- General Counsel:** Chris Waddell
- Consultants:** Leslie Thompson Gabriel Roeder Smith (Actuary)
Paul Wood Gabriel Roeder Smith (Actuary)
- Others:** Tami Douglas-Schatz SLO County Human Resources
Megan Fisher SLO County Human Resources
Michael Hobbs SLO County Human Resources
Larry Batchelder SLOCREA
Daniel Andoetoe Retiree

Call to Order: 9:33 AM by President Clemens, presiding over the meeting.

A) PUBLIC COMMENT

1. None

B) CONSENT

2. Minutes of the Regular Meeting of August 23, 2019 (Approve Without Correction).
3. Report of Deposits and Contributions for the month of August 2019 (Receive and File).
4. Report of Service Retirements, Disability Retirements and DROP Participants for the month of August 2019 (Receive and File).

Motion: Approve the Consent items.

Public Comment: None

Motion Made: Mr. Sibbach

Motion Seconded: Mr. Hamm

Carried: Unanimous

C) CLOSED SESSION

9:35 AM – entered Closed Session

5. PUBLIC EMPLOYEE EVALUATION. The Board will convene in closed session pursuant to Gov. Code section 54957(b)(1) to conduct the annual employee evaluation of the Executive Director

9:45 AM – exited Closed Session

Report – President Clemens returned the meeting to open session reporting no action was taken.

D) ORGANIZATIONAL

6. Executive Director Compensation

Discussion: Mr. Hamm discussed the Personnel Committee review of Executive Director compensation for other pension systems. Based on this review, the Personnel Committee recommended an increase of 5% to the range of compensation for the Pension Trust Executive Director position. Discussion ensued.

Motion: Approval

Public Comment: None

Motion Made: Mr. Savage

Motion Seconded: Mr. Hamm

Carried: Unanimous

7. Pension Trust Staff Survey

Discussion: Mr. Hamm introduced the item. Pension Trust staff members were provided the opportunity to complete a survey that included questions regarding employment with the Pension Trust. Five out of six staff members completed the survey, and the results were discussed. Mr. Nelson noted that staff reviews had been postponed recently due to the development and implementation of PensionGold, and that said reviews would resume imminently. In addition, Mr. Nelson suggested performing monthly informal meetings with individual staff. The Board agreed and recommended that both the staff reviews and the informal meetings occur on a regular basis.

Public Comment: None

No Action Necessary – No further direction provided to Staff which will proceed as recommended.

8. Resolution Thanking Plan Actuary – Leslie Thompson of Gabriel Roeder Smith - Resolution 2019-04

Discussion: President Clemens read aloud Resolution 2019-04 honoring Leslie Thompson for her many years of service to the San Luis Obispo County Pension Trust as Plan Actuary. Several Trustees thanked Ms. Thompson for her service and wished her a happy, well-deserved retirement.

Motion: Approval of Resolution 2019-04

Public Comment: None

Motion Made: Mr. Sibbach

Motion Seconded: Ms. Shoresman

Carried: Unanimous

E) APPLICATIONS FOR DISABILITY RETIREMENT

9. Application for Industrial Disability Retirement – Case 2019-03

Discussion: Mr. Nelson introduced the item to the Board. The applicant is currently in DROP, wishes to retire and apply for disability concurrently, and the independent medical review firm confirmed the applicant qualifies for industrial disability. Trustee Shoresman asked to

confirm that the only change would be to taxability of the benefit, not to the amount of the benefit. Mr. Nelson confirmed this statement is correct.

Motion: Approval

Public Comment: None

Motion Made: Mr. Hamm

Motion Seconded: Mr. Savage

Carried: Unanimous

F) OLD BUSINESS

None

G) NEW BUSINESS

See Strategic Planning Session below

H) INVESTMENTS

10. Monthly Investment Report for August 2019

Discussion: Monthly investment performance report by Staff.

Motion: Receive and File

Public Comment: None

Motion Made: Mr. Clemens

Motion Seconded: Mr. Savage

Carried: Unanimous

11. Alternative Investments Fee Disclosure – CA Code 7514.7

Discussion: Private Equity / Private Credit fee report by Staff to comply with California Statute – Section 7514.7.

Motion: Receive and File

Public Comment: None

Motion Made: Mr. Hamm

Motion Seconded: Mr. Clemens

Carried: Unanimous

12. Fiduciary Properties Inc. – Final Rate of Return Report

Discussion: Fiduciary Properties Inc. – local real estate portfolio – final rate of return report by Staff subsequent to the completion of the exit strategy approved in 2016.

Motion: Receive and File

Public Comment: None

Motion Made: Mr. Savage

Motion Seconded: Mr. Sibbach

Carried: Unanimous

13. Asset Allocation

Discussion: Staff reviewed routine administrative asset allocation transfers related to liquidity.

Public Comment: None

No Action Necessary

I) OPERATIONS**14. Staff Reports**

- i) San Luis Obispo Regional Transit Authority (SLORTA) – Staff reported that SLORTA gave notice of intent to withdraw from CalPERS. SLORTA’s Board was scheduled to recommend becoming a contract agency of the San Luis Obispo County Employees Retirement Plan at a special meeting to be held on October 2nd.
- ii) PensionGold Member Portal – Staff reported that the roll-out of the PensionGold Member Portal was scheduled to begin November 1, 2019. Due to the security requirements of enrollment, which include receipt of a PIN by mail, the enrollment of blocks of active members and retirees will be staggered over several months.

15. General Counsel Reports – Counsel Waddell reported that the Personnel Committee reviewed participation in a post-employment health plan (PEHP) for SLOCPT employees. The plan is similar to the County’s PEHP through Nationwide, and the Personnel Committee plan to recommend participation in the plan at the November 25, 2019 Board of Trustees meeting.

16. Committee Reports:

- i) Audit Committee – No report.
- ii) Personnel Committee - Reported as part of Agenda Item 5.

iii) PAS Replacement Committee – No report.

17. **Upcoming Board Topics** – published on meeting agenda

18. **Trustee Comments** – None

10:46 AM – President Clemens called for a break

10:56 AM – Back in session

J) STRATEGIC PLANNING SESSION

19. Sustainability of the Retirement Plan – Presentation by Plan Actuary - Leslie Thompson and Paul Wood of Gabriel Roeder Smith

Discussion: Paul Wood and Leslie Thompson presented a thorough analysis on the actuarial issues of pension sustainability. A key goal of pension sustainability underlying the discussion is the long-held objective of bringing the Plan to full funding in approximately 2040. Numerous projections of pension funding under different investment return scenarios and variability were presented and discussed with the Board at length.

In addition, actuarial strategies to put in place in 10-20 years to smooth the transition in contribution rates for the expected large decrease once full funding is achieved were discussed in depth.

The economic value of prefunding pension liabilities was analyzed and discussed. The actuarial projections indicate that over the next 50 years, 60% of pension benefit payments will be paid from investment earnings with the remainder from employer and employee contributions.

A conceptual presentation and discussion was held addressing the impacts on defined benefit pension systems when they are closed to new entrants (e.g., when a defined contribution plan for new hires is substituted). The experience of other pension system closed to new hires is that there are no cost savings as long as there is an unfunded liability to be funded.

Public Comment: None

No Action Necessary

20. Business Continuity Plan

Discussion: The Executive Director presented and discussed the Pension Trusts Business Continuity Plan.

Public Comment: None

No Action Necessary

21. Business Continuity Services – LRS, Inc. – PensionGold Secure Agreement

Discussion: Staff recommended the approval of an added Statement of Work to the Pension Trust’s contract with LRS, Inc. (the vendor for the PensionGold pension administration system) to provide Business Continuity Services.

Motion: Approval

Public Comment: None

Motion Made: Mr. Clemens

Motion Seconded: Mr. Hamm

Carried: Unanimous

K) ADJOURNMENT –

There being no further business, the meeting was adjourned at 1:45 PM. The next Regular Meeting was set for November 25, 2019, at 9:30 AM, in the Board of Supervisors Chambers, County Government Center, San Luis Obispo, California 93408.

Respectfully submitted,

Carl Nelson
Executive Director

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**REPORT OF DEPOSITS AND CONTRIBUTIONS FOR THE MONTH OF
SEPTEMBER 2019**

PP 19 9/13/2019	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Employee Rate	Combined Rate	Additional Contributions	Buy Backs	TOTAL Contributions
					Employee Contributions	Employee Rate					
By Employer and Tier:											
County Tier 1	3,431,098.76	876,935.40	25.56%	420,826.98	291,437.70	20.76%	46.32%	2,098.00	21,692.05		1,612,990.13
County Tier 2	946,581.74	249,764.81	26.39%	51,110.15	82,871.38	14.15%	40.54%	-	396.33		384,142.67
County Tier 3	2,948,750.18	723,880.40	24.55%	367,542.88	-	12.46%	37.01%	-	2,596.69		1,094,019.97
Superior Court Tier 1	260,096.62	68,528.04	26.35%	44,893.19	-	17.26%	43.61%	-	-		113,421.23
Superior Court Tier 3	91,930.83	23,088.42	25.11%	10,887.82	-	11.84%	36.96%	-	-		33,976.24
APCD Tier 1	54,895.12	12,765.78	23.25%	7,336.02	3,890.52	20.45%	43.71%	-	-		23,992.32
APCD Tier 3	16,589.61	3,740.62	22.55%	2,124.50	-	12.81%	35.35%	-	-		5,865.12
Pension Trust Staff Tier 1	7,348.66	1,771.76	24.11%	978.11	682.69	22.60%	46.71%	-	-		3,432.56
Pension Trust Staff Tier 2	8,734.40	2,105.87	24.11%	330.16	811.43	13.07%	37.18%	-	-		3,247.46
Pension Trust Staff Tier 3	9,507.98	2,245.79	23.62%	1,293.93	-	13.61%	37.23%	-	-		3,539.72
LAFCO Tier 1	10,832.21	3,269.43	30.18%	709.51	1,006.31	15.84%	46.02%	-	-		4,985.25
LAFCO Tier 3	865.60	239.60	27.68%	80.67	-	9.32%	37.00%	-	-		320.27
	7,787,231.71	1,968,335.92	25.28%	908,113.92	380,700.03	16.55%	41.83%	2,098.00	24,685.07		\$ 3,283,932.94
PP 20 9/27/2019											
By Employer and Tier:											
County Tier 1	3,427,010.00	876,028.38	25.56%	419,927.95	291,274.08	20.75%	46.32%	1,998.00	9,535.61		1,598,764.02
County Tier 2	952,569.94	251,020.98	26.35%	51,082.05	82,030.36	13.97%	40.33%	-	396.33		384,529.72
County Tier 3	2,942,977.80	722,497.35	24.55%	368,245.18	-	12.51%	37.06%	-	2,596.69		1,093,339.22
Superior Court Tier 1	257,764.12	67,959.43	26.36%	44,477.26	-	17.26%	43.62%	-	-		112,436.69
Superior Court Tier 3	89,027.16	22,388.41	25.15%	10,471.29	-	11.76%	36.91%	-	-		32,859.70
APCD Tier 1	55,930.59	13,001.42	23.25%	7,481.74	3,950.08	20.44%	43.68%	-	-		24,433.24
APCD Tier 3	16,589.61	3,740.62	22.55%	2,124.50	-	12.81%	35.35%	-	-		5,865.12
Pension Trust Staff Tier 1	7,348.66	1,771.76	24.11%	978.11	682.69	22.60%	46.71%	-	-		3,432.56
Pension Trust Staff Tier 2	8,734.40	2,105.87	24.11%	330.16	811.43	13.07%	37.18%	-	-		3,247.46
Pension Trust Staff Tier 3	9,507.96	2,245.77	23.62%	1,293.93	-	13.61%	37.23%	-	-		3,539.70
LAFCO Tier 1	10,832.21	3,269.43	30.18%	709.51	1,006.31	15.84%	46.02%	-	-		4,985.25
LAFCO Tier 3	1,731.20	479.20	27.68%	161.35	-	9.32%	37.00%	-	-		640.55
	7,780,023.65	1,966,508.62	25.28%	907,283.03	379,754.95	16.54%	41.82%	1,998.00	12,528.63		\$ 3,268,073.23
TOTAL YEAR TO DATE	153,924,450.51	36,840,808.12	23.93%	17,136,501.81	7,733,852.86	16.16%	40.09%	35,280.92	231,565.38		61,978,009.09

**REPORT OF DEPOSITS AND CONTRIBUTIONS FOR THE MONTH OF
OCTOBER 2019**

PP 21 10/11/2019	Pensionable Salary	Employer Contributions	Employer Rate	Employee Contributions	Employer for		Combined Rate	Additional Contributions	Buy Backs	TOTAL Contributions
					Employee Contributions	Employee Rate				
By Employer and Tier:										
County Tier 1	3,420,255.72	873,936.61	25.55%	419,282.86	290,565.93	20.75%	46.31%	1,998.00	1,692.05	1,587,475.45
County Tier 2	949,481.26	249,889.99	26.32%	50,257.05	81,145.95	13.84%	40.16%	-	396.33	381,689.32
County Tier 3	2,952,181.07	725,288.91	24.57%	370,209.04	-	12.54%	37.11%	-	2,596.69	1,098,094.64
Superior Court Tier 1	258,551.45	68,155.31	26.36%	44,584.27	-	17.24%	43.60%	-	-	112,739.58
Superior Court Tier 3	96,467.33	24,174.13	25.06%	11,413.40	-	11.83%	36.89%	-	-	35,587.53
APCD Tier 1	54,680.43	12,716.90	23.26%	7,290.96	3,878.18	20.43%	43.68%	-	-	23,886.04
APCD Tier 3	16,589.62	3,740.62	22.55%	2,124.50	-	12.81%	35.35%	-	-	5,865.12
Pension Trust Staff Tier 1	7,348.66	1,771.76	24.11%	978.11	682.69	22.60%	46.71%	-	-	3,432.56
Pension Trust Staff Tier 2	8,734.40	2,105.87	24.11%	330.16	811.43	13.07%	37.18%	-	-	3,247.46
Pension Trust Staff Tier 3	11,378.27	2,687.54	23.62%	1,498.97	-	13.17%	36.79%	-	-	4,186.51
LAFCO Tier 1	10,832.21	3,269.43	30.18%	709.51	1,006.31	15.84%	46.02%	-	-	4,985.25
LAFCO Tier 3	1,731.20	479.20	27.68%	161.35	-	9.32%	37.00%	-	-	640.55
	7,788,231.62	1,968,216.27	25.27%	908,840.18	378,090.49	16.52%	41.80%	1,998.00	4,685.07	\$ 3,261,830.01
PP 22 10/25/2019										
By Employer and Tier:										
County Tier 1	3,420,406.35	873,030.43	25.52%	419,074.46	290,937.37	20.76%	46.28%	1,998.00	1,692.05	1,586,732.31
County Tier 2	943,621.59	248,434.15	26.33%	50,367.77	79,821.20	13.80%	40.12%	-	396.33	379,019.45
County Tier 3	3,006,603.08	740,898.59	24.64%	377,763.45	-	12.56%	37.21%	-	2,586.39	1,121,248.43
Superior Court Tier 1	260,132.60	68,489.30	26.33%	44,869.96	-	17.25%	43.58%	-	-	113,359.26
Superior Court Tier 3	96,696.33	24,198.63	25.03%	11,413.74	-	11.80%	36.83%	-	-	35,612.37
APCD Tier 1	55,120.78	12,817.13	23.25%	7,368.44	3,903.50	20.45%	43.70%	-	-	24,089.07
APCD Tier 3	16,429.06	3,704.87	22.55%	2,108.43	-	12.83%	35.38%	-	-	5,813.30
Pension Trust Staff Tier 1	7,715.87	1,860.30	24.11%	1,026.98	716.80	22.60%	46.71%	-	-	3,604.08
Pension Trust Staff Tier 2	9,003.20	2,170.67	24.11%	340.32	836.40	13.07%	37.18%	-	-	3,347.39
Pension Trust Staff Tier 3	11,405.44	2,693.95	23.62%	1,502.85	-	13.18%	36.80%	-	-	4,196.80
LAFCO Tier 1	10,832.21	3,269.43	30.18%	709.51	1,006.31	15.84%	46.02%	-	-	4,985.25
LAFCO Tier 3	1,731.20	479.20	27.68%	161.35	-	9.32%	37.00%	-	-	640.55
	7,839,697.71	1,982,046.65	25.28%	916,707.26	377,221.58	16.50%	41.79%	1,998.00	4,674.77	\$ 3,282,648.26
TOTAL FOR THE MONTH	15,627,929.33	3,950,262.92	25.28%	1,825,547.44	755,312.07	16.51%	41.79%	3,996.00	9,359.84	\$ 6,544,478.27
TOTAL YEAR TO DATE	169,552,379.84	40,791,071.04	24.06%	18,962,194.10	8,489,164.93	16.19%	40.25%	39,276.92	240,925.22	\$ 68,522,632.21

REPORT OF RETIREMENTS**September 2019**

RETIREE NAME	DEPARTMENT	BENEFIT TYPE *	EFFECTIVE DATE	MONTHLY BENEFIT	SS TEMP ANNUITY**
Cole, Clinton	Sheriff-Coroner	DROP	09/01/19	6,561.42	False
Elliot, Julie	District Attorney	Service Retirement	08/24/19	1,746.57	False
Hernandez, Anna-Marie	Sheriff-Coroner	Alternate Payee	08/29/19	578.04	False
Hugh, Maura	Department of Social Services	Service Retirement	09/07/19	3,776.85	False
Hugh, Maura	Department of Social Services	Additional annuity	09/07/19	254.89	False
Roach, Gregory	Sheriff-Coroner	Disability Retirement	09/01/19	4,415.05	False
Whorton, Yolanda	Department of Social Services	Service Retirement	09/01/19	415.96	False

** Additional Annuity Benefits are calculated based on the Additional Contribution and associated Interest balance of the Retiree at the point of retirement (per Sections 5.07, 27.12, 28.12, 29.12, 30.12, and 31.12 of the Plan)*

*** If "True" Retiree has elected an optional Social Security Coordinated Temporary Annuity (per Section 13.06 of the Plan), actual monthly allowance will be increased until age 62 and then actuarially reduced going forward*

REPORT OF RETIREMENTS**October 2019**

RETIREE NAME	DEPARTMENT	BENEFIT TYPE *	EFFECTIVE DATE	MONTHLY BENEFIT	SS TEMP ANNUITY**
Dunn, Linda Joyce	District Attorney	Service Retirement	09/14/19	1,116.33	False
O'Donohoe, Justin J	Sheriff-Coroner	Service Retirement	10/05/19	6,101.38	False
Paterson, Alistair R	Sheriff-Coroner	DROP	10/01/19	3,857.15	False
Tardiff, Kevin L	Public Works ISF	DROP	10/01/19	3,950.89	False
Tardiff, Kevin L	Public Works ISF	Additional Annuity	10/01/19	114.54	False
Wilson, Cindy L	Public Health Department	Service Retirement	10/05/19	3,246.56	False
Wilson, Cindy L	Public Health Department	Additional Annuity	10/05/19	14.34	False

** Additional Annuity Benefits are calculated based on the Additional Contribution and associated Interest balance of the Retiree at the point of retirement (per Sections 5.07, 27.12, 28.12, 29.12, 30.12, and 31.12 of the Plan)*

*** If "True" Retiree has elected an optional Social Security Coordinated Temporary Annuity (per Section 13.06 of the Plan), actual monthly allowance will be increased until age 62 and then actuarially reduced going forward*

Board of Trustees

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Date: October 28, 2019

To: Board of Trustees

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

Investment Report for September 2019

	September	Year to Date 2019	2018	2017	2016	2015	2014
Total Trust Investments (\$ millions)	\$1,409		\$1,285 year end	\$1,351 year end	\$1,196 year end	\$1,148 year end	\$1,190 year end
Total Fund Return	0.7% Gross	10.7% Gross	-3.2 % Gross	15.5 % Gross	6.6 % Gross	-0.8% Gross	5.1 % Gross
Policy Index Return (r)	1.0%	11.2%	-3.2 %	13.4 %	7.7 %	-0.5 %	5.2 %

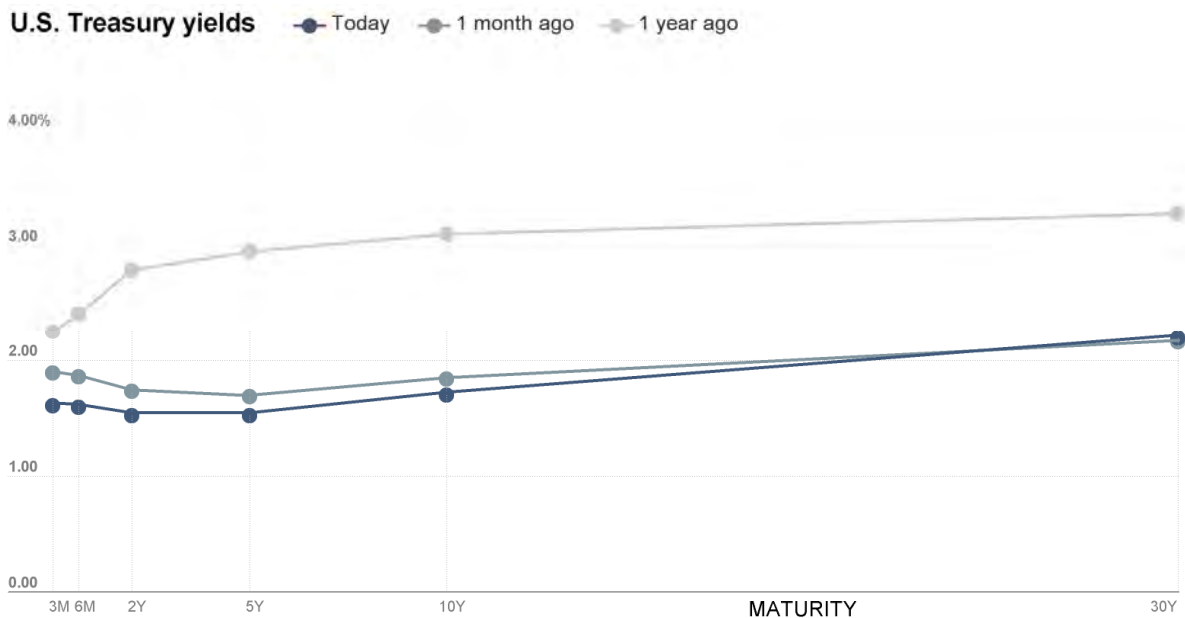
(r) Policy index as of Aug. 2016 revision to Strategic Asset Allocation Policy: 20% domestic equity, 20% international equity, 15% core bonds, 5% bank loans, 5% global bonds, 5% emerging market debt, 15% real estate, 5% commodities, 5% private equity, 5% private credit.

The Economy and Capital Markets:

- **Fed Policy and Interest Rates –**

- At the September 18th FOMC meeting the Fed again reduced the Fed Funds rate by 0.25% in-line with capital market expectations of one more rate cut in 2019.
- The stretched nature of liquidity in the fixed income markets was shown with a pronounced spike in Repo rates in September until the Fed intervened to provide liquidity. Repos are Repurchase Agreements which are a widely used tool for overnight investments by the banking and other sectors.

- The yield curve, responding to a slowing global growth, slipped decidedly inverted August 14th. The 10-year Treasury vs. the 3-month rate has been mostly inverted for several months. The August 14th move to an inverted 10-year Treasury vs. the 2-year Treasury – a reliable predictor of recession in 2-6 quarters – spooked the capital markets with the S&P 500 down 3% for the day. However, Treasury yields in September and October backed off from inverted giving some reassurance to the markets. The 10 year Treasury most recently traded at 1.80% versus the 2 year Treasury at 1.62%. The yield curve as of October 25th is shown below -



- **Economic Growth / Recession Risk –**

- Outlook for GDP Growth –

- The firm worldwide consensus for slowing growth appears to influence both interest rates and equity markets. Some forecasters estimate the risk of U.S. recession in 2020 at about a 40% probability. U.S. GDP growth is likely to be well under 2% in the near term future with low labor force growth being a factor.
- Business confidence in the manufacturing sector has slipped to worrisome levels. The ISM Purchasing Managers Index (PMI) fell to 47.8 in September. PMI survey measures below 50 are indications of contractionary expectations.
- While consumer spending has been the bright spot in the U.S. economy, Consumer Confidence survey data has fallen notably in September – albeit still in a positive range.

- Eurozone and Brexit –

- The ongoing drama of the Brexit issue dominates the British and Eurozone economies. The court reversal of Boris Johnson’s attempt to suspend Parliament and the chaotic response of the House of Commons’ have not bounced the capital markets as much as one would expect. It is possible the European markets have priced in some version of a Brexit resolution short of worst-case and are holding their breath waiting for the

outcome. As of late October it seems likely that an EU extension of the Brexit deadline may take place with a January U.K. election to factor in.

- **Trade Policy –**

- Ongoing turmoil in trade policy has been slightly improved in October with the deferral of some U.S. tariffs on Chinese goods. However, the long term effects of trade uncertainty and its deleterious impact on business's ability to plan is becoming more apparent.
- The World Trade Organization cuts its forecast for growth in world trade in 2020 in half compared to just 6 months ago. The WTO included in its report **"Risks to the forecast are heavily weighted to the downside and dominated by trade policy"**.

- **Employment and Wages –**

- The September DOL report on nonfarm employment showed -
 - New jobs came in at +136K in September, bringing the 3-month average to +157k.
 - The average increase in new jobs in all of 2018 was +223k/month. During 2019 year to date the average increase has been +161k/month.
 - The chain of positive gains in new jobs was extended to 108 consecutive months with the September report.
 - Unemployment declined to 3.5% - the lowest rate since 1969. A broader measure of unemployment that includes discouraged job seekers and part-time employees who would prefer full-time fell to 6.9%.
 - Average Hourly Earnings were little changed with a year-over-year increase of only 2.9%.

- **U.S. Political Turmoil –**

The capital markets tend to not be overly sensitive to political developments. Capital markets tend to focus on corporate profits and interest rates and to focus on politics when the outlook for profits and interest rates is changed by elected officials. The October storm over impeachment inquiries into President Trump appear to not have roiled the markets so far. Capital markets are efficient price-discovery mechanisms and embody expectations about future conditions. It appears that the markets expect and are not too concerned about the likeliest prospect of an impeachment vote in the house of Representatives followed by an acquittal in the Senate. While a historic conflict in American political history, such a path is already factored into capital market prices.

SLOCPT Investment Returns:

The attached report from Verus covers the investment returns of the SLOCPT portfolio and general market conditions through the end of September. The attached market commentary from Verus details market conditions in September, but subsequent activity in October is not yet factored into these numbers.

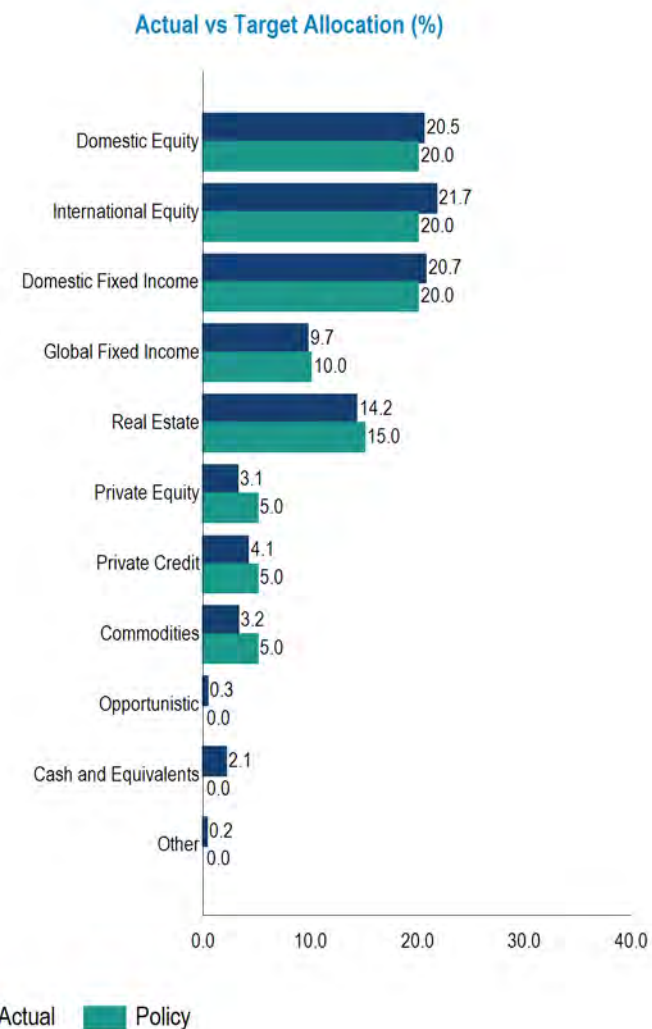
Respectfully submitted

San Luis Obispo County Pension Trust

Executive Summary - Preliminary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	1 Mo	YTD
Total Fund	1,408,635,998	100.0	0.7	10.7
Total Fund ex Overlay	1,405,133,559	99.8	0.7	10.7
Policy Index			1.0	11.2
Total Domestic Equity	289,262,725	20.5	1.7	20.0
Russell 3000			1.8	20.1
PIMCO RAE Fundamental PLUS Instl	57,643,764	4.1	4.2	15.9
S&P 500			1.9	20.6
Loomis Sayles Large Cap Growth	84,295,168	6.0	-0.6	20.7
Russell 1000 Growth			0.0	23.3
Boston Partners Large Cap Value	82,703,766	5.9	3.2	14.9
Russell 1000 Value			3.6	17.8
Atlanta Capital Mgmt	64,620,027	4.6	0.8	30.1
Russell 2500			1.8	17.7
Total International Equity	305,679,324	21.7	1.6	18.0
MSCI ACWI ex USA Gross			2.6	12.1
Dodge & Cox Intl Stock	141,733,800	10.1	4.5	11.5
MSCI EAFE Gross			2.9	13.3
WCM International Growth	163,945,524	11.6	-0.8	24.3
MSCI ACWI ex USA Gross			2.6	12.1
Total Domestic Fixed Income	291,851,041	20.7	-0.1	9.0
BBgBarc US Aggregate TR			-0.5	8.5
BlackRock Core Bond	109,098,553	7.7	-0.5	10.0
BBgBarc US Aggregate TR			-0.5	8.5
Dodge & Cox Income Fund	106,419,003	7.6	0.0	9.2
BBgBarc US Aggregate TR			-0.5	8.5
Pacific Asset Corporate Loan	76,333,486	5.4	0.6	7.4
S&P/LSTA Leveraged Loan Index			0.5	6.8
Total Global Fixed	136,684,605	9.7	0.3	3.6
FTSE World Govt Bond Index			-1.3	6.3
Brandywine Global Fixed Income	65,667,779	4.7	0.4	1.1
FTSE WGBI ex US TR			-1.6	5.4
Ashmore EM Blended Debt Fund	71,016,826	5.0	0.2	--
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELM+			0.3	--



*Other balance represents Clifton Group.

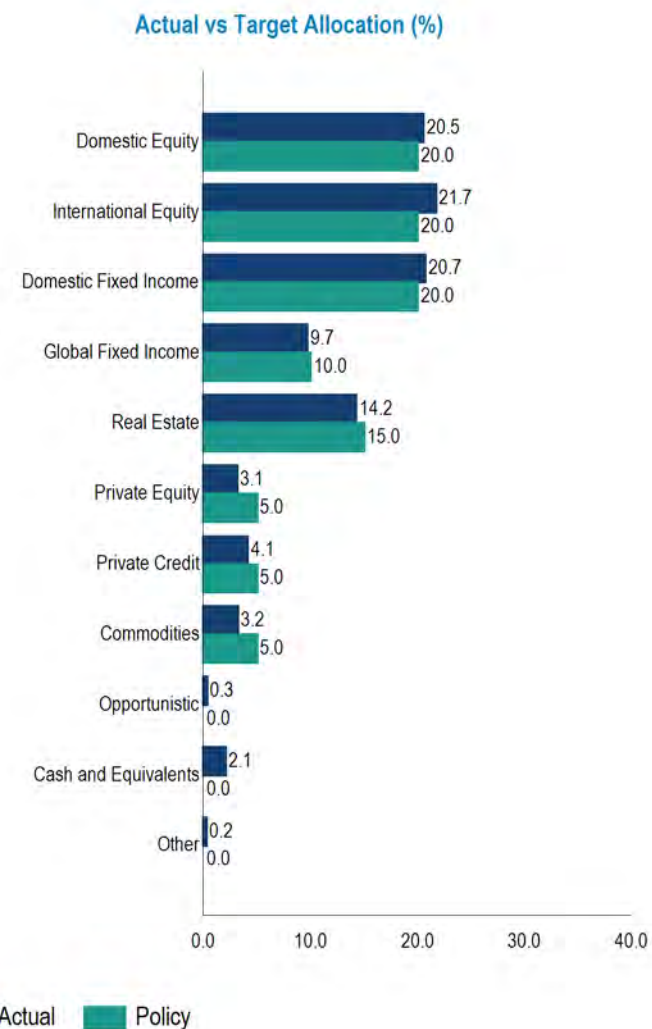
Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. SSGA Flagship S&P 500 liquidated 2/1/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor liquidated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated 5/3/2019. Most recently reported market values for private equity/credit, opportunistic, and illiquid real estate funds adjusted for calls and distributions through the report end date. All data is preliminary.

San Luis Obispo County Pension Trust

Executive Summary - Preliminary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	1 Mo	YTD
Total Real Estate	200,645,293	14.2	0.0	2.3
NCREIF Property Index			0.0	3.3
JP Morgan Core Real Estate	166,614,104	11.8	0.0	1.3
NCREIF-ODCE			0.0	2.4
NCREIF Property Index			0.0	3.3
ARA American Strategic Value Realty	33,885,219	2.4	0.0	5.4
NCREIF-ODCE			0.0	2.4
NCREIF Property Index			0.0	3.3
Total Commodities	44,905,393	3.2	1.3	3.1
Bloomberg Commodity Index TR USD			1.2	3.1
Gresham MTAP Commodity Builder	44,905,393	3.2	1.3	3.1
Bloomberg Commodity Index TR USD			1.2	3.1
Total Private Equity	44,191,010	3.1		
Harbourvest Partners IX Buyout Fund L.P.	14,930,279	1.1		
Pathway Private Equity Fund Investors 9 L.P.	25,474,331	1.8		
Harbourvest 2018 Global Fund L.P.	3,786,400	0.3		
Total Private Credit	58,219,685	4.1		
TPG Diversified Credit Program	58,219,685	4.1		
Total Cash	29,089,956	2.1	0.0	1.5
91 Day T-Bills			0.2	1.7
Cash Account	29,089,956	2.1	0.0	1.5
91 Day T-Bills			0.2	1.7
Total Opportunistic	4,604,526	0.3		
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,502,305	0.3		
PIMCO Distressed Credit Fund	102,221	0.0		
CPI + 5%			0.5	6.0



*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. SSGA Flagship S&P 500 liquidated 2/1/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor liquidated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated 5/3/2019. Most recently reported market values for private equity/credit, opportunistic, and illiquid real estate funds adjusted for calls and distributions through the report end date. All data is preliminary.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

SEPTEMBER 2019
Capital Markets Update

Market commentary

U.S. ECONOMICS

- Nonfarm payrolls increased by 136,000 in September (exp. +145,000) while additions in July and August were revised higher by 45,000 in total. Nonfarm payroll growth has averaged 157,000 over the past three months. The Healthcare (+39,000) and Professional and Business Services (+34,000) sectors led job gains for the month.
- The ISM Manufacturing PMI remained under the neutral level of 50.0 and fell from 49.1 to 47.8 (exp 50.0), the second consecutive month of contraction and the lowest reading since June 2009. Trade remains the most significant issue with new export orders component falling from 43.3 to 41.1.
- Consumer confidence indicators declined and significantly missed estimates. The Conference Board Consumer Confidence Index fell from 134.2 to 125.1 (exp. 133.2), its largest drop in nine months and its largest miss relative to economists' estimates since 2010.

U.S. EQUITIES

- The S&P 500 Index rebounded +1.9% following two consecutive months of decline. At the end of the period, the S&P 500 Index had generated a year-to-date total return of +20.6%.
- The CBOE VIX index faded its gains from August and fell from 19.0 to 16.2 in September. The trailing 30- and 90-day realized volatility on the S&P 500 Index fell to 12.7% and 14.3%, respectively.
- Per FactSet, the Q3 2019 estimated earnings for the S&P 500 is -4.1%. If earnings contract -4.1% in Q3, it will mark the third straight quarter of year-over-year earnings contraction, which hasn't happened since Q4 2015. All eleven sectors have seen downward revisions to EPS estimates, led by Energy (-31.8%) and Materials (-8.1%).

U.S. FIXED INCOME

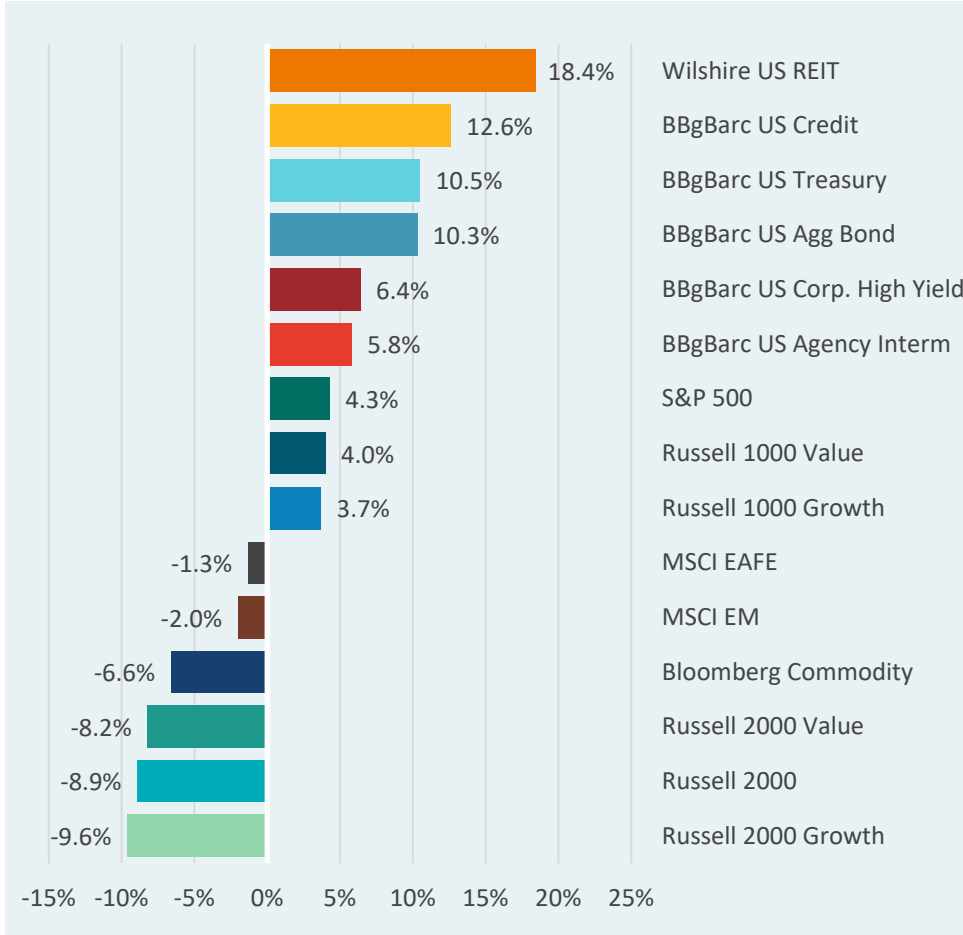
- The Federal Open Market Committee cut its range for the benchmark rate by 0.25% to 1.75% - 2.00%, in line with expectations. Voting committee members' opinions on the decision were dispersed: seven were in favor of the 0.25% cut, two sought no changes, and one preferred a 0.50% cut.
- Ten-year Treasury yields rose from 1.50% to 1.67% and touched intra-month highs of 1.90%. The +0.17% move higher over the month marked the largest monthly advance since last September.
- Riskier credit outperformed safer credit within U.S. markets. The average option-adjusted spread on corporate bonds in the Bloomberg Barclays High Yield Index fell from 3.93% to 3.73%, while the average option-adjust spread on corporate bonds in the Bloomberg Barclays Aggregate Index fell from 1.20% to 1.15%.

INTERNATIONAL MARKETS

- European PMI data continued to paint a gloomy picture for the global manufacturing outlook. Markit's Manufacturing PMI readings plunged to 41.7 in Germany, fell to 47.8 in Italy, faded to 47.7 in Spain, and remained in contraction in the United Kingdom.
- The MSCI Emerging Markets Currency Index gained 0.8% in September, notching its third best monthly performance of the year, and its third month of positive performance in the last four.
- The Supreme Court of the United Kingdom ruled the British Prime Minister Boris Johnson's 5-week suspension of government as illegal. Following the ruling, British lawmakers returned to Parliament, and continued to work toward reaching a deal ahead of the looming October 31st deadline for the U.K. to leave the E.U.

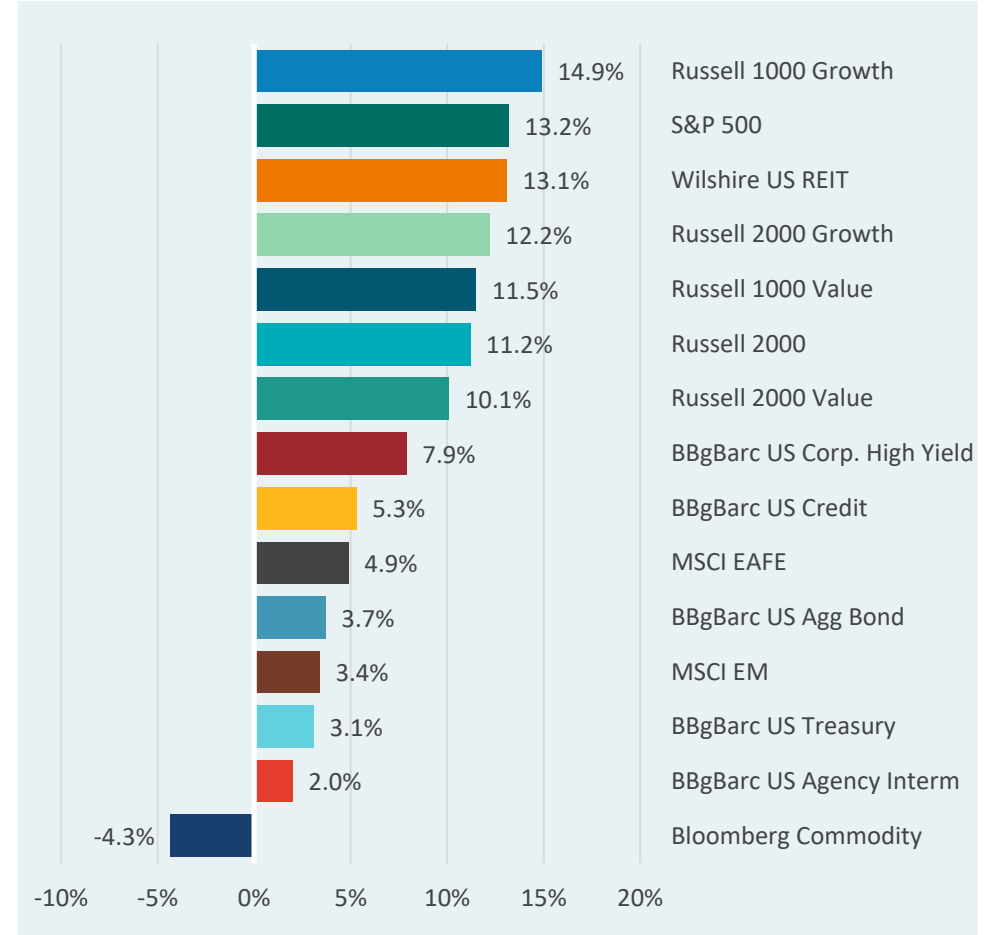
Major asset class returns

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

U.S. large cap equities

- The S&P 500 Index gained 1.9% in September, rebounding from its -1.6% decline last month. Ten of eleven sectors posted positive performance for the month and the Financials (+4.6%) and Utilities (+4.3%) sectors outperformed.
- According to FactSet, the bottom-up September 30th 2020 target price for the S&P 500 Price Index is 3322, which would imply a year-over-year price appreciation of 14.2%. The Energy sector (+25.5%) is expected to see the largest price increase while the Utilities sector (+1.6%) is expected to see the smallest appreciation.
- The Healthcare sector (-0.2%) underperformed over the month, extending its year-to-date underperformance of the S&P 500 Index to 15.0%. The sector has faced headwinds from increased political pressure over drug pricing, opiates and insurance costs.
- At month-end, the forward one-year P/E ratio of the S&P 500 Index was 16.9, which exceeded both its 5- and 10-year averages of 16.6 and 14.8, respectively. The Consumer Discretionary (20.7) and Financials (11.7) sectors have the highest and lowest forward one-year P/E ratios.

S&P 500 PRICE INDEX



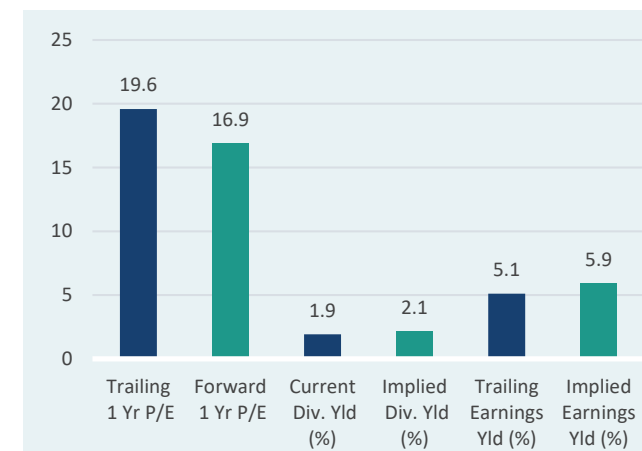
Source: Bloomberg, as of 9/30/19

IMPLIED VOLATILITY (VIX INDEX)



Source: CBOE, as of 9/30/19

S&P 500 VALUATION SNAPSHOT

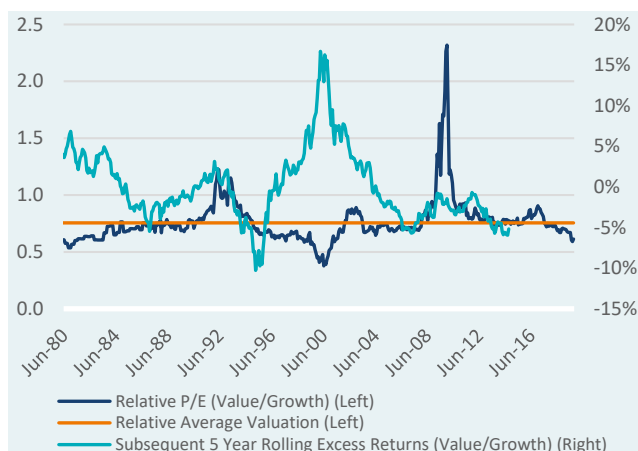


Source: Bloomberg, as of 9/30/19

Domestic equity size and style

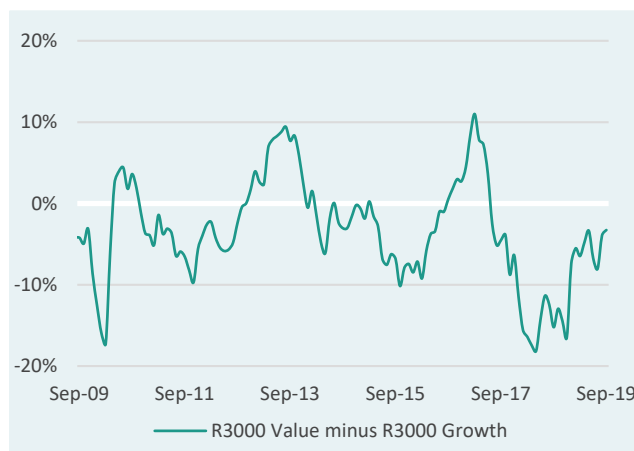
- Value significantly outperformed growth over the period, across both large- and small-cap universes. The Russell 3000 Value Index advanced 3.7% and fared better than the Russell 3000 Growth Index (unchanged) for just the second time this year.
- The outperformance of the value factor over the growth factor was most pronounced within the Financials sector. The Financials Sub-Index within the Russell 3000 Value advanced 5.4%, significantly outpacing its growth counterpart, which registered a 1.0% decline.
- Small-cap equities outperformed large-cap equities for the fourth month this year. The Russell 2000 Index returned 2.1% while the Russell 1000 Index gained 1.7%. Year-to-date, small-cap equities (+14.2%) have underperformed large-cap equities (+20.5%) by 6.3%.
- The S&P 500 Price Index closed the month at 2976, above its 50-, 100-, and 200-day moving-averages, indicating that there has been an upward price trend over the past six months.

VALUE VS. GROWTH RELATIVE VALUATIONS



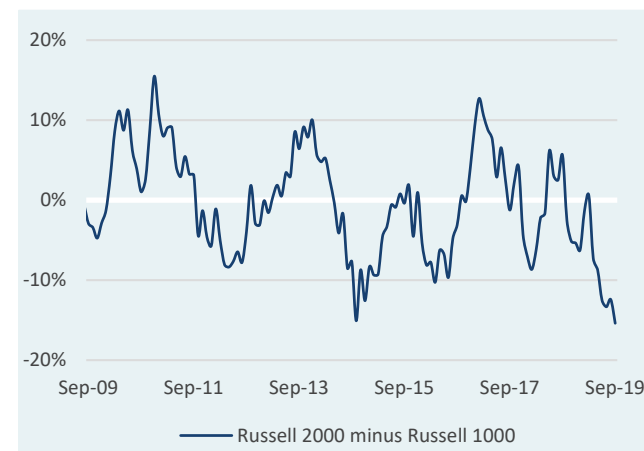
Source: Russell, Bloomberg, as of 9/30/19

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, Bloomberg, as of 9/30/19

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE

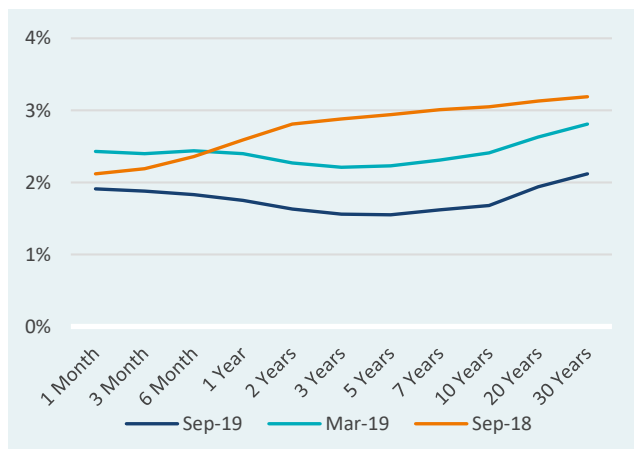


Source: FTSE, Bloomberg, as of 9/30/19

Fixed income

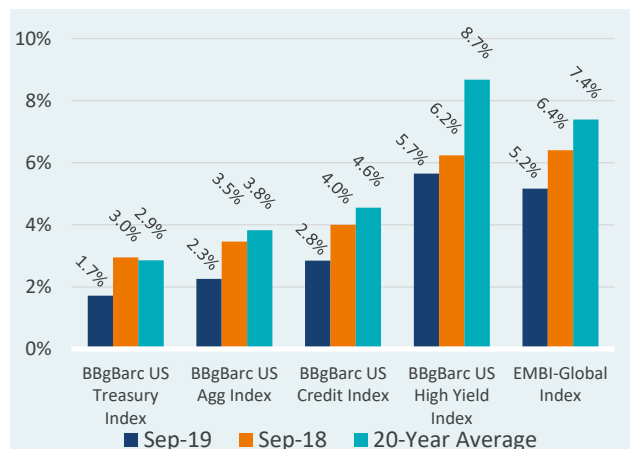
- The European Central Bank delivered a fresh stimulus package in its September meeting, in line with expectations. The ECB cut its main deposit rate from -0.40% to -0.50% and announced it would restart asset purchases to the tune of €20 billion per month beginning November 1st, and with no stated end date.
- At the end of the period, the futures implied probability of the fed funds rate being cut by at least 0.25% by the end of the year sat at 72%. There was a 21% probability of at least 0.50% in cuts by year-end.
- Repo rates, which represent the overnight rate paid by short-term borrowers of cash, reached as high as 8.8% as liquidity was strained in the short-term funds market. Officials at the Federal Reserve Bank of New York responded, providing liquidity and stating that the dislocation was merely a financial “plumbing” issue.
- Local-currency denominated emerging market debt outperformed spread-sector U.S. fixed income. The J.P. Morgan GBI-EM Global Diversified Index (+1.0%) outpaced the S&P/LSTA Leveraged Loan (+0.5%), and Bloomberg Barclays U.S. High Yield (+0.4%) indices.

U.S. TREASURY YIELD CURVE



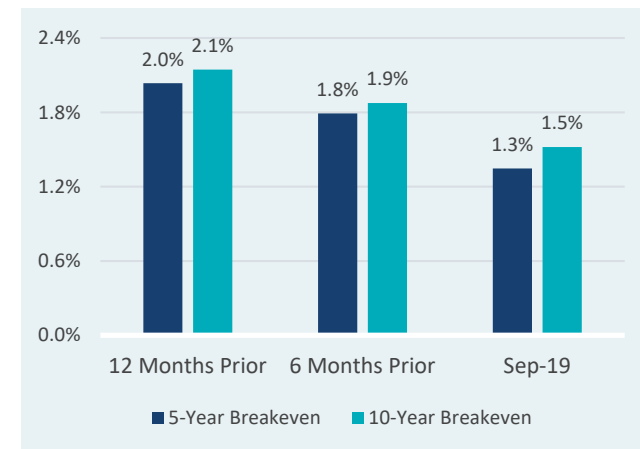
Source: Bloomberg, as of 9/30/19

NOMINAL YIELDS



Source: Morningstar, as of 9/30/19

BREAKEVEN INFLATION RATES

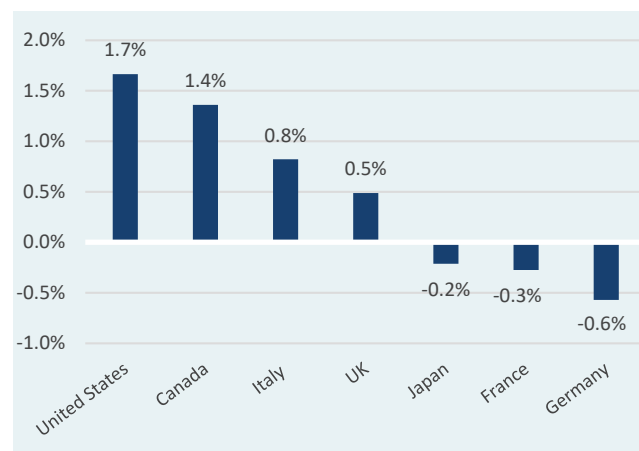


Source: Bloomberg, as of 9/30/19

Global markets

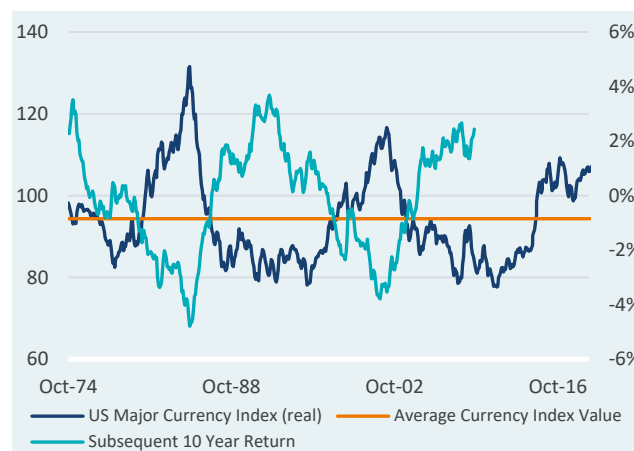
- Emerging market currency exposure dampened EM equity performance. The MSCI EM Index gained 1.9% in U.S. dollar terms and only 1.5% in local currency terms.
- In a gesture of good will, President Trump announced that the effective date of the tariff rate hike from 25% to 30% on \$250 billion of Chinese imports would be delayed from October 1st to October 15th. China also made several good will gestures as the two sides laid the groundwork for the resumption of high-level trade talks in Washington at the beginning of October.
- Following approval by the World Trade Organization, the U.S. announced duties on \$7.5 billion of European exports. The new tariffs will take effect October 18th and will start at 25% for several European food products including wines and cheese, and at 10% for commercial aircraft.
- The global bond rally showed signs of slowing in September. Ten-year German bund yield, which started the month only two basis points above all-time-lows at -0.70%, rose to -0.58% by the end of the month.

GLOBAL SOVEREIGN 10-YEAR YIELDS



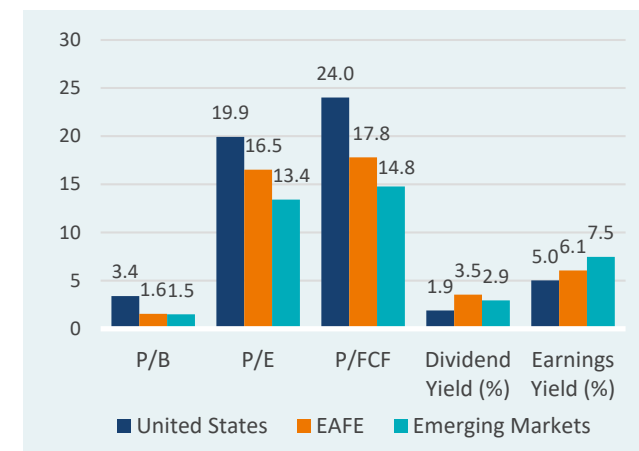
Source: Bloomberg, as of 9/30/19

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 9/30/19

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 9/30/19

Commodities

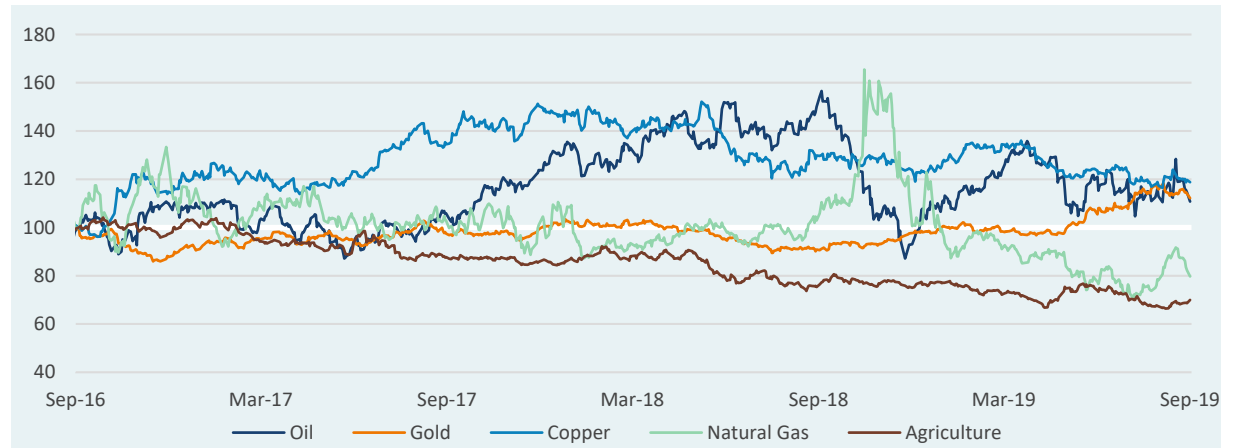
- The Bloomberg Commodity Index advanced 1.2% over the period, bringing its year-to-date performance to 3.1%. Grains (+5.2%), as well as Livestock (+7.5%) propelled the index higher, while Precious Metals (-4.4%) presented headwinds for performance.
- The Livestock Sub-Index rebounded from its poor performance in August with a 7.5% return in September. Lean hog futures prices boosted the sub-index higher on reports that African swine fever had spread into Southeast Asia and South Korea, and that local governments had begun to cull pig populations.
- Brent crude oil futures contracts spiked nearly 10% and reached as high as \$71.95 per barrel following drone attacks on several Saudi Arabian oil processing plants which resulted in the temporary reduction of daily global oil output by 5%. As production was brought back online, oil prices settled and ended the month up only 1.7%.
- Precious Metals (-4.4%) was the worst performing group within the commodities basket. Dollar strength in September made holding gold and silver more expensive in U.S.-dollar terms and rising yields increased the opportunity cost of holding assets not providing income.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	1.2	(1.8)	3.1	(6.6)	(1.5)	(7.2)	(4.3)
Bloomberg Agriculture	4.2	(6.1)	(5.0)	(4.9)	(9.6)	(7.3)	(3.6)
Bloomberg Energy	1.1	(4.5)	5.6	(21.6)	(0.8)	(16.8)	(11.9)
Bloomberg Grains	5.2	(6.5)	(4.5)	(3.8)	(6.7)	(6.7)	(3.7)
Bloomberg Industrial Metals	0.5	2.4	7.2	(2.1)	5.8	(1.7)	(2.0)
Bloomberg Livestock	7.5	0.8	(6.1)	(5.5)	5.8	(6.6)	(1.4)
Bloomberg Petroleum	1.3	(5.3)	18.0	(23.2)	4.2	(14.5)	(6.4)
Bloomberg Precious Metals	(4.4)	5.3	12.8	20.5	0.9	2.2	2.3
Bloomberg Softs	4.2	(8.6)	(8.5)	(7.8)	(18.7)	(11.5)	(6.2)

Source: Morningstar, as of 9/30/19

COMMODITY PERFORMANCE



Source: Bloomberg, as of 9/30/19

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	23.3	13.4	14.9
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	20.5	10.6	13.2
Large Cap Value	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	17.8	9.1	12.2
Small Cap Growth	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	15.3	8.8	11.5
Small Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	14.2	8.2	11.2
Small Cap Value	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	12.8	7.8	10.1
International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	12.8	7.2	9.3
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	12.4	4.9	6.1
US Bonds	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	8.5	3.4	4.9
Emerging Markets Equity	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	5.9	3.3	3.7
Hedge Funds of Funds	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	5.0	2.3	3.4
Real Estate	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	3.3	1.9	2.7
Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	3.1	1.0	0.5
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	1.7	-7.2	-4.3

Large Cap Equity

Large Cap Value

Large Cap Growth

Small Cap Equity

Small Cap Value

Small Cap Growth

International Equity

Emerging Markets Equity

US Bonds

Cash

Commodities

Real Estate

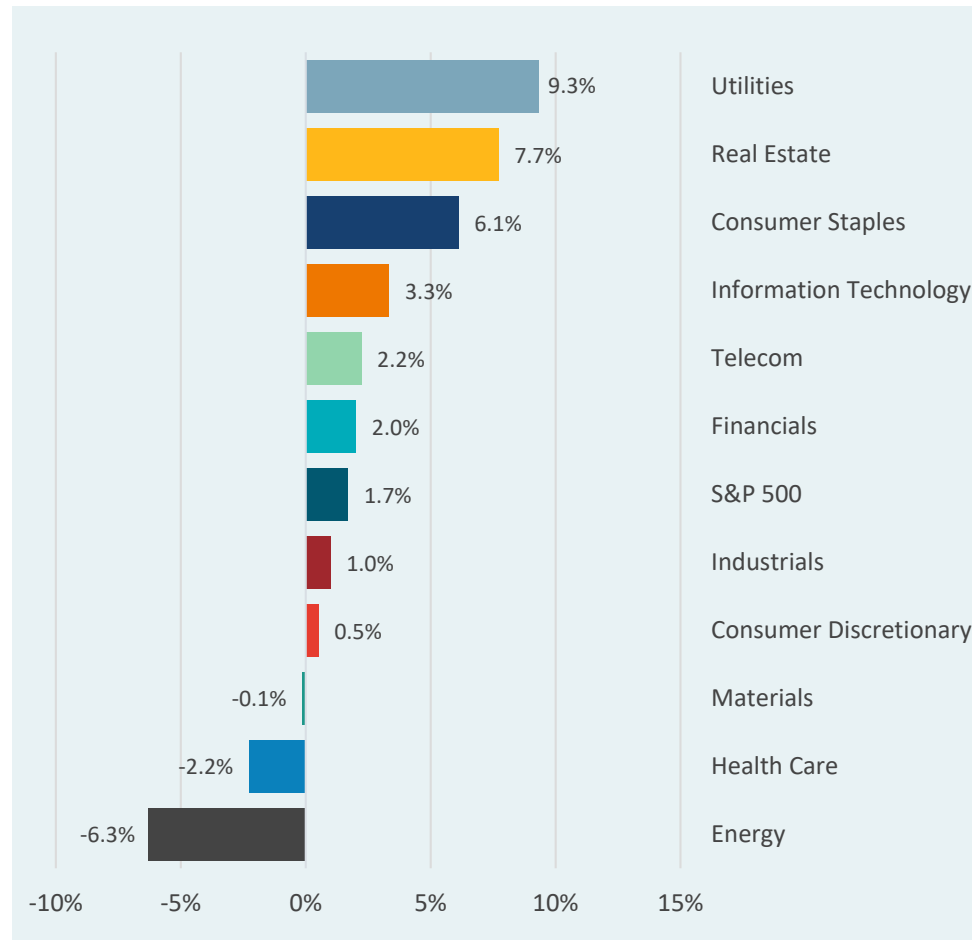
Hedge Funds of Funds

60% MSCI ACWI/40% BBgBarc Global Bond

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/19.

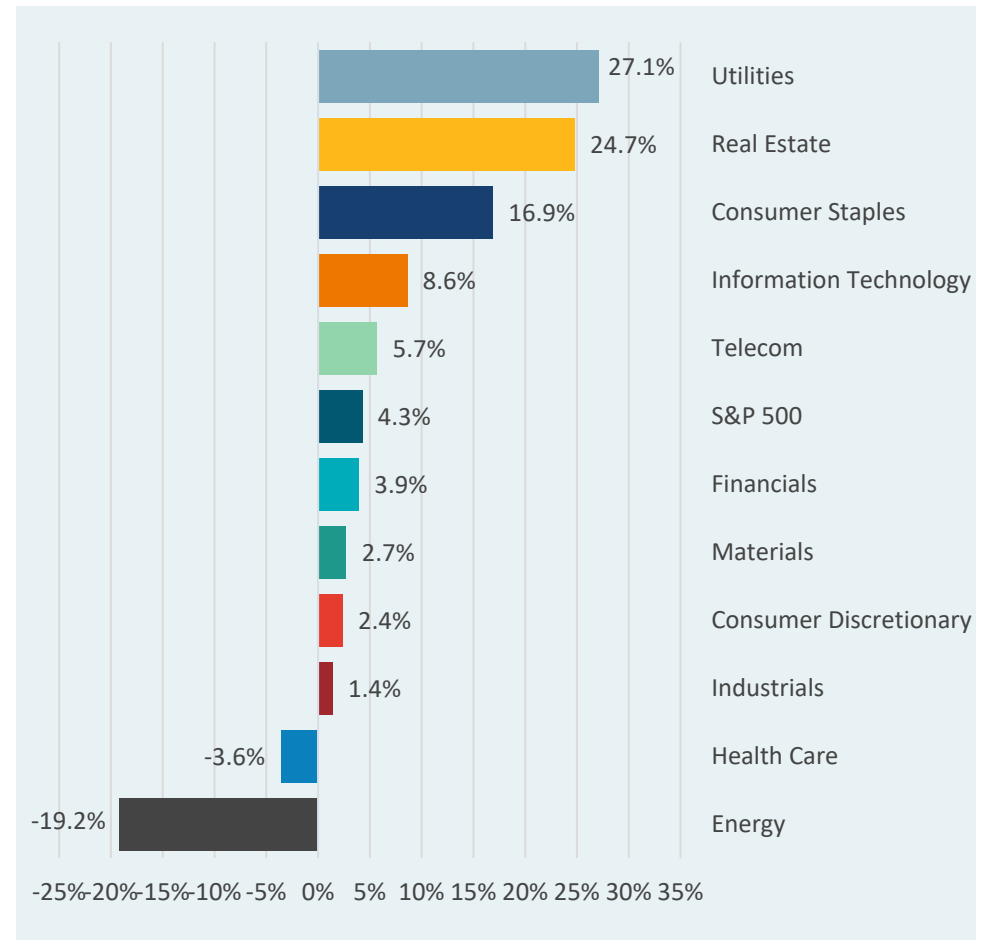
S&P 500 sector returns

Q3



Source: Morningstar, as of 9/30/19

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	1.9	1.7	20.6	4.3	13.4	10.8	13.2
S&P 500 Equal Weighted	3.1	0.8	20.1	3.4	11.1	9.5	13.4
DJ Industrial Average	2.1	1.8	17.5	4.2	16.4	12.3	13.6
Russell Top 200	1.6	1.8	20.0	4.1	14.2	11.2	13.3
Russell 1000	1.7	1.4	20.5	3.9	13.2	10.6	13.2
Russell 2000	2.1	(2.4)	14.2	(8.9)	8.2	8.2	11.2
Russell 3000	1.8	1.2	20.1	2.9	12.8	10.4	13.1
Russell Mid Cap	2.0	0.5	21.9	3.2	10.7	9.1	13.1
Style Index							
Russell 1000 Growth	0.0	1.5	23.3	3.7	16.9	13.4	14.9
Russell 1000 Value	3.6	1.4	17.8	4.0	9.4	7.8	11.5
Russell 2000 Growth	(0.8)	(4.2)	15.3	(9.6)	9.8	9.1	12.2
Russell 2000 Value	5.1	(0.6)	12.8	(8.2)	6.5	7.2	10.1

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	2.1	(0.0)	16.2	1.4	9.7	6.7	8.3
MSCI ACWI ex US	2.6	(1.8)	11.6	(1.2)	6.3	2.9	4.5
MSCI EAFE	2.9	(1.1)	12.8	(1.3)	6.5	3.3	4.9
MSCI EM	1.9	(4.2)	5.9	(2.0)	6.0	2.3	3.4
MSCI EAFE Small Cap	2.8	(0.4)	12.1	(5.9)	5.9	6.0	7.5
Style Index							
MSCI EAFE Growth	1.1	(0.4)	17.9	2.2	7.8	5.5	6.5
MSCI EAFE Value	4.8	(1.7)	7.7	(4.9)	5.1	1.0	3.2
Regional Index							
MSCI UK	4.2	(2.5)	10.1	(2.9)	4.6	0.4	4.8
MSCI Japan	4.0	3.1	11.1	(4.7)	6.2	5.6	5.5
MSCI Euro	2.8	(2.0)	13.9	(1.1)	7.1	2.4	3.1
MSCI EM Asia	2.0	(3.4)	6.0	(3.9)	6.3	4.1	5.2
MSCI EM Latin American	2.6	(5.6)	6.3	6.7	6.8	(0.8)	(0.5)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(1.4)	1.3	7.6	7.1	2.2	2.4	3.5
BBgBarc US Treasury Bills	0.2	0.6	1.9	2.4	1.5	1.0	0.6
BBgBarc US Agg Bond	(0.5)	2.3	8.5	10.3	2.9	3.4	3.7
Duration							
BBgBarc US Treasury 1-3 Yr	(0.1)	0.6	3.1	4.4	1.5	1.3	1.2
BBgBarc US Treasury Long	(2.5)	7.9	19.8	24.8	4.1	6.8	6.9
BBgBarc US Treasury	(0.8)	2.4	7.7	10.5	2.2	2.9	3.1
Issuer							
BBgBarc US MBS	0.1	1.4	5.6	7.8	2.3	2.8	3.1
BBgBarc US Corp. High Yield	0.4	1.3	11.4	6.4	6.1	5.4	7.9
BBgBarc US Agency Interm	(0.2)	1.0	4.1	5.8	1.9	2.0	2.0
BBgBarc US Credit	(0.7)	3.0	12.6	12.6	4.3	4.5	5.3

OTHER

Index							
Bloomberg Commodity	1.2	(1.8)	3.1	(6.6)	(1.5)	(7.2)	(4.3)
Wilshire US REIT	2.8	7.9	27.2	18.4	7.2	10.2	13.1
CS Leveraged Loans	0.4	0.9	6.4	3.1	4.7	4.1	5.4
Alerian MLP	0.8	(5.1)	11.8	(6.4)	(2.7)	(8.2)	7.0
Regional Index							
JPM EMBI Global Div	(0.5)	1.5	13.0	11.6	4.6	5.7	6.9
JPM GBI-EM Global Div	1.0	(0.8)	7.9	10.1	3.1	0.6	2.5
Hedge Funds							
HFRI Composite	(0.3)	(0.5)	6.7	0.3	3.8	2.9	4.0
HFRI FOF Composite	(0.6)	(1.1)	5.0	(0.2)	3.1	1.9	2.7
Currency (Spot)							
Euro	(1.8)	(0.3)	1.5	5.1	(2.1)	0.3	(1.9)
Pound	1.2	(3.2)	(3.2)	(5.5)	(1.7)	(5.3)	(2.6)
Yen	(1.0)	(4.3)	(4.6)	(6.1)	(1.0)	(2.9)	(2.9)

Source: Morningstar, HFR, as of 9/30/19

Notices & disclosures

Past performance is no guarantee of future results. This document is provided for informational purposes only and is directed to institutional clients and eligible institutional counterparties only and is not intended for retail investors. Nothing herein constitutes investment, legal, accounting or tax advice, or a recommendation to buy, sell or hold a security or pursue a particular investment vehicle or any trading strategy. This document may include or imply estimates, outlooks, projections and other “forward-looking statements.” No assurance can be given that future results described or implied by any forward looking information will be achieved. Investing entails risks, including possible loss of principal. Verus Advisory Inc. (“Verus”) file a single form ADV under the United States Investment Advisors Act of 1940, as amended. Additional information about Verus Advisory, Inc. available on the SEC’s website at www.adviserinfo.sec.gov.

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Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

From: Personnel Committee (By Christopher W. Waddell, General Counsel)

Agenda Item 6: Eligibility of SLOOPT Personnel for Post-Employment Health Plan

Recommendation:

The Personnel Committee recommends to the full Board that it authorize the enrollment of Pension Trust employees in the Post-Employment Health Program (PEHP) that is available to non-represented County Employees.

Discussion

Section 3.2.2 of the Pension Trust's Employee Policies and procedures provides that:

3.2.2 Other Benefits and Administration: Other forms of employee compensation, including, but not limited to, cafeteria benefits, healthcare, life insurance, wellness, tuition reimbursement, etc. shall be as consistent as practically possible with the policies as they apply to comparable job classifications used for establishing compensation under section 3.1.1 of this handbook.

Currently, Pension Trust employees are not eligible to participate in the Post-Employment Health Program (PEHP) that is available to non-represented County Employees. This was historically due to a belief that the administrator of the County PEHP, Nationwide, could not administer a PEHP plan for small employer such as the Pension Trust. However, Nationwide has recently confirmed that it can administer a PEHP for Pension Trust employees notwithstanding the small employee base (8 employees).

Given that, on September 19, 2019, based on the recommendation of the General Counsel, the Personnel Committee voted to recommend to the full Board of Trustees at a future meeting that the Board approve an Employer Participation Agreement with Nationwide for a Post-Employment Plan that is identical in all respects to that which is currently available to non-represented employees of the County.

Respectfully Submitted,

Chris Waddell, General Counsel

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Date: November 25, 2019

To: Board of Trustees

From: Personnel Committee (By Christopher W. Waddell, General Counsel)

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Given that, on September 19, 2019, based on the recommendation of the General Counsel, the Personnel Committee voted to recommend to the full Board of Trustees at a future meeting that the Board approve an Employer Participation Agreement with Nationwide for a Post-Employment Plan that is identical in all respects to that which is currently available to non-represented employees of the County.

Respectfully Submitted,

Chris Waddell, General Counsel

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Date: November 25, 2019

To: Board of Trustees

From: Carl Nelson – Executive Director
Amy Burke – Deputy Director
Chris Waddell – General Counsel

Agenda Item 7: Indemnification – Authorization pursuant to Section 16.02(j) of the Retirement Plan

Recommendation:

It is recommended that the Board of Trustees (“BoT”) make findings relative to and approve indemnification pursuant to Section 16.02(j) of the Retirement Plan for the following contracts:

- Investment Management Agreement – Pathway Private Equity Fund Investors 10—Fund of Funds Limited Partnership Agreement.

Discussion:

Since 2007, the Retirement Plan has contained in Section 16.02(i) a blanket prohibition on the Pension Trust indemnifying any party. This prohibition became increasingly problematic in the limits it placed on the Pension to enter into contracts including those for investment management services and commercial banking. On May 10, 2016, the Retirement Plan was amended by the Board of Supervisors for certain technical and housekeeping amendments as recommended by the BoT. These Plan amendments included the following modification of Section 16.02 dealing with indemnification:

Article 16: Administrations and Operation – Section 16.02 excerpt –

...

“(h) Except as provided in section 16.02 (j), it shall have no power to, and shall not, authorize the Pension trust to act as surety for any person or entity, or as guarantor for the debt or obligations of any person or entity.(11-20-2007)

(i) Except as provided in section 16.02 (j) It shall have no power to, and shall not, authorize the Pension Trust to indemnify any person or entity. (11-20-2007)

(j) Notwithstanding sections 16.02 (h) and/or 16.02(i), the Board of Trustees may authorize the Pension Trust to: 1) act as surety for; 2) act as guarantor for; or 3) indemnify any person or entity if the Board of Trustees makes all of the following findings:

- (i) Based upon the assessment of the Executive Director, that it is not possible to obtain comparable services at comparable costs from service providers without having to agree to a surety, guarantor, or indemnification relationship;
- (ii) Based upon the assessment of the Executive Director, that if a surety, guarantor or indemnification relationship is required to obtain comparable services at comparable costs, such relationship is not available from another service provide under contractual provisions that would provide greater protection to the Pension Trust;
- (iii) Based upon the assessment of the Executive Director and General Counsel, that all potential risks of loss and costs to the Pension Trust resulting from the surety, guarantor or indemnification relationship have been identified and that all available actions to minimize such risks have been considered and, where appropriate, taken;
- (iv) Based upon the assessment of the General Counsel, the process used to evaluate the surety, guarantor or indemnification relationship fulfills the fiduciary duties of the members of the Board of Trustees and Pension Trust staff.”

The purpose of this recommended Board of Trustees approval is to make the necessary findings relative to and approve indemnification for the Pension Trust’s private equity fund of funds investment in the Pathway Private Equity Fund Investors 10, Limited Partnership Agreement (hereinafter “Pathway 10”. This investment was approved by the Board at its August 26, 2019 meeting. The fund documents provide for the following indemnification provisions:

- 1) The Subscription Documents for this investment require the Pension Trust to indemnify the General Partner, the Partnership, and all of the associated individuals and entities against any losses, liabilities, claims, damages, and expenses arising out of any breach by the Pension Trust of any representation, warranty, certification or any failure to comply with any covenant or undertaking made by the Pension Trust in connection with the investment.
- 2) Although likely not applicable to the Pension Trust since it is a tax-exempt investor, the Limited Partnership Agreement provides that each limited partner will indemnify the Fund and persons otherwise eligible for indemnification against any taxes, claims or liabilities arising in connection with the limited partner’s tax withholding or failure to comply with the U.S. Foreign Account Tax Compliance Act.
- 3) Although not representing a direct indemnification obligation of the Pension Trust, there are separate indemnification provisions in the Fund documents that provide for the indemnification by the Fund of specified individuals and entities in the event of claims against them. The Fund documents provide for the potential that the Pension Trust could

be required to return distributions received from the Fund if the Fund has insufficient assets to meet its own indemnification obligations (“give-back obligation”).

Outside investment counsel has reviewed these provisions on behalf of the Pension Trust and advises that they are consistent with the market for similar investments, with the exception that the “give-back” obligation is typically subject to more limitations than is the case with this investment. Outside investment counsel additionally advises that while attempts to negotiate further limitations on this obligation with Pathway have been unsuccessful, the balance of terms in the Limited Partnership Agreement as modified by side letter are favorable to the Pension Trust and it is appropriate from a legal perspective to move forward with the investment.

