



Alameda County Employees' Retirement Association  
**BOARD OF RETIREMENT**

**INVESTMENT COMMITTEE/BOARD MEETING**

**ACERA MISSION:**

**To provide ACERA members and employers with flexible, cost-effective, participant-oriented benefits through prudent investment management and superior member services.**

Wednesday, June 12, 2019  
 9:30 a.m.

LOCATION	COMMITTEE MEMBERS	
ACERA C.G. "BUD" QUIST BOARD ROOM 475 14 <sup>TH</sup> STREET, 10 <sup>TH</sup> FLOOR OAKLAND, CALIFORNIA 94612-1900 MAIN LINE: 510.628.3000 FAX: 510.268.9574	ELIZABETH ROGERS, CHAIR	ELECTED GENERAL
	TARRELL GAMBLE, VICE CHAIR	APPOINTED
	DALE AMARAL	ELECTED SAFETY
	OPHELIA BASGAL	APPOINTED
	KEITH CARSON	APPOINTED
	JAIME GODFREY	APPOINTED
	LIZ KOPPENHAVER	ELECTED RETIRED
	HENRY LEVY	TREASURER
	GEORGE WOOD	ELECTED GENERAL
	NANCY REILLY	ALTERNATE RETIRED <sup>1</sup>
	DARRYL L. WALKER	ALTERNATE SAFETY <sup>2</sup>

Should a quorum of the Board attend this meeting, this meeting shall be deemed a joint meeting of the Board and Committee. The order of agenda items is subject to change without notice. Board and Committee agendas and minutes are available online at [www.acera.org](http://www.acera.org).

**Note regarding public comments:** Public comments are limited to four (4) minutes per person in total.

**Note regarding accommodations:** The Board of Retirement will provide reasonable accommodations for persons with special needs of accessibility who plan to attend Board meetings. Please contact ACERA at (510) 628-3000 to arrange for accommodation.

<sup>1</sup> Alternate Retired Member (Votes in the absence of the Elected Retired Member, or, if the Elected Retired Member is present, then votes if both Elected General Members, or the Elected Safety Member and an Elected General Member, are absent.

<sup>2</sup> Alternate Safety Member (Votes in the absence of (1) the Elected Safety, (2) either of the two Elected General Members, or (3) both the Retired and Alternate Retired Members).

# **INVESTMENT COMMITTEE/BOARD MEETING**

**NOTICE and AGENDA, Page 2 of 3 – Wednesday, June 12, 2019**

**Call to Order:** 9:30 a.m.

**Public Input (Time Limit: 4 minutes per speaker)**

## **Action Items: Matters for discussion and possible motion by the Committee**

1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$33 million Investment in Altas Partners Holdings II as part of ACERA's Private Equity Portfolio – Buyouts<sup>3</sup>

9:30 – 10:15

Andrew Sheiner, Altas Partners  
Faraz Shooshani, Verus Advisory Inc.  
John Ta, ACERA  
Betty Tse, ACERA

## **Information Items: These items are not presented for Committee action but consist of status updates and cyclical reports**

1. Review of Pzena Investment Management, LLC (Traditional Manager – Large Cap Value)

William Lipsey, Pzena Investment Management, LLC  
Richard Pzena, Pzena Investment Management, LLC  
Margaret Jadallah, Verus Advisory Inc.  
Thomas Taylor, ACERA  
Betty Tse, ACERA

2. Semiannual Performance Review for the Period Ending March 31, 2019 – Equities and Fixed Income

Barry Dennis, Verus Advisory Inc.  
Margaret Jadallah, Verus Advisory Inc.  
Clint Kuboyama, ACERA  
Thomas Taylor, ACERA  
Betty Tse, ACERA

3. Semiannual Performance Review for the Period Ending March 31, 2019 – Absolute Return

Margaret Jadallah, Verus Advisory Inc.  
Clint Kuboyama, ACERA  
Betty Tse, ACERA

4. Semiannual Performance Review for the Period Ending December 31, 2018 – Private Equity

Faraz Shooshani, Verus Advisory Inc.  
Clint Kuboyama, ACERA  
John Ta, ACERA  
Betty Tse, ACERA

---

<sup>3</sup> Written materials and investment recommendations from the consultants, fund managers and ACERA Investment Staff relating to this alternative investment are exempt from public disclosure pursuant to CA Gov. Codes § 6254.26 and § 6255.

# ***INVESTMENT COMMITTEE/BOARD MEETING***

**NOTICE and AGENDA, Page 3 of 3 – Wednesday, June 12, 2019**

5. Semiannual Performance Review for the Period Ending December 31, 2018 – Real Assets

John Nicolini, Verus Advisory Inc.  
Clint Kuboyama, ACERA  
John Ta, ACERA  
Betty Tse, ACERA

6. Semiannual Performance Review for the Period Ending March 31, 2019 – Real Estate

Avery Robinson, Callan LLC  
Jonathan Gould, Callan LLC  
Thomas Taylor, ACERA  
Betty Tse, ACERA

## **Adjournment into Closed Session**

Govt. Code section 54956.81 – Consider the purchase or sale of a specific pension fund investment, and Govt. Code section 54957.1(d) (4) – Anticipated litigation (1 matter)

## **Reconvene into Open Session to Report on Action Taken in Closed Session**

### **Trustee Remarks**

### **Future Discussion Items**

### **Establishment of Next Meeting Date**

July 10, 2019 at 9:30 a.m.



To: Members of the Investment Committee  
From: Betty Tse, Chief Investment Officer  
Thomas Taylor, Investment Officer  
Date: June 12, 2019  
Subject: Review of Large Cap Value Manager – Pzena

*B Tse*  
*Thomas Taylor*

**Recommendation:**

This is an information item only.

**Background:**

The U.S. Equity - Large Cap Value account managed by Pzena Investment Management was last reviewed at the May 18, 2016 Investment Committee Meeting. At that meeting, the Committee discussed performance, the benchmark, the mandate, management fees, and the desire to complete the transition of the manager restructuring of the U.S. Equity asset class.

Prior to that, the account managed by Pzena was reviewed at the April 8, 2015 and June 12 2013. At all three reviews, Pzena was on the Watchlist and Probation lists. As of 7/5/2018, they were removed from the Watchlist; however, since the most recent changes made to the Amended General Investment Guidelines, Policies and Procedures (9/20/2018), Pzena's performance has declined sharply in the 4Q2018 and underperformed in the 1Q2019. (See Executive Summary.)

**Discussion:**

Before ACERA possibly considers a search for a new large-cap value manager, there are other considerations Staff wishes to bring to the Committee. Given the recent Asset Liability study, this is a good opportunity for Trustees to consider the 1) the percentage allocated to the large cap value asset class, 2) the specific mandate of the value manager, and 3) the manager selection process for the sub-asset class.

**Manager Review:**

**Mandate:** The Pzena is a deep value manager and selects securities from the cheapest quintile of the largest 500 U.S. companies, by market cap, to invest in. Value investors actively seek out the stocks they believe the market has undervalued but often use different metrics to evaluate. In the strategy ACERA subscribed to, Pzena has not varied from its original mandate as a deep value manager.

**Organization:** The strategy's team –is led by Rich Pzena himself. There have been few departures at the organization; however, since the last review, John Goetz, a co-PM on multiple strategies,



moved off of U.S. large cap strategies within the firm. John Flynn replaced Goetz effective January 1<sup>st</sup>, 2017. Firm-wide, assets have grown as the management company has expanded its offerings and global coverage. Accordingly, firm wide assets have grown (AUM), nevertheless AUM in the deep value strategy have continued to wane more over the last few years (dropping from \$1.8 billion down to approx. \$1.0 billion).

**Performance:**

Performance over the extended period of time, save 2016-2017, has been below the benchmark (Russell 1000 Value).

In review of the portfolio performance, Staff considered several of other facts: attribution, tracking error (6.6), upside/downside capture (114.3%/118.8%), excess return (-1.49%), Sharp ratio (0.22) and information ratio (-0.23) for example. Attribution reveals stock selection –in addition to general value investing, has been problematic. For example, the strategy has been over weighted in Financials since the great financial crisis in 2008-2009. However, many financial stock companies have continued to under-perform. At the last investment committee review, stock selection was discussed as challenging for this strategy, yet Pzena continues to carry many of the same stocks in the portfolio (e.g., Bank of America, Citigroup, Hewlett Packard Enterprise & HP, BP, ExxonMobil, and Oracle). Turnover is low and 23 of the 41 positions have been in the portfolio at least 4 or more of the previous years.

**Conclusion:**

Active management -though reduced through recent manager structure changes (80% passive), is an important component of ACERA meeting its performance objectives. It is important to seize this opportunity to clearly define the requisite mandate for ACERA's large cap value manager. With Trustee input, Staff and Verus will bring back a specific recommendation over the next couple of months for the Committee to consider.

**Attachments:**

1. Executive Summary
2. Style Advisor
3. Trading Cost Analysis
4. Verus Memo



## Executive Summary

### Pzena Investment Management, LLC

**Investment Strategy:** Pzena's investment philosophy is deep value - buying good businesses at low prices. Pzena focuses on companies that are underperforming their historically demonstrated earnings power and apply intensive fundamental research to these companies in an effort to determine whether the problems that caused the earnings shortfall are temporary or permanent. Pzena looks for the following five criteria in each position they take: (1) the current valuation is low compared to the company's normalized earnings power; (2) the current earnings are (typically) below historic norms; (3) Pzena judges that the problems are temporary; (4) company management has a viable strategy to generate an earnings recovery; and (5) there is meaningful downside protection in case the earnings recovery does not materialize.

<b>Inception Date with ACERA:</b>	1/5/06
<b>Total Assets Managed:</b>	\$37,066 million (firm-wide) as of 3/31/2019
<b>Total Assets Managed in Product:</b>	\$963 million (institutional clients only) as of 3/31/2019
<b>Total Clients in Product:</b>	13 (institutional clients only) as of 3/31/2019
<b>ACERA Assets Being Managed:</b>	\$165 million as of 3/31/2019
<b>ACERA's Percentage of Product AUM:</b>	17.1% (\$165M / \$963M) – institutional clients only
<b>ACERA's Percentage of Total Product AUM:</b>	4.71% (\$165M / \$3.5B) – institutional and retail clients
<b>Large-Cap-Value Strategy as a Percentage of ACERA's Total Fund:</b>	2.02% (\$165M / \$8.18B)
<b>Account Benchmark:</b>	Russell 1000 Value

#### **Annualized Returns (%):**

Period Ending 3/31/2019	1 Year*	3 Years*	5 Years*	Since Inception*
ACERA's Account ( <i>Gross returns</i> )	-5.34	11.42	7.12	5.36
ACERA's Account ( <i>Net returns</i> )	-5.89	10.91	6.64	4.92
Benchmark (Russell 1000 Value Index)	5.67	10.45	7.72	6.97
Relative Net Performance: Account – Benchmark	-11.56	0.46	-1.08	-2.05

\*Performance represents annualized returns, except Net \$ results

#### **Portfolio Characteristics (weighted average):**

*Data provided below as of 3/31/19:*

	<u>Portfolio</u>	<u>Benchmark</u>
Number of Holdings	41	722
Percentage of Top Ten Holdings	34.39%	4.74%
Annual Turnover	30.83%	N/A
Market Cap(weighted average)	\$58.8 billion	\$119.9 billion
P/E	13.21	16.85

<b>Total Management Fees for 2018:</b>	<b>\$ 1,251,821.02 (44.4bps)</b>
<b>Total Management Fees YTD as of 3/31/19:</b>	<b>\$ 198,098.34 (48.5 bps)</b>

**Manager Style:** Large Cap Value: No change

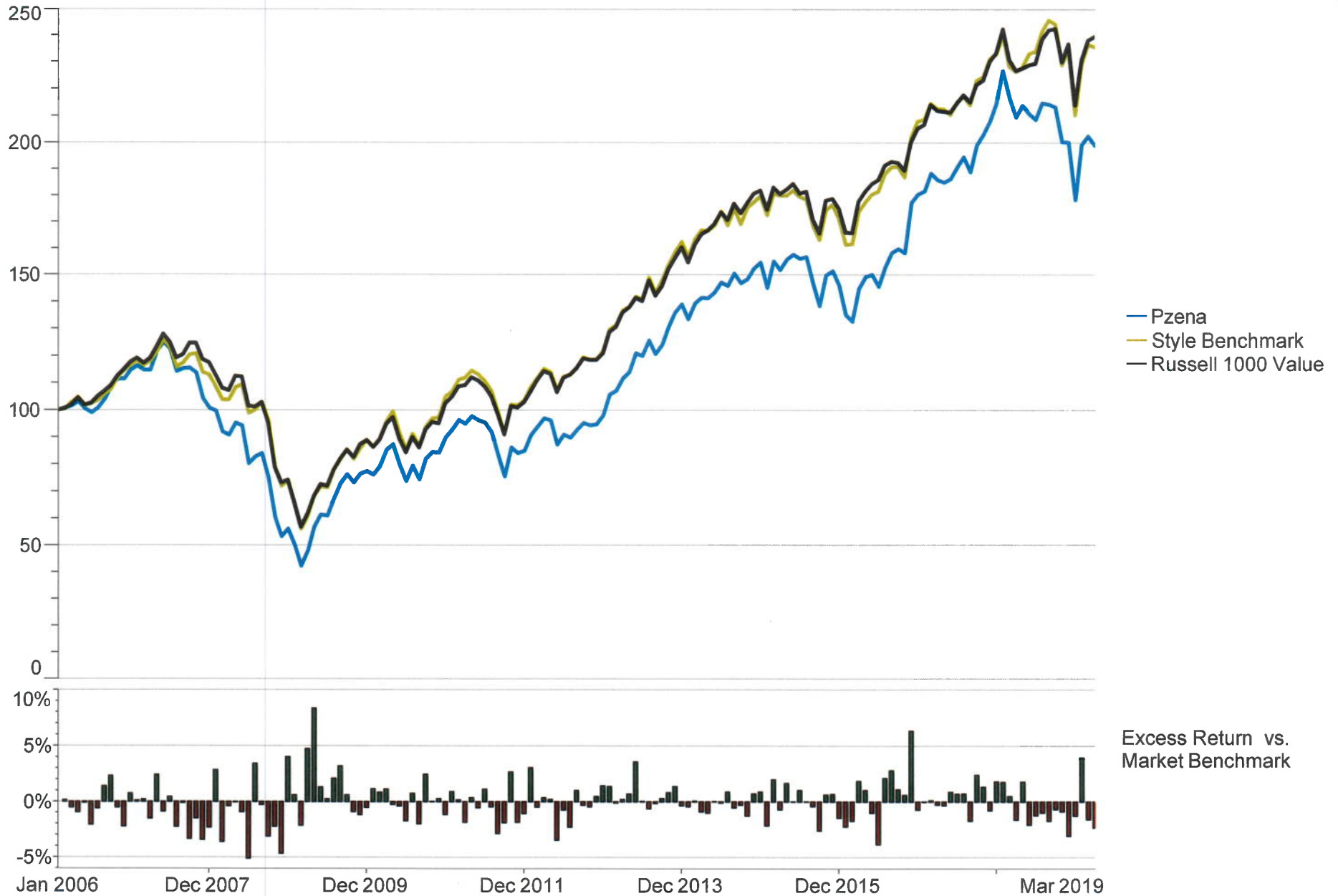
**Compliance:** Pzena is in compliance with ACERA's reporting requirements.

**Key Staff Addition/Reduction Since Last Review:** Effective 1/1/2017, John Flynn was appointed PM and John Goetz was taken off the Large Cap Focused Value strategy to focus on non-U.S strategies.

**Names of Portfolio Managers:** Rich Pzena, John Flynn, Ben Silver

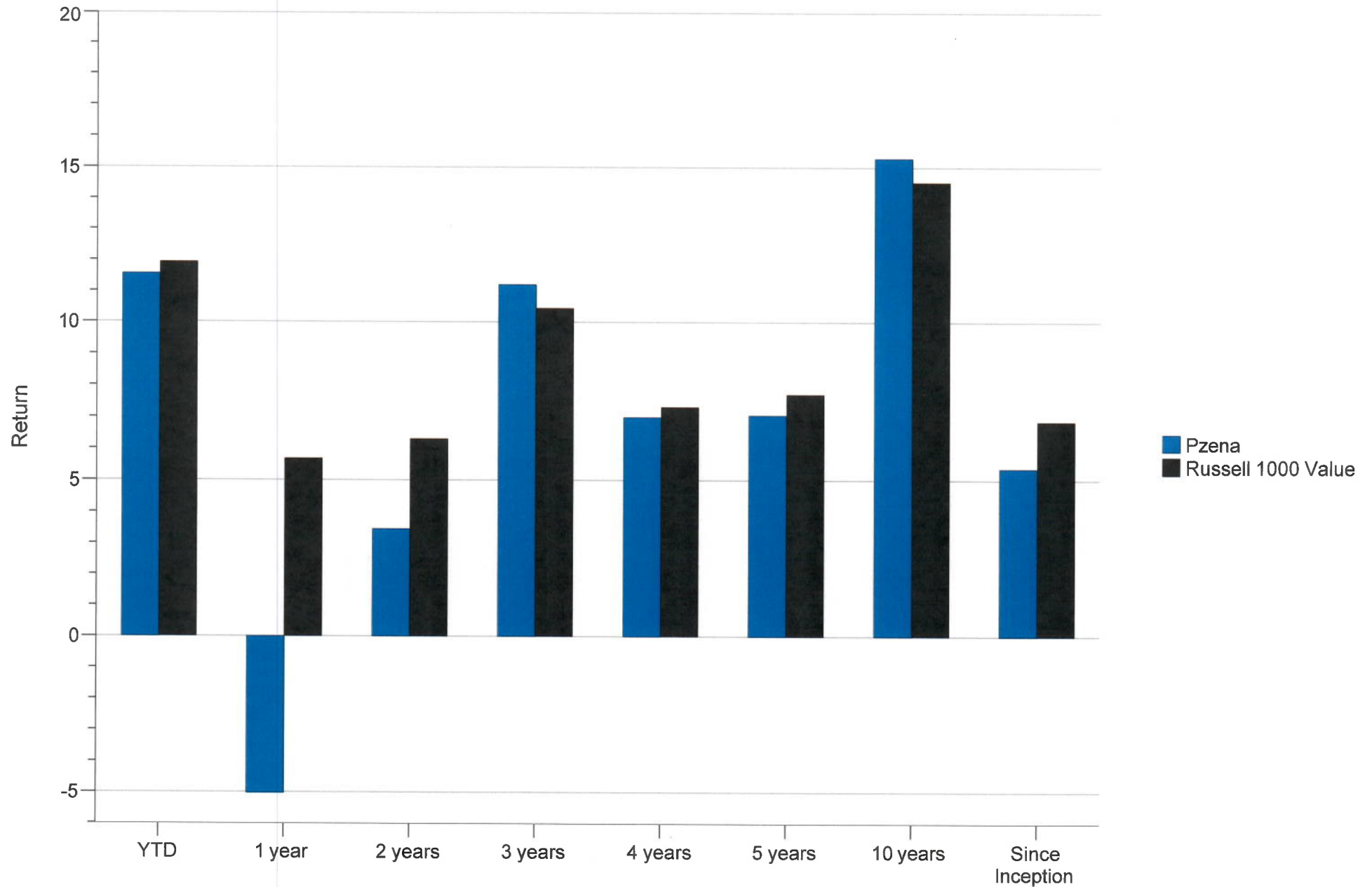
# Manager Performance

February 2006 - March 2019 (Single Computation)



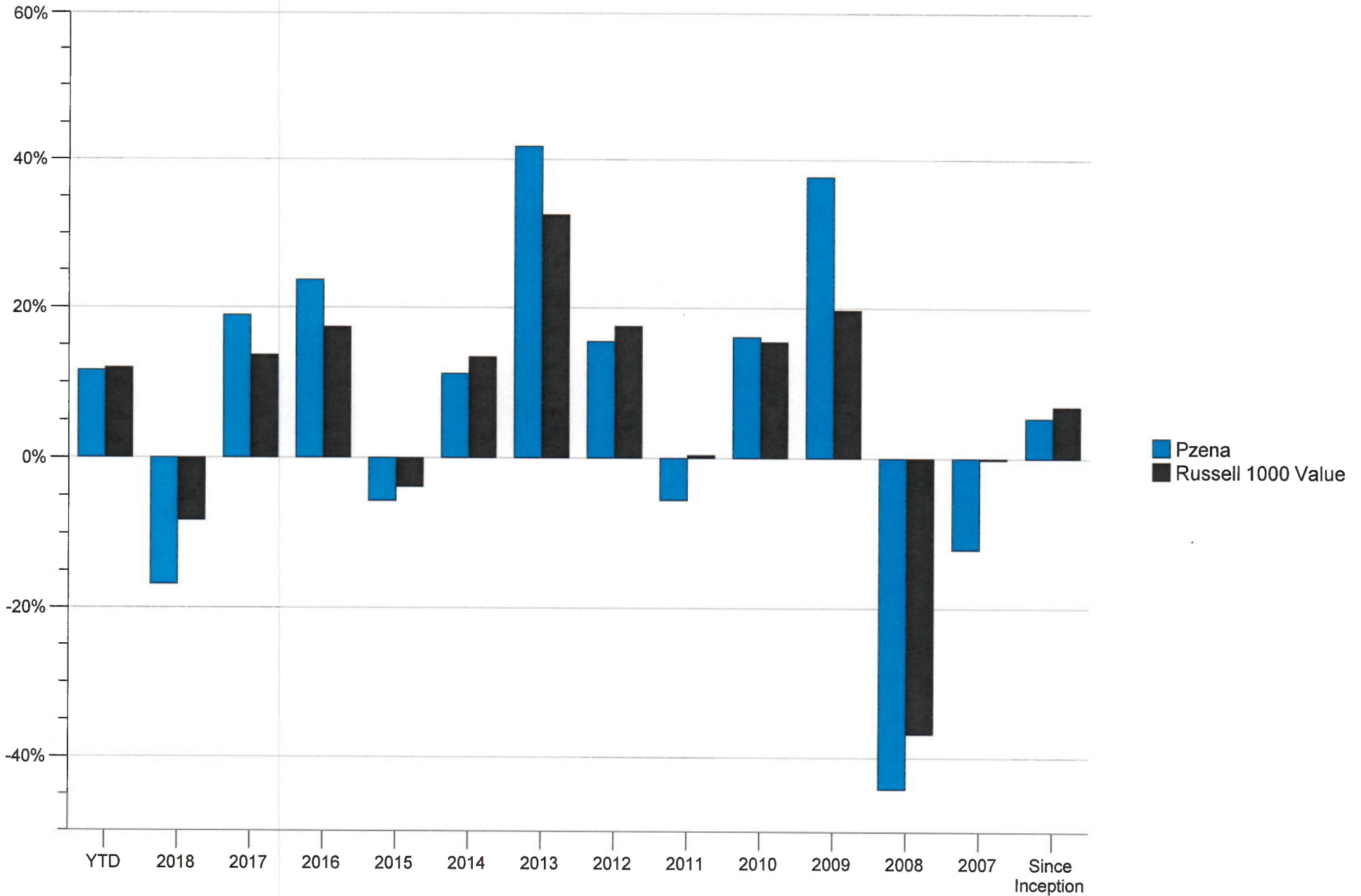
### Manager vs Benchmark: Return

February 2006 - March 2019 (not annualized if less than 1 year)