(j)(i-ii): It is the assessment of the Executive Director that comparable investment managers with investment management agreements that do not contain indemnification provisions similar to those described above or contain indemnification provisions that provide greater protection to the Pension Trust are unavailable, and that the indemnification provisions in the Pathway 10 investment reflect normal terms in the investment management industry.

(j)(iii): The Executive Director and the General Counsel believe that all potential risks of loss and costs to the Pension Trust resulting from these indemnifications have been identified and that all available actions to minimize such risks have been considered and, where appropriate, taken.

(j)(iv): It is the assessment of the General Counsel that the process used to evaluate the indemnification relationship as outlined above fulfills the fiduciary duties of the members of the BoT and Pension Trust staff.

We recommend that the Board adopt the findings and approve the indemnification provisions with the service provider described above.

Respectfully Submitted,

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Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

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

Agenda Item 8: Annual Pensionable Compensation Limit for 2020 pursuant to the Public Employees Pension Reform Act (Tier 3)

Recommendation:

It is recommended that the Board receive and file this report on the Tier 3 AB-340 Pensionable Compensation limit effective January 1, 2020 as calculated by the California Actuarial Advisory Panel for those included in the Federal Social Security system. The annual Tier 3 Compensation limit for 2020 shall be **\$126,291**.

Discussion:

The Public Employees Pension Reform Act of 2012 established a pensionable compensation limit that applies to Tier 3 membership. This amount was specified by PEPRA to equal the January 1, 2013 Social Security maximum wage base of \$113,700. PEPRA also specified that this pensionable compensation limit be adjusted annually based on changes in the Consumer Price Index for All Urban Consumers (CPI-U).

The Board of Trustees at its regular meeting of November 26, 2018 passed Resolution 2018-04 that directed staff to implement annual changes to the PEPRA Compensation limit based on the standardized calculation of this PEPRA Compensation Limit is provided each year by the California Actuarial Advisory Panel (CAAP) (under the State Controllers Office) in late November or December. This report is an annual receive-and-file consent agenda item.

The CAAP is scheduled to meet and approve the draft 2020 PEPRA Compensation limit on November 22, 2019. The calculation of the 2020 PEPRA compensation limit included

in this memo is from the draft CAAP letter. Staff does not expect this amount to change during its adoption by the CAAP. Should a change or correction by the CAAP take place, the Pension Trust will administer the Plan using that corrected limit.

The tentatively approved CAAP calculation of the 2019 PEPRA compensation limits for employees who participate in Social Security is shown on the attached CAAP report. **For 2020 this limit is \$126,291 or \$60.71/hour.**

The history of PEPRA compensation limits for employees who participate in Social Security is shown below –

2013	\$113,700	per PEPRA initial amount
2014	\$115,064	+1.2%
2015	\$117,020	+1.7%
2016	\$117,020	0.0%
2017	\$118,775	+1.5%
2018	\$121,388	+2.2%
2019	\$124,180	+2.3%
2020	\$126,291	+1.017% (draft CAAP report)

Respectfully Submitted

Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

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

Agenda Item 9: Resolution No. 2019-05 – Establishing the Rate of Interest to be paid on the Normal Contributions of Members

Recommendation:

It is recommended that the Board approve the attached Resolution 2019-05. This resolution establishes the rate of interest to be paid on Normal Contributions of Members for the period beginning December 15, 2019 and ending December 26, 2020 at **6.000%**. This rate can be changed at the discretion of the Board of Trustees at any time.

Discussion:

With respect to the establishment of the interest crediting rate for Normal Contribution Accounts, action is taken annually by the Board pursuant to Retirement Plan Section 5.06: Accounting for Contributions. Section 5.06 Accounting For Contributions reads as follows:

The Normal Contributions of Members will be accounted for separately and will be credited with interest as of the last day of each pay period at an annual rate to be determined by the Board of Trustees.

The Retirement Plan is silent as to the method the Trustees use to determine the rate of interest to be credited to a Member's Normal Contribution Account. The practices of other retirement systems in setting a crediting rate for normal contributions vary widely. In the normal case where a Member proceeds to receive a service retirement benefit, the crediting rate for Normal contributions has minimal significance. This is because the retirement benefit is funded by a blending of the Member's Normal Contribution Account and the other reserves (i.e., employer contributions and investment earnings) within the Plan.

If a Member separates service and elects to take a Termination Refund of their Normal Contributions, the interest credited to that account is also paid out to the Member. The loss of the interest in the account is substantially offset by the reduction in liability that was being accrued by the former Member. However, when the interest crediting rate exceeds the rate of return generated by the investment portfolio the interest credited to the Normal Contribution Account implicitly comes from the other reserves within the Plan. The amount of impact on the Plan from Termination Refunds is expected to be minimal because actuarial experience shows that once a Member becomes vested at five years of service the probability of a refund is low.

Last year the Board set the rate of interest to be credited to the Member Normal Contribution Accounts as shown in the table below. Based on the same rationale, Staff's recommendation is to set the interest to be credited to the Member Normal Contribution Accounts at **6.000%** for 2020. **Alternative amounts for setting this rate of interest are also possible and within the discretion of the Board.**

	2019 <u>Adopted</u>	2020 <u>Recommended</u>
Actuarial Earnings Assumption (current year)	7.000%	7.000%
Less	<u>1.000%</u>	<u>1.000%</u>
Interest Rate on Member Normal Contributions	6.000%	6.000%

Also, it is important to note, that this rate can be changed at the discretion of the Board at any point which allows for further adjustments in conjunction with future considerations of actuarial assumptions to be used.

Note that the attached resolution contains an automatic setting of the rate back to 4.50% starting December 27, 2020. The intent of this provision is to establish that the rate can be reduced at the discretion of the Board. This does not bind whatever decision the Board of Trustees may make in establishing the rate of interest being paid on Member Normal Contribution Accounts for periods after 2020.

Respectfully Submitted,

**SAN LUIS OBISPO COUNTY
PENSION TRUST**

RESOLUTION 2019-05

**A RESOLUTION ESTABLISHING THE RATE
OF INTEREST TO BE PAID ON THE
NORMAL CONTRIBUTIONS OF MEMBERS FOR THE PERIOD
BEGINNING DECEMBER 15, 2019 AND ENDING DECEMBER 26, 2020**

WHEREAS, Plan Section 5.06 provides for the crediting of interest on Member's Normal Contributions at an annual rate to be determined by this Board of Trustees; and

WHEREAS, the duties of this Board of Trustees under Plan Section 16.02 require the Board to interpret, construe and apply all provisions of the Plan, and to approve interest rates; and

WHEREAS, pursuant to the above-mentioned Plan Sections, this Board of Trustees, at the Regular Meeting of November 26, 2018, adopted Resolution 2018-05, fixing the rate of interest to be paid on Normal Contribution Accounts at six percent (6.000%); and

WHEREAS, this Board of Trustees has determined that for the period beginning December 15, 2019, establishing the current rate of interest at six percent (6.000%) would be a reasonable and prudent discharge of the above-mentioned duties and a prudent application of funds; and

WHEREAS, uncertainty as to current economic conditions, and volatility of interest rates constitute sufficient cause for the Board of Trustees to limit an increase in said current rate to the period specified above, by returning said rate to four and one-half percent (4.50%), commencing December 27, 2020.

NOW THEREFORE, BE IT RESOLVED by the Board of Trustees of the San Luis Obispo County Pension Trust as follows:

1. That, for the period beginning December 15, 2019, and ending December 26, 2020, the annual rate of interest to be credited to the normal contributions of Members, under Plan Section 5.06 is hereby fixed at six percent (6.000%);
2. That commencing December 27, 2020, and thereafter, the annual rate of interest to be credited to the normal contributions of Members under Plan Section 5.06 is hereby fixed at four and one-half percent (4.50%);
3. That implementation of this Resolution is hereby assigned to the Executive Director of this Pension Trust.

Aye Votes: -
No Votes: -
Abstentions: -
Absent: -

ADOPTED: November 25, 2019

Approved as to Form and Legal Effect

Chris Waddell
General Counsel

SIGNED: _____
Guy Savage, Vice President
Board of Trustees
San Luis Obispo County Pension Trust

ATTEST: _____
Carl Nelson
Executive Director

Board of Trustees

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Date: November 25, 2019
To: Board of Trustees
From: Carl Nelson – Executive Director
Amy Burke – Deputy Director

Agenda Item 10: Resolution No. 2019-06 – Establishing the Rate of Interest to be paid on the Additional Contributions of Members

Recommendation:

It is recommended that the Board approve the attached Resolution 2019-06. This resolution reaffirms the following policy the rate of interest to be paid on Member Additional Contributions for the period beginning December 15, 2019 and ending December 26, 2020 at **1.55%**.

Discussion:

Section 5.07 of the Retirement Plan sets forth the provisions governing the Additional Contribution Accounts. The section provides that this account is designed to provide additional benefits.

Historically, there have been three sources of Additional Contributions. These are as follows:

1. Voluntary Contributions made by members.
2. “Spill-over” contributions as a result of Employer Paid for Employee Normal Contributions (also known as the “pick up”) in excess of the Member’s required contribution rate. This source of additional contributions has become substantially less significant due to recent contribution rate increases, as Employers have bargained for the most part with employee groups to split these required increases on a 50/50 basis.
3. Distributions of excess earnings from SLOCPT.

In 2018, the Board of Trustees approved a benchmark using the yield on Five Year Treasury Bonds as of September 30th of each year. Based on this, Staff recommends for 2020 the interest to be paid on Additional Contribution Accounts be set at the September 30th yield on Five Year Treasury Bonds which is 1.55%.

This action is taken annually by the Board pursuant to Retirement Plan Section 5.07: Additional Contributions.

Respectfully Submitted,

**SAN LUIS OBISPO COUNTY
PENSION TRUST**

RESOLUTION NO. 2019-06

**A RESOLUTION ESTABLISHING THE RATE
OF INTEREST TO BE PAID ON THE
ADDITIONAL CONTRIBUTIONS OF MEMBERS FOR THE PERIOD
BEGINNING DECEMBER 15, 2019 AND ENDING DECEMBER 26, 2020**

WHEREAS, Plan Section 5.07 provides for the crediting of interest to Member Additional Contributions at an annual rate to be determined by this Board of Trustees; and

WHEREAS, the duties of this Board of Trustees under Plan Section 16.02 require the Board to interpret, construe and apply all provisions of the Plan, and to approve interest rates; and

WHEREAS, at the Regular Meeting of the Board of Trustees held November 23, 2009, the Board of Trustees reviewed the matter of crediting Additional Contribution Accounts with appropriate rates of interest, such that participants in said Additional Contribution Accounts receive a rate of return that is consistent with the funding requirements of the Trust; and

WHEREAS, the Board of Trustees finds that portfolio performance on a year-over-year basis is potentially volatile, and that such volatility in the determination of the interest crediting rate is not desirable and, therefore a more stable and objective benchmark to determine the rate of interest credited to the Additional Contribution Accounts is preferable, and

WHEREAS, the Board of Trustees affirms the policy recommendation that the rate of interest to be determined and applied to the Additional Contribution Account be established in a range of not less than 0% and not greater than the established actuarial assumption rate; and

WHEREAS, said policy will ensure the principal amount of a Member's contributions be preserved; and

WHEREAS, the staff recommends and the Board of Trustees finds that the yield on Five Year Treasury Bonds as of September 30th of each year provides a reasonable and objective benchmark for the determination of the appropriate interest crediting rate for Additional Contribution Accounts; and

WHEREAS, based on the foregoing, the rate of interest to be credited to the Employee Additional Contribution Accounts be established for 2020 at a rate of 1.55%.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED by the Board of Trustees of the San Luis Obispo County Pension Trust as follows:

1. That, for the period beginning December 15, 2019, and ending December 26, 2020, the annual rate of interest to be credited to the Member Additional Contribution Accounts, under Plan Section 5.07 is hereby fixed at 1.55%.
2. That commencing December 27, 2020, and thereafter, the annual rate of interest to be credited to the Member Additional Contributions Account under Plan Section 5.07 shall be determined annually by action of the Board of Trustees and may be based on the yield on Five Year Treasury Bonds as of September 30th of each year or a comparable investment.
3. That implementation of this Resolution is hereby assigned to the Executive Director of this Pension Trust.

Aye Votes: -
No Votes: -
Abstentions: -
Absent: -

ADOPTED: November 25, 2019

Approved as to Form and Legal Effect

Chris Waddell
General Counsel

SIGNED: _____
Guy Savage, Vice President
Board of Trustees
San Luis Obispo County Pension Trust

ATTEST: _____
Carl Nelson
Executive Director

Board of Trustees

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



Date: November 25, 2019
To: Board of Trustees
From: Carl Nelson – Executive Director
Amy Burke – Deputy Director

Agenda Item 11: SLO Regional Transit Authority Contracting Agency Recommendation

Recommendation:

Staff recommends that the Board –

1. Recommend to the Board of Supervisors that the San Luis Obispo Regional Transit Authority (RTA) be approved as a Contracting Agency in the San Luis Obispo County Employees Retirement Plan (Retirement Plan) only for RTA designated Eligible Employees (i.e., management, administrative and confidential positions).
2. Recommend the attached Contracting Agency Contract for Board of Supervisors approval.

Contracting Agency Background:

Article 25: Contracting Agencies in the Retirement Plan permits participation in the San Luis Obispo County Pension Trust (Pension Trust) by public agencies that are located within the County of San Luis Obispo. Such participation is authorized by means of a Contracting Agency contract between the agency and San Luis Obispo County. The Contracting Agency contract must be approved by the Board of Supervisors and the governing board of the agency. The role of the Board of Trustees is to evaluate and recommend the terms of such a contract. This includes its actuarial impact on the Retirement Plan, equity relative to the other members of the Plan, and the ability to administer such an arrangement.

The Retirement Plan already has the following agencies participating in the Retirement Plan –

SLO Superior Courts	by contract
SLO Air Pollution Control District	by contract
SLO Local Agency Formation Commission	by contract
SLO County Pension Trust	by Plan By-Laws

The existing Contracting Agencies included by contract all had their origin as County employed members who for various reasons were converted to be employees directly of the agency. In those cases, the transition to contracting agency status just continued the existing Retirement Plan membership of those employees. For the existing contracting agencies membership in the Plan is mandatory for all regular employees.

Should the RTA become a contracting agency it would be the first new entrant to this status. As such, its members are directly comparable to any other new entrant to the Retirement Plan like any other new hire. Also, RTA is proposing to make Retirement Plan membership mandatory only for a specified group of eligible employees in management, administrative and confidential positions.

RTA Request:

The RTA currently provides defined benefit pension benefits for its management, administrative and confidential positions through CalPERS. RTA has given notice to CalPERS of its intent to withdraw from that retirement system in January 2020. The RTA Board has approved such a withdrawal from CalPERS and the scheduled payment of a withdrawal liability to CalPERS. As such, the previous service of CalPERS participating RTA employees will be the responsibility of CalPERS. *As a result, should RTA become a Contract Agency in the SLO Retirement Plan, there will be no accompanying liability for past service.*

The Board of Directors of the RTA at its special meeting held October 2, 2019 formally requested Contract Agency participation in the Retirement Plan as shown on **Attachment A** to this memo.

Pension Trust Evaluation:

Pension Trust staff, General Counsel and Plan Actuary have examined the issue of the RTA becoming a Contracting Agency and find that –

- The requirement for Retirement Plan participation for SLO County and the other Contracting agencies is mandatory for all regular employees. It is permissible under the Retirement Plan for RTA to make its participation requirement

mandatory for all regular employees designated as eligible employees based on specified positions.

- RTA as a Contracting Agency is administratively possible.
- If RTA participates as a Contracting Agency in the Retirement Plan on the same terms as other employers participating in the Retirement Plan – including contribution rates – that such RTA participation is *actuarially neutral* to the Retirement Plan. See **Attachment B** to this memo – letter from Gabriel Roeder Smith as the Plan Actuary.
- RTA has been notified that Article 25 of the Retirement Plan requires that a Contracting Agency pay the costs incurred by the Pension Trust related to such inclusion. The Contracting Agency costs to be invoiced by the Pension Trust to the RTA upon completion of the transaction include: actuarial fees; pension administration system software modifications; legal fees; Pension Trust staff time directly attributable to RTA’s inclusion; and, miscellaneous administrative costs attributable to RTA. RTA will be responsible for their payroll service provider to make the necessary modifications to transmit biweekly payroll and contributions.
- Financial considerations – given the points noted above, the addition of RTA as a Contracting Agency is expected to have no significant difference in financial considerations when compared to any other new hires into the Retirement Plan.

Contracting Agency contract:

The proposed Contracting Agency contract between the RTA and SLO County is included as **Attachment C** to this memo. Key points of the contract include –

- 1) **RTA eligible employees** defined as management, administrative and confidential positions specified in Appendix A to the contract. Plan membership is mandatory for all Eligible Employees.
- 2) **Contribution rates** for RTA and RTA employees will be equivalent to those included in the Retirement Plan for Miscellaneous members in the comparable bargaining unit for unrepresented employees – BU11 (paragraph 6 of the contract). The initial rates are those currently published in the rate appendices to the Retirement Plan.
 - a) RTA, like other contracting agencies and SLO County, will specify the allocation of the required contribution rates between Employer and Employee. For Tier 3 members PEPR requires that Employees pay a minimum of 50% of Normal Cost and this is a limit on how RTA may allocate contribution rates.
 - b) RTA may, for any Tier 2 members, specify an Employer Paid Member Contribution (EPMC) also referred to as a “pick up”.

- c) RTA may specify different allocations of pension contribution rates between employer and employee for –
 - i) Existing members eligible for Tier 2 benefits based on Reciprocity (see item below).
 - ii) Existing members eligible for Tier 3 benefits
 - iii) Future new hire members eligible for Tier 3 benefits

- 3) **Contribution rate increases** - the RTA, like other contracting agencies and SLO County, may specify the effective date of such increases. As a result of the 2019 Actuarial Valuation there is a pension contribution rate increase already approved by the Board of Trustees. SLO County has indicated that it will implement those 2019 rate increases effective July 1, 2020. The SLO Courts and APCD have indicated they will implement those 2019 rate increases January 1, 2020 (the rate increase is actuarially adjusted to be slightly lower for earlier implementation). RTA has indicated that it intends to include the 2019 rate increase upon initiation of Contract Agency status in January 2020.

- 4) **Benefit levels, or Tiers**, for the RTA employees are based on their status as new entrants to the Retirement Plan. This is the equivalent treatment for any other new hire into the Plan. *This means that the default Miscellaneous benefit level for RTA members will be the post-2013 PEPRA benefit level in Tier 3 (paragraph 7 of the contract).*

- 5) **Reciprocity** is expected to be available with CalPERS. However, this is pending confirmation from CalPERS once the RTA withdrawal from that system is finalized. If CalPERS will not certify Reciprocity between systems, all RTA members will remain at Tier 3 benefits. Assuming that CalPERS certifies Reciprocity for the existing RTA employees, the normal administration of Reciprocity would place RTA members in –
 - a) **Tier 3** – for RTA members with a date of hire into RTA after the effective date of PEPRA on January 1, 2013. These RTA members certified as Reciprocal would have their age-at-entry pension contribution rates set at the age they were hired at RTA and they would have vesting date adjusted as well.
 - b) **Tier 2** – for RTA members with a date of hire into RTA before the effective date of PEPRA on January 1, 2013. These RTA members certified as Reciprocal would have their age-at-entry pension contribution rates set at the age they were hired at RTA and they would have their vesting date adjusted as well. They would be eligible for Tier 2 benefits. They would also be eligible for an employer paid EPMC or Pick-up at the discretion of RTA.

Schedule:

- | | |
|---------------|--|
| Nov. 25, 2019 | Board of Trustees consideration of this recommendation |
| Dec. 10, 2019 | Board of Supervisors
- Contracting Agency contract |
| Dec. 11, 2019 | RTA Board of Directors
- Contracting Agency contract
- Finalize CalPERS withdrawal
- Agreements with RTA employees on allocation of pension contribution rates between employer/employee and pick-up of employee contributions for Tier 2 eligible reciprocal members |
| Jan. 10, 2020 | Final day of RTA members under CalPERS |
| Jan. 12, 2020 | Start of RTA members under the SLO Retirement Plan |

Respectfully Submitted

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**RESOLUTION REQUESTING
SAN LUIS OBISPO COUNTY PENSION TRUST
AUTHORIZE ENROLLMENT OF
SAN LUIS OBISPO REGIONAL TRANSIT AUTHORITY
IN COUNTY PENSION SYSTEM**

WHEREAS, the Board of Directors ("Board") of the San Luis Obispo Regional Transit Authority ("RTA") entered into a contract with the California Public Employees' Retirement System ("CalPERS") pursuant to Government Code Section 20460, effective July 1, 1994, for participation by the RTA in CalPERS; and

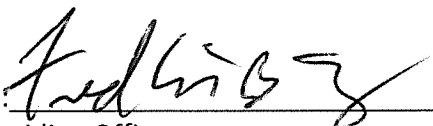
WHEREAS, on January 9, 2019, the Board adopted a Resolution of intention to terminate its contract with CalPERS in order to reduce future financial pension obligations; and

WHEREAS, the Board has determined that becoming a contracting agency under the San Luis Obispo County Employees Retirement Plan ("Plan") administered by the San Luis Obispo County Pension Trust ("Pension Trust") would provide comparable retirement benefits to RTA employees currently enrolled in CalPERS; and

WHEREAS, approval is required from the Pension Trust and the San Luis Obispo County Board of Supervisors for the RTA to become a contracting agency in the Plan.

NOW, THEREFORE, BE IT RESOLVED, that the Board finds that it is in the best interests of the RTA to become a contracting agency under the San Luis Obispo County Employees Retirement Plan administered by the San Luis Obispo County Pension Trust upon termination of the CalPERS contract; and

BE IT FURTHER RESOLVED, that the Board does hereby give notice to the Pension Trust of its request for authorization for the RTA to become a contracting agency under the San Luis Obispo County Employees Retirement Plan.

By: 
Presiding Officer

RTA Board President
Title

10/2/19
Date adopted and approved

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Attachment B

Date: October 21, 2019

To: Board of Trustees

Re: **San Luis Obispo County Regional Transportation Authority - Contracting Agency Agreement**

I have reviewed the draft contract between the County of San Luis Obispo (“County”) and the San Luis Obispo County Regional Transportation Authority (“RTA”) pertaining to the Management, Administrative, and Confidential employees of RTA participating in the San Luis Obispo County Pension Trust (“SLOCPT”). A brief summary of my understanding of the draft agreement is as follows:

- All Management, Administrative, and Confidential employees of RTA will be eligible to become Miscellaneous Members of the SLOCPT. The rank and file represented employees of the RTA are not included in this agreement and are not intended to ever become members of the SLOCPT.
- Participation by the Management, Administrative, and Confidential employees of RTA in the SLOCPT is mandatory.
- All eligible members will enter the SLOCPT as new entrants, therefore, there is no past service liability associated with the group. Furthermore, as these members will be considered new entrants, there is no corresponding asset transfer into the SLOCPT.
- Although there is a high probability of reciprocity, the reciprocity provisions apply just as they would to any other new member in the SLOCPT. Said reciprocity would impact the member’s vested status and the age-at-entry contribution rate, but would not directly impact their Final Average Salary for benefit calculation purposes.
- Contribution rates for eligible Management, Administrative, and Confidential employees of RTA are equal to those of other Miscellaneous Members, pursuant to Article 5 of the Retirement Plan, thus preserving equity between these members and any other new entrant that would enter the SLOCPT.
- The initial employee contribution rates are equivalent to the rates of contributions identified in Appendix A of the Retirement Plan for Bargaining Unit 11 with a rate of Employer Pick-Up to be specified by RTA.
- The RTA will pay to the SLOCPT contributions as determined by the Pension Trust Board of Trustees, in conjunction with the actuary retained by the Board of Trustees for such purposes, necessary to fund and pay the benefits and allowances of eligible Management, Administrative, and Confidential employees of RTA who become Miscellaneous Members of the SLOCPT.
- The draft agreement specifies a process by which the contract can be terminated.
- The number of eligible Management, Administrative, and Confidential employees of RTA is approximately 10.

Board of Trustees

Re: San Luis Obispo County Regional Transportation Authority - Contracting Agency Agreement

October 21, 2019

Attachment B

Page 2

The inclusion of the RTA as a Contracting Agency in the SLOCPT is actuarially neutral to the SLOCPT given that the number of eligible Management, Administrative, and Confidential employees of RTA entering the SLOCPT is not material to the SLOCPT, a large multiple-employer cost sharing plan; new members are entering with no past service liability; appropriate employee and employer contributions are to be made; and, a "Termination Difference" calculation is specified in the draft agreement.

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

If you have any questions about the information above or need any additional information, please contact me at 720-274-7275 or paul.wood@grsconsulting.com.

Respectfully submitted,

A handwritten signature in black ink that reads "Paul Wood". The signature is written in a cursive style and is contained within a rectangular box.

Paul Wood, ASA, FCA, MAAA

cc: Thomas Lyle, ASA, EA, MAAA



**CONTRACT FOR PARTICIPATION
in the
SAN LUIS OBISPO COUNTY PENSION TRUST
and
EMPLOYEES RETIREMENT PLAN**

THIS AGREEMENT, is made and entered into this ___ day of _____, 2019, by and between the County of San Luis Obispo (“County”) and the San Luis Obispo County Regional Transportation Authority (“RTA”):

WHEREAS, the San Luis Obispo County Pension Trust (“Pension Trust”) has been established by the County pursuant to County Code Chapter 2.56; and

WHEREAS, the San Luis Obispo County Employees Retirement Plan (“Retirement Plan”) has been established by the County and its provisions are set forth in the By-Laws of the Pension Trust; and

WHEREAS, pursuant to the authority of California Government Code Section 53216.2, the County is authorized to contract with local agencies within the County whereby certain officers and employees of the local agency are eligible to participate in the San Luis Obispo County Pension Trust and the San Luis Obispo County Employees Retirement Plan; and

WHEREAS, RTA is a local agency within San Luis Obispo County and RTA desires to contract with the County so that the Management, Administrative, and Confidential employees of RTA are eligible to participate in the Pension Trust and the Retirement Plan; and

WHEREAS, the initiation of RTA as a contracting agency in the Pension Trust and the Retirement Plan would be later than the January 1, 2013 effective date of the Public Employees Pension Reform Act (PEPRA) which requires what is currently referred to as the Tier 3 level of retirement benefits under the Retirement Plan or, in the case of Reciprocity pursuant to Article 20 of the Retirement Plan, what is currently referred to as the Tier 2 level of retirement benefits under the Retirement Plan which is the retirement benefit available to Miscellaneous members of the Retirement Plan as of December 31, 2012 as specified by PEPRA; and

WHEREAS, the initiation of RTA as a contracting agency in the Pension Trust and the Retirement Plan would be later than the effective date of PEPRA and what is currently referred to as the Tier 1 level of retirement benefits under the Retirement Plan is not allowable to new entrants in the Miscellaneous class to the Retirement Plan after January 1, 2013 pursuant to PEPRA; and

WHEREAS, Article 25 of the Retirement Plan provides that for all such contracts between the County and a local agency, the Board of Trustees of the Pension Trust shall administer and apply the provisions of such contracts and of the Pension Trust By-Laws and the San Luis Obispo County Employees Retirement Plan.

NOW, THEREFORE, in consideration of the covenants, conditions, agreements, and stipulations herein, the parties hereby agree that, pursuant to the authority of California Government Code Section 53216.2 and pursuant to Article 25 of the San Luis Obispo County Employees Retirement Plan, the Management, Administrative, and Confidential employees of RTA as such positions are designated by RTA (Eligible Employees) and specified in Appendix A to this contract are and shall be eligible to participate in the San Luis Obispo County Pension Trust and Employees Retirement Plan, under the following terms and conditions:

1. This contract and the participation of RTA and the Eligible Employees of RTA in the Pension Trust and Retirement Plan shall be governed by:

a) The provisions of Article 1.5 (Pension Trusts) of Chapter 2 (Officers and Employees) of Part 1 (Powers and Duties Common to Cities, Counties, and other Agencies), of Division 2 (Cities, Counties, and Other Agencies), of Title 5 (Local Agencies) of the California Government Code; and

b) Chapter 2.56 of the San Luis Obispo County Code; and

c) The By-Laws and the Retirement Plan of the Pension Trust, as they presently exist and as they may be amended from time to time.

2. All Eligible Employees of RTA shall be eligible to become Miscellaneous Members of the Pension Trust as set forth in Article 8 of the Retirement Plan except for the RTA Board members, and other RTA employees, who shall not be eligible to participate by reason of this contract.

3. Participation in the Pension Trust shall be mandatory for all Eligible Employees of RTA.

4. RTA shall maintain for each of its Eligible Employees a complete record of each employee's employment with RTA, including: The date of hire, the dates of any approved leaves of absence, the amount and times of the payment of compensation, and termination date and such other employment information as the Pension Trust may from time to time require. RTA shall report such information to the Pension Trust at such times and in such format as shall facilitate the processing of the information by the Pension Trust's record keeping systems.

5. RTA shall deduct from the compensation of each of its Eligible Employees their contributions to the Pension Trust and shall remit those contributions to the Pension Trust each pay period. For those Eligible Employees of RTA, compensation shall be determined pursuant to the provisions of Section 1.14 of the Retirement Plan.

6. The normal rates of contributions for the Eligible Employees of RTA shall be those set forth in Article 5 of the Retirement Plan for Miscellaneous Members. The initial rates of said contributions are set forth in Appendix A of the Retirement Plan equivalent to the rates of contributions identified in Appendix A for Bargaining Unit 11 with a rate of Employer Pick-Up to

be specified by RTA, a copy of which is attached hereto. The normal rates of contribution for the Eligible Employees of RTA shall change when said changes have been incorporated into the Retirement Plan by action of the San Luis Obispo County Board of Supervisors.

7. The Service Retirement Allowance for the Eligible Employees of RTA shall be the same as those set forth in Article 29 (Tier 3) of the Retirement Plan for Miscellaneous Members. For the Eligible Employees of RTA who meet the requirements for Reciprocal Benefits pursuant to Article 20 of the Retirement Plan regardless of their original date of RTA employment, the Service Retirement Allowance shall be the same as those set forth in Article 27 (Tier 2) of the Retirement Plan for Miscellaneous Members. The Service Retirement Allowances for the Eligible Employees of RTA shall not change unless and until RTA and the Pension Trust have entered into a written agreement to do so, or such changes are required by State of California statute, and the said changes have been incorporated into the Retirement Plan by action of the San Luis Obispo County Board of Supervisors.

8. Eligible Employees of RTA shall be entitled to those death benefits set forth for Miscellaneous Members in Article 7 of the Retirement Plan. The death benefits for the Eligible Employees of RTA shall not change unless and until RTA and the Pension Trust have entered into a written agreement to do so and the said changes have been incorporated into the Retirement Plan by action of the San Luis Obispo County Board of Supervisors.

9. Eligible Employees of RTA shall become entitled to receive a service retirement allowance in accordance with the provisions of Article 9 of the Retirement Plan for Miscellaneous Members.

10. Eligible Employees of RTA shall become entitled to receive an Ordinary Disability Retirement Allowance in accordance with the provisions of Article 10 of the Retirement Plan for Miscellaneous Members and the Ordinary Disability Retirement Allowance shall be paid in one of the ways provided for by Article 13 of the Retirement Plan.

11. RTA shall appropriate and pay to the Pension Trust such amounts as are determined by the Pension Trust Board of Trustees, in conjunction with the actuary retained by the Board of Trustees for such purposes, to be necessary to fund and pay the benefits and allowances of Eligible Employees of RTA who become Miscellaneous Members of the Pension Trust. It is understood and agreed that failure by RTA to pay to the Pension Trust those moneys determined by the Pension Trust Board of Trustees to be necessary to fund and pay the benefits and allowances of Eligible Employees of RTA:

- (a) shall result in the reduction of the benefits and allowances payable to the Eligible Employees of RTA by the Pension Trust and by the Retirement Plan and the amount of such reductions of the benefits and allowances payable to the Eligible Employees of RTA shall be determined by the Board of Trustees of the Pension Trust on advice of the actuary employed by the Board of Trustees; and

(b) shall authorize the County to terminate this contract effective sixty days after the County shall have mailed written notice of the County's termination of this contract by registered mail to the governing body of RTA.

12. The initial term of this contract shall be for ten years from the date of its execution by the parties. At the end of the initial term, the term of this contract shall be extended for successive five year periods unless and until RTA shall, at least one hundred and eighty days prior to the end of the initial term, or any succeeding five-extension of the term, of this contract gives written notice to the County that the term of this contract shall not be extended.

13. In the event of termination of this contract, the Pension Trust Board of Trustees shall hold for the benefit of the RTA members of the Pension Trust who are credited with service rendered as employees of RTA and for the beneficiaries of the Pension Trust who are entitled to receive benefits on account of that service, the accumulated contributions and appropriations then held by the Pension Trust and credited to or as having been made by RTA for and on the behalf of the said RTA members and their beneficiaries.

14. In the event of termination the Pension Trust shall cause its actuary, at the expense of RTA, to determine the difference between the following, which difference shall be known as the "Termination Difference":

(1) Pension Trust assets attributable to RTA shall be based on past contributions and the assumed investment rate adopted by the Board of Trustees. Pension Trust assets attributable to RTA shall be determined by applying the proportion of actuarial liabilities attributable to RTA members for funding purposes from the last completed actuarial valuation and applying such ratio to the market value of Pension Trust assets as of the end of the calendar year preceding the date of termination of this contract;

(2) Pension Trust assets attributable to RTA shall be reduced by the actuarial value of the liability associated with any remaining obligations of the Pension Trust to Retired and Reserve RTA members as of the date this contract shall terminate.

15. If the Termination Difference shows that the Pension Trust assets attributable to RTA are more than the liability associated with any remaining obligations of the Pension Trust to RTA members and their beneficiaries after the date of the calculation, then the Pension Trust shall pay the Termination Difference to RTA or its successor.

16. If the Termination Difference shows that the Pension Trust assets attributable to RTA are less than the liability associated with any remaining obligations of the Pension Trust to RTA members and their beneficiaries after the date of the calculation, then RTA shall contribute and pay to the Pension Trust an amount equal to the said Termination Difference. The amount of the said Termination Difference shall be subject to interest at a rate equal to the assumed long term rate of return on Pension Trust assets as recommended by the Pension Trust's actuary and adopted by the Board of Trustees, from time to time, from the date of termination of this contract to the

date that RTA pays the said Termination Difference to the Pension Trust. If RTA fails to pay to the Pension Trust the amount of said Termination Difference, all allowances and benefits payable to RTA Eligible Employees, retirees and their beneficiaries under the Retirement Plan shall be proportionally reduced by the amount of the Termination Difference as determined by the Pension Trust's actuary.

17. The rights and benefits of RTA Eligible Employees, retirees, and their beneficiaries, under the Retirement Plan, after the date of the termination of this contract, shall be the same as if RTA had continued as a contracting agency but shall be subject to reduction in the amounts set forth above. No current active member of RTA shall be deemed to be or shall become entitled to Reciprocal Benefits pursuant to Article 20 of the Retirement Plan by reason of the termination of this contract.

18. All costs, including administrative expenses, attendant to the participation of RTA and its Eligible Employees in the Pension Trust and the Retirement Plan shall be borne by RTA and not by the County or the Pension Trust or the Retirement Plan.

19. The Board of Trustees of the Pension Trust shall administer, construe and apply the provisions of this agreement in accordance with, and subject to, the By-Laws of the Pension Trust.

IN WITNESS WHEREOF, the parties have executed this agreement as of the date first set forth above.

County of San Luis Obispo

**San Luis Obispo County
Regional Transportation Authority**

By: _____
Chair of the Board of Supervisors

By: _____
Chair of the Board of Directors

ATTEST:

Tommy Gong, County Clerk-Recorder and ex-Officio
Clerk of the Board of Supervisors

Clerk of the Regional Transportations Authority

APPROVED AS TO FORM AND
LEGAL EFFECT

APPROVED AS TO FORM AND
LEGAL EFFECT

Rita Neal, County Counsel

By: _____
Deputy County Counsel

By: _____
Nina Negranti, RTA Counsel

APPENDIX A:

CONTRACT FOR PARTICIPATION in the SAN LUIS OBISPO COUNTY PENSION TRUST
and EMPLOYEES RETIREMENT PLAN

**Eligible Employees of RTA for Retirement Plan membership shall include only RTA
employees in the following positions –**

- Executive Director
- Deputy Director
- Chief Financial Officer
- Operations Manager
- Human Resources Officer
- Administrative Services Officer
- Safety Manager
- Grants Manager
- Marketing Manager
- Shop Manager
- Shop Assistant Manager
- Accountant
- Accounting Technician
- Administrative Assistant

Eligible Employee status and participation in the Retirement Plan is mandatory for the above positions.

In the event of approved changes to the position titles of the Eligible Employees of RTA or the creation of new positions that are deemed to be an Eligible Employee, the Pension Trust must be notified by the RTA Executive Director prior to filling such a position or within 30 days of the change of title for an already filled position.

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Board of Trustees

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

San Luis Obispo County Pension Trust *SLOOPT*

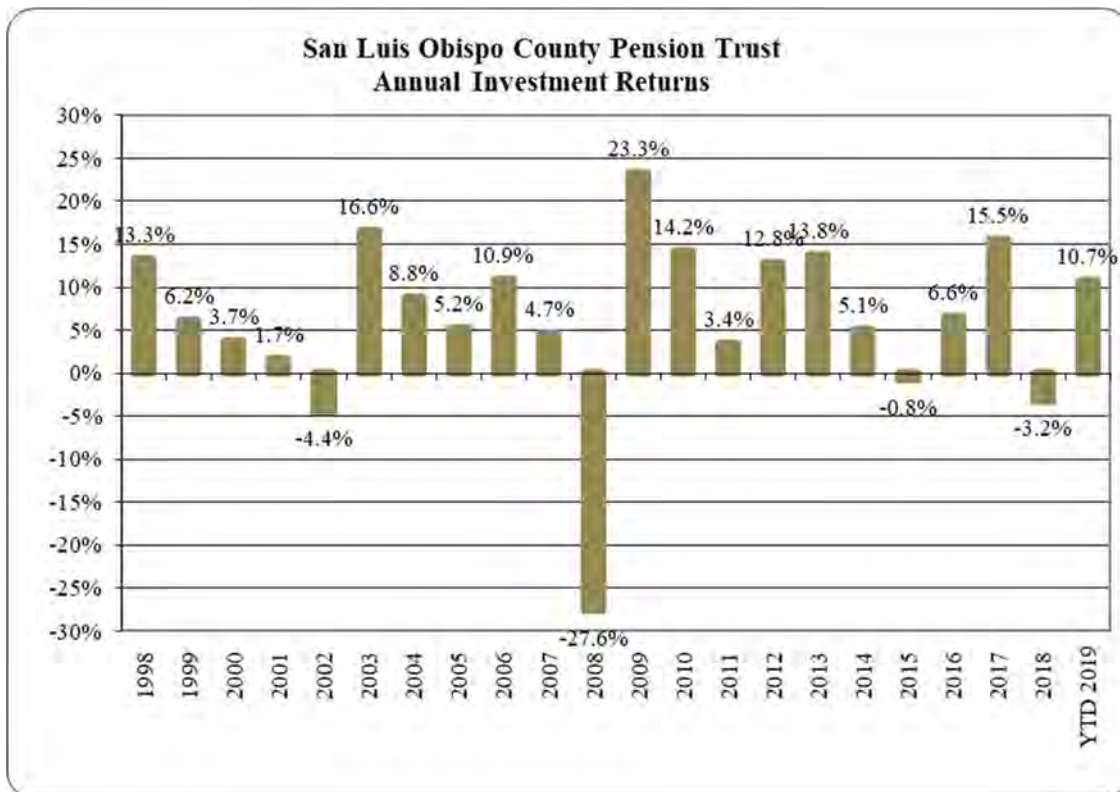
Date: November 25, 2019

To: Board of Trustees

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

Agenda Item 12: Quarterly Investment Report for the 3rd Quarter of 2019

Attached to this memo is the 3Q19 quarterly investment report prepared by the Trust’s investment consultant Verus. Scott Whalen of Verus will make a detailed presentation and discuss the quarterly report. The long-term history of the rates of return gross of fees of the Pension Trust are shown below as an extension of the data in the Verus report.



Respectfully submitted,

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



PERIOD ENDING: SEPTEMBER 30, 2019

Investment Performance Review for

San Luis Obispo County Pension Trust

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

SEATTLE 206-622-3700

LOS ANGELES 300-297-1777

SAN FRANCISCO 415-362-3484

Investment Landscape

TAB I

Investment Performance
Review

TAB II



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

4TH QUARTER 2019
Investment Landscape

Recent Verus research

Visit: <https://www.verusinvestments.com/insights/>

Annual outlooks

PRIVATE EQUITY OUTLOOK

In our annual outlook we discuss the following trends occurring in the private markets:

- Continued strong deal flow in 2018, surpassing the all-time high of 2017.
- Another strong year for M&A activity by strategic buyers in response to slowing global growth to shore up profit margins.
- Europe's continued deployment into new investments to surpass exits by almost 2x, despite the uncertainty of political policies.
- Persistent excess returns above public markets and borrower-friendly leveraged financing driving more capital into the private markets, however investors are gravitating towards larger fund managers with longer track records.
- The continued evolution of secondary markets encompassing increasingly complex transactions.

Topics of interests

CRISIS RISK MITIGATION

We went back in time to find the worst periods in U.S. stock market history. There is always a question regarding whether it is possible to employ risk mitigation within a portfolio without giving up too much in terms of returns or paying too much in expenses.

We briefly examine strategies which are thought to mitigate these effects and find that some are better than others. Most institutional investors already have an effective program of crisis risk mitigation in the form of a significant allocation to high-quality bonds. For those wishing to construct a dedicated crisis risk allocation, we suggest a roadmap.

THE INVESTMENT GOLDEN RULE

Effective capital allocation involves distributing financial resources in a way that aligns the goals and objectives of an organization with its investment program. For institutional investors, this involves designing an appropriate strategic asset allocation (SAA), selecting competent investment managers, and then managing the resulting portfolio well. We believe there is a framework that can help. The "Investment Golden Rule" combines the components of the capital allocation process with the return objective in order to improve investment decisions across the organization. In this paper we analyze some practical examples of the capital allocation process through the lens of this framework.

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3rd quarter summary

THE ECONOMIC CLIMATE

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag. **p. 7**
- Trade policies and conflict likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to hinder growth in the future. **p. 16**

PORTFOLIO IMPACTS

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. **p. 26**
- Core inflation has crept up to cycle-highs in 2019, increasing to 2.4% YoY in September. Headline inflation rose 1.7% YoY, dragged down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces in the global economy. **p. 9**

THE INVESTMENT CLIMATE

- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%. **p. 18**
- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion. **p. 18**

ASSET ALLOCATION ISSUES

- Risk assets were flat over the quarter. Global equities gained 0.0% and U.S. Treasuries gained 2.4% as domestic interest rates fell. Longer duration exposures continued to outperform. **p. 41**
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Emerging market currencies fell -4.0% in Q3 on the back of U.S. dollar strength. These currencies remain depressed relative to history. **p. 36**

A neutral risk stance may be appropriate in today's environment

What drove the market in Q3?

“Trade talks seen as unlikely to mend U.S.-China divide”

U.S. TREASURY FEDERAL BUDGET NET CUSTOMS RECEIPTS (\$BILLIONS)

Apr	May	Jun	Jul	Aug
\$5.24	\$4.93	\$5.61	\$6.47	\$7.01

Article Source: Reuters, September 16th, 2019

“World Economy Sends Up Flares as Manufacturing Slump Hits U.S.”

ISM MANUFACTURING PURCHASING MANAGERS’ INDEX

Apr	May	Jun	Jul	Aug	Sep
52.8	52.1	51.7	51.2	49.1	47.8

Article Source: Bloomberg, September 30th, 2019

“Fed Will Weigh Resuming Balance Sheet Growth at October Meeting”

SIZE OF FEDERAL RESERVE BALANCE SHEET (\$TRILLIONS)

Apr	May	Jun	Jul	Aug	Sep
\$3.93	\$3.85	\$3.83	\$3.78	\$3.76	\$3.86

Article Source: The Wall Street Journal, September 19th, 2019

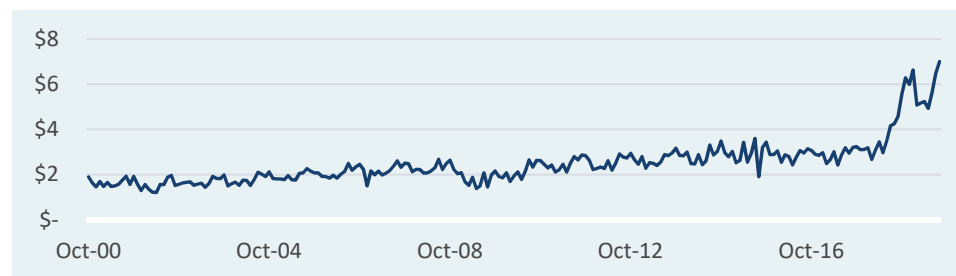
“Can Boris Johnson deliver Brexit as he pledged?”

GBP/USD SPOT EXCHANGE RATE (PRICE OF 1 GBP in USD)

Apr	May	Jun	Jul	Aug	Sep
\$1.30	\$1.26	\$1.27	\$1.22	\$1.22	\$1.23

Article Source: The Australian Financial Review, September 11th, 2019

U.S. TREASURY FEDERAL BUDGET NET RECEIPTS CUSTOMS (\$BILLIONS)



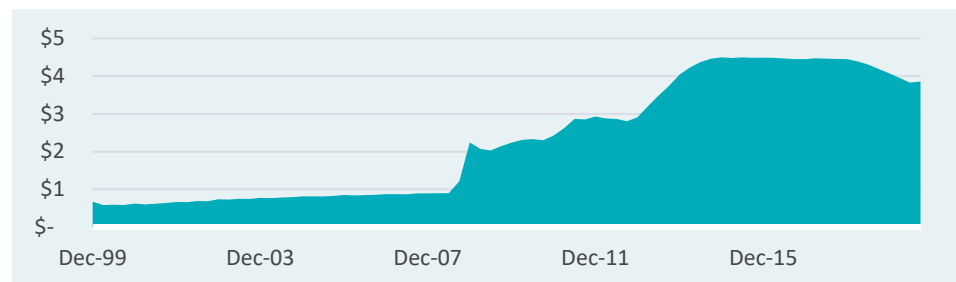
Source: Bloomberg, as of 8/31/19

MANUFACTURING PURCHASING MANAGERS INDEXES (RELATIVE TO 50)



Source: Bloomberg, Federal Reserve, as of 9/30/19. A reading of 0 is considered neutral.

FEDERAL RESERVE BALANCE SHEET (\$TRILLIONS)



Source: Bloomberg, Federal Reserve, as of 9/30/19

Economic environment

U.S. economics summary

- Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). U.S. Q2 consumer spending came in stronger than any time since 2014, while weak business inventory investment acted as a slight drag.
- U.S-China trade remained a major story in Q3. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Trade conflict has likely weighed on economic progress. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to act as a drag on growth in the future.
- Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, dragged down by falling energy prices.
- The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run.
- Despite record unemployment, wage growth remains lukewarm, decelerating from a cycle high of 3.4% achieved in February, to 2.9% in September.
- In October, the IMF cut its 2019 global economic growth forecast from 3.2% to 3.0%, referencing global trade friction as a primary driver.

	Most Recent	12 Months Prior
GDP (YoY)	2.3% 6/30/19	3.2% 6/30/18
Inflation (CPI YoY, Core)	2.4% 9/30/19	2.3% 9/30/18
Expected Inflation (5yr-5yr forward)	1.7% 9/30/19	2.2% 9/30/18
Fed Funds Target Range	1.75 – 2.00% 9/30/19	2.00 – 2.25% 9/30/18
10 Year Rate	1.7% 9/30/19	3.1% 9/30/18
U-3 Unemployment	3.5% 9/30/19	3.7% 9/30/18
U-6 Unemployment	6.9% 9/30/19	7.5% 9/30/18

GDP growth

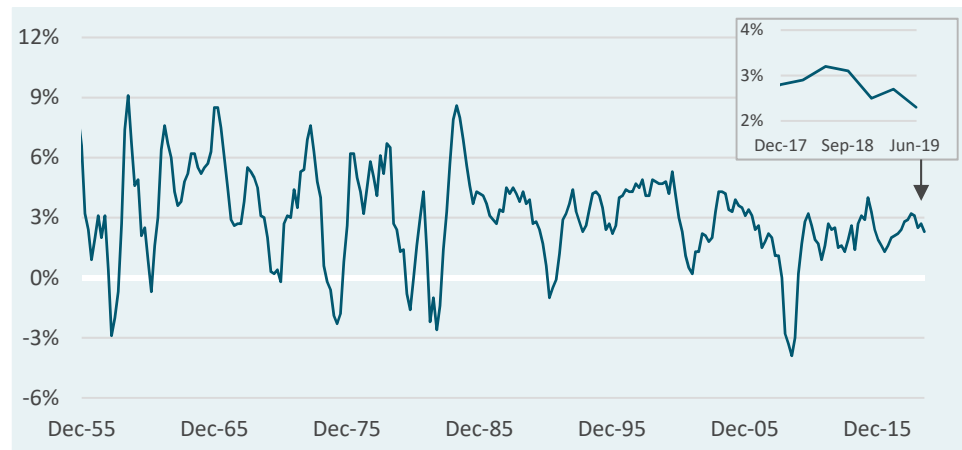
Real GDP grew at a 2.3% rate year-over-year in the second quarter (2.0% quarterly annualized rate). A lack of corporate inventory investment detracted -0.9% from the overall GDP print, perhaps fueled by frontloaded business purchases in efforts to avoid tariffs. Business investment also acted as a slight drag. Weakness was offset by strength in consumer spending not seen since late 2014. Economists broadly expect U.S. economic growth to moderate to a 2.0% pace in 2020.

economic growth. Uncertainty regarding the future of U.S.-China trade relations and supply chain disruptions caused by new tariff impositions are expected to further weigh on trade, spending, and business investment.

On October 9th, the Federal Reserve Bank of Atlanta GDPNow forecast indicated GDP growth of 1.7% in the third quarter. This forecast has recently fallen due to weaker than expected inventory investment.

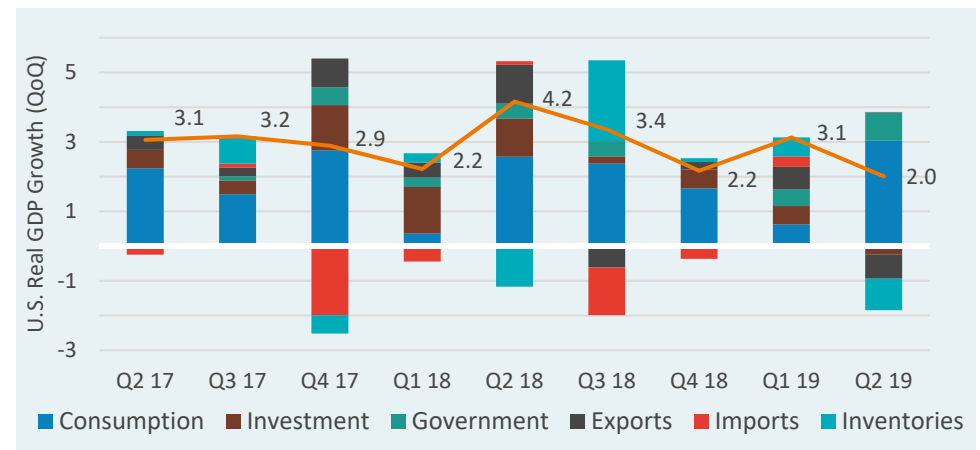
Trade policies and conflict likely resulted in a mild drag on

U.S. REAL GDP GROWTH (YOY)



Source: Bloomberg, as of 6/30/19

U.S. GDP GROWTH ATTRIBUTION



Source: BEA, annualized quarterly rate, as of 6/30/19

Inflation

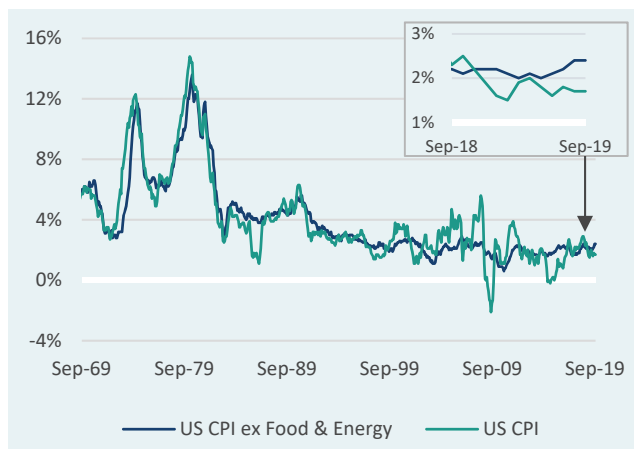
Core inflation has crept up to cycle-highs, rising 2.4% YoY in September. Headline inflation increased 1.7% YoY, held down by falling energy prices. Neither the media nor investors appear to be concerned about rising inflation, as of yet. Investors remain focused on deflationary forces across the global economy.

The market is pricing inflation to be very low over the next 10 years, as indicated by the U.S. 10yr TIPS breakeven inflation rate of 1.52%. This breakeven rate is still a ways

from its cycle low of 1.18% achieved in February 2016, when the price of oil crashed to below \$30 per barrel and pushed inflation down drastically.

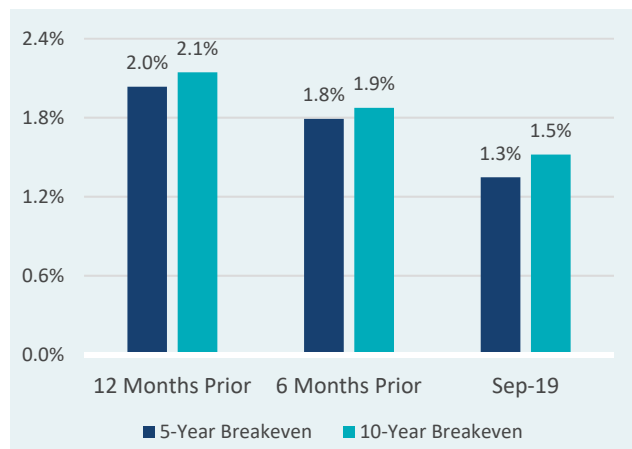
We believe it is likely that inflation will remain subdued. If inflation was to rise persistently, this might place central banks in a perilous position, given their recent unwillingness to raise interest rates. A rising inflation environment would also put upward pressure on interest rates, creating a drag on the global economy.

U.S. CPI (YOY)



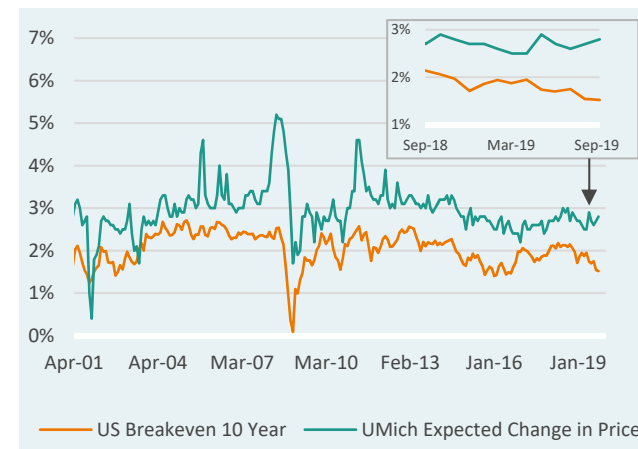
Source: Bloomberg, as of 9/30/19

U.S. BREAKEVEN INFLATION RATES



Source: FRED, as of 9/30/19

INFLATION EXPECTATIONS



Source: Bloomberg, as of 9/30/19

Labor market

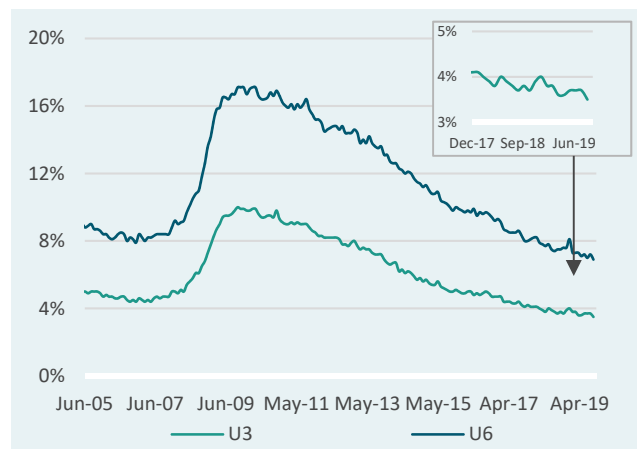
The U.S. unemployment rate reached a 50-year low of 3.5% in September. Historically, the rate of unemployment has risen prior to the beginning of each U.S. recession, which suggests the U.S. expansion may still have room to run. Despite record unemployment, wage growth remains lukewarm, decelerating to 2.9% YoY in September, down from a cycle high of 3.4% YoY achieved in February.

Interestingly, the small pool of U.S. workers who are currently unemployed have been out of work for much

longer, on average, than during past economic cycles. A shift in the composition of U.S. jobs may be contributing to this effect, as many manufacturing jobs have been outsourced/lost, and automated production processes have displaced some workers. Mismatches between the skills of available U.S. job-seekers and the skills required for current jobs appears to be creating some *structural unemployment*. Workers who are *structurally unemployed* require retraining and education to reposition themselves in the labor market.

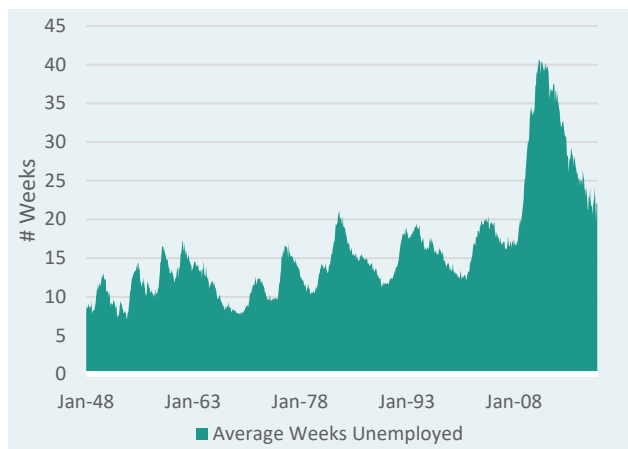
U.S. labor market remains strong, though further upside may be limited

U.S. UNEMPLOYMENT



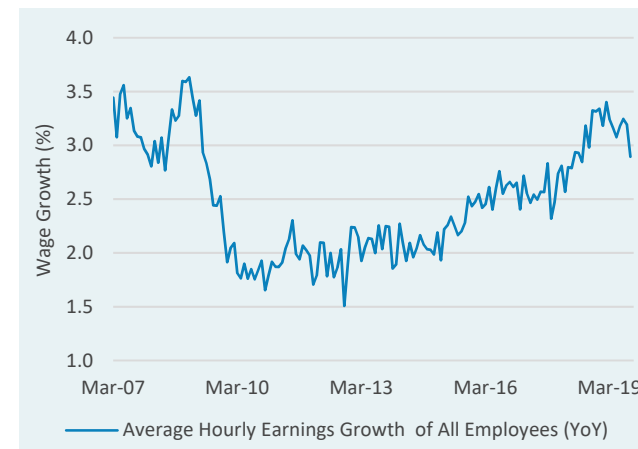
Source: FRED, as of 9/30/19

LENGTH OF UNEMPLOYMENT



Source: FRED, as 9/30/19

U.S. WAGE GROWTH



Source: FRED, as of 9/30/19

The consumer

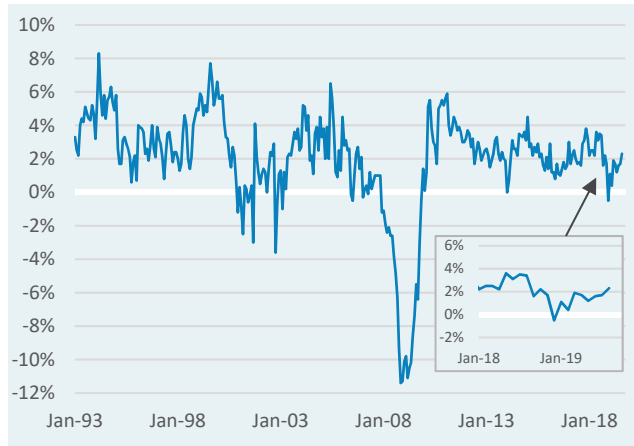
Retail sales fell in late 2018 but recovered year-to-date with a September growth rate of 2.3% YoY. Big-ticket purchases of items such as automobiles and homes have slowed from their 2016 highs.

The U.S. consumer continues to exhibit strength, as the labor market has reached record tightness, sentiment remains solid, and borrowing costs have fallen. However, slowing big ticket purchases will act as a headwind to growth. This slowing may be partly an effect of low interest rate burnout. As interest rates have been low for many years, consumers in need of big-ticket items have likely already purchased those items. Since

consumers are not likely to purchase yet another car or home, the incremental positive impacts of lower interest rates may be limited.

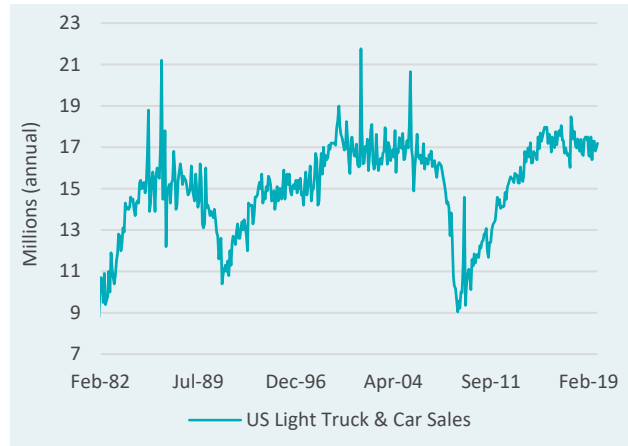
Consumer spending growth throughout this expansion has been a bright spot but has remained moderate, perhaps influenced by memories of the U.S. housing bubble and global financial crisis. Conservative spending habits are reflected in much higher savings rates than those witnessed during the economic boom of the 2000s – during which households spent more of their disposable income than any time since the Great Depression of the 1930s.

REAL RETAIL SALES GROWTH (YOY)



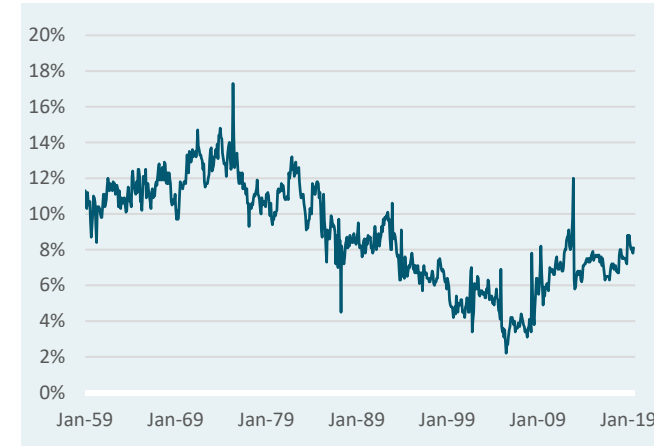
Source: FRED, as of 8/31/19

AUTO SALES



Source: Bloomberg, as of 9/30/19

PERSONAL SAVINGS RATE



Source: FRED, as of 8/31/19

Sentiment

Consumer sentiment faded but remained strong relative to history. The ratcheting up of trade tensions between the U.S. and China cast a shadow over a robust U.S. labor market.

Quits rate data from the Bureau of Labor Statistics indicated that 2.3% of total employed U.S. workers voluntarily quit their jobs in August - a level not seen since April 2001. Policymakers and economists view the quits rate as a measure of job confidence; quits rates typically rise when the labor market is relatively tight, and wages are moving higher.

Over the quarter, the University of Michigan's Consumer Sentiment Index fell from 98.2 to 93.2. Consumers remained more concerned about the near-term future than about the current situation. The two components of the index – Expectations and Current Situation - fell from 89.3 to 83.4 and from 111.9 to 108.5, respectively.

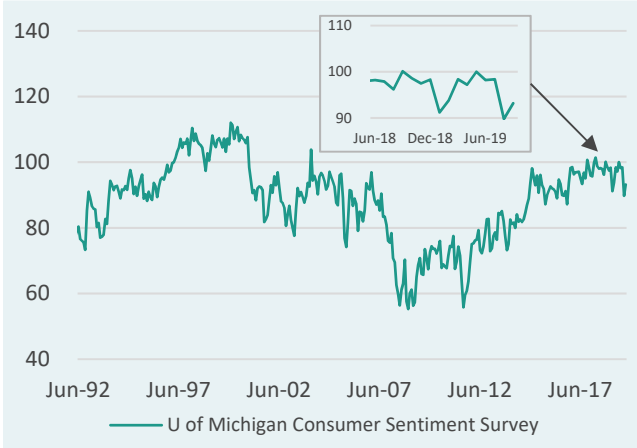
Optimism among small business owners trended lower as well. In the September NFIB report, 30% of small business owners reported they were negatively affected by tariffs.

U.S. WORKER QUIT RATE



Source: FRED, as of 8/31/19

CONSUMER SENTIMENT



Source: University of Michigan, as of 9/30/19 (see Appendix)

NFIB SMALL BUSINESS OPTIMISM INDEX



Source: NFIB, as of 9/30/19

Housing

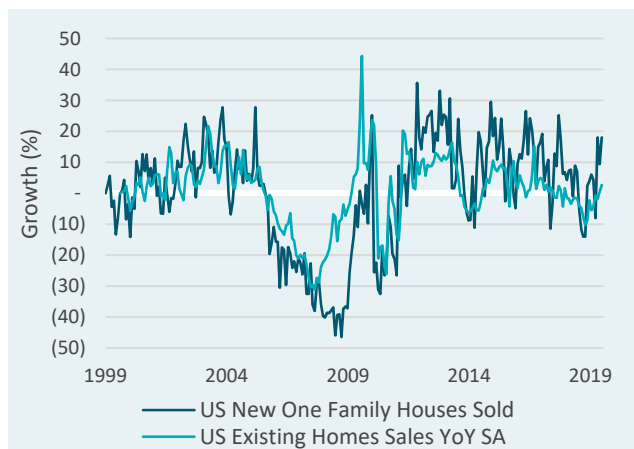
The housing market appears to be cooling off after a strong boom throughout the recent economic expansion. Home prices are falling modestly in some markets, and sales activity slowed in 2018. However, the recent drop in interest rates and mortgage rates has eased the cost of home ownership and may reignite activity.

Existing home sales grew +2.6% YoY in August. New home sales, a far smaller portion of the overall market, grew at a stronger rate of +18% YoY. An increase in new home sales likely reflects rising homebuilder activity in recent years, as indicated by the NAHB Housing Starts and Housing Permits Indices.

Home prices have fallen. The median U.S. home sale price was down -5% YoY in Q2. Falling prices and further weakening of the U.S. economy may create negative momentum as many buyers do not wish to purchase a home in a falling housing market, or in an economy that may be headed for recession.

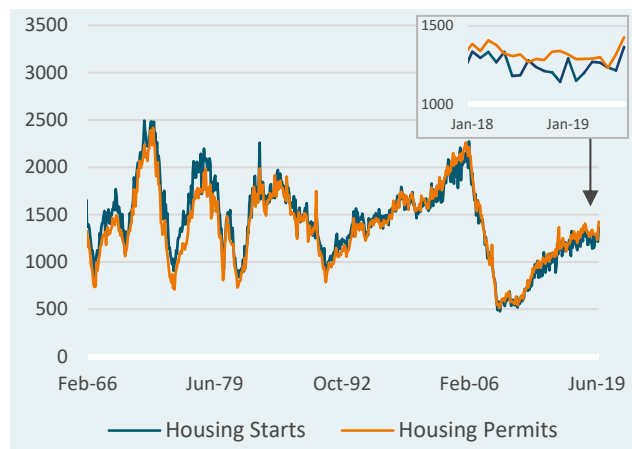
It is always helpful to remember that home price trends can vary meaningfully by location, which means national statistics are sometimes difficult to interpret at a local level.

U.S. HOME SALES (YOY)



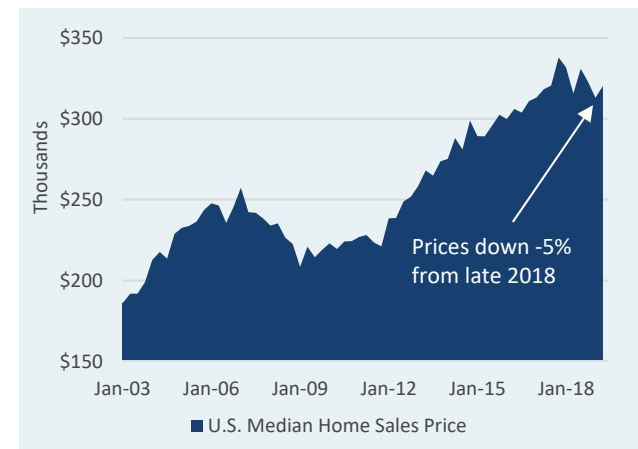
Source: FRED, as of 8/31/19

HOUSING STARTS & PERMITS



Source: Bloomberg, NAHB, as of 8/31/19 (see appendix)

MEDIAN U.S. HOME SALES PRICE



Source: FRED, as of 6/30/19

International economics summary

- The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%. Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%, cue for central banks to step in and attempt to bolster economic growth through more accommodative policy.
- Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.
- U.S-China negotiations will likely continue to impact trade around the world. The U.S. scheduled tariff rate hikes on \$250B in already-tariffed Chinese imports, as well as tariff impositions of up to 15% on the remaining \$300B in Chinese imports not currently exposed to duties. The Chinese retaliated with commensurate tariff adjustments. The two sides agreed to continued trade talks in Washington D.C. at the beginning of October.
- Dormant trade tensions between the U.S. and the E.U. saw a resurgence over the quarter – the U.S. applied tariffs between 10-25% on \$7.5B of imports from the E.U.
- A major theme in the third quarter was the global manufacturing slowdown, which was illuminated by gloomy European manufacturing PMI data. The Markit Eurozone Manufacturing PMI fell to 45.7, further into contractionary territory indicated by a reading below 50. The German reading fell to 41.7. It has yet to be seen whether manufacturing weakness will spill into the larger services sector, where PMIs still indicate business expansion.
- Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	2.3% <i>6/30/19</i>	1.7% <i>9/30/19</i>	3.5% <i>9/30/19</i>
Eurozone	1.2% <i>6/30/19</i>	0.8% <i>9/30/19</i>	7.4% <i>8/31/19</i>
Japan	1.0% <i>6/30/19</i>	0.4% <i>9/30/19</i>	2.3% <i>5/31/19</i>
BRICS Nations	5.0% <i>6/30/19</i>	3.1% <i>9/30/19</i>	5.1% <i>6/30/19</i>
Brazil	1.0% <i>6/30/19</i>	2.9% <i>9/30/19</i>	11.8% <i>8/31/19</i>
Russia	0.9% <i>6/30/19</i>	4.0% <i>9/30/19</i>	4.3% <i>8/31/19</i>
India	5.8% <i>3/31/19</i>	4.0% <i>9/30/19</i>	8.5% <i>12/31/17</i>
China	6.2% <i>6/30/19</i>	3.0% <i>9/30/19</i>	3.6% <i>6/30/19</i>

International economics

The United States delivered year-over-year GDP growth of 2.3% in the second quarter, extending outperformance relative to other developed nations, which have posted year-over-year growth of around 1.0%.

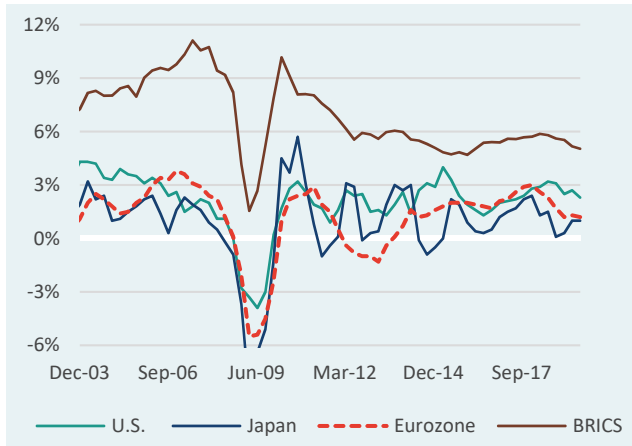
The Organization for Economic Development cut its 2019 calendar year forecast for global growth from 3.2% to 2.9% and its 2020 calendar year forecast from 3.4% to 3.0%.

Driving the downward revisions were trade tensions, which the OECD estimated would reduce 2019 global growth by 0.6%, 2019 U.S. growth by 0.7%, and 2019 Chinese growth by 1.0%

Inflation has remained subdued across international developed markets, and many pundits have viewed the mild inflation data as a cue for central banks to step in and attempt to bolster economic growth through more accommodative policy. Unemployment rates continued to tick lower around the globe. In the U.S., unemployment hit a 50-year low at 3.5%.

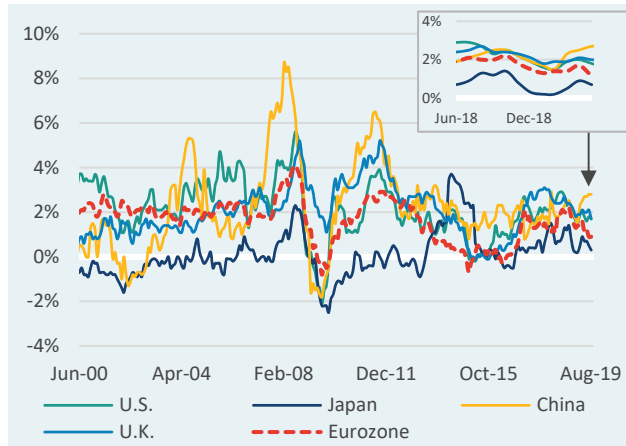
Chinese GDP expanded 6.0% year-over-year in the third quarter, its slowest rate of growth since the first quarter of 1992. Beijing's official target range for 2019 growth is between 6.0-6.5%.

REAL GDP GROWTH (YOY)



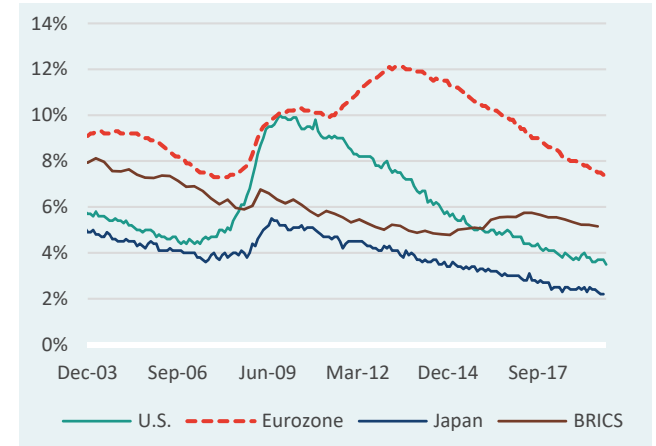
Source: Bloomberg, as of 6/30/19

INFLATION (CPI YOY)



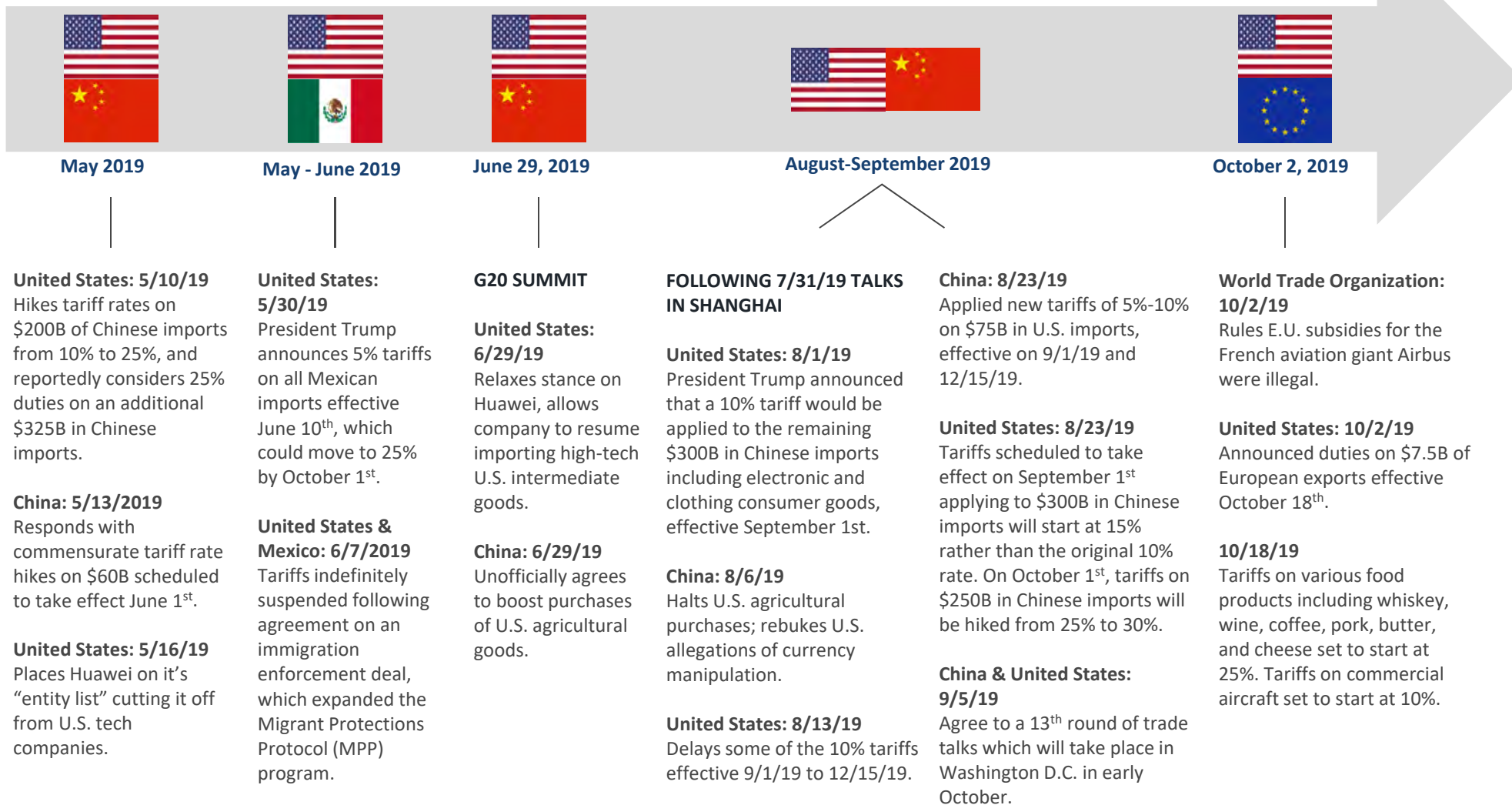
Source: Bloomberg, as of 9/30/19

UNEMPLOYMENT RATE



Source: Bloomberg, as of 9/30/19 or most recent release

Trade update



Source: Wikimedia Commons

Fixed income rates & credit

Interest rate environment

- Global sovereign bonds rallied, encouraged by muted inflation expectations and dovish guidance from global central banks. Central bankers appealed for fiscal action, citing the limited capacity of monetary policy to sustain further economic expansion.
- The Federal Open Market Committee cut the range for its benchmark interest rate by 0.25% in both its July and September meetings, bringing the new range for federal funds to 1.75-2.00%.
- FOMC members appear divided on the likely future path of interest rates. Per the September dot plot, 8 of 17 members expect one further 0.25% cut by the end of 2020, 2 expect no change, and 7 expect either one or two 0.25% rate hikes.
- The European Central Bank delivered a fresh stimulus package in September, in line with expectations. The ECB cut its main deposit rate from -0.40% to -0.50% and announced it would restart asset purchases of €20 billion per month, beginning November 1st.
- Global sovereign yields continued to plummet. In Germany, 10-year bond yields touched fresh all-time lows, and the entire German sovereign curve moved below 0%. In Italy, 10-year bond yields fell 1.28% to 0.82%, boosted by the formation of a new coalition government between the Democratic Party and the Five-Star Movement.
- Repo rates, which represent the overnight rate paid by short-term borrowers of cash, surged as overnight liquidity was constrained. The New York Fed intervened, injecting over \$300 billion into money markets over the course of a few weeks. Fed officials viewed the brief spike in repo rates as a financial “plumbing” issue, which could justify an “organic resumption of balance sheet growth”, not to be confused with crisis-era QE policy.

Area	Short Term (3M)	10-Year
United States	1.81%	1.66%
Germany	(0.57%)	(0.57%)
France	(0.59%)	(0.27%)
Spain	(0.54%)	0.15%
Italy	(0.28%)	0.82%
Greece	0.65%	1.35%
U.K.	0.78%	0.49%
Japan	(0.32%)	(0.21%)
Australia	1.06%	1.02%
China	2.33%	3.14%
Brazil	5.04%	7.05%
Russia	6.58%	7.01%

Source: Bloomberg, as of 9/30/19

Rising global debt – two opposing forces

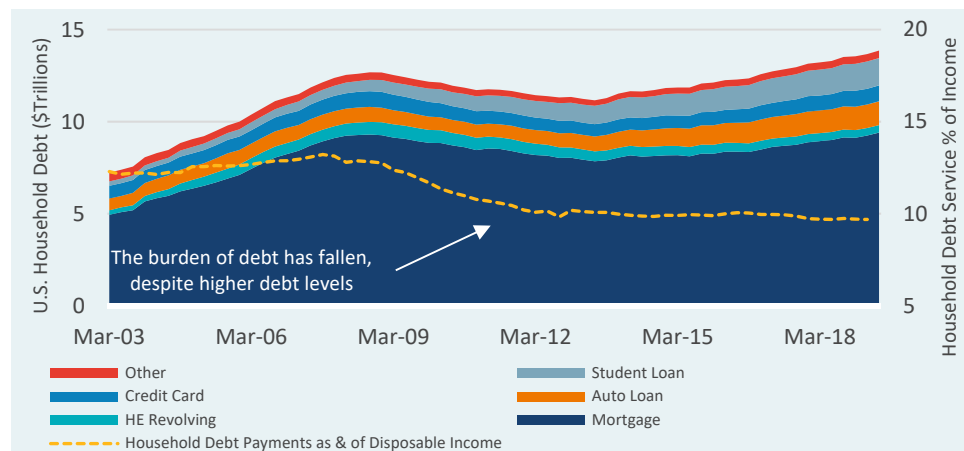
As the world has entered a low interest rate environment, many businesses and households have taken on greater debt. This is a natural trend – cheaper financing makes many purchases economical that were not when interest rates were high. As the cost of debt falls, businesses have also increasingly sought debt as a preferred source of overall financing.

Simultaneously, lower interest rates have offset much of the burden of taking on more debt. Some may argue that if an entity loads up on debt, but interest rates fall enough so that the entity's monthly debt payment does not change, this additional debt does not add significant risk to the entity's situation. It appears this is what is occurring around the world – greater use of debt, with the

burden of that debt largely offset by much lower interest rates. However, we believe risks are heightened in this environment.

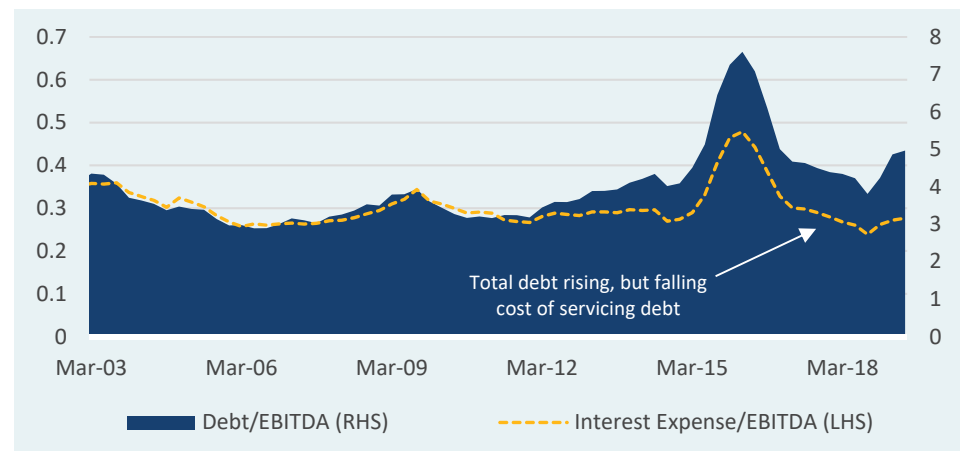
What are the investment implications? Changes in debt levels and interest rates tend to be slow-moving and secular, and difficult to act upon. But these events may in fact be informative about the future. First, expanded budgets and higher debt loads create incentives for governments to keep interest rates low to avoid economic problems. Second, significant corporate profit growth in recent years from financial engineering should not be expected to continue indefinitely. Third, higher debt loads may add to deflationary pressure, if debt service begins to take a greater share of income. We will continue to watch these secular forces.

HOUSEHOLD DEBT BURDEN



Source: FRED, as of 6/30/19

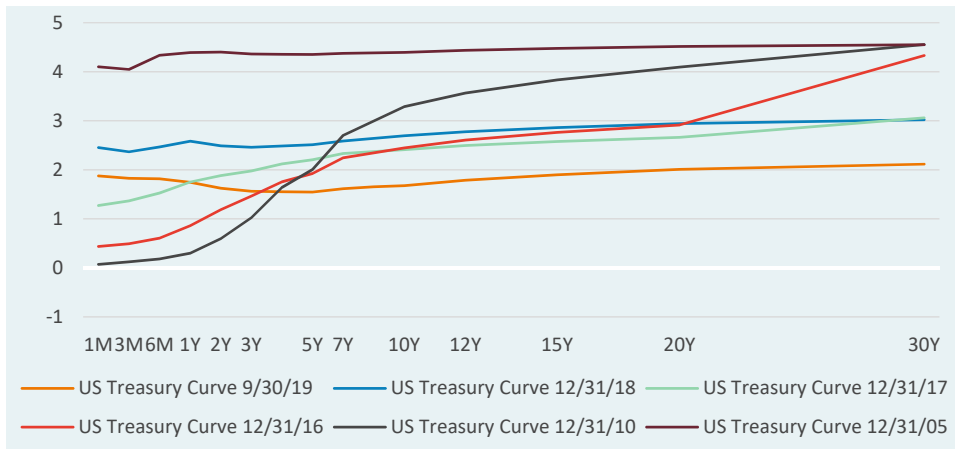
HIGH YIELD DEBT BURDEN



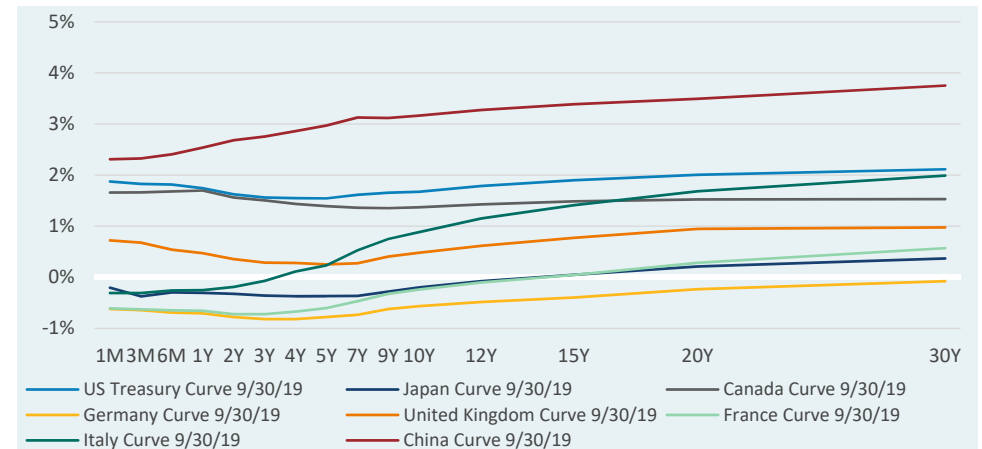
Source: Bank of America Merrill Lynch, as of 6/30/19 – Interest expense divided by total debt

Yield environment

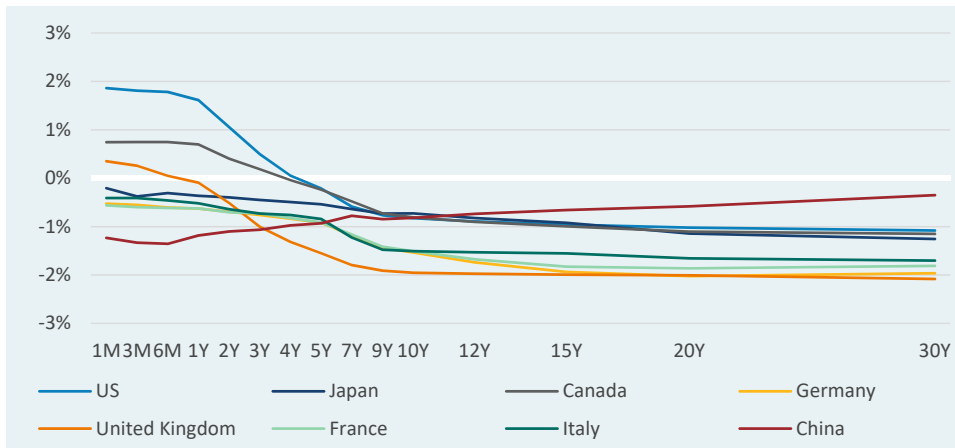
U.S. YIELD CURVE



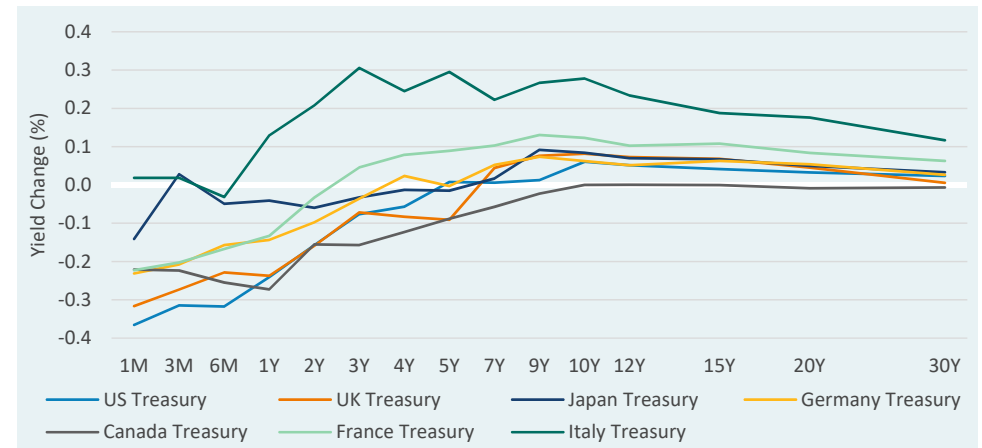
GLOBAL GOVERNMENT YIELD CURVES



YIELD CURVE CHANGES OVER LAST FIVE YEARS



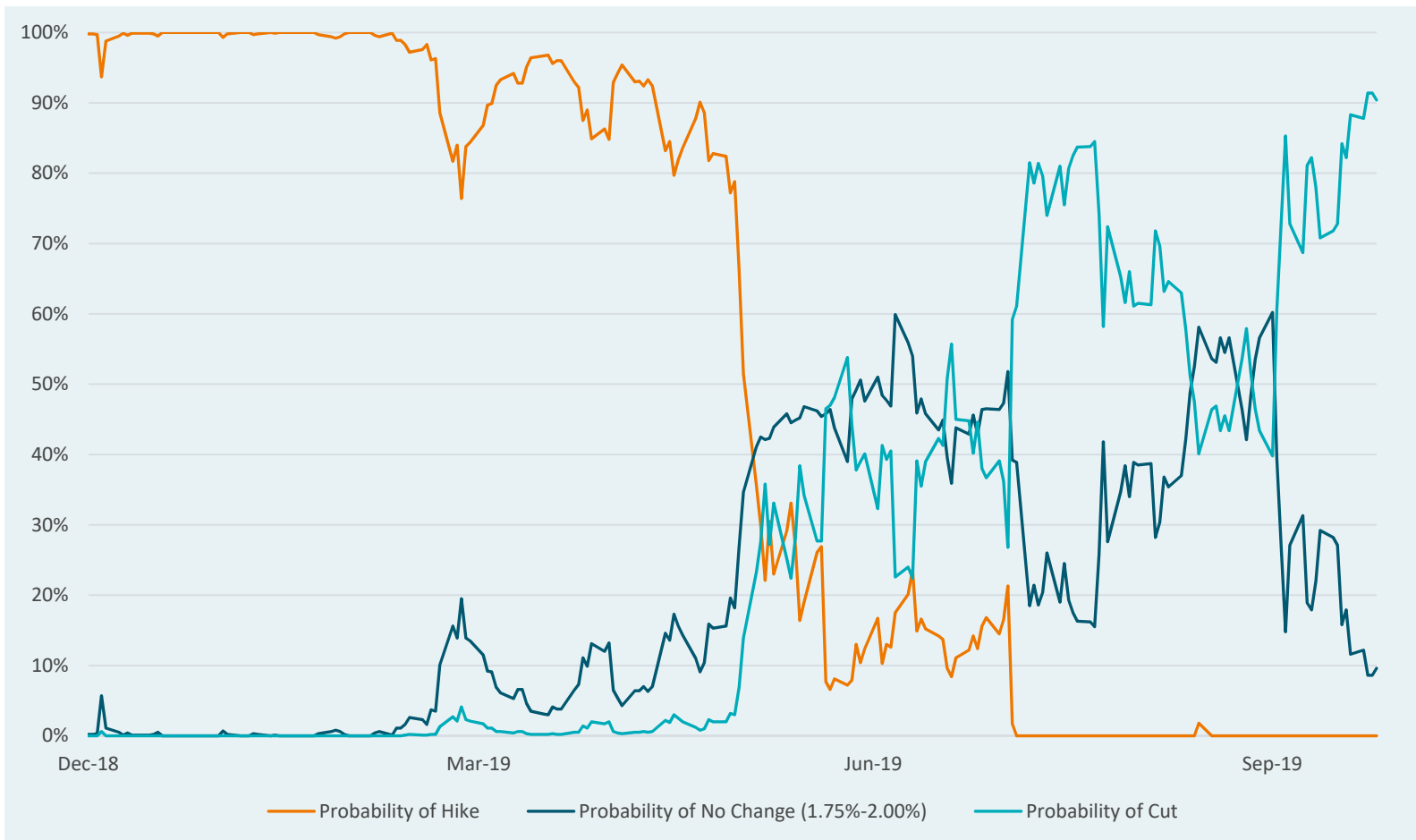
IMPLIED CHANGES OVER NEXT YEAR



Source: Bloomberg, as of 9/30/19

October Fed meeting

FUTURES IMPLIED PROBABILITIES FOR OCTOBER FED RATE DECISION



In September, the Fed cut its range for federal funds by 0.25%, in line with expectations

Investors expect the Fed to cut rates again by 0.25% at the October 30th meeting

Source: Bloomberg, as of 10/24/19

Credit environment

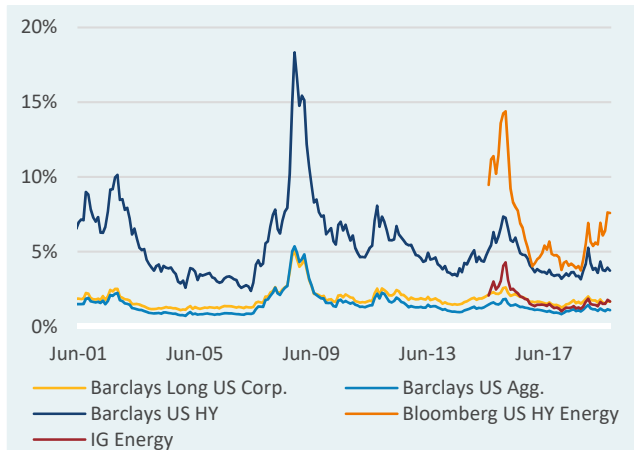
High yield bond spreads tightened slightly during Q3 as below investment grade assets remained somewhat stable over the period. Credit in general has been positively impacted by Federal Reserve dovishness. Anticipation of easier interest rate policies, which could potentially lengthen the credit cycle, has strengthened sentiment for risk assets. BB-rated bonds outperformed both CCC- and B-rated bonds in the third quarter once again. High yield bonds have returned +11.4% YTD, materially outperforming bank loans (+6.4%), but slightly underperforming investment grade credit (+12.6%).

The bank loan market has experienced some modest positive performance as interest rates rose off of their lows during the

quarter. The asset class was impacted by a pause in the Fed's hiking cycle and uncertainty surrounding future moves.

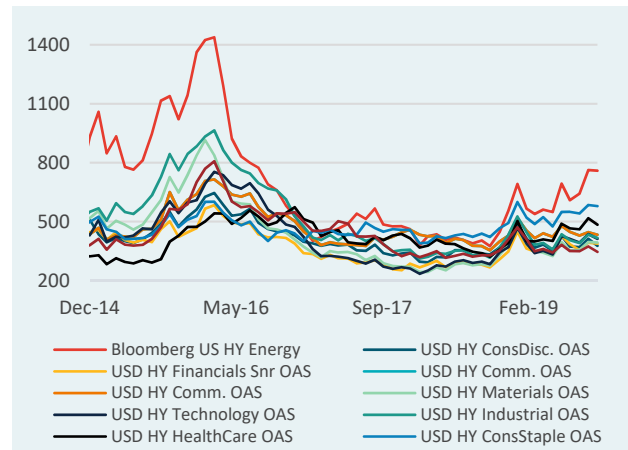
Based on concerns over late-cycle behavior in credit markets, we do not believe investors are being adequately compensated for credit risk. Late-cycle volatility tends to coincide with widening credit spreads and higher propensity for default activity. An underweight to U.S. investment grade, high yield credit, and bank loans may be warranted, with an overweight to emerging market debt which appears to offer more attractive value. This positioning should result in an overall neutral credit risk stance. Within U.S. markets, higher quality and more liquid assets appear most attractive.

SPREADS



Source: Barclays, Bloomberg, as of 9/30/19

HIGH YIELD SECTOR SPREADS (BPS)



Source: Bloomberg, as of 9/30/19

Market	Credit Spread (OAS)	
	9/30/19	9/30/18
Long U.S. Corp	1.7%	1.5%
U.S. Inv Grade Corp	1.2%	1.1%
U.S. High Yield	3.7%	3.2%
U.S. Bank Loans*	4.5%	3.7%

Source: Barclays, Credit Suisse, Bloomberg, as of 9/30/19

*Discount margin (4-year life)

Default & issuance

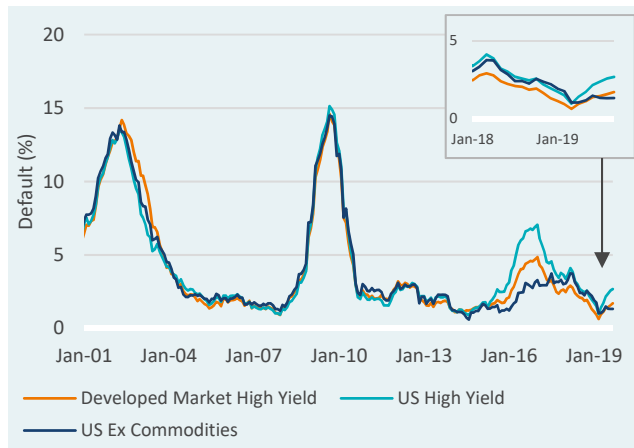
Default activity has been low and stable in the U.S. credit market, despite price volatility. The par-weighted default rate for high yield increased to 2.5% but remains below its long-term average range of 3.0-3.5%. For loans, the par-weighted default rate at the end of the third quarter was 1.4% and remains below the long-term average of 3.1%, according to data from J.P. Morgan. Consumer, retail, telecom, and utilities sectors may be especially prone to stress in the current environment.

Senior loan and high yield markets have essentially

recovered from a wave of defaults seen in 2015-2016 that were generated by energy and metals/mining sectors. High yield bond recovery rates have improved significantly since that time. However, the recent reversal in this recovery trend is notable and worth watching.

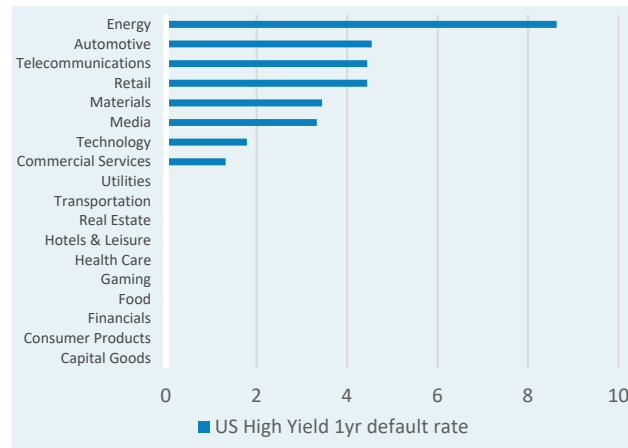
Gross high yield issue activity increased in September as investors took advantage of a dip in yields. Loan market issuance is significantly behind last year's pace, likely influenced by lower demand for floating rate securities now that the Federal Reserve has paused monetary tightening.

HY DEFAULT RATE (ROLLING 1-YEAR)



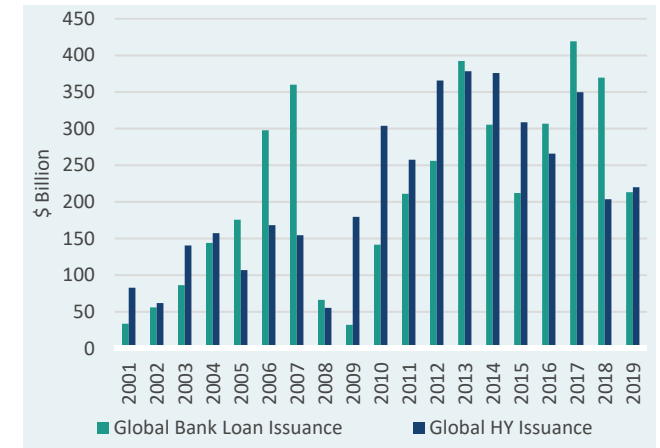
Source: BofA Merrill Lynch, as of 9/30/19

U.S. HY SECTOR DEFAULTS (LAST 12 MONTHS)



Source: BofA Merrill Lynch, as of 9/30/19 – par weighted

GLOBAL ISSUANCE (\$ BILLIONS)



Source: Bloomberg, BofA Merrill Lynch, as of 9/30/19

Equity

Equity environment

- U.S. equities outperformed international in Q3 (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.
- The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by flat earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S. equities on track for three consecutive quarters of earnings loss.
- The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted

basket of currencies, which created volatility and currency losses for unhedged investors.

- A large rotation from momentum stocks into value stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance of the prior five months largely reversed in several days. The fall was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.
- Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have continued their run of underperformance.

	QTD TOTAL RETURN		1 YEAR TOTAL RETURN	
	(unhedged)	(hedged)	(unhedged)	(hedged)
US Large Cap (S&P 500)	1.7%		4.3%	
US Small Cap (Russell 2000)	(2.4%)		(8.9%)	
US Large Value (Russell 1000 Value)	1.4%		4.0%	
US Large Growth (Russell 1000 Growth)	1.5%		3.7%	
International Large (MSCI EAFE)	(1.1%)	2.3%	(1.3%)	4.2%
Eurozone (Euro Stoxx 50)	(1.4%)	3.8%	1.3%	11.5%
U.K. (FTSE 100)	(2.2%)	1.4%	(2.7%)	5.4%
Japan (NIKKEI 225)	2.9%	3.6%	(8.2%)	(5.9%)
Emerging Markets (MSCI Emerging Markets)	(4.2%)	(2.2%)	(2.0%)	(0.4%)

Source: Russell Investments, MSCI, STOXX, FTSE, Nikkei, as of 9/30/19

Domestic equity

U.S. equities outpaced international in the third quarter (S&P 500 +1.7%, MSCI EAFE -1.1%) as domestic markets continued to lead. Some convergence of U.S. interest rates with the ultra-low rates of international markets likely supported equity prices over the quarter. We expect further declines in U.S. yields to be supportive of stocks, as low rates bolster earnings and reduce the attractiveness of fixed income.

The S&P 500 has delivered moderate returns of 4.3% over the past year. Returns have likely been limited by slow earnings growth of 1.7%, and relatively high valuations. In the third quarter, S&P 500 YoY earnings growth is expected to be -4.1%, which would put U.S.

equities on track for three consecutive quarters of earnings loss. Revenue growth in Q3 is expected to be 2.8% YoY. Investors may point to seemingly lofty earnings growth expectations for 2020 as reason for optimism, though in reality this is a fairly average forecast. Growth expectations are typically high initially, and then fall to a more realistic level as time passes.

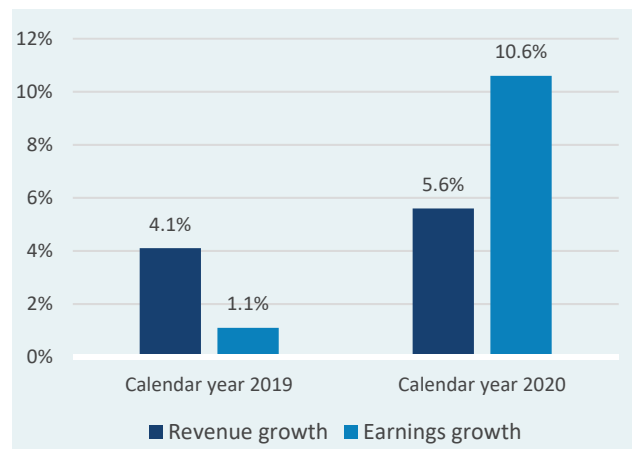
U.S. equities offer lower yields and less attractive valuations relative to other markets around the world, which suggests domestic equities might underperform over the long-term. However, U.S. may continue to outperform over the shorter-term due to relative economic and market strength.

U.S. EQUITIES



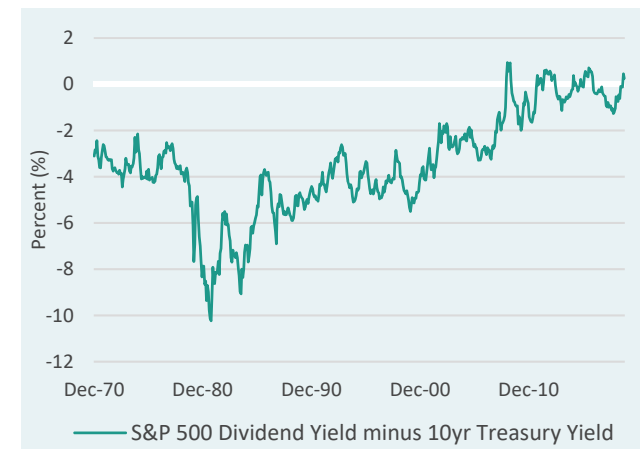
Source: Standard & Poor's, as of 9/30/19

Q3 2019 EARNINGS EXPECTATIONS



Source: FactSet, as of 10/11/19

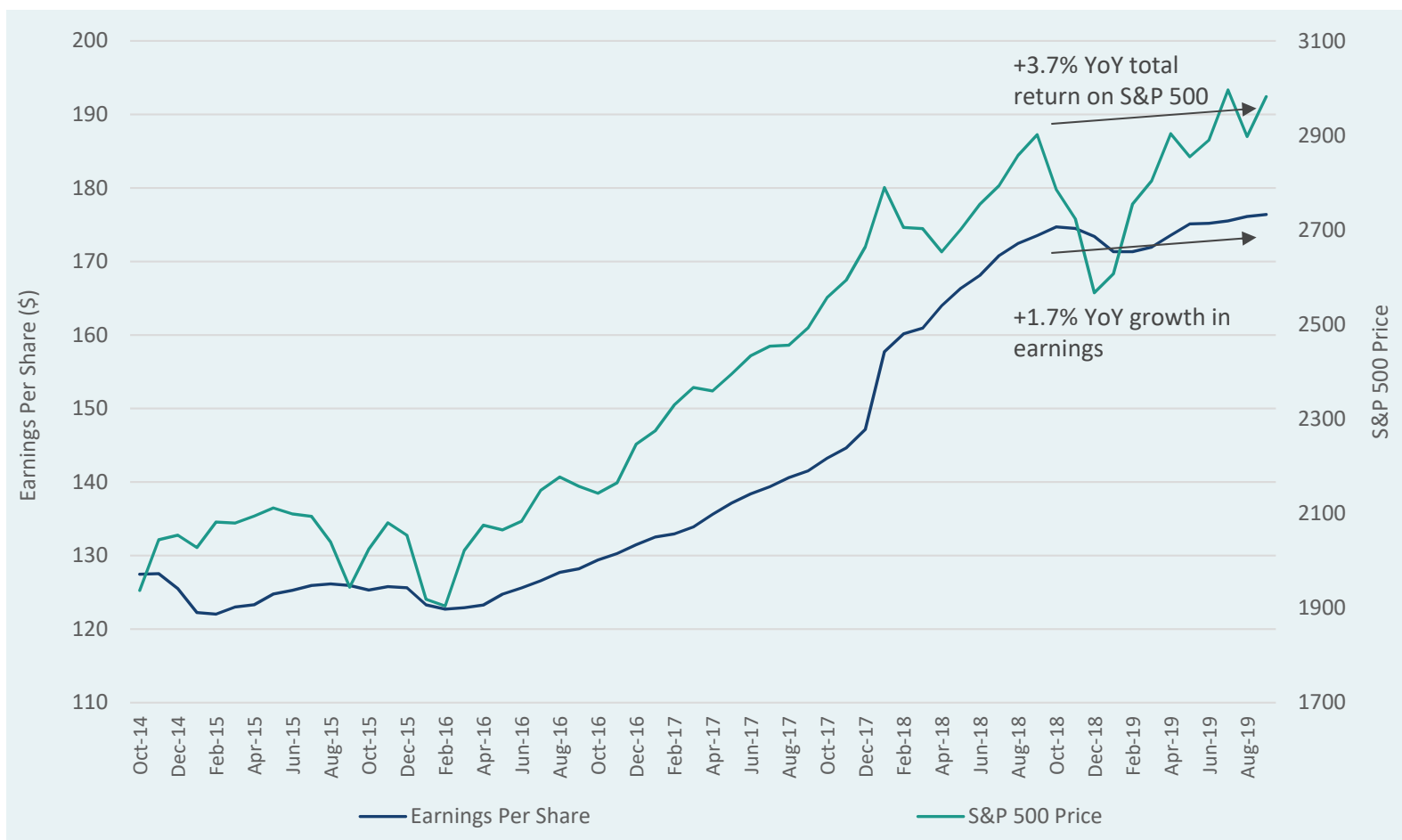
RELATIVE YIELDS



Source: Standard & Poor's, as of 9/30/19

Domestic equity

S&P 500 INDEX PRICE & EARNINGS LEVEL



U.S. equity performance has moderated

If earnings flatten out, this may lead to milder future returns

Source: Standard & Poor's, Bloomberg, as of 9/30/19

Domestic equity size & style

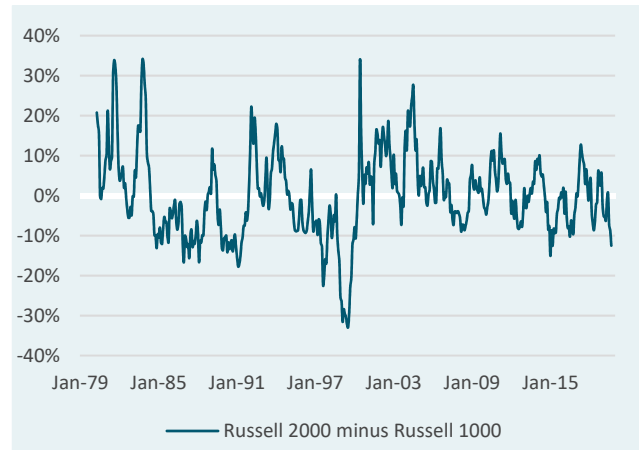
Value stock performance was on par with growth stocks during the third quarter (Russell 1000 Value +1.4%, Russell 1000 Growth +1.5%) while small cap stocks underperformed large stocks (Russell 2000 -2.4%, Russell 1000 +1.4%). Year-to-date, the size factor and value factor have extended their run of weakness.

The impact of sector performance on the value premium was mixed in the third quarter. Financials (+2.0%) and Utilities (+9.3%) outperformed the overall index (S&P 500 +1.7%) which boosted value, but poor Energy (-6.3%) performance counteracted these effects. Information Technology beat the

overall index (+3.3%) which acted as a headwind for value stocks.

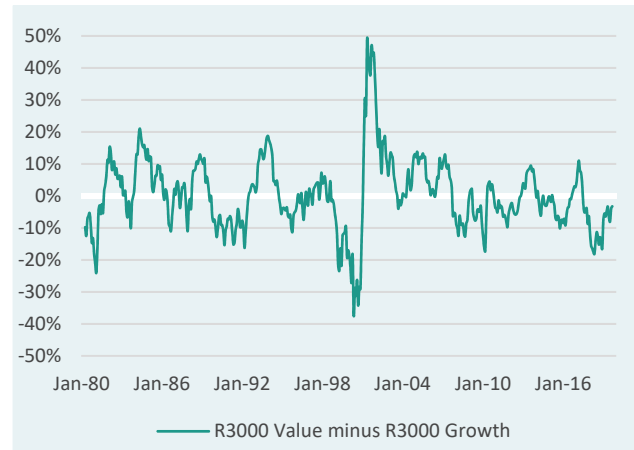
Value stocks have exhibited a long run of underperformance over the past decade. Our view has been that value stocks did not appear attractive, despite persistent performance pain. This was because value stocks had underperformed due to fundamental reasons rather than due to prices becoming stretched. Now, for the first time in this cycle it appears value prices are becoming unusually cheap, as indicated by a large disparity between Russell 1000 Value and Russell 1000 Growth P/E multiples.

SMALL CAP VS LARGE CAP (YOY)



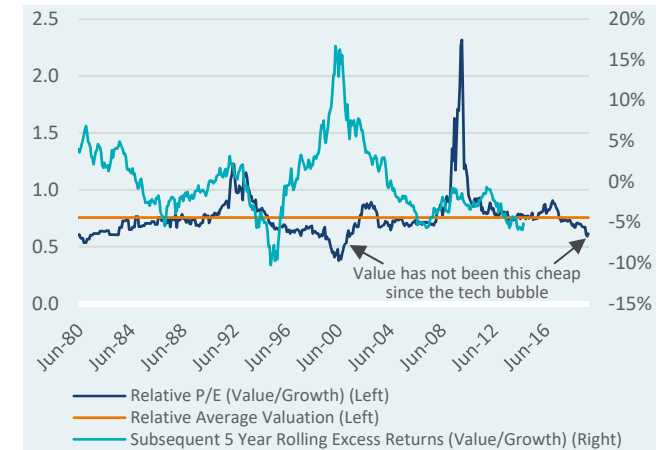
Source: FTSE, as of 9/30/19

VALUE VS GROWTH (YOY)



Source: FTSE, as of 9/30/19

VALUE STARTING TO LOOK CHEAP



Source: Russell, Bloomberg, as of 9/30/19

Domestic equity style – a closer look

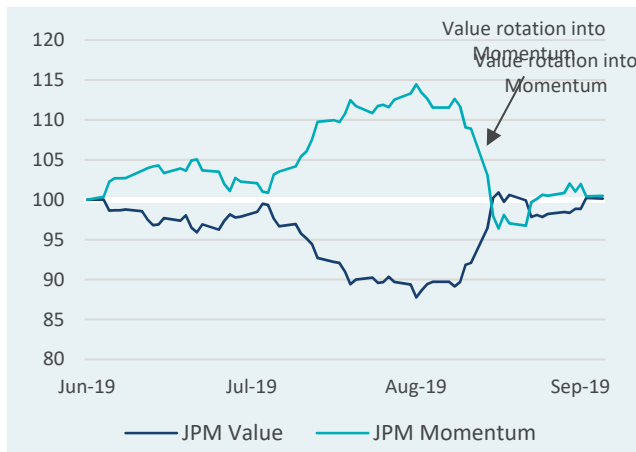
One of the largest rotations in decades into value stocks from momentum stocks occurred in Q3. The selloff was a multi-standard deviation event, with performance accruing from the prior five months largely reversed in several days. The reversal was likely due to a combination of better than expected economic news, monetary/fiscal stimulus expectations, and extreme positioning in these factors.

However, the selloff was short-lived as factor volatility reversed later in September. The Q3 reversal did not negate a long run of poor value results. As mentioned, the value factor

remains cheap relative to history.

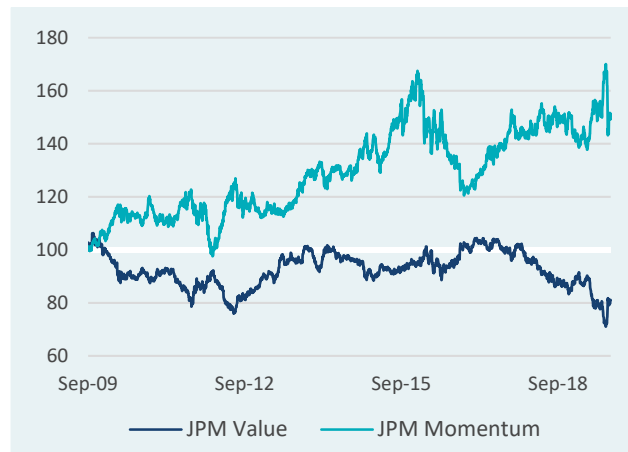
Mean reversion is a key underlying driver of the value factor. After the Global Financial Crisis, the speed at which stocks moved in/out of the respective top (cheap) and bottom (expensive) factor quintiles slowed relative to history. While expensive stocks are now exiting the bottom quintile at a somewhat faster rate, stocks with the most attractive valuations continued to remain cheap for longer periods of time relative to the pre-Global Financial Crisis period.

Q3 CUMULATIVE FACTOR PERFORMANCE
(INDEXED 6/30/2019 = 100)



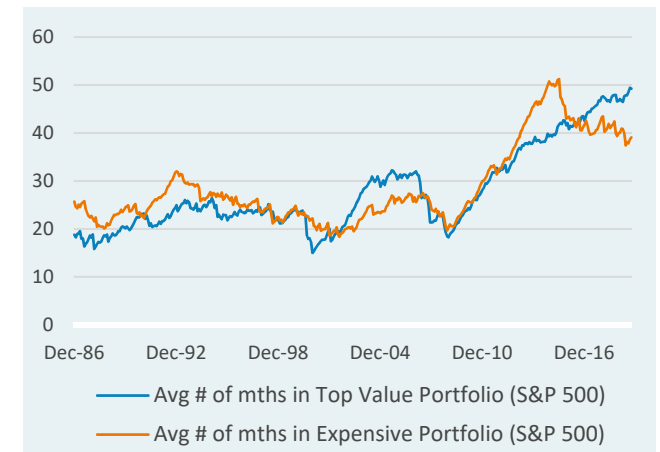
Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

10YR CUMULATIVE FACTOR PERFORMANCE
(INDEXED 9/30/2009 = 100)



Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

STRUCTURAL HEADWIND TO VALUE



Source: J.P. Morgan Chase & Co., Copyright 2019, as of 9/30/19

International developed equity

International equity performance was impacted heavily by currency movements in the third quarter. In local terms, the MSCI EAFE Index delivered a total return of 1.8%, bringing year-to-date performance to 15.7%. For unhedged U.S. investors however, the MSCI EAFE Index generated a quarterly return of -1.1%, dragging the year-to-date figure to 12.8%. Dollar strength reemerged as a powerful force driving returns due in part to widening interest rate differentials between the U.S. and the rest of the world.

Japanese equities outperformed over the period, delivering a

Q3 return of 3.5% in local terms. Unhedged U.S. investors in the MSCI Japan Index received only 3.1%, as the yen depreciated slightly vs. the U.S. dollar over the period.

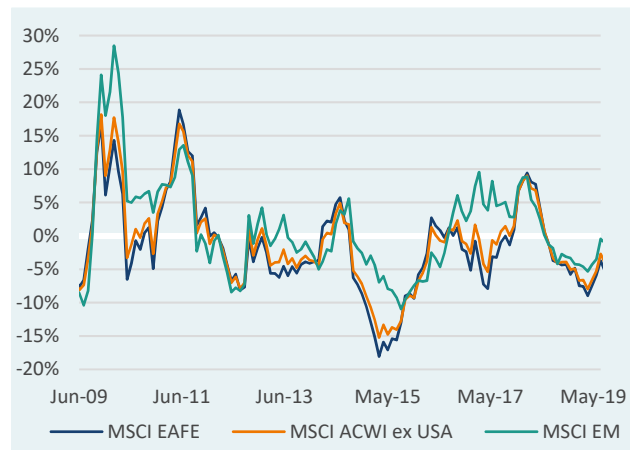
The British pound weakened in July as the new Prime Minister Boris Johnson signaled a much harder line on Brexit than his predecessor's. Toward the end of the quarter, the pound strengthened as markets began pricing a lower likelihood of a "no-deal" Brexit, which many market participants viewed as unfriendly to markets.

INTERNATIONAL DEVELOPED EQUITIES



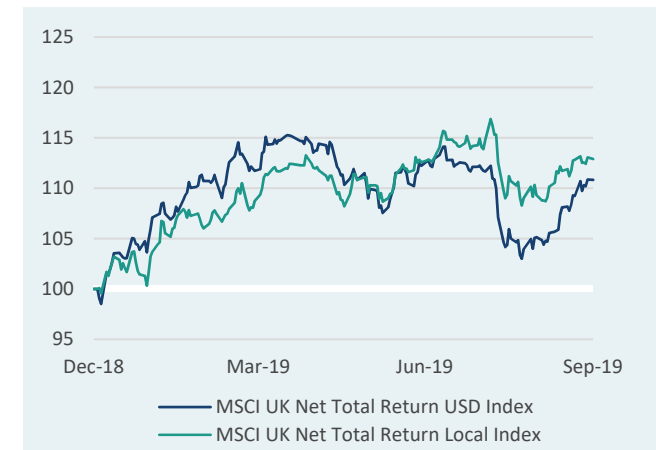
Source: MSCI, as of 9/30/19

EFFECT OF CURRENCY (1-YEAR ROLLING)



Source: MSCI, as of 9/30/19

U.K. EQUITY PERFORMANCE (YTD)



Source: Bloomberg, as of 9/30/19

Emerging market equity

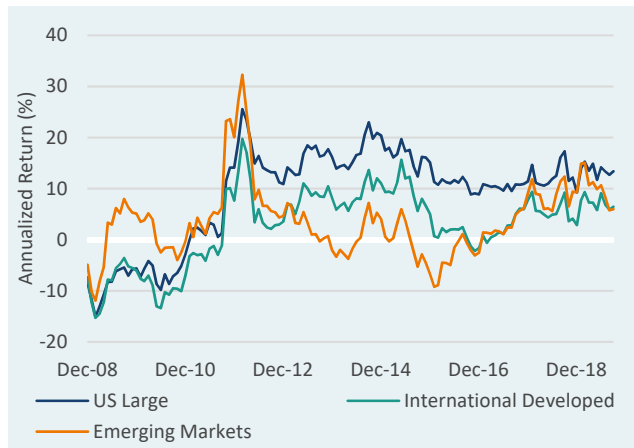
Emerging market equities (MSCI Emerging Markets -4.2%) lagged developed markets (MSCI EAFE -1.1%) over the quarter, while U.S. equities outperformed (S&P 500 +1.7%).

Equity multiples have expanded year-to-date, recovering to the levels of September 2018. Developed and emerging markets continue to appear cheap relative to domestic equity valuations.

We see two opposing forces impacting emerging markets in

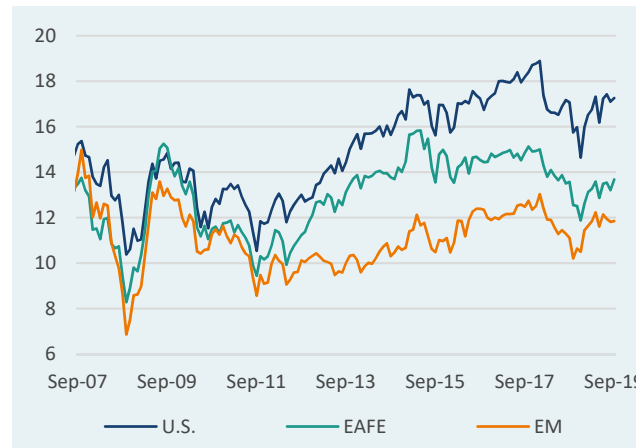
the current environment. The first force is decelerating global growth and a rising probability of recession, which likely bodes poorly for emerging market performance. However, the second force of widespread central bank dovishness may boost emerging market performance in the near term. Specifically, if global growth levels out while central banks unleash another round of easing, there may be material upside to emerging market equities. On balance, we remain moderately bullish on emerging markets, though we are watching developments closely.

EQUITY PERFORMANCE (3-YR ROLLING)



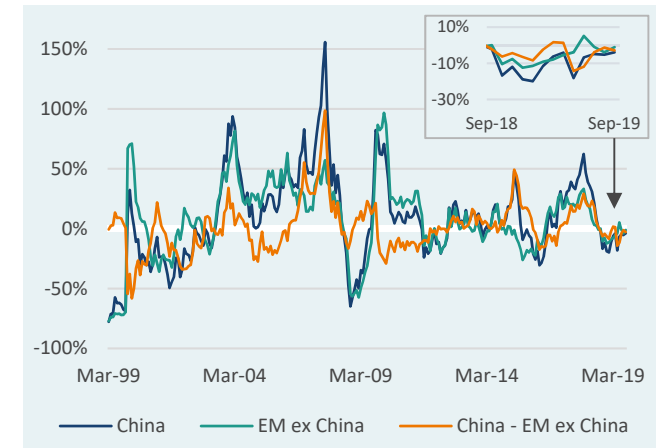
Source: Standard & Poor's, MSCI, as of 9/30/19

FORWARD P/E



Source: MSCI, as of 9/30/19

CHINA & EM: ROLLING 1-YEAR PERFORMANCE (USD)



Source: MSCI, as of 9/30/19

Equity valuations

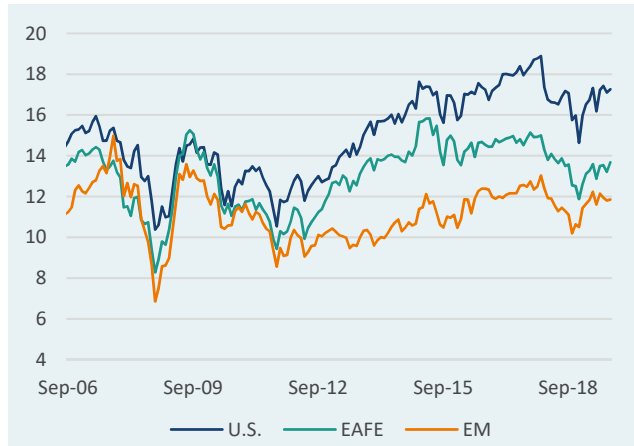
Equity valuations have climbed back up year-to-date as prices recover from their large drop in late 2018. U.S. equities are expensive relative to their long-run average, while international and emerging equities currently sit at normal levels.

The forward P/E multiple on the MSCI US Index ticked up from 17.2x to 17.3x over the quarter and remains above both its 5-year (17.1x) and 10-year (15.3x) averages. International equities remain at a forward P/E multiple (13.7x) between the

5-year (14.2x) and 10-year (13.2x) averages. Emerging market equities became a bit cheaper but are still trading at a forward P/E of 11.9x, above both their 5-year and 10-year averages.

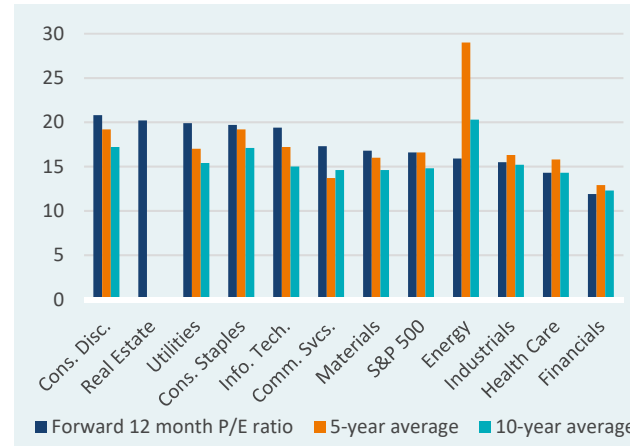
U.S. large cap stocks outperformed most unhedged international and emerging market equities. In a more uncertain geopolitical landscape, investors appear to remain willing to stomach loftier relative valuations in exchange for the quality of U.S. institutions. The U.S. economy is less reliant on exports, and U.S. companies are less reliant on foreign demand, helping to shield U.S. stocks from trade turbulence.

FORWARD P/E RATIOS



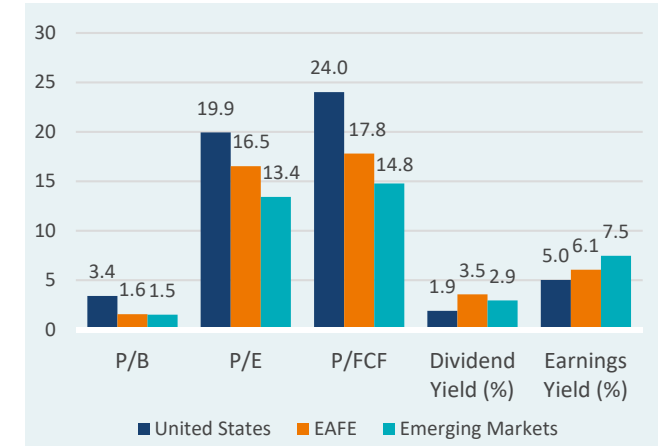
Source: MSCI, 12m forward P/E, as of 9/30/19

S&P 500 INDEX FORWARD SECTOR P/E RATIOS



Source: Standard & Poor's, FactSet, as of 10/11/19

VALUATION METRICS (3-MONTH AVERAGE)



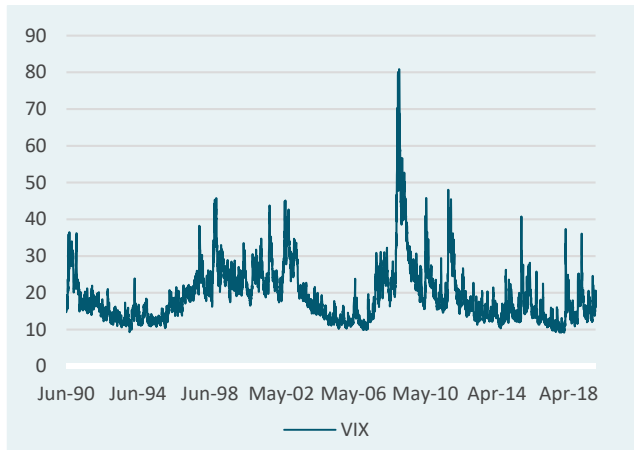
Source: Bloomberg, MSCI as of 9/30/19 - trailing P/E

Equity volatility

Implied volatility on both U.S. stocks and European stocks picked up over the quarter, albeit from depressed levels. The VIX Index which measures the 30-day implied volatility of U.S. stocks jumped to nearly 25.0 in August following a material escalation in U.S.-Chinese trade tensions. By quarter-end, the VIX settled at 16.2, up 1.1 points, and above its year-to-date average of 15.9. In Europe, the V2X Index gauging implied volatility on the Euro Stoxx 50 Index rose from 13.7 to 15.8, above its year-to-date average of 15.4.

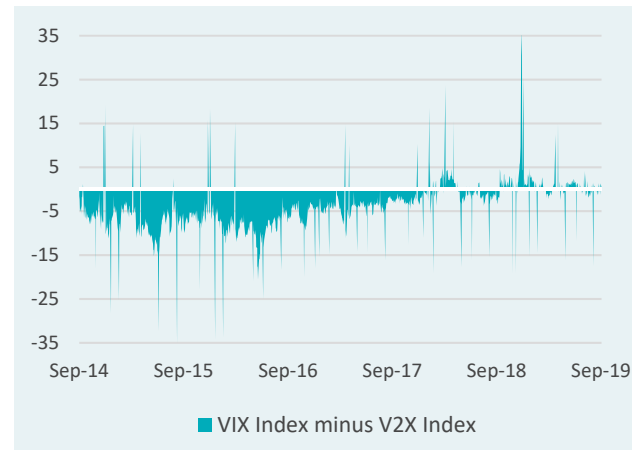
Despite the ratcheting up of trade tension in Q3, the realized trailing 30-day realized volatility on Chinese mainland shares was surprisingly low – falling from 18.0% to 12.9%. In comparison, U.S. 30-day volatility rose from 12.2% to 12.7%. Volatility of U.S. and China equities has only been this close 17% of the time. Looking ahead to Q4, despite realized volatility being low, it is important to remember that Chinese equities have been extremely volatile. As recent as 2014, 30-day annualized volatility reached 60% in mainland China.

U.S. IMPLIED VOLATILITY (VIX)



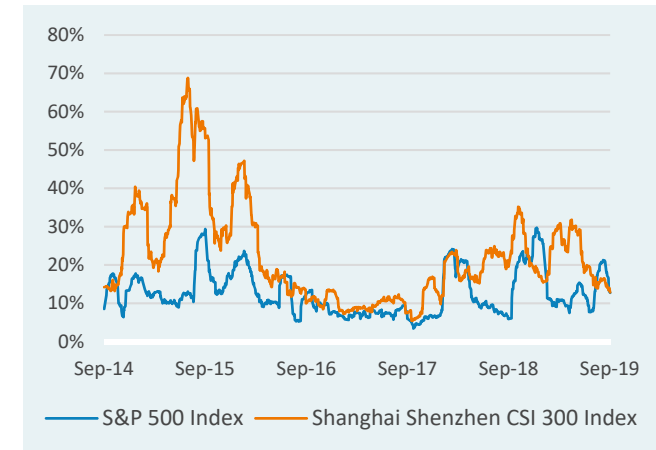
Source: CBOE, as of 9/30/19

U.S. IMPLIED VOLATILITY VS. EUROPEAN IMPLIED VOLATILITY



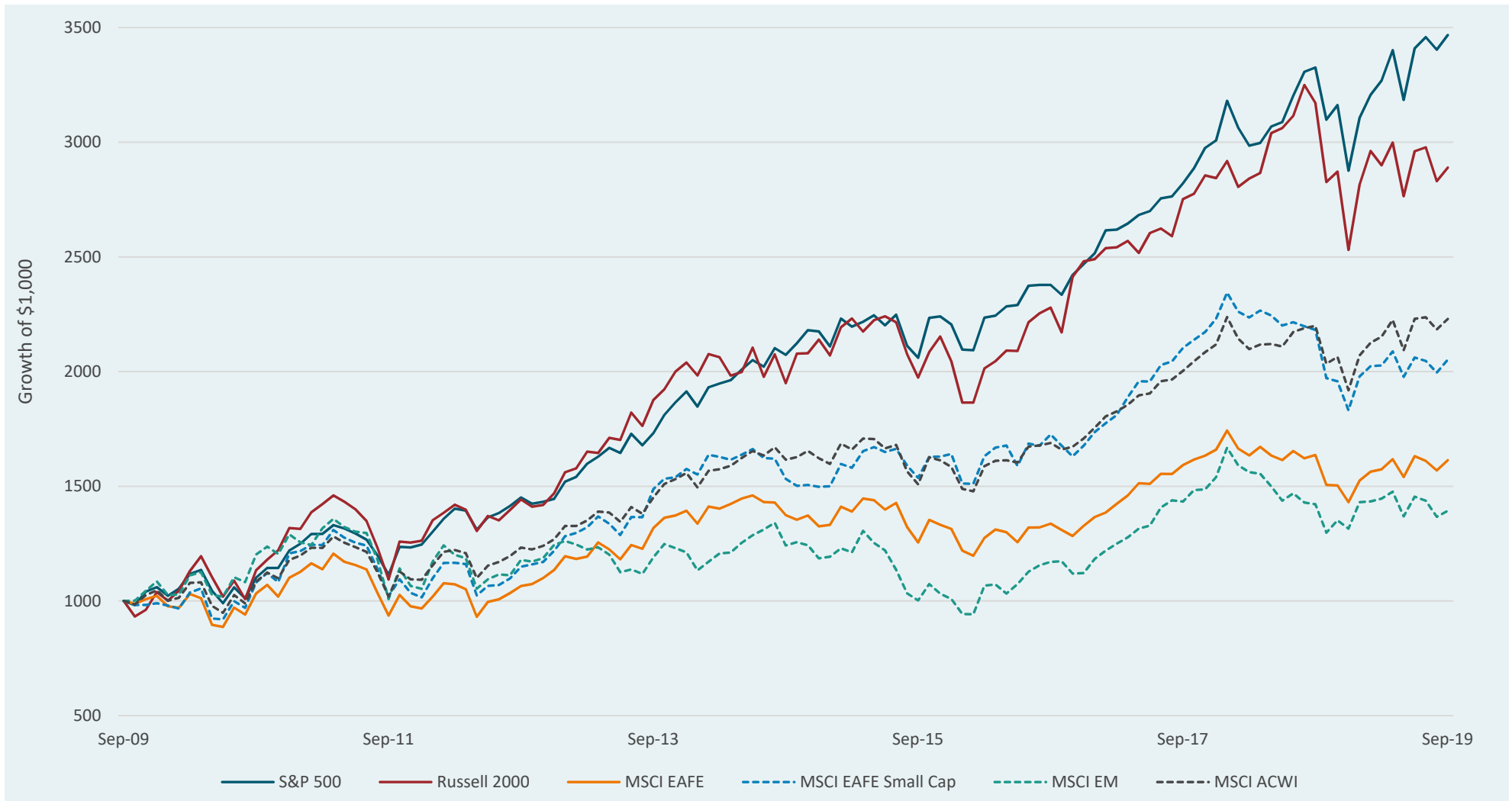
Source: Bloomberg, as of 9/30/19

30-DAY REALIZED VOLATILITY – U.S. LARGE CAP STOCKS VS. CHINESE MAINLAND STOCKS



Source: Bloomberg, as of 9/30/19

Long-term equity performance



Source: Morningstar, as of 9/30/19

Other assets

Currency

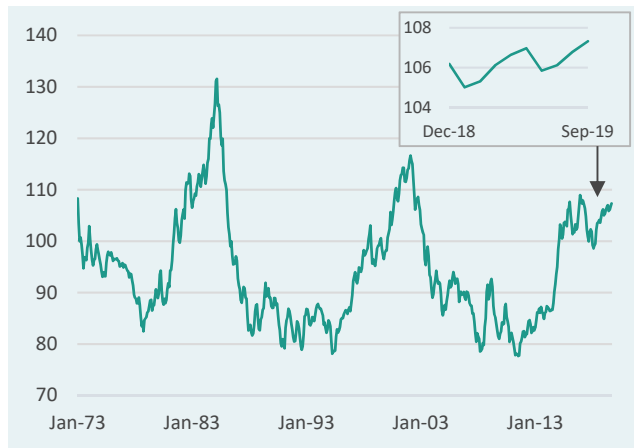
The U.S. dollar appreciated 2.6% in Q3 relative to a trade-weighted basket of currencies. Dollar volatility has been suppressed so far in 2019, following large swings experienced during years 2014-2018. Investors are pricing in a 78% chance of one more 0.25% rate cut by the end of 2019, and a 25% chance of 0.50% in rate cuts. The market continues to price in more aggressive easing than what the Federal Reserve has indicated, which may contribute to volatility if actual easing measures underwhelm the market.

weakness in the short-term, including: aggressive easing by the Federal Reserve which leads to a convergence of U.S. and international interest rates levels, further upside surprise to U.S. inflation, and/or weakening U.S. economic conditions which brings the U.S. more in line with other developed economies.

Emerging market currencies fell -4% quarter, on the back of U.S. dollar strength. These currencies remain very depressed relative to history.

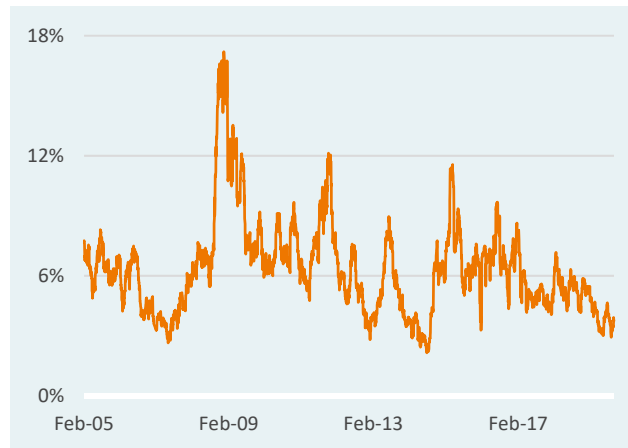
A variety of market scenarios may lead to U.S. dollar

U.S. DOLLAR TRADE WEIGHTED INDEX



Source: Federal Reserve, Verus, as of 9/30/19

BLOOMBERG DOLLAR SPOT INDEX REALIZED 30-DAY VOLATILITY



Source: Bloomberg, as of 9/30/19

JPM EMERGING MARKET CURRENCY INDEX



Source: Bloomberg, JPMorgan, as of 9/30/19

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	23.3	13.1	15.4
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	18.5	9.9	13.5
Small Cap Growth	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	16.3	8.8	13.1
Large Cap Value	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	13.8	8.1	11.6
Small Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	11.8	6.6	11.5
60/40 Global Portfolio	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	11.4	6.4	10.0
International Equity	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	9.7	4.6	9.3
US Bonds	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	9.1	4.1	6.4
Small Cap Value	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	7.3	3.3	5.0
Hedge Funds of Funds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	5.7	2.0	4.1
Emerging Markets Equity	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	3.9	1.9	3.9
Real Estate	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	3.3	0.9	2.9
Commodities	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	1.9	0.4	0.5
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	1.5	-8.6	-4.3

BEST
↑

WORST
↓

- Large Cap Equity
- Large Cap Value
- Large Cap Growth
- Small Cap Equity
- Small Cap Value

- Small Cap Growth
- International Equity
- Emerging Markets Equity
- US Bonds
- Cash

- Commodities
- Real Estate
- Hedge Funds of Funds
- 60% MSCI ACWI/40% BBgBarc Global Bond

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 6/30/19.

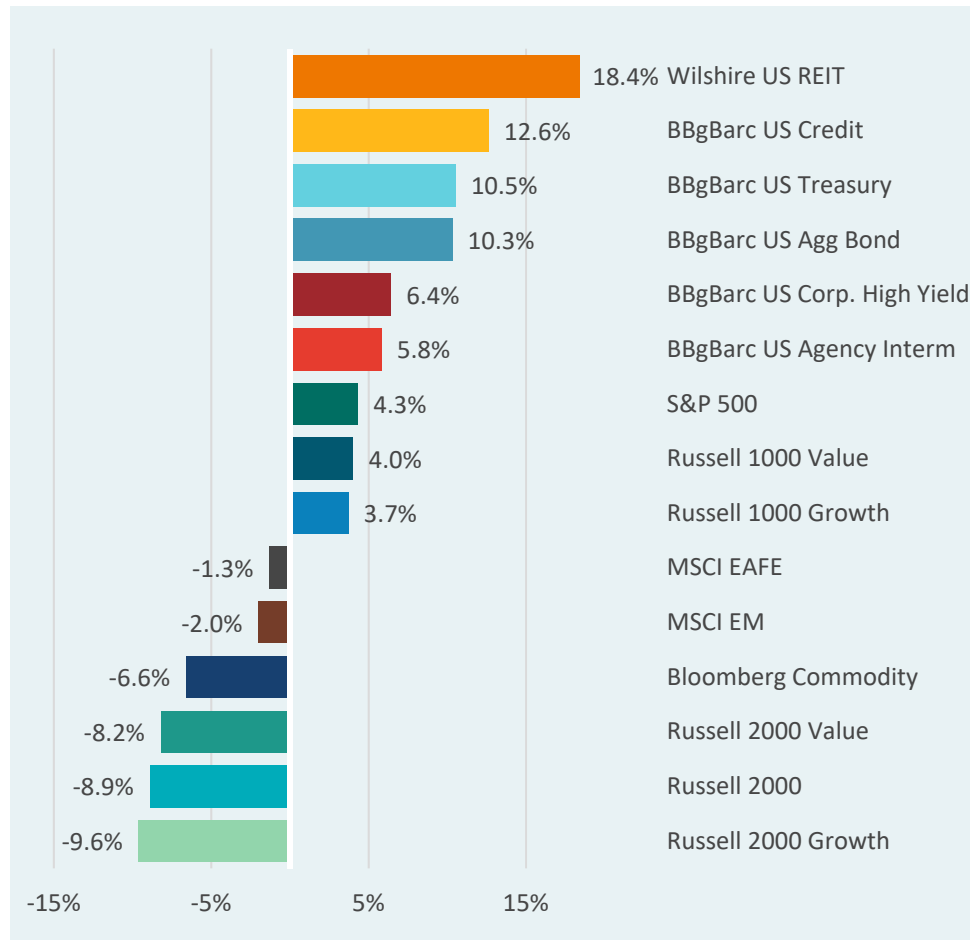
Investment Landscape
4th Quarter 2019

Agenda Item 12

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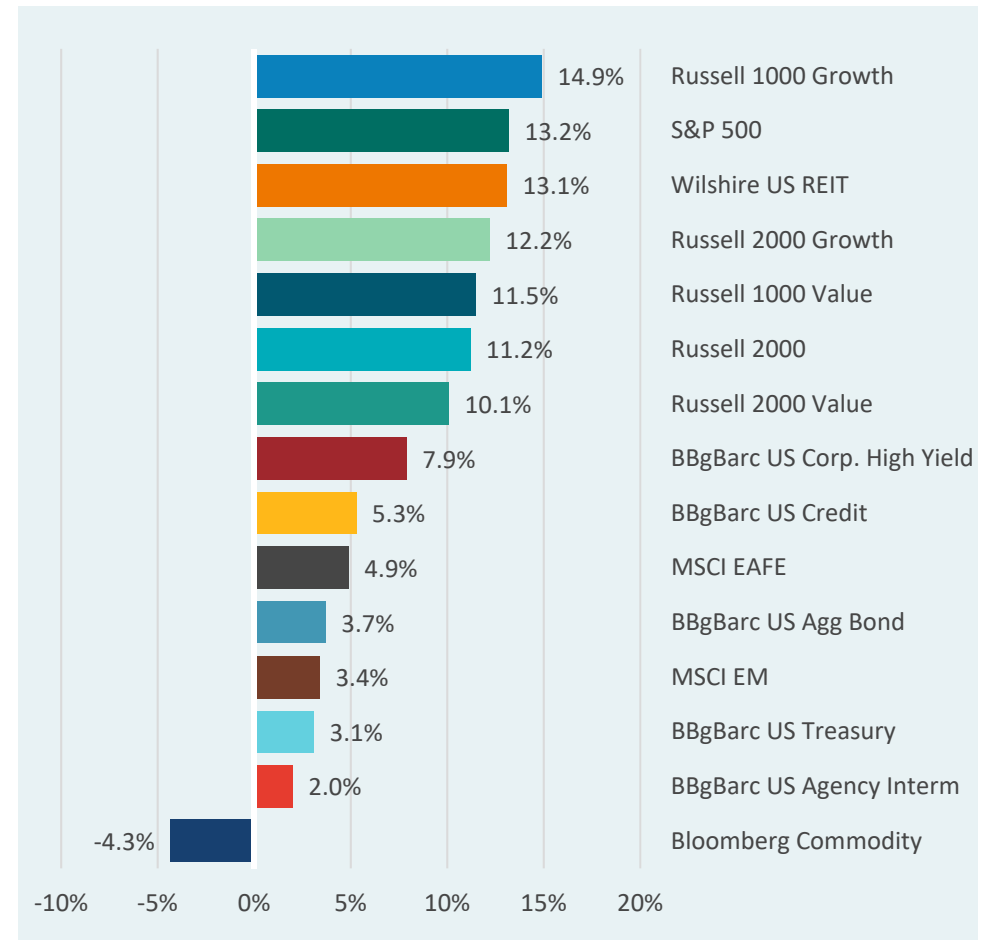
Major asset class returns

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

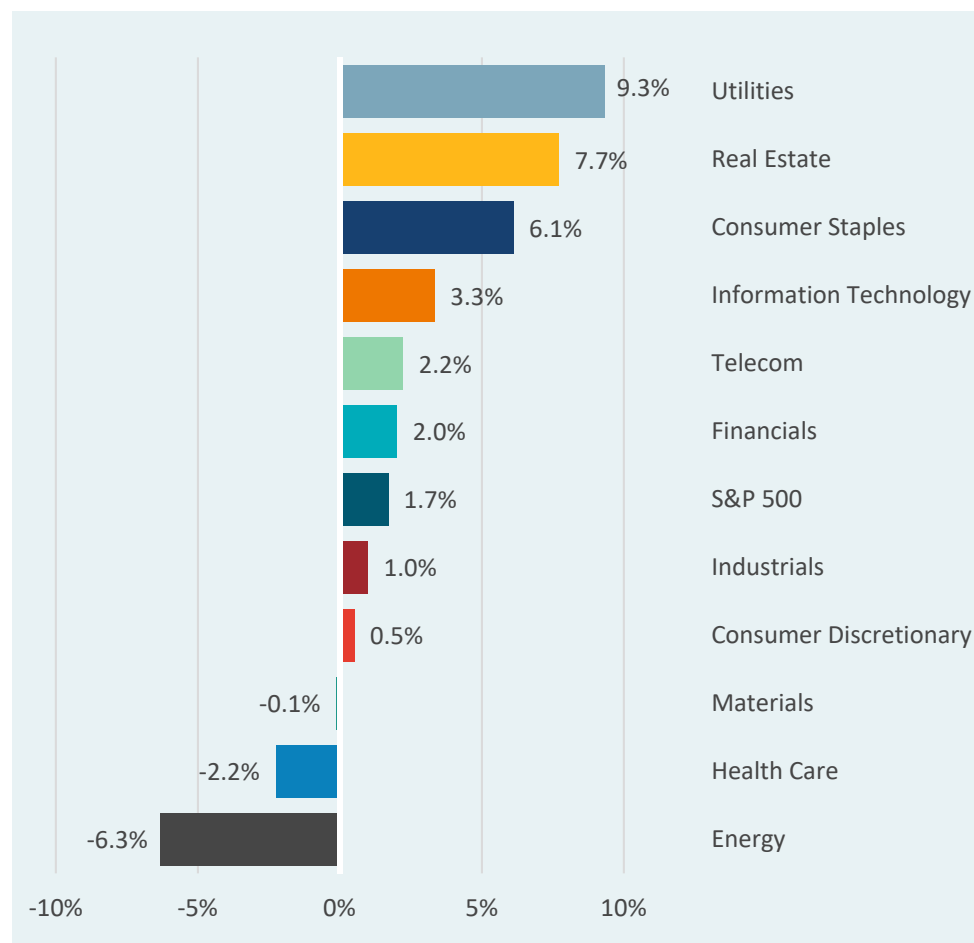
TEN YEARS ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

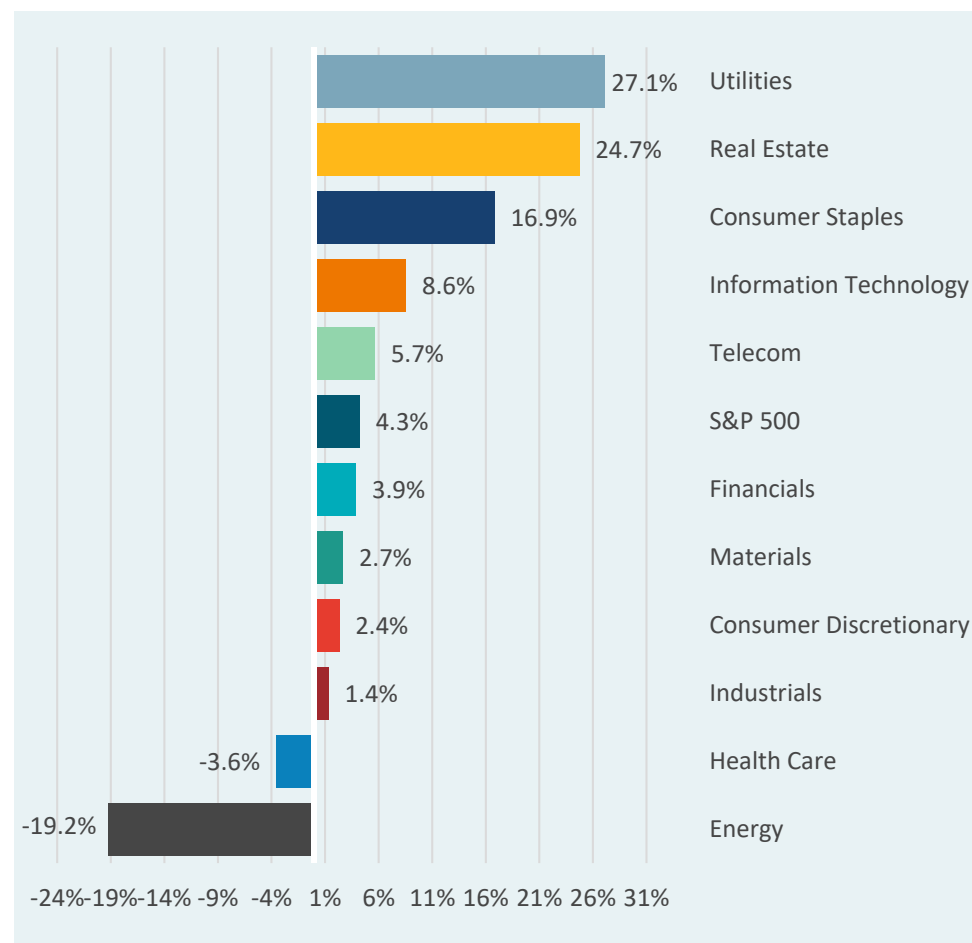
S&P 500 sector returns

Q3



Source: Morningstar, as of 9/30/19

ONE YEAR ENDING SEPTEMBER



Source: Morningstar, as of 9/30/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	1.9	1.7	20.6	4.3	13.4	10.8	13.2
S&P 500 Equal Weighted	3.1	0.8	20.1	3.4	11.1	9.5	13.4
DJ Industrial Average	2.1	1.8	17.5	4.2	16.4	12.3	13.6
Russell Top 200	1.6	1.8	20.0	4.1	14.2	11.2	13.3
Russell 1000	1.7	1.4	20.5	3.9	13.2	10.6	13.2
Russell 2000	2.1	(2.4)	14.2	(8.9)	8.2	8.2	11.2
Russell 3000	1.8	1.2	20.1	2.9	12.8	10.4	13.1
Russell Mid Cap	2.0	0.5	21.9	3.2	10.7	9.1	13.1
Style Index							
Russell 1000 Growth	0.0	1.5	23.3	3.7	16.9	13.4	14.9
Russell 1000 Value	3.6	1.4	17.8	4.0	9.4	7.8	11.5
Russell 2000 Growth	(0.8)	(4.2)	15.3	(9.6)	9.8	9.1	12.2
Russell 2000 Value	5.1	(0.6)	12.8	(8.2)	6.5	7.2	10.1

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	2.1	(0.0)	16.2	1.4	9.7	6.7	8.3
MSCI ACWI ex US	2.6	(1.8)	11.6	(1.2)	6.3	2.9	4.5
MSCI EAFE	2.9	(1.1)	12.8	(1.3)	6.5	3.3	4.9
MSCI EM	1.9	(4.2)	5.9	(2.0)	6.0	2.3	3.4
MSCI EAFE Small Cap	2.8	(0.4)	12.1	(5.9)	5.9	6.0	7.5
Style Index							
MSCI EAFE Growth	1.1	(0.4)	17.9	2.2	7.8	5.5	6.5
MSCI EAFE Value	4.8	(1.7)	7.7	(4.9)	5.1	1.0	3.2
Regional Index							
MSCI UK	4.2	(2.5)	10.1	(2.9)	4.6	0.4	4.8
MSCI Japan	4.0	3.1	11.1	(4.7)	6.2	5.6	5.5
MSCI Euro	2.8	(2.0)	13.9	(1.1)	7.1	2.4	3.1
MSCI EM Asia	2.0	(3.4)	6.0	(3.9)	6.3	4.1	5.2
MSCI EM Latin American	2.6	(5.6)	6.3	6.7	6.8	(0.8)	(0.5)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	(1.4)	1.3	7.6	7.1	2.2	2.4	3.5
BBgBarc US Treasury Bills	0.2	0.6	1.9	2.4	1.5	1.0	0.6
BBgBarc US Agg Bond	(0.5)	2.3	8.5	10.3	2.9	3.4	3.7
Duration							
BBgBarc US Treasury 1-3 Yr	(0.1)	0.6	3.1	4.4	1.5	1.3	1.2
BBgBarc US Treasury Long	(2.5)	7.9	19.8	24.8	4.1	6.8	6.9
BBgBarc US Treasury	(0.8)	2.4	7.7	10.5	2.2	2.9	3.1
Issuer							
BBgBarc US MBS	0.1	1.4	5.6	7.8	2.3	2.8	3.1
BBgBarc US Corp. High Yield	0.4	1.3	11.4	6.4	6.1	5.4	7.9
BBgBarc US Agency Interm	(0.2)	1.0	4.1	5.8	1.9	2.0	2.0
BBgBarc US Credit	(0.7)	3.0	12.6	12.6	4.3	4.5	5.3

OTHER

Index							
Bloomberg Commodity	1.2	(1.8)	3.1	(6.6)	(1.5)	(7.2)	(4.3)
Wilshire US REIT	2.8	7.9	27.2	18.4	7.2	10.2	13.1
CS Leveraged Loans	0.4	0.9	6.4	3.1	4.7	4.1	5.4
Alerian MLP	0.8	(5.1)	11.8	(6.4)	(2.7)	(8.2)	7.0
Regional Index							
JPM EMBI Global Div	(0.5)	1.5	13.0	11.6	4.6	5.7	6.9
JPM GBI-EM Global Div	1.0	(0.8)	7.9	10.1	3.1	0.6	2.5
Hedge Funds							
HFRI Composite	(0.3)	(0.5)	6.7	0.3	3.8	2.9	4.0
HFRI FOF Composite	(0.6)	(1.1)	5.0	(0.2)	3.1	1.9	2.7
Currency (Spot)							
Euro	(1.8)	(0.3)	1.5	5.1	(2.1)	0.3	(1.9)
Pound	1.2	(3.2)	(3.2)	(5.5)	(1.7)	(5.3)	(2.6)
Yen	(1.0)	(4.3)	(4.6)	(6.1)	(1.0)	(2.9)	(2.9)

Source: Morningstar, HFR, as of 9/30/19

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)

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/>)

NAHB Housing Market Index - the housing market index is a weighted average of separate diffusion indices for three key single-family indices: market conditions for the sale of new homes at the present time, market conditions for the sale of new homes in the next six months, and the traffic of prospective buyers of new homes. The first two series are rated on a scale of Good, Fair, and Poor and the last is rated on a scale of High/Very High, Average, and Low/Very Low. A diffusion index is calculated for each series by applying the formula $(\text{Good-Poor} + 100)/2$ to the present and future sales series and $(\text{High/Very High-Low/Very Low} + 100)/2$ to the traffic series. Each resulting index is then seasonally adjusted and weighted to produce the HMI. Based on this calculation, the HMI can range between 0 and 100.