# Calendar Year Return

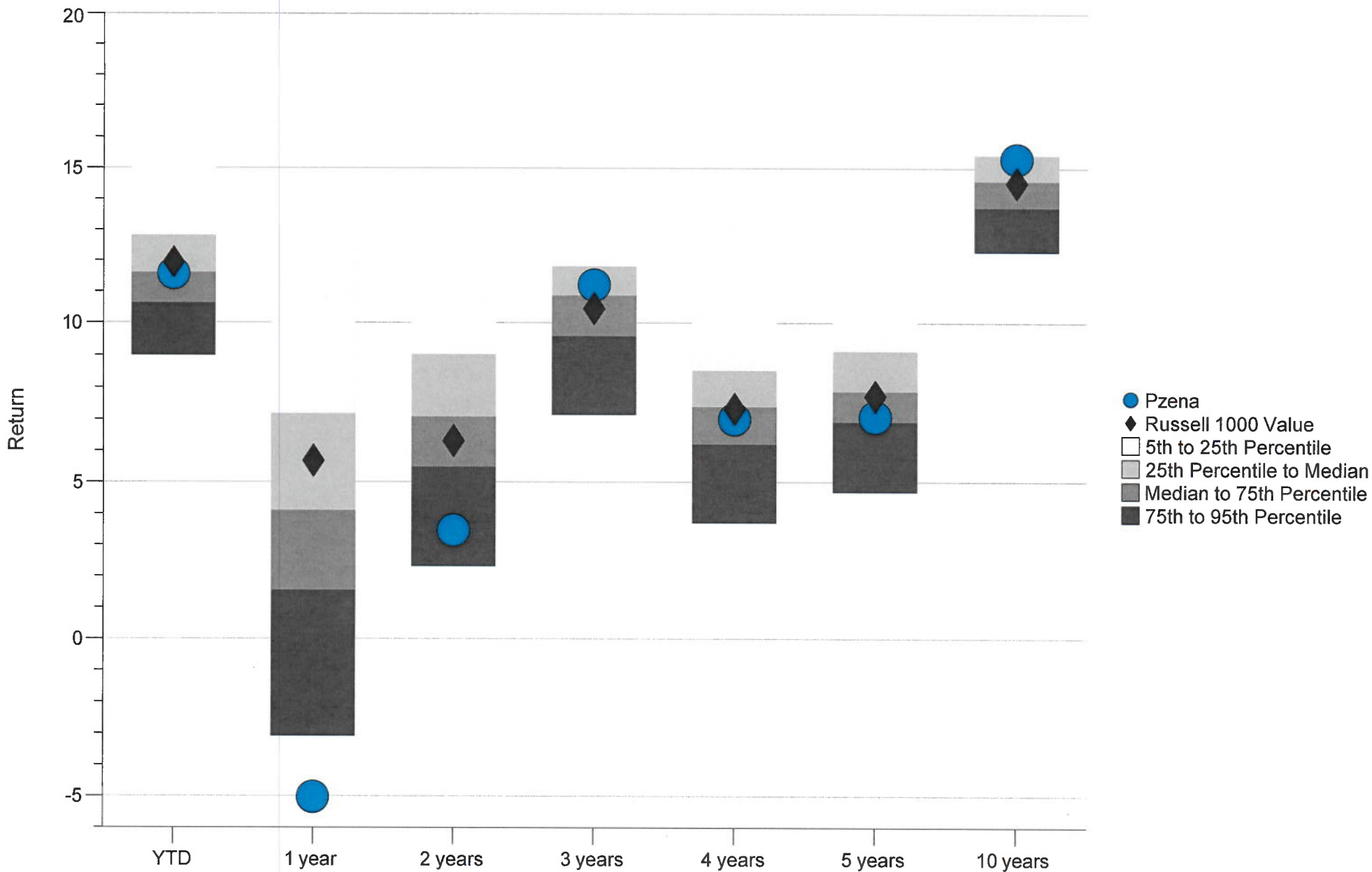
As of March 2019





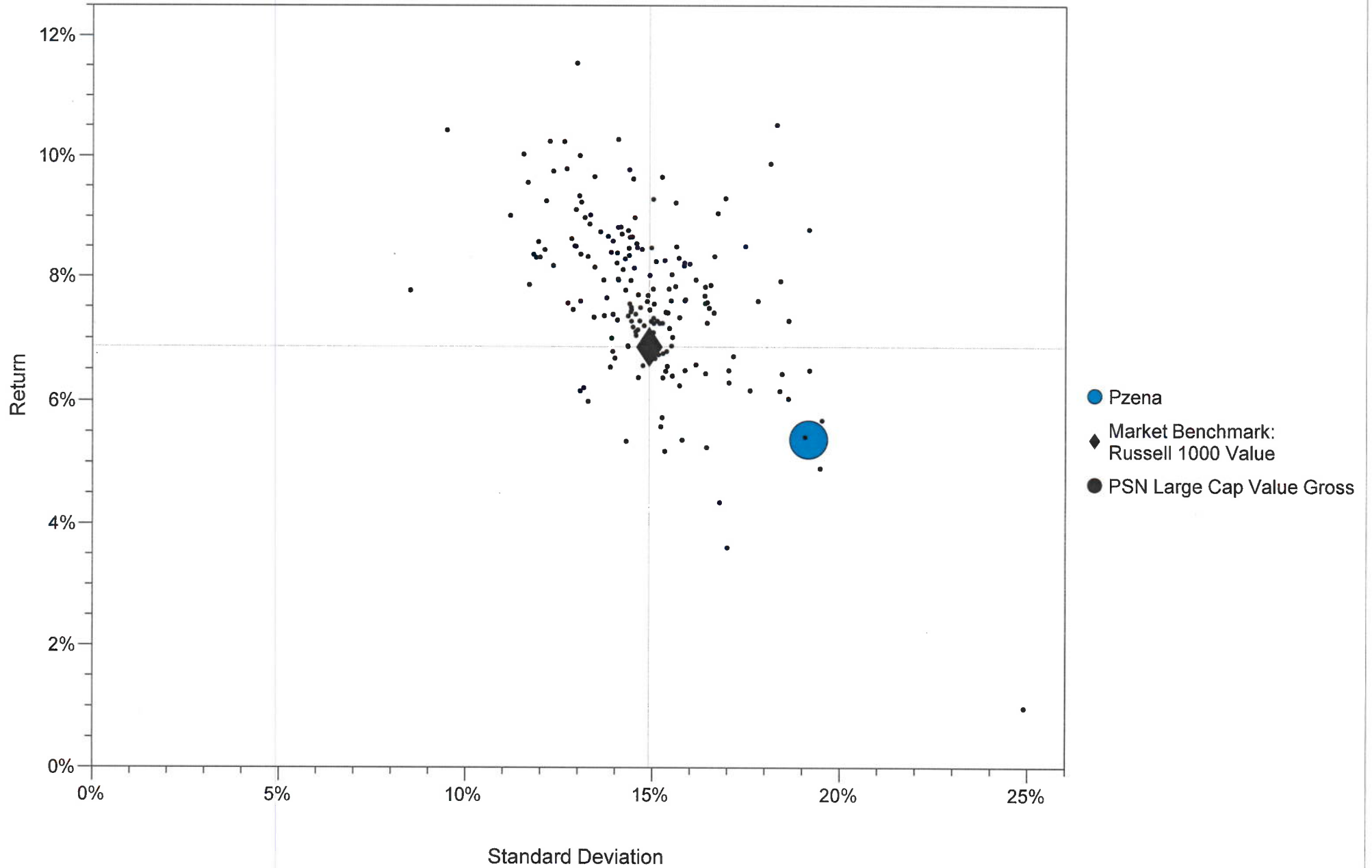
# Manager vs PSN Large Cap Value Gross: Return

February 2006 - March 2019 (not annualized if less than 1 year)



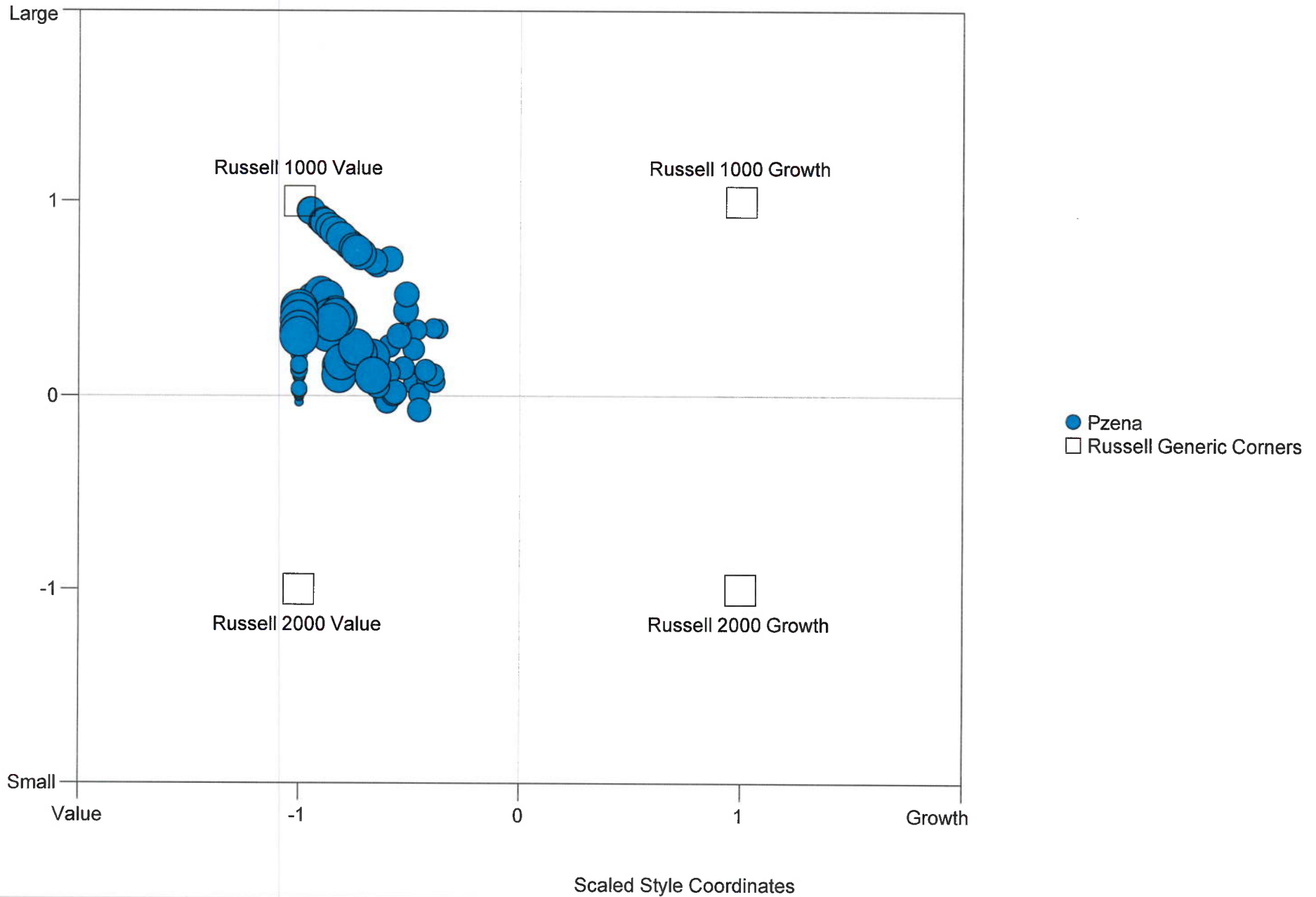
### Risk / Return

February 2006 - March 2019 (Single Computation)



# Manager Style

February 2006 - March 2019 (36-Month Moving Windows, Computed Monthly)





## Pzena Investment Management Trading Cost Analysis

ACERA has contracted with Zeno Consulting Group (Zeno) to perform the trading cost analyses since 1Q98. ACERA has also contracted with Zeno to monitor and analyze the efficiency of ACERA's DB program since September 2006.

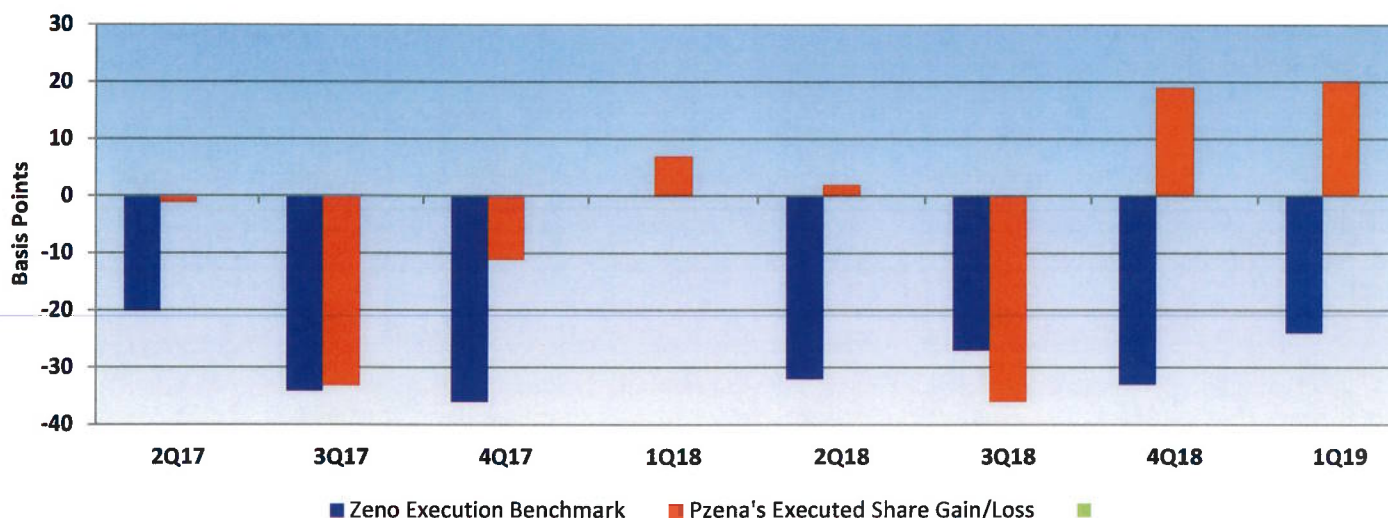
**Zeno Methodology:** Trades executed in the same stock, on the same side (Buy or Sell) and within five trading days of the previous trade, are grouped into the same Decision/Order. For each group of trades, Decision/Order prices are set to the opening price of the stock on the day of the first trade. For example, assume a manager's "Decision" to trade was made at the Market's close on Oct. 20th. The stock's opening price on Oct. 21st becomes the Decision/Order price against which all trade prices in each group are compared. Since either gains or losses can accrue to the funds assets through the process of trading stocks, Zeno nomenclature identifies "total costs" as "Executed Share Gain/Loss."

<b>Executed Share Gain/Loss:</b>	Commission + Market Impact + Delays
<b>Zeno Execution Benchmark:</b>	Zeno Average Execution Gain/Loss based on the average cost for all managers in the Zeno Database trading similar stocks in similar size and market conditions (risk adjusted)
<b>Commission:</b>	Cost of transacting with a broker
<b>Market Impact:</b>	Each day's trading cost (opening price minus trade price)
<b>Delays:</b>	The costs of trading decisions over several days (decision price minus days opening price)

**Trading Discipline:** If prices are favorable (i.e. falling for buys, rising for sells) a positive Executed Share Gain/Loss number will accrue for the fund if delays occur while trading. If prices are adverse (i.e. rising for buys, falling for sells), a negative Executed Share Gain/Loss number will be incurred by the fund if delays occur while trading. Many growth/momentum managers incur execution losses, since they usually purchase and liquidate stocks with adverse prices (growth stocks also tend to be momentum stocks).

### Pzena Execution Gain/Loss vs. Zeno Execution Benchmark:

	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19
Zeno Execution Benchmark	-20	-34	-36	0	-32	-27	-33	-24
Pzena's Executed Share Gain/Loss	-1	-33	-11	7	2	-36	19	20
Value Added/Lost by Pzena	19	1	25	7	34	-9	52	44



### Summary:

Pzena has routinely added value to ACERA's portfolio by incurring lower execution costs relative to its benchmark in all quarters over the last two calendar years. The total dollar value added by Pzena over that time period is approximately \$900,000.

# Memorandum

**To:** Alameda County Employees' Retirement Association  
**From:** Verus  
**Date:** June 12, 2019  
**RE:** Pzena Investment Management Large Cap Focused Value

---

## General Information

Firm name:	Pzena Investment Management
Strategy name:	Large Cap Focused Value
Firm total AUM:	\$37.1 billion
Strategy total AUM:	\$1.0 billion
ACERA portfolio value:	\$148.2 million
Strategy inception with ACERA:	January 2006
Benchmark:	Russell 1000 Value

*Note: Data as of 3/31/19*

## Organization

Pzena Investment Management, LLC (“Pzena”) was founded in 1995 and is focused on long-term, deep value investing. In October 2007, Pzena conducted an initial public offering of its holding company, Pzena Investment Management, Inc. Today, about 55% of the firm is owned by current employees, while about 26% is publicly held. The remaining 19% is privately held by outside owners, including former employees. Employee ownership is dispersed across 48 partners.

The firm is headquartered in New York, New York with client services offices located in Melbourne, Australia and London, U.K.

Since ACERA’s last review of Pzena in May of 2016, the firm has grown its total assets under management, mainly through its non-U.S. strategies. A stated reason for the growth in non-U.S. assets and, conversely, loss in U.S. assets is the trend to increased allocation to non-U.S. equities in portfolios at the expense of U.S. equities. Moreover, Pzena cited the move to passive and LDI as headwinds to their U.S. equity business, which has resulted in a drop in AUM for the Large Cap Focused Value strategy over the past three years. While not stated by Pzena, it is logical to presume that the strategy’s near-term underperformance has been another reason for asset loss.

## Investment Professionals

Pzena's investment team is comprised of 25 investment professionals with fundamental research analysts organized by global industries. Richard Pzena, John Flynn, Ben Silver and Manoj Tandon comprise the portfolio management team for the Large Cap Focused Value strategy. Ben Silver joined the team in 2012, and Manoj Tandon joined the team in 2014 after Antonio (Tony) DeSpirito resigned from the firm. John Flynn replaced John Goetz in 2017 when Goetz stepped down from this strategy (but remains at the firm). All Large Cap Focused Value portfolio management team members have been with Pzena for over a decade and are equity owners.

## Philosophy & Process

Pzena's Large Cap Focused Value strategy is a concentrated, low-turnover approach to deep value equity investing. Through a bottom-up, fundamental research process, Pzena seeks to buy good businesses that are trading at significantly discounted valuations, focusing exclusively on companies that are underperforming their historical earnings power. Using a proprietary model, the investment team ranks the largest 500 U.S. companies in terms of price relative to normalized earnings, and then focuses their research efforts on the most undervalued quintile of the universe. For this remaining quintile, the investment team seeks to assess whether the causes of under-valuation are temporary or permanent. If a prospective company's under-valuation is viewed as temporary, Pzena will then assess whether they would be able to reasonably forecast the company's normalized earnings power. If Pzena is able to develop a final, fully researched estimate of normalized earnings, the estimate is inserted into the model. If a security continues to rank in the cheapest quintile, it is then eligible to be purchased.

Before a stock can be added to the portfolio, all five of the following criteria must be met:

- Current valuation is low compared to the company's normalized earnings power;
- Current earnings are below historic norms;
- Management has a viable plan to generate earnings recovery;
- The company's business is sound, with sustainable advantages or significant barriers to entry;
- Significant downside protection in the form of real asset value (in the event that expected earnings recovery fails to materialize).

Pzena believes that building a portfolio exclusively focused on companies with these characteristics should generate excess returns for long-term investors. Their approach can often result in holdings in controversial names and sectors that the team believes are temporarily mispriced but will revert to their normalized earnings power.

For the Large Cap Focused Value strategy, the portfolio management team has joint decision-making responsibility, with no single person possessing final authority – all must agree for a

security to be purchased in the portfolio. The end result is a concentrated, low-turnover portfolio of between 30 and 40 securities.

In terms of risk management, positions are limited to 5% of the portfolio at cost and must be trimmed if they reach 7.5% of the portfolio at market. Weights of individual securities typically range between 1% and 5%. In general, the most undervalued companies receive the largest weightings in the portfolio; however, this is subject to Pzena's judgment regarding the nature of the company's undervaluation. Relative to the Russell 1000 Value Index, the strategy's sector weights are limited to +/- 15% the weight in the index. With regard to sell discipline, Pzena employs the same ranking system that informs its stock purchases. Valuation ranks are continuously monitored and a stock is sold once its valuation reaches the midpoint of its investment universe.

In response to the strategy's significant underperformance during the global financial crisis, Pzena has since sought to avoid companies that carry excessive financial leverage and are in the top quintile of volatility. Stocks that are deemed attractive through their fundamental research analysis but have these attributes tend to have small weights in the portfolio.

## Performance

As expected for a concentrated, deep value strategy, Pzena's tracking error tends to run high, generally around 5-6%, ranking the strategy in the top quartile among its peers. Pzena's beta and standard deviation are greater than that of the Russell 1000 Value Index.

ACERA portfolio	QTD (%)	YTD (%)	1 yr (%)	3 yr (%)	5 yr (%)	10 yr (%)	Annualized s.i. (1/2006)
Gross performance*	5.83	18.10	-1.88	12.40	8.36	13.90	5.77
Net performance*	5.70	17.80	-2.38	11.87	7.87	13.43	5.33
Russell 1000 Value	3.55	15.90	9.06	10.97	8.27	13.76	7.20

\*Returns ended 4/30/19

As depicted above, Pzena's results have been significantly disappointing over the one year and since inception time periods. During calendar year 2018, Pzena's deep value approach faced extreme headwinds in an environment that rewarded growth over value (ACERA -16.48% vs. -8.27% for the Russell 1000 Value Index). Pzena stuck to its deep value discipline which has resulted in a large position in financials (40% of the portfolio) that the team views as very cheap vs. normalized earnings power. They have added energy services companies (ex. Halliburton) and drug distributors (ex. Cardinal) to the ACERA portfolio that have not yet been rewarded. Pzena has added to some of its positions as valuations have become more attractive (ex. GE) and are closely monitoring others (ex. Mylan). As mentioned above, Pzena's longer-term results were impaired by significant underperformance during the global financial crisis, in particular because of financial holdings.

Pzena's deep value approach results in a lumpy return pattern. During Pzena's 13-year tenure managing money for ACERA, the portfolio has experienced both noteworthy outperformance (2009, 2013) and underperformance (2008, 2018) compared to the Russell 1000 Value Index. Similarly, the portfolio has ranked in both the top quartile of large cap value peers (2009, 2013, 2016) and bottom quartile (2008, 2011, 2015, 2018).

### **Summary Assessment**

Pzena was placed on Watchlist/Probation status by ACERA for performance and for the departure of portfolio manager Tony DeSpirito. Although Watchlist/Probation status was lifted for the change in personnel, Pzena remained on Watchlist/Probation status for performance. Under ACERA's new watchlist policy which is more qualitative and holistic than its previous policy, Verus and Staff concluded that Pzena should remain on watch for significant and prolonged underperformance.

Verus concurs that Pzena's investment approach has experienced stylistic headwinds. However, attribution analysis for the past year shows that stock selection has contributed more to underperformance than have factor or style biases; in other words, under-performing stock investments have accounted for more underperformance than their deep value tilt. Underperformance stemming from allocation, in particular to financials, detracted 224 bps, while stock selection, mainly in consumer discretionary, healthcare and financials, detracted 755 bps. (Note that this is time period dependent and there have been time periods during the ACERA relationship where stock selection has added excess return based on attribution analysis.)

Although assets in the Large Cap Focused Value strategy managed for ACERA have decreased in recent years, Verus acknowledges that this is a tough environment for Large Cap Value and active U.S. equity strategies generally. The firm has grown its total firm assets through its non-U.S. strategies which has resulted in net inflows at the total firm AUM level. Thus, we are not overly concerned about strategy asset loss as it pertains to viability of the firm or maintenance of the product.

Pzena cautions that the Value cycle, which is tied to the economic cycle, was artificially truncated through Fed monetary policy interventions and over-selling based on investor intolerance for periods of underperformance. Pzena also reminds that Value cycles will eventually revert. Verus believes that Pzena's deep value approach will again be rewarded by the market and should experience a meaningful turnaround at some point. Nevertheless, it is arguable whether Pzena represents traditional Value investing and whether they represent the best option for ACERA.

Verus seeks feedback from the ICM following the Pzena review regarding appropriate next steps, namely whether to a) keep Pzena on watch and continue to monitor, b) accelerate our due diligence and re-underwrite Pzena as an ACERA manager (this would include an onsite visit) or c) revisit large cap value manager options and include Pzena in the analysis. Should Trustees

advise further action on Pzena, Verus and Staff will return with next steps in the next 2-3 months. As stated in prior Pzena reviews, this manager requires investors to tolerate above-average tracking error, given its concentrated, deep value approach which may lead to periods of significant underperformance. However, investing with Pzena should also result in greater alpha opportunities in the long run to compensate for additional risk – especially when value is in favor. In summary, Pzena Large Cap Focused Value is not a strategy for investors who would prefer less volatility and tighter tracking error.