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San Luis Obispo County Pension Trust

Investment Performance Review

Period Ending: September 30, 2019



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SEATTLE 206-622-3700

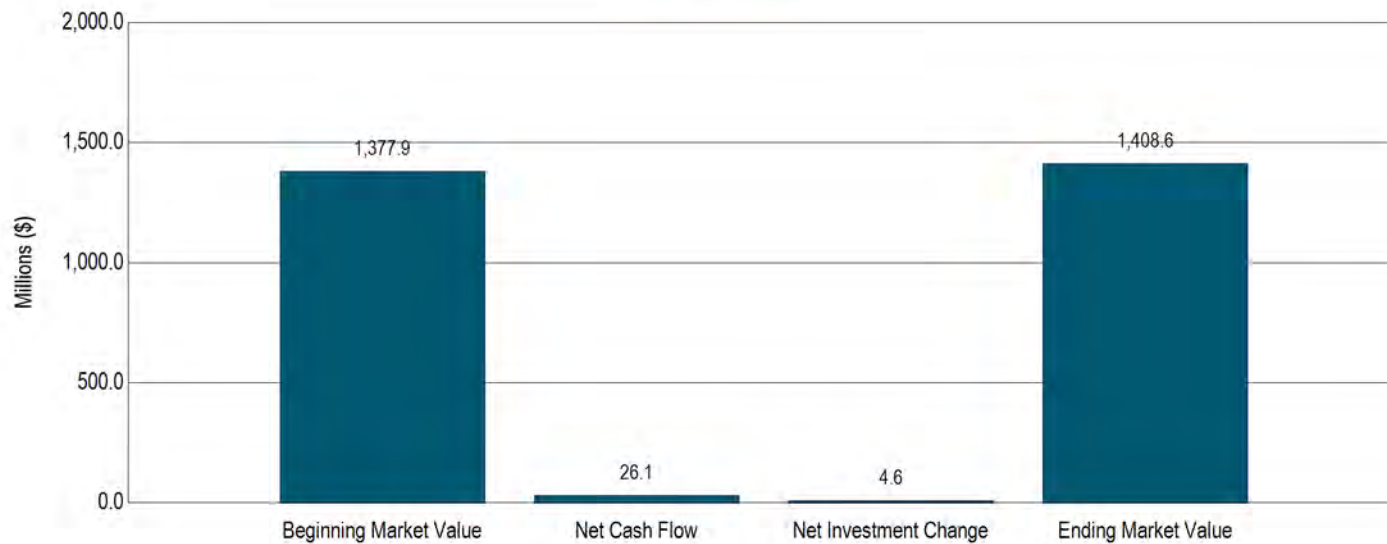
LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

Portfolio Reconciliation

	Last Three Months	One Year
Beginning Market Value	\$1,377,943,003	\$1,386,757,059
Net Cash Flow	\$26,139,517	-\$29,654,300
Net Investment Change	\$4,553,478	\$51,533,239
Ending Market Value	\$1,408,635,998	\$1,408,635,998

Change in Market Value
Last Three Months



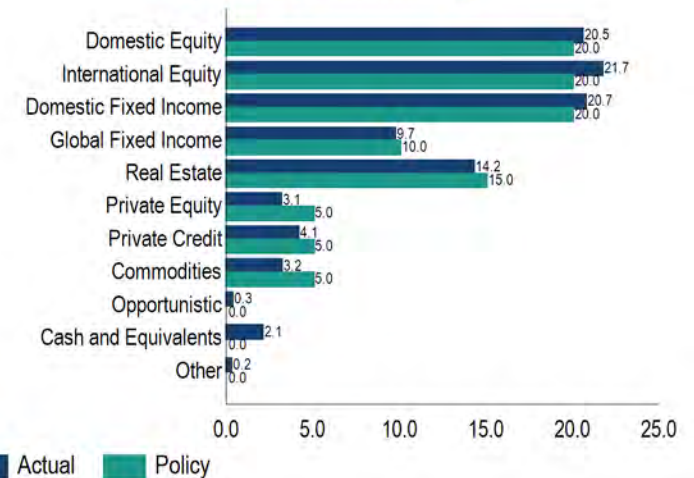
Contributions and withdrawals may include intra-account transfers between managers/funds.

Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2019

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Total Fund	0.4	80	4.2	48	7.2	79	5.5	87
<i>Policy Index</i>	1.0	36	5.2	18	7.2	80	5.8	82
Total Fund ex Overlay	0.4	80	4.3	48	7.2	80	5.5	87
<i>Policy Index</i>	1.0	36	5.2	18	7.2	80	5.8	82
Total Domestic Equity	1.1	49	3.6	36	14.0	9	11.0	16
<i>Russell 3000</i>	1.2	40	2.9	47	12.8	33	10.4	36
Total International Equity	-0.8	7	3.5	4	8.6	6	4.6	23
<i>MSCI ACWI ex USA Gross</i>	-1.7	41	-0.7	26	6.8	26	3.4	59
Total Domestic Fixed Income	2.1	31	8.6	45	3.9	23	4.0	27
<i>BBgBarc US Aggregate TR</i>	2.3	18	10.3	14	2.9	53	3.4	47
Total Global Fixed	-2.6	--	3.3	--	1.1	--	-0.2	--
<i>FTSE World Govt Bond Index</i>	0.8	--	8.1	--	1.2	--	1.8	--
Total Real Estate	0.4	--	3.9	--	6.4	--	9.1	--
<i>NCREIF Property Index</i>	1.4	--	6.2	--	6.8	--	8.6	--
Total Commodities	-2.5	--	-10.6	--	-0.1	--	-6.7	--
<i>Bloomberg Commodity Index TR USD</i>	-1.8	--	-6.6	--	-1.5	--	-7.2	--
Total Private Equity	2.1	--	9.1	--	15.8	--	15.6	--
<i>Russell 3000 + 3%</i>	1.9	--	6.0	--	16.2	--	13.7	--
Total Private Credit	2.9	--	8.1	--	--	--	--	--
<i>BBgBarc High Yield +2% (Lagged)</i>	3.0	--	9.6	--	--	--	--	--
Total Cash	0.0	--	2.0	--	1.4	--	1.0	--
<i>91 Day T-Bills</i>	0.5	--	2.3	--	1.5	--	1.0	--
Total Opportunistic	3.4	--	2.7	--	10.8	--	7.1	--
<i>Russell 3000 + 3%</i>	1.9	--	6.0	--	16.2	--	13.7	--

Actual vs Target Allocation (%)



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



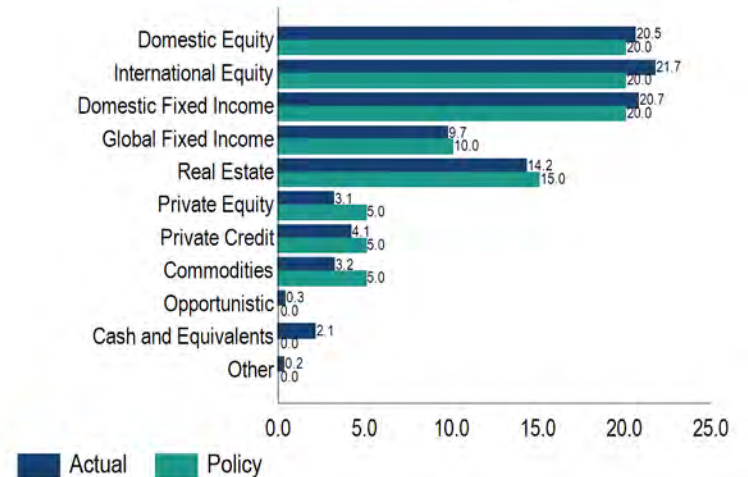
New Policy Index as of 10/1/2016: 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 +3%, 5% BBgBarc High Yield +2% (Lagged). Private Equity, Private Credit and Opportunistic composite returns are lagged by one quarter. Stone Harbor funded 7/9/13. Gresham TAP funded 8/30/13. Pacific Asset Corporate Loan funded 9/1/2014. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. All returns are (G) Gross of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation.

Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2019

	QTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank
Total Fund	0.3	84	3.8	59	6.8	91	5.1	96
<i>Policy Index</i>	1.0	36	5.2	18	7.2	80	5.8	82
Total Fund ex Overlay	0.3	84	3.9	59	6.8	91	5.1	96
<i>Policy Index</i>	1.0	36	5.2	18	7.2	80	5.8	82
Total Domestic Equity	1.0	58	3.1	45	13.5	18	10.6	31
<i>Russell 3000</i>	1.2	40	2.9	47	12.8	33	10.4	36
Total International Equity	-1.0	8	2.8	6	7.9	7	3.9	38
<i>MSCI ACWI ex USA Gross</i>	-1.7	41	-0.7	26	6.8	26	3.4	59
Total Domestic Fixed Income	2.0	33	8.2	54	3.5	29	3.7	36
<i>BBgBarc US Aggregate TR</i>	2.3	18	10.3	14	2.9	53	3.4	47
Total Global Fixed	-2.8	--	2.6	--	0.5	--	-0.9	--
<i>FTSE World Govt Bond Index</i>	0.8	--	8.1	--	1.2	--	1.8	--
Total Real Estate	0.4	--	3.9	--	6.3	--	8.6	--
<i>NCREIF Property Index</i>	1.4	--	6.2	--	6.8	--	8.6	--
Total Commodities	-2.5	--	-10.6	--	-0.2	--	-7.0	--
<i>Bloomberg Commodity Index TR USD</i>	-1.8	--	-6.6	--	-1.5	--	-7.2	--
Total Private Equity	2.1	--	9.1	--	15.7	--	14.7	--
<i>Russell 3000 + 3%</i>	1.9	--	6.0	--	16.2	--	13.7	--
Total Private Credit	2.9	--	8.1	--	--	--	--	--
<i>BBgBarc High Yield +2% (Lagged)</i>	3.0	--	9.6	--	--	--	--	--
Total Cash	0.0	--	2.0	--	1.4	--	1.0	--
<i>91 Day T-Bills</i>	0.5	--	2.3	--	1.5	--	1.0	--
Total Opportunistic	3.4	--	2.7	--	10.7	--	6.7	--
<i>Russell 3000 + 3%</i>	1.9	--	6.0	--	16.2	--	13.7	--

Actual vs Target Allocation (%)



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



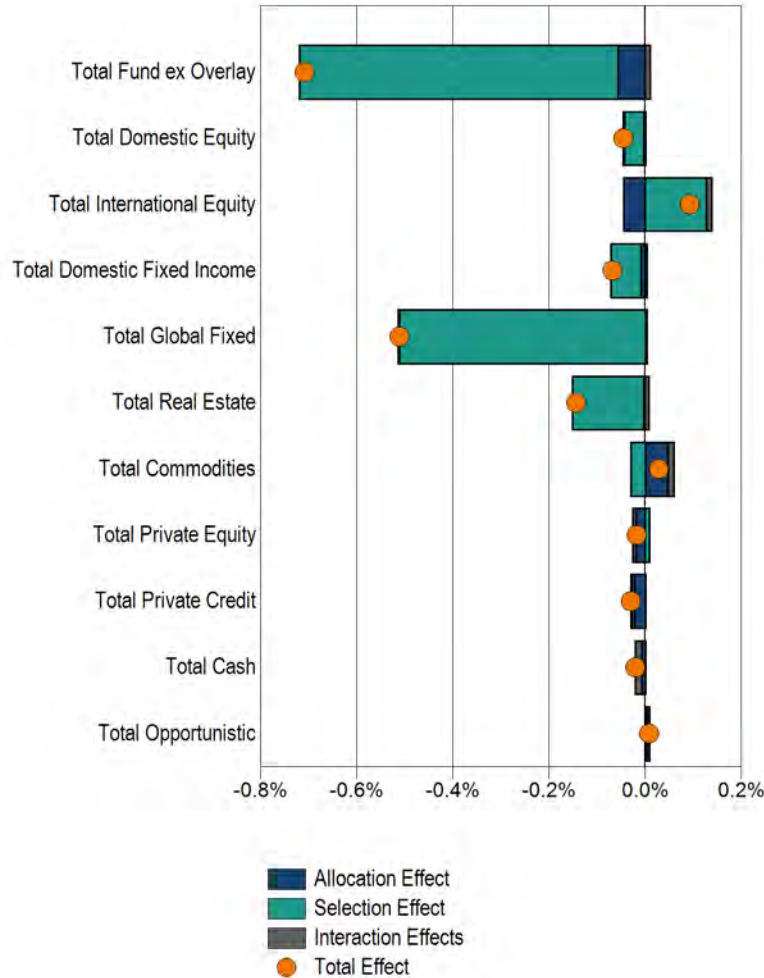
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Total Fund ex Overlay
Attribution (Net of Fees)

Period Ending: September 30, 2019

Performance Attribution

Attribution Effects
3 Months Ending September 30, 2019



	Last 3 Mo.
Wtd. Actual Return	0.25%
Wtd. Index Return *	0.96%
Excess Return	-0.71%
Selection Effect	-0.66%
Allocation Effect	-0.06%
Interaction Effect	0.01%

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

Attribution Summary
3 Months Ending September 30, 2019

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	0.96%	1.16%	-0.20%	-0.04%	0.00%	0.00%	-0.05%
Total International Equity	-1.01%	-1.70%	0.69%	0.13%	-0.04%	0.01%	0.09%
Total Domestic Fixed Income	1.98%	2.27%	-0.29%	-0.06%	-0.01%	0.00%	-0.07%
Total Global Fixed	-2.82%	2.27%	-5.09%	-0.51%	0.00%	0.00%	-0.51%
Total Real Estate	0.43%	1.41%	-0.98%	-0.15%	0.00%	0.01%	-0.14%
Total Commodities	-2.46%	-1.84%	-0.62%	-0.03%	0.05%	0.01%	0.03%
Total Private Equity	2.09%	1.91%	0.18%	0.01%	-0.02%	-0.01%	-0.02%
Total Private Credit	2.90%	3.01%	-0.11%	-0.01%	-0.02%	0.00%	-0.03%
Total Cash	0.00%	0.50%	-0.50%	0.00%	-0.01%	-0.01%	-0.02%
Total Opportunistic	3.45%	1.91%	1.54%	0.00%	0.00%	0.00%	0.01%
Total	0.25%	0.96%	-0.71%	-0.66%	-0.06%	0.01%	-0.71%

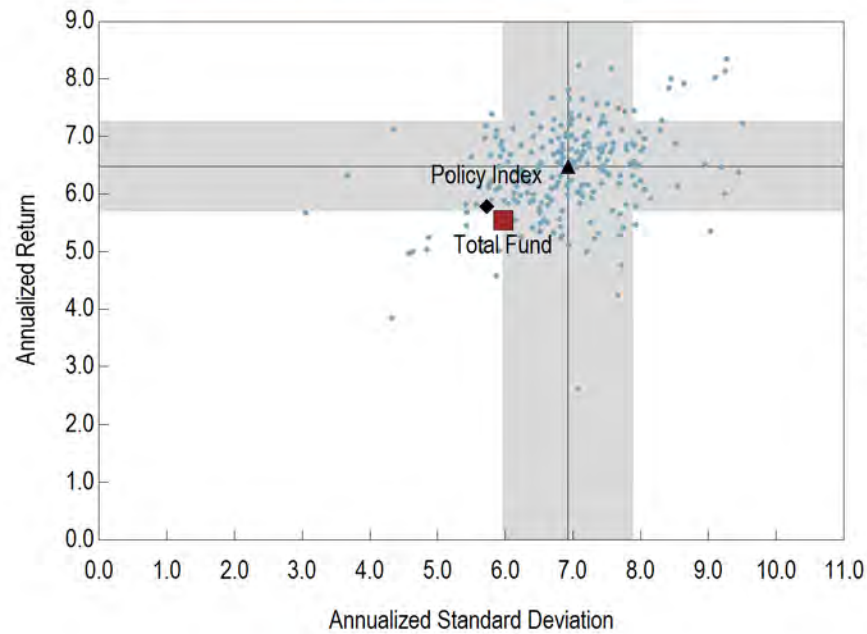
Attribution does not account for effects of overlay program. Weighted returns shown in attribution analysis may differ from actual returns. Wtd. Actual Return is the sum of the products of each group's return and its respective weight at the beginning of the period.

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

Period Ending: September 30, 2019

	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	5.54%	-0.24%	5.97%	-0.34%	1.02	1.28%	0.95	0.77	-0.19	100.70%	104.97%

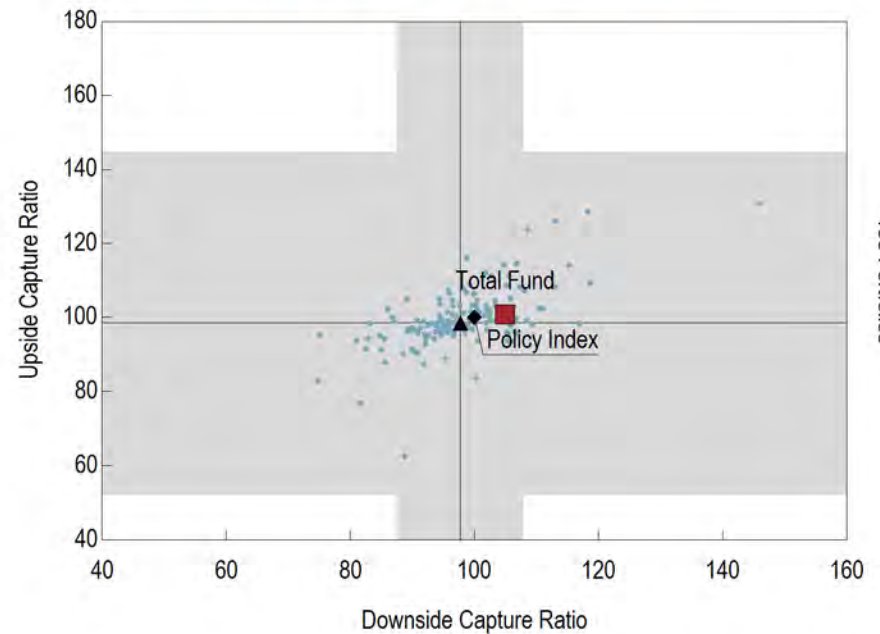
Annualized Return vs. Annualized Standard Deviation



237 Portfolios

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

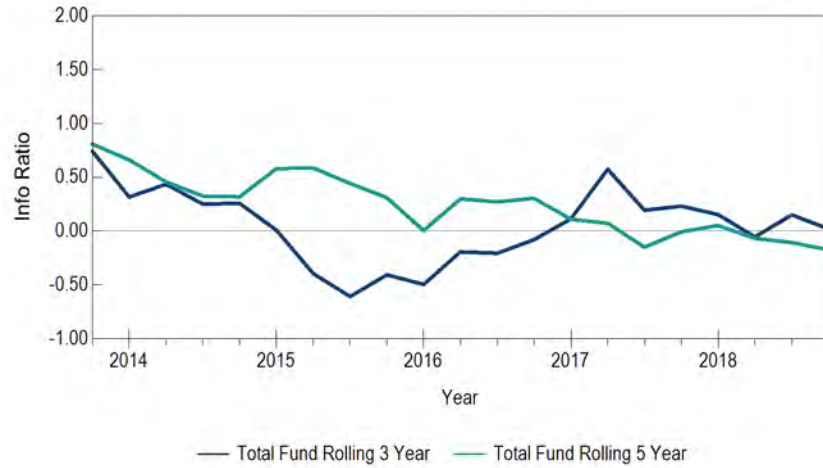
Upside Capture Ratio vs. Downside Capture Ratio



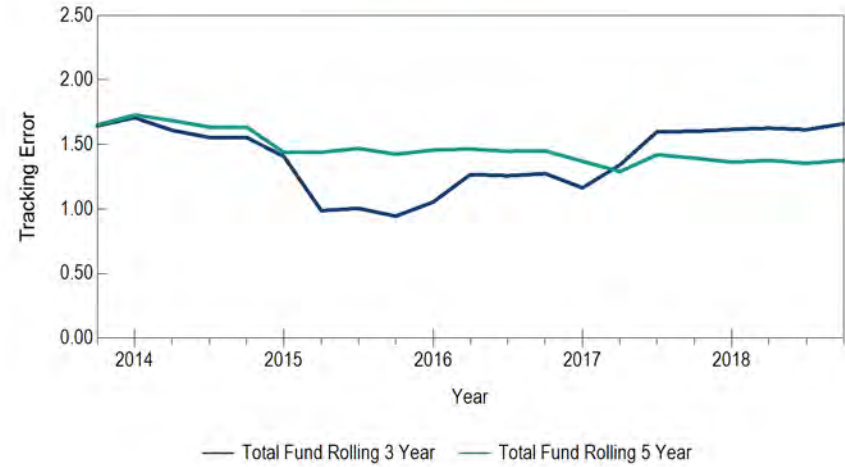
150 Portfolios

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

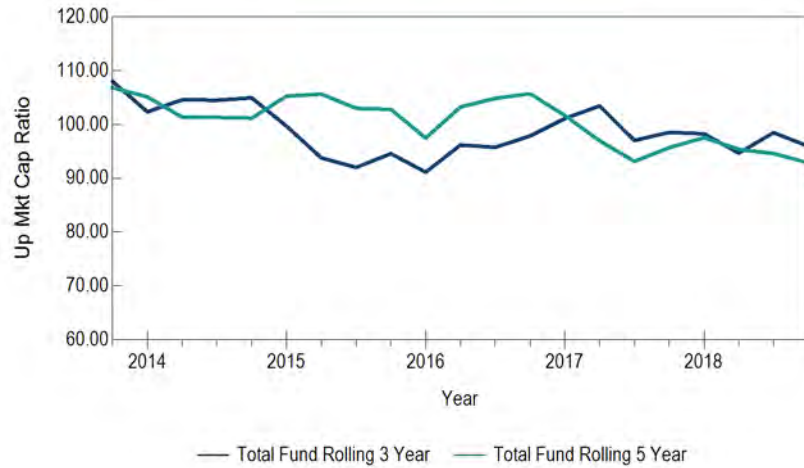
Rolling Information Ratio



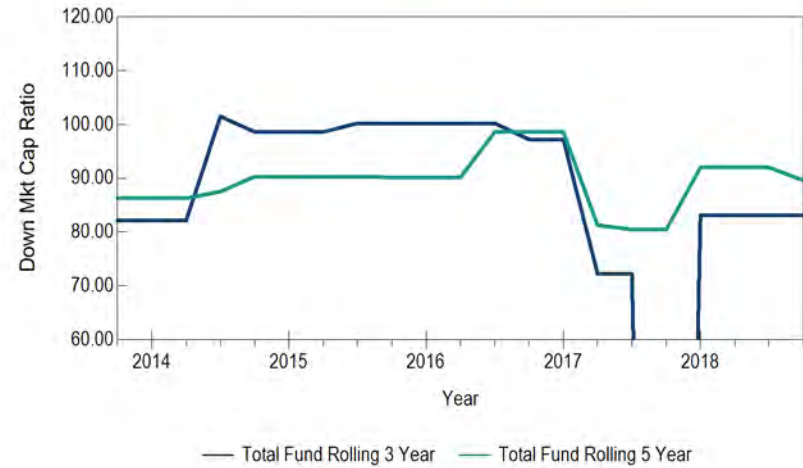
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund Performance Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
Total Fund	1,408,635,998	100.0	0.4	4.2	7.2	5.5	8.0	-3.1	15.5	6.6	-0.8	5.1		
<i>InvMetrics Public DB Gross Rank</i>			80	48	79	87	58	25	47	84	74	66		
Total Fund ex Overlay	1,405,133,559	99.8	0.4	4.3	7.2	5.5	8.0	-3.1	15.3	6.6	-0.8	5.2		
<i>Policy Index</i>			1.0	5.2	7.2	5.8	7.4	-3.2	13.4	7.8	-0.5	5.2		
<i>InvMetrics Public DB Gross Rank</i>			80	48	80	87	59	25	51	83	75	64		
Total Domestic Equity	289,262,725	20.5	1.1	3.6	14.0	11.0	14.0	-5.2	25.1	13.0	1.2	11.0		
<i>Russell 3000</i>			1.2	2.9	12.8	10.4	13.1	-5.2	21.1	12.7	0.5	12.6		
<i>InvMetrics Public DB US Eq Gross Rank</i>			49	36	9	16	3	36	4	48	18	60		
PIMCO RAE Fundamental PLUS Instl	57,643,764	4.1	1.6	-0.3	10.1	8.4	12.4	-6.6	17.0	15.9	-2.7	12.7	7.9	Nov-07
<i>S&P 500</i>			1.7	4.3	13.4	10.8	13.2	-4.4	21.8	12.0	1.4	13.7	8.4	Nov-07
<i>eV US Large Cap Core Equity Gross Rank</i>			56	82	91	88	74	72	89	6	86	58	78	Nov-07
Loomis Sayles Large Cap Growth	84,295,168	6.0	-1.4	6.7	--	--	--	-1.7	34.1	--	--	--	18.4	Dec-16
<i>Russell 1000 Growth</i>			1.5	3.7	--	--	--	-1.5	30.2	--	--	--	18.1	Dec-16
<i>eV US Large Cap Growth Equity Gross Rank</i>			85	31	--	--	--	58	16	--	--	--	42	Dec-16
Boston Partners Large Cap Value	82,703,766	5.9	1.8	-0.9	--	--	--	-8.5	--	--	--	--	8.7	Jan-17
<i>Russell 1000 Value</i>			1.4	4.0	--	--	--	-8.3	--	--	--	--	7.7	Jan-17
<i>eV US Large Cap Value Equity Gross Rank</i>			51	76	--	--	--	54	--	--	--	--	42	Jan-17
Atlanta Capital Mgmt	64,620,027	4.6	3.0	9.1	17.4	16.1	--	-4.5	26.6	12.6	10.4	5.8	18.2	Aug-10
<i>Russell 2500</i>			-1.3	-4.0	9.5	8.6	--	-10.0	16.8	17.6	-2.9	7.1	13.0	Aug-10
<i>eV US Small-Mid Cap Equity Gross Rank</i>			4	4	6	1	--	25	15	62	1	56	1	Aug-10
Total International Equity	305,679,324	21.7	-0.8	3.5	8.6	4.6	7.4	-12.2	26.6	2.2	-4.3	2.1		
<i>MSCI ACWI ex USA Gross</i>			-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4		
<i>InvMetrics Public DB ex-US Eq Gross Rank</i>			7	4	6	23	2	9	81	82	68	1		
Dodge & Cox Intl Stock	141,733,800	10.1	-1.5	-2.1	5.9	1.3	5.6	-17.5	24.7	9.0	-10.8	0.6	2.3	Dec-07
<i>MSCI EAFE Gross</i>			-1.0	-0.8	7.0	3.8	5.4	-13.4	25.6	1.5	-0.4	-4.5	1.7	Dec-07
<i>eV All EAFE Equity Gross Rank</i>			62	43	61	97	73	73	74	3	99	14	65	Dec-07
WCM International Growth	163,945,524	11.6	-0.3	9.2	--	--	--	-6.7	--	--	--	--	15.1	Feb-17
<i>MSCI ACWI ex USA Gross</i>			-1.7	-0.7	--	--	--	-13.8	--	--	--	--	6.4	Feb-17
<i>eV ACWI ex-US All Cap Growth Eq Gross Rank</i>			15	1	--	--	--	1	--	--	--	--	9	Feb-17

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidating as of 7/1/2019.

Total Fund
Performance Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
Total Domestic Fixed Income	291,851,041	20.7	2.1	8.6	3.9	4.0	4.6	0.4	4.3	4.5	1.1	4.7		
<i>BBgBarc US Aggregate TR</i>			2.3	10.3	2.9	3.4	3.7	0.0	3.5	2.6	0.6	6.0		
<i>InvMetrics Public DB US Fix Inc Gross Rank</i>			31	45	23	27	29	55	50	49	17	68		
BlackRock Core Bond	109,098,553	7.7	2.4	11.3	--	--	--	0.3	--	--	--	--	4.9	Jan-17
<i>BBgBarc US Aggregate TR</i>			2.3	10.3	--	--	--	0.0	--	--	--	--	4.4	Jan-17
<i>eV US Core Fixed Inc Gross Rank</i>			44	14	--	--	--	27	--	--	--	--	37	Jan-17
Dodge & Cox Income Fund	106,419,003	7.6	2.2	9.6	--	--	--	0.1	--	--	--	--	5.1	Jan-17
<i>BBgBarc US Aggregate TR</i>			2.3	10.3	--	--	--	0.0	--	--	--	--	4.4	Jan-17
<i>eV US Core Fixed Inc Gross Rank</i>			78	89	--	--	--	43	--	--	--	--	21	Jan-17
Pacific Asset Corporate Loan	76,333,486	5.4	1.5	3.9	5.3	4.8	--	1.0	4.9	9.2	2.5	--	4.6	Sep-14
<i>S&P/LSTA Leveraged Loan Index</i>			1.0	3.1	4.5	4.0	--	0.4	4.1	10.2	-0.7	--	3.8	Sep-14
<i>eV US Float-Rate Bank Loan Fixed Inc Gross Rank</i>			24	32	6	12	--	29	26	51	9	--	27	Sep-14
Total Global Fixed	136,684,605	9.7	-2.6	3.3	1.1	-0.2	2.3	-6.6	14.4	5.8	-11.8	-2.2		
<i>FTSE World Govt Bond Index</i>			0.8	8.1	1.2	1.8	1.7	-0.8	7.5	1.6	-3.6	-0.5		
<i>InvMetrics Public DB Gbl Fix Inc Gross Rank</i>			--	--	--	--	--	99	29	67	95	93		
Brandywine Global Fixed Income	65,667,779	4.7	-2.7	-1.1	0.5	0.0	2.8	-4.1	12.5	2.2	-9.3	2.9	3.4	Nov-07
<i>FTSE WGBI ex US TR</i>			-0.1	6.8	0.6	1.3	1.1	-1.8	10.3	1.8	-5.5	-2.7	2.3	Nov-07
<i>eV Global Fixed Inc Unhedged Gross Rank</i>			98	96	97	96	74	83	9	71	96	43	71	Nov-07
Ashmore EM Blended Debt Fund	71,016,826	5.0	-2.6	--	--	--	--	--	--	--	--	--	1.9	Mar-19
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>			0.0	--	--	--	--	--	--	--	--	--	4.0	Mar-19
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>			93	--	--	--	--	--	--	--	--	--	89	Mar-19
Total Real Estate	200,645,293	14.2	0.4	3.9	6.4	9.1	8.1	7.5	7.8	7.8	18.0	10.4		
<i>NCREIF Property Index</i>			1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8		
JP Morgan Core Real Estate	166,614,104	11.8	0.2	2.9	5.5	8.1	10.3	7.0	6.1	8.4	15.2	11.2	5.4	Mar-08
<i>NCREIF-ODCE</i>			1.3	5.6	7.3	9.3	10.9	8.3	7.6	8.8	15.0	12.5	5.4	Mar-08
<i>NCREIF Property Index</i>			1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8	6.2	Mar-08
ARA American Strategic Value Realty	33,885,219	2.4	1.5	7.2	8.4	--	--	9.1	7.4	--	--	--	8.5	Jun-16
<i>NCREIF-ODCE</i>			1.3	5.6	7.3	--	--	8.3	7.6	--	--	--	7.4	Jun-16
<i>NCREIF Property Index</i>			1.4	6.2	6.8	--	--	6.7	7.0	--	--	--	6.8	Jun-16

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidating as of 7/1/2019.

Total Fund Performance Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014	Inception	Inception Date
Total Commodities	44,905,393	3.2	-2.5	-10.6	-0.1	-6.7	-3.8	-12.4	6.2	12.6	-25.2	-16.0		
<i>Bloomberg Commodity Index TR USD</i>			-1.8	-6.6	-1.5	-7.2	-4.3	-11.2	1.7	11.8	-24.7	-17.0		
Gresham MTAP Commodity Builder	44,905,393	3.2	-2.5	-10.6	-0.1	-6.7	--	-12.4	6.2	12.6	-25.2	-16.0	-6.7	Aug-13
<i>Bloomberg Commodity Index TR USD</i>			-1.8	-6.6	-1.5	-7.2	--	-11.2	1.7	11.8	-24.7	-17.0	-7.4	Aug-13
Total Private Equity	44,191,010	3.1												
Harbourvest Partners IX Buyout Fund L.P.	14,930,279	1.1												
Pathway Private Equity Fund Investors 9 L.P.	25,474,331	1.8												
Harbourvest 2018 Global Fund L.P.	3,786,400	0.3												
Total Private Credit	58,219,685	4.1												
TPG Diversified Credit Program	58,219,685	4.1												
Total Cash	29,089,956	2.1	0.0	2.0	1.4	1.0	0.7	1.5	1.0	0.5	0.4	0.3		
<i>91 Day T-Bills</i>			0.5	2.3	1.5	1.0	0.5	1.9	0.9	0.3	0.0	0.0		
Cash Account	29,089,956	2.1	0.0	2.0	1.4	1.0	0.7	1.5	1.0	0.5	0.4	0.3		
<i>91 Day T-Bills</i>			0.5	2.3	1.5	1.0	0.5	1.9	0.9	0.3	0.0	0.0		
Total Opportunistic	4,604,526	0.3												
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,502,305	0.3												
PIMCO Distressed Credit Fund	102,221	0.0												
<i>CPI + 5%</i>			1.5	6.8	7.2	6.6	--	7.0	7.2	7.2	5.8	5.8	6.9	Jun-10

Since Inception ranking is from the beginning of the first complete month of performance. Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidating as of 7/1/2019.

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Fund	1,408,635,998	100.0	0.3	3.8	6.8	5.1	7.5	-3.5	15.0	6.0	-1.3	4.6
Total Fund ex Overlay	1,405,133,559	99.8	0.3	3.9	6.8	5.1	7.5	-3.5	14.9	6.1	-1.3	4.7
Policy Index			1.0	5.2	7.2	5.8	7.4	-3.2	13.4	7.8	-0.5	5.2
Total Domestic Equity	289,262,725	20.5	1.0	3.1	13.5	10.6	13.6	-5.7	24.5	12.7	0.8	10.5
Russell 3000			1.2	2.9	12.8	10.4	13.1	-5.2	21.1	12.7	0.5	12.6
PIMCO RAE Fundamental PLUS Instl	57,643,764	4.1	1.5	-0.7	9.6	7.9	12.1	-7.0	16.5	15.4	-3.2	12.3
S&P 500			1.7	4.3	13.4	10.8	13.2	-4.4	21.8	12.0	1.4	13.7
Loomis Sayles Large Cap Growth	84,295,168	6.0	-1.5	6.2	--	--	--	-2.1	33.5	--	--	--
Russell 1000 Growth			1.5	3.7	--	--	--	-1.5	30.2	--	--	--
Boston Partners Large Cap Value	82,703,766	5.9	1.7	-1.3	--	--	--	-8.9	--	--	--	--
Russell 1000 Value			1.4	4.0	--	--	--	-8.3	--	--	--	--
Atlanta Capital Mgmt	64,620,027	4.6	2.8	8.2	16.5	15.2	--	-5.3	25.6	11.7	9.6	5.0
Russell 2500			-1.3	-4.0	9.5	8.6	--	-10.0	16.8	17.6	-2.9	7.1
Total International Equity	305,679,324	21.7	-1.0	2.8	7.9	3.9	6.8	-12.8	25.8	1.6	-4.9	1.4
MSCI ACWI ex USA Gross			-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4
Dodge & Cox Intl Stock	141,733,800	10.1	-1.7	-2.7	5.3	0.6	4.9	-18.0	23.9	8.3	-11.4	0.1
MSCI EAFE Gross			-1.0	-0.8	7.0	3.8	5.4	-13.4	25.6	1.5	-0.4	-4.5
WCM International Growth	163,945,524	11.6	-0.4	8.5	--	--	--	-7.4	--	--	--	--
MSCI ACWI ex USA Gross			-1.7	-0.7	--	--	--	-13.8	--	--	--	--
Total Domestic Fixed Income	291,851,041	20.7	2.0	8.2	3.5	3.7	4.3	0.0	3.9	4.2	0.9	4.4
BBgBarc US Aggregate TR			2.3	10.3	2.9	3.4	3.7	0.0	3.5	2.6	0.6	6.0
BlackRock Core Bond	109,098,553	7.7	2.3	11.0	--	--	--	0.1	--	--	--	--
BBgBarc US Aggregate TR			2.3	10.3	--	--	--	0.0	--	--	--	--
Dodge & Cox Income Fund	106,419,003	7.6	2.1	9.1	--	--	--	-0.3	--	--	--	--
BBgBarc US Aggregate TR			2.3	10.3	--	--	--	0.0	--	--	--	--
Pacific Asset Corporate Loan	76,333,486	5.4	1.4	3.6	5.0	4.5	--	0.7	4.6	8.8	2.1	--
S&P/LSTA Leveraged Loan Index			1.0	3.1	4.5	4.0	--	0.4	4.1	10.2	-0.7	--
Total Global Fixed	136,684,605	9.7	-2.8	2.6	0.5	-0.9	1.6	-7.2	13.7	5.1	-12.4	-2.8
FTSE World Govt Bond Index			0.8	8.1	1.2	1.8	1.7	-0.8	7.5	1.6	-3.6	-0.5
Brandywine Global Fixed Income	65,667,779	4.7	-2.8	-1.5	0.0	-0.5	2.3	-4.5	12.0	1.7	-9.7	2.4
FTSE WGBI ex US TR			-0.1	6.8	0.6	1.3	1.1	-1.8	10.3	1.8	-5.5	-2.7

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidating as of 7/1/2019.

Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	% of Portfolio	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Ashmore EM Blended Debt Fund	71,016,826	5.0	-2.8	--	--	--	--	--	--	--	--	--
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+			0.0	--	--	--	--	--	--	--	--	--
Total Real Estate	200,645,293	14.2	0.4	3.9	6.3	8.6	7.7	7.5	7.8	6.8	16.9	9.6
NCREIF Property Index			1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
JP Morgan Core Real Estate	166,614,104	11.8	0.2	2.9	5.4	7.6	9.5	7.0	6.1	7.3	14.1	10.0
NCREIF-ODCE			1.3	5.6	7.3	9.3	10.9	8.3	7.6	8.8	15.0	12.5
NCREIF Property Index			1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
ARA American Strategic Value Realty	33,885,219	2.4	1.5	7.2	8.3	--	--	9.1	7.4	--	--	--
NCREIF-ODCE			1.3	5.6	7.3	--	--	8.3	7.6	--	--	--
NCREIF Property Index			1.4	6.2	6.8	--	--	6.7	7.0	--	--	--
Total Commodities	44,905,393	3.2	-2.5	-10.6	-0.2	-7.0	-4.2	-12.4	6.2	11.8	-25.8	-16.6
Bloomberg Commodity Index TR USD			-1.8	-6.6	-1.5	-7.2	-4.3	-11.2	1.7	11.8	-24.7	-17.0
Gresham MTAP Commodity Builder	44,905,393	3.2	-2.5	-10.6	-0.2	-7.0	--	-12.4	6.2	11.8	-25.8	-16.6
Bloomberg Commodity Index TR USD			-1.8	-6.6	-1.5	-7.2	--	-11.2	1.7	11.8	-24.7	-17.0
Total Private Equity	44,191,010	3.1										
Harbourvest Partners IX Buyout Fund L.P.	14,930,279	1.1										
Pathway Private Equity Fund Investors 9 L.P.	25,474,331	1.8										
Harbourvest 2018 Global Fund L.P.	3,786,400	0.3										
Total Private Credit	58,219,685	4.1										
TPG Diversified Credit Program	58,219,685	4.1										
Total Cash	29,089,956	2.1	0.0	2.0	1.4	1.0	0.7	1.5	1.0	0.5	0.4	0.3
91 Day T-Bills			0.5	2.3	1.5	1.0	0.5	1.9	0.9	0.3	0.0	0.0
Cash Account	29,089,956	2.1	0.0	2.0	1.4	1.0	0.7	1.5	1.0	0.5	0.4	0.3
91 Day T-Bills			0.5	2.3	1.5	1.0	0.5	1.9	0.9	0.3	0.0	0.0
Total Opportunistic	4,604,526	0.3										
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,502,305	0.3										
PIMCO Distressed Credit Fund	102,221	0.0										
CPI + 5%			1.5	6.8	7.2	6.6	--	7.0	7.2	7.2	5.8	5.8

Research Affiliates converted to PIMCO RAE Fundamental Plus Instl on 6/5/15 (performance prior to this date represents previously held Research Affiliates Equity US Large, L.P.). ARA American funded 6/22/2016. Fidelity Real Estate Growth II liquidated 12/31/2015. Loomis Sayles Large Cap Growth funded 12/31/2016. Direct Real Estate is lagged one quarter. Boston Partners funded 1/31/2017. Vontobel liquidated 2/15/2017. WCM International funded 2/15/2017. PIMCO Core Plus liquidated 1/6/2017. BlackRock Core and Dodge & Cox Income funded 1/19/2017. Pathway Private Equity Fund Investors 9 L.P. funded 4/7/2017. Fidelity Real Estate Growth III liquidated 12/29/2017. SSGA S&P 500 Flagship liquidated 1/3/2018. SSGA TIPS liquidated 1/17/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor Local Markets terminated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidating as of 7/1/2019.

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

Period Ending: September 30, 2019

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
PIMCO RAE Fundamental PLUS Instl	9.61%	-3.78%	12.99%	-4.18%	1.03	3.36%	0.93	0.62	-1.12	87.75%	109.49%
Atlanta Capital Mgmt	16.46%	6.95%	13.70%	8.69%	0.82	5.83%	0.86	1.09	1.19	106.18%	72.11%
Dodge & Cox Intl Stock	5.27%	-1.74%	13.67%	-2.78%	1.15	5.29%	0.86	0.27	-0.33	109.08%	118.42%
Pacific Asset Corporate Loan	5.01%	0.48%	2.67%	0.63%	0.97	0.44%	0.97	1.30	1.11	107.11%	94.41%
Brandywine Global Fixed Income	0.03%	-0.56%	7.54%	-0.46%	0.83	4.98%	0.59	-0.20	-0.11	77.41%	86.37%
JP Morgan Core Real Estate	5.43%	-1.87%	0.93%	4.90%	0.07	2.95%	0.06	4.21	-0.63	25.55%	--
ARA American Strategic Value Realty	8.30%	0.99%	3.68%	9.22%	-0.13	5.01%	0.01	1.83	0.20	24.20%	--
Gresham MTAP Commodity Builder	-0.15%	1.35%	9.08%	1.41%	1.04	3.74%	0.83	-0.18	0.36	127.94%	106.75%

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
PIMCO RAE Fundamental PLUS Instl	7.92%	-2.92%	12.16%	-2.81%	0.99	2.92%	0.94	0.57	-1.00	84.78%	103.76%
Atlanta Capital Mgmt	15.19%	6.62%	12.89%	8.18%	0.82	5.59%	0.85	1.10	1.18	102.10%	70.56%
Dodge & Cox Intl Stock	0.64%	-3.13%	14.93%	-3.68%	1.15	5.37%	0.89	-0.02	-0.58	107.72%	115.70%
Brandywine Global Fixed Income	-0.48%	-1.76%	7.37%	-1.51%	0.81	4.94%	0.59	-0.20	-0.36	59.14%	83.13%
JP Morgan Core Real Estate	7.61%	-1.73%	1.37%	6.47%	0.12	3.77%	0.13	4.87	-0.46	26.77%	--
Gresham MTAP Commodity Builder	-7.02%	0.15%	12.11%	0.18%	1.00	3.21%	0.93	-0.66	0.05	111.24%	102.46%

Private Markets
Non Marketable Securities Overview

Period Ending: September 30, 2019

Vintage	Manager & Fund Name	Estimated 9/30 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value as of IRR date	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁶	IRR Date
2011	HarbourVest Partners IX-Buyout Fund L.P.	\$14,930,279	\$20,000,000	\$16,550,000	83%	\$3,450,000	\$11,961,953	\$15,358,051	72.3%	162.5%	17.7%	6/30/19
2018	HarbourVest Partners 2018 Global Fund L.P.	\$3,786,400	\$20,000,000	\$3,600,000	18%	\$16,400,000	-	-	-	-	-	-
2010	KKR Mezzanine Partners I L.P. ⁵	\$4,502,305	\$20,000,000	\$20,000,000	100%	\$0	\$29,566,840	\$4,502,305	147.8%	170.3%	8.3%	6/30/19
2010	PIMCO Distressed Credit Fund ⁴	\$102,221	\$20,000,000	\$20,000,000	100%	\$0	\$27,950,093	\$102,221	139.8%	140.3%	12.3%	6/30/19
2016	TPG Diversified Credit Program	\$58,219,685	\$75,000,000	\$54,975,296	73%	\$20,024,704	\$4,551,021	\$53,791,241	8.3%	114.2%	9.7%	6/30/19
2017	Pathway Private Equity Fund Investors 9 L.P.	\$25,474,331	\$65,000,000	\$24,961,782	38%	\$40,038,218	\$243,611	-	1.0%	103.0%	-	-
Total Alternative Illiquids		\$107,015,221	\$220,000,000	\$140,087,078	64%	\$79,912,922	\$74,273,518	\$73,753,818	52.6%	105.7%		
% of Portfolio (Market Value)		7.6%										

	Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense ⁷
HarbourVest Partners IX-Buyout Fund L.P.	\$49,834	\$0	\$0	\$13,507	\$63,341
HarbourVest Partners 2018 Global Fund L.P.	\$23,834	\$0	\$0	\$40,148	\$63,982
KKR Mezzanine Partners I L.P.	\$15,688	\$0	\$0	\$8,328	\$24,016
PIMCO Distressed Credit Fund ⁴	\$0	\$0	\$0	\$0	\$0
TPG Diversified Credit Program	\$0	\$0	\$0	\$144,402	\$144,402
Pathway Private Equity Fund Investors 9 L.P.	\$98,283	\$0	\$0	\$0	\$98,283
	\$187,639	\$0	\$0	\$206,385	\$394,024

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

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

³Last known market value + capital calls - distributions

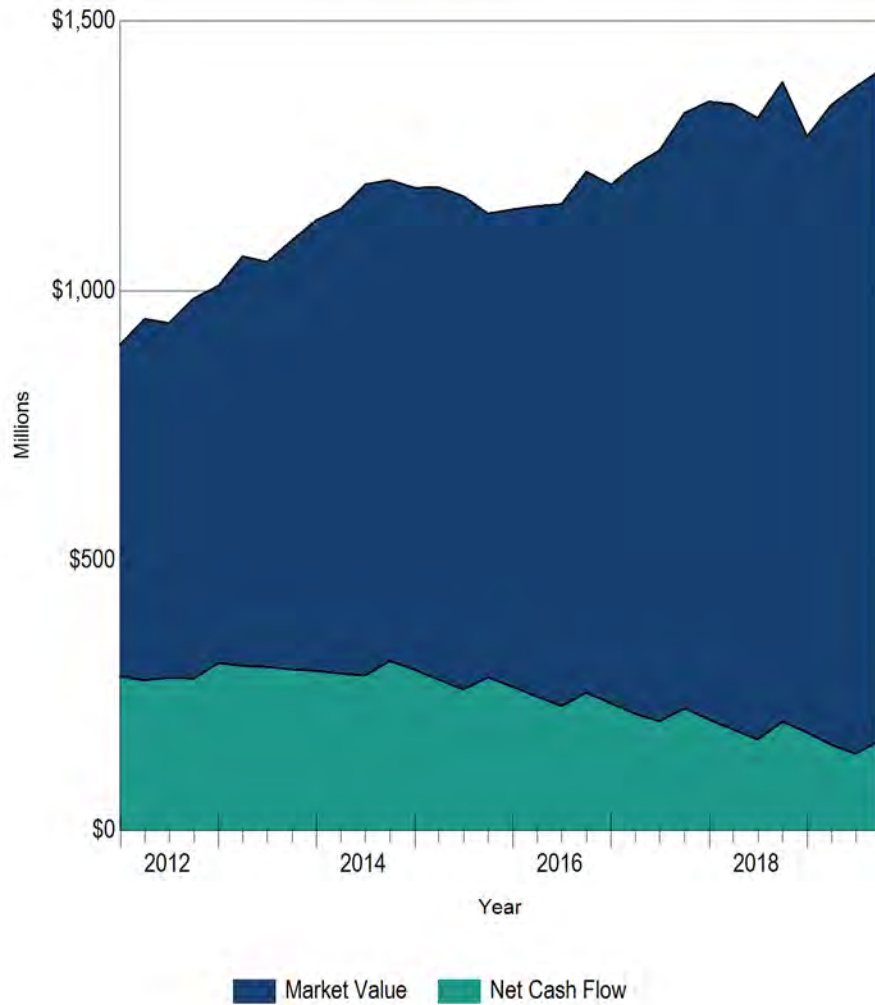
⁴Investment period ended, no further capital to be called.

⁵Net IRR is calculated on the cash flows of the underlying investments of the fund and is net of the underlying fund fees and carried interest.

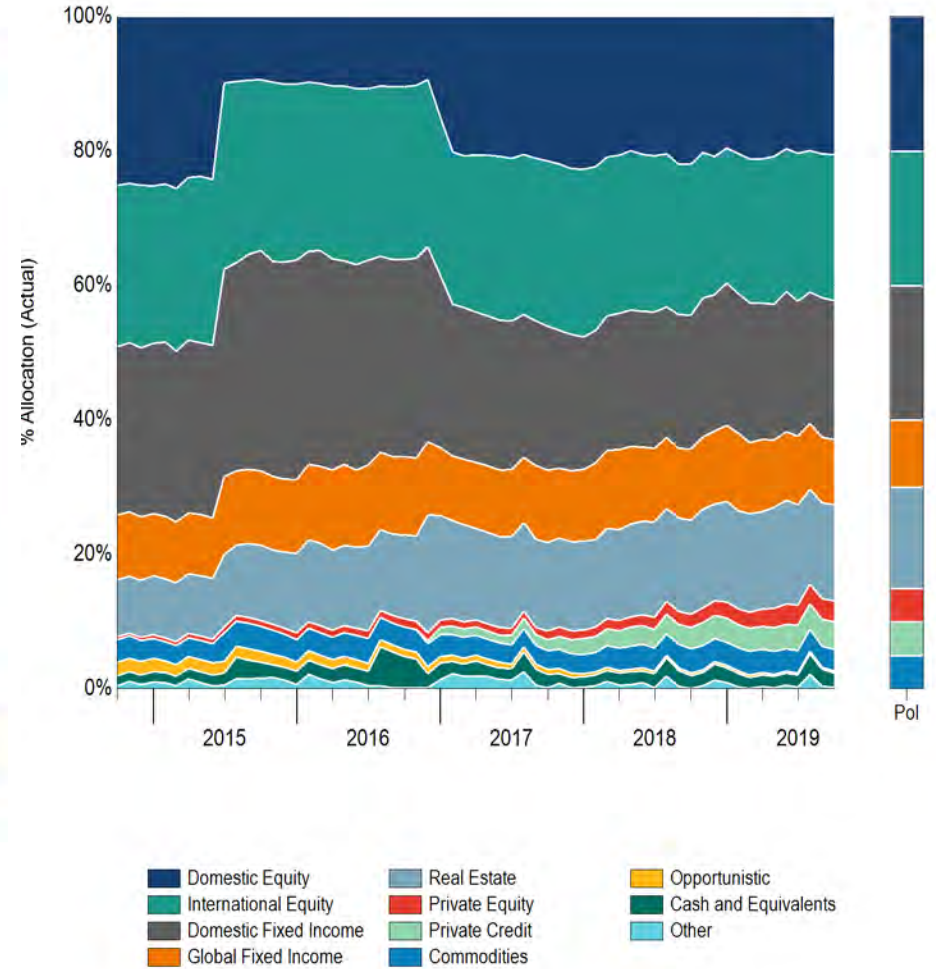
⁶KKR: As of 3Q2019, total capital called is \$23,593,570, which includes recycled distributions. Unused capital commitment is \$2,109,437 after including distribution proceeds available for reinvestment.

⁷All fees and expenses are for 2Q 2019.

Market Value History



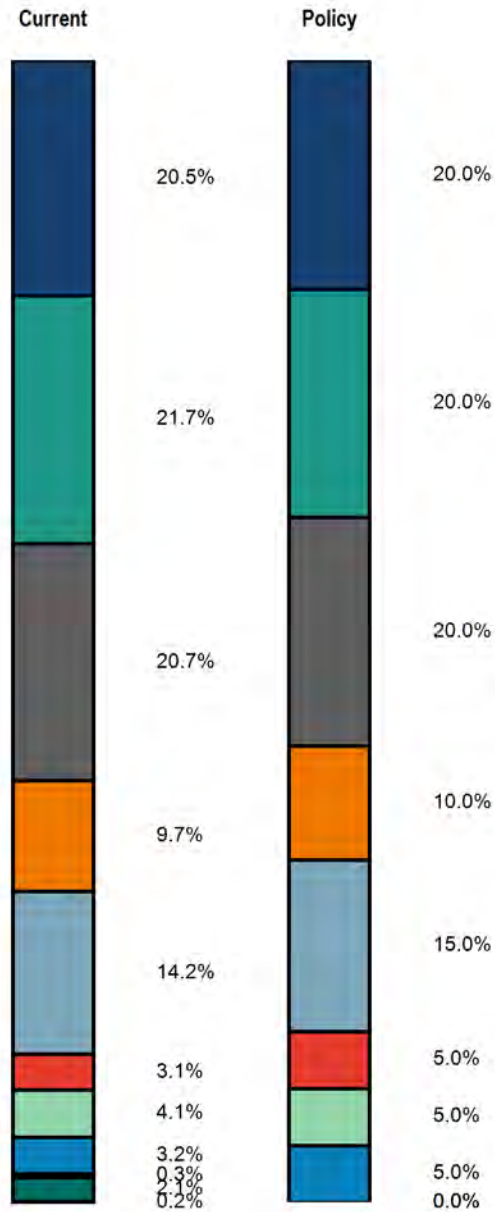
Asset Allocation History



*Other balance represents Clifton Group

Total Fund
Asset Allocation vs. Policy

Period Ending: September 30, 2019



	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
Domestic Equity	\$289,262,725	20.5%	20.0%	\$7,535,526	15.0% - 30.0%	Yes
International Equity	\$305,679,324	21.7%	20.0%	\$23,952,125	15.0% - 30.0%	Yes
Domestic Fixed Income	\$291,851,041	20.7%	20.0%	\$10,123,842	10.0% - 30.0%	Yes
Global Fixed Income	\$136,684,605	9.7%	10.0%	-\$4,178,995	0.0% - 20.0%	Yes
Real Estate	\$200,645,293	14.2%	15.0%	-\$10,650,106	5.0% - 20.0%	Yes
Private Equity	\$44,191,010	3.1%	5.0%	-\$26,240,790	0.0% - 10.0%	Yes
Private Credit	\$58,219,685	4.1%	5.0%	-\$12,212,115	0.0% - 10.0%	Yes
Commodities	\$44,905,393	3.2%	5.0%	-\$25,526,407	0.0% - 10.0%	Yes
Opportunistic	\$4,604,526	0.3%	0.0%	\$4,604,526	0.0% - 10.0%	Yes
Cash and Equivalents	\$29,089,956	2.1%	0.0%	\$29,089,956	0.0% - 5.0%	Yes
Other	\$3,502,439	0.2%	--	\$3,502,439	--	No
Total	\$1,408,635,998	100.0%	100.0%			

*Other balance represents Clifton Group

Total Fund Investment Fund Fee Analysis

Period Ending: September 30, 2019

Account	Fee Schedule	Market Value As of 9/30/2019	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
ARA American Strategic Value Realty	1.25% of First 10.0 Mil, 1.20% of Next 15.0 Mil, 1.10% of Next 25.0 Mil, 1.00% Thereafter	\$33,885,219	2.4%	\$402,737	1.19%
Ashmore EM Blended Debt Fund	1.00% of Assets	\$71,016,826	5.0%	\$710,168	1.00%
Atlanta Capital Mgmt	0.80% of First 50.0 Mil, 0.70% of Next 100.0 Mil, 0.60% Thereafter	\$64,620,027	4.6%	\$502,340	0.78%
BlackRock Core Bond	0.28% of First 100.0 Mil, 0.26% Thereafter	\$109,098,553	7.7%	\$303,656	0.28%
Boston Partners Large Cap Value	0.40% of Assets	\$82,703,766	5.9%	\$330,815	0.40%
Brandywine Global Fixed Income	0.45% of First 50.0 Mil, 0.40% of Next 50.0 Mil, 0.35% Thereafter	\$65,667,779	4.7%	\$287,671	0.44%
Cash Account	No Fee	\$29,089,956	2.1%	--	--
Direct Real Estate	No Fee	\$145,970	0.0%	--	--
Dodge & Cox Income Fund	0.43% of Assets	\$106,419,003	7.6%	\$457,602	0.43%
Dodge & Cox Intl Stock	0.64% of Assets	\$141,733,800	10.1%	\$907,096	0.64%
Gresham MTAP Commodity Builder	0.75% of First 50.0 Mil, 0.50% Thereafter	\$44,905,393	3.2%	\$336,790	0.75%
Harbourvest 2018 Global Fund L.P.	282,000 Annually	\$3,786,400	0.3%	\$282,000	7.45%
Harbourvest Partners IX Buyout Fund L.P.	200,000 Annually	\$14,930,279	1.1%	\$200,000	1.34%
JP Morgan Core Real Estate	1.00% of Assets	\$166,614,104	11.8%	\$1,666,141	1.00%
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	300,000 Annually	\$4,502,305	0.3%	\$300,000	6.66%
Loomis Sayles Large Cap Growth	0.45% of First 100.0 Mil, 0.40% Thereafter	\$84,295,168	6.0%	\$379,328	0.45%
Pacific Asset Corporate Loan	0.37% of Assets	\$76,333,486	5.4%	\$282,434	0.37%
Pathway Private Equity Fund Investors 9 L.P.	Please see footnote	\$25,474,331	1.8%	--	--
PIMCO Distressed Credit Fund	150,000 Annually	\$102,221	0.0%	\$150,000	146.74%
PIMCO RAE Fundamental PLUS Instl	0.40% of Assets	\$57,643,764	4.1%	\$230,575	0.40%
The Clifton Group	50,000 Annually	\$3,502,439	0.2%	\$50,000	1.43%
TPG Diversified Credit Program	Please see footnote	\$58,219,685	4.1%	--	--
WCM International Growth	0.70% of Assets	\$163,945,524	11.6%	\$1,147,619	0.70%
Investment Management Fee		\$1,408,635,998	100.0%	\$8,926,974	0.63%

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

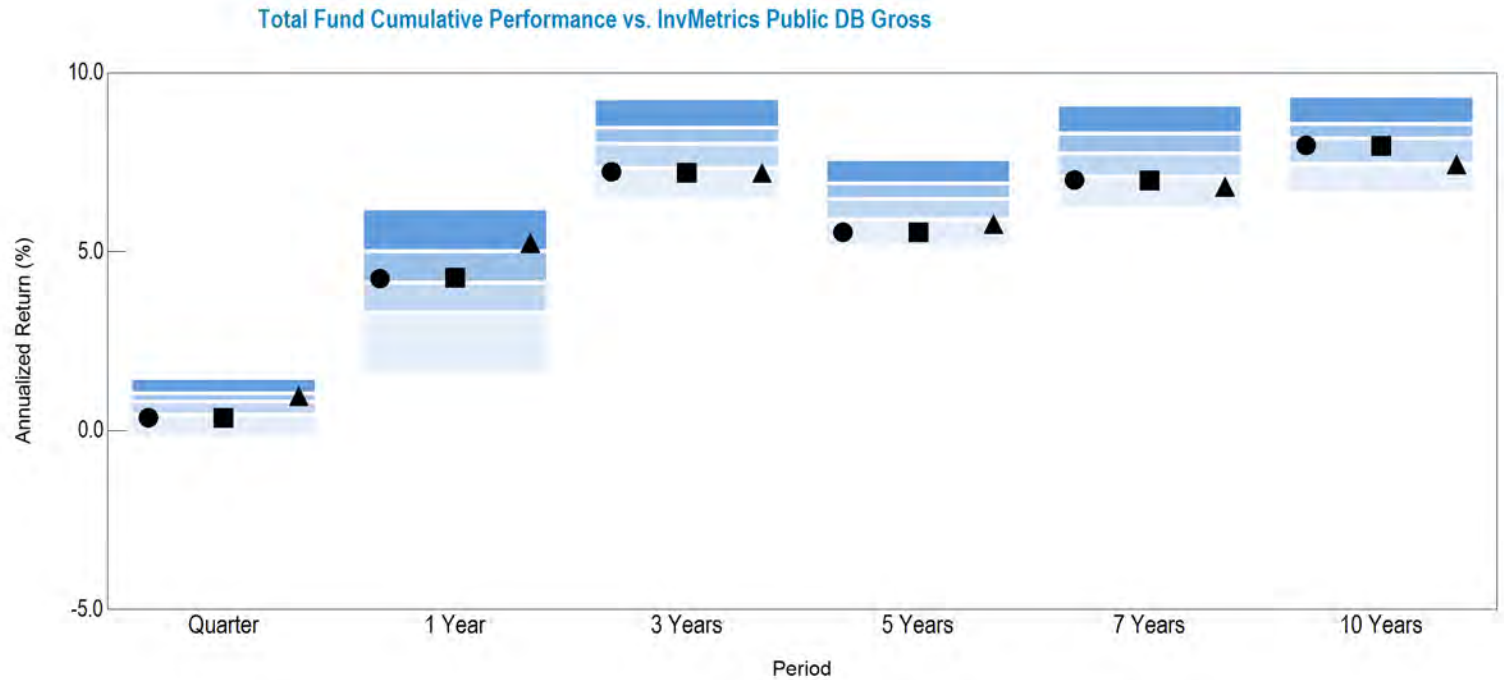
*Clifton Group fee schedule represents contractual minimum fee. Actual fee charged is \$1,500 per month through at least 6/30/2015.

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

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: September 30, 2019



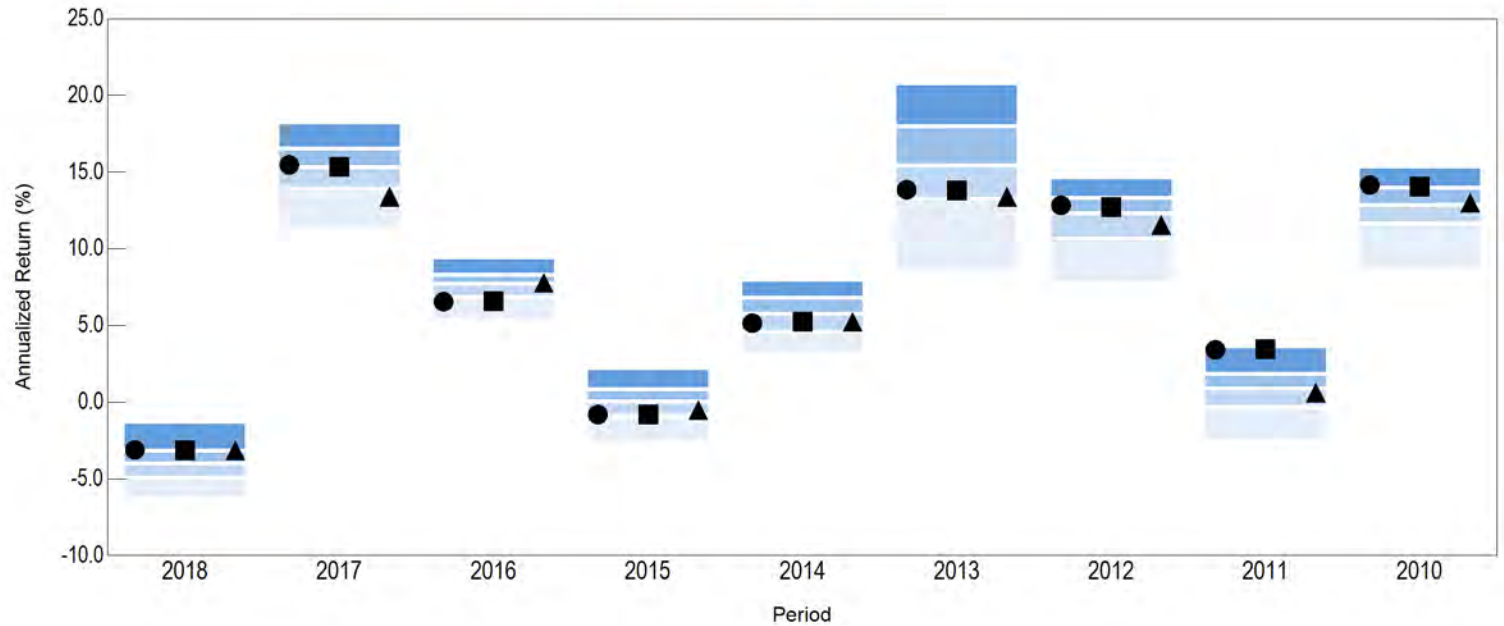
	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.5		6.2		9.3		7.6		9.1		9.4	
25th Percentile	1.1		5.0		8.5		6.9		8.3		8.6	
Median	0.8		4.1		8.0		6.5		7.8		8.2	
75th Percentile	0.5		3.3		7.3		5.9		7.1		7.5	
95th Percentile	-0.2		1.6		6.5		5.2		6.2		6.7	
# of Portfolios	262		256		246		237		224		199	
● Total Fund	0.4	(80)	4.2	(48)	7.2	(79)	5.5	(87)	7.0	(77)	8.0	(58)
■ Total Fund ex Overlay	0.4	(80)	4.3	(48)	7.2	(80)	5.5	(87)	7.0	(77)	8.0	(59)
▲ Policy Index	1.0	(36)	5.2	(18)	7.2	(80)	5.8	(82)	6.8	(82)	7.4	(77)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: September 30, 2019

Total Fund Consecutive Periods vs. InvMetrics Public DB Gross

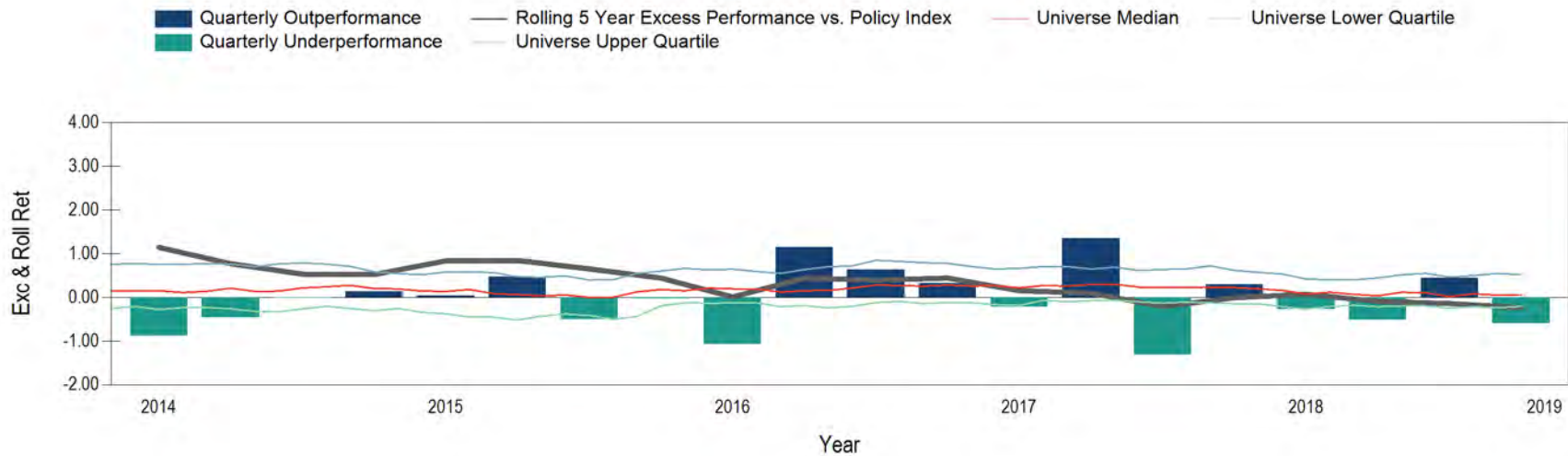


	2018	2017	2016	2015	2014	2013	2012	2011	2010
5th Percentile	-1.3	18.2	9.4	2.2	8.0	20.8	14.6	3.6	15.4
25th Percentile	-3.1	16.5	8.4	0.9	6.8	18.0	13.4	1.9	14.0
Median	-4.0	15.3	7.7	0.1	5.8	15.5	12.4	0.9	12.9
75th Percentile	-4.9	14.0	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7
95th Percentile	-6.3	11.3	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6
# of Portfolios	319	304	305	316	248	231	236	206	188
● Total Fund	-3.1 (25)	15.5 (47)	6.6 (84)	-0.8 (74)	5.1 (66)	13.8 (71)	12.8 (40)	3.4 (6)	14.2 (21)
■ Total Fund ex Overlay	-3.1 (25)	15.3 (51)	6.6 (83)	-0.8 (75)	5.2 (64)	13.8 (72)	12.7 (43)	3.5 (6)	14.1 (24)
▲ Policy Index	-3.2 (26)	13.4 (86)	7.8 (49)	-0.5 (67)	5.2 (64)	13.4 (74)	11.6 (69)	0.6 (60)	13.0 (48)

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



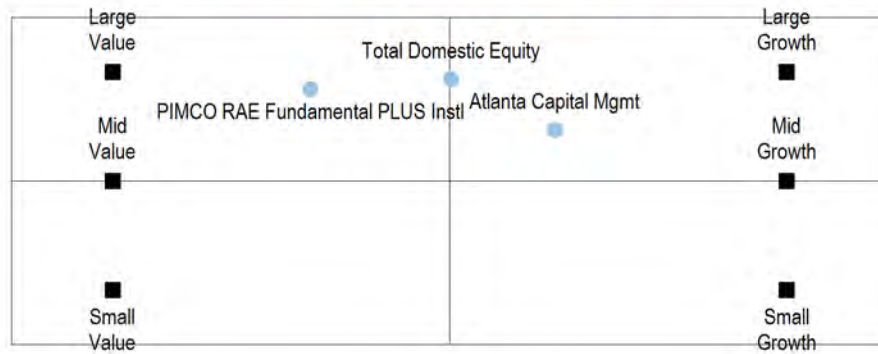
Total Domestic Equity

Asset Class Overview (Gross of Fees)

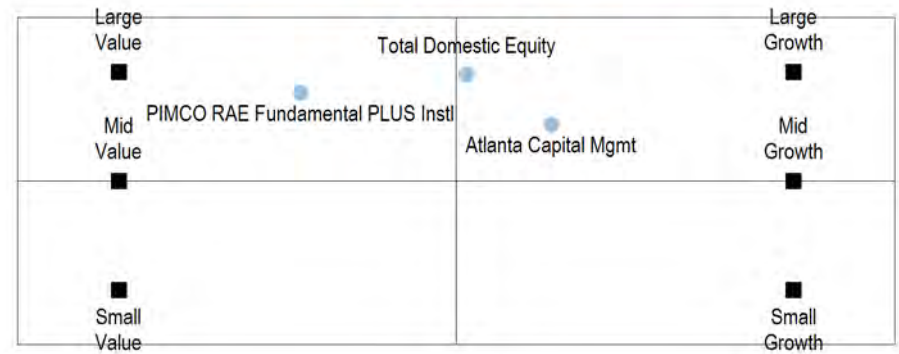
Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Equity	289,262,725	1.1	3.6	14.0	11.0	14.0	-5.2	25.1	13.0	1.2	11.0
<i>Russell 3000</i>		1.2	2.9	12.8	10.4	13.1	-5.2	21.1	12.7	0.5	12.6
<i>InvMetrics Public DB US Eq Gross Rank</i>		49	36	9	16	3	36	4	48	18	60
PIMCO RAE Fundamental PLUS Instl	57,643,764	1.6	-0.3	10.1	8.4	12.4	-6.6	17.0	15.9	-2.7	12.7
<i>S&P 500</i>		1.7	4.3	13.4	10.8	13.2	-4.4	21.8	12.0	1.4	13.7
<i>eV US Large Cap Core Equity Gross Rank</i>		56	82	91	88	74	72	89	6	86	58
Loomis Sayles Large Cap Growth	84,295,168	-1.4	6.7	--	--	--	-1.7	34.1	--	--	--
<i>Russell 1000 Growth</i>		1.5	3.7	--	--	--	-1.5	30.2	--	--	--
<i>eV US Large Cap Growth Equity Gross Rank</i>		85	31	--	--	--	58	16	--	--	--
Boston Partners Large Cap Value	82,703,766	1.8	-0.9	--	--	--	-8.5	--	--	--	--
<i>Russell 1000 Value</i>		1.4	4.0	--	--	--	-8.3	--	--	--	--
<i>eV US Large Cap Value Equity Gross Rank</i>		51	76	--	--	--	54	--	--	--	--
Atlanta Capital Mgmt	64,620,027	3.0	9.1	17.4	16.1	--	-4.5	26.6	12.6	10.4	5.8
<i>Russell 2500</i>		-1.3	-4.0	9.5	8.6	--	-10.0	16.8	17.6	-2.9	7.1
<i>eV US Small-Mid Cap Equity Gross Rank</i>		4	4	6	1	--	25	15	62	1	56

U.S. Effective Style Map
3 Years Ending September 30, 2019



U.S. Effective Style Map
5 Years Ending September 30, 2019



Total Domestic Equity
Asset Class Overview (Net of Fees)

Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Equity	289,262,725	1.0	3.1	13.5	10.6	13.6	-5.7	24.5	12.7	0.8	10.5
<i>Russell 3000</i>		1.2	2.9	12.8	10.4	13.1	-5.2	21.1	12.7	0.5	12.6
PIMCO RAE Fundamental PLUS Instl	57,643,764	1.5	-0.7	9.6	7.9	12.1	-7.0	16.5	15.4	-3.2	12.3
<i>S&P 500</i>		1.7	4.3	13.4	10.8	13.2	-4.4	21.8	12.0	1.4	13.7
Loomis Sayles Large Cap Growth	84,295,168	-1.5	6.2	--	--	--	-2.1	33.5	--	--	--
<i>Russell 1000 Growth</i>		1.5	3.7	--	--	--	-1.5	30.2	--	--	--
Boston Partners Large Cap Value	82,703,766	1.7	-1.3	--	--	--	-8.9	--	--	--	--
<i>Russell 1000 Value</i>		1.4	4.0	--	--	--	-8.3	--	--	--	--
Atlanta Capital Mgmt	64,620,027	2.8	8.2	16.5	15.2	--	-5.3	25.6	11.7	9.6	5.0
<i>Russell 2500</i>		-1.3	-4.0	9.5	8.6	--	-10.0	16.8	17.6	-2.9	7.1

Total Domestic Equity
 Asset Class Overview (Net of Fees)

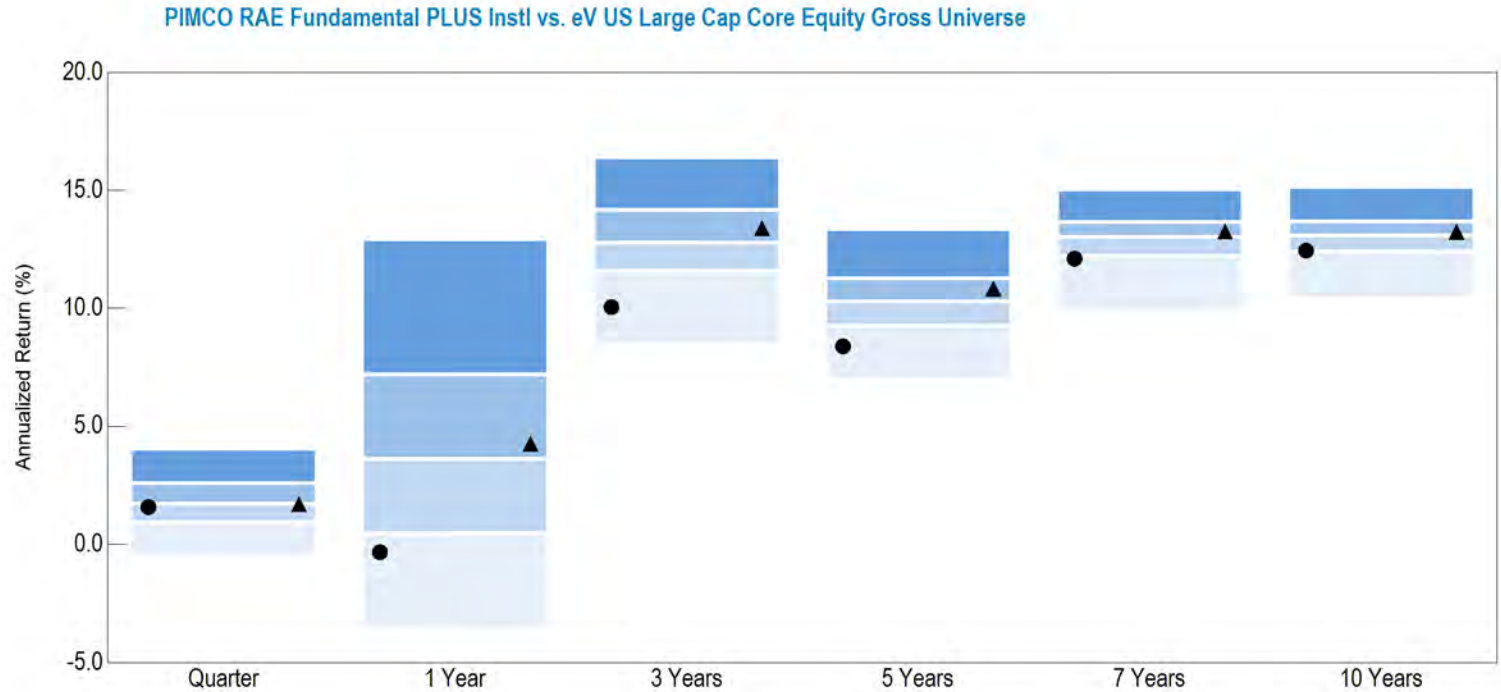
Period Ending: September 30, 2019

Correlation Matrix
 Last 1 Year

	Total Domestic Equity	PIMCO RAE Fundamental PLUS Instl	Loomis Sayles Large Cap Growth	Boston Partners Large Cap Value	Russell 3000
Total Domestic Equity	1.00	--	--	--	--
PIMCO RAE Fundamental PLUS Instl	0.99	1.00	--	--	--
Loomis Sayles Large Cap Growth	0.98	0.96	1.00	--	--
Boston Partners Large Cap Value	0.99	1.00	0.94	1.00	--
Russell 3000	1.00	1.00	0.98	0.99	1.00

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

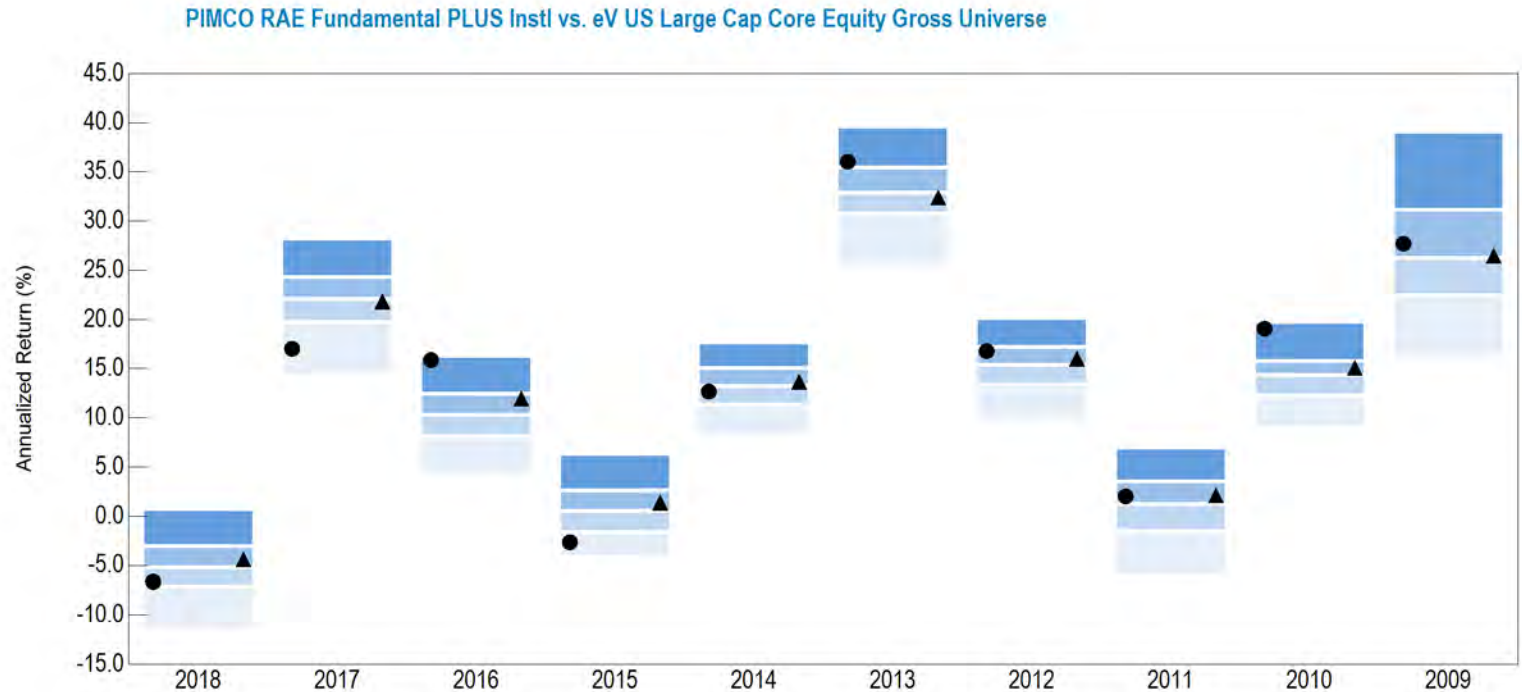
Period Ending: September 30, 2019



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	4.0	12.9	16.4	13.4	15.0	15.1						
25th Percentile	2.6	7.2	14.2	11.3	13.7	13.7						
Median	1.7	3.6	12.8	10.3	13.0	13.1						
75th Percentile	0.9	0.5	11.6	9.3	12.2	12.4						
95th Percentile	-0.5	-3.5	8.5	7.0	9.9	10.4						
# of Portfolios	294	294	282	266	241	206						
● PIMCO RAE Fundamental PLUS Instl	1.6 (56)	-0.3 (82)	10.1 (91)	8.4 (88)	12.1 (79)	12.4 (74)						
▲ S&P 500	1.7 (52)	4.3 (44)	13.4 (40)	10.8 (36)	13.3 (40)	13.2 (44)						

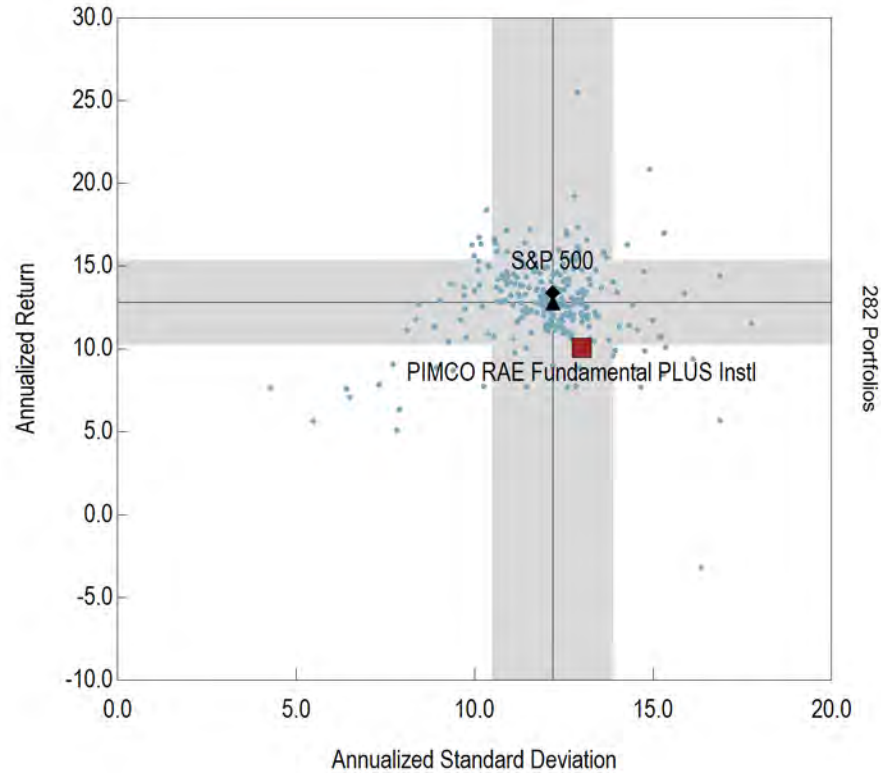
PIMCO RAE Fundamental PLUS Instl
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2019



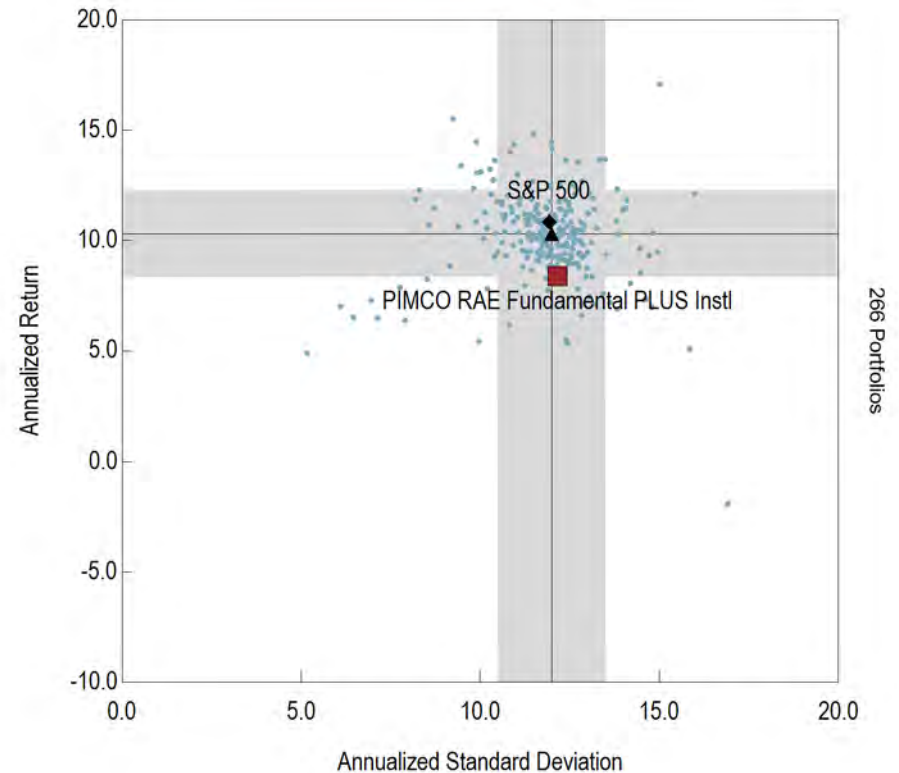
	Return (Rank)									
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
5th Percentile	0.7	28.2	16.3	6.3	17.7	39.6	20.1	7.0	19.7	39.1
25th Percentile	-3.0	24.3	12.5	2.7	15.1	35.5	17.2	3.6	15.8	31.2
Median	-5.1	22.1	10.4	0.6	13.3	32.9	15.4	1.3	14.4	26.3
75th Percentile	-7.1	19.8	8.2	-1.6	11.4	30.8	13.4	-1.5	12.3	22.6
95th Percentile	-11.4	14.4	4.3	-4.1	8.2	25.4	9.8	-5.9	9.1	16.1
# of Portfolios	316	318	308	267	267	261	254	259	254	280
● PIMCO RAE Fundamental PLUS Instl	-6.6 (72)	17.0 (89)	15.9 (6)	-2.7 (86)	12.7 (58)	36.0 (22)	16.8 (29)	2.0 (41)	19.0 (7)	27.7 (42)
▲ S&P 500	-4.4 (40)	21.8 (53)	12.0 (31)	1.4 (42)	13.7 (42)	32.4 (58)	16.0 (41)	2.1 (40)	15.1 (37)	26.5 (48)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending September 30, 2019

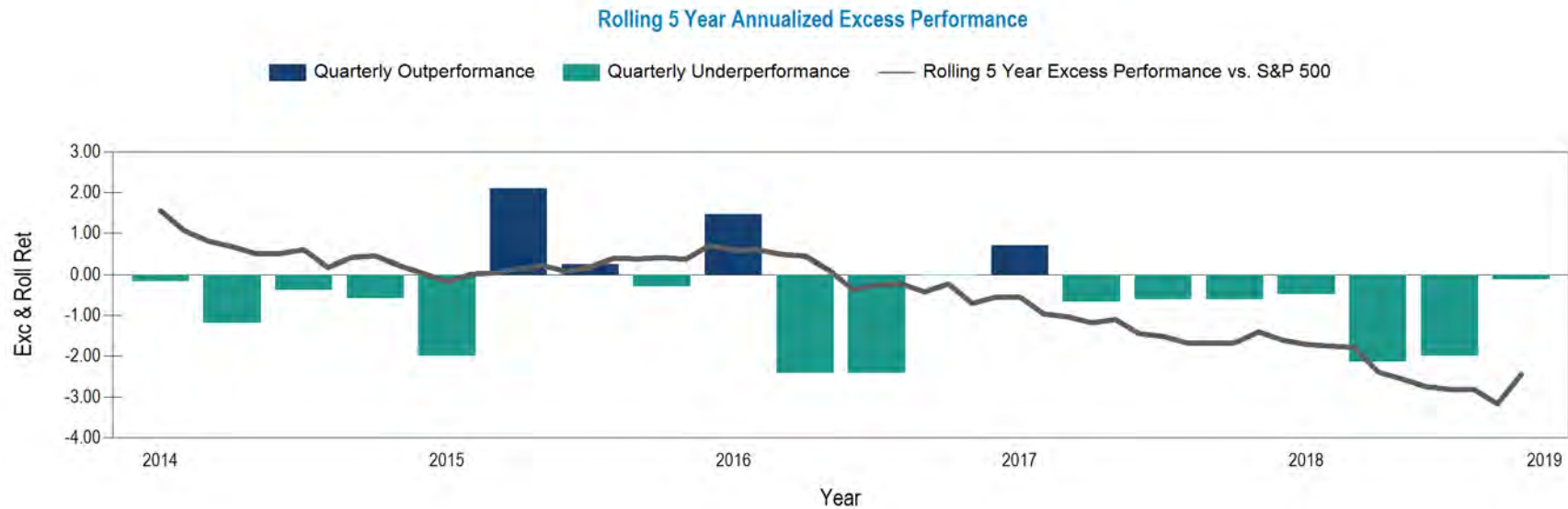


- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending September 30, 2019



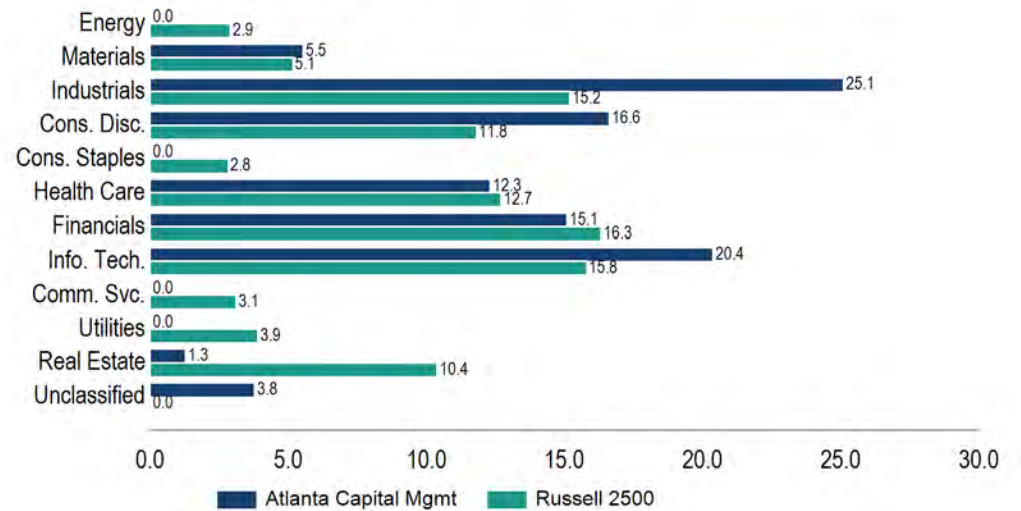
- PIMCO RAE Fundamental PLUS Instl
- ◆ S&P 500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Large Cap Core Equity Gross



Characteristics

	Portfolio	Russell 2500
Number of Holdings	54	2,491
Weighted Avg. Market Cap. (\$B)	9.49	5.11
Median Market Cap. (\$B)	8.22	1.06
Price To Earnings	26.98	19.40
Price To Book	4.29	2.67
Price To Sales	1.78	1.33
Return on Equity (%)	21.94	7.01
Yield (%)	0.78	1.66
Beta	0.90	1.00

Sector Allocation (%) vs Russell 2500



*Unclassified includes Cash

Top Holdings
 Ending Period Weight

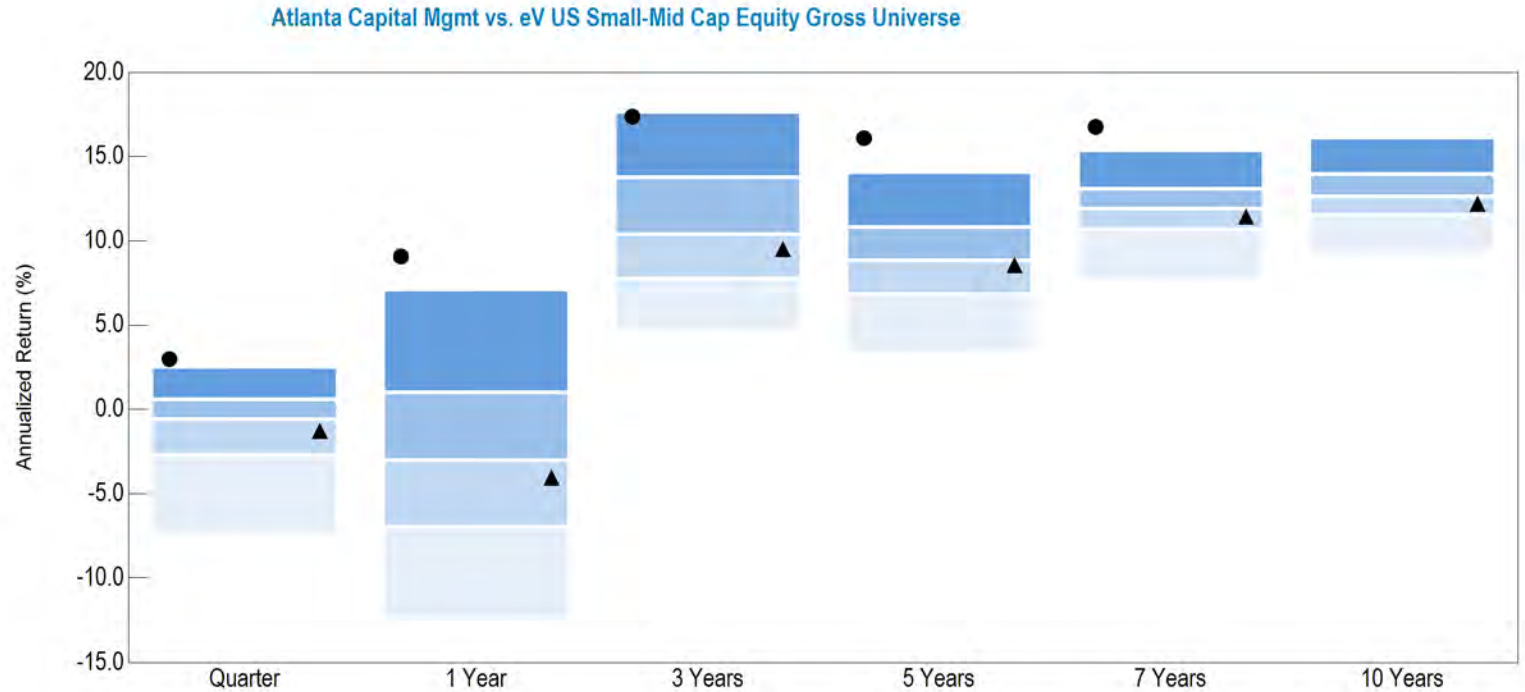
W R BERKLEY	4.81%
ARAMARK	4.67%
TRANSUNION	4.27%
SERVICEMASTER GLB.HDG.	3.99%
TELEFLEX	3.97%
JPMORGAN FEDERAL MMKT - AGENCY SHR FUND 355 MONTHLY VARIABLE 12312049	3.78%
WEX	2.97%
HENRY SCHEIN	2.87%
LENNOX INTL.	2.82%
APTARGROUP	2.73%
Total	36.87%

Top Contributors

	Avg Wgt	Return	Contribution
ARAMARK	3.94	21.21	0.83
HUNT JB TRANSPORT SVS.	2.51	21.36	0.54
W R BERKLEY	4.79	9.72	0.47
TRANSUNION	4.21	10.44	0.44
MANHATTAN ASSOCS.	2.58	16.36	0.42
CDW	3.50	11.32	0.40
SERVICEMASTER GLB.HDG.	3.85	7.31	0.28
RPM INTERNATIONAL	1.35	13.24	0.18
BLACKBAUD	1.99	8.34	0.17
ANSYS	2.04	8.08	0.16

Bottom Contributors

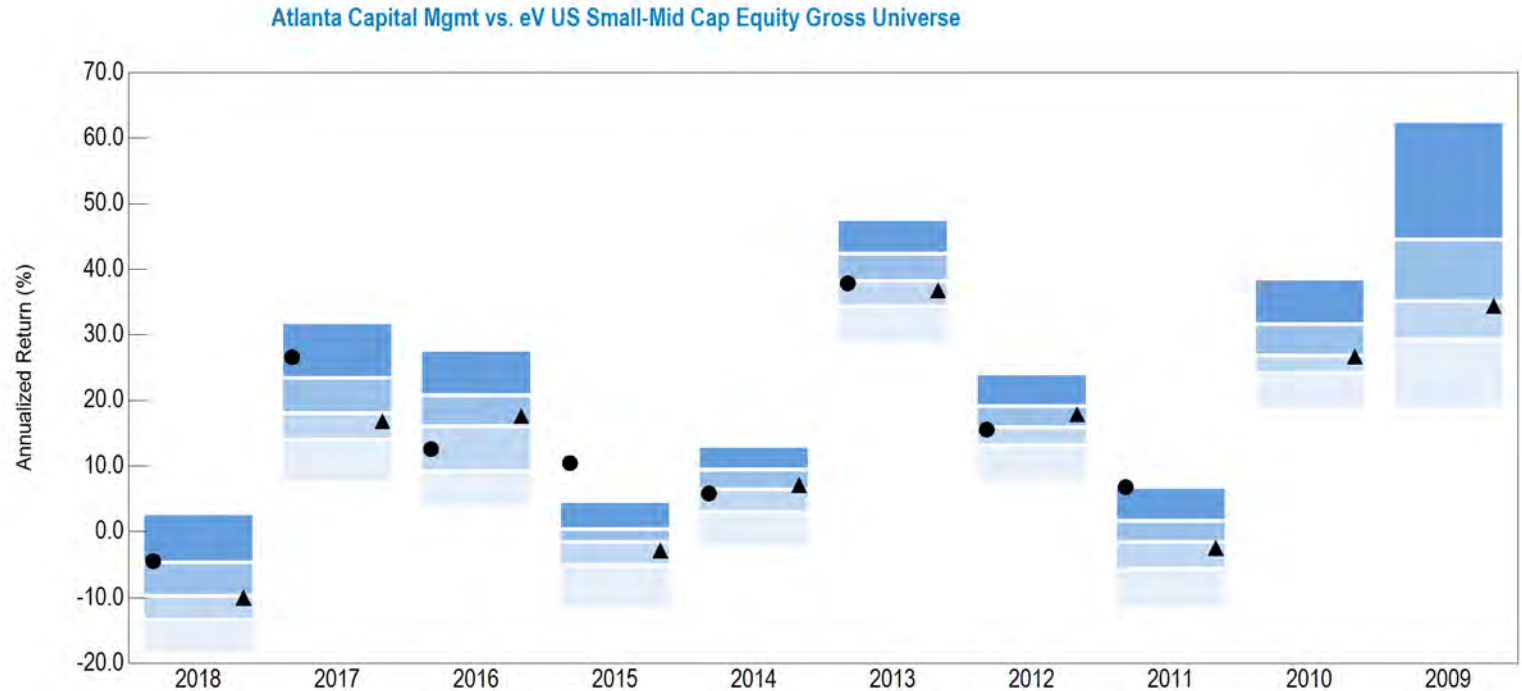
	Avg Wgt	Return	Contribution
LENNOX INTL.	2.89	-11.37	-0.33
HENRY SCHEIN	2.51	-9.16	-0.23
GARTNER 'A'	1.63	-11.15	-0.18
COVETRUS	0.35	-51.39	-0.18
FACTSET RESEARCH SYS.	1.19	-14.99	-0.18
TRIMBLE	1.01	-13.97	-0.14
APTARGROUP	2.82	-4.46	-0.13
VARIAN MEDICAL SYSTEMS	0.99	-12.52	-0.12
DENTSPLY SIRONA	1.37	-8.48	-0.12
GRACO	1.10	-7.96	-0.09



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.5		7.1		17.6		14.1		15.3		16.1	
25th Percentile	0.6		1.0		13.8		10.8		13.1		14.0	
Median	-0.6		-3.0		10.4		8.9		11.9		12.7	
75th Percentile	-2.7		-7.0		7.8		6.9		10.7		11.6	
95th Percentile	-7.4		-12.3		4.7		3.4		7.7		9.3	
# of Portfolios	225		224		208		189		171		144	
● Atlanta Capital Mgmt	3.0	(4)	9.1	(4)	17.4	(6)	16.1	(1)	16.8	(2)	--	(--)
▲ Russell 2500	-1.3	(59)	-4.0	(57)	9.5	(58)	8.6	(55)	11.4	(63)	12.2	(61)

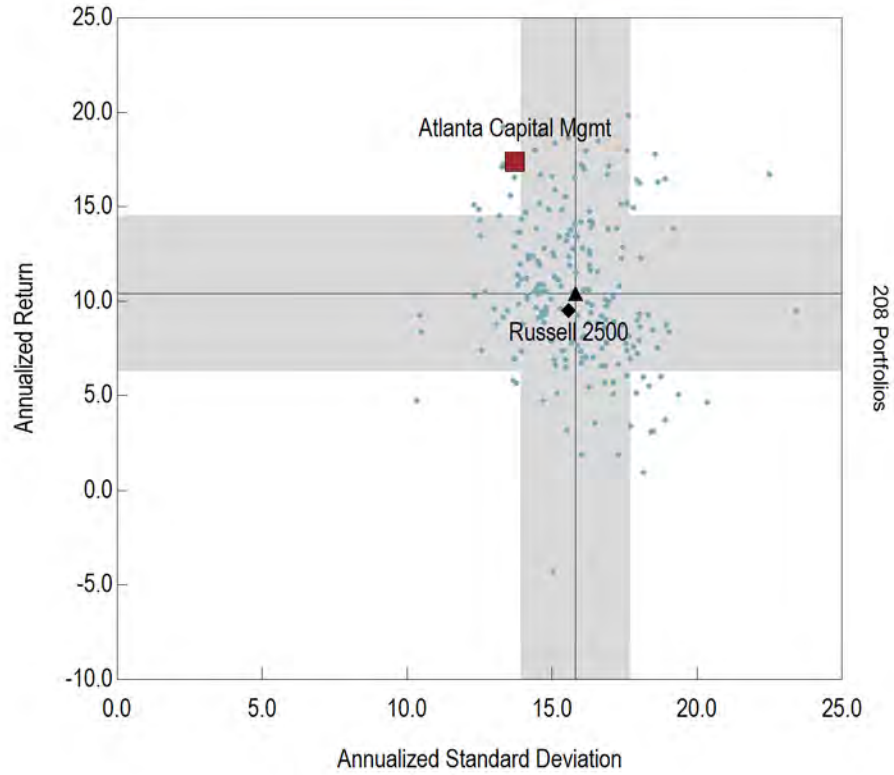
Atlanta Capital Mgmt
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2019



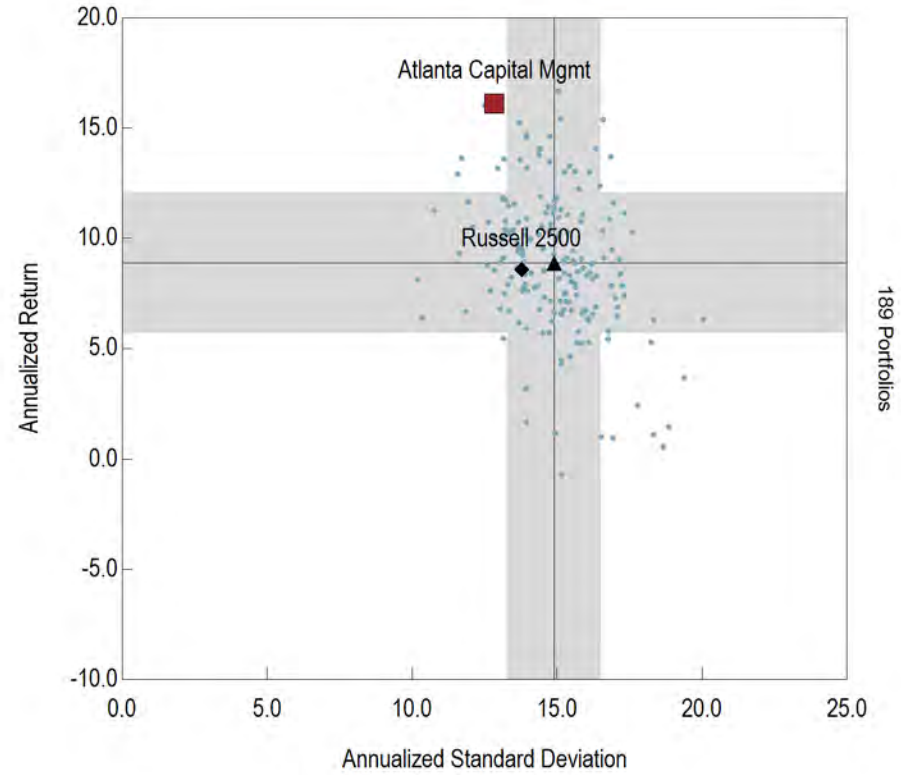
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Return (Rank)										
5th Percentile	2.8	31.9	27.6	4.6	13.0	47.6	24.1	6.8	38.5	62.6
25th Percentile	-4.6	23.5	20.8	0.4	9.6	42.5	19.2	1.7	31.7	44.6
Median	-9.6	18.1	16.1	-1.5	6.5	38.2	16.0	-1.5	26.9	35.2
75th Percentile	-13.3	14.1	9.2	-5.0	3.1	34.4	13.3	-5.6	24.3	29.4
95th Percentile	-18.5	7.5	3.8	-11.6	-2.3	28.7	7.8	-11.6	18.7	18.7
# of Portfolios	236	233	238	215	210	210	216	211	210	226
● Atlanta Capital Mgmt	-4.5 (25)	26.6 (15)	12.6 (62)	10.4 (1)	5.8 (56)	37.8 (52)	15.5 (55)	6.8 (5)	-- (--)	-- (--)
▲ Russell 2500	-10.0 (53)	16.8 (61)	17.6 (38)	-2.9 (64)	7.1 (46)	36.8 (58)	17.9 (36)	-2.5 (56)	26.7 (52)	34.4 (55)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending September 30, 2019

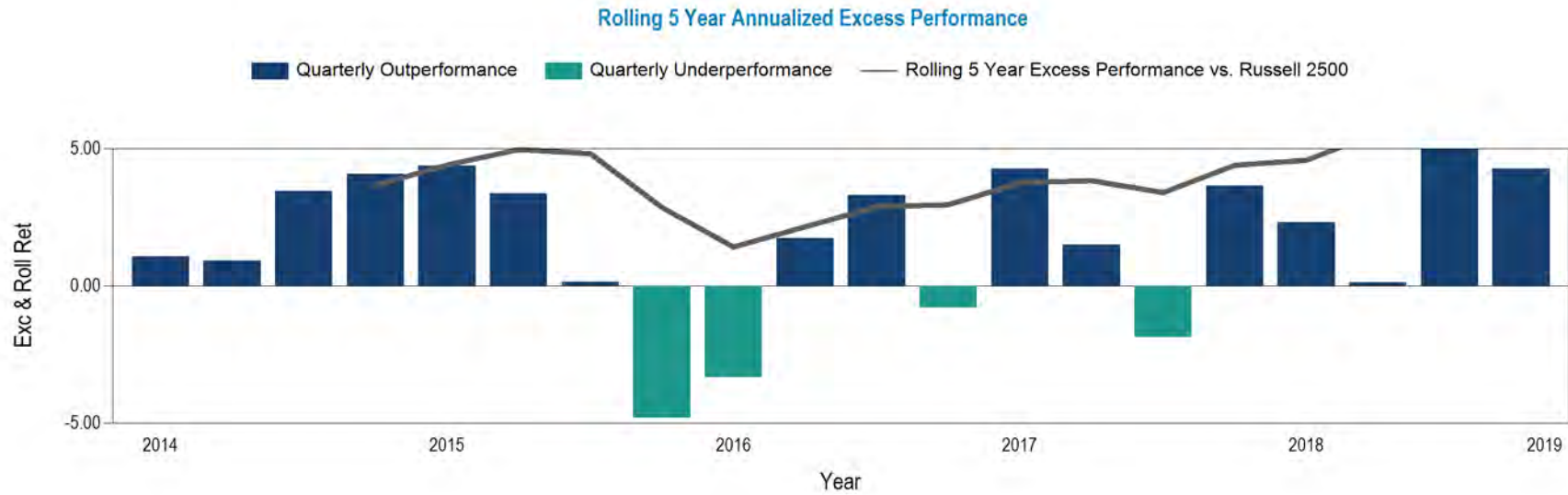
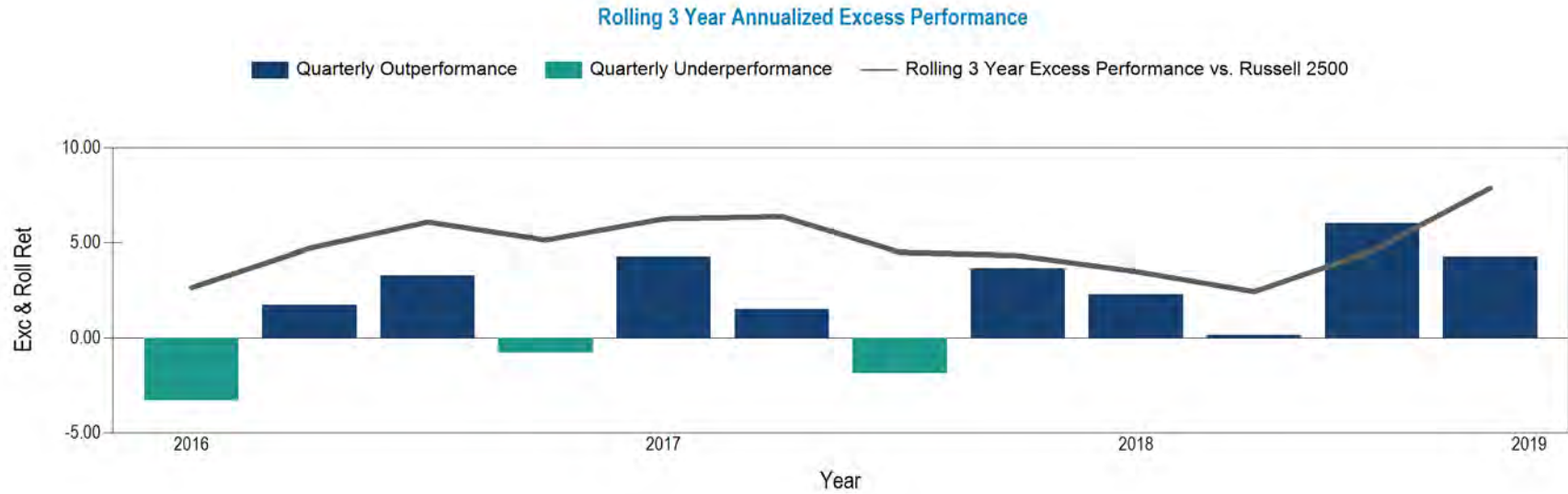


- Atlanta Capital Mgmt
- ◆ Russell 2500
- ▲ Universe Median
- 68% Confidence Interval
- eV US Small-Mid Cap Equity Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending September 30, 2019



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

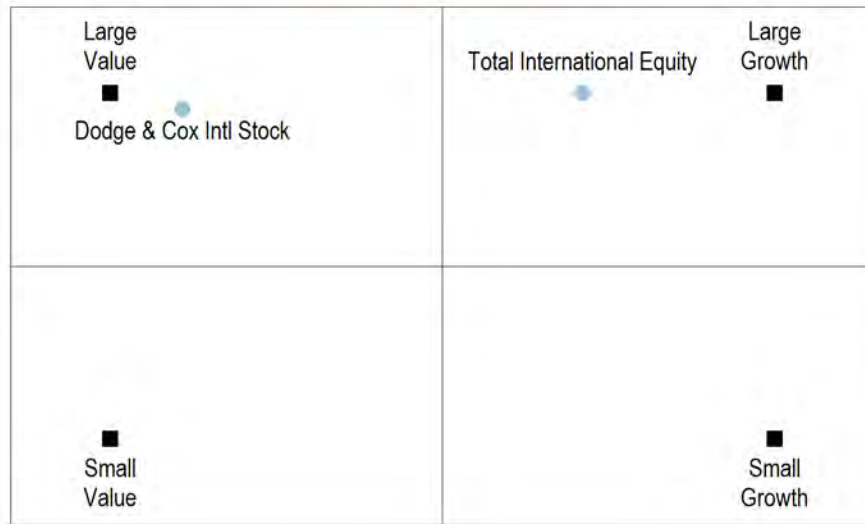


Total International Equity
Asset Class Overview (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	305,679,324	-0.8	3.5	8.6	4.6	7.4	-12.2	26.6	2.2	-4.3	2.1
MSCI ACWI ex USA Gross		-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4
InvMetrics Public DB ex-US Eq Gross Rank		7	4	6	23	2	9	81	82	68	1
Dodge & Cox Intl Stock	141,733,800	-1.5	-2.1	5.9	1.3	5.6	-17.5	24.7	9.0	-10.8	0.6
MSCI EAFE Gross		-1.0	-0.8	7.0	3.8	5.4	-13.4	25.6	1.5	-0.4	-4.5
eV All EAFE Equity Gross Rank		62	43	61	97	73	73	74	3	99	14
WCM International Growth	163,945,524	-0.3	9.2	--	--	--	-6.7	--	--	--	--
MSCI ACWI ex USA Gross		-1.7	-0.7	--	--	--	-13.8	--	--	--	--
eV ACWI ex-US All Cap Growth Eq Gross Rank		15	1	--	--	--	1	--	--	--	--

EAFE Effective Style Map
3 Years Ending September 30, 2019



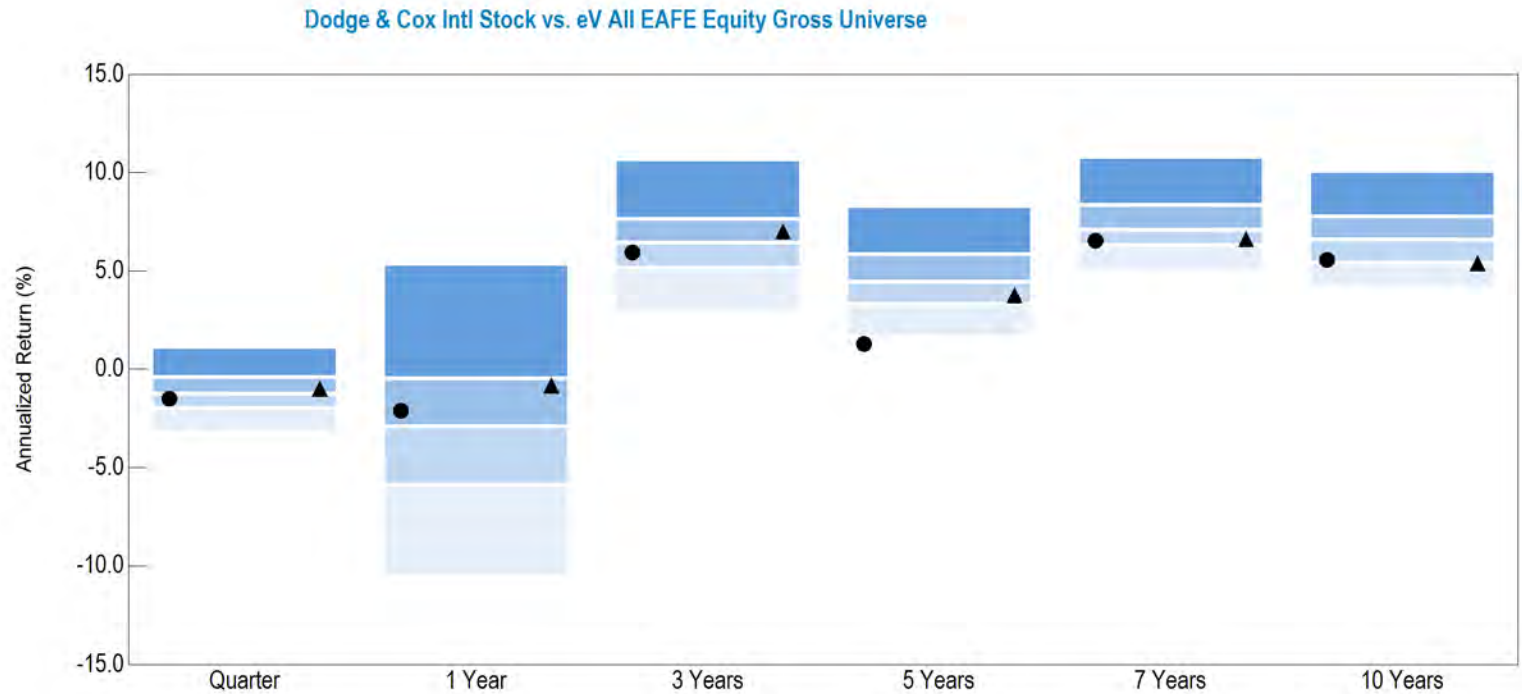
EAFE Effective Style Map
5 Years Ending September 30, 2019



Total International Equity
 Asset Class Overview (Net of Fees)

Period Ending: September 30, 2019

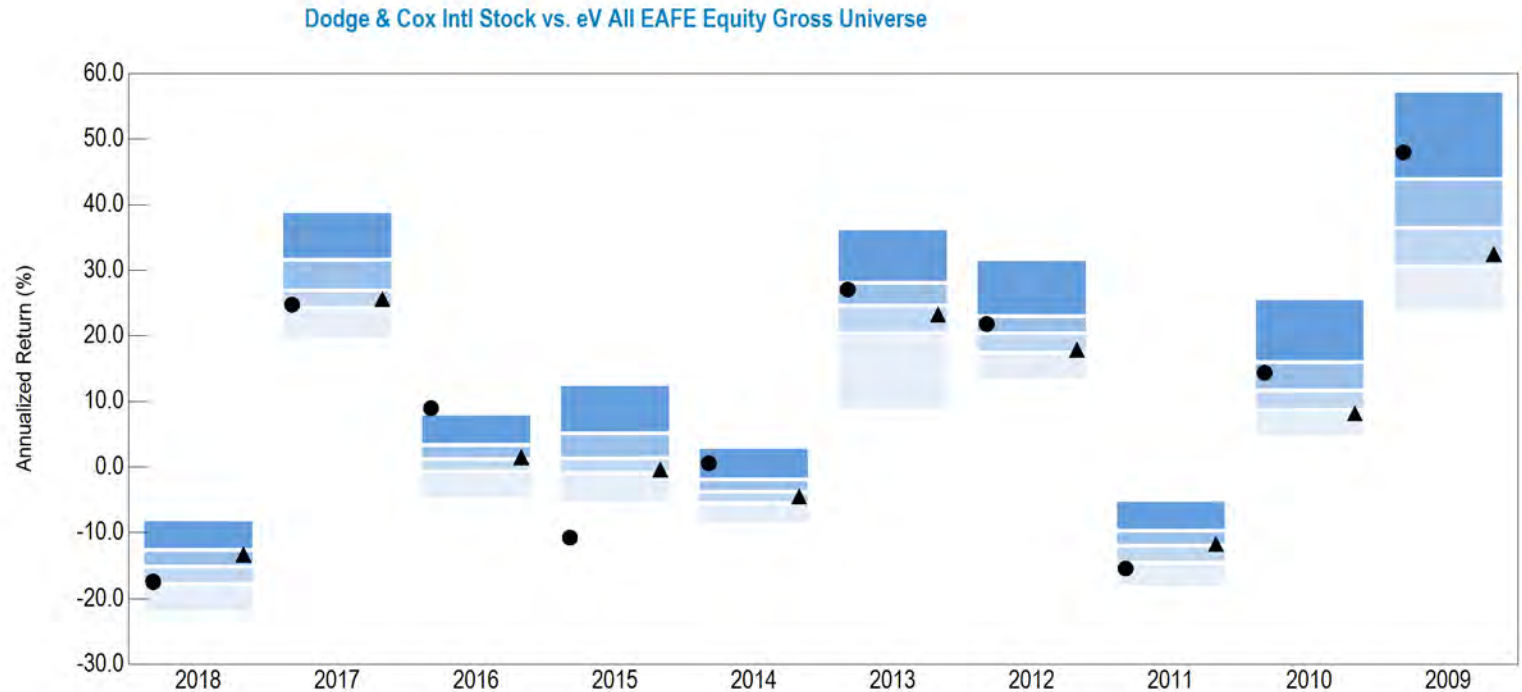
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total International Equity	305,679,324	-1.0	2.8	7.9	3.9	6.8	-12.8	25.8	1.6	-4.9	1.4
<i>MSCI ACWI ex USA Gross</i>		-1.7	-0.7	6.8	3.4	4.9	-13.8	27.8	5.0	-5.3	-3.4
Dodge & Cox Intl Stock	141,733,800	-1.7	-2.7	5.3	0.6	4.9	-18.0	23.9	8.3	-11.4	0.1
<i>MSCI EAFE Gross</i>		-1.0	-0.8	7.0	3.8	5.4	-13.4	25.6	1.5	-0.4	-4.5
WCM International Growth	163,945,524	-0.4	8.5	--	--	--	-7.4	--	--	--	--
<i>MSCI ACWI ex USA Gross</i>		-1.7	-0.7	--	--	--	-13.8	--	--	--	--



	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.1		5.3		10.6		8.3		10.8		10.1	
25th Percentile	-0.4		-0.4		7.7		5.9		8.4		7.8	
Median	-1.2		-2.9		6.5		4.5		7.1		6.6	
75th Percentile	-1.9		-5.9		5.2		3.4		6.3		5.4	
95th Percentile	-3.1		-10.5		3.0		1.6		5.0		4.2	
# of Portfolios	387		387		369		328		295		263	
● Dodge & Cox Intl Stock	-1.5	(62)	-2.1	(43)	5.9	(61)	1.3	(97)	6.5	(68)	5.6	(73)
▲ MSCI EAFE Gross	-1.0	(43)	-0.8	(28)	7.0	(36)	3.8	(65)	6.6	(66)	5.4	(78)

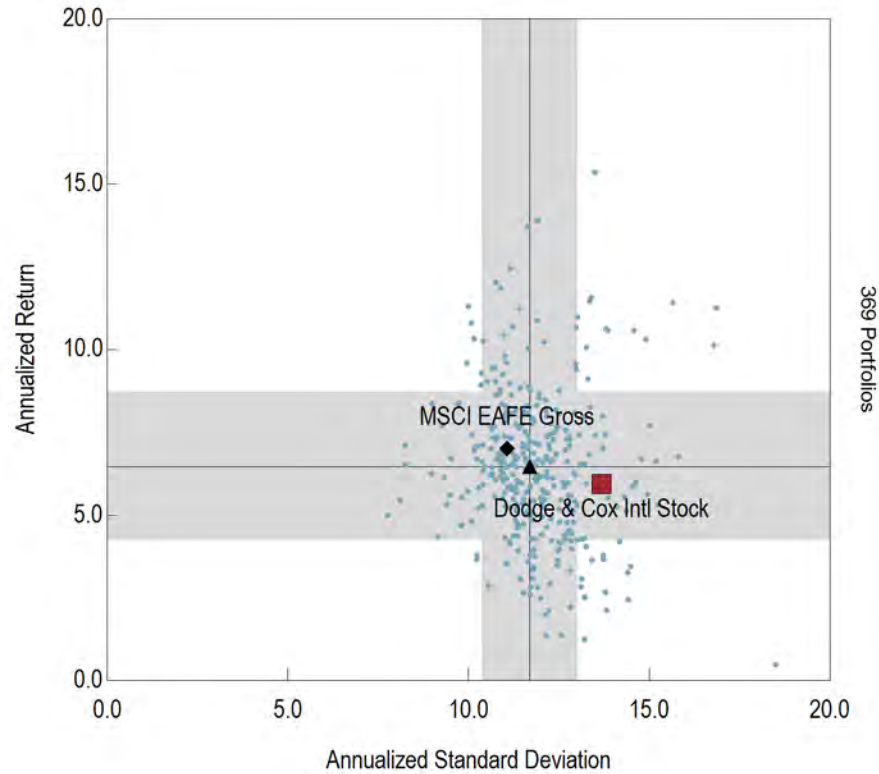
Dodge & Cox Intl Stock
 Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2019



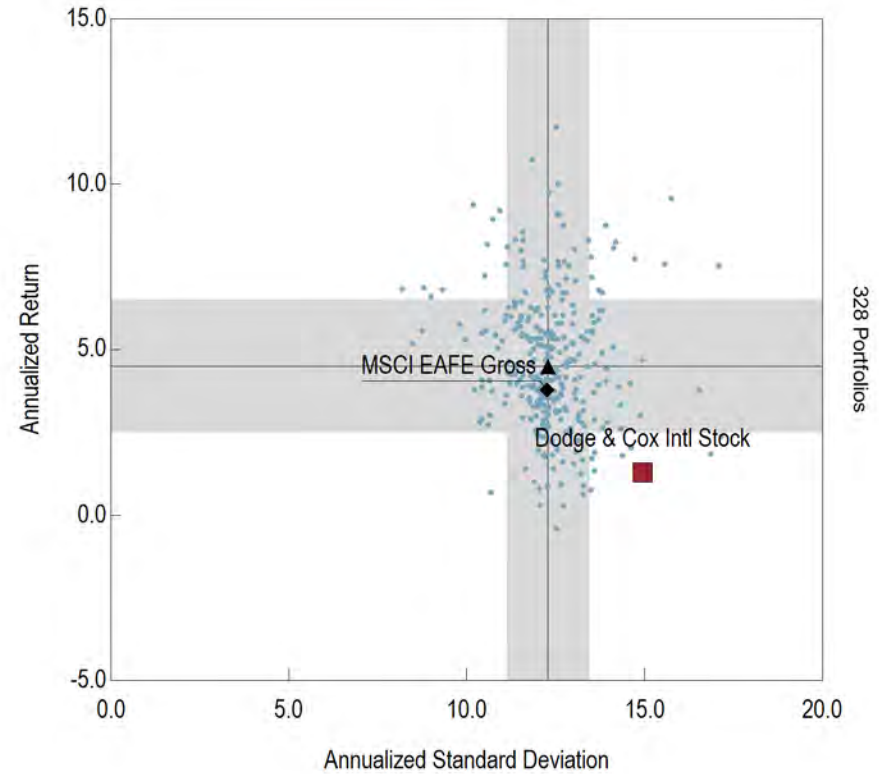
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Return (Rank)										
5th Percentile	-8.0	39.0	8.1	12.6	3.0	36.3	31.7	-5.1	25.7	57.3
25th Percentile	-12.6	31.6	3.4	5.2	-1.9	28.1	23.1	-9.7	16.1	44.0
Median	-15.1	27.0	1.3	1.4	-3.7	24.6	20.4	-12.0	11.7	36.5
75th Percentile	-17.8	24.3	-0.6	-0.9	-5.4	20.5	17.5	-14.5	8.7	30.7
95th Percentile	-22.2	19.7	-4.9	-5.4	-8.6	8.6	13.3	-18.2	4.6	23.7
# of Portfolios	391	370	350	325	314	284	263	278	352	455
● Dodge & Cox Intl Stock	-17.5 (73)	24.7 (74)	9.0 (3)	-10.8 (99)	0.6 (14)	27.1 (32)	21.8 (37)	-15.5 (82)	14.4 (36)	48.0 (17)
▲ MSCI EAFE Gross	-13.4 (35)	25.6 (63)	1.5 (47)	-0.4 (66)	-4.5 (60)	23.3 (60)	17.9 (72)	-11.7 (47)	8.2 (78)	32.5 (67)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending September 30, 2019



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

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending September 30, 2019



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



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

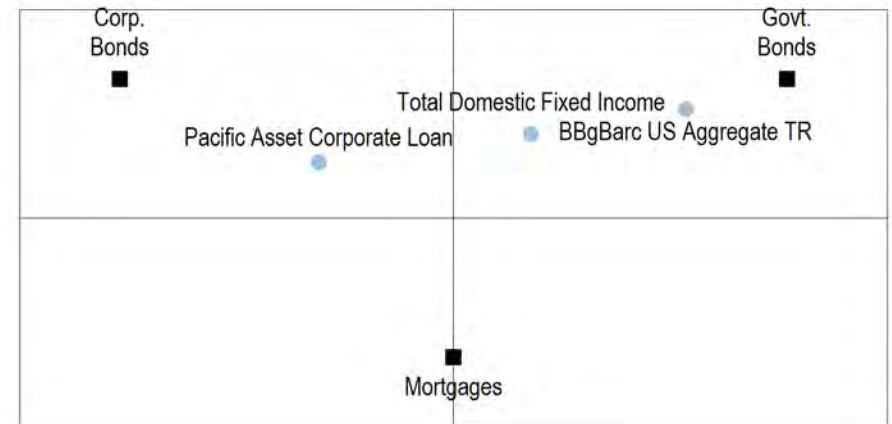
Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Fixed Income	291,851,041	2.1	8.6	3.9	4.0	4.6	0.4	4.3	4.5	1.1	4.7
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	2.9	3.4	3.7	0.0	3.5	2.6	0.6	6.0
<i>InvMetrics Public DB US Fix Inc Gross Rank</i>		31	45	23	27	29	55	50	49	17	68
BlackRock Core Bond	109,098,553	2.4	11.3	--	--	--	0.3	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	--	--	--	0.0	--	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		44	14	--	--	--	27	--	--	--	--
Dodge & Cox Income Fund	106,419,003	2.2	9.6	--	--	--	0.1	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	--	--	--	0.0	--	--	--	--
<i>eV US Core Fixed Inc Gross Rank</i>		78	89	--	--	--	43	--	--	--	--
Pacific Asset Corporate Loan	76,333,486	1.5	3.9	5.3	4.8	--	1.0	4.9	9.2	2.5	--
<i>S&P/LSTA Leveraged Loan Index</i>		1.0	3.1	4.5	4.0	--	0.4	4.1	10.2	-0.7	--
<i>eV US Float-Rate Bank Loan Fixed Inc Gross Rank</i>		24	32	6	12	--	29	26	51	9	--

Fixed Income Effective Style Map
3 Years Ending September 30, 2019



Fixed Income Effective Style Map
5 Years Ending September 30, 2019



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

Period Ending: September 30, 2019

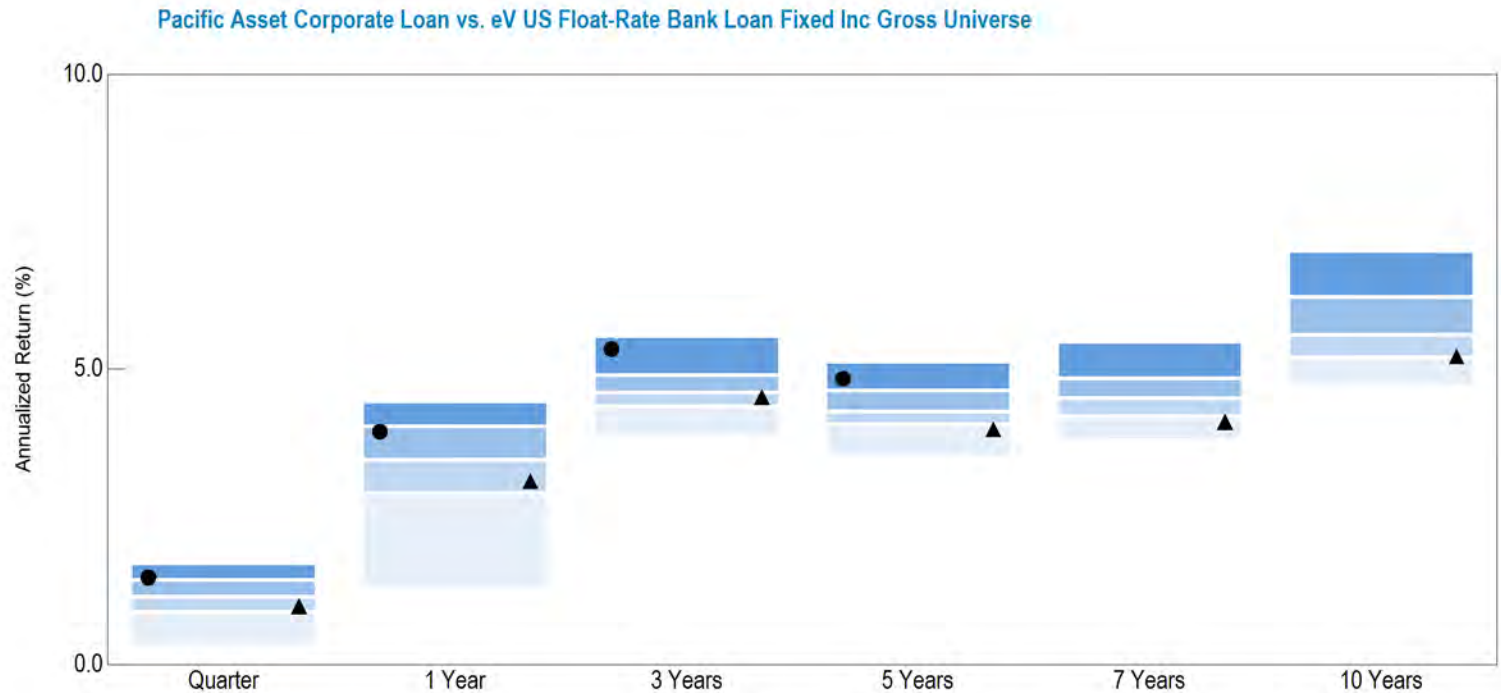
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Domestic Fixed Income	291,851,041	2.0	8.2	3.5	3.7	4.3	0.0	3.9	4.2	0.9	4.4
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	2.9	3.4	3.7	0.0	3.5	2.6	0.6	6.0
BlackRock Core Bond	109,098,553	2.3	11.0	--	--	--	0.1	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	--	--	--	0.0	--	--	--	--
Dodge & Cox Income Fund	106,419,003	2.1	9.1	--	--	--	-0.3	--	--	--	--
<i>BBgBarc US Aggregate TR</i>		2.3	10.3	--	--	--	0.0	--	--	--	--
Pacific Asset Corporate Loan	76,333,486	1.4	3.6	5.0	4.5	--	0.7	4.6	8.8	2.1	--
<i>S&P/LSTA Leveraged Loan Index</i>		1.0	3.1	4.5	4.0	--	0.4	4.1	10.2	-0.7	--

Correlation Matrix
Last 1 Year

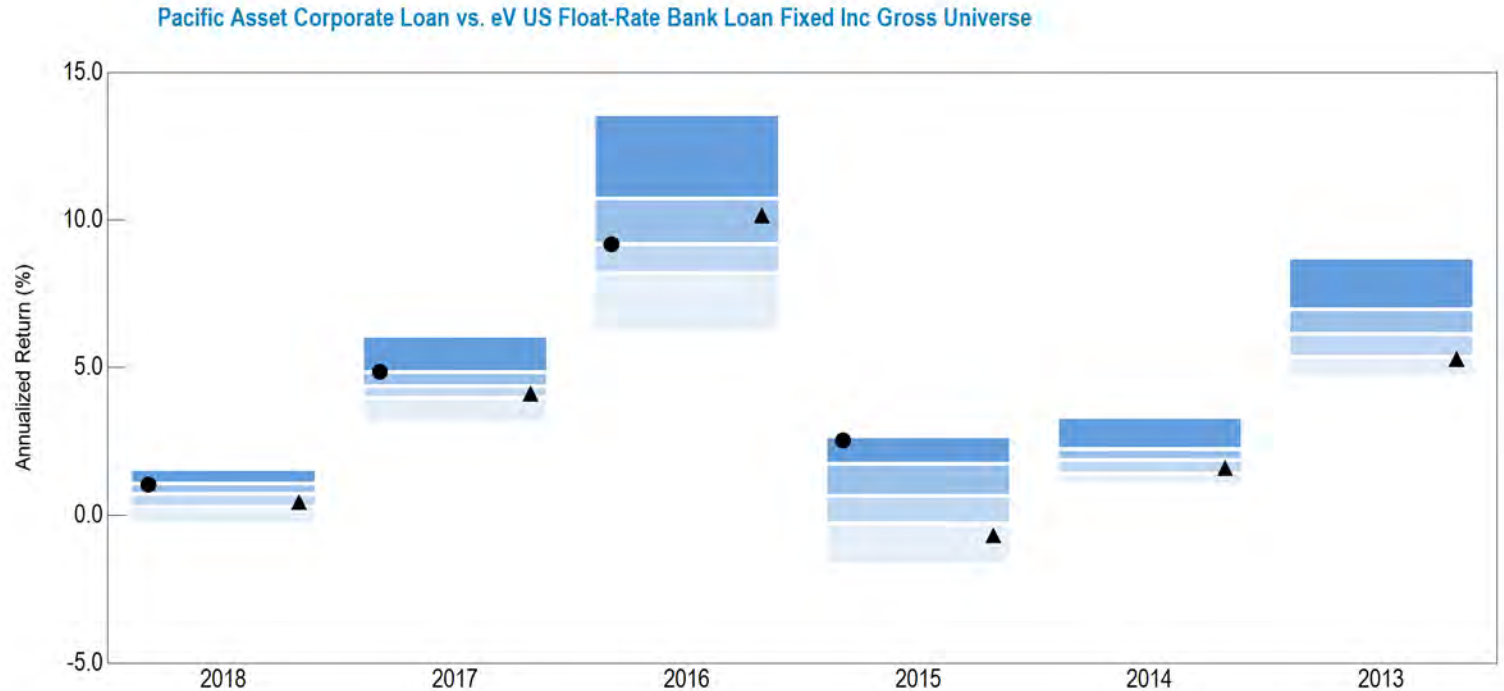
	Total Domestic Fixed Income	BlackRock Core Bond	Dodge & Cox Income Fund	Pacific Asset Corporate Loan	BBgBarc US Aggregate TR
Total Domestic Fixed Income	1.00	--	--	--	--
BlackRock Core Bond	0.98	1.00	--	--	--
Dodge & Cox Income Fund	1.00	0.98	1.00	--	--
Pacific Asset Corporate Loan	0.99	0.95	0.99	1.00	--
BBgBarc US Aggregate TR	0.93	0.98	0.93	0.89	1.00

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

Period Ending: September 30, 2019

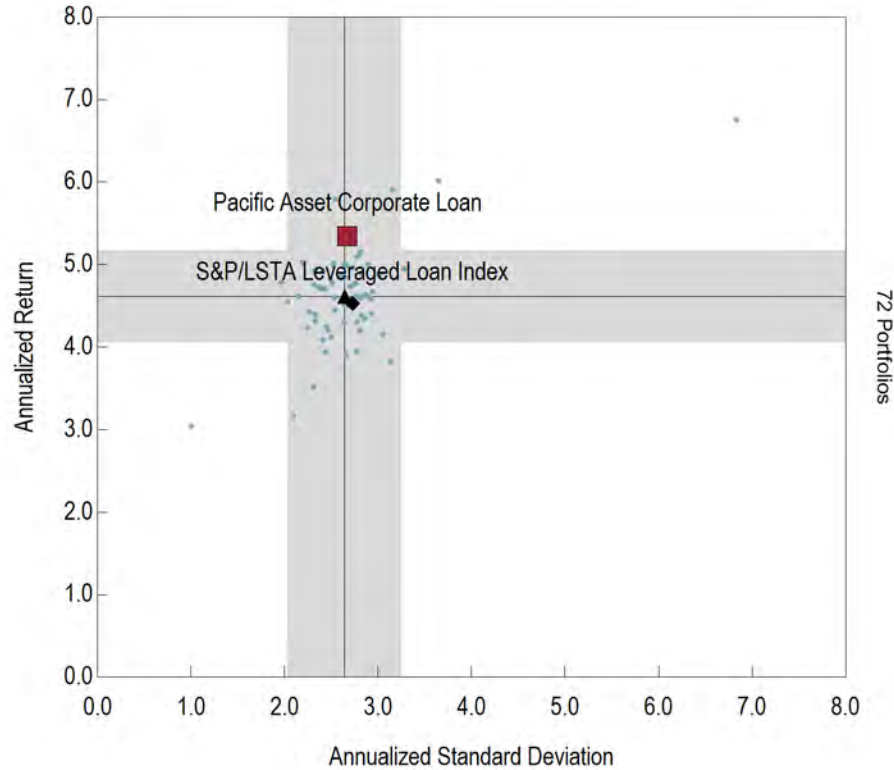


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	1.7		4.5		5.6		5.1		5.5		7.0	
25th Percentile	1.4		4.0		4.9		4.6		4.9		6.2	
Median	1.2		3.5		4.6		4.3		4.5		5.6	
75th Percentile	0.9		2.9		4.4		4.1		4.2		5.2	
95th Percentile	0.3		1.3		3.9		3.5		3.8		4.7	
# of Portfolios	74		74		72		71		63		48	
● Pacific Asset Corporate Loan	1.5	(24)	3.9	(32)	5.3	(6)	4.8	(12)	--	(--)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	1.0	(70)	3.1	(68)	4.5	(66)	4.0	(83)	4.1	(83)	5.2	(75)



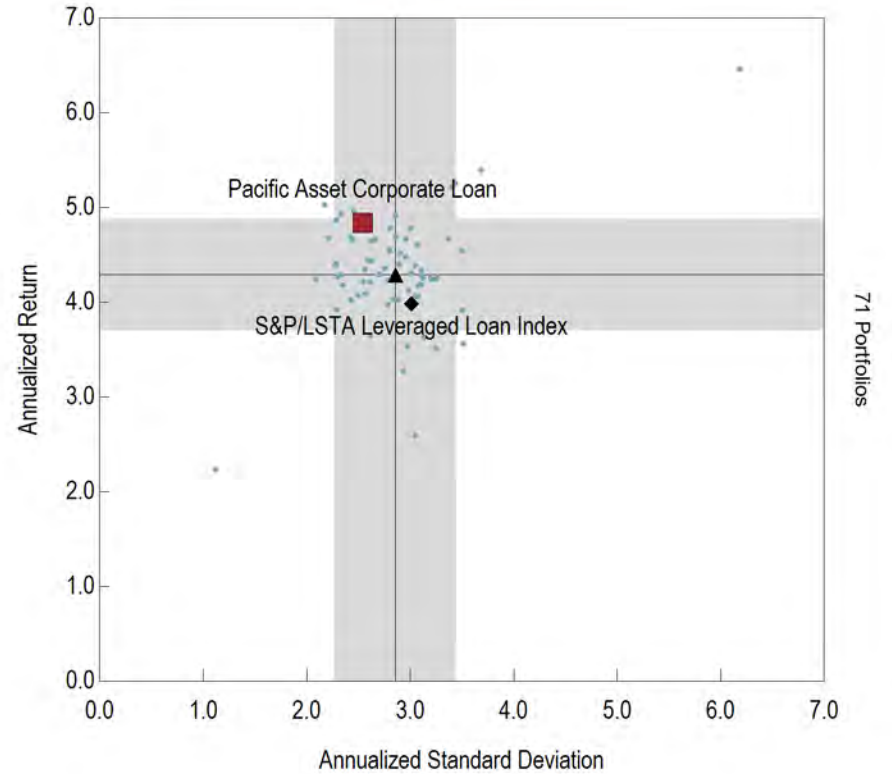
	2018		2017		2016		2015		2014		2013	
5th Percentile	1.6		6.1		13.6		2.7		3.3		8.7	
25th Percentile	1.1		4.9		10.7		1.8		2.3		7.0	
Median	0.7		4.4		9.2		0.7		1.9		6.2	
75th Percentile	0.3		4.0		8.2		-0.3		1.4		5.4	
95th Percentile	-0.3		3.1		6.2		-1.7		1.1		4.7	
# of Portfolios	76		75		69		54		48		53	
● Pacific Asset Corporate Loan	1.0	(29)	4.9	(26)	9.2	(51)	2.5	(9)	--	(--)	--	(--)
▲ S&P/LSTA Leveraged Loan Index	0.4	(68)	4.1	(71)	10.2	(35)	-0.7	(82)	1.6	(68)	5.3	(79)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending September 30, 2019



- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
 5 Years Ending September 30, 2019



- Pacific Asset Corporate Loan
- ◆ S&P/LSTA Leveraged Loan Index
- ▲ Universe Median
- 68% Confidence Interval
- eV US Float-Rate Bank Loan Fixed Inc Gross



Total Global Fixed
Asset Class Overview (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Global Fixed	136,684,605	-2.6	3.3	1.1	-0.2	2.3	-6.6	14.4	5.8	-11.8	-2.2
<i>FTSE World Govt Bond Index</i>		0.8	8.1	1.2	1.8	1.7	-0.8	7.5	1.6	-3.6	-0.5
<i>InvMetrics Public DB Gbl Fix Inc Gross Rank</i>		--	--	--	--	--	99	29	67	95	93
Brandywine Global Fixed Income	65,667,779	-2.7	-1.1	0.5	0.0	2.8	-4.1	12.5	2.2	-9.3	2.9
<i>FTSE WGBI ex US TR</i>		-0.1	6.8	0.6	1.3	1.1	-1.8	10.3	1.8	-5.5	-2.7
<i>eV Global Fixed Inc Unhedged Gross Rank</i>		98	96	97	96	74	83	9	71	96	43
Ashmore EM Blended Debt Fund	71,016,826	-2.6	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		0.0	--	--	--	--	--	--	--	--	--
<i>eV All Emg Mkts Fixed Inc Gross Rank</i>		93	--	--	--	--	--	--	--	--	--

Total Global Fixed
Asset Class Overview (Net of Fees)

Period Ending: September 30, 2019

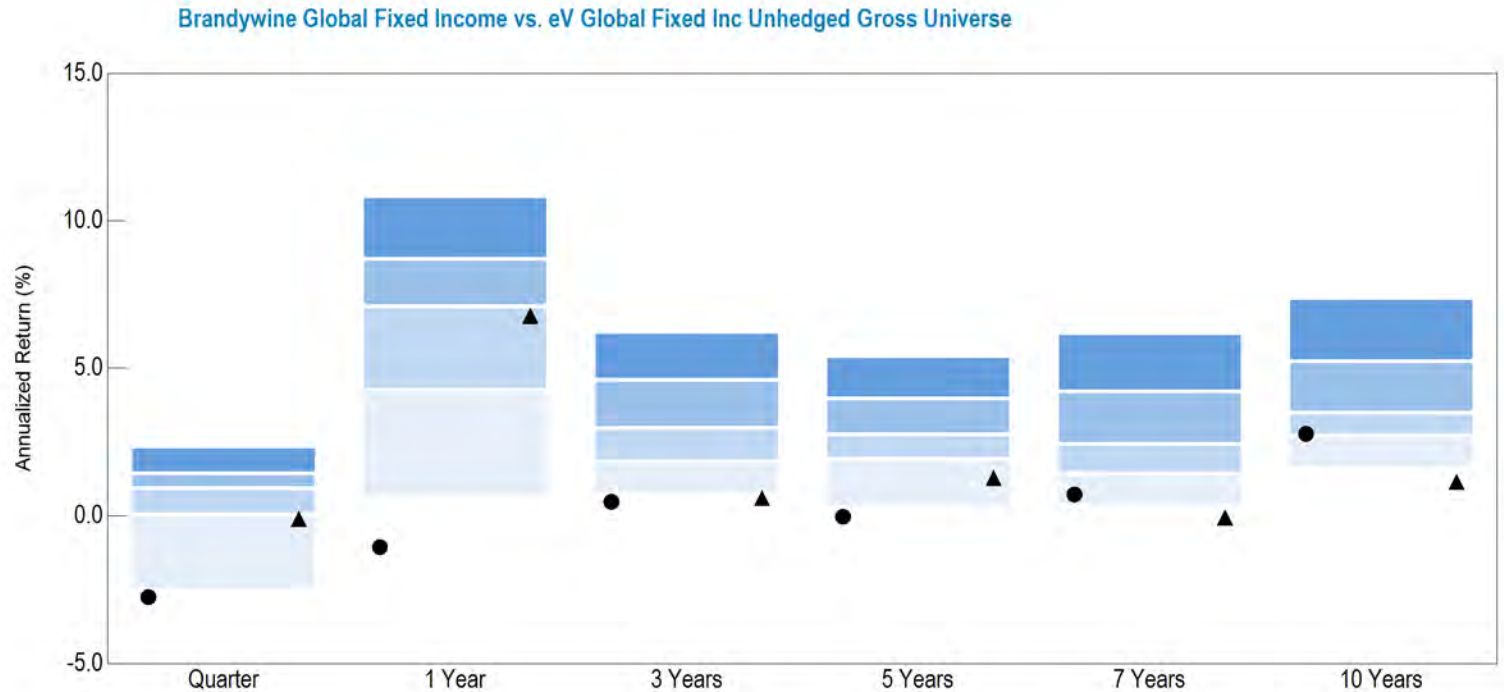
	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Global Fixed	136,684,605	-2.8	2.6	0.5	-0.9	1.6	-7.2	13.7	5.1	-12.4	-2.8
<i>FTSE World Govt Bond Index</i>		0.8	8.1	1.2	1.8	1.7	-0.8	7.5	1.6	-3.6	-0.5
Brandywine Global Fixed Income	65,667,779	-2.8	-1.5	0.0	-0.5	2.3	-4.5	12.0	1.7	-9.7	2.4
<i>FTSE WGBI ex US TR</i>		-0.1	6.8	0.6	1.3	1.1	-1.8	10.3	1.8	-5.5	-2.7
Ashmore EM Blended Debt Fund	71,016,826	-2.8	--	--	--	--	--	--	--	--	--
<i>50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMI+</i>		0.0	--	--	--	--	--	--	--	--	--

Correlation Matrix
Last 1 Year

	Total Global Fixed	Brandywine Global Fixed Income	Ashmore EM Blended Debt Fund	FTSE World Govt Bond Index
Total Global Fixed	1.00	--	--	--
Brandywine Global Fixed Income	0.97	1.00	--	--
Ashmore EM Blended Debt Fund	--	--	1.00	--
FTSE World Govt Bond Index	0.78	0.73	--	1.00

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

Period Ending: September 30, 2019

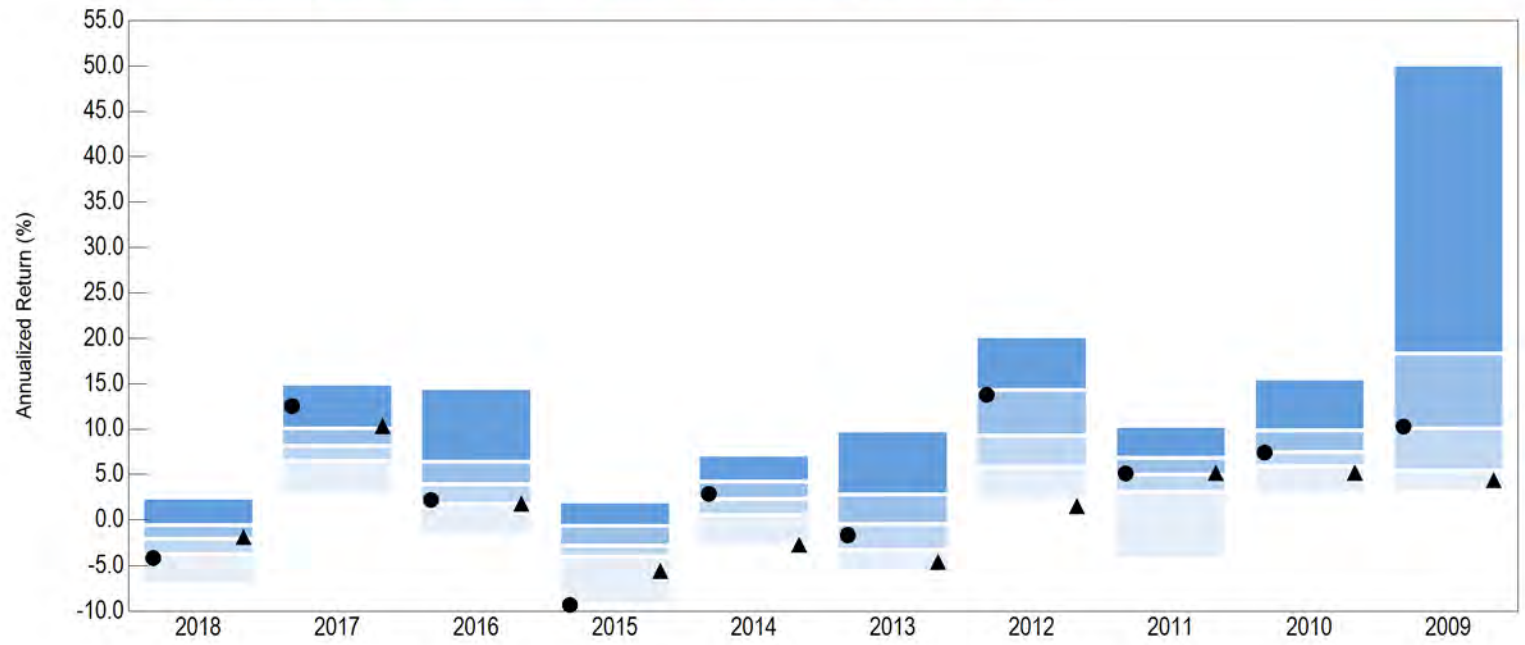


	Quarter		1 Year		3 Years		5 Years		7 Years		10 Years	
5th Percentile	2.3	10.8	6.2	5.4	6.2	7.4						
25th Percentile	1.4	8.7	4.6	4.0	4.2	5.2						
Median	1.0	7.1	3.0	2.8	2.5	3.5						
75th Percentile	0.1	4.3	1.9	2.0	1.4	2.7						
95th Percentile	-2.5	0.6	0.7	0.3	0.3	1.6						
# of Portfolios	225	225	213	194	166	118						
● Brandywine Global Fixed Income	-2.7	(98)	-1.1	(96)	0.5	(97)	0.0	(96)	0.7	(90)	2.8	(74)
▲ FTSE WGBI ex US TR	-0.1	(78)	6.8	(54)	0.6	(97)	1.3	(88)	-0.1	(98)	1.1	(97)

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

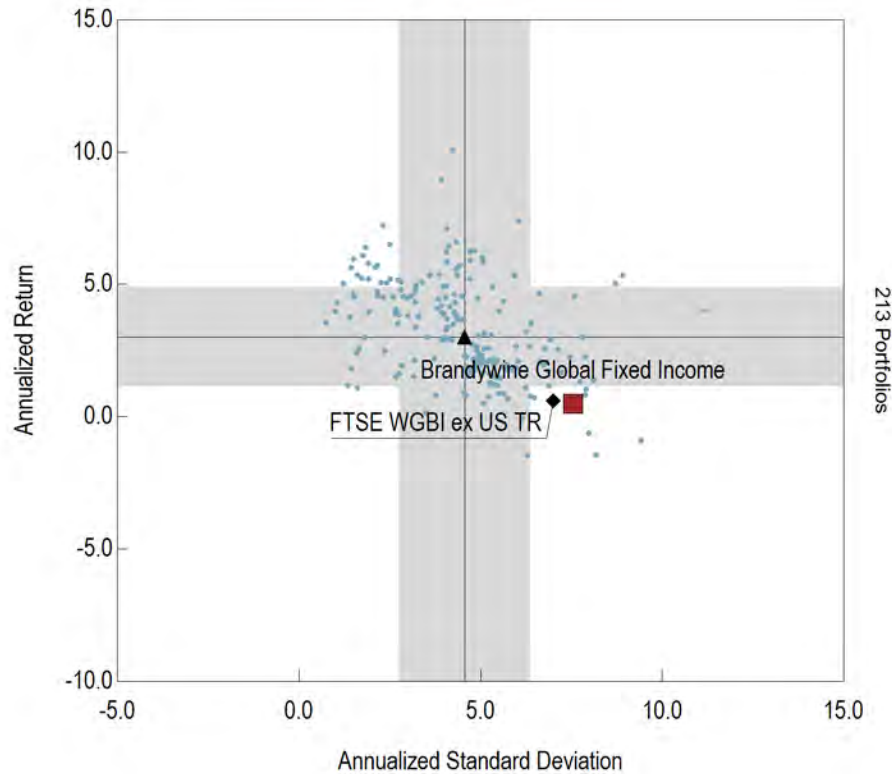
Period Ending: September 30, 2019

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

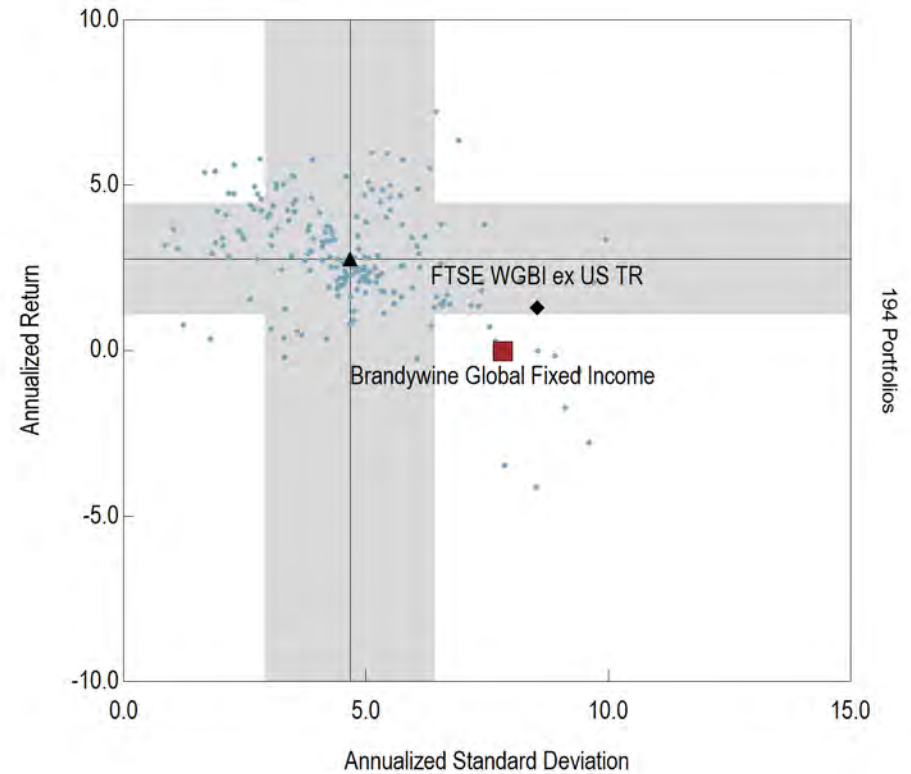


	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
5th Percentile	2.5	15.0	14.5	2.0	7.1	9.8	20.2	10.4	15.5	50.1
25th Percentile	-0.5	10.1	6.5	-0.6	4.2	2.8	14.3	6.9	9.9	18.4
Median	-2.0	8.2	4.0	-2.7	2.3	-0.4	9.4	5.0	7.5	10.1
75th Percentile	-3.7	6.5	1.8	-4.0	0.6	-3.2	5.9	3.2	6.0	5.4
95th Percentile	-7.0	3.0	-1.5	-9.2	-2.7	-5.6	2.2	-4.2	3.0	3.2
# of Portfolios	231	231	221	189	159	142	118	108	76	72
● Brandywine Global Fixed Income	-4.1 (83)	12.5 (9)	2.2 (71)	-9.3 (96)	2.9 (43)	-1.6 (59)	13.8 (30)	5.1 (49)	7.4 (52)	10.3 (49)
▲ FTSE WGBI ex US TR	-1.8 (48)	10.3 (21)	1.8 (75)	-5.5 (89)	-2.7 (95)	-4.6 (89)	1.5 (98)	5.2 (48)	5.2 (87)	4.4 (84)

Annualized Return vs. Annualized Standard Deviation
 3 Years Ending September 30, 2019

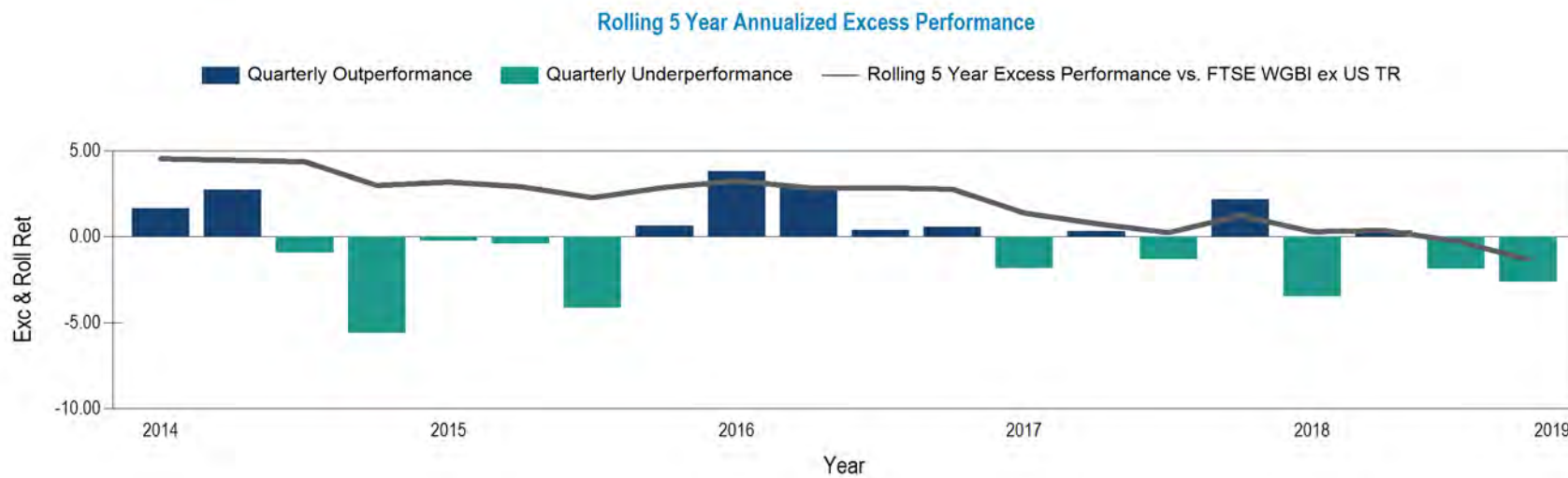


Annualized Return vs. Annualized Standard Deviation
 5 Years Ending September 30, 2019



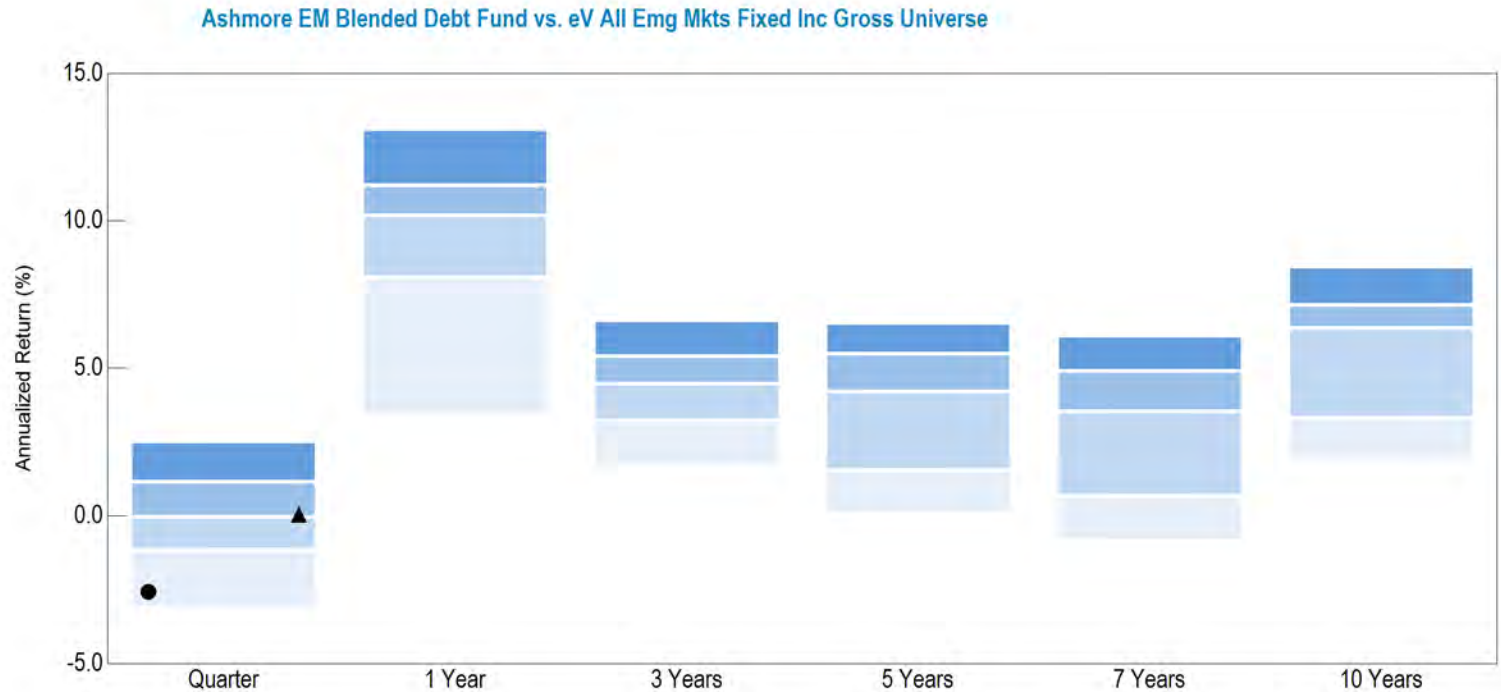
- Brandywine Global Fixed Income
- ◆ FTSE WGBI ex US TR
- ▲ Universe Median
- 68% Confidence Interval
- eV Global Fixed Inc Unhedged Gross

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



Ashmore EM Blended Debt Fund
 Cumulative Performance Comparison (Gross of Fees)

Period Ending: September 30, 2019



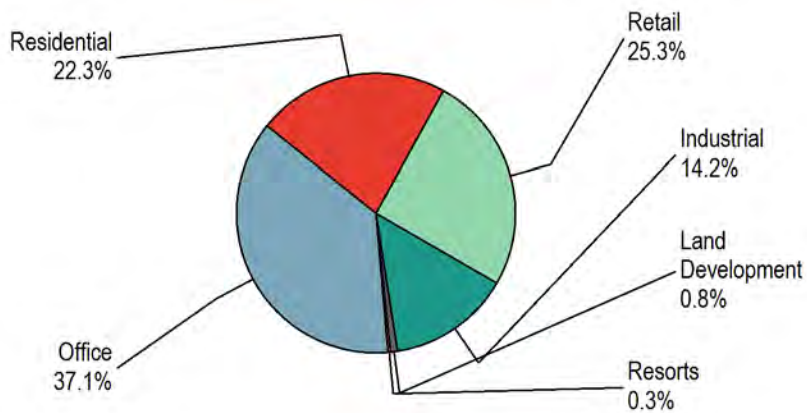
	Return (Rank)											
5th Percentile	2.5	13.1	6.6	6.5	6.1	8.4						
25th Percentile	1.2	11.2	5.4	5.5	4.9	7.2						
Median	0.0	10.2	4.5	4.2	3.6	6.4						
75th Percentile	-1.1	8.1	3.3	1.5	0.7	3.3						
95th Percentile	-3.1	3.4	1.7	0.1	-0.8	1.9						
# of Portfolios	262	260	250	222	180	97						
● Ashmore EM Blended Debt Fund	-2.6	(93)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)
▲ 50% JPM EMBI GD/25% JPM GBI EM GD/25%	0.0	(50)	--	(--)	--	(--)	--	(--)	--	(--)	--	(--)

Total Real Estate
Asset Class Overview (Gross of Fees)

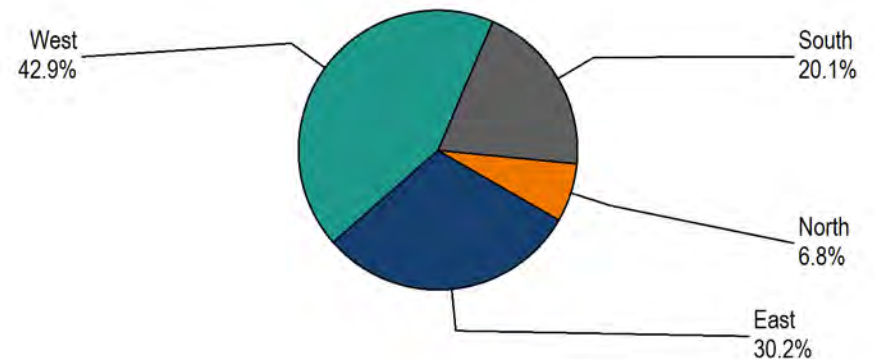
Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Real Estate	200,645,293	0.4	3.9	6.4	9.1	8.1	7.5	7.8	7.8	18.0	10.4
<i>NCREIF Property Index</i>		1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
JP Morgan Core Real Estate	166,614,104	0.2	2.9	5.5	8.1	10.3	7.0	6.1	8.4	15.2	11.2
<i>NCREIF-ODCE</i>		1.3	5.6	7.3	9.3	10.9	8.3	7.6	8.8	15.0	12.5
<i>NCREIF Property Index</i>		1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
ARA American Strategic Value Realty	33,885,219	1.5	7.2	8.4	--	--	9.1	7.4	--	--	--
<i>NCREIF-ODCE</i>		1.3	5.6	7.3	--	--	8.3	7.6	--	--	--
<i>NCREIF Property Index</i>		1.4	6.2	6.8	--	--	6.7	7.0	--	--	--

Property Type Allocation
Allocation as of September 30, 2019



Geographic Diversification
Allocation as of September 30, 2019



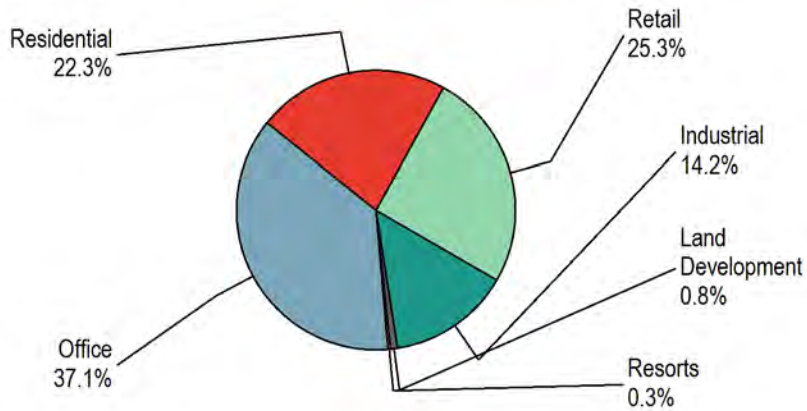
ARA American Strategic Value Realty is lagged one quarter.