*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 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. and Verus Investors, LLC (“Verus”) file a single form ADV under the United States Investment Advisors Act of 1940, as amended.*

PREPARED FOR:





Mandate:	Large Cap Focused Value Strategy
Inception Date:	1/5/2006
Portfolios:	ALAMEDA COUNTY EMPLOYEES RETIREMENT ASSOCIATION (ACERA)
Assets Under Management:	\$ 164.9 million



## Portfolio Summary

Current Strategy: Large Cap  
Focused Value

Period December 31, 2018 - March 29, 2019

Preliminary | 3

ALAMEDA COUNTY EMPLOYEES RETIREMENT ASSOCIATION (ACERA)

Report Currency = US Dollar

Portfolio Allocation			
Allocation	Value	% of Total	Current Yield
Cash & Equivalents	3,008,964	1.82	1.91
Equities	161,695,611	98.04	2.61
Accrued Income	224,564	0.14	N/A
<b>Total</b>	<b>164,929,139</b>	<b>100</b>	<b>2.59</b>

Portfolio Changes	
Portfolio Value on 12/31/2018	147,980,181
Contributions	33
Distributions	0
Inv Mgmt Fees	-211,123
Expenses	0
Income	1,049,651
Appreciation	16,116,720
Change in Accrued Income	-6,324
<b>Portfolio Value on 03/29/2019</b>	<b>164,929,139</b>

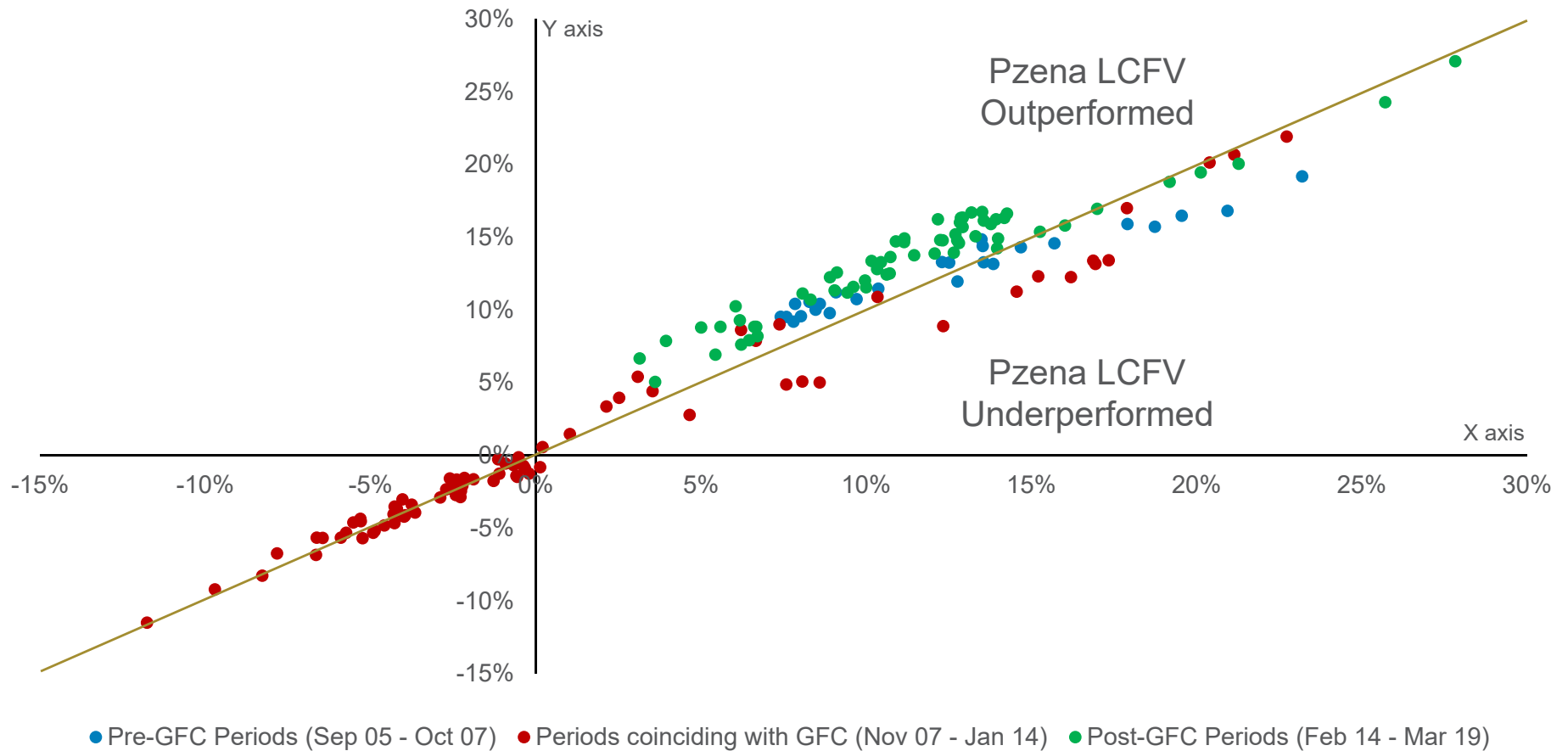
Portfolio Performance-Historical Rates of Return								
	Month To Date	Quarter To Date	Year To Date	One Year	Three Year*	Five Year*	Ten Year*	Annualized Since Jan 05, 2006
Portfolio (Gross)	-1.72	11.60	11.60	-5.34	11.42	7.12	15.25	5.36
Portfolio (Net) <sup>1</sup>	-1.72	11.45	11.45	-5.89	10.91	6.64	14.77	4.92
F. R. 1000 VALUE	0.64	11.93	11.93	5.67	10.45	7.72	14.52	6.97

\*Annualized Returns  
<sup>1</sup> Performance is Net of Fees

Ten Largest Holdings	
	% Weight
AMERICAN INTERNATIONAL GROUP	4.1 %
FORD MOTOR COMPANY	3.7 %
HALLIBURTON CO	3.7 %
CITIGROUP INC	3.7 %
GENERAL ELECTRIC CO	3.5 %
CAPITAL ONE FINL CORP	3.4 %
COGNIZANT TECH SOLUTIONS - A	3.2 %
LEAR CORP	3.2 %
HEWLETT PACKARD ENTERPRISE COMPANY	3.1 %
BANK OF AMERICA CORP	3.0 %
<b>Total</b>	<b>34.4 %</b>

Note: Securities with a \*\*\* preceding the security name denote an American Depository Receipt or US-traded foreign security.

5-Year Rolling Returns of Pzena Large Cap Focused Value<sup>1</sup> vs. Low Price/Book<sup>2</sup>  
October 2000 – March 2019



Y axis: Monthly Rolling 5-year USD annualized return of Pzena’s Large Cap Focused Value strategy  
X axis: Monthly Rolling 5-year USD annualized return of Low Price/Book

Source: Sanford C. Bernstein & Co., Pzena analysis

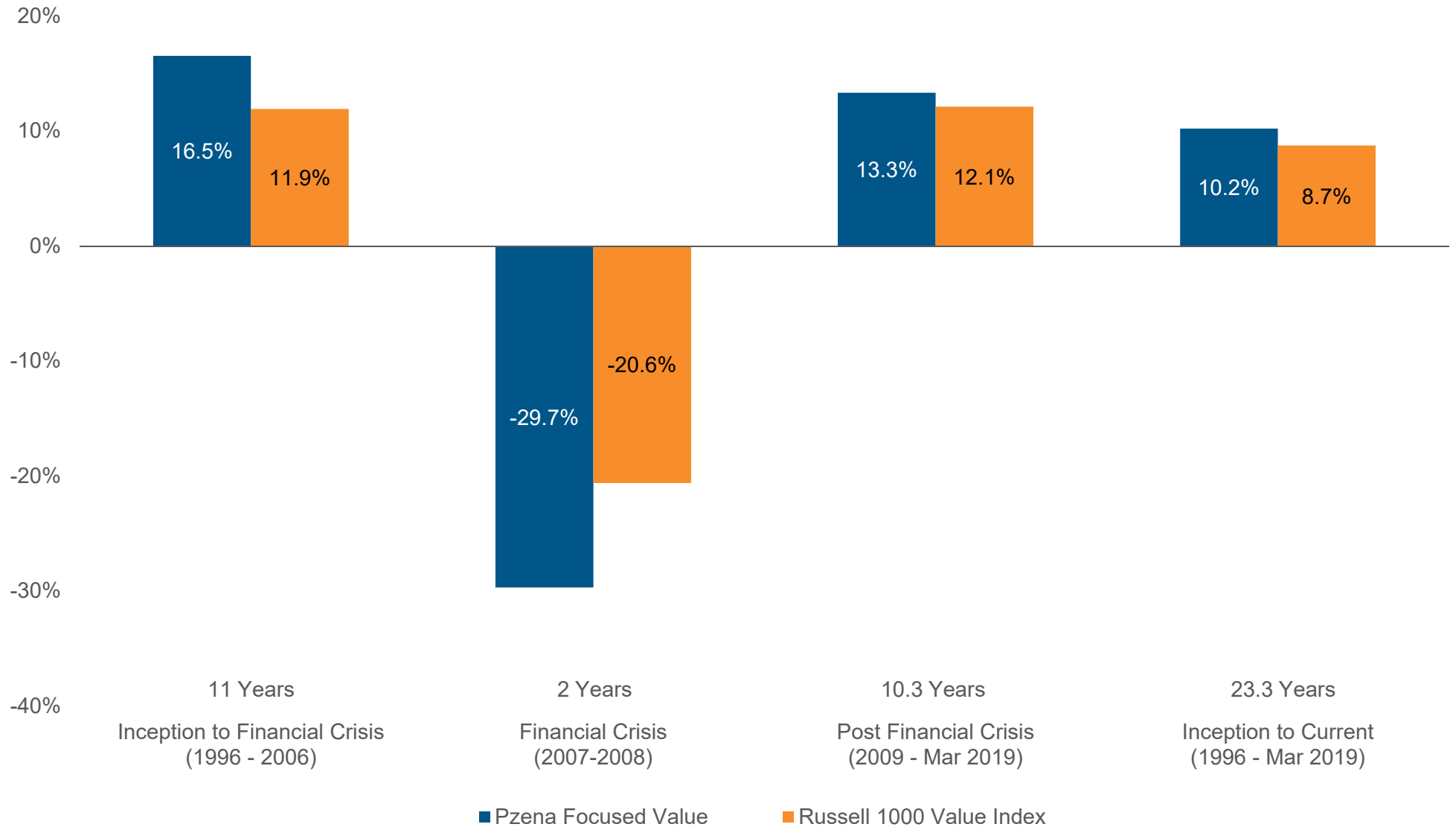
<sup>1</sup>Returns based on gross performance of our Pzena Large Cap Focused Value composite in US dollars.

A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®), is provided later in this presentation.

<sup>2</sup>Cheapest quintile price to book of largest ~500 US stocks ranked by market capitalization (equally-weighted data);

does not represent any specific Pzena product or service.

Past performance is not indicative of future returns.



Returns based on gross performance of our Pzena Focused Value composite in US dollars. A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®), is provided later in this presentation.

Source: Frank Russell Company, Pzena Analysis

Past performance is not indicative of future returns.

### Unwavering Commitment to Deep Value Investing

- Concentrated portfolio of deeply undervalued businesses
  - Superior Research
  - Systematic Process
- Long-term investment horizon

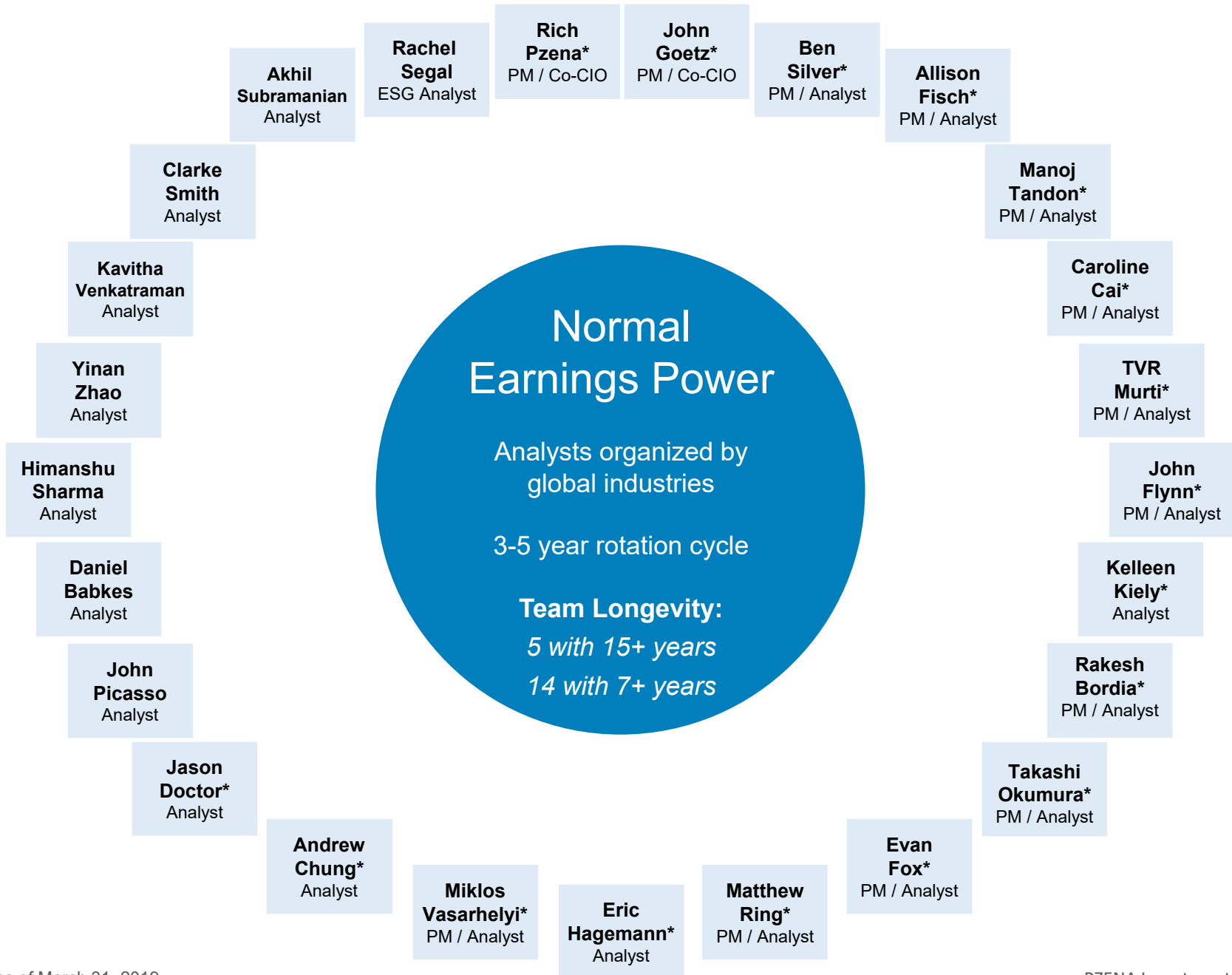
### The Right Investment Team

- 25-person global research team with 14 together for 7+ years
- Business people focused on evaluating businesses

### Culture of Ownership

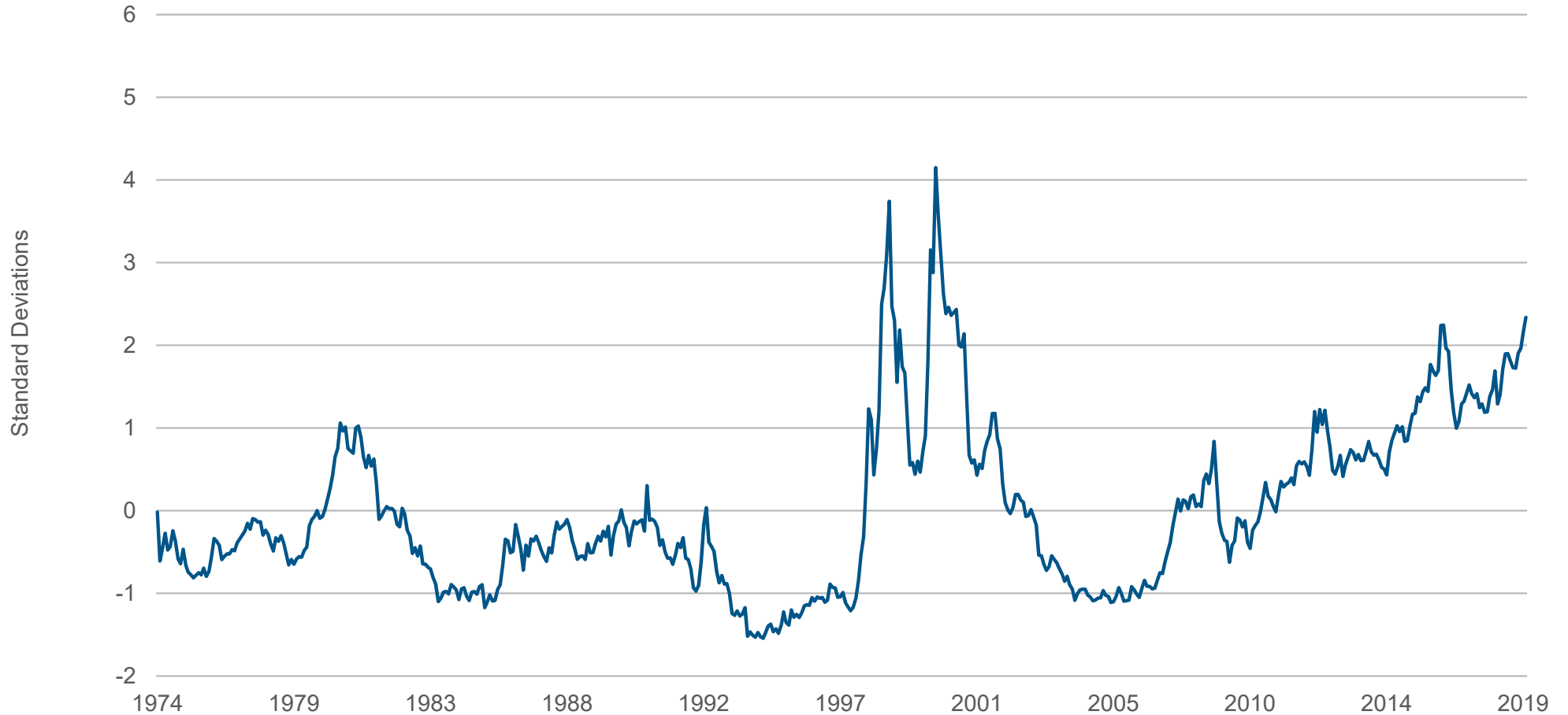
- Broad and significant equity ownership
- 48 Partners – fosters a culture of shared purpose with clients

As of March 31, 2019.



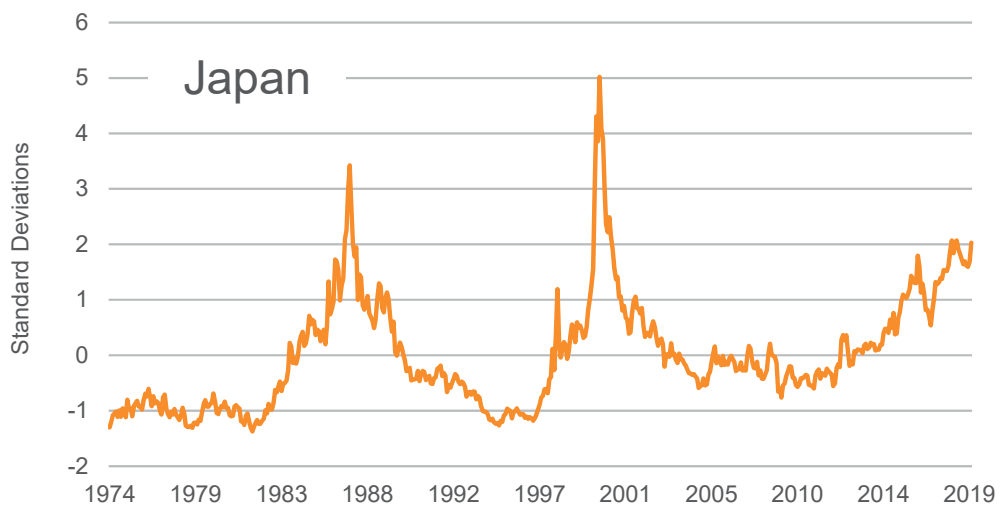
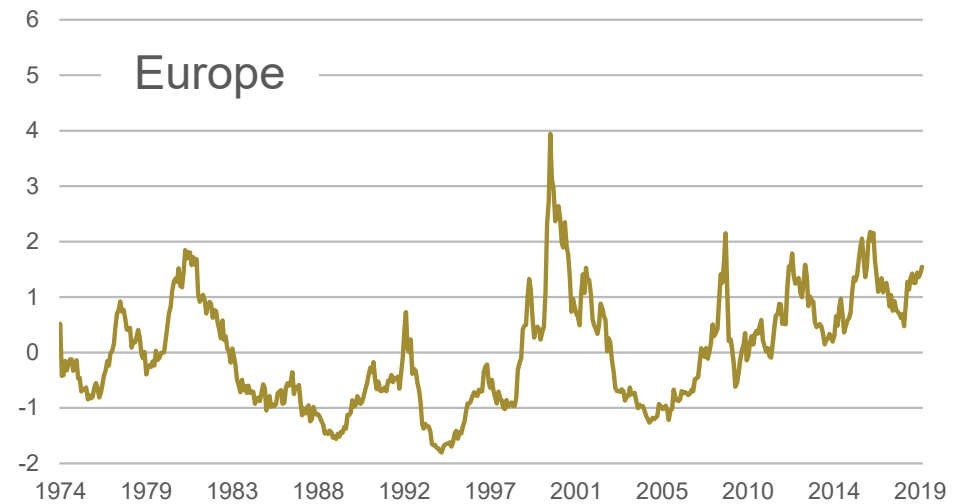
\*Partners as of March 31, 2019

## Global 1<sup>st</sup> Quintile vs. 5<sup>th</sup> Quintile Dispersion Expressed in Standard Deviations



Data through March 2019. Source: Sanford C. Bernstein & Co., Pzena analysis  
 Dispersion based on price to book; equally-weighted data.  
 Universe is the largest ~1,600 stocks by market capitalization in developed world.

## 1<sup>st</sup> Quintile vs. 5<sup>th</sup> Quintile Dispersion by Region Expressed in Standard Deviations



Data through March 2019. Source: Sanford C. Bernstein & Co., Pzena analysis  
Dispersion based on price to book; equally-weighted data.  
Universes comprise the largest stocks by market capitalization for each region as follows:  
~1000 largest US; ~300 largest Japanese; ~500 largest European; ~1100 largest emerging markets.

	Cheapest Quintile	Universe <sup>2</sup>
Global	8.4	16.5
US	9.3	16.8
Europe	7.9	15.9
Japan	8.0	17.5
Emerging Markets	7.3	14.7

As of March 2019

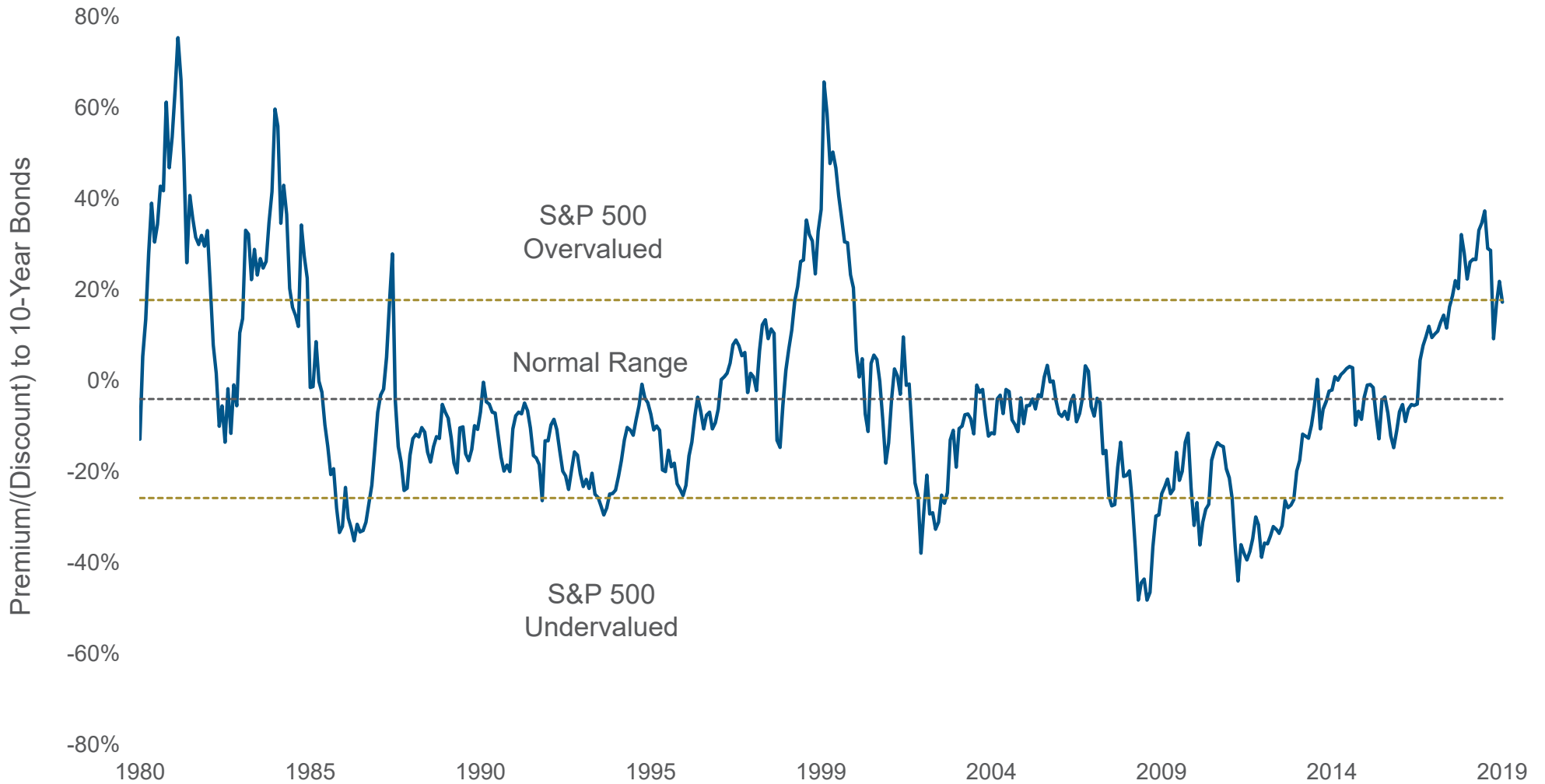
Source: FactSet, Reuters, Pzena analysis

<sup>1</sup>Pzena estimates. <sup>2</sup>Universes comprise the largest stocks by market capitalization for each region as follows:

~2,000 largest global; ~1,000 largest US; ~750 largest European; ~750 largest Japanese; ~1,500 largest emerging markets.