Total Real Estate
Asset Class Overview (Net of Fees)

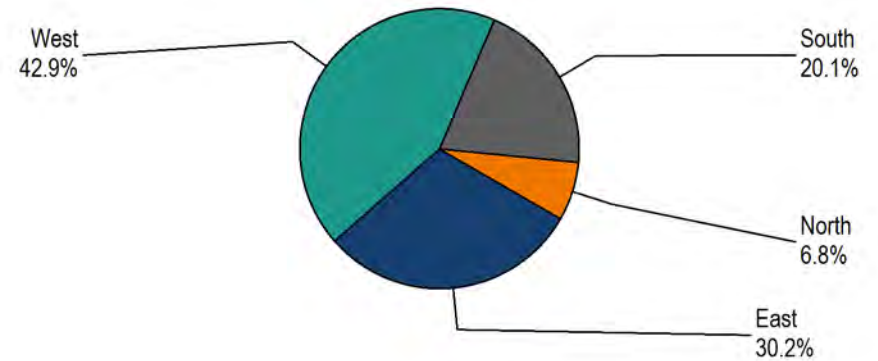
Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Real Estate	200,645,293	0.4	3.9	6.3	8.6	7.7	7.5	7.8	6.8	16.9	9.6
<i>NCREIF Property Index</i>		1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
JP Morgan Core Real Estate	166,614,104	0.2	2.9	5.4	7.6	9.5	7.0	6.1	7.3	14.1	10.0
<i>NCREIF-ODCE</i>		1.3	5.6	7.3	9.3	10.9	8.3	7.6	8.8	15.0	12.5
<i>NCREIF Property Index</i>		1.4	6.2	6.8	8.6	9.8	6.7	7.0	8.0	13.3	11.8
ARA American Strategic Value Realty	33,885,219	1.5	7.2	8.3	--	--	9.1	7.4	--	--	--
<i>NCREIF-ODCE</i>		1.3	5.6	7.3	--	--	8.3	7.6	--	--	--
<i>NCREIF Property Index</i>		1.4	6.2	6.8	--	--	6.7	7.0	--	--	--

Property Type Allocation
Allocation as of September 30, 2019



Geographic Diversification
Allocation as of September 30, 2019



ARA American Strategic Value Realty is lagged one quarter.

Total Commodities
 Asset Class Summary (Gross of Fees)

Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	44,905,393	-2.5	-10.6	-0.1	-6.7	-3.8	-12.4	6.2	12.6	-25.2	-16.0
<i>Bloomberg Commodity Index TR USD</i>		-1.8	-6.6	-1.5	-7.2	-4.3	-11.2	1.7	11.8	-24.7	-17.0
Gresham MTAP Commodity Builder	44,905,393	-2.5	-10.6	-0.1	-6.7	--	-12.4	6.2	12.6	-25.2	-16.0
<i>Bloomberg Commodity Index TR USD</i>		-1.8	-6.6	-1.5	-7.2	--	-11.2	1.7	11.8	-24.7	-17.0

Total Commodities
 Asset Class Summary (Net of Fees)

Period Ending: September 30, 2019

	Market Value	3 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	2018	2017	2016	2015	2014
Total Commodities	44,905,393	-2.5	-10.6	-0.2	-7.0	-4.2	-12.4	6.2	11.8	-25.8	-16.6
<i>Bloomberg Commodity Index TR USD</i>		-1.8	-6.6	-1.5	-7.2	-4.3	-11.2	1.7	11.8	-24.7	-17.0
Gresham MTAP Commodity Builder	44,905,393	-2.5	-10.6	-0.2	-7.0	--	-12.4	6.2	11.8	-25.8	-16.6
<i>Bloomberg Commodity Index TR USD</i>		-1.8	-6.6	-1.5	-7.2	--	-11.2	1.7	11.8	-24.7	-17.0

Performance Return Calculations

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

Data Source

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

Illiquid Alternatives

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

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
PIMCO RAE Fundamental PLUS	11/30/2007	J.P. Morgan	JP Morgan Core Real Estate	3/6/2008	J.P. Morgan
Loomis Sayles Large Cap Growth	12/31/2016	J.P. Morgan	Gresham MTAP Commodity	8/31/2013	BNY Mellon
Boston Partners Large Cap Value	1/31/2017	Boston Partners	Cash Account	-	SLOCPT
Atlanta Capital Management	8/31/2010	J.P. Morgan	HarbourVest Partners IX-Buyout	2011 ¹	HarbourVest
Dodge & Cox Intl Stock	12/6/2007	J.P. Morgan	HarbourVest 2018 Global Fund L.P.	-	HarbourVest
WCM International Growth	2/15/2017	WCM	KKR Mezzanine Partners	2010 ¹	KKR
BlackRock Core Bond	1/19/2017	J.P. Morgan	PIMCO Distressed Credit Fund	2010 ¹	Brown Brothers Harriman
Dodge & Cox Income	1/19/2017	Deutsche Bank	ARA American Strategic Value	6/22/2016	American Realty Adv.
Pacific Asset Corporate Loan	9/1/2014	Deutsche Bank	TPG Diversified Credit Program	2016 ¹	TPG
Brandywine Global Fixed	11/30/2007	J.P. Morgan	Pathway Private Equity Fund 9	2017 ¹	Pathway
Ashmore EM Blended Debt Fund	3/31/2019	Ashmore			

¹ Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (10/1/2016-Current)	20% Russell 3000, 20% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 15% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps, 5% BBgBarc High Yield +2% (lagged).
Policy Index (7/1/2014-9/30/2016)	23% Russell 3000, 22% MSCI ACWI ex-US (Gross), 35% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (7/1/2013-6/30/2014)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 30% BBgBarc U.S. Aggregate, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.
Policy Index (4/1/2011-6/30/2013)	27% Russell 3000, 23% MSCI ACWI ex-US (Gross), 20% BBgBarc U.S. Aggregate, 5% Citi World Govt Bond, 5% Barclays US TIPS, 10% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000+ 300 bps.

Other Disclosures

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: $\text{Portfolio Return} - [\text{Risk-free Rate} + \text{Portfolio Beta} \times (\text{Market Return} - \text{Risk-free Rate})]$.

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: $\text{Portfolio Excess Return} / \text{Portfolio Standard Deviation}$.

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.

Board of Trustees

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San Luis Obispo, CA 93408
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www.SLOPensionTrust.org



Date: November 25, 2019

To: Board of Trustees

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

Investment Report for October 2019

	October	Year to Date 2019	2018	2017	2016	2015	2014
Total Trust Investments (\$ millions)	\$1,420		\$1,285 year end	\$1,351 year end	\$1,196 year end	\$1,148 year end	\$1,190 year end
Total Fund Return	1.3% Gross	12.1% Gross	-3.2 % Gross	15.5 % Gross	6.6 % Gross	-0.8% Gross	5.1 % Gross
Policy Index Return (r)	1.6%	13.1%	-3.2 %	13.4 %	7.7 %	-0.5 %	5.2 %

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

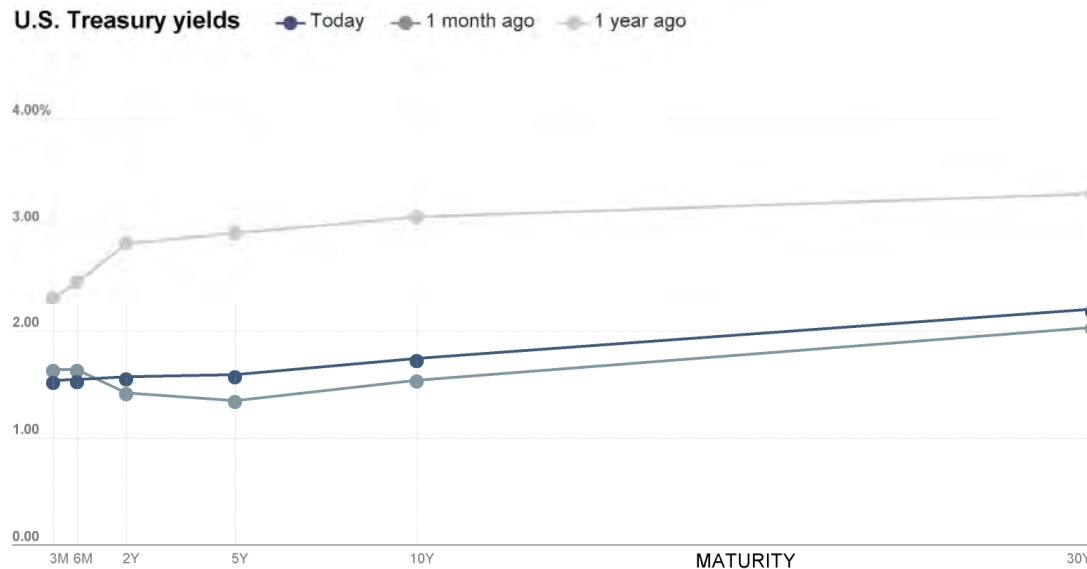
The Economy and Capital Markets:

- **Fed Policy and Interest Rates –**

- At the October 30th FOMC meeting the Fed again reduced the Fed Funds rate by 0.25% to the 1.50% to 1.75% range. The reduction was consistent with capital market expectations of one more rate cut in 2019.
 - In a recent change of tone, the Fed signaled that it will pause and assess incoming data before it considers lowering rates again. Fed Chair Powell said that while “there’s plenty of risk left,” some of it has subsided, pointing to the potential for a limited trade

deal between the United States and China and a negotiated exit for Britain from the European Union.

- The yield curve, responding to a slowing global growth, slipped decidedly inverted August 14th. However, Treasury yields starting in September and into November backed off from inverted giving some reassurance to the markets. The 10 year Treasury most recently traded at 1.78% versus the 2 year Treasury at 1.61%. The yield curve as of November 21st is shown below -



- **Economic Growth / Recession Risk –**

- Outlook for GDP Growth –

- 3Q19 GDP growth preliminary data showed a reduction to a 1.9% annual rate. Contributing factors included strong continued consumer spending at a +2.9% rate. This was in contrast to a reduction in business investment that came in at a -3.90% decrease rate. GDP was also impacted by a prolonged labor strike at General Motors and production slowing at Boeing due to 737 Max problems.

- Eurozone and Brexit –

- The saga of the Brexit issue still dominates the British and Eurozone economies. Markets were comforted in the short term by Boris Johnson’s success at extending the EU withdrawal deadline from Oct. 31st to Jan. 31st. The U.K. will hold a snap election in Parliament in December that may clarify the party allegiances towards the conservative “leave” group.

- **Trade Policy –**

- U.S equity and fixed income markets calmed – and moved up in equity returns and Treasury yields – in October-November on news of a preliminary first phase of a trade agreement with China. The finalization of a portion of the trade dispute between the U.S. and China is still pending official moves in reducing tariffs, enforcing restrictions on technology transfer and increasing agricultural imports into China.

- **Employment and Wages –**

- The October DOL report on nonfarm employment showed -

- New jobs came in at +128k in September – well above expectations. In addition the estimates for August and September job growth were revised upwards by 95k. The prolonged strike at General Motors reduced jobs by 50k in October. In addition, the layoff of about 20k temporary U.S. Census workers also reduced employment. Job gains were in the consumer services sectors while manufacturing sectors are beginning to contract.
- Job growth over the last 3 months has averaged +176k compared to a 3 month average jobs gain during the same period in 2018 of +222k.
- The job market appears to be weathering the turmoil of trade tensions and slowing global growth – albeit with some slowing. This is almost entirely due to a resilient level of consumer spending in the U.S. economy – consistent with the story on GDP growth.
- Unemployment changed slightly from 3.5% to 3.6% in October. A broader measure of unemployment (U-6) that includes discouraged job seekers and part-time employees who would prefer full-time rose to 7.0%.
- Average Hourly Earnings were little changed with a year-over-year increase measured at +3.0%.

SLOCPT Investment Returns:

The attached report from Verus covers the investment returns of the SLOCPT portfolio and general market conditions through the end of October. The attached market commentary from Verus details market conditions in October, but subsequent activity in November is not yet factored into these numbers.

Respectfully submitted

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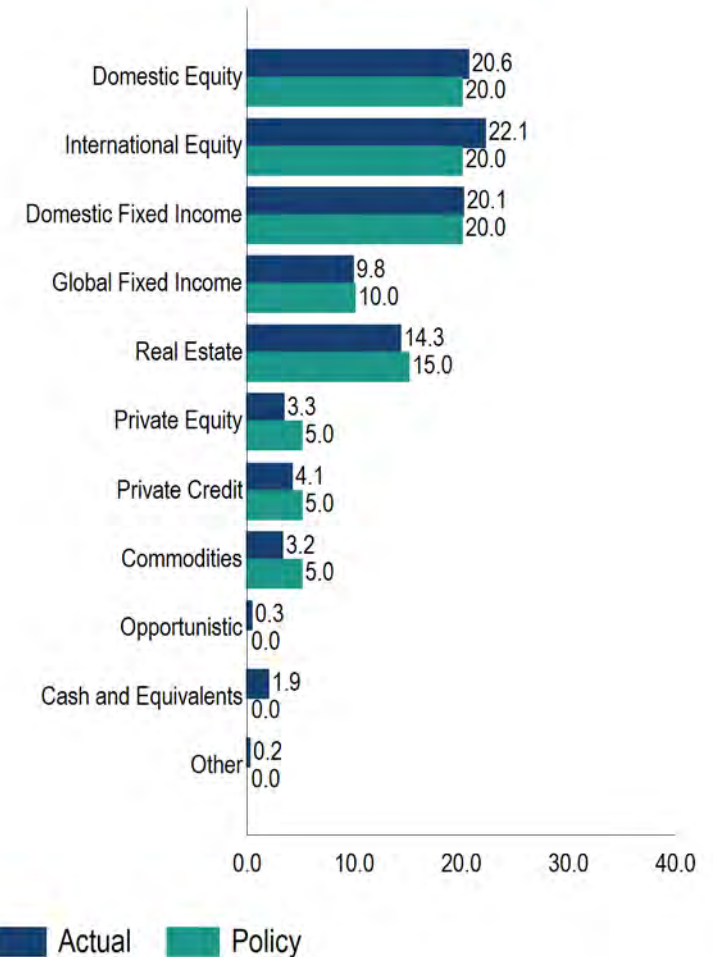
San Luis Obispo County Pension Trust

Executive Summary - Preliminary (Gross of Fees)

Period Ending: October 31, 2019

	Market Value	% of Portfolio	1 Mo	YTD
Total Fund	1,419,505,382	100.0	1.3	12.1
Total Fund ex Overlay	1,417,126,453	99.8	1.3	12.2
Policy Index			1.5	13.1
Total Domestic Equity	292,271,785	20.6	1.1	21.3
Russell 3000			2.2	22.7
PIMCO RAE Fundamental PLUS Instl	58,618,170	4.1	1.7	17.9
S&P 500			2.2	23.2
Loomis Sayles Large Cap Growth	85,760,759	6.0	1.9	22.9
Russell 1000 Growth			2.8	26.8
Boston Partners Large Cap Value	84,065,173	5.9	1.7	16.8
Russell 1000 Value			1.4	19.5
Atlanta Capital Mgmt	63,827,683	4.5	-1.2	28.5
Russell 2500			1.9	20.0
Total International Equity	314,168,659	22.1	2.8	21.3
MSCI ACWI ex USA Gross			3.5	16.0
Dodge & Cox Intl Stock	146,715,413	10.3	3.6	15.5
MSCI EAFE Gross			3.6	17.4
WCM International Growth	167,453,246	11.8	2.2	27.0
MSCI ACWI ex USA Gross			3.5	16.0
Total Domestic Fixed Income	285,571,256	20.1	0.3	9.3
BBgBarc US Aggregate TR			0.3	8.8
BlackRock Core Bond	109,425,432	7.7	0.3	10.3
BBgBarc US Aggregate TR			0.3	8.8
Dodge & Cox Income Fund	106,872,171	7.5	0.5	9.7
BBgBarc US Aggregate TR			0.3	8.8
Pacific Asset Corporate Loan	69,273,653	4.9	-0.1	7.3
S&P/LSTA Leveraged Loan Index			-0.4	6.3
Total Global Fixed	139,228,472	9.8	1.9	5.6
FTSE World Govt Bond Index			0.5	6.8
Brandywine Global Fixed Income	67,606,529	4.8	3.0	4.1
FTSE WGBI ex US TR			0.8	6.3
Ashmore EM Blended Debt Fund	71,621,943	5.0	0.9	--
50% JPM EMBI GD/25% JPM GBI EM GD/25% JPM ELMH+			1.4	--

Actual vs Target Allocation (%)



*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. SSGA Flagship S&P 500 liquidated 2/1/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor liquidated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated 5/3/2019. Most recently reported market values for private equity/credit, opportunistic, and illiquid real estate funds adjusted for calls and distributions through the report end date. All data is preliminary.

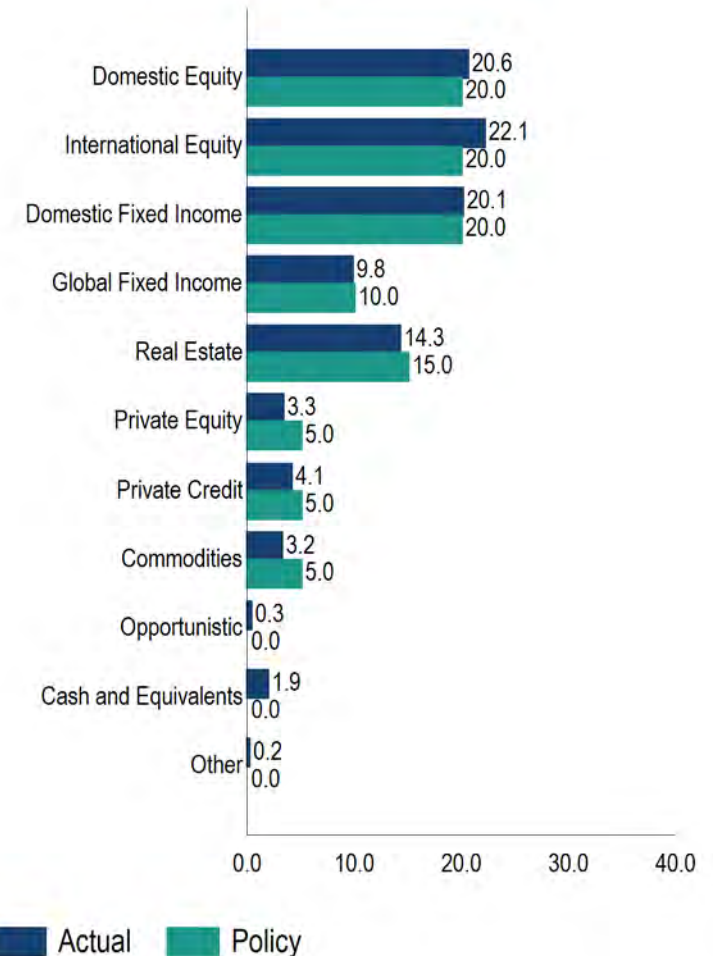
San Luis Obispo County Pension Trust

Executive Summary - Preliminary (Gross of Fees)

Period Ending: October 31, 2019

	Market Value	% of Portfolio	1 Mo	YTD
Total Real Estate	202,383,572	14.3	0.8	3.1
NCREIF Property Index			0.0	4.8
JP Morgan Core Real Estate	167,712,091	11.8	0.6	1.9
NCREIF-ODCE			0.0	3.8
NCREIF Property Index			0.0	4.8
ARA American Strategic Value Realty	34,510,892	2.4	1.8	7.3
NCREIF-ODCE			0.0	3.8
NCREIF Property Index			0.0	4.8
Total Commodities	45,757,713	3.2	1.9	5.0
Bloomberg Commodity Index TR USD			2.0	5.2
Gresham MTAP Commodity Builder	45,757,713	3.2	1.9	5.0
Bloomberg Commodity Index TR USD			2.0	5.2
Total Private Equity	47,378,124	3.3		
Harbourvest Partners IX Buyout Fund L.P.	14,616,579	1.0		
Pathway Private Equity Fund Investors 9 L.P.	27,975,145	2.0		
Harbourvest 2018 Global Fund L.P.	4,786,400	0.3		
Total Private Credit	58,665,897	4.1		
TPG Diversified Credit Program	58,665,897	4.1		
Total Cash	27,040,047	1.9	0.7	2.2
91 Day T-Bills			0.1	1.8
Cash Account	27,040,047	1.9	0.7	2.2
91 Day T-Bills			0.1	1.8
Total Opportunistic	4,660,927	0.3		
Kohlberg Kravis Roberts & Co. Mezzanine Partners I	4,558,758	0.3		
PIMCO Distressed Credit Fund	102,169	0.0		
CPI + 5%			0.6	6.7

Actual vs Target Allocation (%)



*Other balance represents Clifton Group.

Policy Index (10/1/2016): 20% Russell 3000, 20% MSCI ACWI ex. US, 30% BBgBarc Aggregate, 15% NCREIF Property, 5% Bloomberg Commodity, 5% Russell 3000 + 300 bp, 5% BBgBarc High Yield + 200 bp lagged. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. Boston Partners funded 2/1/2017. WCM Intl Growth replaced Vontobel on 2/15/2017. Pathway 9 funded 4/7/2017. SSGA TIPS liquidated on 12/7/2017. Fidelity Real Estate Growth III liquidated on 12/29/2017. SSGA Flagship S&P 500 liquidated 2/1/2018. Harbourvest 2018 Global Fund L.P. funded 12/14/2018. Stone Harbor liquidated 3/22/2019. Ashmore EM Blended Debt funded 3/31/2019. Direct RE liquidated 5/3/2019. Most recently reported market values for private equity/credit, opportunistic, and illiquid real estate funds adjusted for calls and distributions through the report end date. All data is preliminary.



**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**

OCTOBER 2019
Capital Markets Update

Market commentary

U.S. ECONOMICS

- U.S. GDP expanded at an annualized quarterly rate of 1.9% (exp. +1.6%) in Q3 2019, the lowest level since Q4 2018. Personal consumption continued to drive growth and contributed 1.9% to the overall print. A 1.5% contraction in gross private domestic investment weighed on growth.
- Nonfarm payrolls grew by 128,000 over the month, well above expectations for an increase of 80,000. Net payroll additions were revised 51,000 higher in August and 44,000 higher in September, bringing the three-month average payroll growth to 176,000. The Leisure and Hospitality (+61,000) and Education and Health Care (+39,000) sectors led job gains for the period.
- Consumer confidence ticked up in October. The University of Michigan's Consumer Sentiment Index rose from 93.2 to 95.5 (exp. 96.0) while the Conference Board's Consumer Confidence Index rose from 125.1 to 125.9 (exp. 128.0)

U.S. EQUITIES

- The S&P 500 Index continued to climb in October, gaining 2.2% over the period. Views that U.S. – Chinese relations were on a productive track likely helped to push the index to fresh all-time highs.
- The CBOE VIX Index of implied volatility fell from 16.2 to 13.2 over the month, its lowest level since July. The trailing 30-day realized volatility of the S&P 500 Index remained subdued and fell slightly to 12.5.
- Per FactSet, the number of companies beating Q3 earnings estimates (76%) is above the 5-year average of 72% but by notably smaller margins. In aggregate, companies are reporting earnings that are 3.8% above expectations, below the 5-year average of 4.9%.

U.S. FIXED INCOME

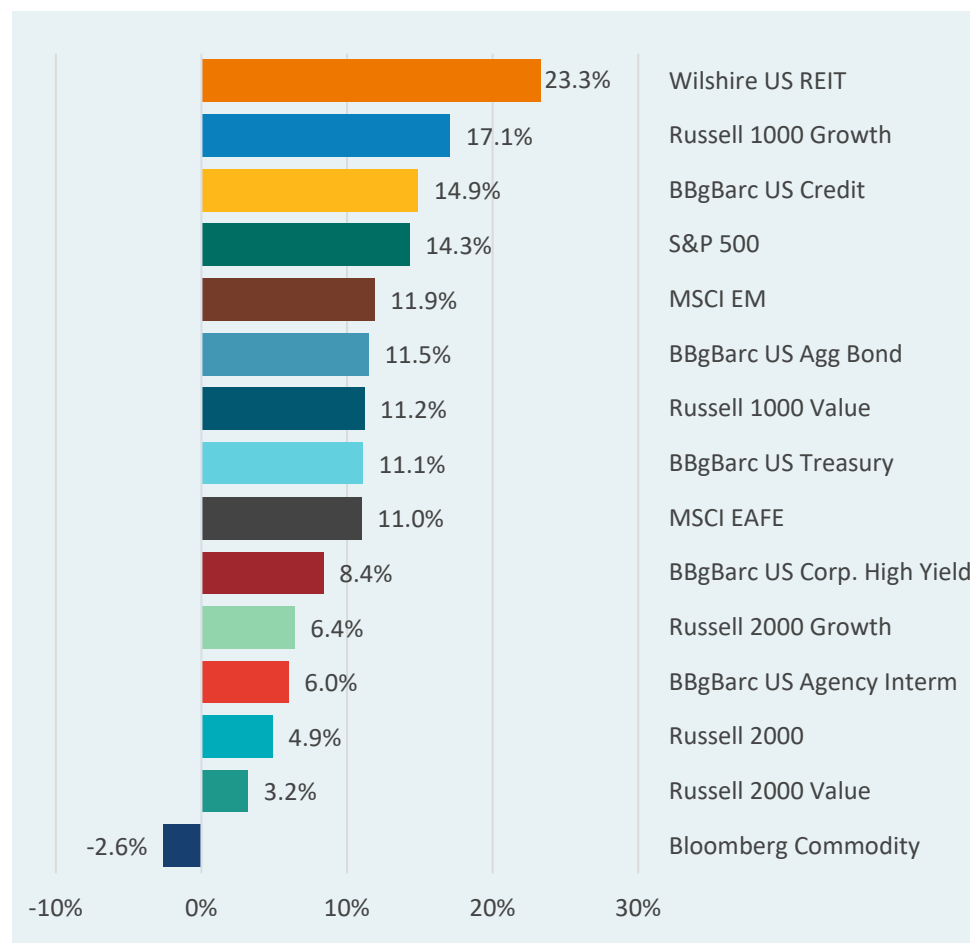
- The Federal Open Market Committee cut its range for the fed funds rate by 0.25% to 1.50% -1.75%, in line with expectations. Fed Chairman Jerome Powell signaled that moves to ease policy would likely be paused until conditions change materially.
- At the end of the period, the futures implied probability of the fed funds range being cut by at least 0.25% by the end of the year was 27%. There was a 38% probability of at least 0.25% in cuts by the end of Q1 2020.
- Ten-year Treasury yields ticked up from 1.67% to 1.69% and touched intra-month highs of 1.84%.

INTERNATIONAL MARKETS

- For the second straight month global equities outperformed U.S. equities. International developed (MSCI EAFE Index 3.6%) and emerging market (MSCI EM Index 4.2%) equities outpaced the U.S. S&P 500 Index which rose 2.2%.
- The U.K. Prime Minister, Boris Johnson, reached an agreement with the E.U. to extend the deadline for the U.K. to leave the E.U. by three months, from October 31st to January 31st. The U.K. Parliament then voted in favor of holding a snap election in December, where Johnson's Conservative Party will attempt to gain a majority with hopes of clearing a path toward "Brexit".
- According to a preliminary report from Eurostat, economic growth in Europe remained subdued. Eurozone GDP grew 1.1% year-over-year in the third quarter, its slowest pace since Q4 2013. Year-over-year growth was slightly more robust in France (+1.3%), and significantly worse in Italy (+0.3%).

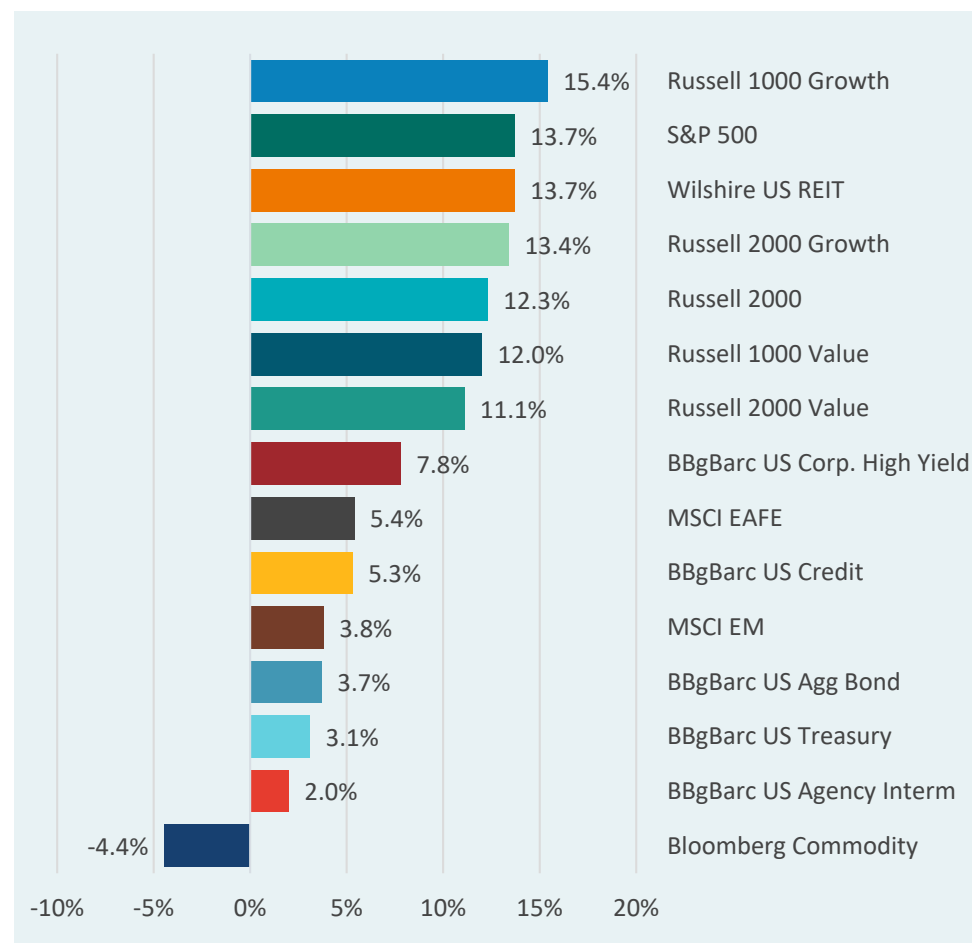
Major asset class returns

ONE YEAR ENDING OCTOBER



Source: Morningstar, as of 10/31/19

TEN YEARS ENDING OCTOBER



Source: Morningstar, as of 10/31/19

U.S. large cap equities

- The S&P 500 Index gained 2.2% over the period. The Health Care (+5.1%), Information Technology (+3.9%), and Communication Services (+3.0%) were the top performing sectors while the Energy (-2.3%) and Utilities sectors (-0.8%) lagged.
- The Energy (-2.3%) sector was the worst performing sector over the month. Weaker-than-expected economic data coming out of China stoked concerns over crude oil demand, which likely contributed to a sell-off in Energy-related stocks.
- At month-end, the forward one-year P/E ratio of the S&P 500 Index was 17.3, which exceeded both its 5- and 10-year averages of 16.6 and 14.9, respectively. Per FactSet, the Consumer Discretionary (21.6) and Financials (12.5) sectors have the highest and lowest forward one-year P/E ratios, respectively.
- Net futures positioning indicated a market expectation for lower short-term implied volatility. Per the CFTC, non-commercial investors were short 188,000 VIX futures contracts as of October 29th, a new all-time low.

S&P 500 PRICE INDEX



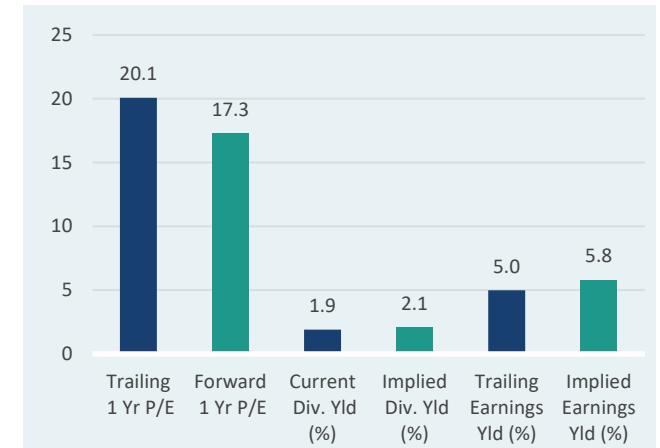
Source: Bloomberg, as of 10/31/19

IMPLIED VOLATILITY (VIX INDEX)



Source: CBOE, as of 10/31/19

S&P 500 VALUATION SNAPSHOT



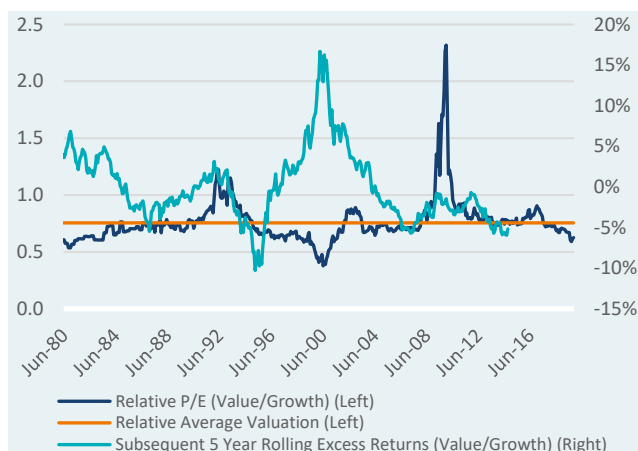
Source: Bloomberg, as of 10/31/19

Domestic equity size and style

- Small-cap equities extended their recent outperformance of large-cap equities. The Russell 2000 Index returned 2.6% while the Russell 1000 Index gained 2.1% Year-to-date, small-cap equities (+17.2%) have underperformed large-cap equities (+23.1%) by 5.9%.
- The iShares Edge MSCI USA Quality Factor ETF, which seeks to track the performance of high quality large and mid-cap stocks based on ROE, earnings variability, and leverage, rose 2.1%, roughly in line with the S&P 500 Index.

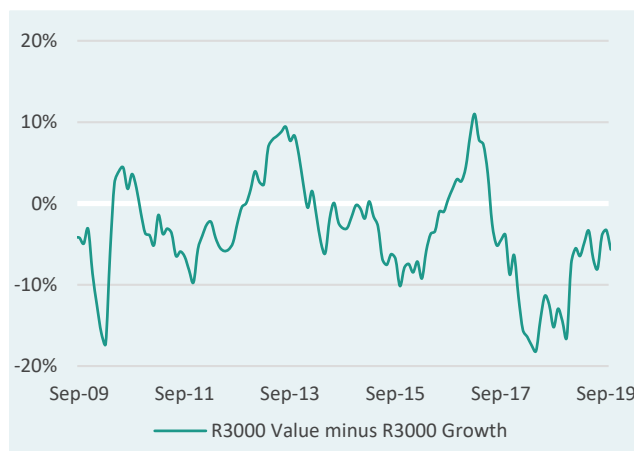
- Growth outperformed value over the period, across both large-and small-cap universes. The Russell 3000 Growth Index advanced 2.8% and has fared better than the Russell 3000 Value Index (+1.5%) for eight out of ten months this year.
- Growth outperformance was largely attributed to its larger exposure to the Information Technology and Health Care sectors which at month-end held a combined weight of 52% in the Russell 3000 Growth Index and an 18% weight in the Russell 3000 Value Index.

VALUE VS. GROWTH RELATIVE VALUATIONS



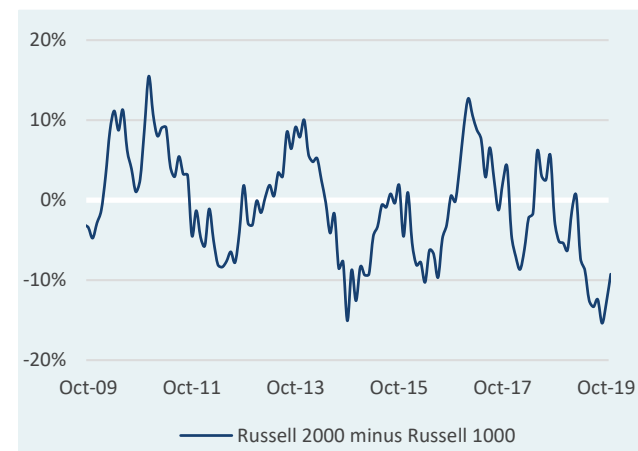
Source: Russell, Bloomberg, as of 10/31/19

VALUE VS. GROWTH 1-YR ROLLING RELATIVE PERFORMANCE



Source: FTSE, Bloomberg, as of 10/31/19

SMALL VS. LARGE 1-YR ROLLING RELATIVE PERFORMANCE

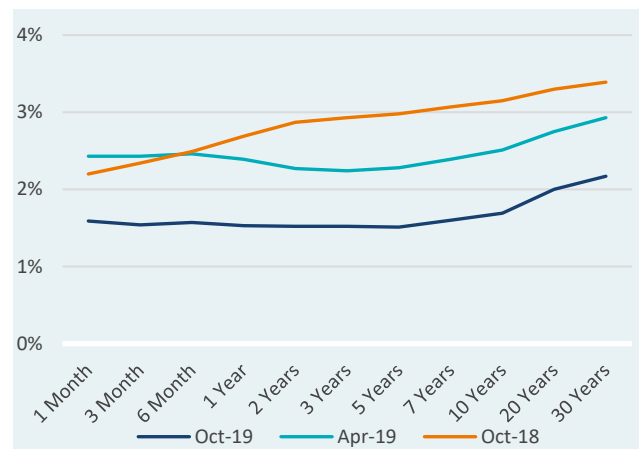


Source: FTSE, Bloomberg, as of 10/31/19

Fixed income

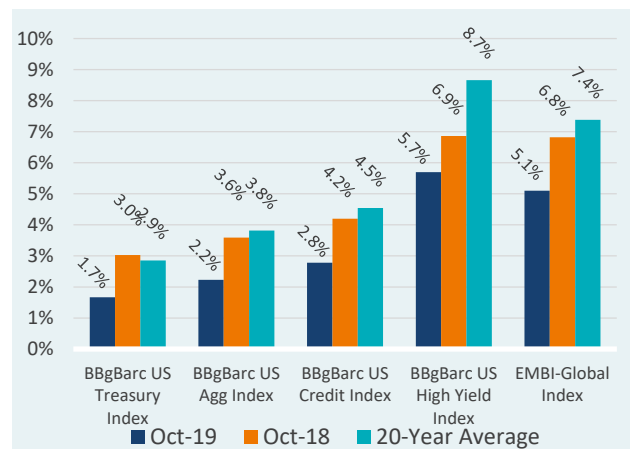
- The JPM GBI-EM Global Diversified Index rose 2.9% in October while the JPM EMBI Global Diversified Index rose 0.4%. Emerging market currency appreciation likely presented tailwinds for unhedged U.S. investors in emerging market debt.
- Expectations for future inflation ticked up, due in part to the Federal Reserve’s accommodative forward guidance on interest rates. Five- and ten-year breakeven inflation rates rose from 1.3% to 1.4% and from 1.5% to 1.6% respectively, over the period.
- Italy raised \$7 billion in its first issuance of U.S. dollar denominated bonds since 2010. Strong demand resulted in over \$18 billion in orders, a sign that investors wanted exposure to dollar-denominated Italian debt.
- Ten-year Japanese government bond yields rose from -0.22% to -0.15%, returning to the Bank of Japan’s stated preferred range of -0.20% to +0.20%. In its October meeting, the BoJ decided to leave policy unchanged, but tweaked its forward guidance to communicate a “downward bias on policy rates”.

U.S. TREASURY YIELD CURVE



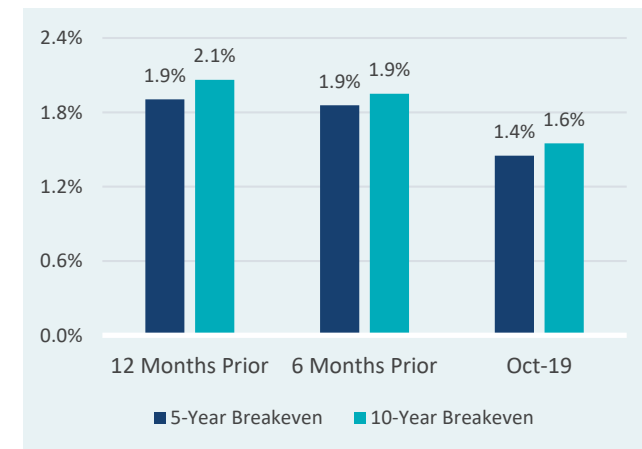
Source: Bloomberg, as of 10/31/19

NOMINAL YIELDS



Source: Morningstar, as of 10/31/19

BREAKEVEN INFLATION RATES

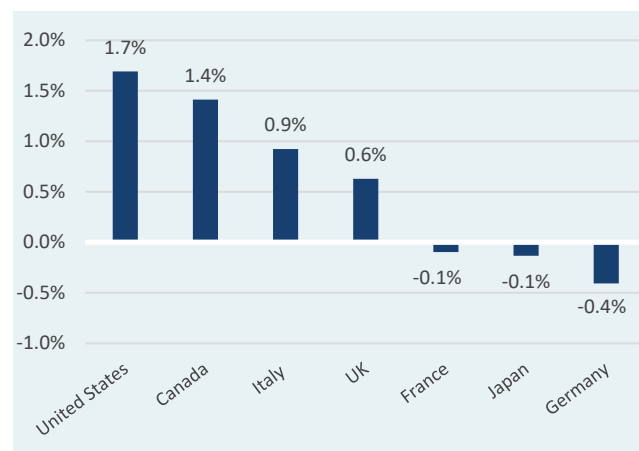


Source: Bloomberg, as of 10/31/19

Global markets

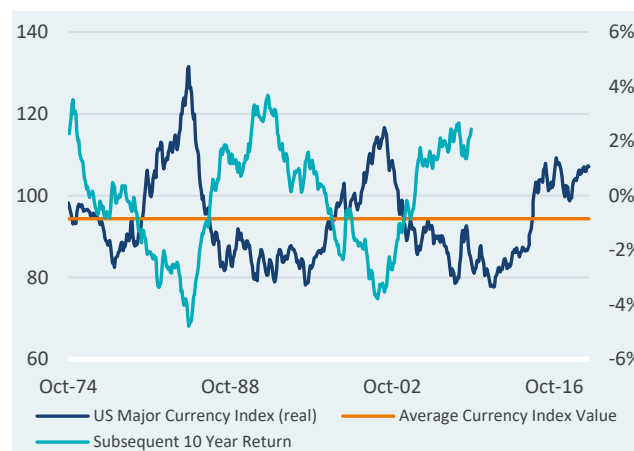
- Optimism regarding U.S.-Chinese relations built as negotiators continued to work towards a “phase one” agreement. China stated that it had agreed with Washington in principle and that currently in place tariffs may be removed in phases. Disagreements on the location to sign have helped to push the expected meeting date into December.
- The U.S. dollar depreciated materially versus trade-weighted pairs. The Bloomberg Dollar Spot Index fell 1.9%, bringing its year-to-date return to 0.0%.
- Emerging market currency exposure provided a tailwind to emerging market equity performance in October. The MSCI EM Index gained 4.2% in U.S. dollar terms and only 3.0% in local terms.
- The dividend yields of the MSCI EAFE and MSCI Emerging Market indices were relatively flat over the month but remained elevated compared to the MSCI USA Index. The trailing 12-month gross dividend yield of the MSCI EAFE Index ended the month 1.6% higher than the trailing dividend yield of the MSCI USA Index.

GLOBAL SOVEREIGN 10-YEAR YIELDS



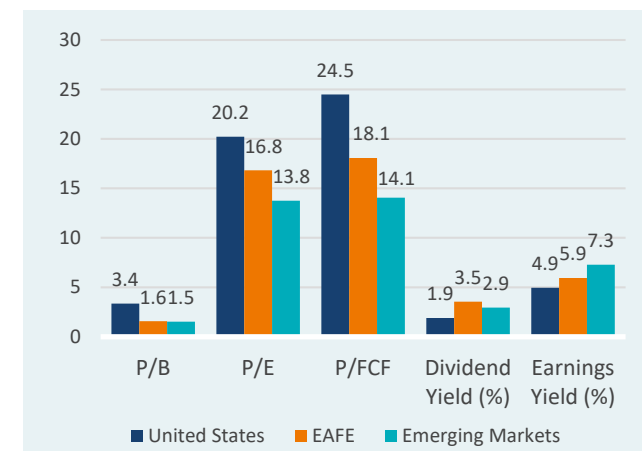
Source: Bloomberg, as of 10/31/19

U.S. DOLLAR MAJOR CURRENCY INDEX



Source: Federal Reserve, as of 10/31/19

MSCI VALUATION METRICS (3-MONTH AVG)



Source: Bloomberg, as of 10/31/19

Commodities

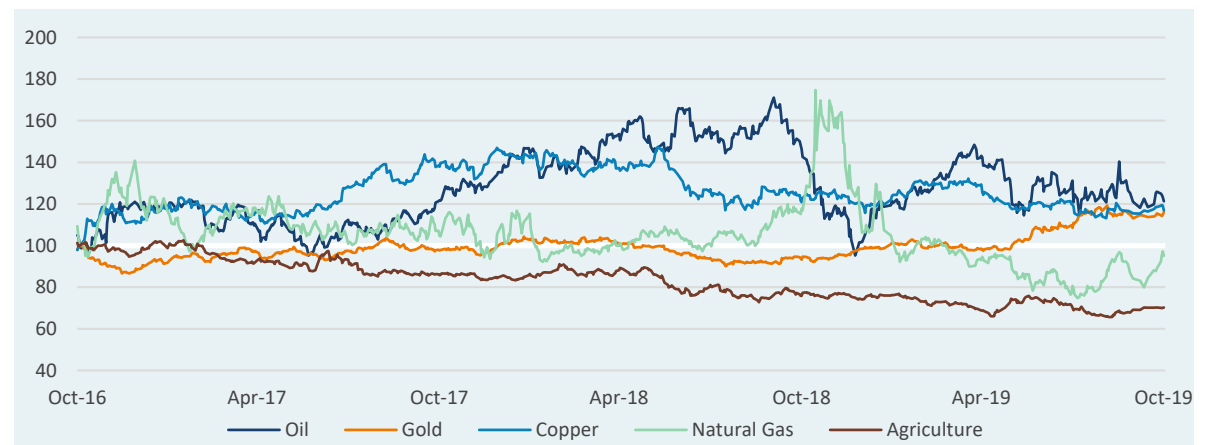
- The Bloomberg Commodity Index advanced 2.0% over the period bringing its year-to-date performance to 5.2%. Every sector posted positive returns and the Precious Metals (+3.8%), Industrial Metals (+1.8%) and Agriculture (+1.7%) sectors posted the best performance.
- The Precious Metals Sub-Index rebounded and gained 3.8% in October. Easier monetary policy from the Fed likely contributed to the strong performance of gold (+3.0%) and silver (+6.4%) as falling interest rates lower the opportunity cost of holding non-yielding assets.
- The Agriculture component of the commodities basket saw positive returns of 1.7% as optimism for a “phase one” deal with China continued to build. China pledged to buy more U.S. soybeans, but purchases remain below levels seen prior to the beginning of the trade war.
- Saudi Aramco, perhaps the world’s most valuable company, announced its intention to price its IPO on December 5th. Analysts expect a valuation around \$1.5 trillion, while the Saudi Arabian Crown Prince has stated a valuation between \$1.5-2 trillion would be reasonable.

INDEX AND SECTOR PERFORMANCE

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Bloomberg Commodity	2.0	2.0	5.2	(2.6)	(0.7)	(6.7)	(4.4)
Bloomberg Agriculture	1.7	1.7	(3.4)	(5.3)	(10.0)	(8.5)	(3.7)
Bloomberg Energy	1.6	1.6	7.3	(15.7)	0.6	(15.0)	(12.1)
Bloomberg Grains	1.4	1.4	(3.2)	(2.4)	(7.7)	(8.9)	(4.2)
Bloomberg Industrial Metals	1.8	1.8	9.2	5.5	6.0	(1.6)	(2.2)
Bloomberg Livestock	0.7	0.7	(5.5)	(4.1)	4.3	(6.2)	(1.8)
Bloomberg Petroleum	1.4	1.4	19.6	(14.0)	6.0	(12.6)	(7.0)
Bloomberg Precious Metals	3.8	3.8	17.1	24.1	3.7	3.7	2.6
Bloomberg Softs	0.8	0.8	(7.7)	(16.5)	(18.2)	(11.0)	(5.9)

Source: Morningstar, as of 10/31/19

COMMODITY PERFORMANCE



Source: Bloomberg, as of 10/31/19

Appendix

Periodic table of returns

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	YTD	5-Year	10-Year
Large Cap Growth	38.7	66.4	31.8	14.0	25.9	56.3	26.0	34.5	32.6	39.8	5.2	79.0	29.1	14.3	18.6	43.3	13.5	13.3	31.7	37.3	6.7	26.8	13.4	15.4
Large Cap Equity	27.0	43.1	22.8	8.4	10.3	48.5	22.2	21.4	26.9	16.2	1.4	37.2	26.9	7.8	18.1	38.8	13.2	5.7	21.3	30.2	1.9	23.1	10.5	13.7
Large Cap Value	20.3	33.2	12.2	7.3	6.7	47.3	20.7	20.1	23.5	15.8	-6.5	34.5	24.5	2.6	17.9	34.5	13.0	0.9	17.3	25.0	0.0	19.5	8.6	13.4
Small Cap Growth	19.3	27.3	11.6	3.3	1.6	46.0	18.3	14.0	22.2	11.8	-21.4	32.5	19.2	1.5	17.5	33.5	11.8	0.6	12.1	22.2	-1.5	18.6	8.4	12.3
Small Cap Equity	16.2	26.5	7.0	2.8	1.0	39.2	16.5	7.5	18.4	11.6	-25.9	28.4	16.8	0.4	16.4	33.1	6.0	0.0	11.8	21.7	-3.5	17.2	7.6	12.0
International Equity	8.7	21.3	4.1	-2.4	-6.0	29.9	14.3	6.3	15.5	10.3	-33.8	23.3	16.1	-2.1	15.3	23.3	4.9	-0.8	11.2	14.6	-6.0	16.9	7.4	11.1
Small Cap Value	15.6	24.3	6.0	2.5	-5.9	30.0	14.5	7.1	16.6	10.9	-28.9	27.2	16.7	0.1	16.3	32.5	5.6	-0.4	11.3	17.1	-4.8	15.5	6.2	9.8
60/40 Global Portfolio	4.9	20.9	-3.0	-5.6	-11.4	29.7	12.9	5.3	15.1	7.0	-35.6	20.6	15.5	-2.9	14.6	12.1	4.2	-1.4	8.0	13.7	-8.3	14.5	5.3	6.4
Emerging Markets Equity	1.2	13.2	-7.3	-9.1	-15.5	25.2	11.4	4.7	13.3	7.0	-36.8	19.7	13.1	-4.2	11.5	11.0	3.4	-2.5	7.1	7.8	-9.3	10.4	4.3	5.4
US Bonds	-2.5	11.4	-7.8	-9.2	-15.7	23.9	9.1	4.6	10.4	5.8	-37.6	18.9	10.2	-5.5	10.5	9.0	2.8	-3.8	5.7	7.7	-11.0	8.8	3.2	3.8
Hedge Funds of Funds	-5.1	7.3	-14.0	-12.4	-20.5	11.6	6.9	4.6	9.1	4.4	-38.4	11.5	8.2	-5.7	4.8	0.1	0.0	-4.4	2.6	7.0	-11.2	5.8	2.9	3.7
Commodities	-6.5	4.8	-22.4	-19.5	-21.7	9.0	6.3	4.2	4.8	-0.2	-38.5	5.9	6.5	-11.7	4.2	-2.0	-1.8	-7.5	1.0	3.5	-12.9	5.2	2.2	2.7
Real Estate	-25.3	-0.8	-22.4	-20.4	-27.9	4.1	4.3	3.2	4.3	-1.6	-43.1	0.2	5.7	-13.3	0.1	-2.3	-4.5	-14.9	0.5	1.7	-13.8	4.8	1.0	0.5
Cash	-27.0	-1.5	-30.6	-21.2	-30.3	1.0	1.4	2.4	2.1	-9.8	-53.2	-16.9	0.1	-18.2	-1.1	-9.5	-17.0	-24.7	0.3	0.9	-14.6	1.8	-6.7	-4.4

Large Cap Equity

Large Cap Value

Large Cap Growth

Small Cap Equity

Small Cap Value

Small Cap Growth

International Equity

Emerging Markets Equity

US Bonds

Cash

Commodities

Real Estate

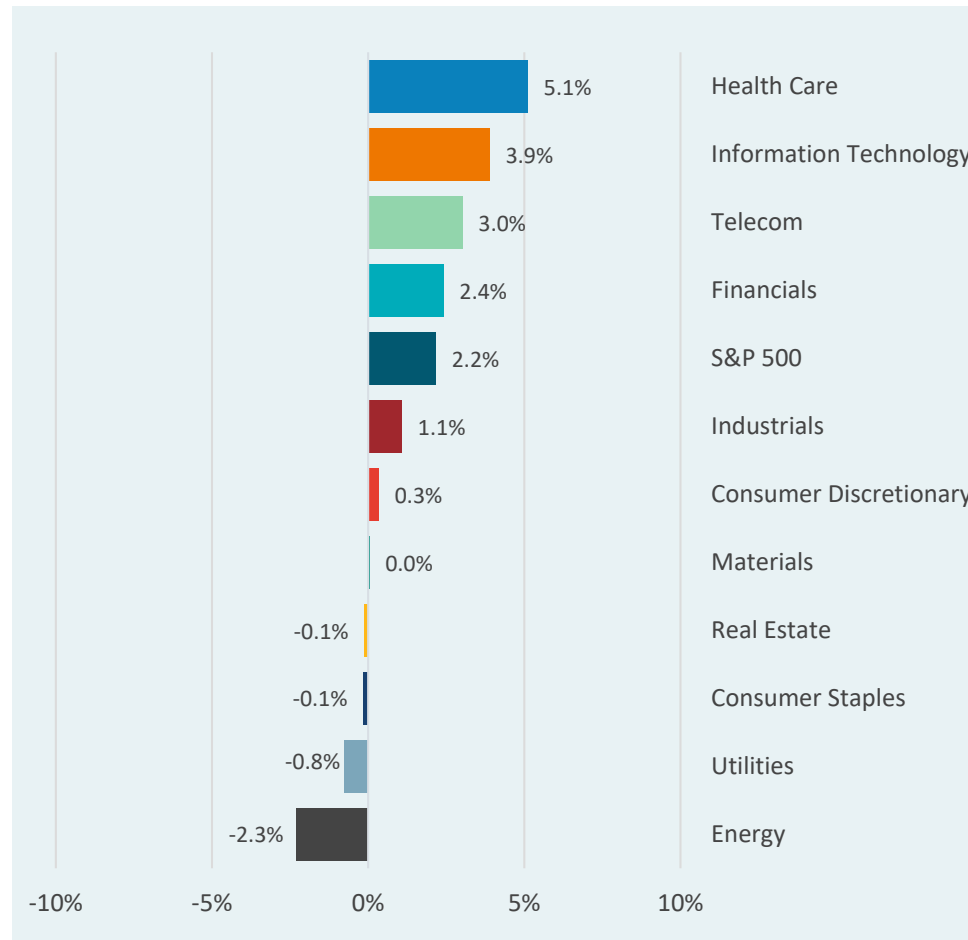
Hedge Funds of Funds

60% MSCI ACWI/40% BBgBarc Global Bond

Source Data: Morningstar, Inc., Hedge Fund Research, Inc. (HFR), National Council of Real Estate Investment Fiduciaries (NCREIF). Indices used: Russell 1000, Russell 1000 Value, Russell 1000 Growth, Russell 2000, Russell 2000 Value, Russell 2000 Growth, MSCI EAFE, MSCI EM, BBgBarc US Aggregate, T-Bill 90 Day, Bloomberg Commodity, NCREIF Property, HFRI FOF, MSCI ACWI, BBgBarc Global Bond. NCREIF Property Index performance data as of 9/30/19.

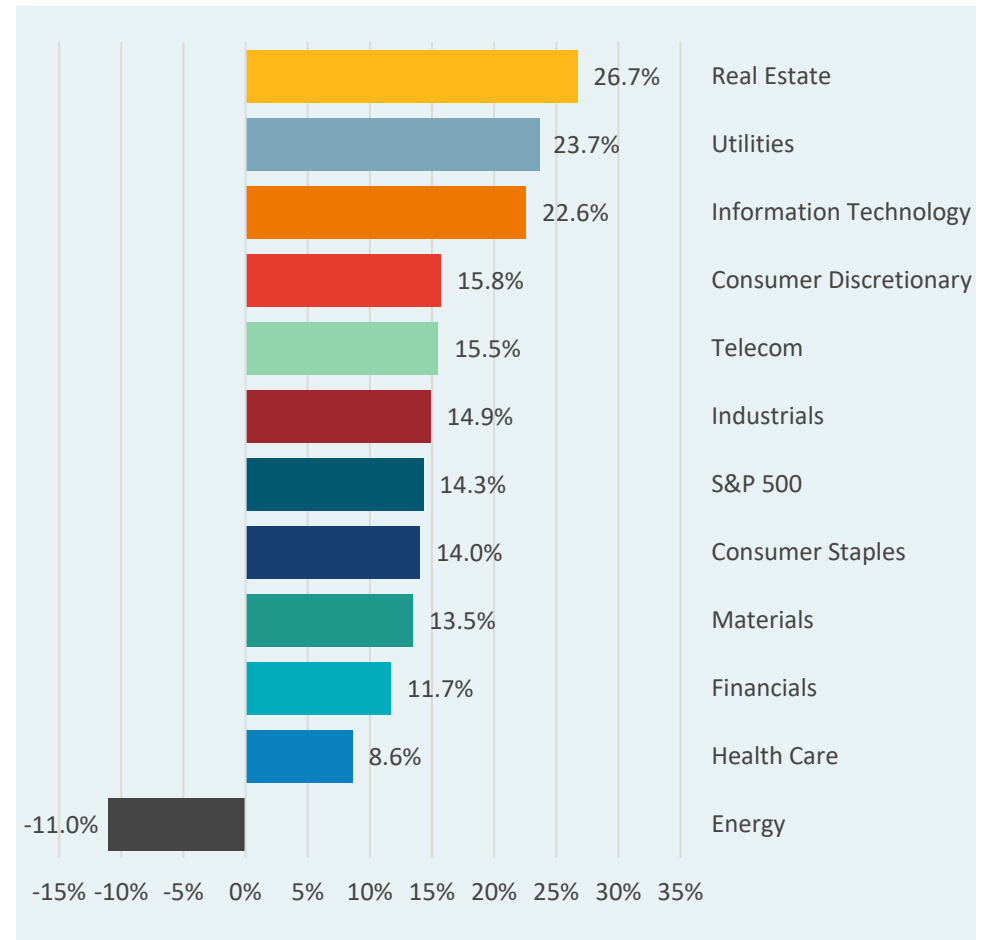
S&P 500 sector returns

QTD



Source: Morningstar, as of 10/31/19

ONE YEAR ENDING OCTOBER



Source: Morningstar, as of 10/31/19

Detailed index returns

DOMESTIC EQUITY

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Core Index							
S&P 500	2.2	2.2	23.2	14.3	14.9	10.8	13.7
S&P 500 Equal Weighted	1.3	1.3	21.6	12.8	12.4	9.1	14.0
DJ Industrial Average	0.6	0.6	18.2	10.3	17.0	11.9	13.6
Russell Top 200	2.5	2.5	23.0	14.3	15.7	11.3	13.7
Russell 1000	2.1	2.1	23.1	14.2	14.7	10.5	13.7
Russell 2000	2.6	2.6	17.2	4.9	11.0	7.4	12.3
Russell 3000	2.2	2.2	22.7	13.5	14.5	10.3	13.6
Russell Mid Cap	1.1	1.1	23.2	13.7	12.3	8.7	13.7
Style Index							
Russell 1000 Growth	2.8	2.8	26.8	17.1	18.9	13.4	15.4
Russell 1000 Value	1.4	1.4	19.5	11.2	10.5	7.6	12.0
Russell 2000 Growth	2.8	2.8	18.6	6.4	13.2	8.4	13.4
Russell 2000 Value	2.4	2.4	15.5	3.2	8.6	6.2	11.1

INTERNATIONAL EQUITY

Broad Index							
MSCI ACWI	2.7	2.7	19.4	12.6	11.3	7.1	8.8
MSCI ACWI ex US	3.5	3.5	15.5	11.3	8.1	3.8	4.9
MSCI EAFE	3.6	3.6	16.9	11.0	8.5	4.3	5.4
MSCI EM	4.2	4.2	10.4	11.9	7.4	2.9	3.8
MSCI EAFE Small Cap	4.5	4.5	17.1	8.8	8.6	7.4	8.1
Style Index							
MSCI EAFE Growth	3.6	3.6	22.2	16.6	10.6	6.4	6.9
MSCI EAFE Value	3.6	3.6	11.6	5.5	6.3	2.1	3.8
Regional Index							
MSCI UK	2.8	2.8	13.2	7.1	7.5	1.5	4.9
MSCI Japan	4.9	4.9	16.5	9.2	7.4	6.9	6.3
MSCI Euro	3.4	3.4	17.8	11.6	8.6	3.8	3.8
MSCI EM Asia	4.5	4.5	10.7	12.8	8.4	4.7	5.8
MSCI EM Latin American	4.5	4.5	11.1	7.7	5.0	0.1	(0.2)

FIXED INCOME

	Month	QTD	YTD	1 Year	3 Year	5 Year	10 Year
Broad Index							
BBgBarc US TIPS	0.3	0.3	7.9	9.0	2.4	2.3	3.4
BBgBarc US Treasury Bills	0.2	0.2	2.1	2.5	1.6	1.0	0.6
BBgBarc US Agg Bond	0.3	0.3	8.8	11.5	3.3	3.2	3.7
Duration							
BBgBarc US Treasury 1-3 Yr	0.3	0.3	3.4	4.6	1.7	1.3	1.2
BBgBarc US Treasury Long	(0.9)	(0.9)	18.7	27.6	5.2	6.0	6.9
BBgBarc US Treasury	0.1	0.1	7.8	11.1	2.6	2.7	3.1
Issuer							
BBgBarc US MBS	0.4	0.4	6.0	8.9	2.5	2.7	3.1
BBgBarc US Corp. High Yield	0.3	0.3	11.7	8.4	6.0	5.2	7.8
BBgBarc US Agency Interm	0.3	0.3	4.4	6.0	2.1	1.9	2.0
BBgBarc US Credit	0.6	0.6	13.3	14.9	4.8	4.4	5.3

OTHER

Index							
Bloomberg Commodity	2.0	2.0	5.2	(2.6)	(0.7)	(6.7)	(4.4)
Wilshire US REIT	1.0	1.0	28.5	23.3	9.7	8.2	13.7
CS Leveraged Loans	(0.5)	(0.5)	5.9	2.6	4.2	4.0	5.3
Alerian MLP	6.6	6.6	19.2	8.7	0.8	(6.2)	7.3
Regional Index							
JPM EMBI Global Div	0.3	0.3	13.3	14.3	5.1	5.4	6.9
JPM GBI-EM Global Div	2.9	2.9	11.0	15.6	4.3	0.8	2.7
Hedge Funds							
HFRI Composite	0.4	0.4	7.2	4.1	4.1	3.1	4.0
HFRI FOF Composite	0.5	0.5	5.8	3.6	3.4	2.2	2.7
Currency (Spot)							
Euro	2.3	2.3	(2.4)	(1.5)	0.6	(2.3)	(2.8)
Pound	5.0	5.0	1.6	1.3	2.0	(4.2)	(2.4)
Yen	(0.0)	(0.0)	1.5	4.4	(0.9)	0.7	(1.8)

Source: Morningstar, HFR, as of 10/31/19

Notices & disclosures

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Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

From: Carl Nelson – Executive Director
Amy Burke – Deputy Director
Scott Whalen - Verus

Agenda Item 14: Investment Program Overview – Presentation by Scott Whalen, Verus

Scott Whalen as the Pension Trust's investment consultant will provide a thorough presentation using the attached exhibits. The purpose of the Investment Program Overview presentation is to provide a refresher on the fundamentals of investing for a retirement system. It is also in partial fulfillment of Trustees annual 12 hour educational requirement.

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**PERSPECTIVES
THAT DRIVE
ENTERPRISE
SUCCESS**



2019

Building, Maintaining, and Monitoring a Successful Investment Program

San Luis Obispo County Pension Trust – Trustee Education

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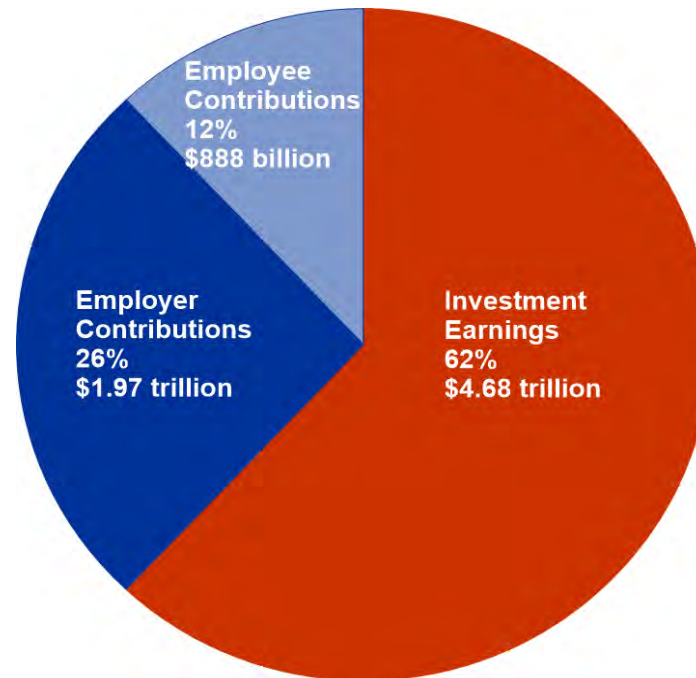
Appendix: Portfolio building blocks PAGE 48

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Importance of investment assets

- Could opt for a **pay as you go** system with out prefunding liabilities
- **Contributions** would have to fund all benefit payments
- Creates **intergenerational transfers**
- Pre-funding allows the use of **long-term investment returns** and the magic of **compound interest** to defray future liabilities

Public Pension Sources of Revenue, 1988-2017

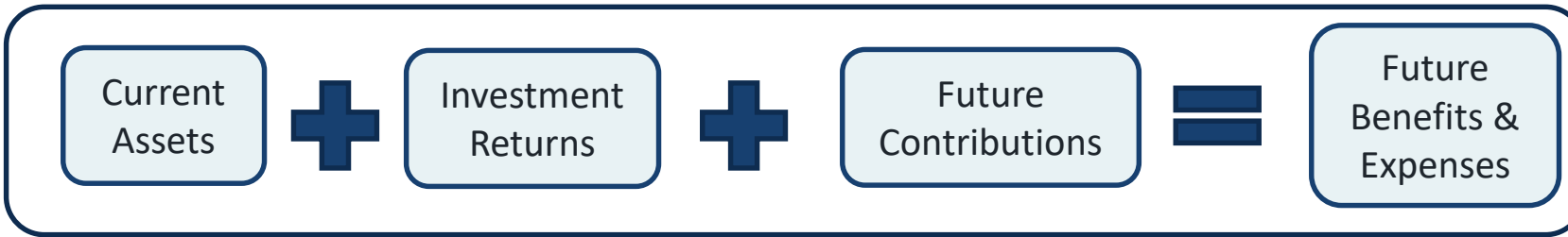


Over time, approximately 60% of public pension balances built up by investment earnings.