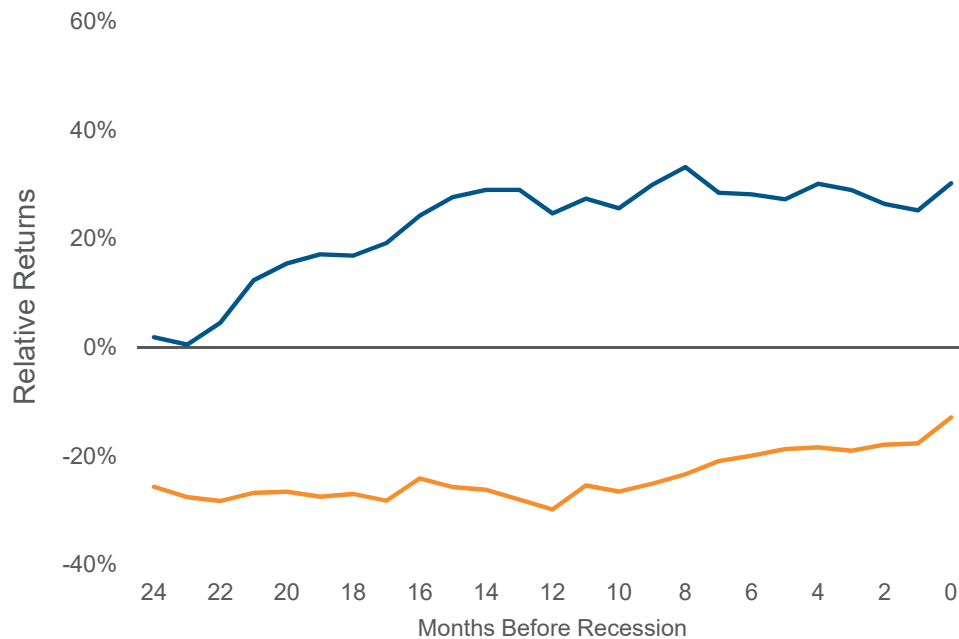
S&P 500 Valuation Relative to Bond Market: 1980 – March 2019



Source: Sanford C. Bernstein & Co., U.S. Department of the Treasury, Pzena analysis  
 Valuation based on Pzena's dividend discount model analysis, assuming 20-year average equity risk premium.  
 Past performance is not indicative of future returns.

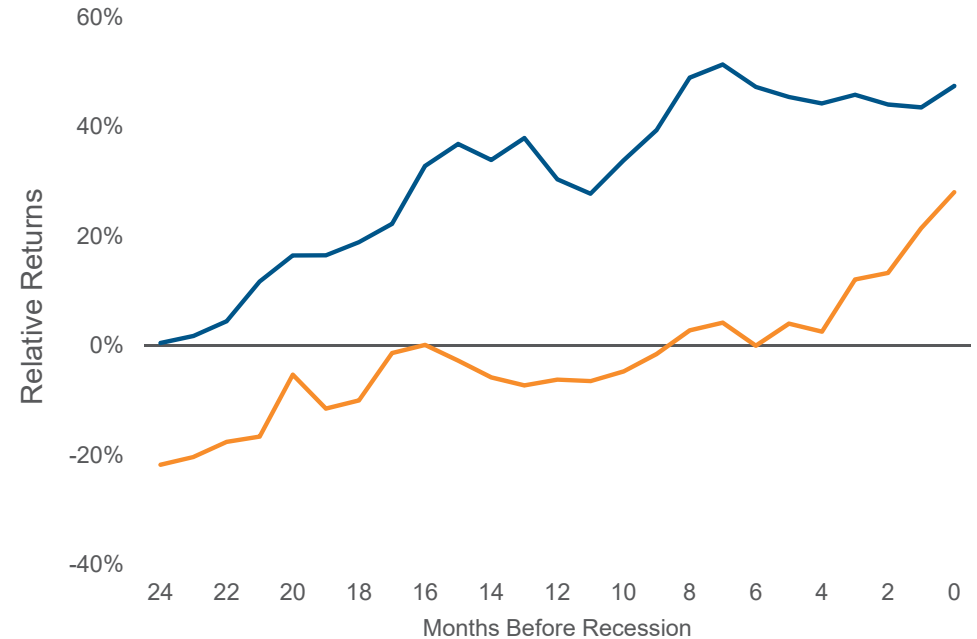
## Forward 36-Month Relative Returns\* Prior to Recessions 1975 – 2001 vs. Global Financial Crisis

### US Large Cap Financials



— Global Financial Crisis ("GFC") — Average of All Recessions ex. GFC

### US Large Cap Consumer Discretionary



— Global Financial Crisis ("GFC") — Average of All Recessions ex. GFC

Source: National Bureau of Economic Research, Empirical Research Partners, Pzena analysis  
 Financials and consumer discretionary within the largest ~750 US stocks by market capitalization.  
 \*Equally-weighted cumulative returns of sector versus capitalization-weighted returns of the ~750 US stocks.  
 Does not represent any specific Pzena product or service.  
 Past performance is not indicative of future returns.

US Large-Cap Financials Relative to the Market<sup>1</sup>  
 Ratios of P/B<sup>2</sup>  
 1974 - March 2019



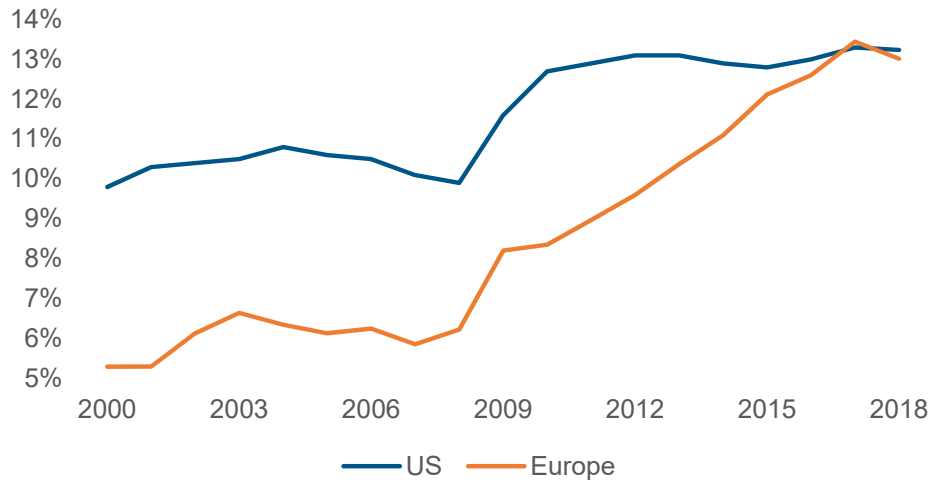
Source: National Bureau of Economic Research, Empirical Research Partners, Pzena Analysis

<sup>1</sup>Largest ~1,000 US stocks ranked by market capitalization.

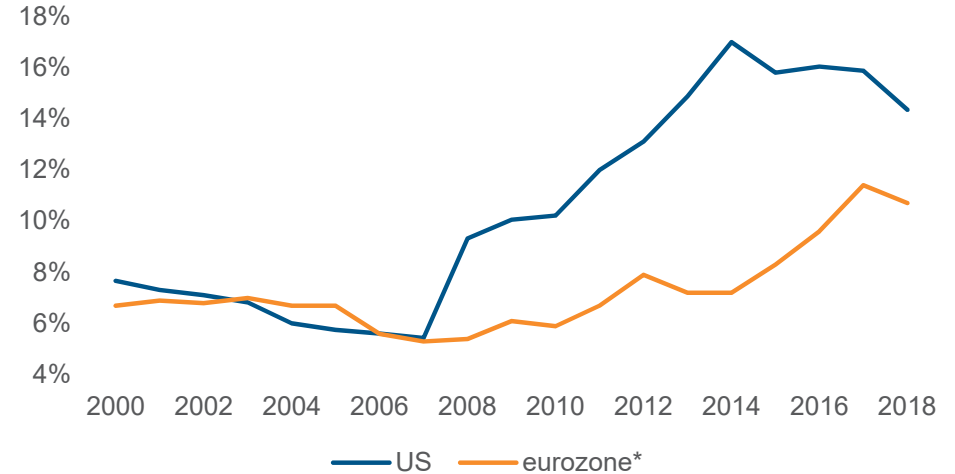
<sup>2</sup>All equally-weighted data.

Past performance is not indicative of future returns.

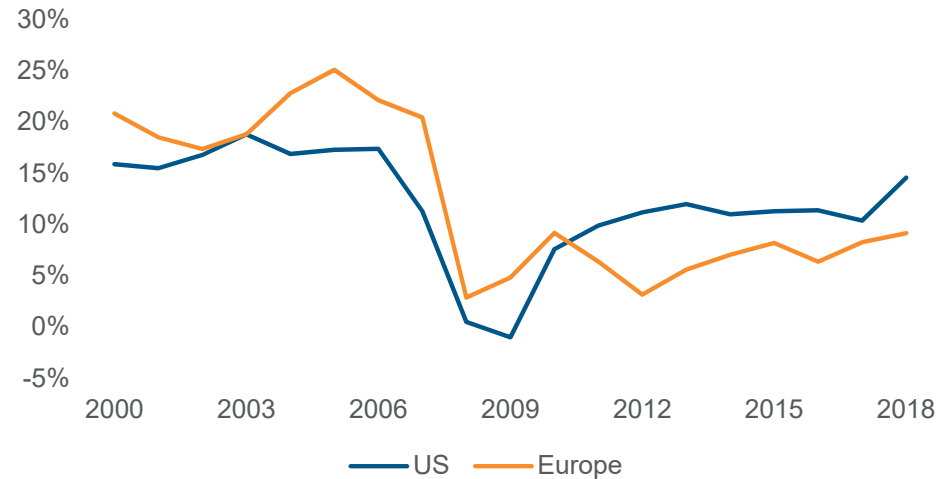
### Tier 1 Common Equity Ratio



### Liquidity Ratio



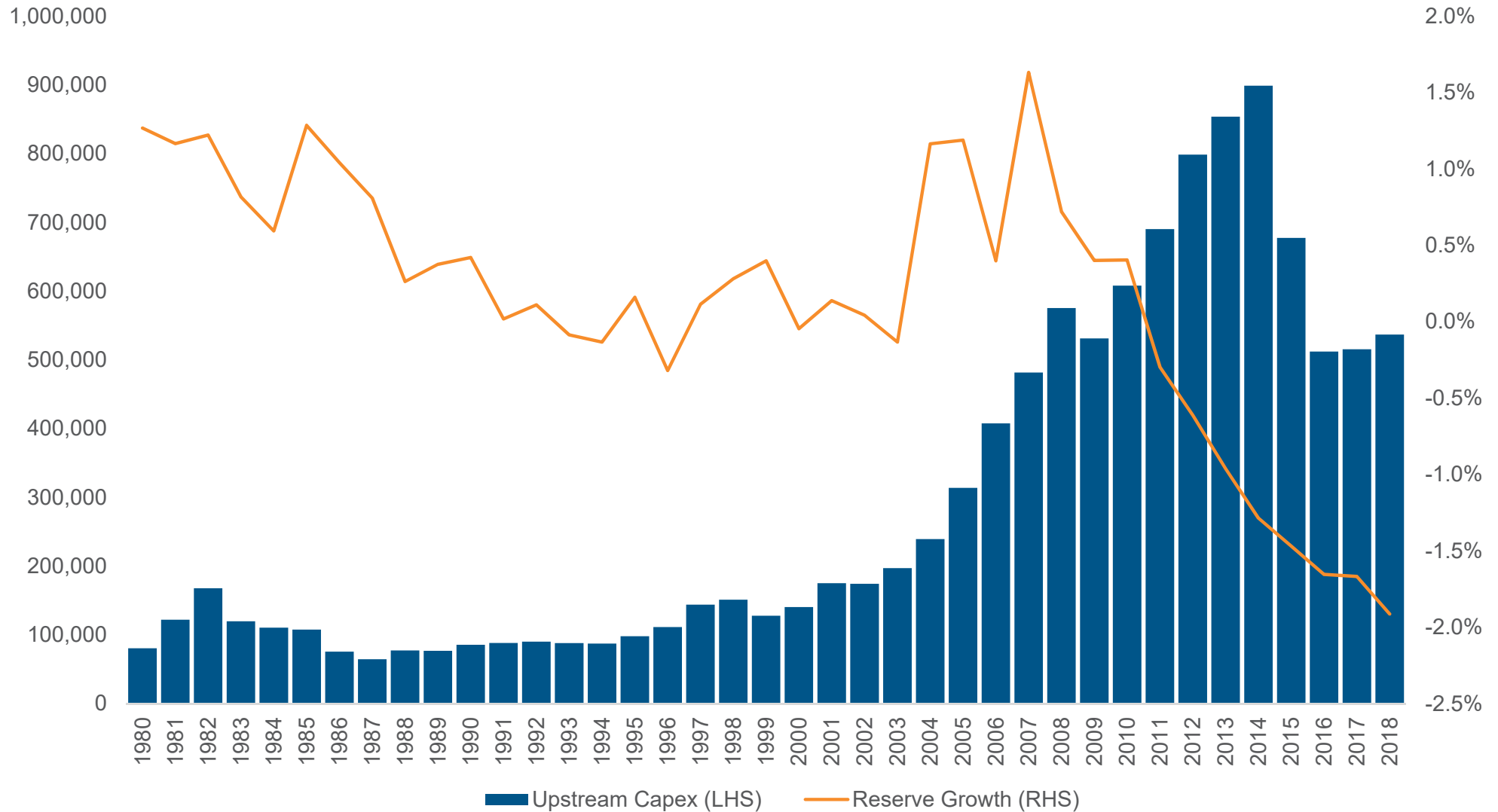
### Return on Tangible Equity



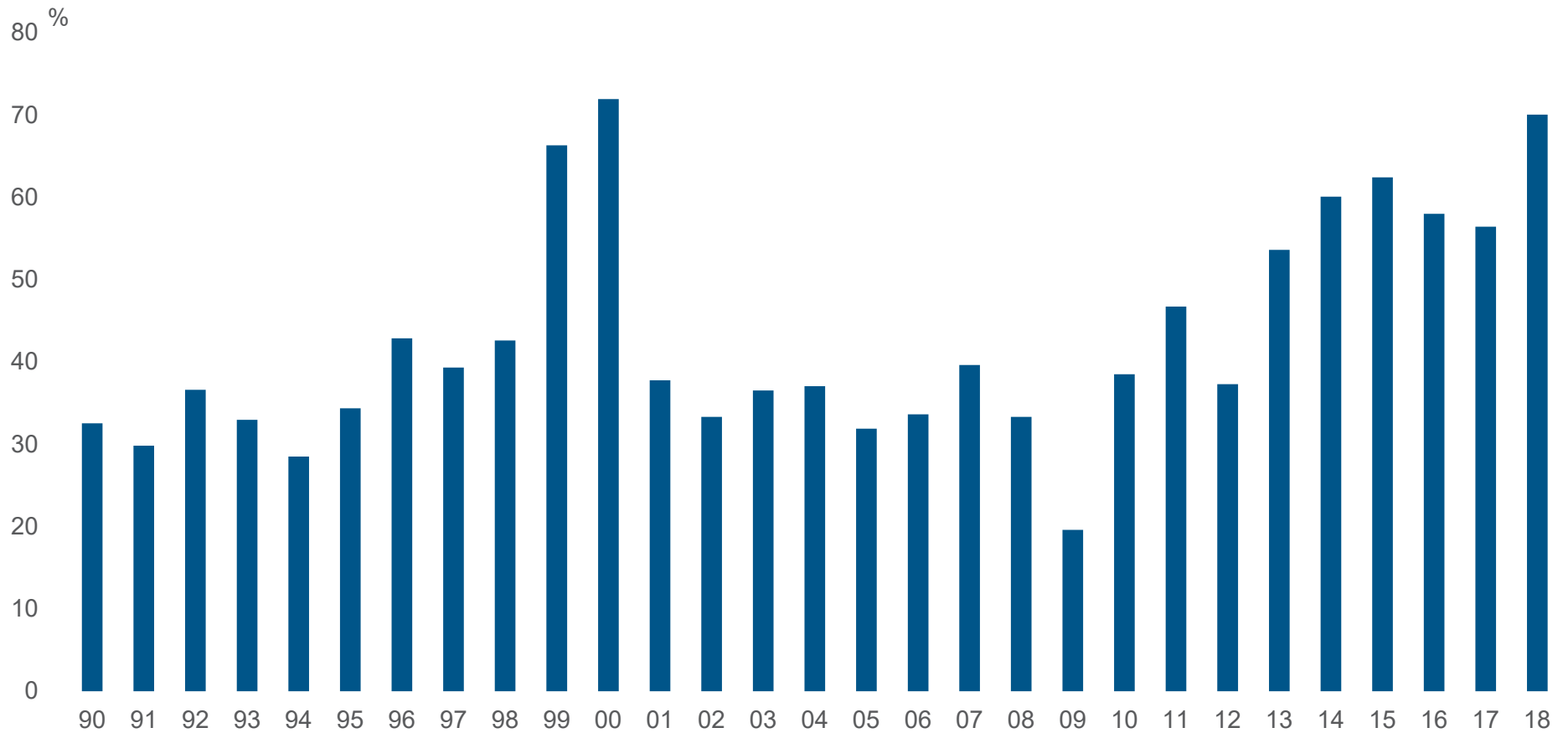
Source: European Central Bank (ECB), Exane, Federal Deposit Insurance Corporation (FDIC), Pzena analysis  
 US data are FDIC-insured commercial banks and savings institutions. Europe data are Pan-European banks in Exane's coverage universe.  
 Liquidity ratio in US defined as (cash, treasuries, and municipals) / total assets;  
 liquidity ratio in eurozone defined as (deposits at ECB, eurozone government bonds) / total assets.  
 \*eurozone banks per ECB data.

Past performance is not indicative of future returns.

## Upstream Capital Expenditures (\$MM) and Reserve Growth %



US IPOs  
Share of Offerings with Negative Earnings  
1990 - 2018



	Large Cap Focused Value	Russell 1000® Value
■ Price to Normal Earnings	9.1x	17.4x*
■ Price / Earnings (1-Year Forecast)	10.6x	14.6x
■ Price / Book	1.3x	2.1x
■ Median Market Cap (\$B)	\$20.2	\$8.9
■ Weighted Average Market Cap (\$B)	\$60.6	\$119.9
■ Active Share	86.7%	--
■ Standard Deviation^	14.5%	11.0%
■ Number of Stocks (model portfolio)	39	722

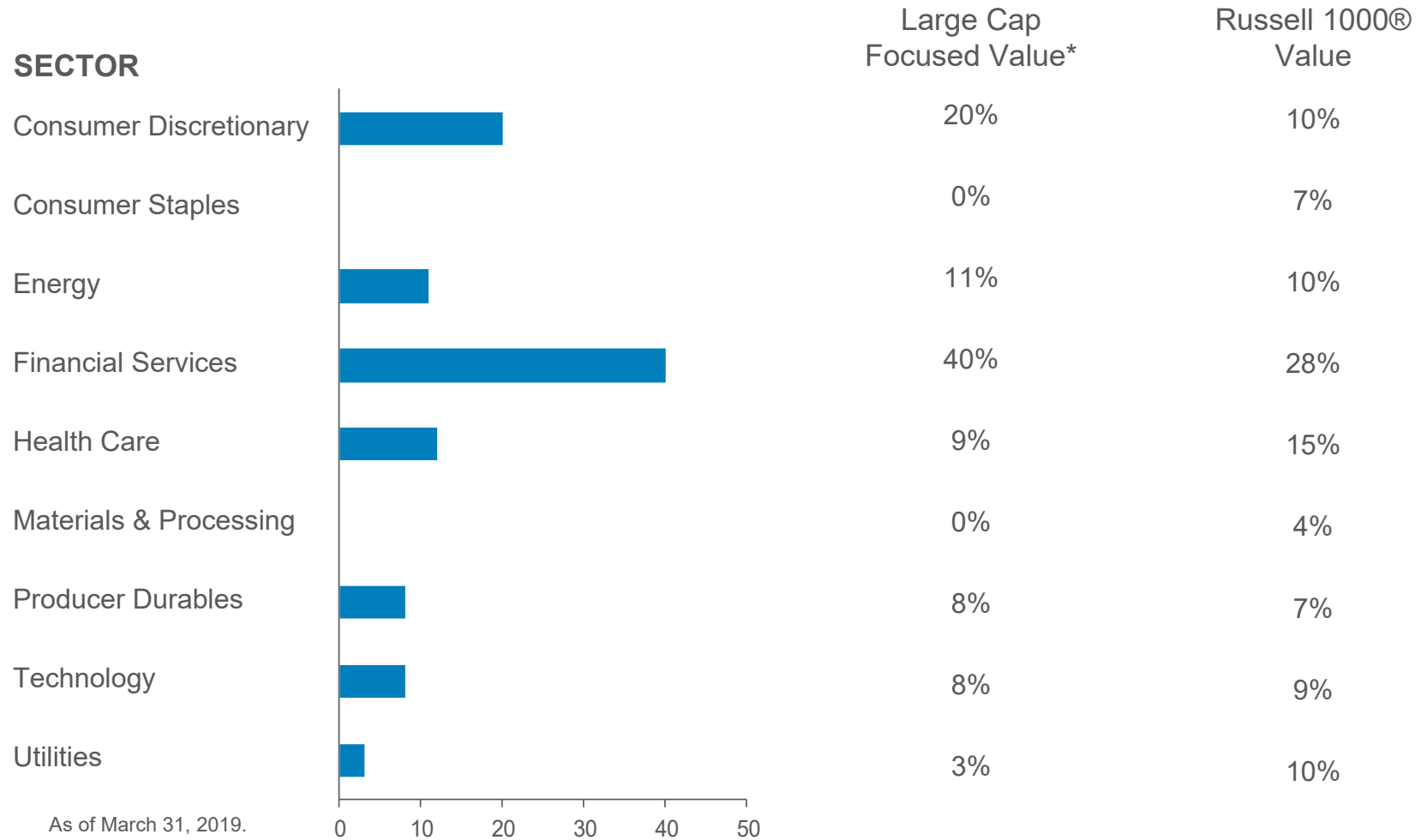
As of March 31, 2019.

Past performance is not indicative of future returns.

\*Large Cap Universe Median (500 largest US companies); ^5 Year

Source: FactSet, Russell 1000® Value, Pzena Analysis

This information supplements the GIPS-compliant composite performance information appearing later in this presentation.



\*Large Cap Focused Value Composite estimate

Source: FactSet, Russell 1000® Value. This information supplements the GIPS-compliant composite performance information appearing later in this presentation.

Sector weights adjusted for cash – may appear higher than actual. Numbers may not add to 100% due to rounding.