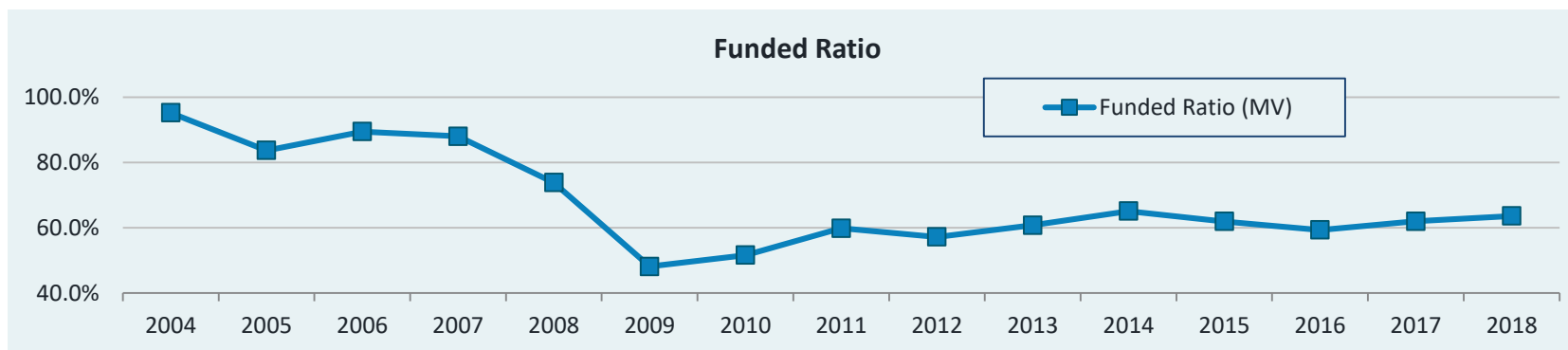
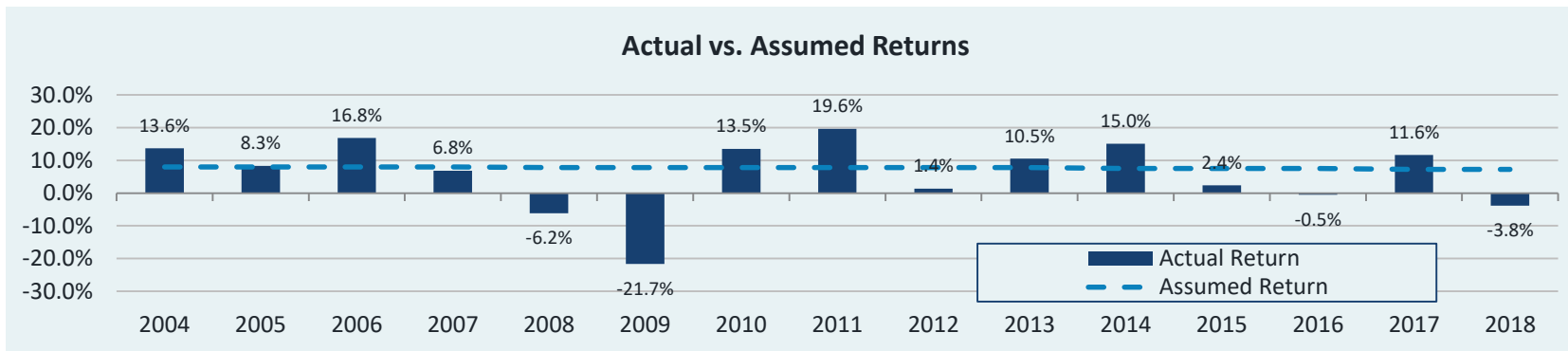
*From NASRA site,
Topics/Contribution*

Source: NASRA

Linking assets and liabilities



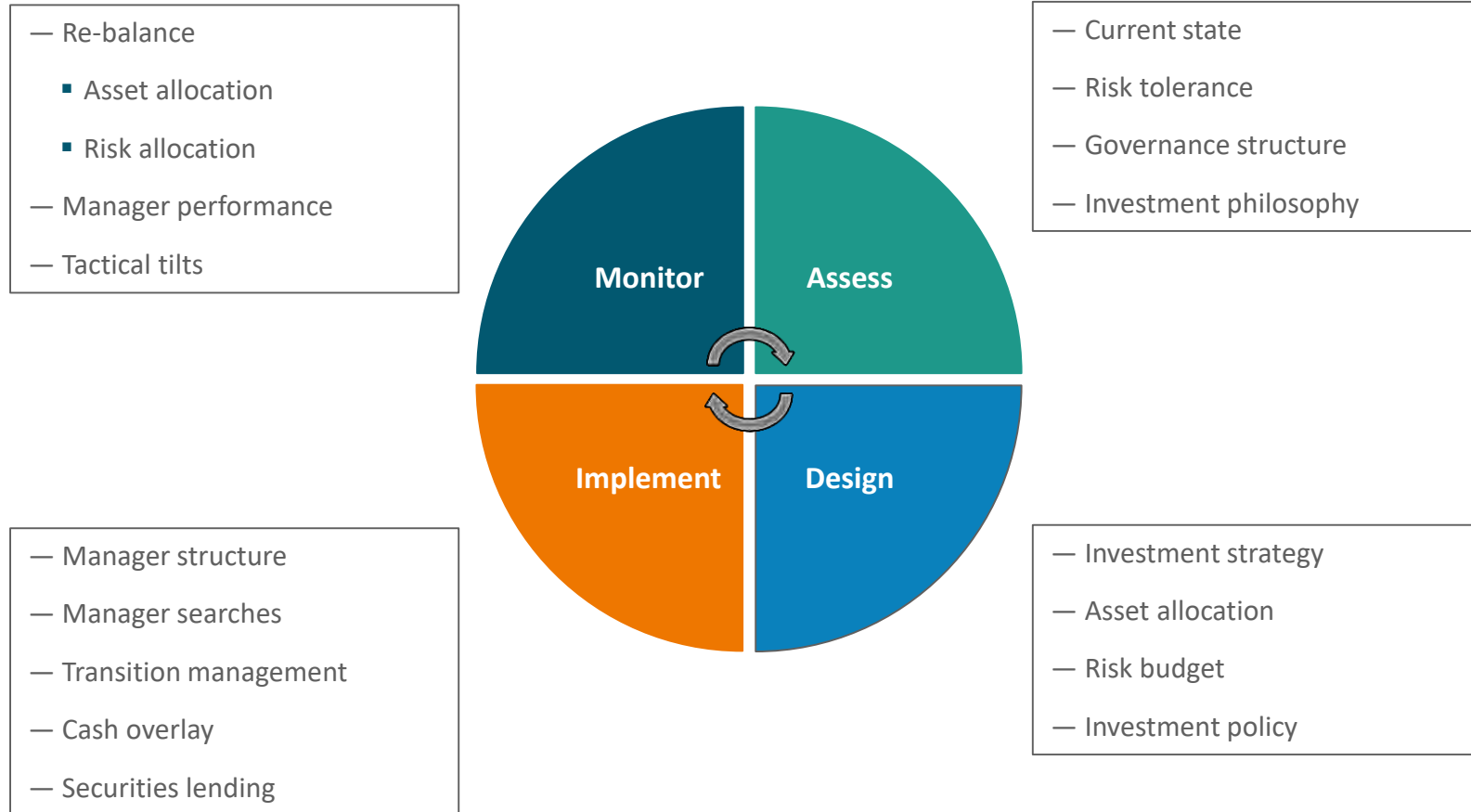
For most public pension plans, the correlation between asset and liability growth is low, which leads to contribution and funding volatility



Source: sample '37 Act pension plan

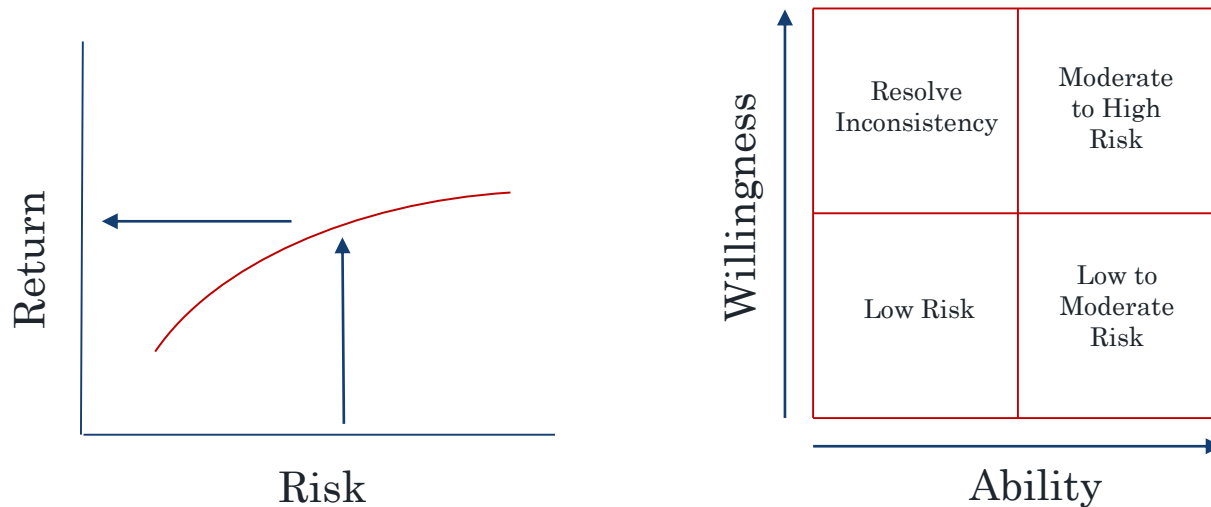
Developing a sensible investment strategy

Institutional investing process



Assessing enterprise risk tolerance

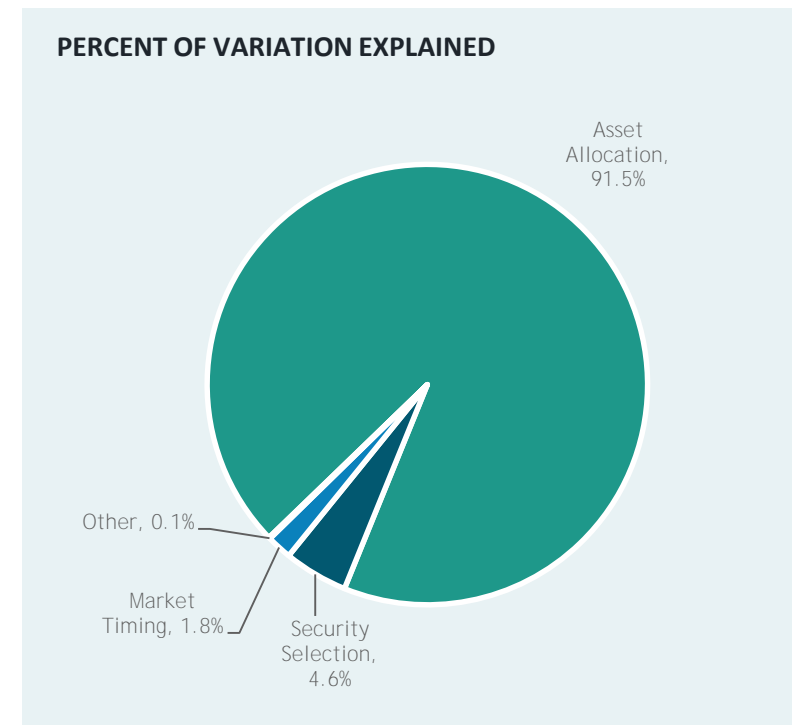
- Identify overall willingness and ability to incur risk
- Identify client-specific risks
- Provide insight into risk-focused investment strategy development process



Asset allocation drives the bulk of returns

Academic Support:

- Gary P. Brinson, L. Randolph Hood, and Gilbert L. Beebower. "Determinants of Portfolio Performance". *Financial Analysts Journal*, July/August 1986
- Gary P. Brinson, Brian D. Singer, and Gilbert L. Beebower. "Determinants of Portfolio Performance II: An Update". *Financial Analysts Journal*, 47, 3 (1991)
- Roger G. Ibbotson and Paul D. Kaplan. "Does Asset Allocation Policy Explain 40%, 90%, or 100% of Performance?" *Financial Analysts Journal*, January/February 2000



Source: Brinson, Singer & Beebower: *Determinants of Portfolio Performance II: An Update*

Portfolio building blocks

	Stocks	Bonds	Other
Primary Purpose:	<ul style="list-style-type: none"> — Growth 	<ul style="list-style-type: none"> — Income — Capital Preservation 	<ul style="list-style-type: none"> — Diversification/Risk Reduction
Key Characteristics:	<ul style="list-style-type: none"> — Ownership of a share of a company's earnings — Highly liquid — Highly correlated to overall economic activity 	<ul style="list-style-type: none"> — Loans to institutional borrowers — Negative correlation to interest rates — May be correlated to economic activity in times of severe stress 	<ul style="list-style-type: none"> — Low liquidity — Difficult to value — Additional due diligence — Non-normal returns distributions
Further Segmentation:	<ul style="list-style-type: none"> — Growth / Value — Company size 	<ul style="list-style-type: none"> — Sector — Credit Quality 	<ul style="list-style-type: none"> — Real Estate — Hedge Funds — Private Equity — Commodities — Other

The role of asset classes



Modern portfolio theory

First introduced in 1952 by Harry Markowitz – Nobel prize winning professor from Yale University

Basic Assumptions (It's all about risk and return)

- Investors are rational
- A rational investor will choose the highest rate of return for taking on a given amount of risk
- Risk and return can be reasonably estimated
- Diversification of investments provides the investor with a so-called “free lunch”

Basic Principles

- Return
- Risk
- Correlation (“the magic in the mix”)

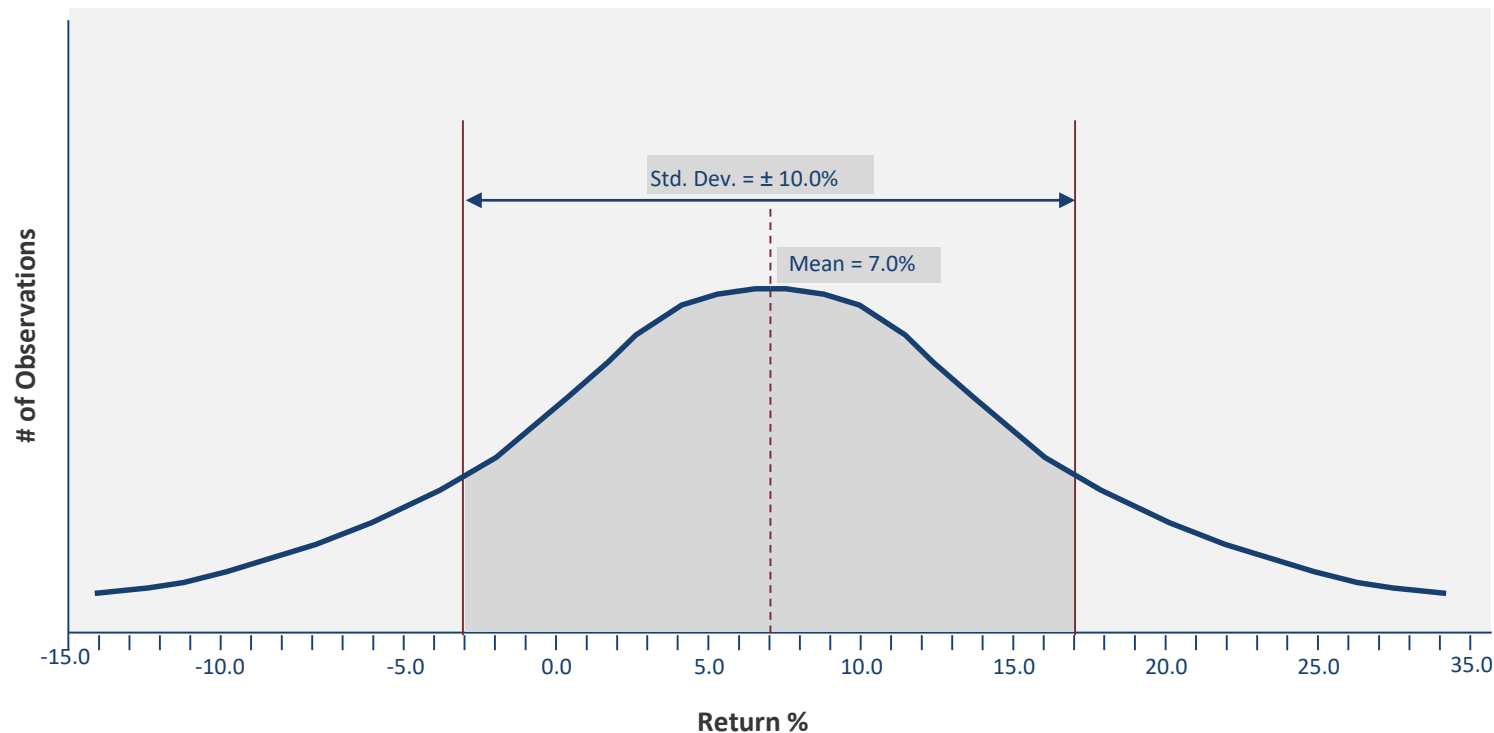
Model inputs

To construct a high quality, “efficient” portfolio, you must answer just four basic questions:

1. What are the appropriate Asset Classes to invest in (e.g., stocks, bonds, real estate)?
2. What is the expected Return for each asset class?
3. What is the expected Risk of investing in each asset class?
4. How are the returns of these asset classes Correlated over time?

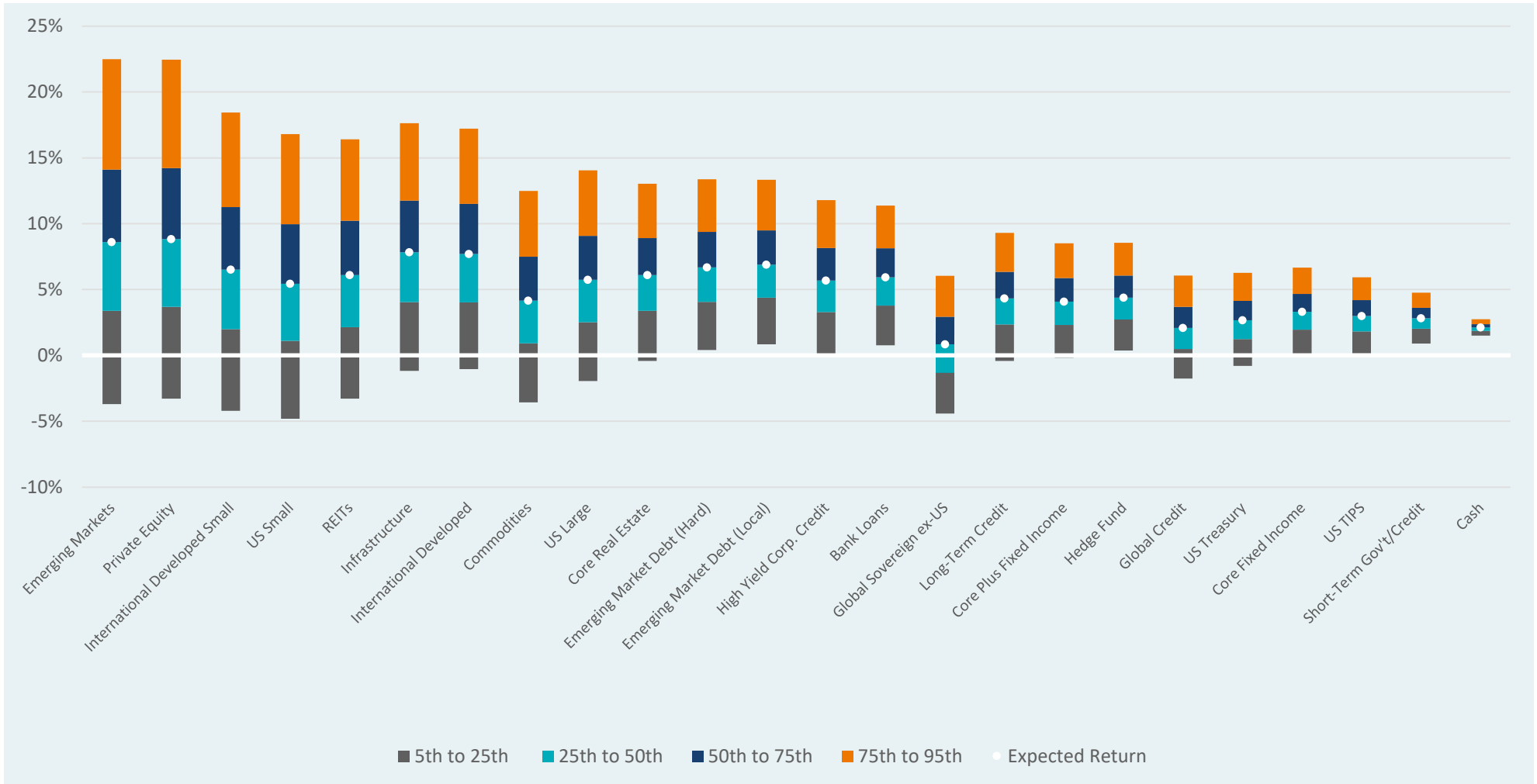
Standard deviation: a measure of risk

Standard deviation can be used as an effective measure of risk by indicating how far from the average, or **mean**, return one is likely to fall in any given time period. The rules of statistics dictate that you will fall within 1 standard deviation of the mean 2/3 of the time, within 2 standard deviations 95% of the time, and within 3 standard deviations 99% of the time



Range of likely 10-year outcomes

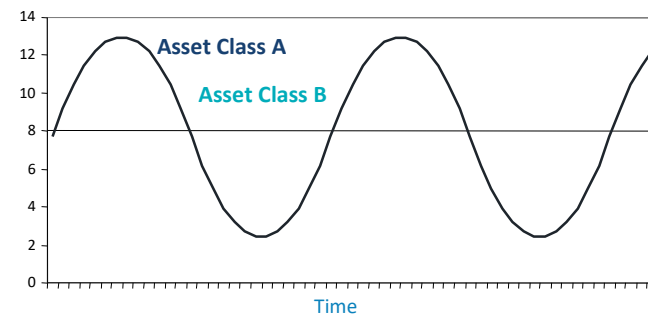
10 YEAR RETURN 90% CONFIDENCE INTERVAL



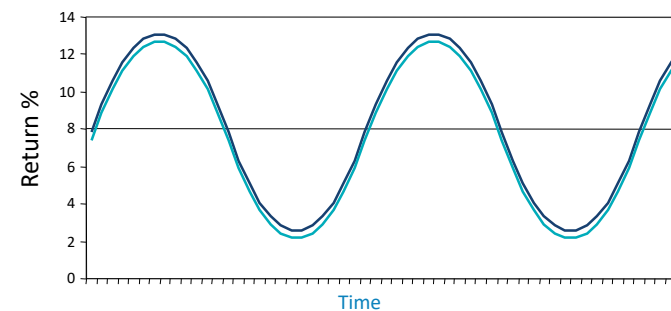
Correlation

- Correlation describes how different asset classes perform in relation to one another over time. It measures the sensitivity of the return of one asset class to that of another, and it is the key to effective diversification
- If two asset classes have identical returns over time, they are perfectly correlated with a correlation coefficient of one. In this case there is no diversification benefit
- If two different asset classes have returns that move in the opposite direction over time, they are said to have perfect negative correlation with a correlation coefficient of minus one. This case provides complete diversification but is practically impossible to achieve in the “real world”

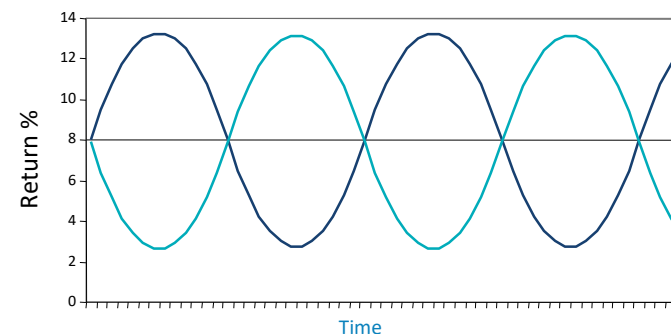
“ > -1
and
 < 1 ”



“ $= 1$ ”

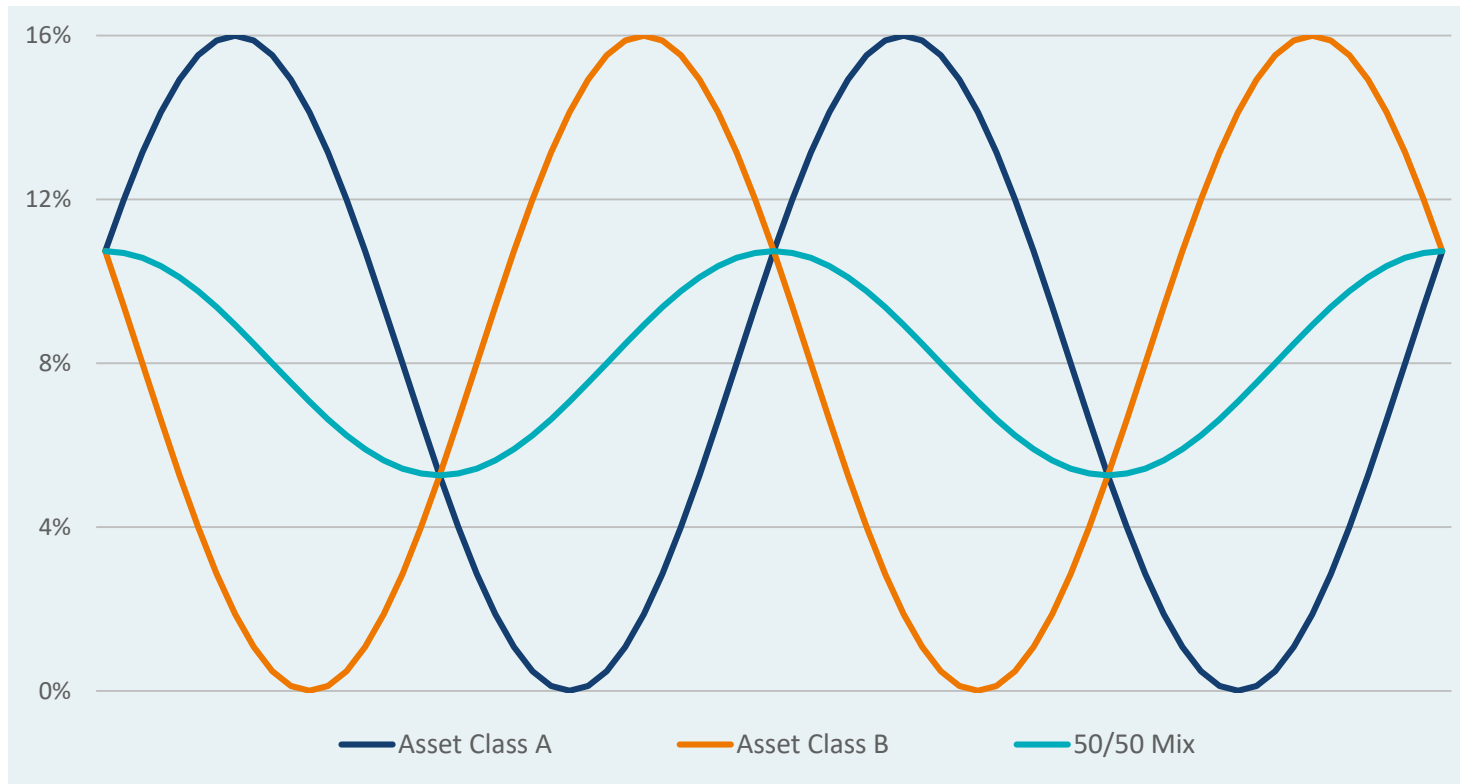


“ $= -1$ ”



Correlation and diversification

Choosing asset classes with different return profiles reduces the volatility, or risk, of a portfolio while maintaining its long-term average return



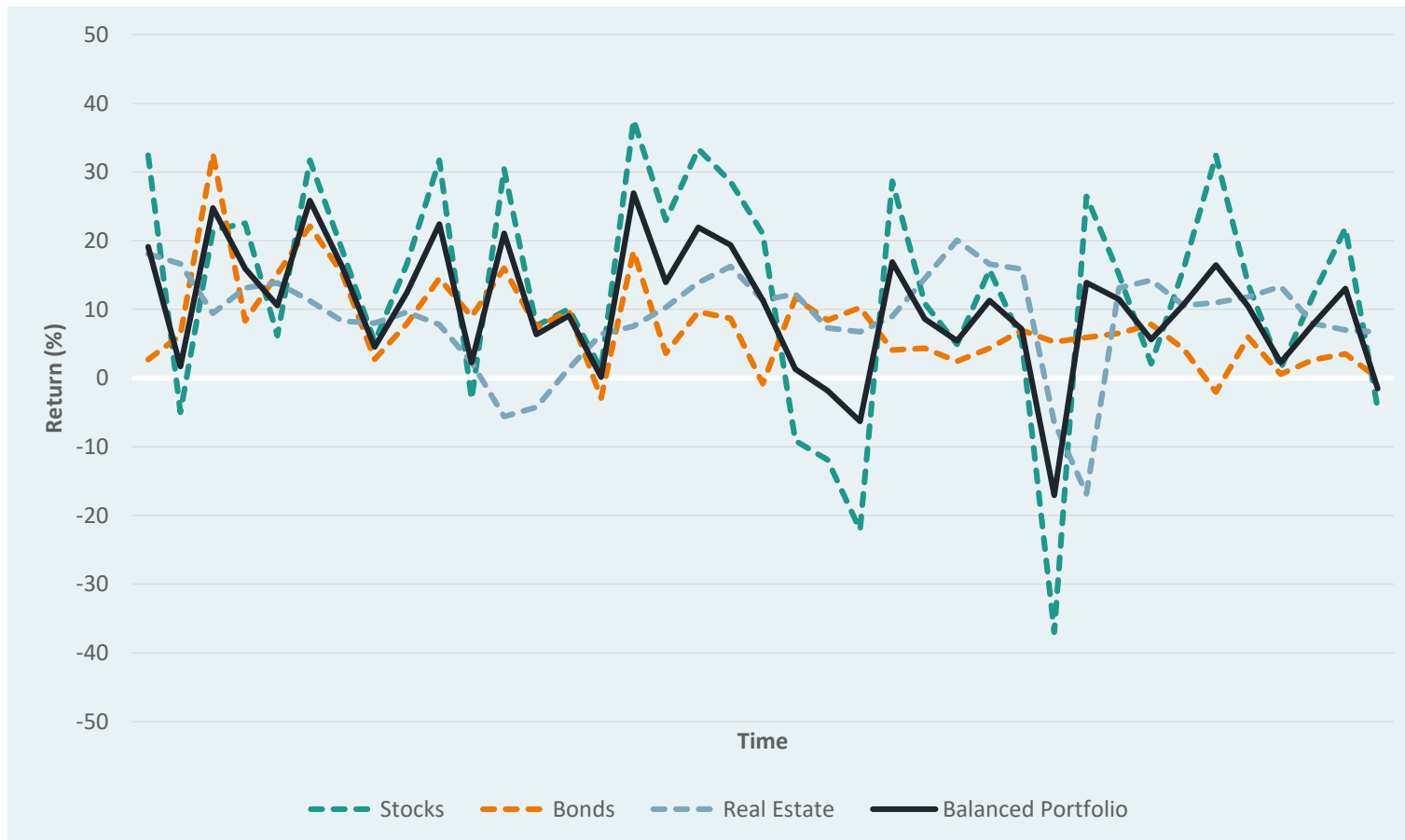
Historical asset class correlations

	U.S. Stocks	Int'l Stocks	Bonds	Real Estate Equity	Private Equity	Hedge Funds
U.S. Stocks	1.00					
Int'l Stocks	0.82	1.00				
Bonds	0.01	0.00	1.00			
Real Estate Private	-0.01	0.01	-0.12	1.00		
Private Equity	0.22	0.24	-0.15	0.60	1.00	
Hedge Funds	0.61	0.71	0	0.09	0.32	1.00

Source: MPI June 1994 – Sept 2018

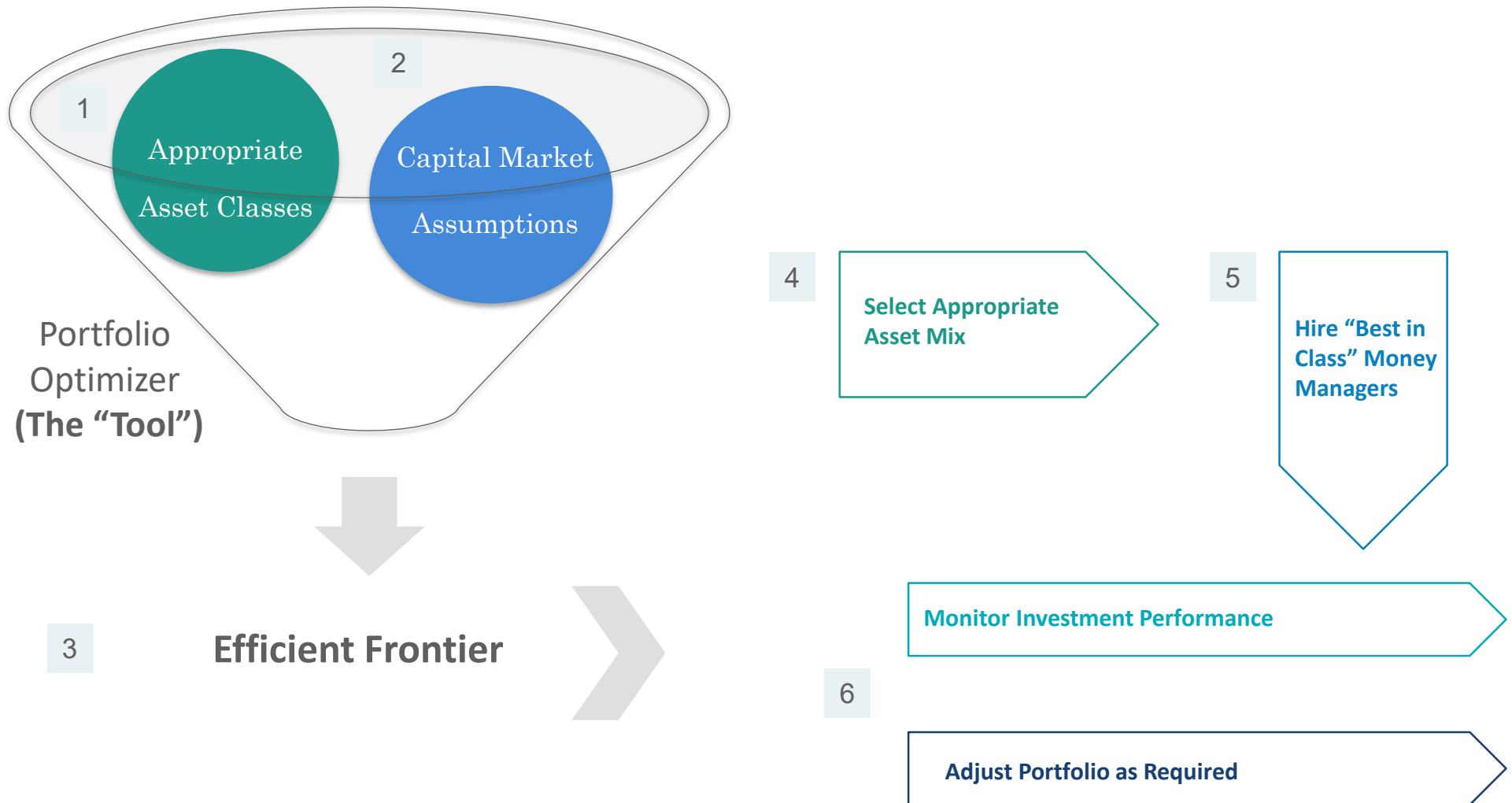
Correlation at work: a historical example

Investing in a single asset class provides a wide range of returns over time. When asset classes are combined, volatility is reduced



* Assumes an asset mix of 50% stock, 40% bonds, and 10% real estate, re-balanced annually.
January 1980 – December 2018 Source: MPI

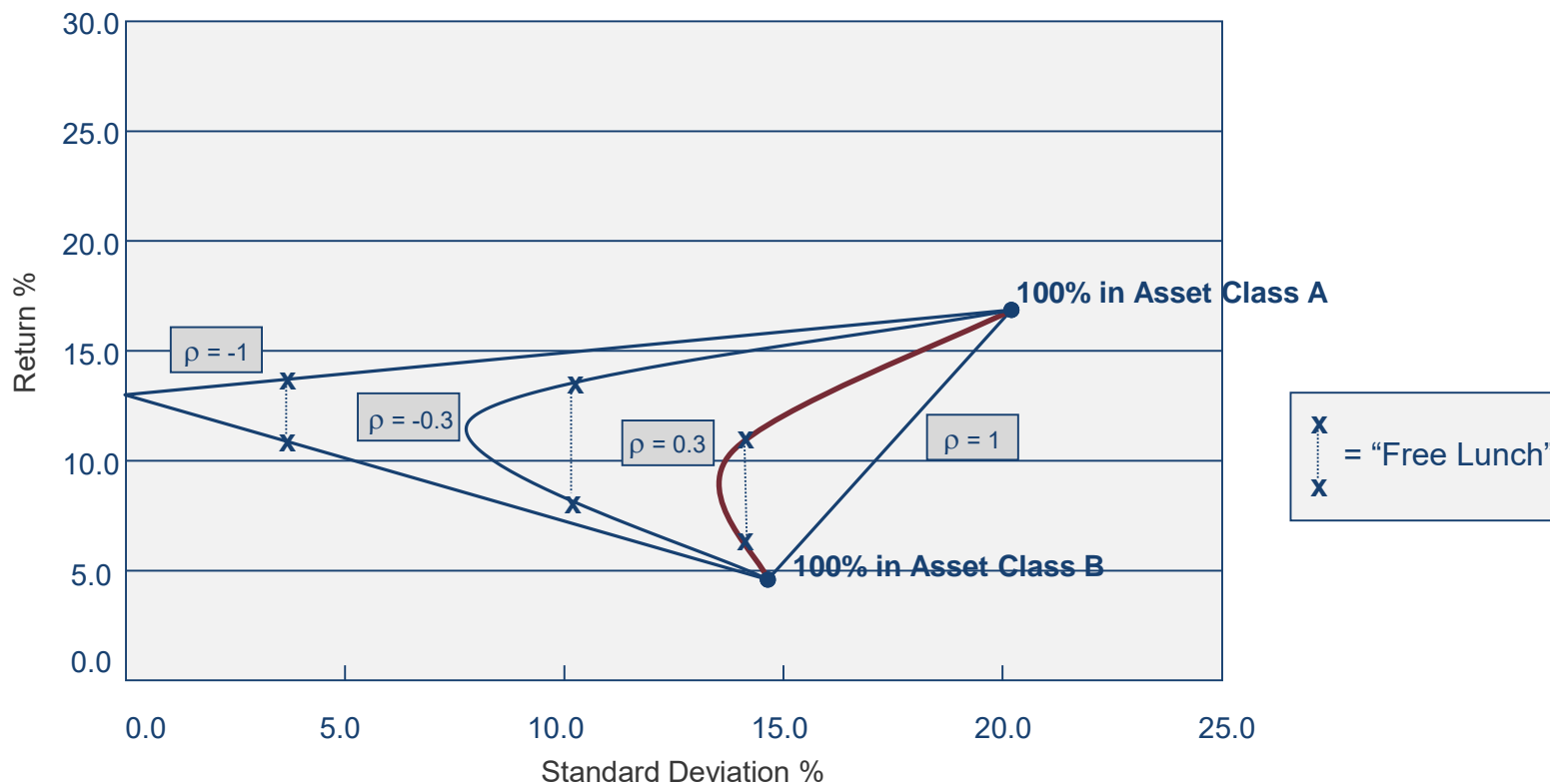
The “modern” portfolio investment process



The efficient frontier: a two-asset example

3 Efficient Frontier

When asset classes are combined in the most efficient manner, a line or boundary emerges representing risk/return combinations with the highest rate of return for the least amount of risk. This line is known as the Efficient Frontier.

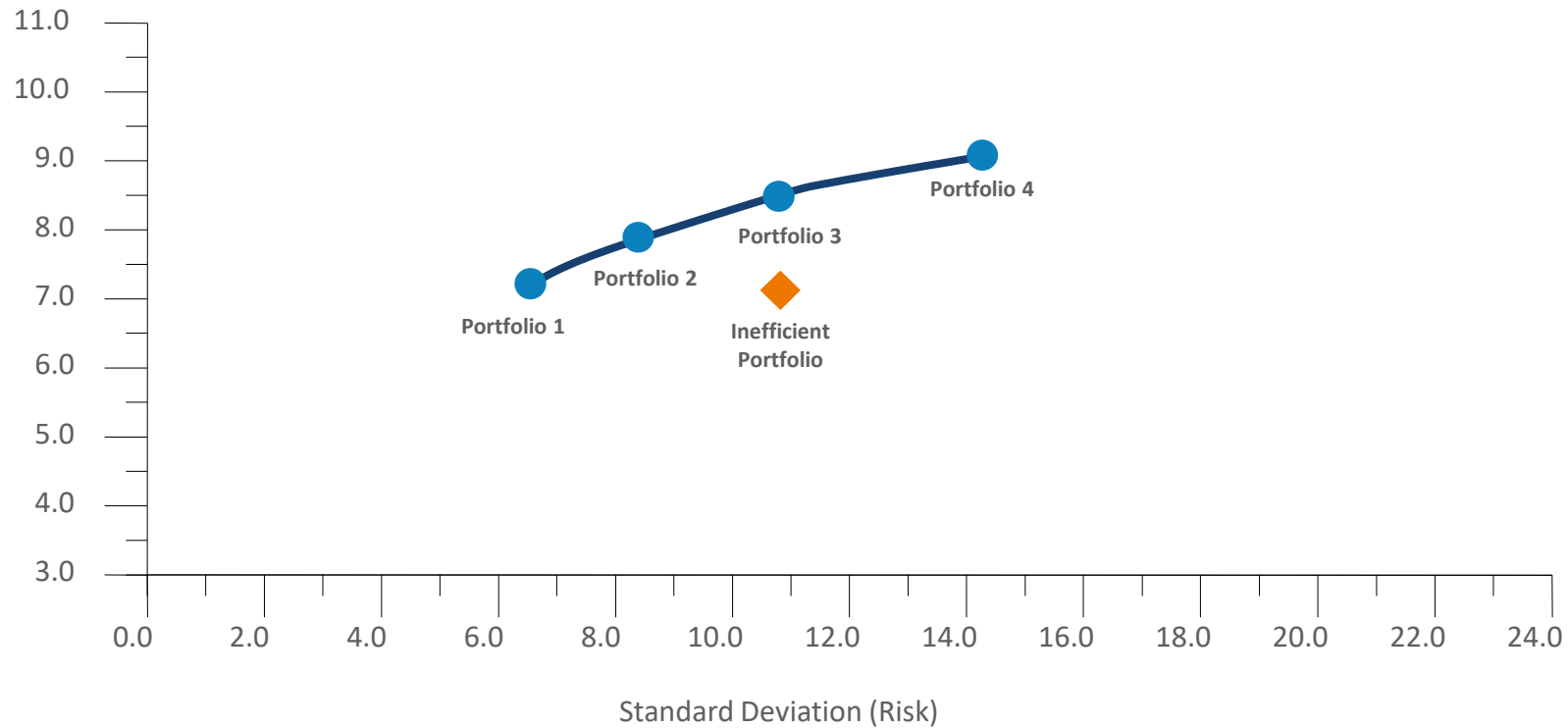


Note: ρ represents the correlation coefficient between the two asset classes

Sample efficient frontier

3 Efficient Frontier

Expected Return



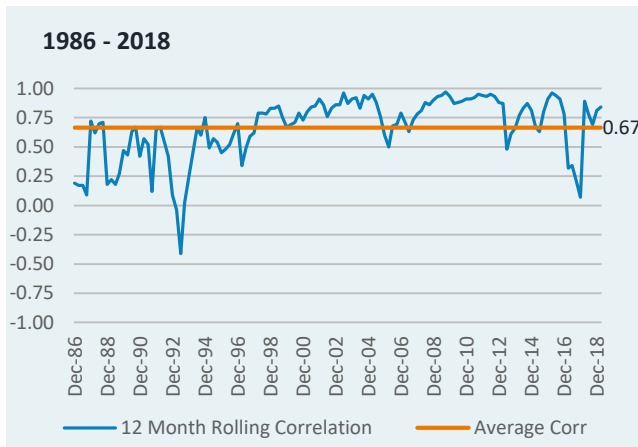
Modern portfolio theory principles: review

1. Strategic Asset Allocation is the key driver of long-term portfolio performance
2. In constructing a well-diversified portfolio, one must consider:
 - Appropriate asset classes
 - Expected returns
 - Expected risk (standard deviation)
 - The expected relationship between asset classes (correlation)
3. By constructing a portfolio that includes different asset classes, an investor is able to maximize the portfolio's return at each level of risk (efficient frontier)
4. Diversification is the only "free lunch"

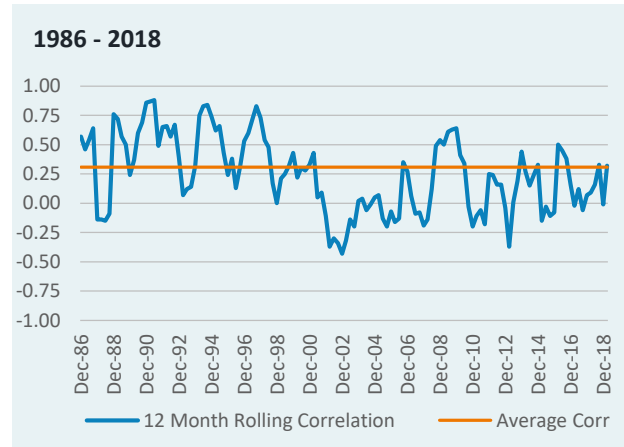
Modern portfolio theory drawbacks: unstable correlations

- Multiple asset classes provide good portfolio diversification on average
- But dispersion is remarkably high...
...and higher correlation tends to show up when investors can least afford it

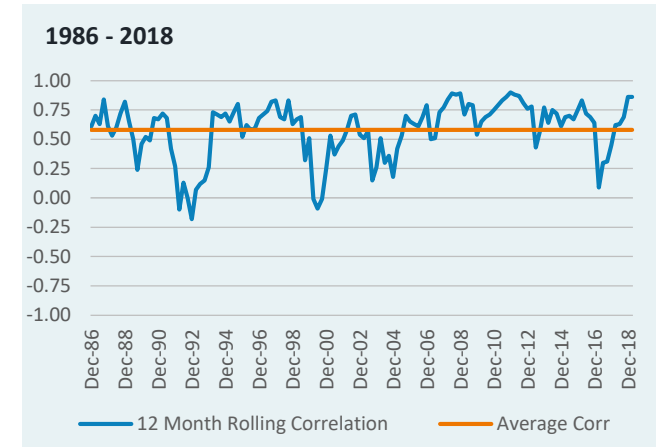
S&P 500 VS. MSCI EAFE



S&P 500 VS. INVESTMENT GRADE CREDIT



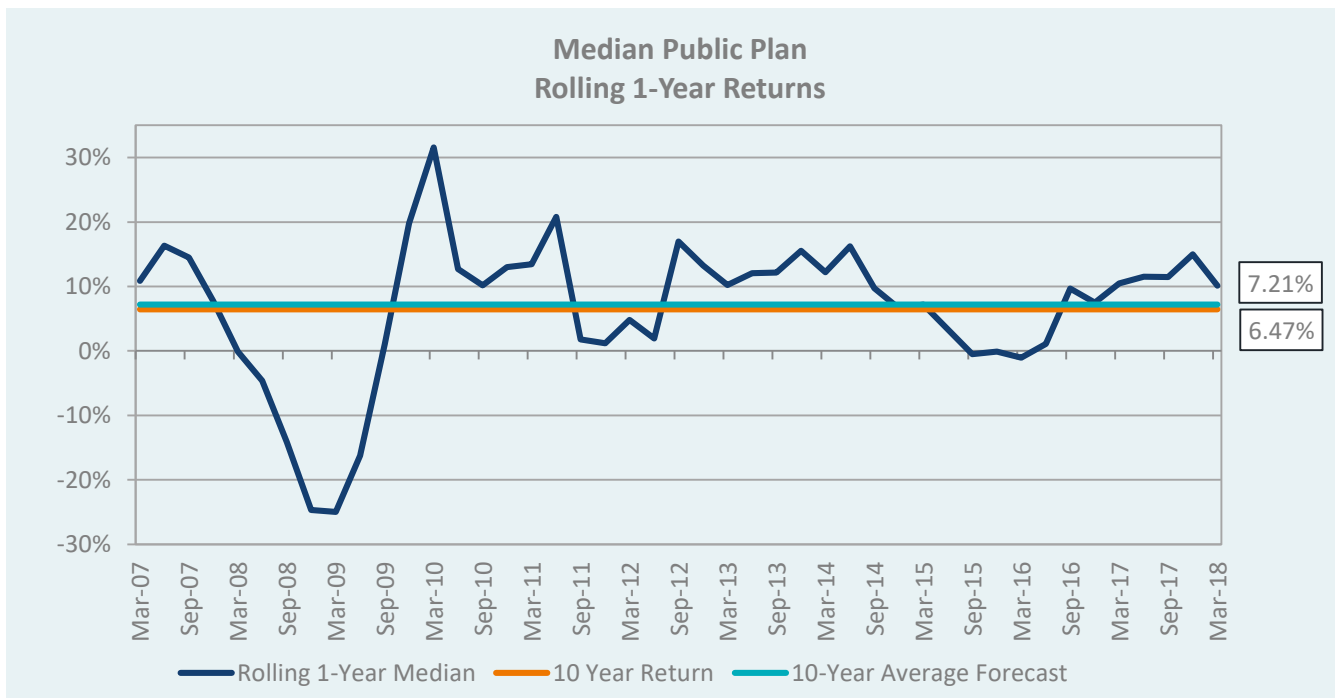
S&P 500 VS. HIGH YIELD BONDS



Modern portfolio theory drawbacks: forecasting error

- In 2007, a reasonably well diversified portfolio was expected to generate an annual return of 7.2%
- That 10-year expectation missed the mark
- Actual experience comes with “fat tails”

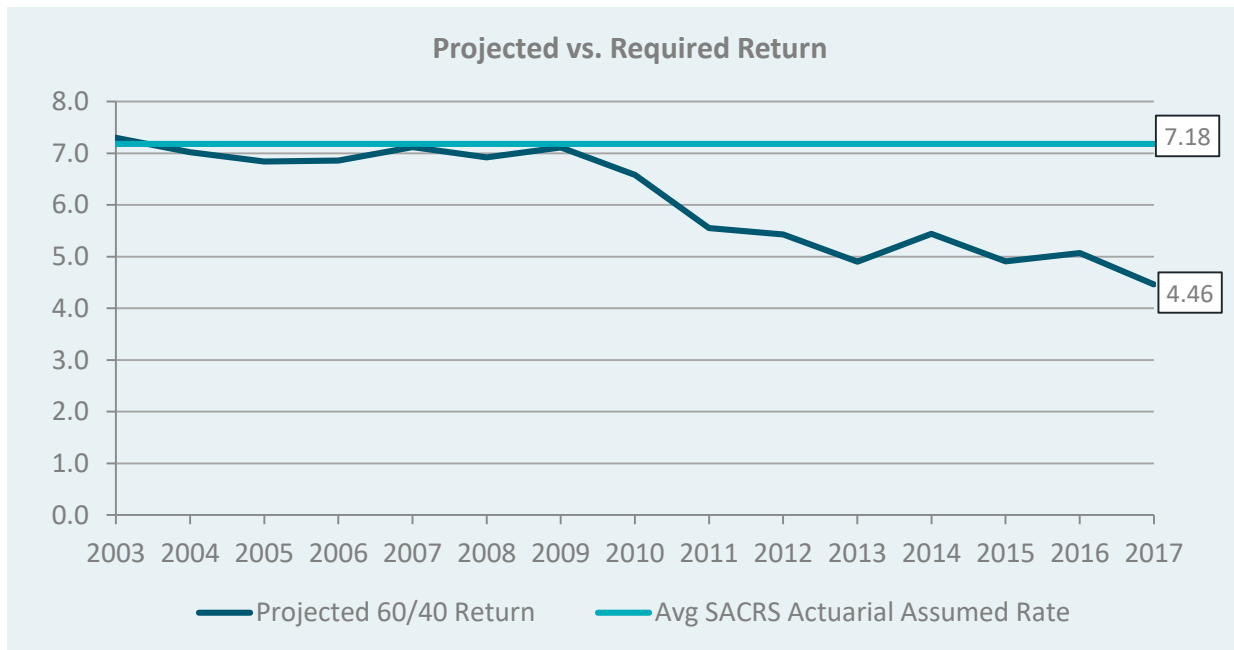
Asset Class	Allocation	Average Forecast	Weighted Average
US Equity	40%	8.13%	3.21%
Int'l Developed	12%	8.42%	1.00%
EM Equity	5%	8.91%	0.41%
US Fixed Income	25%	5.39%	1.37%
Real Estate	10%	6.61%	0.65%
Hedge Funds	9%	6.43%	0.56%
Total Fund	100%		7.21%



Source: Average of selected 2007 capital market assumptions, Investment Consultants Cooperative, InvestorForce, BNY Mellon, Verus

Modern portfolio theory drawbacks: myopic risk management

- In 2017, the average actuarial assumed rate of return for '37 Act Counties was 7.18%
- The range was 7.0% to 7.5%
- As return expectations drop, Boards may be prone to reach for yield, which also leads to increased risk...possibly at precisely the wrong time



Source: SACRS Member websites, Verus Capital Market Assumptions

Know thyself: understanding investor behavior

Traditional vs. behavioral finance

Traditional financial modeling assumes all investors make rational investment decisions based on well-established notions of risk and reward. Behavioral finance recognizes that investors base investment decisions on factors that may not be validated by traditional finance concepts

Traditional Assumptions (MPT)

- Risk Aversion
- Rational Expectations
- Asset Integration

Behavioral Assumptions

- Loss Aversion – Investors prefer larger uncertain losses to smaller certain losses
- Biased Expectations – Investors place too much confidence in their ability to forecast the future
- Asset Segregation – Investors tend to focus on individual asset classes rather than the entire portfolio

Behavioral biases to watch out for

Over-confidence

- Believing one's ability to forecast the future is better than it is (led to the collapse of LTCM)

Representativeness

- Making judgments based on stereotypes (failure to appreciate mean reversion)

Anchoring

- Inability to adjust views in response to new information (i.e., stuck in the past)

Familiarity

- Investing in what is familiar (leads to lack of appropriate diversification)

Loss Aversion

- Propensity to hold a losing position too long – and even to double down (led to the collapse of Barings Bank)

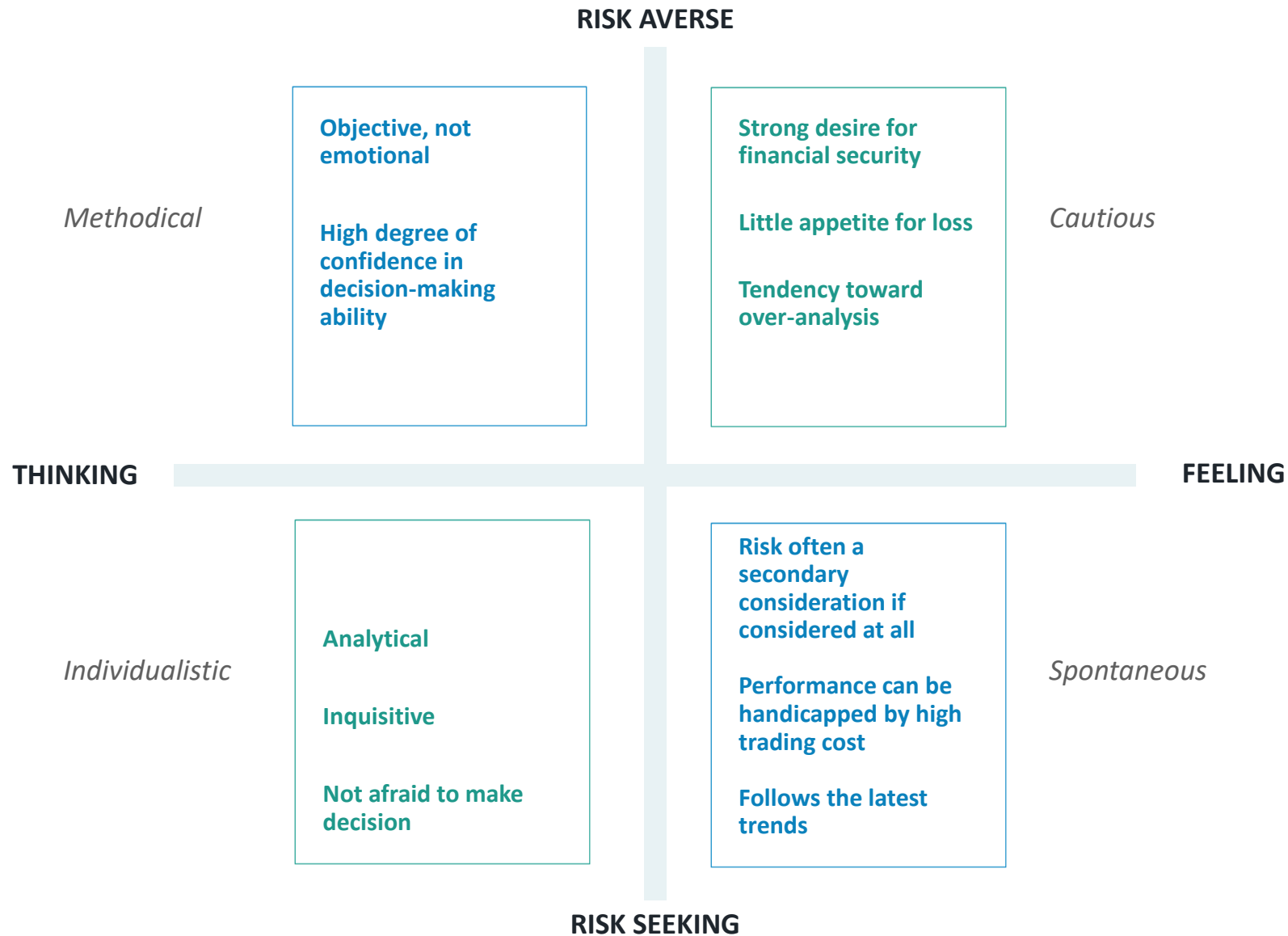
Regret Minimization

- Propensity to sell a winning position too soon

Hindsight Bias

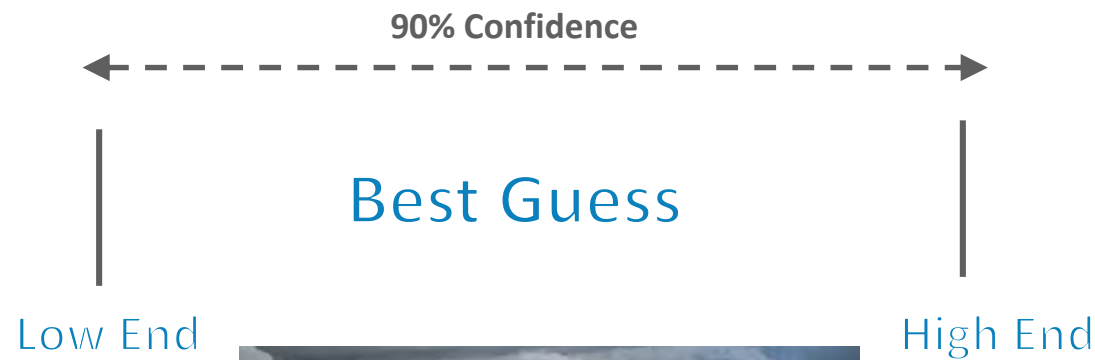
- Propensity to remember good outcomes and forget bad ones (leads to over-confidence)

Personality typing



Making the point

Estimating take-off weight of a fully loaded Airbus A380



Assessing different approaches

Investment models

	Typical Peer	80/20	70/30	60/40	Risk Diversified 50/25/25	Risk Diversified 40/30/30	FFP
Equities	50	80	70	60	50	40	40
Global Equity	45	80	70	60	50	40	25
Private Equity	5				10	5	15
Fixed Income	35	20	30	40	25	30	35
Cash							5
US Treasury					10	15	10
Short-Term Gov't/Credit							10
Core Fixed Income	35	20	30	40			
High Yield Corp. Credit					5	5	
Emerging Markets Debt (Local)					5	5	
Private Credit					5	5	10
Other	15	0	0	0	25	30	25
Commodities	5					5	
Hedge Funds	5				5	5	10
Core Real Estate	5				20	20	15
Total	100	100	100	100	100	100	100

Typical peer is based on BNY Mellon universe data of DB Plans > \$2 Billion

Typical peer

Description

- An evolution of the 60/40 mix adopted by many defined benefit pension plans
- The model's core components are global equities and core fixed income
- Augmented with small, diversifying allocations to private equity, commodities, hedge funds, and core real estate

Pros

- Performs well when equity markets do well
- Low relative complexity
- Low peer risk

Cons

- Modest return expectations
- High concentration in equity risk
- Performs poorly when equities perform poorly
- Susceptible to large drawdowns

80/20; 70/30; 60/40

Description

- Illustrative portfolios designed to demonstrate the implications of varying degrees of risk; the portfolios are composed of Global Equities and US Core Fixed Income;

Pros

- Extremely low complexity
- Cheap to implement and maintain

Cons

- High peer risk
- Low diversification
 - High exposure to equity risk factor
 - Highly susceptible to equity drawdowns

Risk-balanced portfolios

Description

- Model designed to increase risk diversification to the Typical Peer in a way that doesn't markedly increase peer risk
- Does not rely on large allocations to hedge funds or other complex instruments to achieve risk factor diversification

Pros

- Well diversified from an asset and risk factor perspective
- High efficiency (risk adjusted returns)
- Low volatility relative to other models in the study
- Designed to reduce downside risk and ultimately lower tail risk relative to other models with similar risk

Cons

- Higher allocations to private assets increase embedded leverage
- When equity is in favor, model may not keep up with peers with heavy or concentrated equity exposure

Functionally focused portfolio (FFP)

Description

- Design based on functional elements, rather than categorizing assets by asset class or risk factors (e.g., liquidity and short-term needs, long term growth assets, diversifying strategies)

Pros

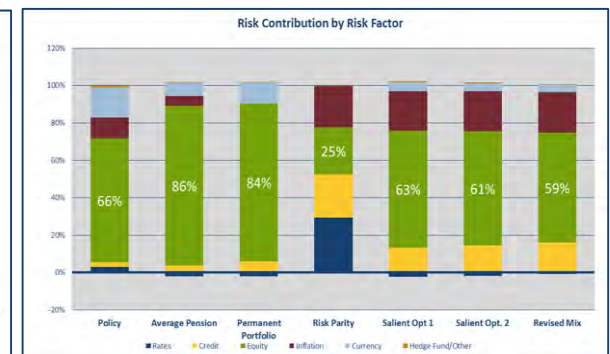
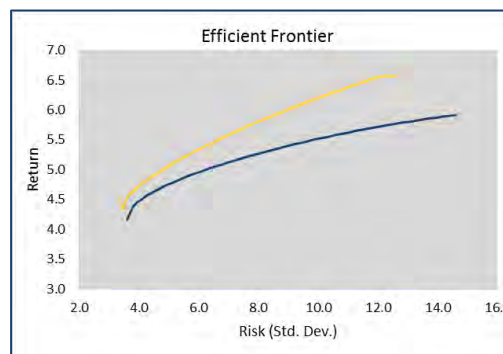
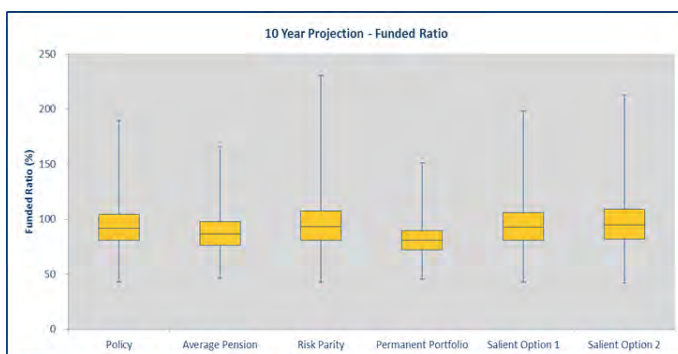
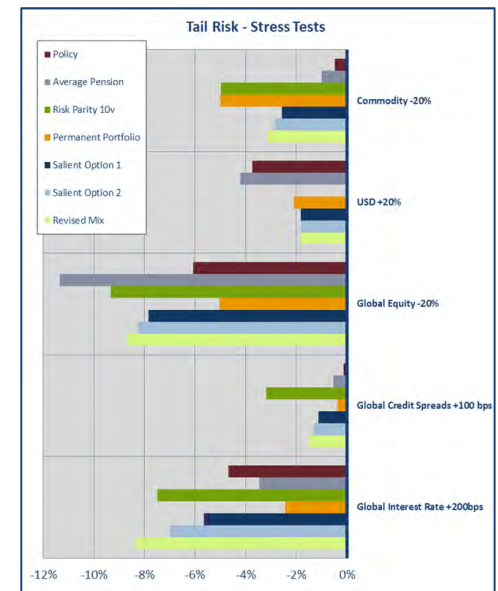
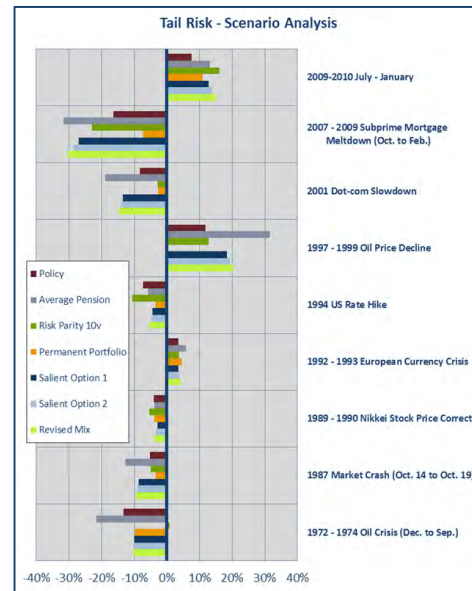
- Highly diversified from a risk factor and asset perspective
- Portfolio is conceptually simple and strategically aligned with functional goals
- Higher expected return than Typical Peer
- Low volatility relative to other models in the study
- Low drawdowns relative to other models in the study
- Highly efficient as measured by the Sharpe Ratio

Cons

- Less upside potential
- High peer risk (may not keep up with peers in strong equity markets)

Modeling techniques

1. Mean-Variance Analysis
2. Asset-Liability Modeling
3. Scenario Analysis
4. Stress Tests
5. Risk Decomposition



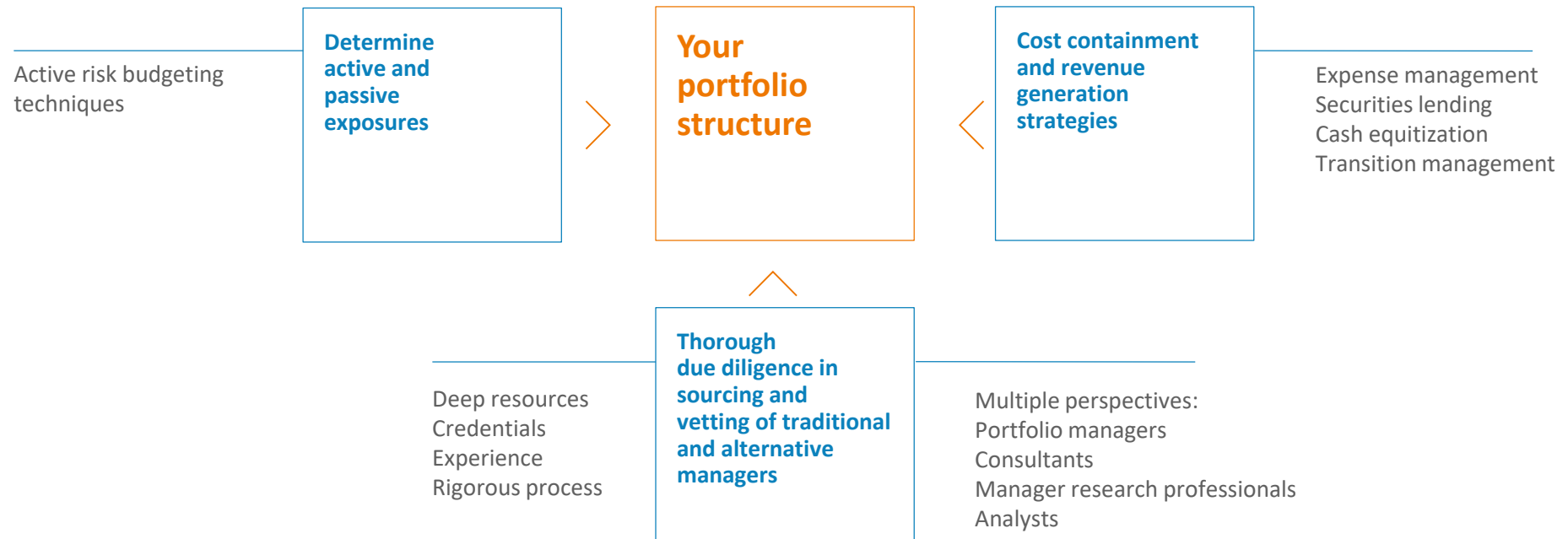
Note: Images illustrative of the process and are from a 2014 Asset/Liability Study conducted for SDCERA

Investment model evaluation summary

Selection Criteria	Investment Models						
	Typical Peer	80/20	70/30	60/40	Risk-Balanced (50/25/25)	Risk-Balanced (40/30/30)	FFP
Risk/Return Metrics							
Expected Return	6.00%	6.90%	6.50%	6.00%	7.10%	6.60%	6.60%
Volatility	9.60%	13.20%	11.50%	9.90%	11.00%	9.70%	9.50%
Sharpe Ratio	0.41	0.37	0.38	0.4	0.45	0.46	0.48
Daily VaR (95% confidence, \$MM)	\$69.60	\$110.40	\$95.00	\$79.80	\$60.10	\$57.70	\$43.10
Daily CVaR (95% confidence, \$MM)	\$102.30	\$149.00	\$131.90	\$114.70	\$97.90	\$92.00	\$84.40
2007-2009 Drawdown (Simulation)	-30.40%	-38.50%	-38.00%	-32.60%	-36.30%	-33.00%	-28.80%
1st Percentile (1 Year, MVA)	-23.30%	-33.00%	-28.60%	-24.40%	-27.20%	-24.10%	-22.20%
Potential impact on Discount Rate	-1.26%	-0.32%	-0.77%	-1.22%	-0.14%	-0.67%	-0.62%
Other Key Metrics (Expected Yr. 10)							
Funded Ratio	93.8	99.4	96.6	94	100.3	96.9	97.3
\$MM Contributions - Employer	\$230.10	\$137.00	\$197.80	\$228.00	\$121.20	\$193.50	\$194.50
% of Pay Cont. - Employer	29.1	17.5	25	28.9	15	24.5	24.6
Risk Factors							
Portfolio Complexity	med	low	low	low	med	med	med
Leverage	low	low	low	low	med	med	med
Peer/Headline Risk	low	high	high	high	med	med	high
Liquidity Risk	med	med	med	low	med	med	low
Tail Risk	med	high	high	med	high	low	low
Equity Risk Allocation	high	high	high	high	med	low	med

Implementation and Monitoring

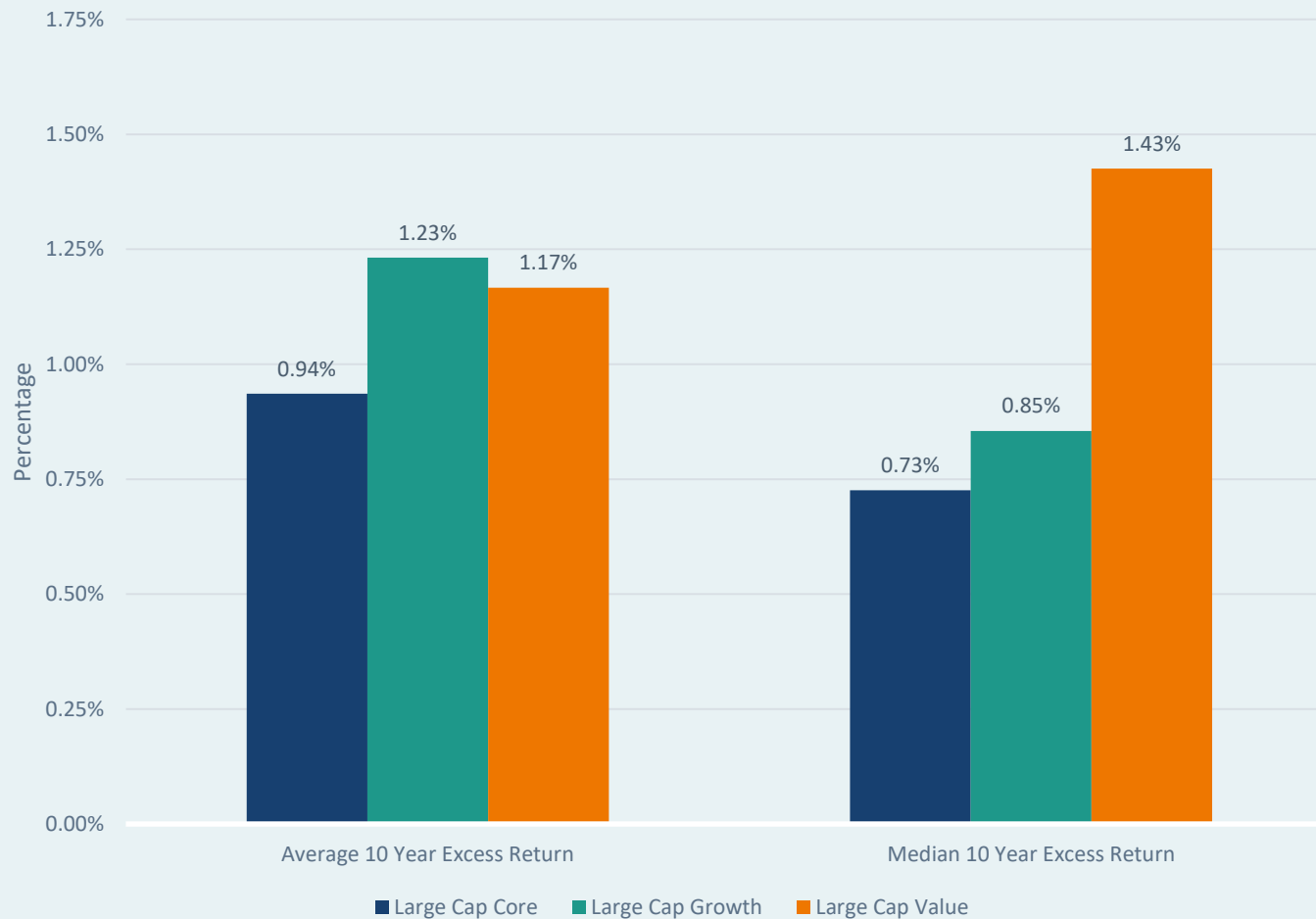
Efficient implementation is critical to success



The importance of patience

Case study

EXCESS RETURNS OF OUTPERFORMING MANAGERS (TEN YEARS ENDING DECEMBER 2018)



Using data from eVestment, Verus conducted a study to assess to what extent good managers underperform along the way. The study observed 96, 115, and 210 Large Cap Core, Growth, and Value managers, respectively, who outperformed their benchmarks over 10-years ending December 2018

Short-term underperformance should be expected

Returns were then examined to identify what percentage of these funds underperformed their benchmarks over annualized three-year rolling periods:

- Despite long-term outperformance, most of the managers surveyed underperformed their benchmarks over at least one three-year period;
- Over all three-year periods, the mean batting average for growth managers was approximately 47%, while core and value managers underperformed more often; and
- A meaningful percentage of the managers underperformed their indices by at least 2% during a three-year stretch and some even underperformed by 5% or more on an annualized basis.

ACTIVE MANAGEMENT OVER ROLLING 3-YEAR PERIODS

	Large Cap Core	Large Cap Growth	Large Cap Value
% of Funds Who Underperformed at least One 3-Yr Period	53.6%	74.3%	80.9%
Average Rolling 3-Yr Batting Average	38.3%	46.6%	39.7%
Highest Batting Average	89.0%	80.6%	77.8%
Lowest Batting Average	22.2%	19.4%	22.2%
% of Funds which Trailed for 3 yrs by at least 2% Annualized	17.0%	38.4%	41.7%
% of Funds which Trailed for 3 yrs by at least 5% Annualized	4.9%	6.0%	6.7%

3-Year rolling with 4 quarter look back

Governance and decision-making

Role of trustees

- Use common sense
- Be naturally skeptical
- Ask questions until you understand
- Don't overcomplicate things
- Partner with providers, but don't get too cozy

Decision making framework



The
“experts”

The Decision
makers

Who owns the decisions?

Trustees

- Ultimate Fiduciary Responsibility
- Can and should obtain advice

Advisors

- Consultants and/or staff
- Help Trustees define goals
- Craft asset allocations
- Craft policy to carry out Board goals

Implementers

- Executive staff
- Investment staff
- Specialty consultants
- Investment managers

Appendix: Portfolio Building Blocks

Primary building blocks

Stocks

Why are equities held in portfolios?