## Portfolio Summary

Current Strategy: Large Cap  
Focused Value

Period December 31, 2018 - March 29, 2019

Preliminary | 19

ALAMEDA COUNTY EMPLOYEES RETIREMENT ASSOCIATION (ACERA)

Report Currency = US Dollar

Portfolio Appraisal										
Quantity	CCY	Price	Total Cost		Market Value			Gain/Loss		Income
			Avg Cost	Cost	Value	(%)	Amount	Yield	Income	
<b>Cash &amp; Equivalents</b>										
<b>Total Cash &amp; Equivalents</b>					<b>3,008,964.21</b>	<b>3,008,964.21</b>	<b>1.8</b>		<b>1.9</b>	<b>57,471</b>
<b>Equities</b>										
<b>CONSUMER DISCRETIONARY</b>										
49,478	***GILDAN ACTIVEWEAR INC	USD	35.97	31.78	1,572,364.56	1,779,723.66	1.1	207,359	1.5	26,520
694,851	FORD MOTOR COMPANY	USD	8.78	12.48	8,668,296.67	6,100,791.78	3.7	-2,567,505	6.8	416,911
220,370	INTERPUBLIC GROUP OF COS INC	USD	21.01	20.36	4,487,619.69	4,629,973.70	2.8	142,354	4.5	207,148
38,338	LEAR CORP	USD	135.71	144.32	5,532,862.05	5,202,849.98	3.2	-330,012	2.2	115,014
26,450	MOHAWK INDUSTRIES INC	USD	126.15	131.52	3,478,738.22	3,336,667.50	2.0	-142,071	0.0	0
243,098	NEWELL BRANDS INC.	USD	15.34	24.31	5,909,750.16	3,729,123.32	2.3	-2,180,627	6.0	223,650
176,323	NEWS CORP - CLASS A	USD	12.44	17.29	3,048,162.16	2,193,458.12	1.3	-854,704	1.6	35,265
47,220	OMNICOM GROUP	USD	72.99	55.39	2,615,575.32	3,446,587.80	2.1	831,012	3.6	122,772
29,214	PVH CORP	USD	121.95	113.13	3,304,887.32	3,562,647.30	2.2	257,760	0.1	4,382
<b>Total CONSUMER DISCRETIONARY</b>					<b>38,618,256.15</b>	<b>33,981,823.16</b>	<b>20.6</b>	<b>-4,636,433</b>	<b>3.4</b>	<b>1,151,661</b>
<b>ENERGY</b>										
409,601	***CENOVUS ENERGY INC.	USD	8.68	12.38	5,068,821.42	3,555,336.68	2.2	-1,513,485	1.7	61,815
52,735	***ROYAL DUTCH SHELL PLC ADR	USD	62.59	61.50	3,243,261.09	3,300,683.65	2.0	57,423	5.1	168,541
85,875	BAKER HUGHES A GE CO	USD	27.72	25.32	2,173,937.83	2,380,455.00	1.5	206,517	2.6	61,830
206,818	HALLIBURTON CO	USD	29.30	34.98	7,233,913.70	6,059,767.40	3.7	-1,174,146	2.5	148,909
146,446	NATIONAL OILWELL VARCO INC	USD	26.64	39.23	5,744,724.28	3,901,321.44	2.4	-1,843,403	0.8	29,289
<b>Total ENERGY</b>					<b>23,464,658.32</b>	<b>19,197,564.17</b>	<b>11.7</b>	<b>-4,267,094</b>	<b>2.5</b>	<b>470,385</b>
<b>FINANCIAL SERVICES</b>										
58,475	***AXIS CAPITAL HOLDINGS LTD	USD	54.78	33.42	1,954,060.42	3,203,260.50	1.9	1,249,200	2.9	93,560
181,187	***UBS GROUP AG	USD	12.11	16.28	2,948,970.11	2,194,174.57	1.3	-754,796	5.8	126,831
155,771	AMERICAN INTERNATIONAL GROUP	USD	43.06	39.11	6,092,835.47	6,707,499.26	4.1	614,664	3.0	199,387
205,379	AXA EQUITABLE HOLDINGS INC	USD	20.14	20.30	4,170,169.26	4,136,333.06	2.5	-33,836	2.6	106,797
178,902	BANK OF AMERICA CORP	USD	27.59	21.84	3,907,390.27	4,935,906.18	3.0	1,028,516	2.2	107,341
67,886	CAPITAL ONE FINL CORP	USD	81.69	66.96	4,545,443.30	5,545,607.34	3.4	1,000,164	2.0	108,618
97,141	CITIGROUP INC	USD	62.22	38.04	3,694,823.73	6,044,113.02	3.7	2,349,289	2.9	174,854

## Portfolio Summary

Current Strategy: Large Cap  
Focused Value

Period December 31, 2018 - March 29, 2019

Preliminary | 20

ALAMEDA COUNTY EMPLOYEES RETIREMENT ASSOCIATION (ACERA)

Report Currency = US Dollar

### Portfolio Appraisal

Quantity	CCY	Price	Total Cost		Market Value			Gain/Loss		Income
			Avg	Cost	Value	(%)	Amount	Yield	Income	
			Cost	Cost						
<b>Equities</b>										
77,741	USD	33.14	41.13	3,197,791.40	2,576,336.74	1.6	-621,455	3.1	80,851	
20,011	USD	191.99	134.55	2,692,383.99	3,841,911.89	2.3	1,149,528	1.7	64,035	
39,118	USD	101.23	37.72	1,475,684.06	3,959,915.14	2.4	2,484,231	3.2	125,178	
120,581	USD	23.49	27.41	3,305,435.66	2,832,447.69	1.7	-472,988	2.1	60,291	
112,933	USD	42.57	30.51	3,446,074.54	4,807,557.81	2.9	1,361,483	3.9	189,727	
113,140	USD	42.20	30.92	3,498,006.07	4,774,508.00	2.9	1,276,502	2.8	135,768	
66,323	USD	49.96	25.12	1,665,850.36	3,313,497.08	2.0	1,647,647	0.1	2,653	
100,028	USD	48.32	53.92	5,393,021.68	4,833,352.96	2.9	-559,669	3.7	180,050	
<b>Total FINANCIAL SERVICES</b>				<b>51,987,940.33</b>	<b>63,706,421.24</b>	<b>38.7</b>	<b>11,718,481</b>	<b>2.8</b>	<b>1,755,940</b>	
<b>HEALTH CARE</b>										
147,822	USD	28.34	36.32	5,369,096.27	4,189,275.48	2.5	-1,179,821	0.0	0	
15,603	USD	189.98	183.92	2,869,756.27	2,964,257.94	1.8	94,502	3.1	90,497	
50,558	USD	48.15	72.60	3,670,394.44	2,434,367.70	1.5	-1,236,027	4.0	96,323	
31,239	USD	117.06	144.51	4,514,332.86	3,656,837.34	2.2	-857,496	1.3	48,733	
<b>Total HEALTH CARE</b>				<b>16,423,579.84</b>	<b>13,244,738.46</b>	<b>8.0</b>	<b>-3,178,841</b>	<b>1.8</b>	<b>235,553</b>	
<b>PRODUCER DURABLES</b>										
18,593	USD	93.80	48.85	908,339.77	1,744,023.40	1.1	835,684	2.0	35,699	
569,427	USD	9.99	11.30	6,434,507.70	5,688,575.73	3.5	-745,932	0.4	22,777	
32,802	USD	136.17	123.45	4,049,334.87	4,466,648.34	2.7	417,313	1.9	86,597	
14,581	USD	73.72	73.58	1,072,926.21	1,074,911.32	0.7	1,985	0.7	6,999	
<b>Total PRODUCER DURABLES</b>				<b>12,465,108.55</b>	<b>12,974,158.79</b>	<b>7.9</b>	<b>509,050</b>	<b>1.2</b>	<b>152,072</b>	
<b>TECHNOLOGY</b>										
73,402	USD	72.45	54.05	3,967,568.74	5,317,974.90	3.2	1,350,406	1.1	58,722	
326,613	USD	15.43	12.26	4,002,897.78	5,039,638.59	3.1	1,036,741	2.9	146,976	

## Portfolio Summary

Current Strategy: Large Cap  
Focused Value

Period December 31, 2018 - March 29, 2019

Preliminary | 21

ALAMEDA COUNTY EMPLOYEES RETIREMENT ASSOCIATION (ACERA)

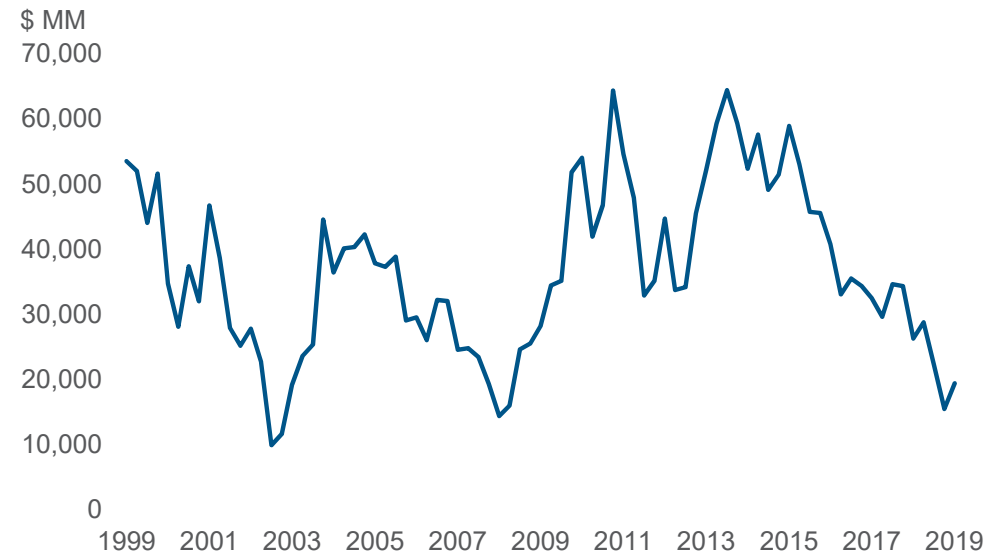
Report Currency = US Dollar

Portfolio Appraisal										
		Total Cost			Market Value					Income
		Avg						Gain/Loss		
Quantity	CCY	Price	Cost	Cost	Value	(%)	Amount	Yield	Income	
<b>Equities</b>										
65,498	ORACLE CORP	USD	53.71	34.56	2,263,868.60	3,517,897.58	2.1	1,254,029	1.8	62,878
<b>Total TECHNOLOGY</b>				<b>10,234,335.12</b>	<b>13,875,511.07</b>	<b>8.4</b>	<b>3,641,176</b>	<b>1.9</b>	<b>268,576</b>	
<b>UTILITIES</b>										
76,153	EDISON INTERNATIONAL	USD	61.92	61.72	4,699,849.19	4,715,393.76	2.9	15,545	4.0	186,575
<b>Total Equities</b>				<b>157,893,727.49</b>	<b>161,695,610.65</b>	<b>98.1</b>	<b>3,801,883</b>	<b>2.6</b>	<b>4,220,762</b>	
<b>TOTAL ASSETS</b>				<b>160,902,691.70</b>	<b>164,704,574.86</b>		<b>3,801,883</b>	<b>2.6</b>	<b>4,278,233</b>	
<b>Accrued Income</b>					<b>224,563.94</b>					
<b>TOTAL ASSETS + Accrued Income</b>					<b>164,929,138.80</b>					

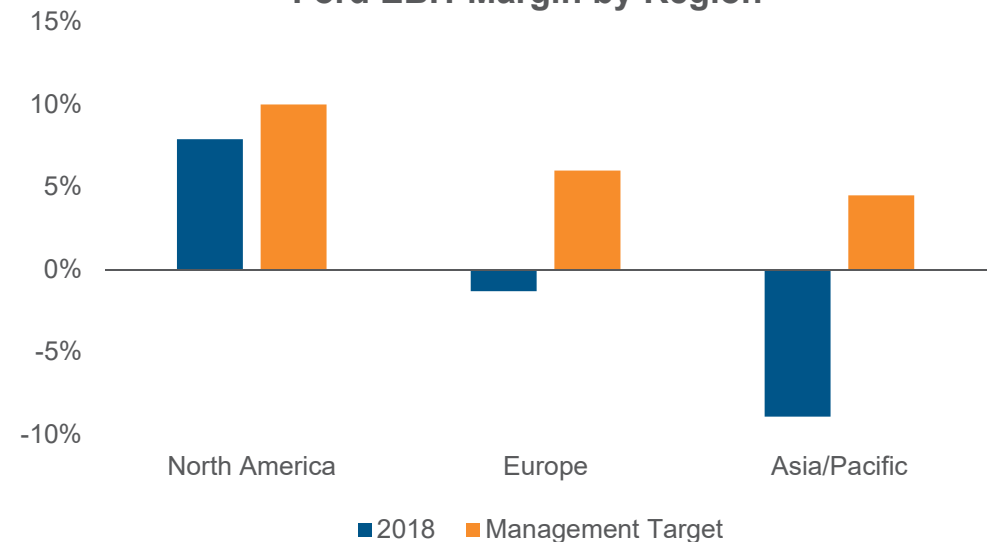
# Appendix

- Leading global car and truck franchise, built over decades, based on reliably manufacturing cars and trucks at scale, while integrating the latest systems and technologies
- Stock price cut in half over the last five years due to concerns over loss-making non-US operations, aging product line up, potential industry sales slowdown, and negative perceptions over plans in vehicle electrification and autonomous driving
- Company has identified path to improved profitability based on self-help initiatives that target specific operational and product lineup issues
- Downside protection - healthy balance sheet, ample liquidity, and operational flexibility cushioning against industry downturn
- Compelling valuation at 8.0x our estimate of normalized earnings provides substantial upside opportunity

**Ford's Automotive Enterprise Value is Near 20-Year Lows<sup>1</sup>**



**Ford EBIT Margin by Region<sup>2</sup>**



<sup>1</sup>Excludes value of Ford Motor Credit Company.

<sup>2</sup>Asia-Pacific target represents estimate for China.

Source: Company reports, Capital IQ, Pzena analysis

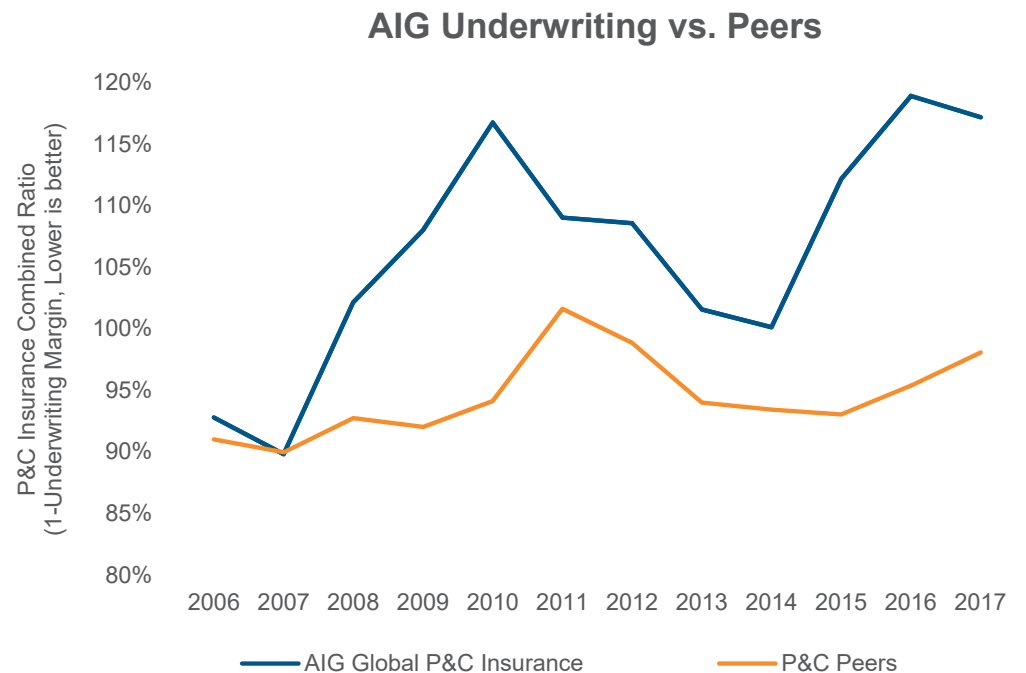
Ford Motor Company is held in our following Focused strategies as of 3/31/2019:

Focused Value, Large Cap Focused Value.

Past performance is not indicative of future returns.

- AIG is a US based multi-line Insurer, which has successfully cleaned up its balance sheet and Life Insurance segment since the Global Financial Crisis
- New management’s current focus on costs and underwriting standards for P&C insurance book should bring underwriting profitability in line with peers
- Management is building on AIG’s Industry leading positions in Specialty Insurance and High Net Worth Personal Lines to help grow book value
- At just 0.7x P/BV, the market is not pricing in recovery, creating significant upside for successful execution

Price (3/31/2019)	Forward P/E	P/Normal EPS*	P/BV
\$43.06	9.9x	6.7x	0.7x

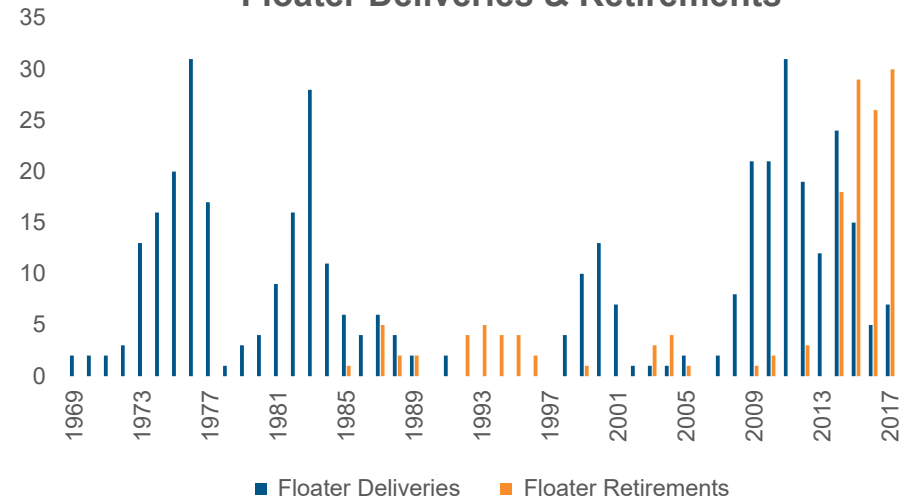


\*Pzena estimates. Source: Company Reports, FactSet, Reuters, Dowling & Co, Pzena Analysis  
 This company is held in our Large Cap Focused Value strategy as of 3/31/2019.  
 Highlighted holdings are illustrative of our research process; our selection methodology is provided at the conclusion of this presentation. Past performance is not indicative of future returns.

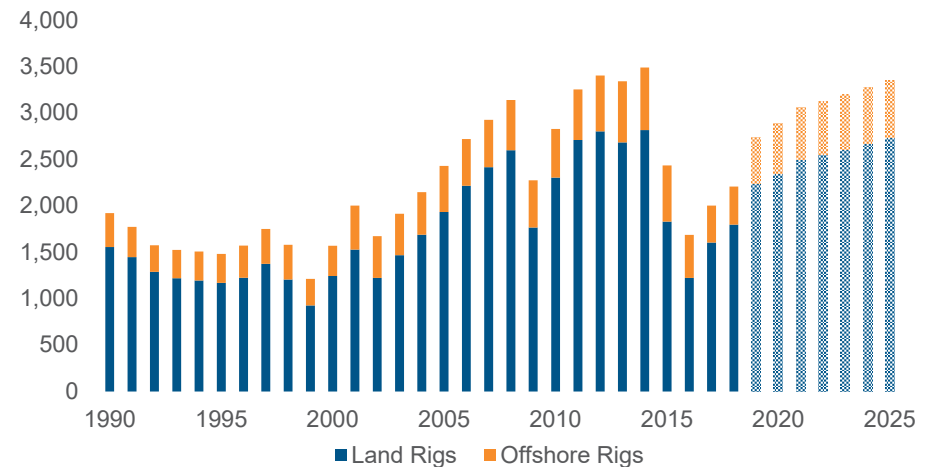
- National Oilwell Varco (“NOV”) is a leading provider of capital equipment for oil & gas exploration and production
- Recent results have suffered from the collapse in the capital spend of the upstream oil & gas industry, particularly the spend on new drilling rigs
- NOV has focused on right-sizing the cost structure for the current level of activity and the company has a solid balance sheet with net debt of 1.5x current EBITDA
- Two of NOV’s three segments are already seeing activity levels recovering, and the third, Rig Technologies, should see the benefit from increased rig utilization

Price (3/31/2019)	Forward P/E	P/Normal EPS*	P/BV
\$26.64	126.9x	7.2x	0.7x

Floater Deliveries & Retirements



Avg. Rigs in Operation – Actual & Projected

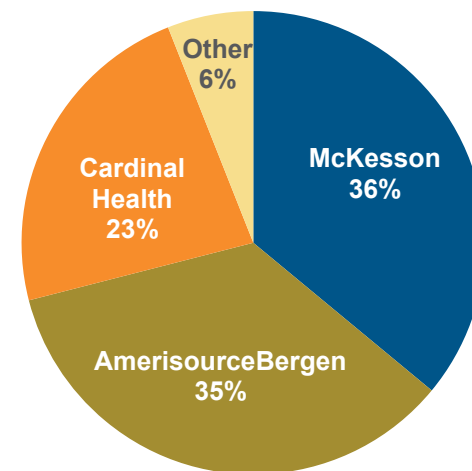


\*Pzena estimates. Source: Company reports, Rystad Energy, Pzena analysis  
 This company is held in our Large Cap Focused Value strategy as of 3/31/2019.  
 Highlighted holdings are illustrative of our research process; our selection methodology is provided at the conclusion of this presentation. Past performance is not indicative of future returns.

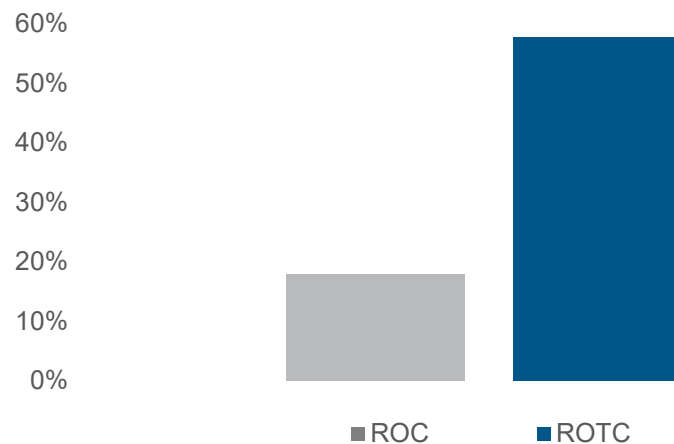
- Largest US drug distributor operating in a natural oligopoly with three players controlling 90%+ of market
- Company's characteristics define a good business - significant barriers to entry, high return on capital, and a meaningful value proposition for its customers
- Price competition, unexpectedly low drug prices, and worries about Amazon disrupting the pharmacy supply chain have hurt earnings and depressed valuation
- Working to restore profitability and trading at 7.2x our estimate of normalized earnings we believe it is compelling

Price (3/31/2019)	Forward P/E	P/Normal EPS*	P/BV
\$117.06	8.5x	7.2x	2.4x

**US Pharmaceutical Distribution Market**



**McKesson's 10 Year Average**



\*Pzena estimates.

Source: Company reports, Barclays Research, FactSet, Reuters, Pzena analysis  
 This company is held in our Large Cap Focused Value strategy as of 3/31/2019.

Highlighted holdings are illustrative of our research process; our selection methodology is provided at the conclusion of this presentation. Past performance is not indicative of future returns.



## US Markets Key Financial Data by Valuation Quintile

Price/Normal Quintile	Total Quintile Earnings (bn)	Historical Return on Equity	Historical Revenue Growth	Price to		
				Earnings	Sales	Book Value
Q1 (cheapest)	\$501	17%	8%	12x	1.3x	1.8x
Q2	\$390	17%	9%	14x	1.6x	2.5x
Q3	\$359	15%	8%	19x	2.1x	3.9x
Q4	\$269	12%	10%	23x	3.0x	5.8x
Q5 (expensive)	\$132	3%	20%	37x	3.9x	5.5x

Source: FactSet, Reuters, Pzena analysis

Valuation quintile buckets based on Pzena's price-to-normalized earnings estimates.

P/E and P/S ratios are calculated using average sell-side consensus 1-yr forward estimates.