- Equities are the return driver of the portfolio
- Equities allow investors to participate in economic (GDP) growth
- Equities are also held to earn a premium for bearing the risk of uncertain future cash flows

Types of stocks

- Large Cap
 - Bigger companies, “household names”
 - Represented by S&P 500 Index
 - \$104 billion average market value

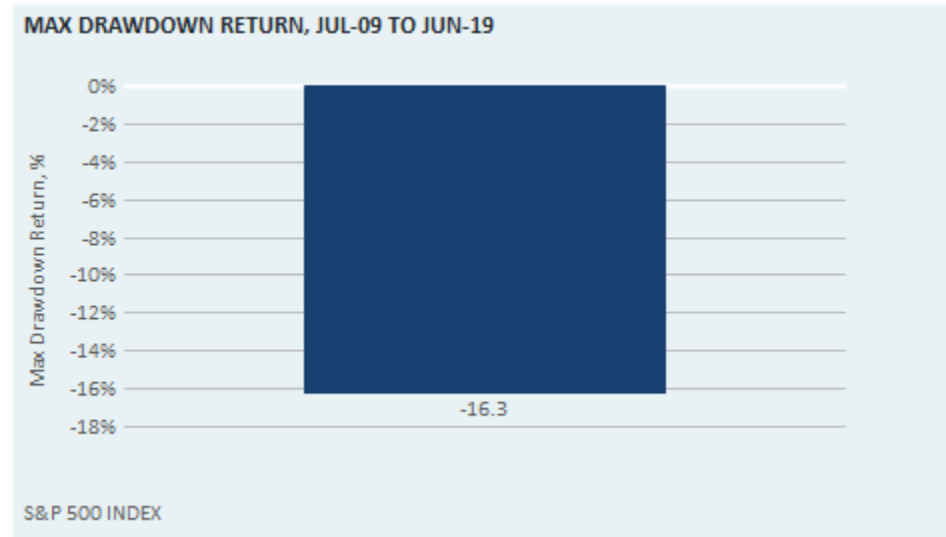
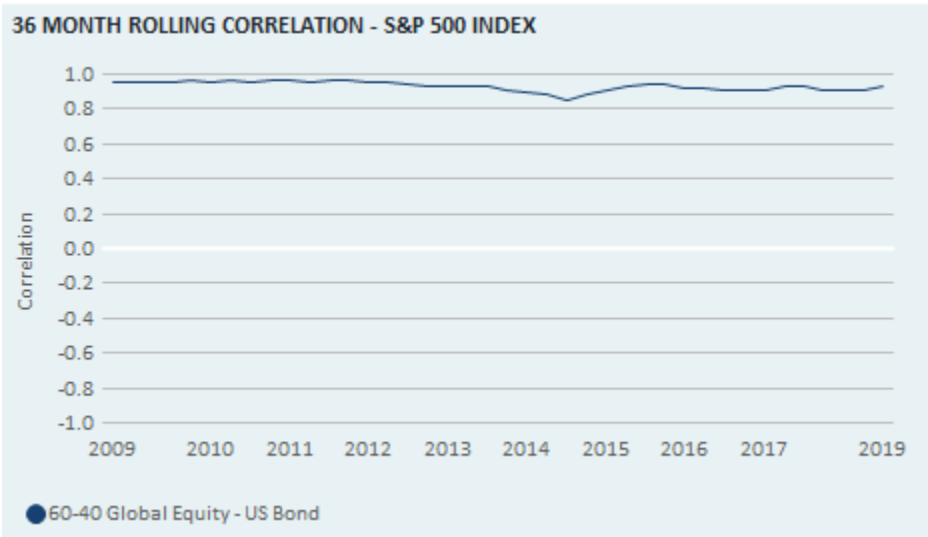
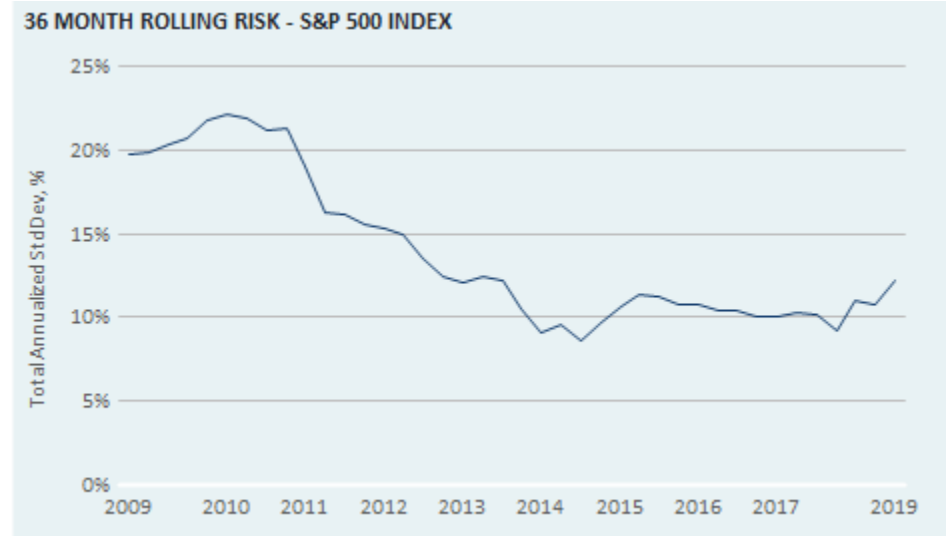
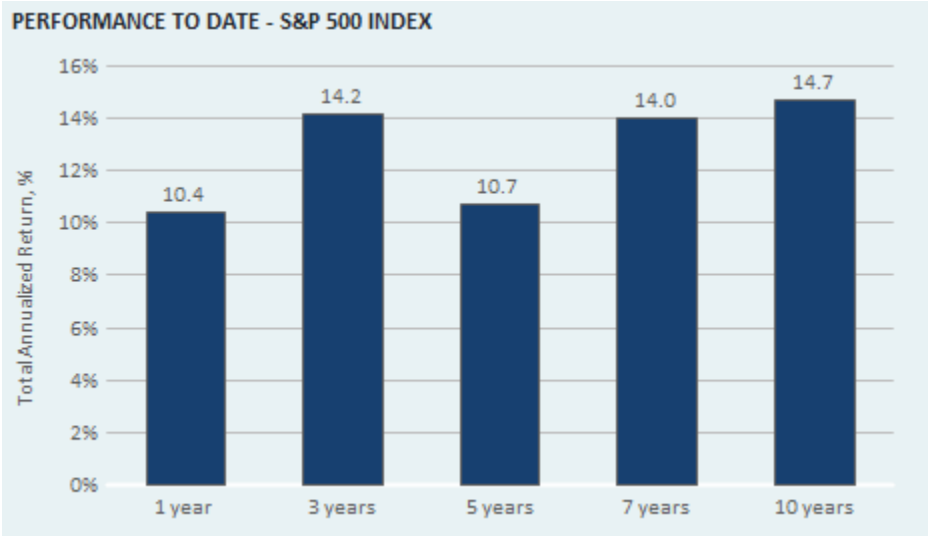
- Small Cap Stocks
 - Smaller companies
 - Represented by Russell 2000 Index
 - \$1.4 billion average market cap

- “Value” Portfolios
 - Are “cheaper” than the market and as such thought to represent “a good value”

- “Growth” Portfolios
 - Aren’t “cheap” but are believed to have high potential for earning growth and price appreciation

- “Core” Portfolios
 - Contain a mix of value and growth companies

Stocks



Stocks represented by the S&P 500, data as of June 30, 2019

Bonds

Core fixed income serves several roles:

- The primary role is to provide diversification from equity risk
- A second role is to protect principal
- A third role is to generate income
- Credit allows the investor to earn a premium for lending and indirectly participates in economic growth
- Treasuries (TIPS) hedge against inflation

Types of bonds

- Treasuries
 - Bills, notes, bonds
 - Issued and backed by the U.S. Treasury

- Agencies
 - FNMA, GNMA, etc.
 - Issued by agency, backed by U.S. Treasury (most)

- Corporates
 - IBM, Phillip Morris, etc.
 - Issued by that corporation, backed by its promise to pay

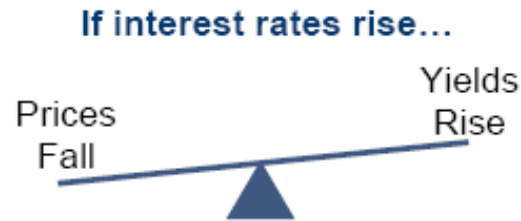
- Mortgages
 - Issued by company, secured by lien on property

- Others
 - Municipals, convertibles, asset-backed, inflation-protected (TIPS), international

Factors affecting bond prices

Primary Factors:

- Interest Rates



“Bad” for bond investors



“Good” for bond investors

- Duration/Maturity

- The direction of interest rates determine the direction of bond pricing but the duration/maturity of the bond determines the magnitude of the change in pricing.
- The longer the duration/maturity, the bigger the price movement

Other Factors:

- Yield curve positioning
- Quality
- Sector
- Security Selection
- International vs. Non U.S. Dollar denominated bonds

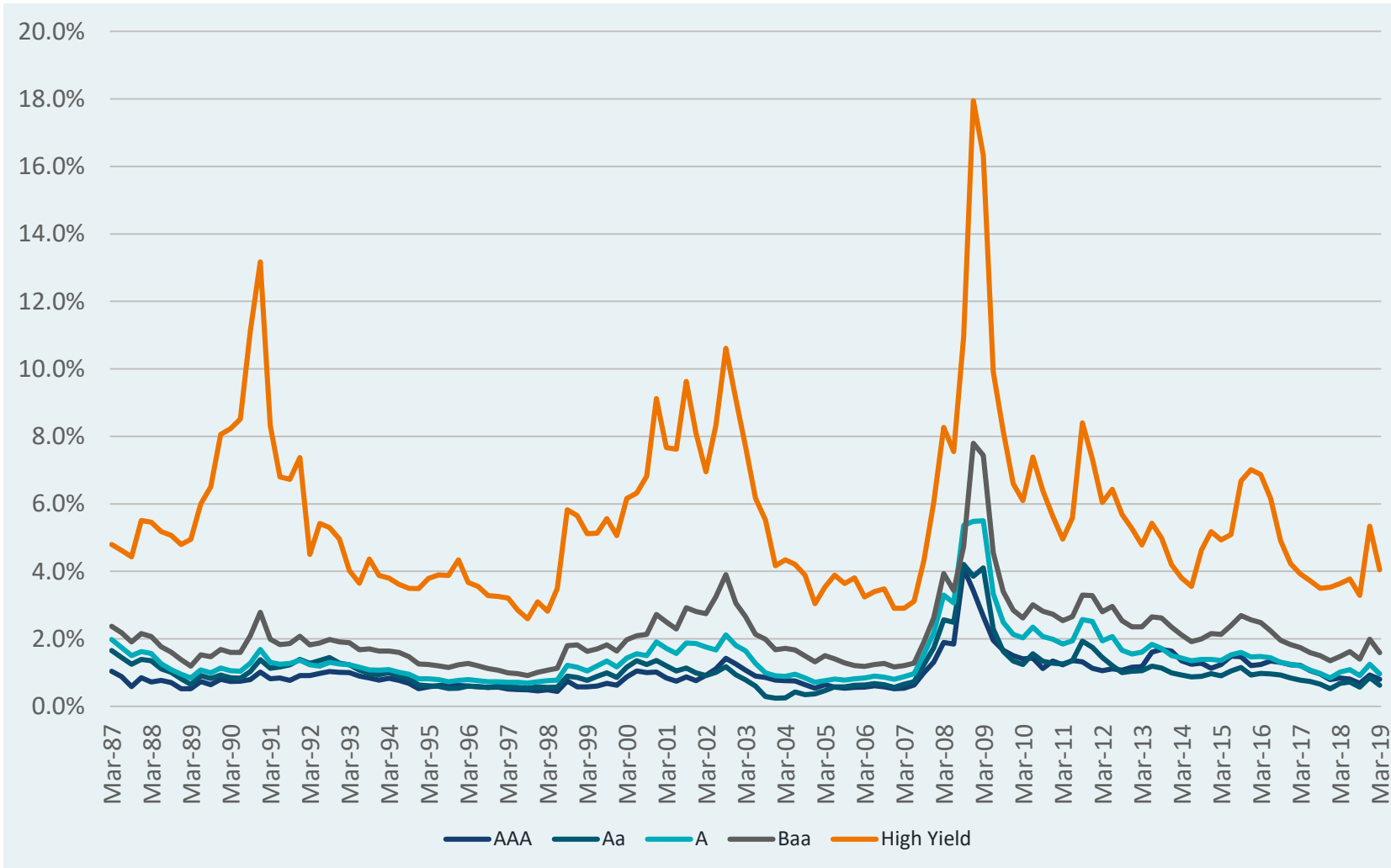
Credit ratings

Measures of potential default risk

		RATING AGENCIES		
		<i>S&P</i>	<i>Moody's</i>	<i>Bond ratings are based on the Agency's judgement regarding capacity of the issuer to meet its obligations</i>
Investment Grade		AAA	Aaa	Highest, extreme strong capacity to pay principal and interest
		AA	Aa	Very high quality, capacity to pay is also very strong
		A	A	Strong capacity to pay, somewhat susceptible to changes in adverse economic conditions
		BBB	Baa	Adequate capacity to pay, however, adverse economic conditions are likely to lead to weakened capacity to pay
High Yield		BB, B CCC, CC	Ba, B, Caa, Ca	Speculative with regards to issuer's capacity to pay principal and interest according to terms of issuance, major risk exposure to adverse economic conditions

Getting paid for default risk

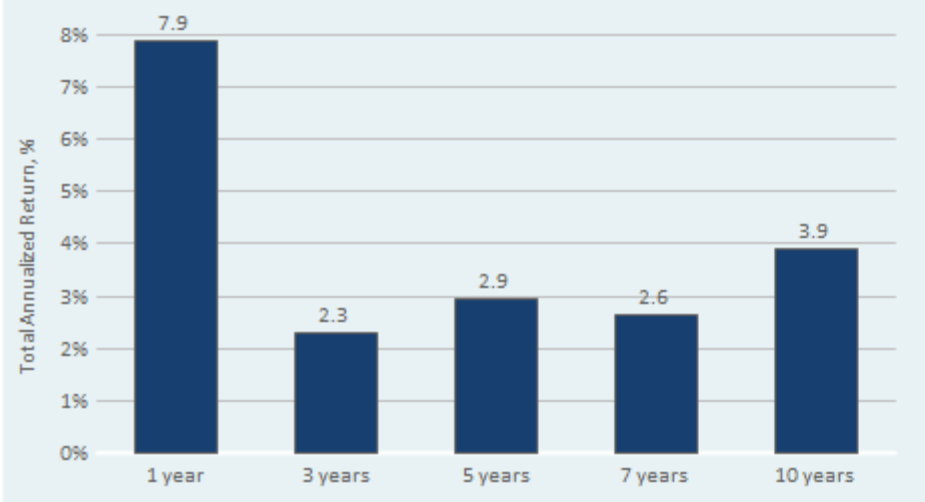
Spread over treasuries



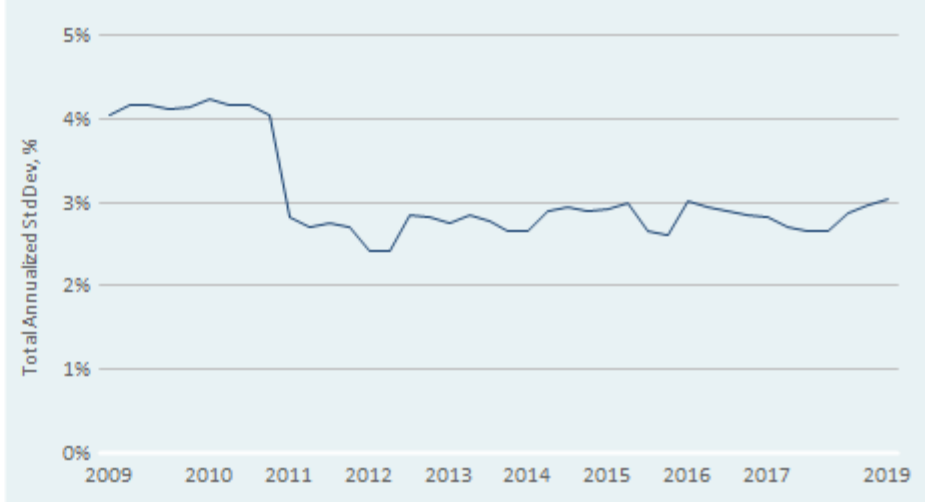
Source: MPI

Bonds

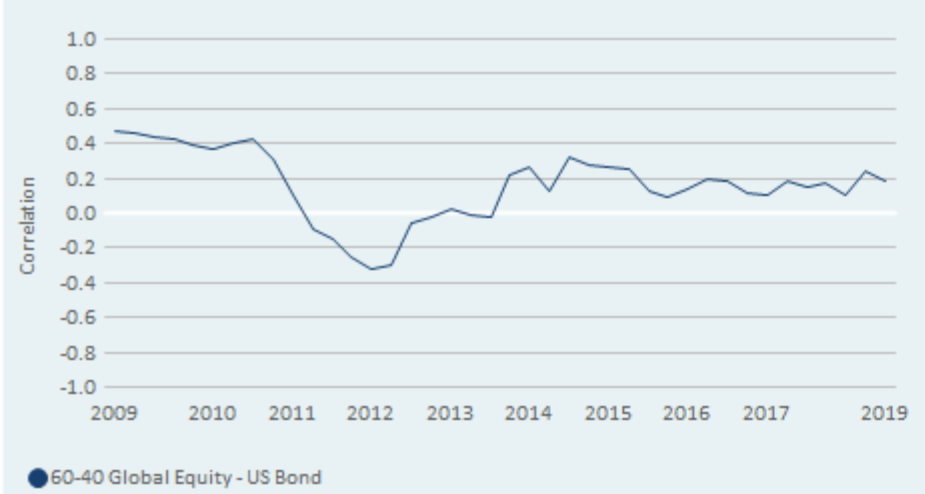
PERFORMANCE TO DATE - BARCLAYS US AGG BOND TR USD



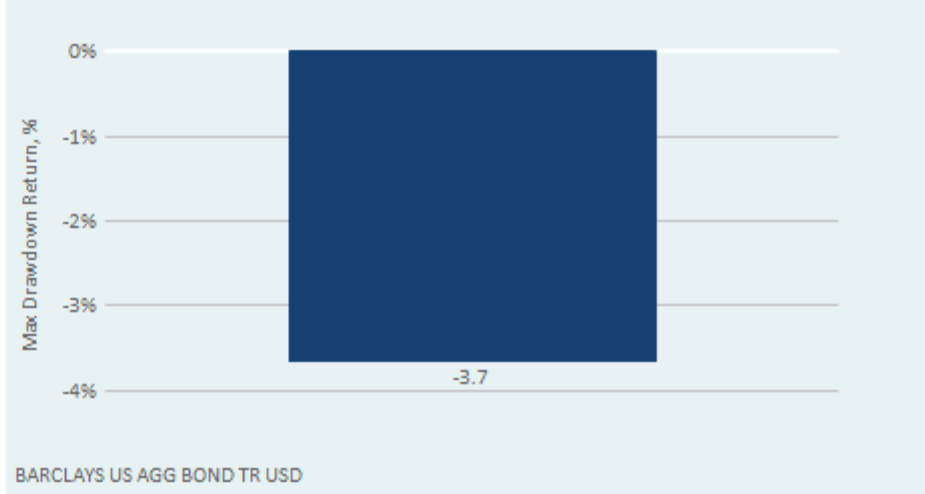
36 MONTH ROLLING RISK - BARCLAYS US AGG BOND TR USD



36 MONTH ROLLING CORRELATION - BARCLAYS US AGG BOND TR USD



MAX DRAWDOWN RETURN, JUL-09 TO JUN-19



Bond represented by the Bloomberg Barclay's US Agg Index, data as of June 30, 2019

Supplemental building blocks

Real estate

Investments, directly or indirectly, in real estate or real estate-related securities

Effective inflation hedge

Should be diversified by property type, geographic area, and economic sector

- Property type
 - Office, industrial, multifamily, retail

- Geographic area
 - East, West, South, Midwest

- Economic sector
 - Technology, defense

Accessible through various investment vehicles, including commingled funds

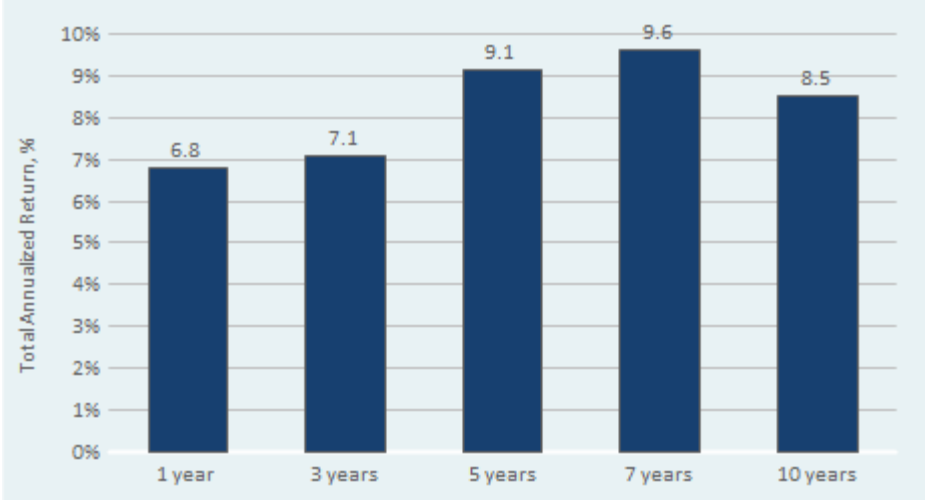
Real estate

Real estate offers:

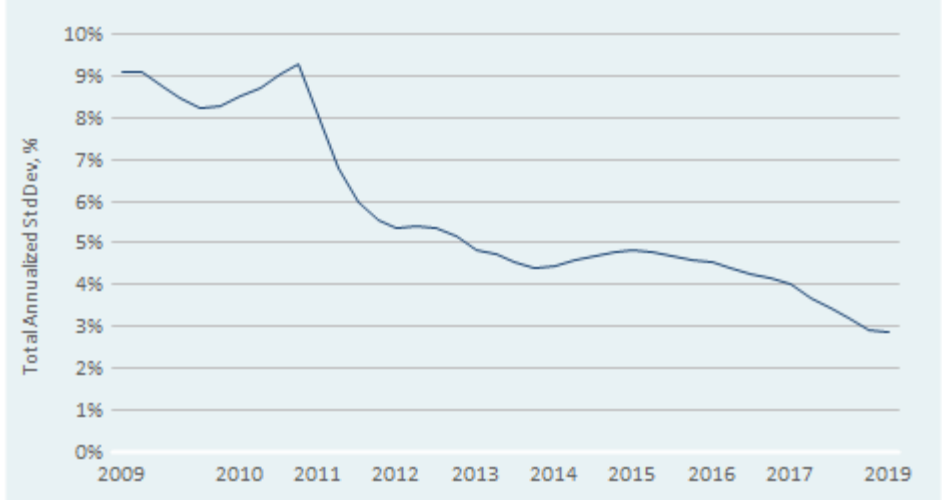
- Inflation protection in the form of rent increases
- Diversification by being less correlated with stocks and bonds
- Income generation from rents
- Total return which includes income return as well as price appreciation
- Participation in economic growth
- Reduction of equity sensitivity

Real estate

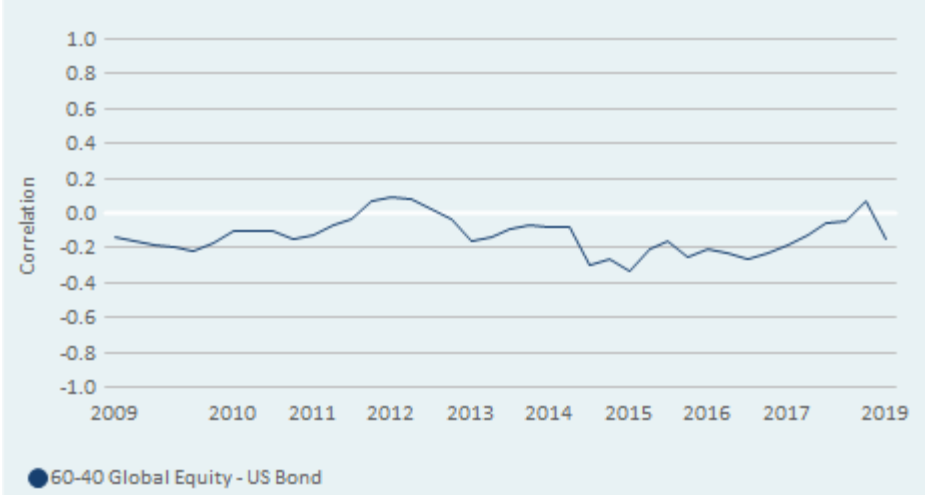
PERFORMANCE TO DATE - NCREIF PROPERTY



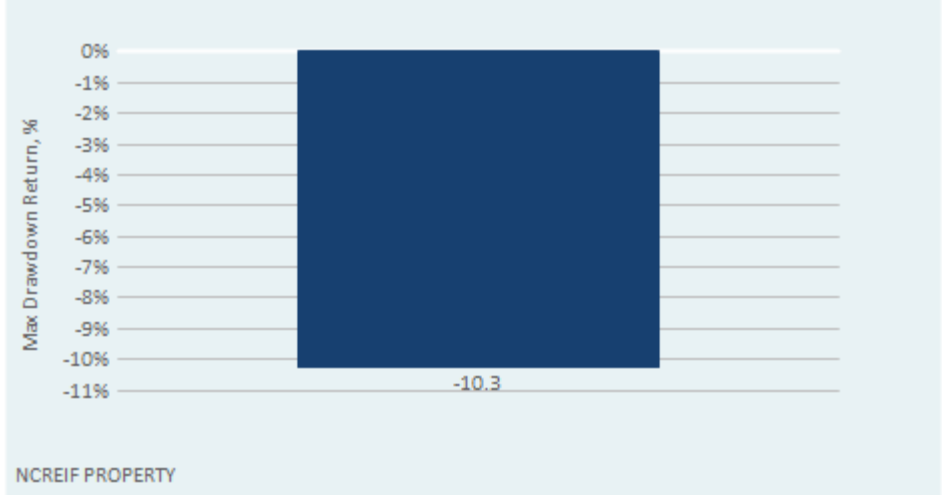
36 MONTH ROLLING RISK - NCREIF PROPERTY



36 MONTH ROLLING CORRELATION - NCREIF PROPERTY



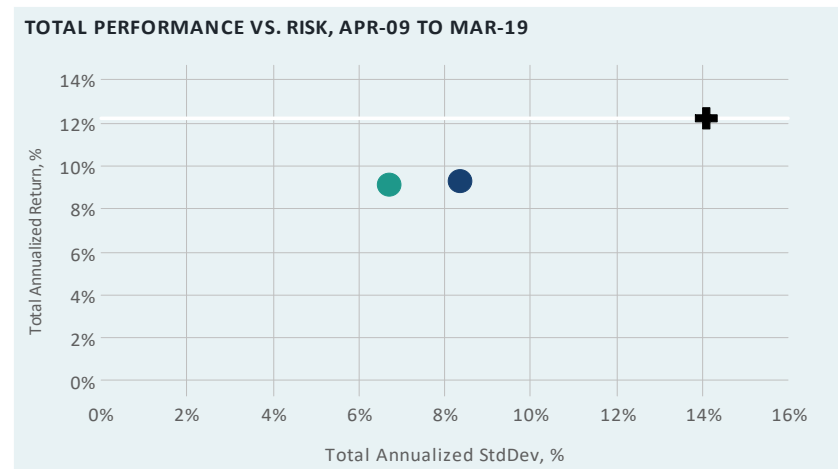
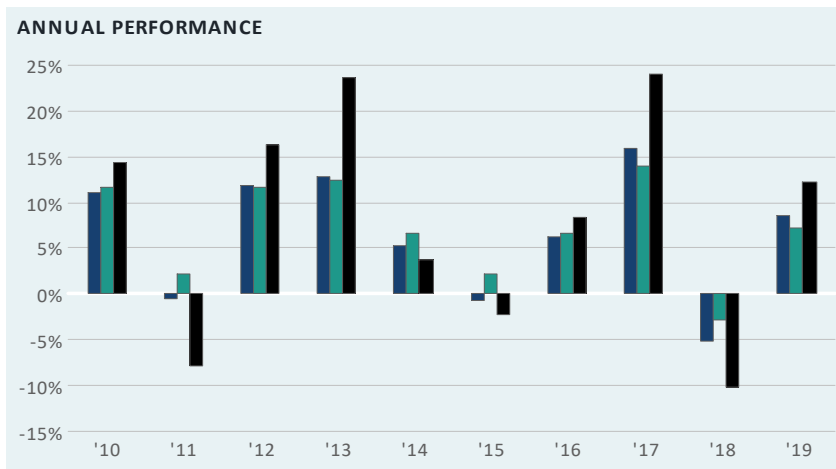
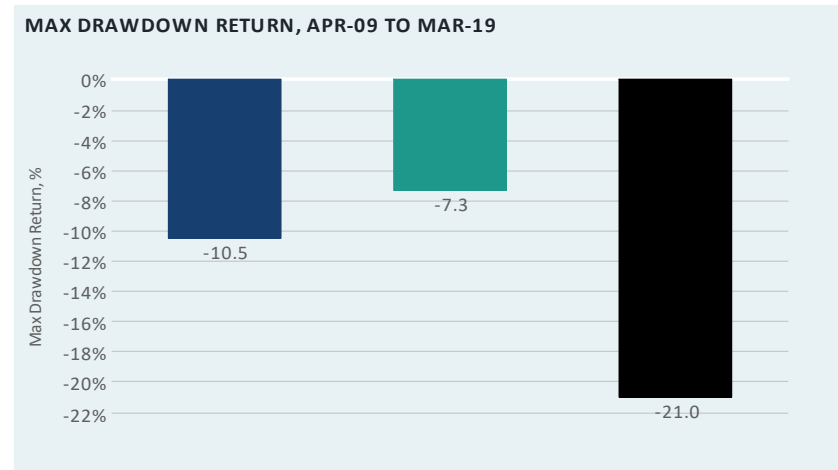
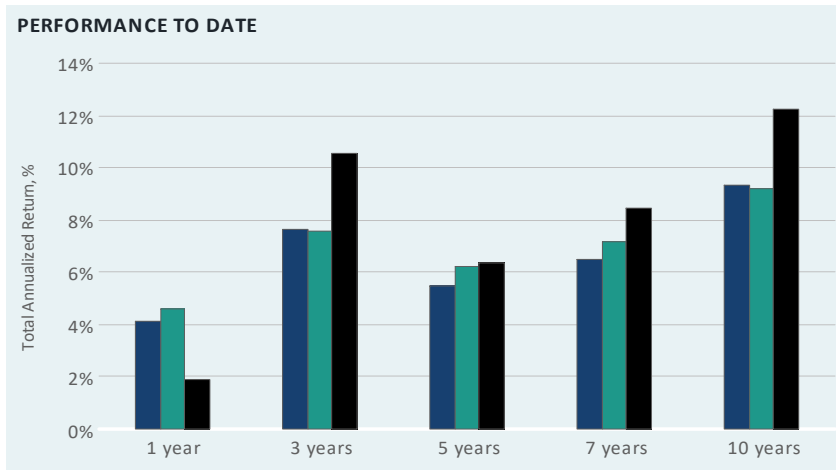
MAX DRAWDOWN RETURN, APR-09 TO MAR-19



Real estate represented by the NCREIF Property Index, data as of June 30, 2019

Adding real estate to a 60/40 portfolio

● 60-40 Global Equity - US Bond ● 48-32-20 ACWI-BC Agg-Real Estate + MSCI ACWI IMI NR USD



Real estate represented by the NCREIF Property Index, data as of March 31, 2019

Commodities

Commodities are held in portfolios:

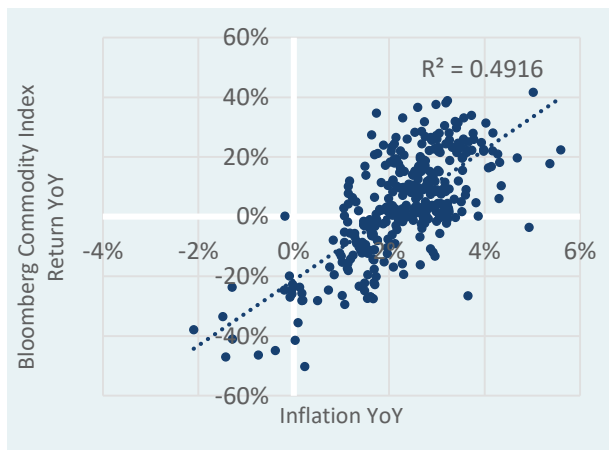
- To provide inflation sensitivity, which has translated to strong performance during inflation shocks and negative performance during inflation drops
- For diversification purposes because commodities tend to have a low correlation to stocks and bonds

Commodities

- Commodities are typically held in portfolios to provide inflation sensitivity, which has translated to strong performance during inflation shocks and negative performance during inflation drops. They tend to provide high medium-term correlation to inflation.
- Typical exposure is through a weighted combination of various commodities such as the Bloomberg Commodity Index. The largest target weight of this index is Energy at approximately 32%.
- Each component of the commodity index has a different correlation to inflation.
- Additional considerations:
 - Commodities can suffer during equity down markets
 - Commodity prices can be very volatile

Commodities have offered high positive returns during inflation shocks and negative returns during periods of weaker inflation.

COMMODITY YOY VS. INFLATION YOY



Source: BLS, MPI as of 6/30/19 (since 1991)

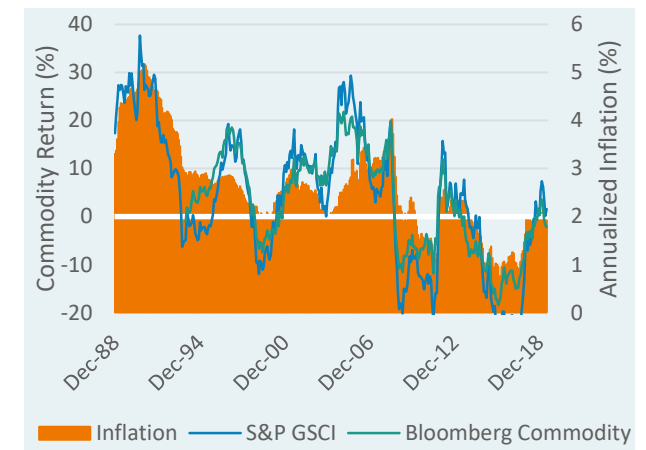
RISING INFLATION

Period of rising inflation	Annualized inflation	Annualized GSCI returns	Annualized Bberg returns
12/1/1975 to 12/1/1980	9.2%	14.9%	N/A
5/1/1986 to 5/1/1991	4.5%	24.9%	N/A
7/1/2003 to 7/1/2008	3.7%	21.3%	20.1%

Largest inflation increases, examining all 5-year periods since inception of S&P GSCI Index. Top three periods shown above are identified using the largest difference between end-of-period inflation and beginning-of-period inflation.

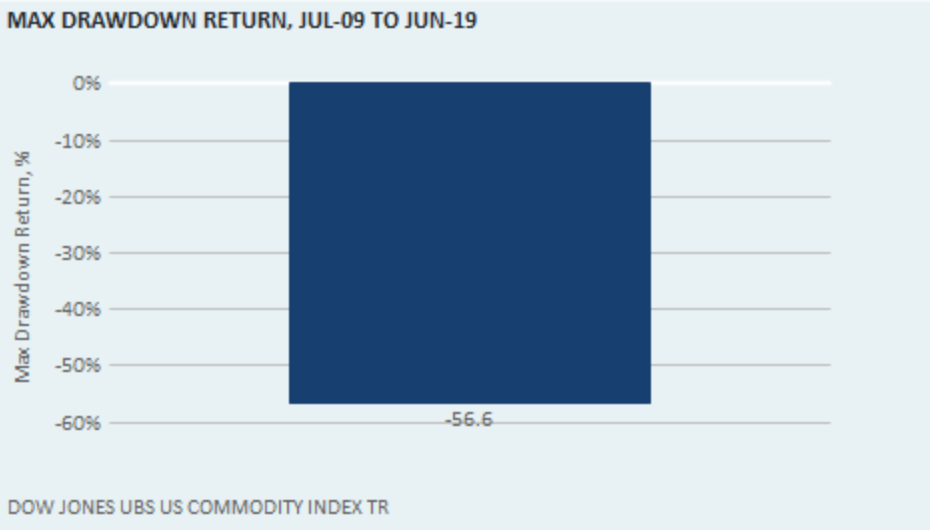
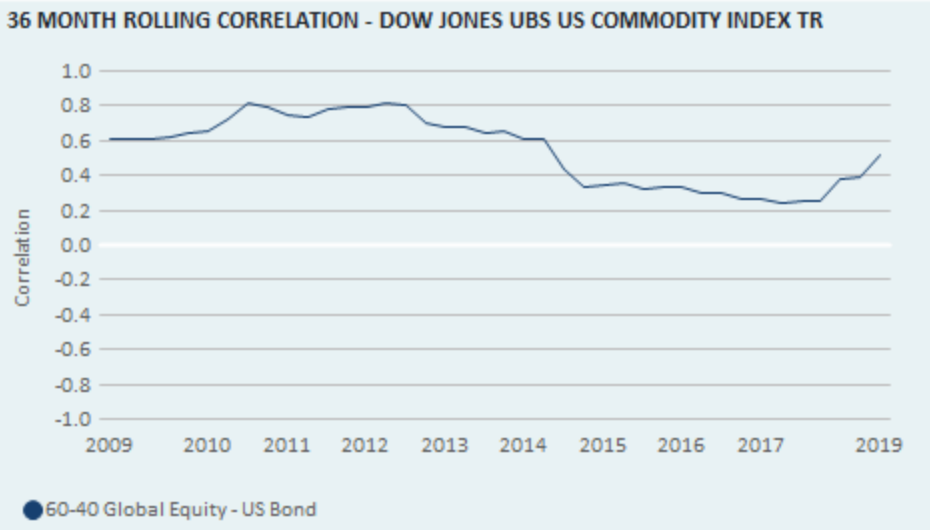
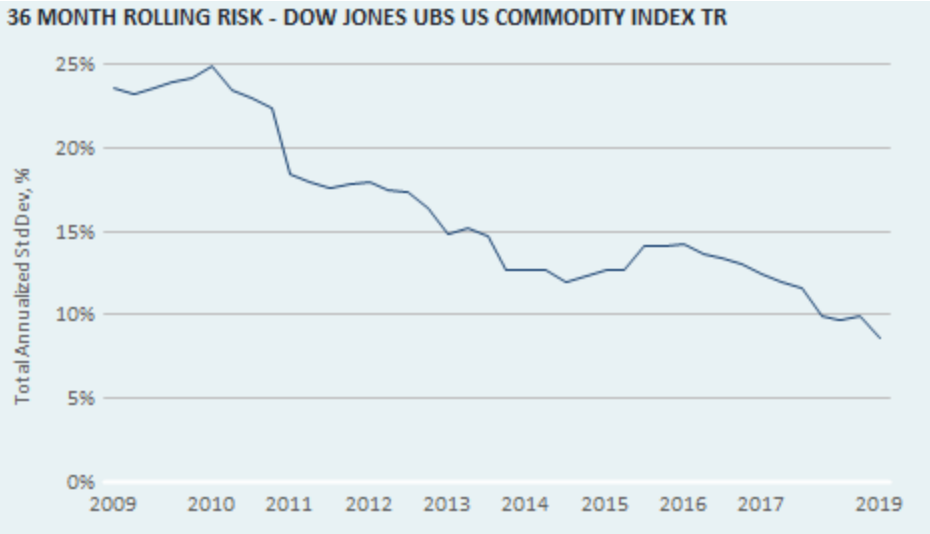
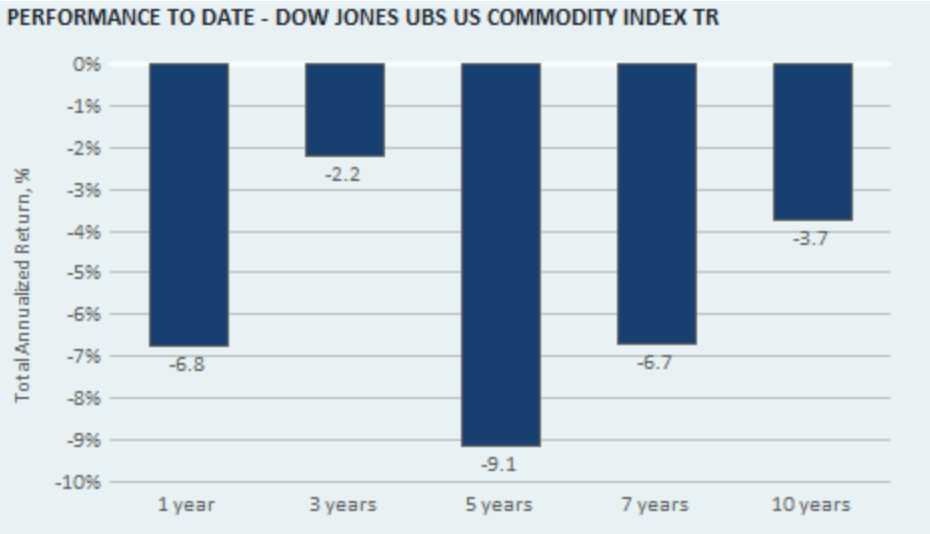
Source: FRED, Bloomberg, Standard & Poor's

3 YEAR ROLLING RETURNS



Source: Standard & Poor's, Bloomberg, as of 9/30/15

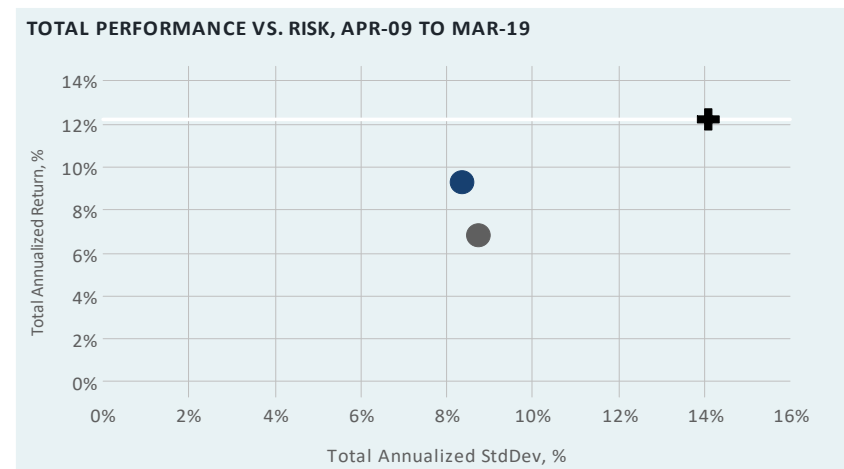
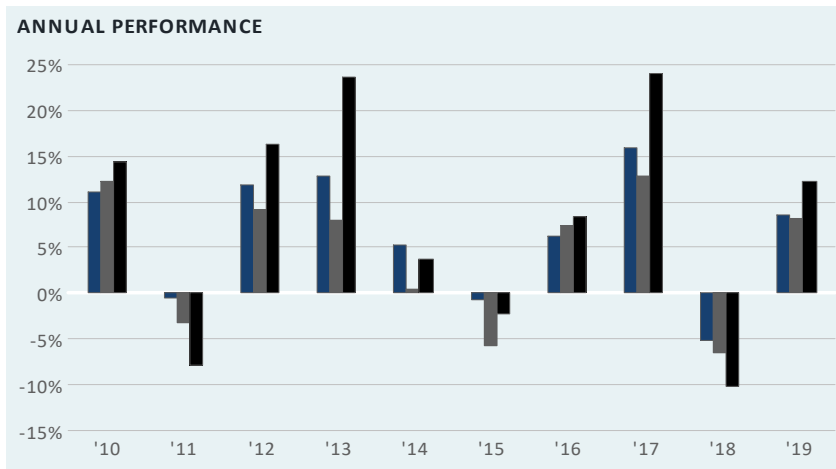
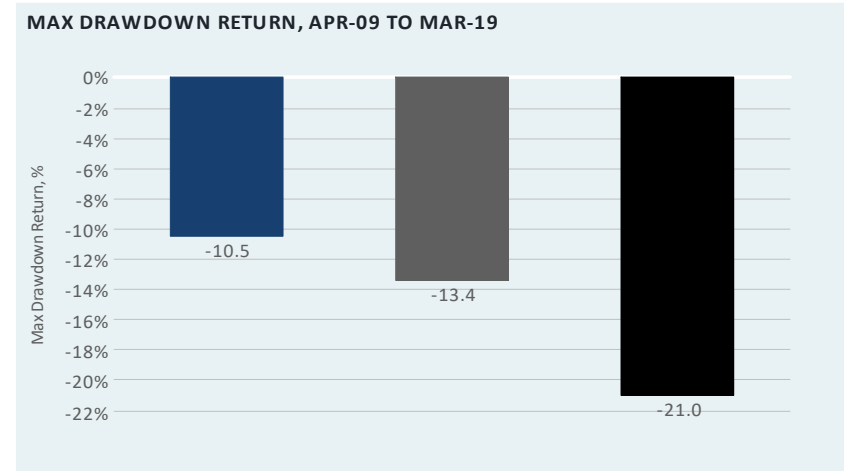
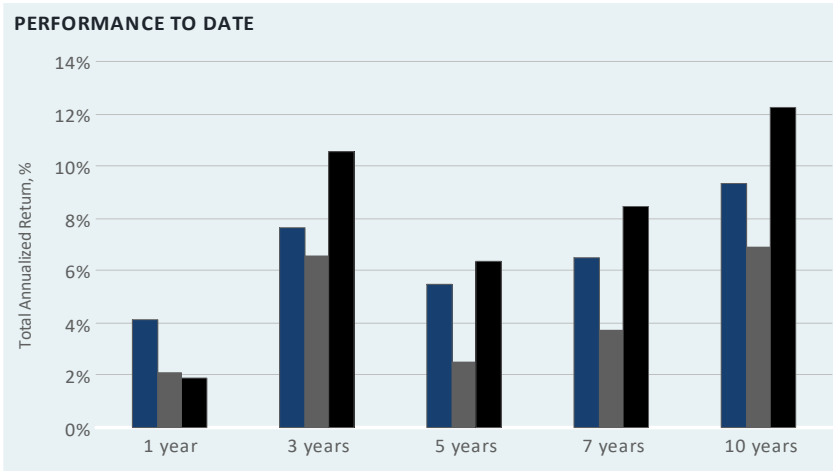
Commodities



Data as of June 30, 2019

Adding commodities to a 60/40 portfolio

● 60-40 Global Equity - US Bond ● 48-32-20 ACWI-BC Agg-Commodities + MSCI ACWI IMI NR USD



Commodities represented by the Bloomberg commodity index, data as of March 31, 2019

Hedge funds

Hedge funds have different applications for different investors. But typically, hedge funds provide:

- Diversification benefits through a return stream that is not highly correlated with equities and fixed income
- Decreased volatility that can hedge against a market downturn

Hedge funds

What are they?

- Not homogeneous – there is no “typical” absolute return strategy
- Activities are limited only by the contracts governing the particular fund
- Have as their goal positive returns that are not closely correlated to broader financial markets
- Often hedge their investments against adverse moves in equity and other markets
- Can be grouped into three broad categories: Relative Value, Event-Driven, and Long/Short

Are they risky?

- All investments have risk
- Hedge fund strategies’ risks are not the common risks of traditional long only stock or bond investments.
- Different hedge fund strategies are exposed to different risk factors, such as:
 - Merger and acquisition activity, arbitrage opportunities, credit spreads, volatility, liquidity, headline risk
- Leverage played a significant historic role in generating return
- Hedge fund strategies can reduce the risk of the overall portfolio due to low correlations with traditional asset classes

Other factors

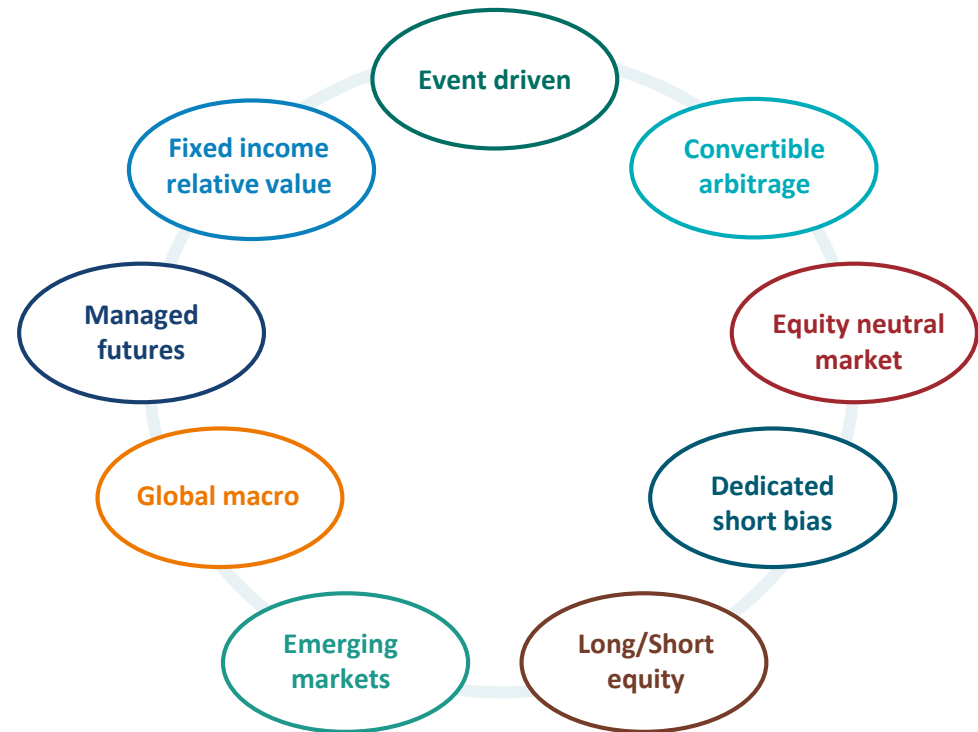
- Strategies are unique and not well understood
- Fees are higher relative to traditional mandates
- Lack of transparency
- Assets are held outside of custodial loop

The role of hedge funds

Hedge funds seek to provide superior risk-adjusted returns with low correlations to existing portfolio assets

- Today, investors should realize that a portion of a hedge fund’s returns do not just reflect the manager’s skill (“alpha”), but can be attributed to common risk factors known as “hedge fund betas”
- Hedge fund betas reflect the fact that similar strategies are exposed to common systematic risks. In fact, there are lower fee hedge fund strategies designed to capture “hedge fund beta”
- Strategies characterized as having hedge fund betas include:
 - Equity based strategies (long-short, market neutral, short-bias, emerging markets)
 - Macro strategies (global macro, managed futures)
 - Arbitrage strategies (convertible arbitrage, event driven, fixed income relative value)
- Asset allocation amongst these strategies is important in designing a successful hedge fund portfolio

Classic hedge fund strategies



Arbitrage Strategies

Capture relative mispricing between two related assets.

Equity Oriented Strategies

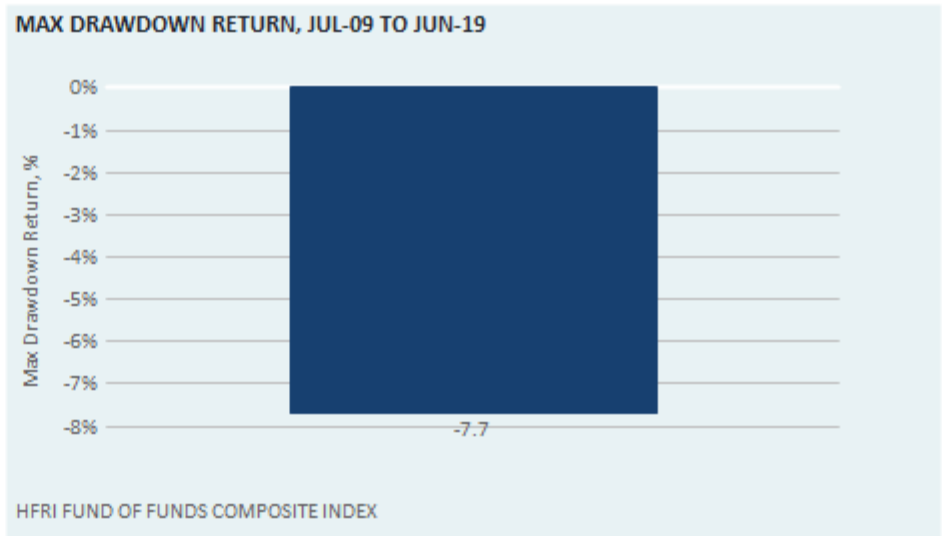
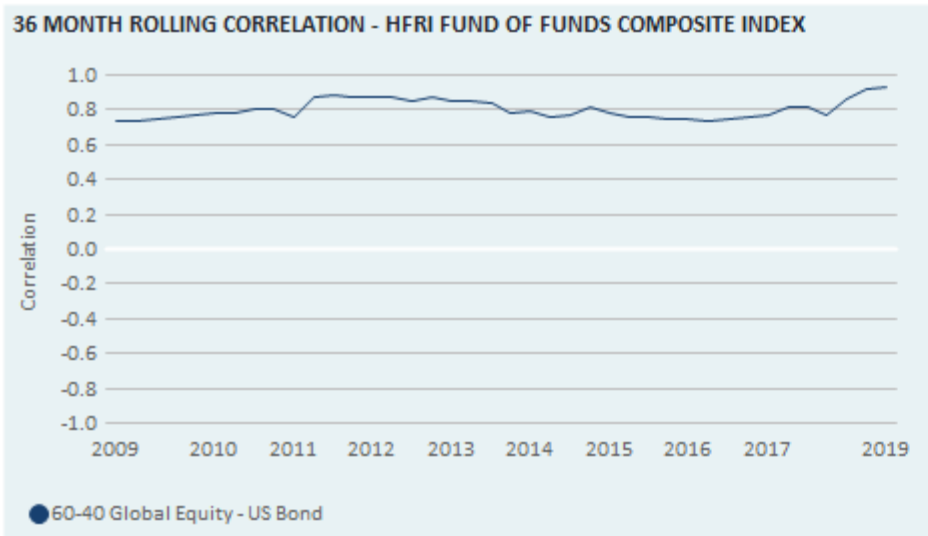
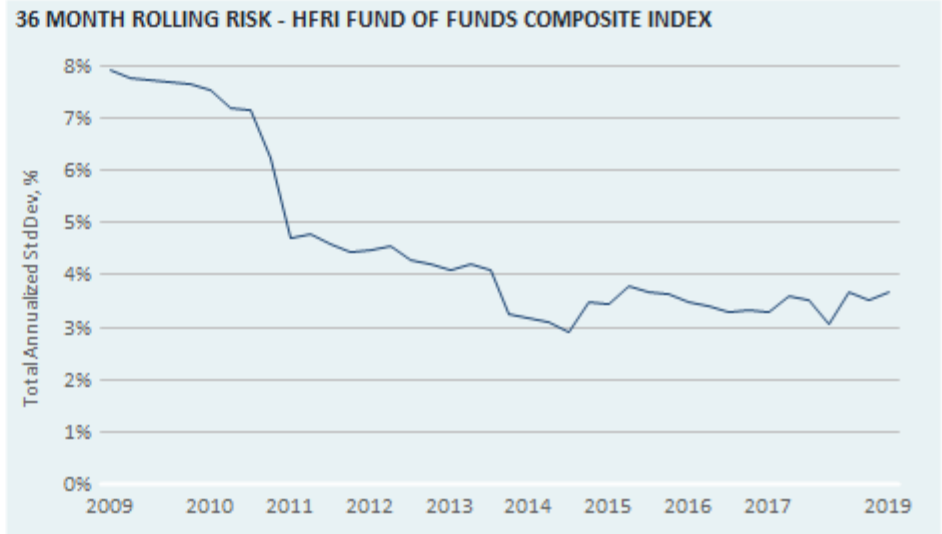
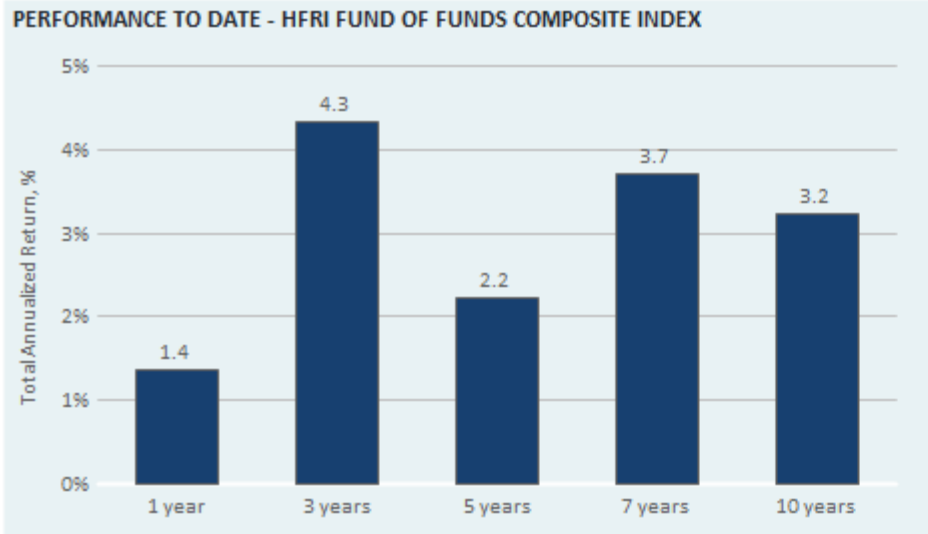
Take advantage of market inefficiencies that cause specific stocks to be under- or over-priced.

Macro Strategies

Profit from dislocations in global equity, bond, currency and commodity markets, including those driven by investors' behavioral biases.

Source: AQR

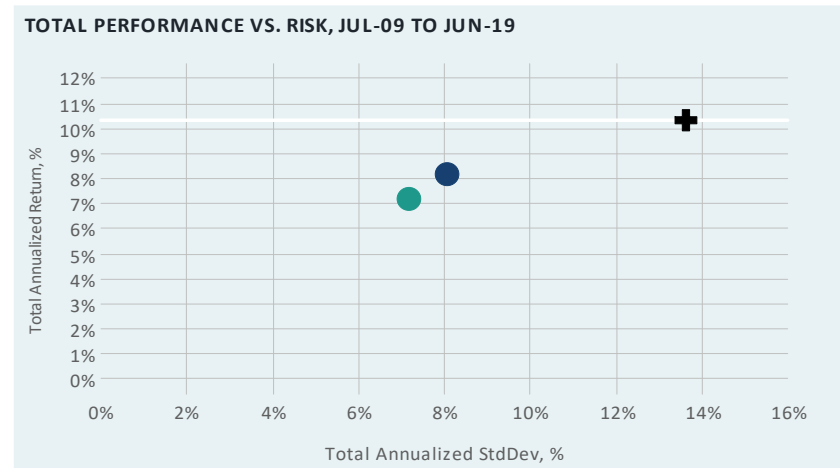
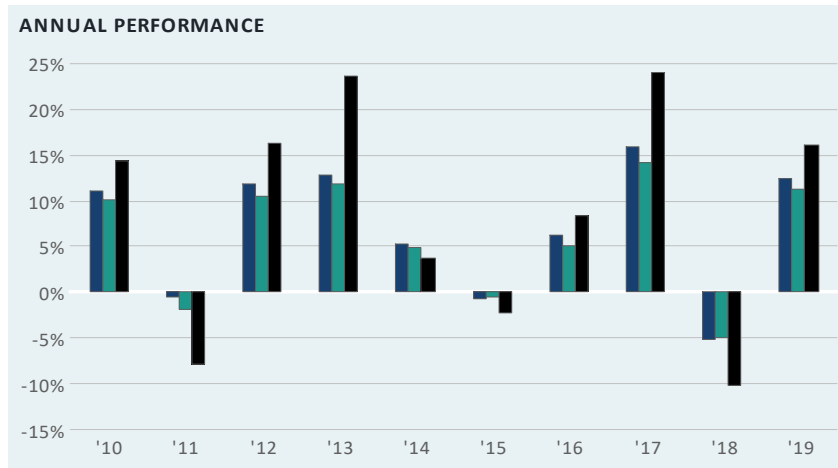
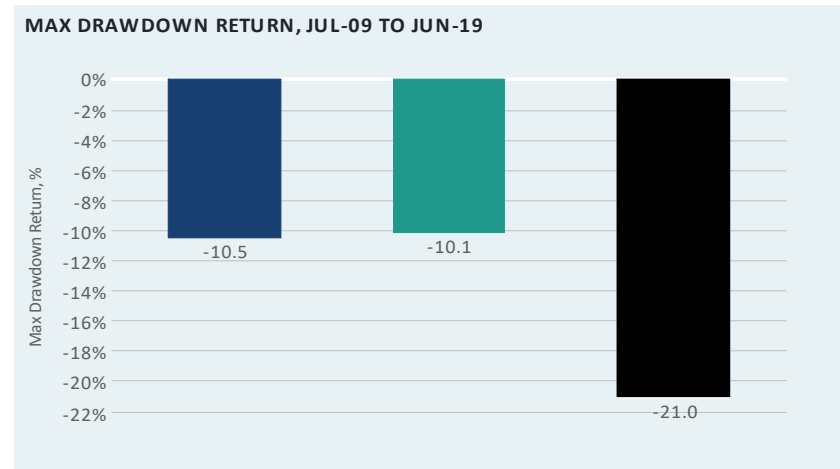
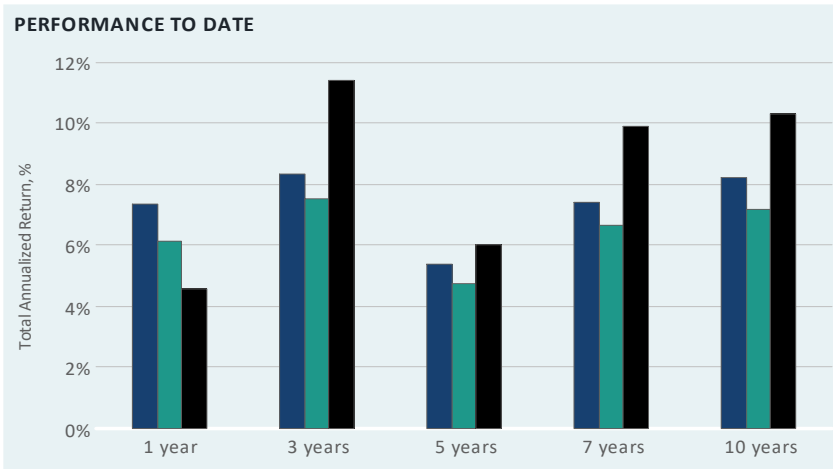
Hedge funds



Hedge Funds represented by the HFRI Fund of Funds index, data as of June 30, 2019

Adding hedge funds to a 60/40 portfolio

● 60-40 Global Equity - US Bond ● 48-32-20 GI Eq-US Bond-HF + MSCI ACWI IMI NR USD



Hedge Funds represented by the HFRI Fund of Funds Index. Data as of June 30, 2019

Private equity

Private equity is held in a portfolio:

- For all the reasons equities are held and also for return enhancement through an illiquidity premium
- Diversification can be an unintended benefit since the underlying investments are valued infrequently resulting in an illusion of returns that are uncorrelated to the public markets

Private equity

Private equity commonly refers to any equity investment that is not freely tradable on an exchange

Private equity investments are made by partnerships that involve three main constituents:

- **Limited Partner:** Institutions or individuals who contribute capital to a private equity fund
- **General Partner:** The managing partner in a private equity management company who has unlimited personal liability for the debts and obligations of the Limited Partnership and the right to participate in its management
- **Portfolio companies:** Investee firms or companies backed by private equity firms

Private equity is an illiquid and long-term investment. Investor's capital is typically committed for up to 10 years and "harvested" during years 6 through 10

A typical private equity firm will raise a new fund from investors every three to four years

Private equity – differences from public markets

Investment Vehicles

- Private investment vehicles (partnerships)
- Manager serves as general partner, invests some capital, manages assets (active role)
- Investor serves as limited partner and provides bulk of capital (passive role)

Fees

- Fees are generally paid on committed capital during investment period (~1%+)
- After investment period, fees are charged on invested capital (~1%+)
- Incentive fees apply depending on strategy (~10%-20%), usually with a preferred return to investors first

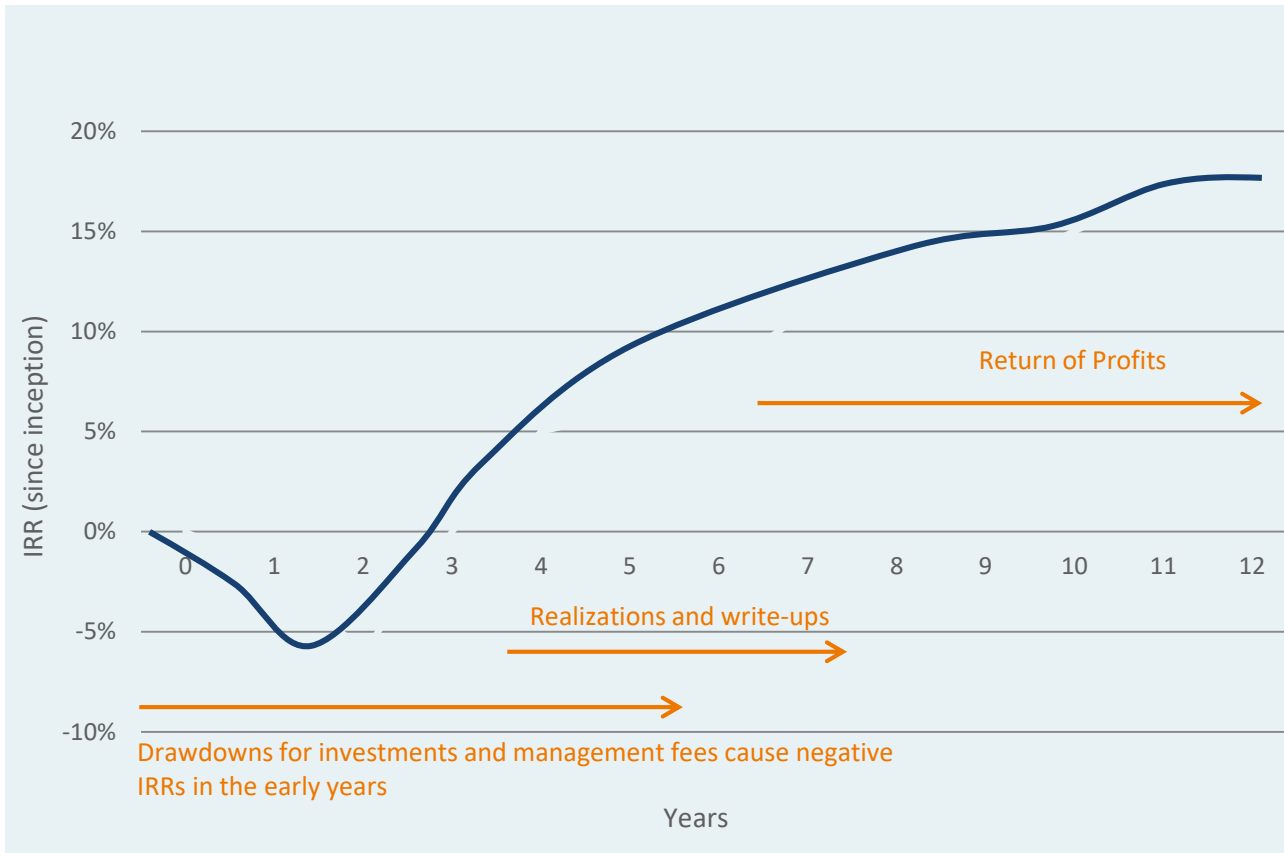
Liquidity

- Partnerships have lock ups as long as 10-12 years
- Usually broken up by a 3-5 year investment period and 5+ years harvesting period
- Hence investors commit capital upfront which will be drawn over time
- Once invested, only exits are fruition of partnership or sale of interest to secondary investor
- In rare instances partnerships dissolve

Diversification

- Diversify by managers, strategies, and vintage years.

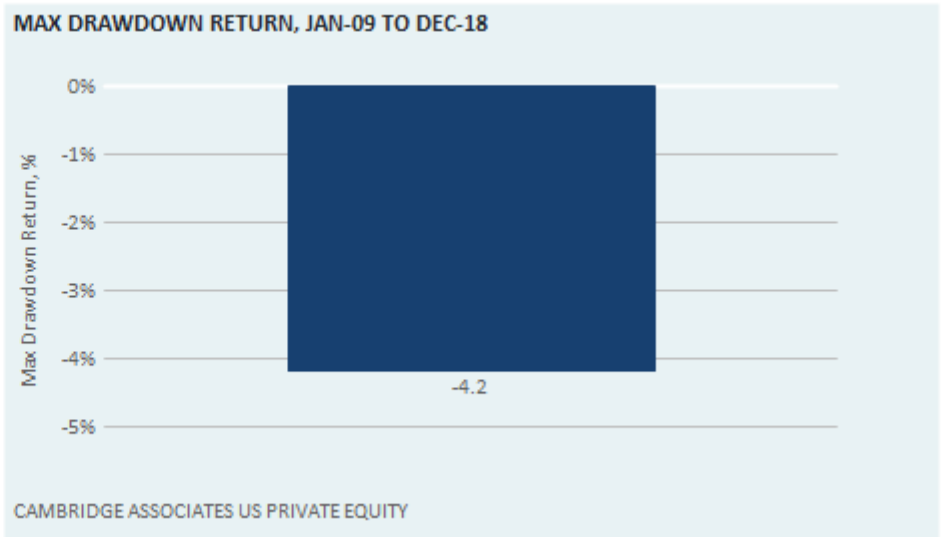
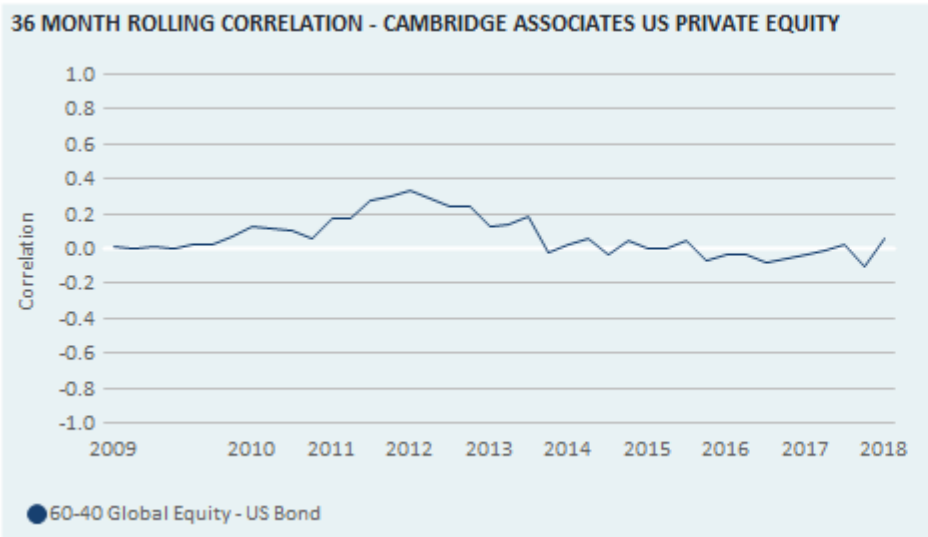
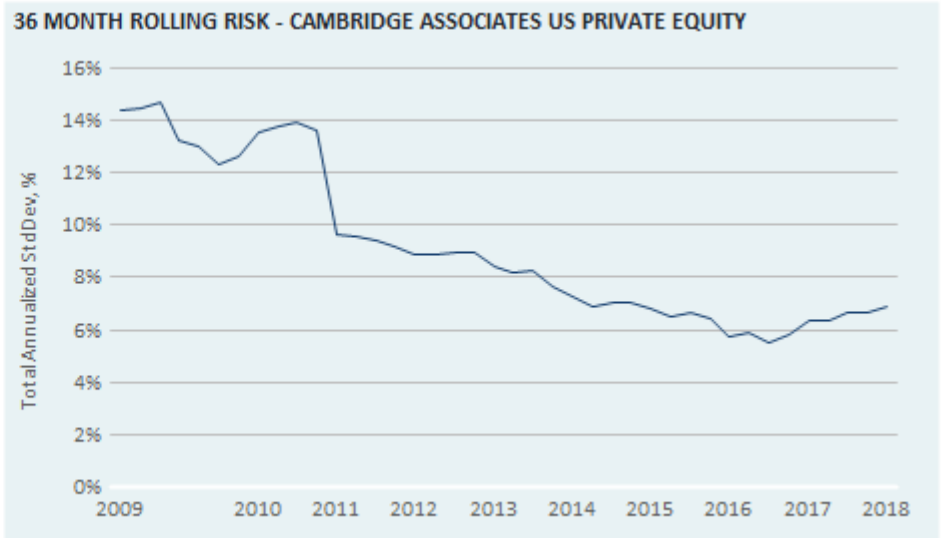
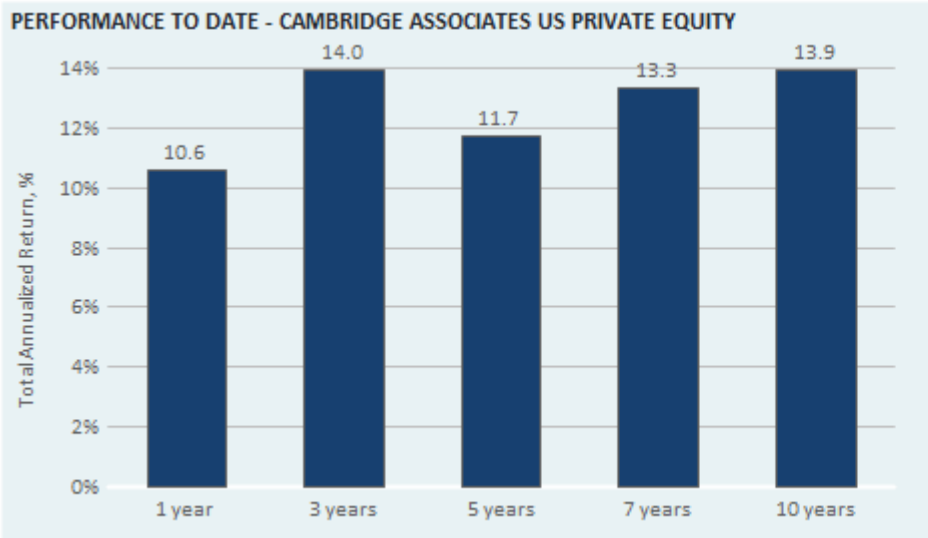
Private equity: the “J-curve” effect



Private equity returns are generally negative during the first few years of an investment – primarily due to the realization of early losses and fee payments – though the degree varies by asset type.

As investments mature and are realized, returns become positive, resulting in the “J-Curve” Effect.

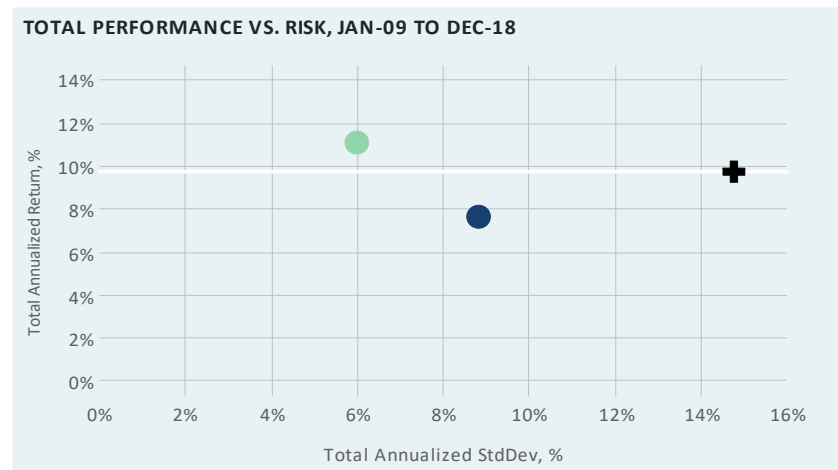
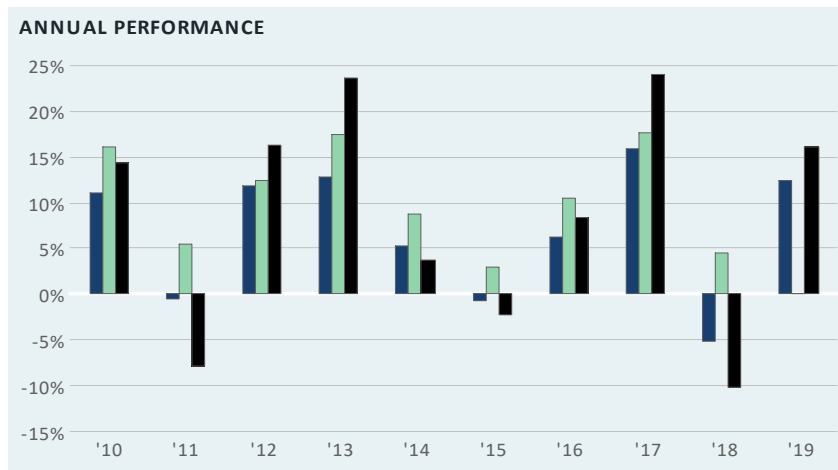
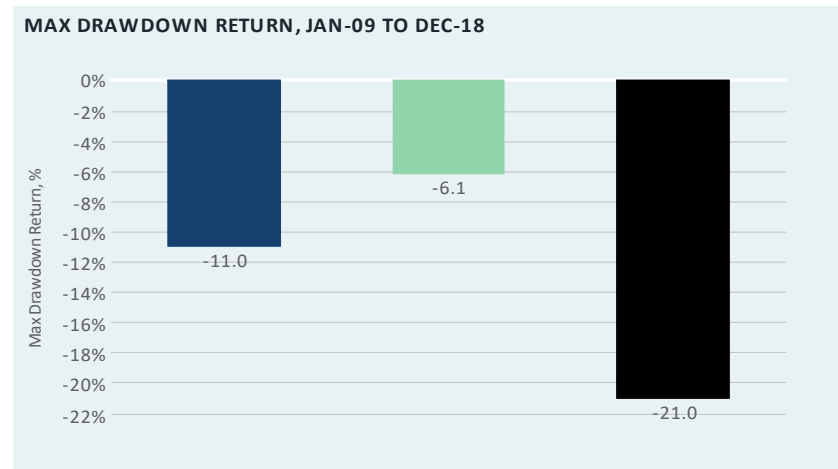
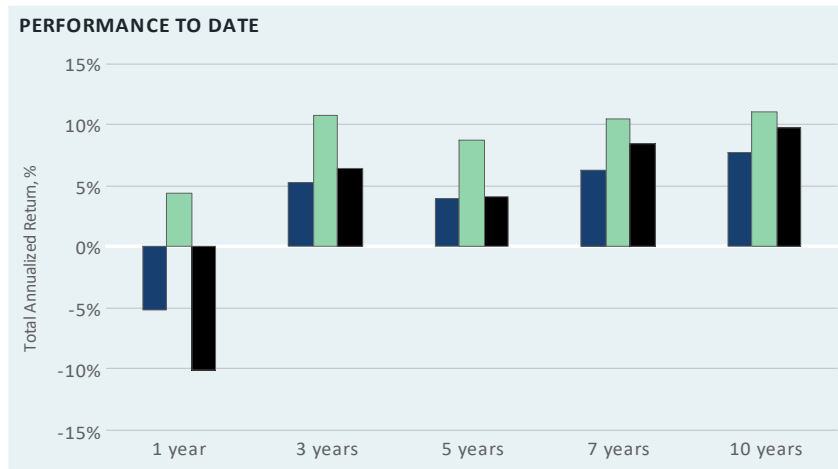
Private equity



Private Equity represented by the Cambridge Associates Private Equity index, data as of December 31, 2018

Adding private equity to a 60/40 portfolio

● 60-40 Global Equity - US Bond ● 48-32-20 Gl Eq-US Bond-PE + MSCI ACWI IMI NR USD



Private Equity represented by the Cambridge Associates US Private Equity Index. Data as of December 31, 2018

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Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

From: Carl Nelson – Executive Director
Amy Burke – Deputy Director
Scott Whalen - Verus

Agenda Item 15: Real Estate – Core / Value-Add Strategy Rebalancing

Recommendation:

That the Board of Trustees discuss and review the planned rebalancing of Real Estate investments between the already in place Core and Value-Added strategies.

Discussion:

The Strategic Asset Allocation policy approved for the Pension Trust includes target allocations to Real Estate of –

- 10% Core real estate
- 5% Value-Added real estate

Both real estate strategies are currently in place in open-end commingled funds. The JP Morgan Strategic Properties Fund (JPM-SPF) for core real estate and the American Realty Advisors Strategic Value Fund (ARA-SVF) for value added real estate.

Core real estate is best described as a broadly diversified higher quality, low vacancy, office/industrial/multi-family-residential properties. Value-Added real estate is similar but, may acquire properties at lower valuations due to the need to complete development, rehabilitate or re-position in the local market to build up occupancy levels and lease rates.

The current allocations to real estate are shown in the table below. Also shown are the Staff proposed rebalancing shifts between strategies. We have discussed them with Scott Whalen of Verus and he is in agreement.

<i>\$ millions % of total fund</i>	2018 Year End	3Q19	Rebalance shifts	Target Allocation
Core JPM-SPF	\$163 12.7%	\$167 11.8%	-\$26 Drawdown ** split between 4Q19 and 1Q19	\$140 10%
Value-Add ARA-SVF	\$22 * 1.7%	\$34 * 2.4%	+\$26 from Core +\$10 from other rebalance transfers ***	\$70 5%
Local FPI local RE	\$7 0.5%	Closed	-	\$0 -
Total Real Estate	\$192 14.9%	\$201 14.2%		\$210 15%

* Initial commitment to the open-ed ARA-SVF was \$30 million – of which \$20 million had been admitted at year-end 2018. Subsequently, the remaining \$10 million was admitted during 2019.

** JPM-SPF is expected to be able to fill withdrawal requests for \$13 million at 12/31/19 and \$13 million at 3/31/20 (fund is open quarterly).

*** ARA-SVF has an incoming funds queue and is expected to be able to admit the planned additional \$36 million across two to four quarters (fund is open quarterly). The additional \$10 million rebalancing funds from other sources will be considered quarter by quarter like other rebalancing transactions and drawdowns from over-target allocation investment accounts will be put in place. The funds may also be sourced from the expected employer contributions prefunding in July 2020 depending on the timing of ARA-SVF open dates.

Direct Board of Trustees authorization for these real estate fund transactions is not necessary since they are a rebalancing within the adopted asset allocation policy and between existing investment funds used by the Pension Trust. However, the size of the transactions warrant Board discussion and consensus.

Respectfully submitted

Board of Trustees

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Date: November 25, 2019

To: Board of Trustees

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

Agenda Item 16: Asset Allocation November 2019

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

The normal investment portfolio drawdowns for liquidity to fund benefit payments and capital calls for 4Q19 are being spread out across 4Q19 to minimize cash allocations. The pending drawdowns may be modified depending on actual asset mix as it evolves across the quarter.

Public equities – domestic	- \$3m from Loomis Sayles	(pending)
	- \$3m from Boston Partners	(pending)
	- \$6m from Atlanta Capital	(pending)
Public equities – international	- \$6m from Dodge & Cox Intl.	(pending)
Fixed Income	- \$7m from Pacific Asset Mgmt. Bank Loans	(done)
	- \$6m from BlackRock Core Bonds	(done)

No Board action is planned at this point.

Respectfully submitted

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