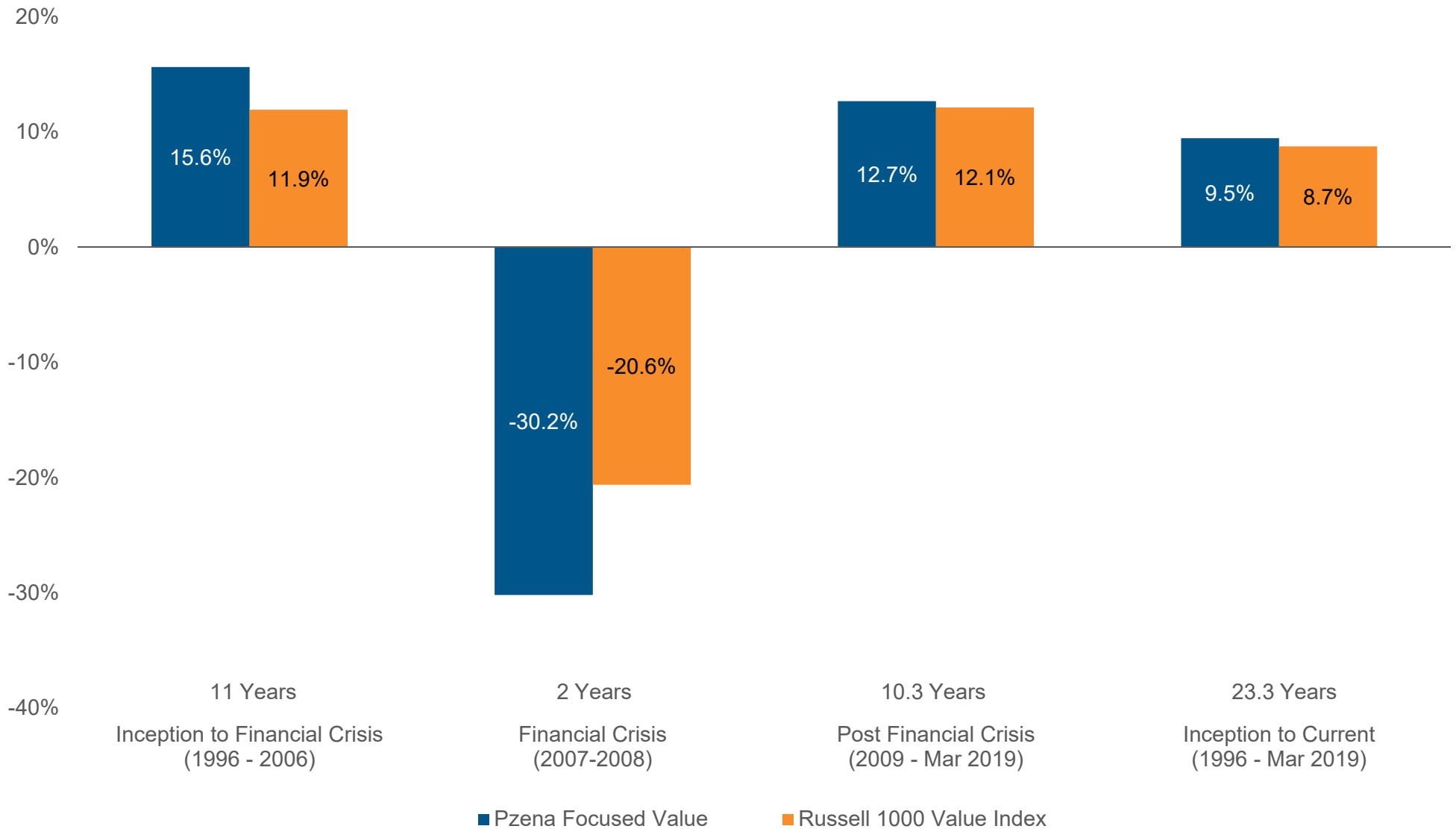
Return on equity and revenue growth calculated over trailing 10-year period.

Universe is the largest ~1,000 largest stocks in the US by market capitalization.

Data as of March 2019.

Does not represent any specific Pzena product or service.

Past performance is not indicative of future returns.



Returns based on net performance of our Pzena Focused Value composite in US dollars. A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®), is provided later in this presentation.

Source: Frank Russell Company, Pzena Analysis

Past performance is not indicative of future returns.

	Annualized Returns						
	1Q 2019	YTD	One Year	Three Year	Five Year	Ten Year	Since Inception 1/1/96
Focused Value — Gross	12.1%	12.1%	-7.8%	9.4%	6.0%	15.4%	10.2%
Focused Value — Net	12.0%	12.0%	-8.2%	8.9%	5.5%	14.7%	9.5%
Russell 1000® Value Index	11.9%	11.9%	5.7%	10.5%	7.7%	14.5%	8.7%

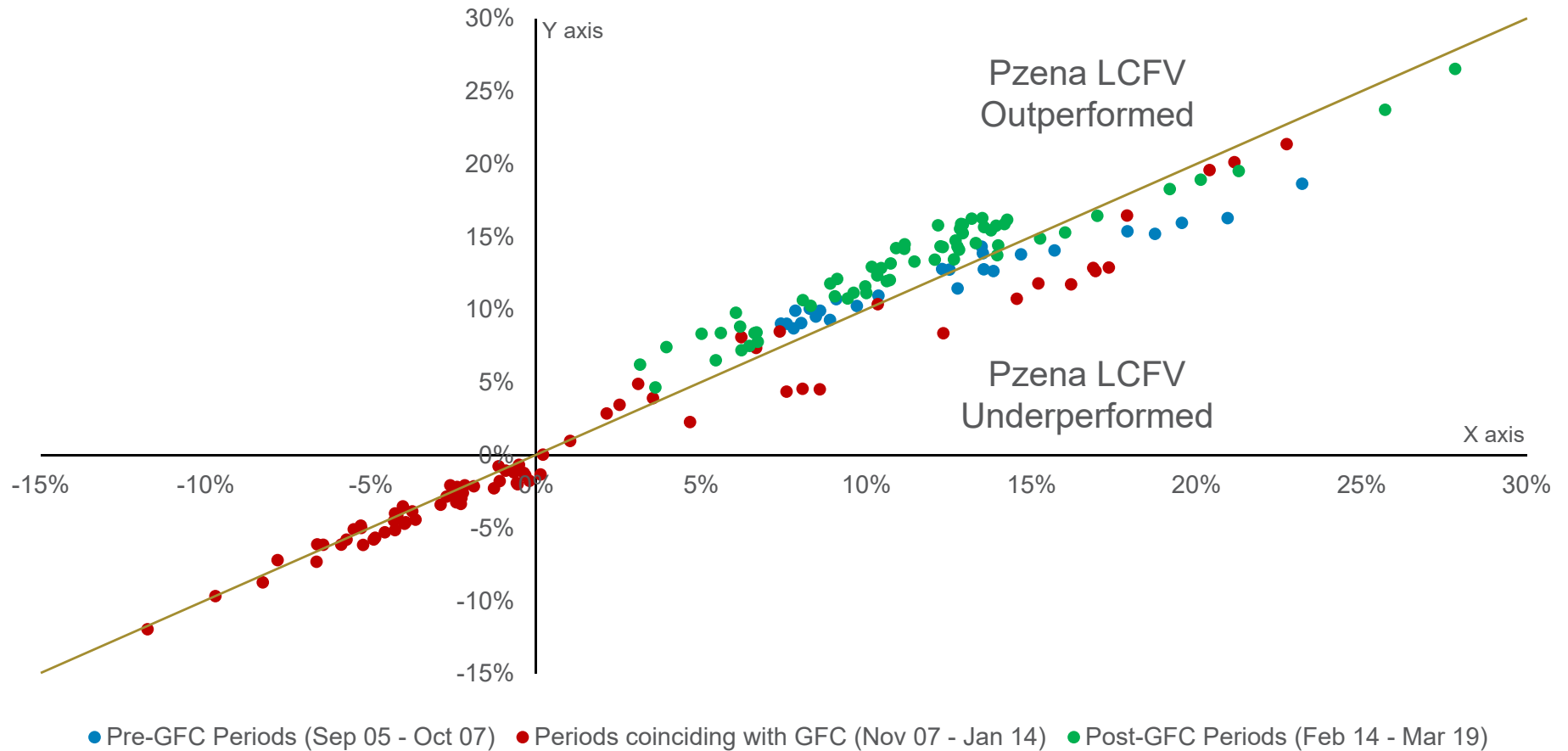
Returns through March 31, 2019.

Past performance is not indicative of future returns. For calendar year returns please refer to the GIPS Compliant Presentation and Notes to Performance at the end of this presentation.

Returns are calculated in US dollars (“USD”). All performance numbers are preliminary and subject to change.

The performance in the body of this report is an abbreviated presentation of composite performance and is presented as supplemental information only. A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®), is provided later in this presentation.

5-Year Rolling Returns of Pzena Large Cap Focused Value<sup>1</sup> vs. Low Price/Book<sup>2</sup>  
October 2000 – March 2019



Y axis: Monthly Rolling 5-year USD annualized return of Pzena’s Large Cap Focused Value strategy  
X axis: Monthly Rolling 5-year USD annualized return of Low Price/Book

Source: Sanford C. Bernstein & Co., Pzena analysis

<sup>1</sup>Returns based on net performance of our Pzena Large Cap Focused Value composite in US dollars.

A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®), is provided later in this presentation.

<sup>2</sup>Cheapest quintile price to book of largest ~500 US stocks ranked by market capitalization (equally-weighted data);

does not represent any specific Pzena product or service.

Past performance is not indicative of future returns.

	1Q 2019	YTD	One Year	Annualized Returns			
				Three Year	Five Year	Ten Year	Since Inception 10/1/00
Large Cap Focused Value — Gross	11.3%	11.3%	-5.2%	11.2%	6.9%	15.3%	7.1%
Large Cap Focused Value — Net	11.2%	11.2%	-5.5%	10.8%	6.5%	14.8%	6.6%
Russell 1000® Value Index	11.9%	11.9%	5.7%	10.5%	7.7%	14.5%	6.7%

Returns through March 31, 2019.

Past performance is not indicative of future returns. For calendar year returns please refer to the GIPS Compliant Presentation and Notes to Performance at the end of this presentation.

Returns are calculated in US dollars (“USD”). All performance numbers are preliminary and subject to change.

The performance in the body of this report is an abbreviated presentation of composite performance and is presented as supplemental information only. A full presentation of composite performance that adheres to the Global Investment Performance Standards (GIPS®) is provided later in this presentation.

**John J. Flynn**

Principal and Portfolio Manager. Mr. Flynn is a co-portfolio manager for the US Mid Cap and Large Cap strategies, along with the Focused Value and Small Cap Focused Value services. Mr. Flynn became a member of the firm in 2005. Prior to joining Pzena Investment Management, Mr. Flynn was an associate at Weston Presidio, a middle-market private equity investment firm. He earned a B.A. in Music from Yale University and an M.B.A. with distinction from the Harvard Business School.

**Benjamin S. Silver, CFA, CPA**

Principal and Portfolio Manager. Mr. Silver serves as co-portfolio manager for the US Mid Cap, Large Cap, and Global strategies, along with the Focused Value and Small Cap Focused Value services. Mr. Silver became a member of the firm in 2001. Prior to joining Pzena Investment Management, Mr. Silver was a research analyst at Levitas & Company, a value-based equity hedge fund, and a manager for Ernst & Young LLP in their Financial Services Group. He earned a B.S. magna cum laude in Accounting from Sy Syms School of Business at Yeshiva University. Mr. Silver is a Certified Public Accountant and holds the Chartered Financial Analyst designation.

**Richard S. Pzena**

Founder, Managing Principal, Co-Chief Investment Officer, Portfolio Manager, and member of the firm's Executive Committee. Mr. Pzena is the architect of the firm's investment strategy and conceived and developed our proprietary screening model. He serves as co-portfolio manager for the US Large Cap and Mid Cap strategies, Focused Value, and US Best Ideas. Mr. Pzena began the firm in 1995. Prior to forming Pzena Investment Management, Mr. Pzena was the Director of US Equity Investments and Chief Research Officer for Sanford C. Bernstein & Company. He joined Bernstein as an oil industry analyst and was named to the Institutional Investor All America Research Team for three years running. Mr. Pzena also served as Chief Investment Officer, Small Cap Equities. Prior to joining Bernstein, Mr. Pzena worked for the Amoco Corporation in various financial and planning roles. He earned a B.S. summa cum laude and an M.B.A. from the Wharton School of the University of Pennsylvania.

Pzena Investment Management, LLC  
 Schedule of Investment Performance  
 Pzena Large Cap Focused Value Composite

Year Ended Dec 31	Rate of Return (Gross)	Benchmark Return	Number of Portfolios	Composite Assets at End of Period (US\$ millions)	Total Firm Assets at End of Period (US\$ millions)	Total Product Managed Assets <sup>(a)</sup> at End of Period (US\$ millions)	Composite Assets as a Percentage of Firm Assets	Composite Assets as a Percentage of Product			Composite 3-yr Annualized Standard Deviation	Benchmark 3-yr Annualized Standard Deviation
								Managed Assets <sup>(a)</sup>	High <sup>(b)</sup>	Low <sup>(b)</sup>		
2018	-16.2%	-8.3%	19	3,244	32,198	3,244	10.1%	100.0%	-15.8%	-16.9%	14.6%	10.8%
2017	18.2%	13.7%	20	4,178	37,690	4,178	11.1%	100.0%	19.3%	17.6%	14.8%	10.2%
2016	23.3%	17.3%	21	3,651	30,035	3,687	12.2%	99.0%	24.2%	22.7%	14.8%	10.8%
<b>3-yr Annualized</b>	<b>6.9%</b>	<b>7.0%</b>										
2015	-6.1%	-3.8%	25	4,369	25,999	4,398	16.8%	99.3%	-5.4%	-6.6%	12.9%	10.7%
2014	11.6%	13.5%	30	5,796	27,738	5,830	20.9%	99.4%	13.1%	10.7%	11.5%	9.2%
<b>5-yr Annualized</b>	<b>5.1%</b>	<b>5.9%</b>										
2013	41.8%	32.5%	35	5,897	24,977	5,961	23.6%	98.9%	43.8%	40.5%	16.4%	12.7%
2012	15.8%	17.5%	43	4,189	17,107	4,256	24.5%	98.4%	16.6%	14.8%	19.2%	15.5%
2011	-5.3%	0.4%	56	4,858	13,519	4,984	35.9%	97.5%	-3.9%	-6.8%	25.9%	20.7%
2010	16.3%	15.5%	61	3,290	15,630	6,618	21.0%	49.7%	17.8%	14.7%	N/A	N/A
2009	38.5%	19.7%	61	2,482	14,285	6,696	17.4%	37.1%	40.9%	34.9%	N/A	N/A
<b>10-yr Annualized</b>	<b>12.4%</b>	<b>11.2%</b>										
2008	-44.1%	-36.9%	74	1,798	10,707	5,635	16.8%	31.9%	-42.6%	-47.8%	N/A	N/A
2007	-12.3%	-0.2%	130	4,093	23,638	13,478	17.3%	30.4%	-10.0%	-13.8%	N/A	N/A
2006	17.7%	22.2%	142	5,060	27,341	17,798	18.5%	28.4%	19.9%	16.0%	N/A	N/A
2005	11.3%	7.1%	82	2,879	16,818	9,414	17.1%	30.6%	12.9%	10.5%	N/A	N/A
2004	16.3%	16.5%	25	768	10,737	3,777	7.2%	20.3%	17.3%	16.1%	N/A	N/A
2003	40.6%	30.0%	3	44	5,818	591	Less Than 1%	7.4%	N/A	N/A	N/A	N/A
2002	-12.8%	-15.5%	2	3	3,138	33	Less Than 1%	9.1%	N/A	N/A	N/A	N/A
2001	1.6%	-5.6%	1	1	2,873	1	Less Than 1%	100.0%	N/A	N/A	N/A	N/A
2000 (c)	6.5%	3.6%	1	1	1,280	1	Less Than 1%	100.0%	N/A	N/A	N/A	N/A

(a) Product Managed Assets information is included as supplemental information. See Notes to Performance.  
 (b) High and Low performance for the Composite is presented when two or more accounts were active for the entire year.  
 (c) Composite created in October 2000 with inception date of 10/1/2000. Performance represents partial year 2000.

Past performance is not indicative of future returns.

Pzena Investment Management, LLC (the “Firm”) claims compliance with the Global Investment Performance Standards (“GIPS®”) and has prepared and presented this report in compliance with the GIPS standards. Pzena Investment Management, LLC has been independently verified for the periods January 1, 1996 to December 31, 2018. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm’s policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Pzena Large Cap Focused Value Composite has been examined for the periods October 1, 2000 to December 31, 2018. The verification and performance examination reports are available upon request. The Firm commenced operations on January 1, 1996. The Firm is a registered investment adviser that follows a classic value investment approach and is the operating company of Pzena Investment Management, Inc. Pzena Investment Management, Inc. is a publicly traded company whose shares are listed on the New York Stock Exchange under the ticker symbol “PZN.”

The Pzena Large Cap Focused Value Composite (the “Composite”) was created in October 2000. The Composite represents returns for clients invested in Pzena Large Cap Focused Value strategy. The verification and performance examination reports are available upon request. Pzena Large Cap Focused Value is a portfolio generally consisting of 30-40 stocks generally taken from a universe of the largest 500 U.S.-traded companies at the time of initial purchase. The presentation of investment performance sets forth the time-weighted rates of return (the “Return”) for the Composite. Past performance is not an indication of future results and may differ for future time periods.

The Composite includes all fee-paying, non-fee-paying and non wrap fee portfolios since inception date, and mutual fund portfolios since April 2011, that are managed on a fully discretionary basis by the Firm, according to the Pzena Large Cap Focused Value strategy. For the periods ending December 31, 2018, December 31, 2017, December 31, 2016, December 31, 2015, December 31, 2014, December 31, 2013, December 31, 2012, December 31, 2011 and December 31, 2010, 0.04%, 0.04%, 0.04%, 0.03%, 0.02%, 0.02%, 0.01%, 0.00%, and 0.00%, respectively, of the Composite assets were represented by non fee-paying accounts. Eligible new portfolios are added to the Composite at the beginning of the first full month under management. Terminated portfolios are removed from the Composite after the last full month that the portfolio is under firm management.

The Total Product Managed Assets represents the total value of all accounts invested in the Pzena Large Cap Focused Value strategy managed and traded by the Firm, including accounts with client-imposed restrictions or accounts not fully invested at year-end.

Generally, securities listed on any national securities exchange are valued at the last quoted sale price on the exchange. For securities that have not recently traded, an estimate of current price is used to value the security. Securities which are not listed are valued at the most recent publicly quoted bid price. Securities transactions are recorded on a trade date basis. Dividend income is recorded as of the ex-dividend date.

The rate of return is calculated on a time-weighted, total return basis and includes all dividends, interest, accrued income and realized and unrealized gains or losses. Returns are calculated in U.S. dollars (“USD”).

Gross rates of return are presented gross of investment management fees and net of the deduction of brokerage commissions and transaction costs. Net rates of return are presented net of investment management fees and net of the deduction of brokerage commissions and transaction costs. An investor’s actual return will be reduced by investment management fees.

Generally, investment management fees are charged based upon the size of the portfolio, and are applied quarterly. The Firm’s standard annual asset-based fee schedule is as follows: for accounts under \$10 million the fees are 1.00% per annum with a maximum annual fee of \$70,000; for accounts of \$10 million or more, the fees are 0.70% per annum on the first \$25 million of assets, 0.50% per annum on the next \$75 million of assets, 0.40% per annum on the next \$200 million of assets, and 0.35% thereafter. Generally fees are not negotiable. However, over time the standard fees have evolved and changed. The fees may vary depending on the date the account is opened or on an account’s particular requirements. To illustrate the compounded effect of the deduction of a 1% annual fee on a hypothetical investment of \$1,000 in an account where the average annual return before fees was 10% for a 10-year period, and assuming reinvestment of all dividends and interest, the initial investment would have grown to \$1,100 after one year before fees and \$1,089 after fees; to \$1,611 after five years before fees and \$1,532 after fees; and to \$2,594 at the end of ten years before fees and \$2,346 after fees. Further discussion regarding our advisory fees is contained in our Form ADV Part 2.



Composite returns are benchmarked to the Russell 1000® Value Index (the “Index”). The benchmark is used for comparative purposes only and generally reflects the risk or investment style of the investments reported on the schedule of investment performance. The Russell 1000® Value Index is an unmanaged index that measures the performance of those Russell 1000® companies with lower price-to-book ratios and lower forecasted growth rates. The Index cannot be invested in directly. Investments made by the Firm for the portfolios it manages in the Pzena Large Cap Focused Value Composite may differ from those of the Russell 1000® Value Index. Accordingly, investment results will differ from those of the benchmark.

The standard deviation of comparable performance over time is a measure of volatility. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period. The three-year annualized standard deviation was not required to be reported prior to 2011. The Firm also presents the returns for the highest and lowest yielding portfolios in the Composite. High and Low performance for the Composite is only presented when two or more accounts were active for the entire year. Additional information is available upon request regarding policies for valuing portfolios, calculating performance, and preparing compliant presentations, as well as a list of composite descriptions.

Past performance is no guarantee of future results, and the past performance of Pzena Large Cap Focused Value composite should not be considered indicative of the future performance of any accounts or commingled funds managed by the Firm. Investment return and principal value of an investment will fluctuate over time.

The Firm is the owner of all other copyrights relating to the material in this report, except as otherwise noted. This report contains proprietary and confidential material of the Firm and others. Any unauthorized use, misuse, disclosure, duplication or redistribution of such items or information is strictly prohibited.

Pzena Investment Management, LLC  
 Schedule of Investment Performance  
 Pzena Focused Value Composite

Year Ended Dec 31	Rate of Return (Gross)	Benchmark Return	Number of Portfolios	Composite Assets at End of Period (US\$ millions)	Total Firm Assets at End of Period (US\$ millions)	Total Product Managed Assets <sup>(a)</sup> at End of Period (US\$ millions)	Composite Assets as a Percentage of Firm Assets	Composite Assets as a Percentage of Product Managed Assets <sup>(a)</sup>			Composite 3-yr Annualized Standard Deviation	Benchmark 3-yr Annualized Standard Deviation
								High <sup>(b)</sup>	Low <sup>(b)</sup>			
2018	-20.1%	-8.3%	52	1,768	32,198	1,768	5.5%	100.0%	-19.5%	-21.5%	15.5%	10.8%
2017	17.0%	13.7%	56	2,195	37,690	2,195	5.8%	100.0%	18.8%	15.3%	15.3%	10.2%
2016	24.7%	17.3%	58	2,007	30,035	2,009	6.7%	99.9%	26.2%	21.7%	15.5%	10.8%
<b>3-yr Annualized</b>	<b>5.2%</b>	<b>7.0%</b>										
2015	-5.6%	-3.8%	61	1,580	25,999	1,580	6.1%	100.0%	-4.4%	-6.8%	13.5%	10.7%
2014	11.4%	13.5%	61	1,804	27,738	1,804	6.5%	100.0%	12.1%	9.4%	11.9%	9.2%
<b>5-yr Annualized</b>	<b>4.2%</b>	<b>5.9%</b>										
2013	43.8%	32.5%	62	1,875	24,977	1,918	7.5%	97.8%	45.9%	41.7%	16.4%	12.7%
2012	16.9%	17.5%	69	1,468	17,107	1,468	8.6%	100.0%	18.2%	15.5%	19.1%	15.5%
2011	-3.7%	0.4%	83	1,571	13,519	1,571	11.6%	100.0%	-1.9%	-4.9%	25.8%	20.7%
2010	16.5%	15.5%	89	1,768	15,630	1,774	11.3%	99.7%	17.9%	14.8%	N/A	N/A
2009	39.1%	19.7%	95	1,331	14,285	1,737	9.3%	76.8%	41.8%	32.9%	N/A	N/A
<b>10-yr Annualized</b>	<b>12.4%</b>	<b>11.2%</b>										
2008	-43.7%	-36.9%	127	1,297	10,707	1,831	12.1%	70.8%	-41.1%	-47.8%	N/A	N/A
2007	-12.1%	-0.2%	212	4,240	23,638	5,038	17.9%	84.1%	-10.0%	-17.1%	N/A	N/A
2006	18.2%	22.2%	227	5,090	27,341	5,921	18.6%	86.0%	20.7%	16.2%	N/A	N/A
2005	8.8%	7.1%	235	4,840	16,818	5,314	28.8%	91.1%	12.1%	6.9%	N/A	N/A
2004	19.6%	16.5%	212	4,543	10,737	4,922	42.3%	92.3%	21.8%	17.5%	N/A	N/A
2003	42.9%	30.0%	154	3,440	5,818	3,630	59.1%	94.8%	45.9%	39.2%	N/A	N/A
2002	-6.4%	-15.5%	110	2,003	3,138	2,109	63.8%	95.0%	-0.9%	-12.1%	N/A	N/A
2001	16.3%	-5.6%	105	1,965	2,873	2,042	68.4%	96.2%	20.9%	8.9%	N/A	N/A
2000	40.2%	7.0%	74	1,177	1,280	1,202	91.9%	97.9%	51.4%	31.3%	N/A	N/A
1999	-2.1%	7.3%	77	560	653	584	85.7%	95.9%	6.4%	-8.3%	N/A	N/A
1998	-0.7%	15.6%	105	542	773	595	70.1%	91.1%	2.7%	-7.5%	N/A	N/A
1997	27.0%	35.2%	85	171	471	252	36.2%	67.7%	30.2%	24.8%	N/A	N/A
1996 (c)	30.1%	21.7%	16	42	154	53	27.5%	80.0%	N/A	N/A	N/A	N/A

(a) Product Managed Assets information is included as supplemental information. See Notes to Performance.  
 (b) High and Low performance for the Composite is presented when two or more accounts were active for the entire year.  
 (c) Composite created in January 1996 with inception date of 1/1/1996.

Past performance is not indicative of future returns.

Pzena Investment Management, LLC (the “Firm”) claims compliance with the Global Investment Performance Standards (“GIPS®”) and has prepared and presented this report in compliance with the GIPS standards. Pzena Investment Management, LLC has been independently verified for the periods January 1, 1996 to December 31, 2018. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm’s policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. The Pzena Focused Value Composite has been examined for the periods January 1, 1996 to December 31, 2018. The verification and performance examination reports are available upon request. The Firm commenced operations on January 1, 1996. The Firm is a registered investment adviser that follows a classic value investment approach and is the operating company of Pzena Investment Management, Inc. Pzena Investment Management, Inc. is a publicly traded company whose shares are listed on the New York Stock Exchange under the ticker symbol “PZN.”

The Pzena Focused Value Composite (the “Composite”) was created in January 1996. The Composite represents returns for clients invested in Pzena Focused Value strategy. Pzena Focused Value is a portfolio generally consisting of 30-40 stocks generally taken from a universe of the largest 1,000 U.S.-traded companies at the time of initial purchase. The presentation of investment performance sets forth the time-weighted rates of return (the “Return”) for the Composite. Past performance is not an indication of future results and may differ for future time periods.

The Composite includes all fee-paying, non fee-paying, and non wrap fee portfolios since inception date, and mutual fund portfolios since April 2011, that are managed on a fully discretionary basis by the Firm, according to the Pzena Focused Value strategy. For the periods ending December 31, 2018, December 31, 2017, December 31, 2016, December 31, 2015, December 31, 2014, December 31, 2013, December 31, 2012, December 31, 2011 and December 31, 2010, 0.4%, 0.5%, 0.6%, 0.6%, 0.7%, 0.6%, 0.4%, 0.3% and 0.0%, respectively, of the Composite assets were represented by non fee-paying accounts. Eligible new portfolios are added to the Composite at the beginning of the first full month under management. Terminated portfolios are removed from the Composite after the last full month that the portfolio is under firm management.

The Total Product Managed Assets represents the total value of all accounts invested in the Pzena Focused Value strategy managed and traded by the Firm, including accounts with client-imposed restrictions or accounts not fully invested at year-end.

Generally, securities listed on any national securities exchange are valued at the last quoted sale price on the exchange. For securities that have not recently traded, an estimate of current price is used to value the security. Securities which are not listed are valued at the most recent publicly quoted bid price. Securities transactions are recorded on a trade date basis. Dividend income is recorded as of the ex-dividend date.

The rate of return is calculated on a time-weighted, total return basis and includes all dividends, interest, accrued income and realized and unrealized gains or losses. Returns are calculated in U.S. dollars (“USD”).

Gross rates of return are presented gross of investment management fees and net of the deduction of brokerage commissions and transaction costs. Net rates of return are presented net of investment management fees and net of the deduction of brokerage commissions and transaction costs. An investor’s actual return will be reduced by investment management fees.

Generally, investment management fees are charged based upon the size of the portfolio, and are applied quarterly. The Firm’s standard annual asset-based fee schedule is as follows: for accounts under \$10 million, the fees are 1.5% per annum with a maximum annual fee of \$100,000; for accounts of \$10 million or more, the fees are 1.0% per annum on the first \$10 million, 0.75% per annum on the next \$40 million, 0.60% per annum on the next \$50 million and 0.50% per annum thereafter. Generally fees are not negotiable. However, over time the standard fees have evolved and changed. The fees may vary depending on the date the account is opened or on an account’s particular requirements. To illustrate the compounded effect of the deduction of a 1% annual fee on a hypothetical investment of \$1,000 in an account where the average annual return before fees was 10% for a 10-year period, and assuming reinvestment of all dividends and interest, the initial investment would have grown to \$1,100 after one year before fees and \$1,089 after fees; to \$1,611 after five years before fees and \$1,532 after fees; and to \$2,594 at the end of ten years before fees and \$2,346 after fees. Further discussion regarding our advisory fees is contained in our Form ADV Part 2.

Composite returns are benchmarked to the Russell 1000® Value Index (the “Index”). The benchmark is used for comparative purposes only and generally reflects the risk or investment style of the investments reported on the schedule of investment performance. The Russell 1000® Value Index is an unmanaged index that measures the performance of those Russell 1000® companies with lower price-to-book ratios and lower forecasted growth rates. The Index cannot be invested in directly. Investments made by the Firm for the portfolios it manages in the Pzena Focused Value Composite may differ from those of the Russell 1000® Value Index. Accordingly, investment results will differ from those of the benchmark.

The standard deviation of comparable performance over time is a measure of volatility. The three-year annualized standard deviation measures the variability of the composite and the benchmark returns over the preceding 36-month period. The three-year annualized standard deviation was not required to be reported prior to 2011. The Firm also presents the returns for the highest and lowest yielding portfolios in the Composite. High and Low performance for the Composite is only presented when two or more accounts were active for the entire year. Additional information is available upon request regarding policies for valuing portfolios, calculating performance, and preparing compliant presentations, as well as a list of composite descriptions.

Past performance is no guarantee of future results, and the past performance of Pzena Focused Value composite should not be considered indicative of the future performance of any accounts or commingled funds managed by the Firm. Investment return and principal value of an investment will fluctuate over time.

The Firm is the owner of all other copyrights relating to the material in this report, except as otherwise noted. This report contains proprietary and confidential material of the Firm and others. Any unauthorized use, misuse, disclosure, duplication or redistribution of such items or information is strictly prohibited.

These presentation materials are intended for the exclusive purpose of evaluating the investment advisory services of Pzena Investment Management, LLC. Any other use is strictly prohibited.

These presentation materials and any attachments delivered separately herewith may contain non-public or confidential information of Pzena Investment Management, LLC. Accordingly, neither this booklet nor any portion hereof may be reproduced or redistributed without the prior written consent of Pzena Investment Management, LLC. Disclosure of the information presented in this booklet to anyone other than the recipient's employees, officers, directors, or financial or legal representatives is also prohibited without the prior written consent of Pzena Investment Management, LLC.

This document does not constitute an offer to sell, or a solicitation of an offer to buy, securities or investment advisory services in any jurisdiction where such an offer or solicitation is against the law, or to anyone to whom it is unlawful to make such an offer or solicitation, or if the person making the offer or solicitation is not qualified to do so. The information contained herein is general in nature and does not constitute legal, tax, or investment advice. Prospective investors are encouraged to consult their own professional advisers as to the implications of making an investment in any securities or investment advisory services.

Notable portfolio holdings are discussed for illustrative purposes only. The specific portfolio securities discussed in this presentation were selected for inclusion based on their ability to help you better understand our investment process and, where applicable, the investment model for our particular product strategy in which you are invested. They were selected from securities in one or more of our Focused Value strategy composites, as of February 28, 2019, and were not selected based on performance. They do not represent all of the securities purchased or sold for our client accounts during any particular period, and it should not be assumed that investments in such securities were or will be profitable.

Holdings vary among client accounts as a result of different product strategies having been selected thereby. Holdings also may vary among client accounts as a result of opening dates, cash flows, tax strategies, etc. There is no assurance that any securities discussed herein remain in client portfolios at the time you receive this presentation booklet or that securities sold have not been repurchased. The S&P 500® is a registered trademark of Standard & Poor's, a division of S&P Global Inc., which is the owner of all copyrights relating to this index and the source of the performance statistics of this index that are referred to herein.

Russell® is a trademark of the Frank Russell Company. FTSE Russell is the source and owner of the Russell Index data contained or reflected in this material and all trademarks and copyrights related thereto. The presentation may contain confidential information and unauthorized use, disclosure, copying, dissemination or redistribution is strictly prohibited. This is a presentation of Pzena Investment Management, LLC. FTSE Russell is not responsible for the formatting or configuration of this material or for any inaccuracy in Pzena Investment Management's presentation thereof.

The Global Industry Classification Standard ("GICS") was developed by and is the exclusive property and a service mark of MSCI Inc. ("MSCI") and Standard & Poor's, a division of S&P Global Inc. ("S&P") and is licensed for use by Pzena Investment Management, LLC ("PIM"). Neither MSCI, S&P nor any third party involved in making or compiling the GICS or any GICS classifications makes any express or implied warranties or representations with respect to such standard or classification (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability and fitness for a particular purpose with respect to any of such standard or classification. Without limiting any of the foregoing, in no event shall MSCI, S&P, and of their affiliates or any third party involved in making or compiling the GICS or any GICS classifications have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

The MSCI information may only be used for internal use, may not be reproduced or disseminated in any form and may not be used as a basis for or a component of any financial instruments or products or indices. None of the MSCI information is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. Historical data and analysis should not be taken as an indication or guarantee of any future performance analysis, forecast or prediction. The MSCI information is provided on an "as is" basis and the user of this information assumes the entire risk of any use made of this information. MSCI, each of its affiliates and each other person involved in or related to compiling, computing or creating any MSCI information (collectively, the MSCI Parties) expressly disclaims all warranties (including, without limitation, any warranties of originality, accuracy, completeness, timeliness, non-infringement, merchantability and fitness for a particular purpose) with respect to this information. Without limiting any of the foregoing, in no event shall any MSCI party have any liability for any direct, indirect, special, incidental, punitive, consequential (including, without limitation, lost profits) or any other damages.

© Pzena Investment Management, LLC, 2019. All rights reserved.



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



**PERIOD ENDING: MARCH 31, 2019**

Investment Performance Review for

**Alameda County Employees' Retirement Association**



# 1<sup>st</sup> quarter summary

## THE ECONOMIC CLIMATE

- Real GDP growth continued at 3.0% YoY - on pace with the third quarter (2.2% quarterly annualized rate). Forecasts for 2019 U.S. growth have weakened. The U.S. economy is expected to grow at a 2.4% pace in 2019, according to the Survey of Professional Forecasters, while the Federal Reserve expects 2.1% growth this year.
- In March, negotiations resumed between U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for a trade resolution being reached in the near-to-intermediate future. The two sides have yet to agree on a formal timeline.

## PORTFOLIO IMPACTS

- The Federal Open Market Committee reiterated its “patient” approach to policy, leaving rates unchanged, helping to push asset prices upward. Chairman Powell announced that starting in May the balance sheet runoff would slow from \$50 to \$30 billion a month, and would end in September.
- Risk assets exhibited strong performance over the quarter. U.S. equities delivered the greatest gains (S&P 500 +13.6%, MSCI ACWI +12.2%), reversing U.S. underperformance in Q4 2018 (S&P 500 -13.5%, MSCI ACWI -12.8%). This was followed by riskier credit with high single-digit returns, and safer credit and government bonds with low single-digit returns.

## THE INVESTMENT CLIMATE

- The first quarter was nearly a mirror image of 2018 Q4, as many assets retraced losses of the prior quarter.
- Declining long-term Treasury yields following the Fed meeting in March briefly caused the yield curve to invert, meaning that short-term yields (3-month) were higher than long-term yields (10-year). Investors have expressed concerns that this may signal a near term recession. We believe these concerns are overblown.
- The House of Commons in the British Parliament briefly took control of their government’s legislative agenda, but failed to reach a majority vote on a path forward. On April 10th, British Prime Minister Theresa May and the European Council agreed to extend the Brexit deadline from April 12th to October 31st.

## ASSET ALLOCATION ISSUES

- All major asset classes delivered positive performance in Q1, a refreshing change of pace from broad-based losses experienced in 2018.
- Economic conditions around the world have exhibited a weakening trend, leading to the question of whether a turn in the economic cycle is near. The first quarter was more mixed with strength in places, easing some concern. We remain watchful of this weakening trend, but believe the economy and market may have more room to run.

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

# U.S. economics summary

- Real GDP growth continued at 3.0% YoY, on pace with the third quarter (2.2% on a quarterly annualized rate).
- Forecasts for 2019 U.S. growth have weakened. The U.S. economy is expected to grow at a 2.4% pace in 2019, according to the Survey of Professional Forecasters, while the Federal Reserve expects 2.1% growth this year.
- In March, negotiations resumed between U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for a formal trade resolution being reached in the near future.
- U.S. inflation remained near the 2.0% Fed target. After dipping to 1.5% YoY in February, headline inflation recovered to 1.9% in March, resulting in no change over the quarter.
- Average hourly earnings grew 3.2% YoY in March, missing expectations of 3.3%. A slight tick up in the average non-farm private workweek from 34.4 to 34.5 hours likely contributed to the cooler wage data.
- The labor market remained strong in Q1. U-3 unemployment fell to 3.8% from 3.9% in December, though the labor force participation rate weakened from 63.1% to 63.0% during the period.
- The Federal Open Market Committee reiterated its “patient” approach to policy, leaving rates unchanged. Expectations for 2019 GDP growth and rate hikes were cut, and markets rallied. Chairman Powell announced that starting in May the balance sheet runoff would slow from \$50 billion per month to \$30 billion, and would end in September.

	Most Recent	12 Months Prior
GDP (YoY)	3.0% <i>12/31/18</i>	2.5% <i>12/31/17</i>
Inflation (CPI YoY, Core)	2.0% <i>3/31/19</i>	2.1% <i>3/31/18</i>
Expected Inflation (5yr-5yr forward)	2.0% <i>3/31/19</i>	2.2% <i>3/31/18</i>
Fed Funds Target Range	2.25 – 2.50% <i>3/31/19</i>	1.50 – 1.75% <i>3/31/18</i>
10 Year Rate	2.4% <i>3/31/19</i>	2.7% <i>3/31/18</i>
U-3 Unemployment	3.8% <i>3/31/19</i>	4.0% <i>3/31/18</i>
U-6 Unemployment	7.3% <i>3/31/19</i>	7.9% <i>3/31/18</i>



# International economics summary

- Global growth expectations for the next two years were revised materially lower in Q1. The OECD's global GDP growth forecast for 2019 and 2020 fell from 3.5% to 3.3%, and from 3.5% to 3.4%, respectively.
- In March, negotiations resumed between high-level U.S. and Chinese trade delegations. The dialogue was viewed as constructive, and optimism picked up for some sort of formal trade resolution being reached in the near-to-intermediate future, although the two sides have yet to agree on a formal timeline.
- The German Manufacturing PMI fell from 47.6 to 44.1 in March, falling further into the contractionary territory below 50. New orders and export sales data came in weaker than expected which contributed to a more pessimistic outlook for German manufacturing activity.
- The House of Commons in the British Parliament briefly took control of their government's legislative agenda, but failed to reach a majority vote on a path forward. On April 10th, British Prime Minister Theresa May and the European Council agreed to extend the Brexit deadline from April 12th to October 31st.
- The spread between the JP Morgan Global Services and Manufacturing PMIs rose to 3.1 in March. Last March, the spread was at 0.0, indicating that over the past year the outlook for global manufacturing activity has weakened relative to the outlook for global services activity. Typically, services activity is more resilient to a worsening economic backdrop.

Area	GDP (Real, YoY)	Inflation (CPI, YoY)	Unemployment
United States	3.0% <i>12/31/18</i>	1.5% <i>2/28/19</i>	3.8% <i>3/31/19</i>
Eurozone	1.1% <i>12/31/18</i>	1.4% <i>3/31/19</i>	7.8% <i>2/28/19</i>
Japan	0.3% <i>12/31/18</i>	0.2% <i>2/28/19</i>	2.3% <i>2/28/19</i>
BRICS Nations	5.8% <i>12/31/18</i>	2.4% <i>3/31/19</i>	5.3% <i>12/31/18</i>
Brazil	1.1% <i>12/31/18</i>	3.9% <i>2/28/19</i>	12.2% <i>3/31/19</i>
Russia	2.7% <i>12/31/18</i>	5.3% <i>3/31/19</i>	4.9% <i>2/28/19</i>
India	7.2% <i>12/31/18</i>	2.6% <i>2/28/19</i>	8.5% <i>12/31/17</i>
China	6.4% <i>12/31/18</i>	1.5% <i>2/28/19</i>	3.8% <i>12/31/18</i>

# Interest rate environment

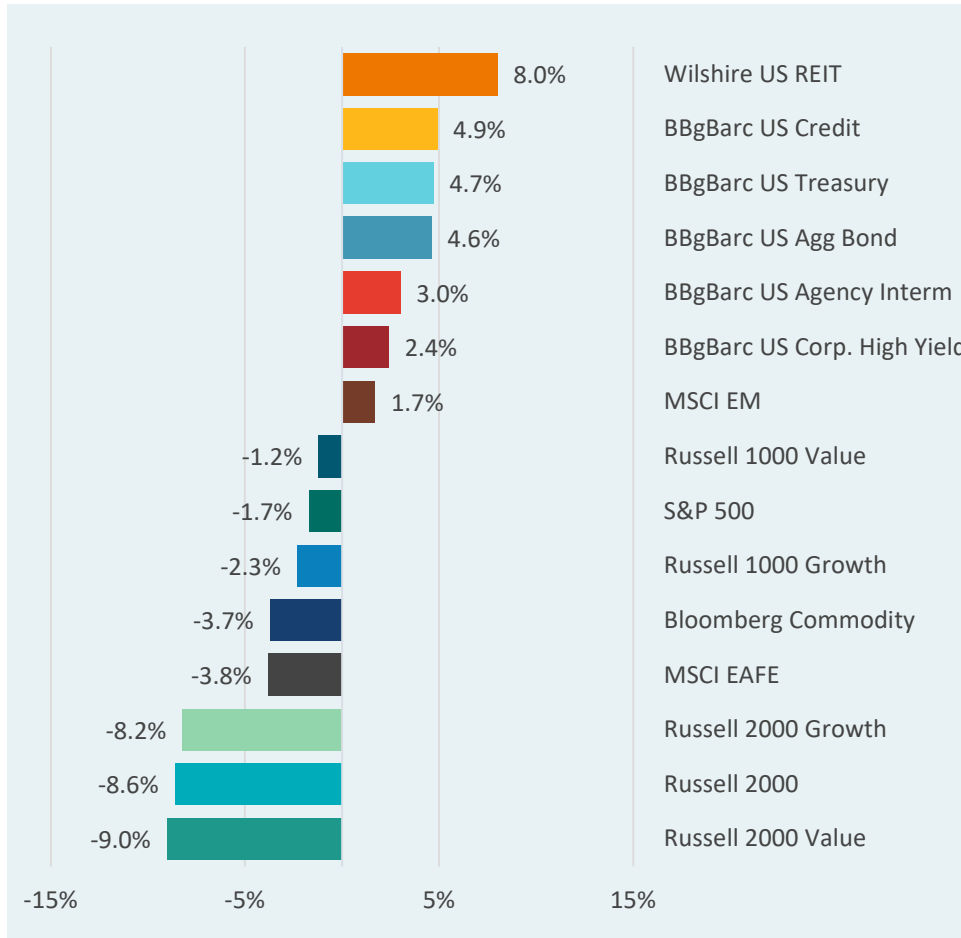
- The Federal Reserve held the fed funds rate unchanged over the quarter, and communicated a much more dovish stance on monetary policy amid slower growth expectations and stable inflation near 2%.
- Fed officials lowered their collective expectations for rate hikes in 2019 from two to zero, and announced that the balance sheet unwind would conclude in September, much earlier than previously anticipated.
- More dovish expectations for monetary policy and concerns over economic growth likely helped push long-term Treasury yields lower. The 10-year yield fell 28 bps to just above 2.4%.
- Falling long-term yields and stable short-term yields led to a brief inversion of the Treasury curve between the 10-year and 3-month yields.
- While widely considered a bearish signal for the economy and risk markets, the timing between curve inversion and bearish economic and market environments has varied widely. Additionally, Fed asset purchases of long-term Treasuries has artificially lowered yields and muddled the information conveyed by the yield curve.
- The ECB also pivoted to a more dovish stance as officials announced that deposit rates will be on hold through at least the end of the year.
- The 10-year German bund yield dipped back into negative territory for the first time since late 2016.
- Emerging market local bonds offer attractive yields relative to developed markets, even after adjusting for inflation. The JPM GBI-EM Index yielded 7% at the end of March.

Area	Short Term (3M)	10-Year
United States	2.39%	2.41%
Germany	(0.53%)	(0.07%)
France	(0.54%)	0.32%
Spain	(0.40%)	1.10%
Italy	(0.20%)	2.49%
Greece	0.87%	3.73%
U.K.	0.80%	1.00%
Japan	(0.17%)	0.08%
Australia	1.68%	1.77%
China	2.08%	3.07%
Brazil	6.31%	8.97%
Russia	7.35%	8.41%

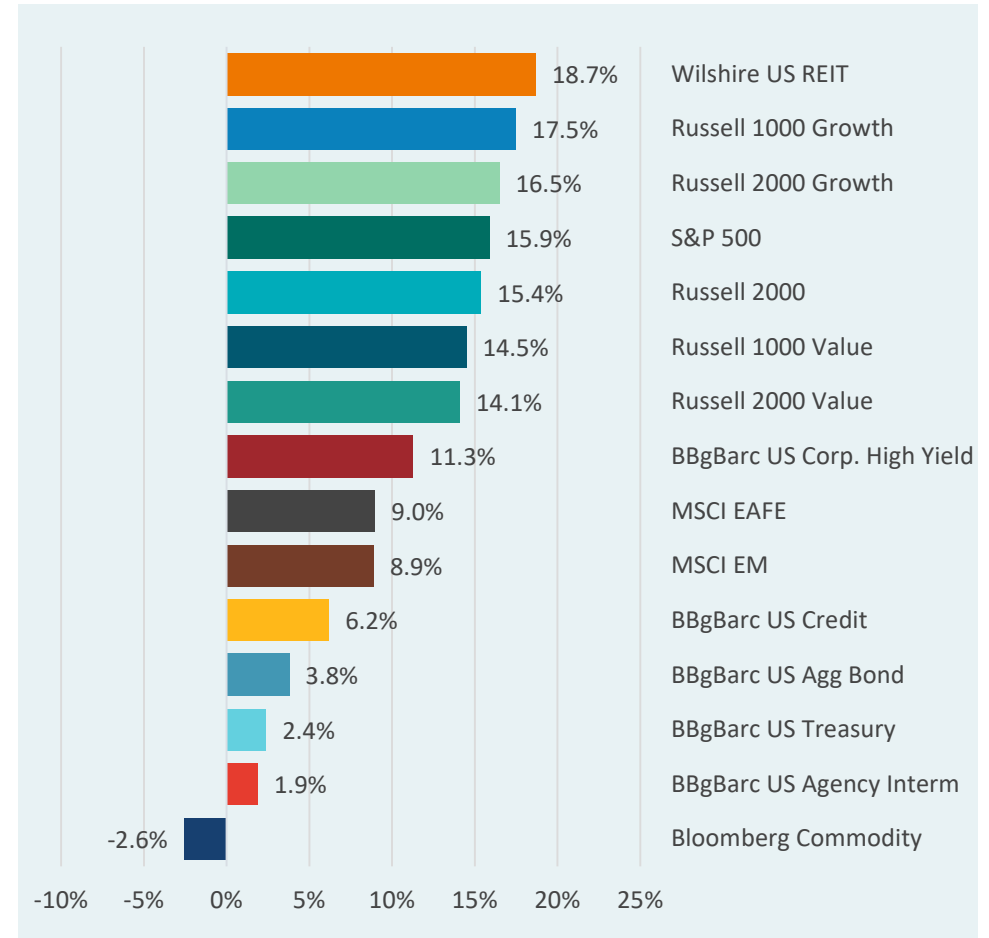
Source: Bloomberg, as of 3/31/19

# Major asset class returns

SIX MONTHS ENDING MARCH

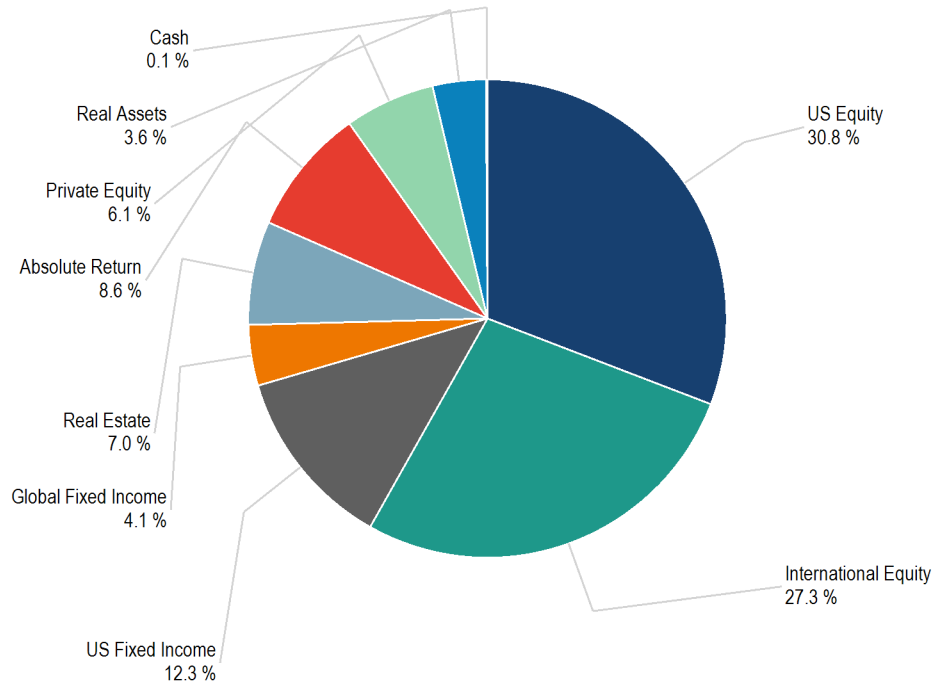


TEN YEARS ENDING MARCH



Total Fund  
Asset Allocation Analysis

Period Ending: March 31, 2019

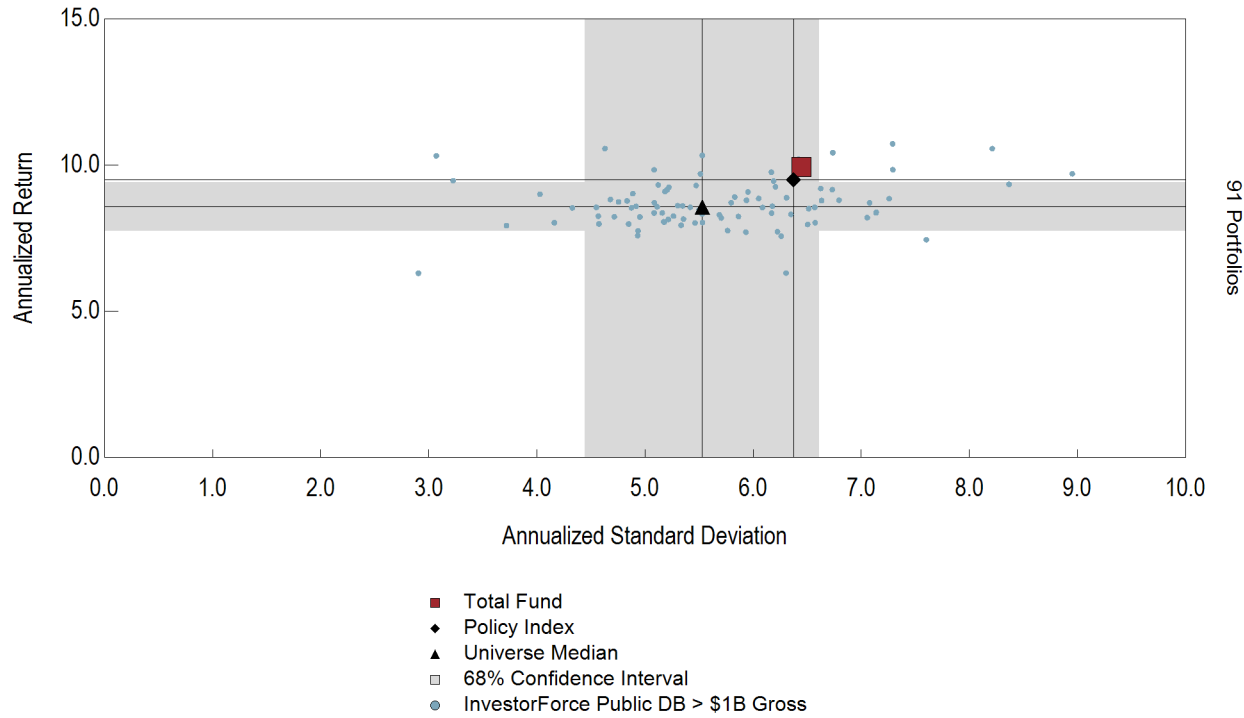


	Current Balance	Current Allocation
US Equity	\$2,514,772,467	30.8%
International Equity	\$2,228,167,930	27.3%
US Fixed Income	\$1,007,280,462	12.3%
Global Fixed Income	\$333,487,201	4.1%
Real Estate	\$575,212,635	7.0%
Absolute Return	\$703,082,579	8.6%
Private Equity	\$499,089,132	6.1%
Real Assets	\$297,171,660	3.6%
Cash	\$10,082,991	0.1%
<b>Total</b>	<b>\$8,168,347,056</b>	<b>100.0%</b>

	Policy Allocation	Current Allocation	Difference
US Equity	28.0%	30.8%	-2.8%
International Equity	26.0%	27.3%	-1.3%
US Fixed Income	12.8%	12.3%	0.5%
Global Fixed Income	2.3%	4.1%	-1.8%
Real Estate	8.0%	7.0%	1.0%
Absolute Return	9.0%	8.6%	0.4%
Private Equity	9.0%	6.1%	2.9%
Real Assets	5.0%	3.6%	1.4%
Cash	0.0%	0.1%	0.1%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	

Total Fund  
Risk vs. Return (3 Years)

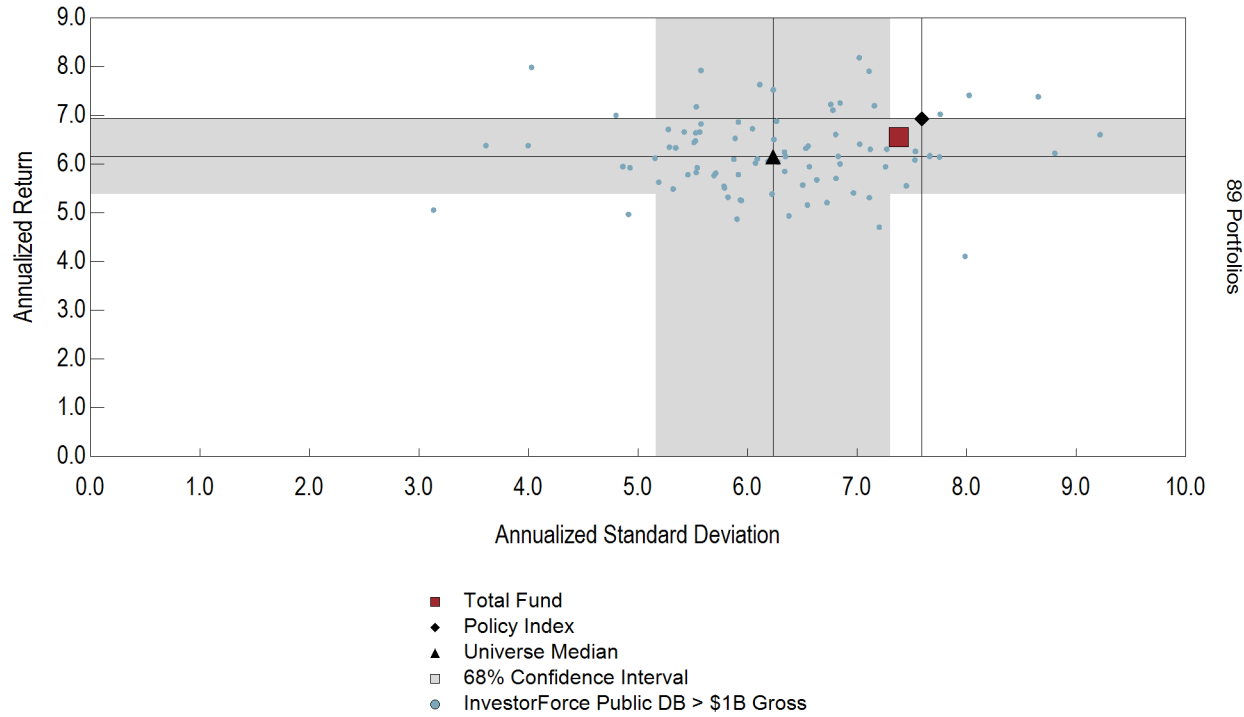
Period Ending: March 31, 2019



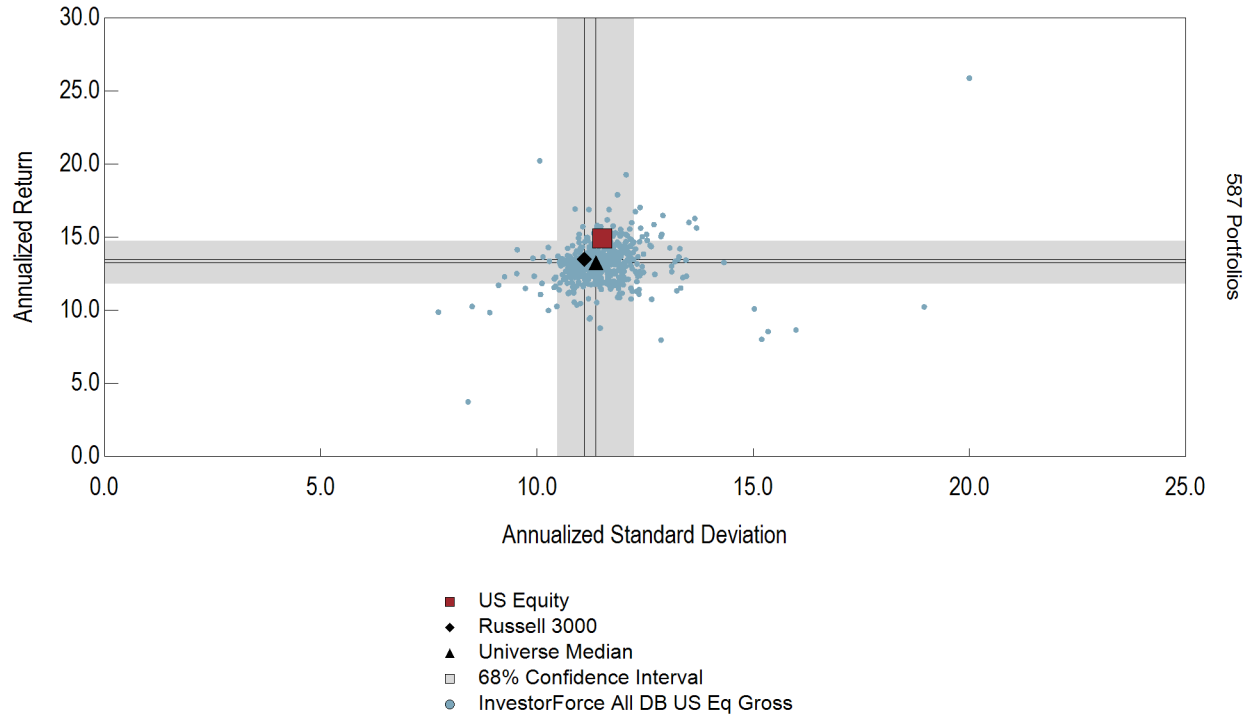
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	9.93%	9	6.45%	78	1.35	43	0.37	51	1.16%	68
Policy Index	9.49%	16	6.37%	75	1.30	56	--	--	0.00%	1
Allocation Index	9.33%	19	6.67%	85	1.21	69	-0.31	90	0.53%	6
InvestorForce Public DB > \$1B Gross Median	8.57%	--	5.53%	--	1.32	--	0.39	--	1.02%	--

Total Fund  
Risk vs. Return (5 Years)

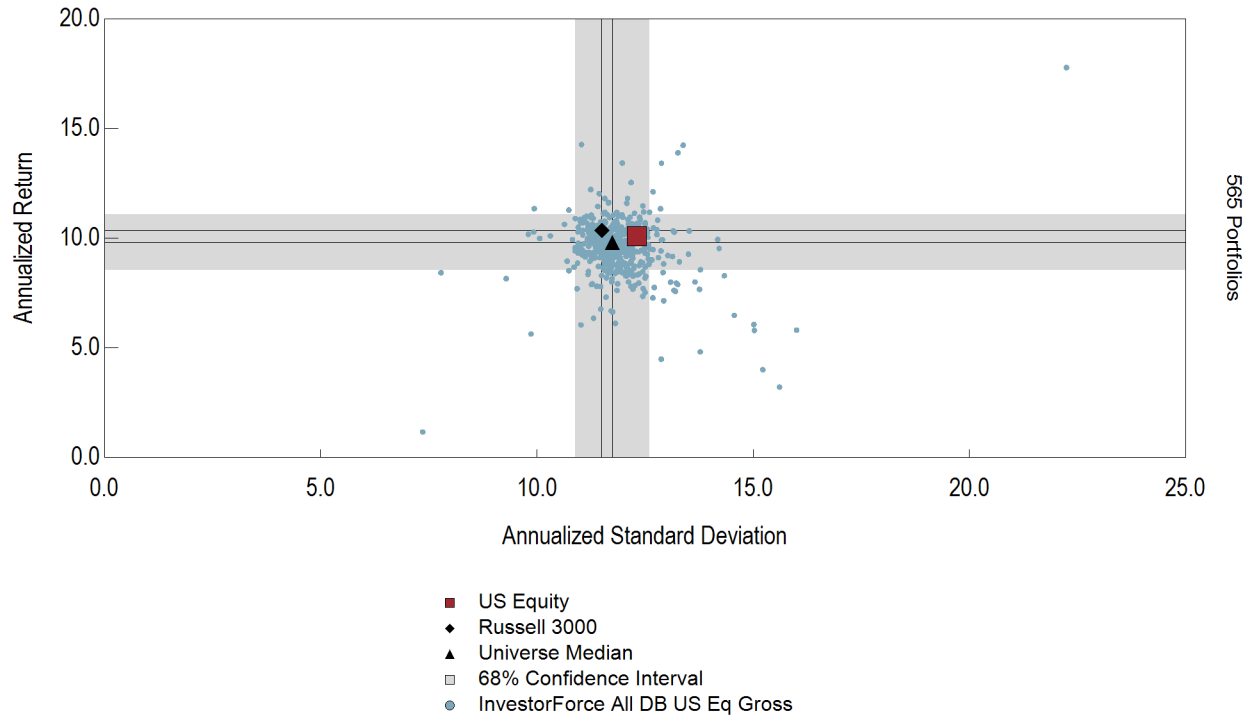
Period Ending: March 31, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fund	6.55%	30	7.38%	87	0.78	70	-0.30	89	1.26%	67
Policy Index	6.93%	17	7.59%	91	0.81	63	--	--	0.00%	1
Allocation Index	6.68%	23	7.67%	93	0.77	72	-0.57	97	0.44%	3
InvestorForce Public DB > \$1B Gross Median	6.16%	--	6.23%	--	0.86	--	0.15	--	1.14%	--

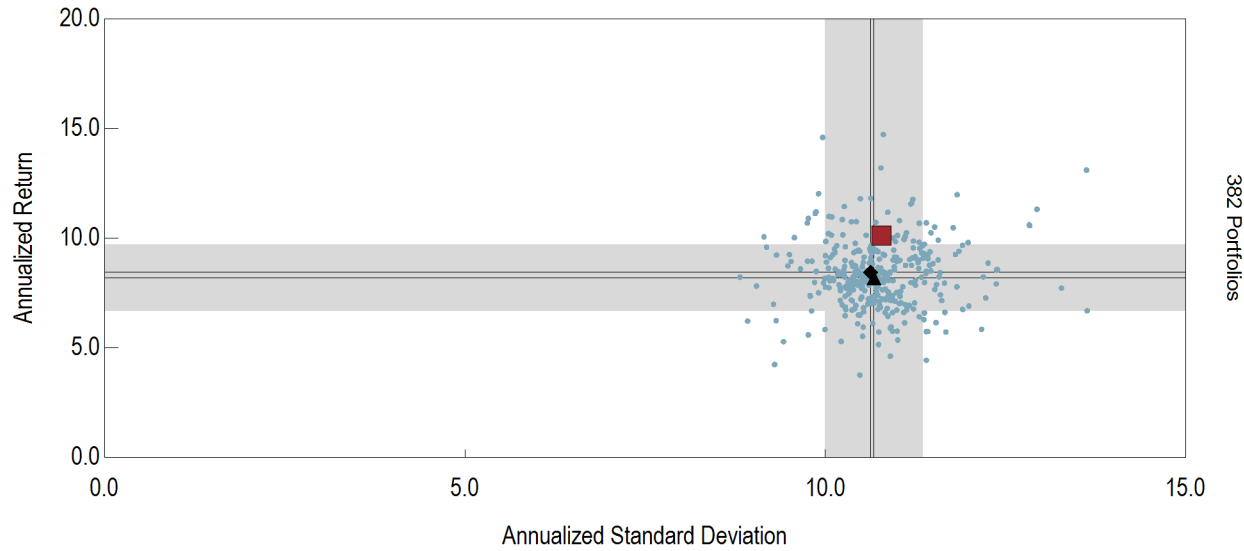


	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	14.92%	9	11.52%	62	1.19	8	0.96	5	1.50%	39
Russell 3000	13.48%	40	11.09%	34	1.11	34	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	13.26%	--	11.36%	--	1.06	--	-0.16	--	1.83%	--



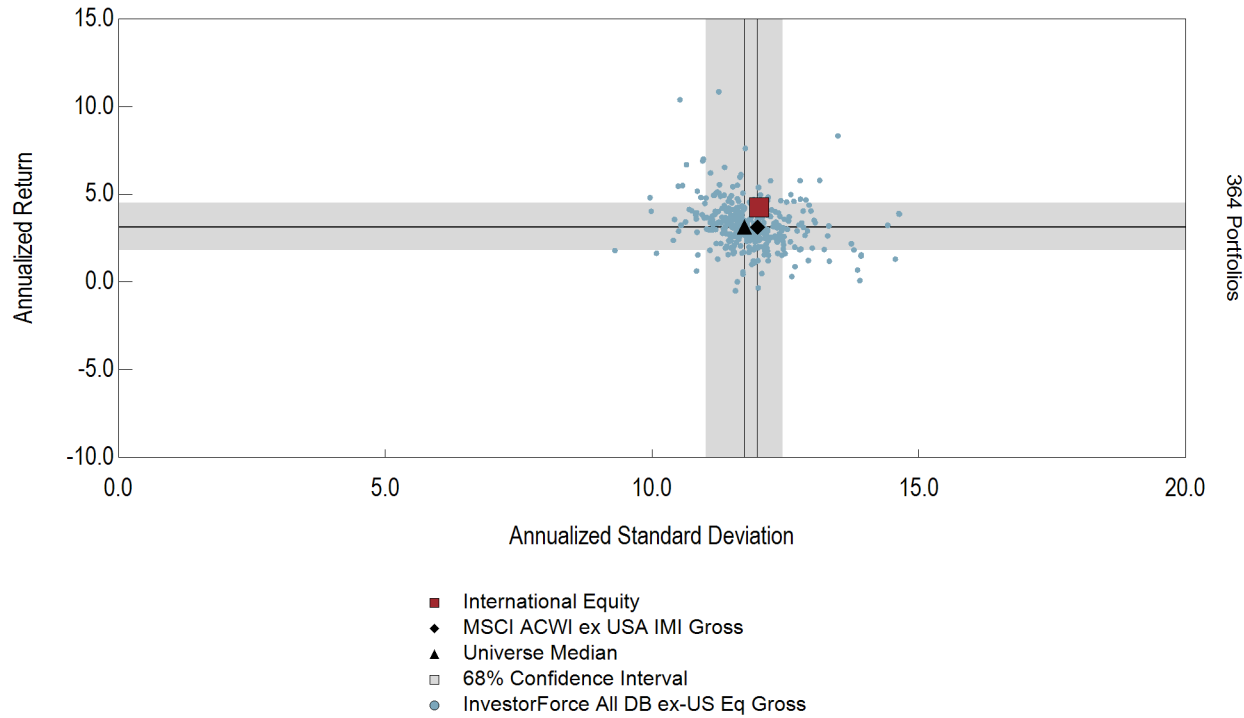
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
US Equity	10.09%	38	12.30%	84	0.76	54	-0.12	32	2.24%	61
Russell 3000	10.35%	26	11.50%	31	0.83	22	--	--	0.00%	1
InvestorForce All DB US Eq Gross Median	9.80%	--	11.74%	--	0.77	--	-0.36	--	1.92%	--





- International Equity
- ◆ MSCI ACWI ex USA IMI Gross
- ▲ Universe Median
- 68% Confidence Interval
- InvestorForce All DB ex-US Eq Gross

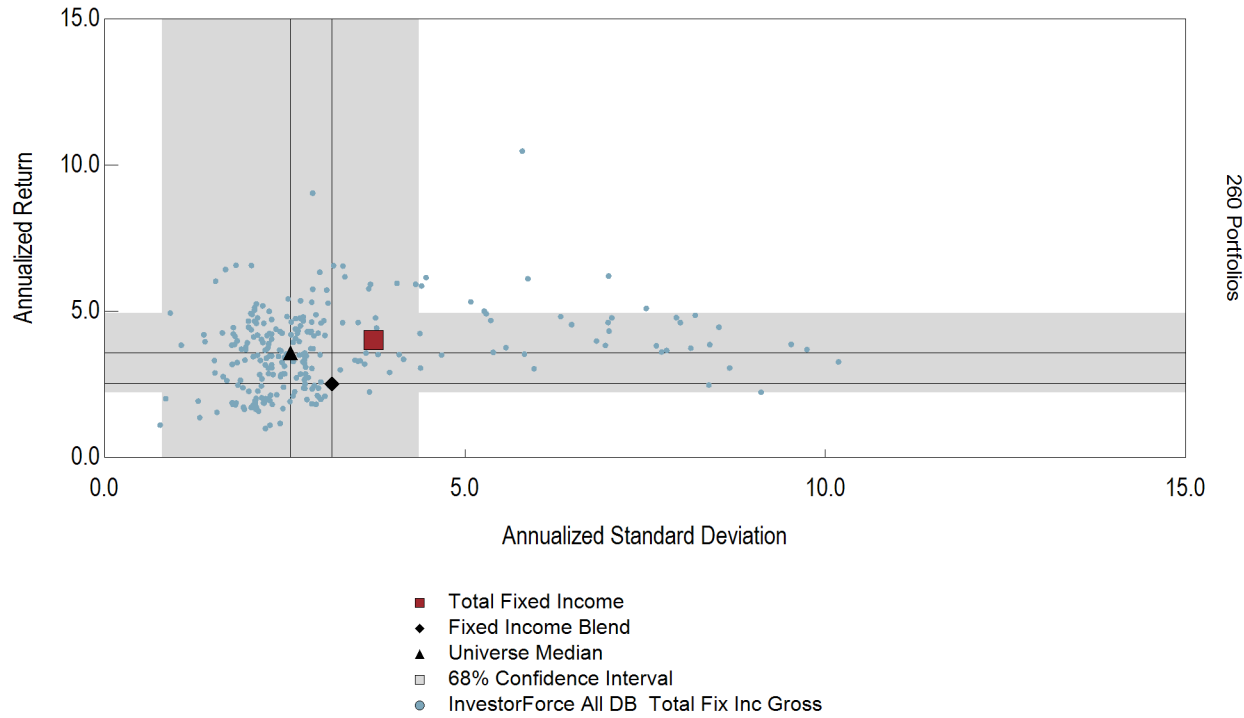
	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	10.13%	10	10.78%	58	0.83	10	1.12	5	1.51%	13
MSCI ACWI ex USA IMI Gross	8.44%	42	10.63%	46	0.68	42	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	8.19%	--	10.68%	--	0.66	--	0.05	--	2.64%	--



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
International Equity	4.25%	17	12.01%	68	0.29	19	0.75	10	1.50%	7
MSCI ACWI ex USA IMI Gross	3.13%	52	11.98%	65	0.20	52	--	--	0.00%	1
InvestorForce All DB ex-US Eq Gross Median	3.15%	--	11.73%	--	0.20	--	0.17	--	2.80%	--

Total Fixed Income  
Risk vs. Return (3 Years)

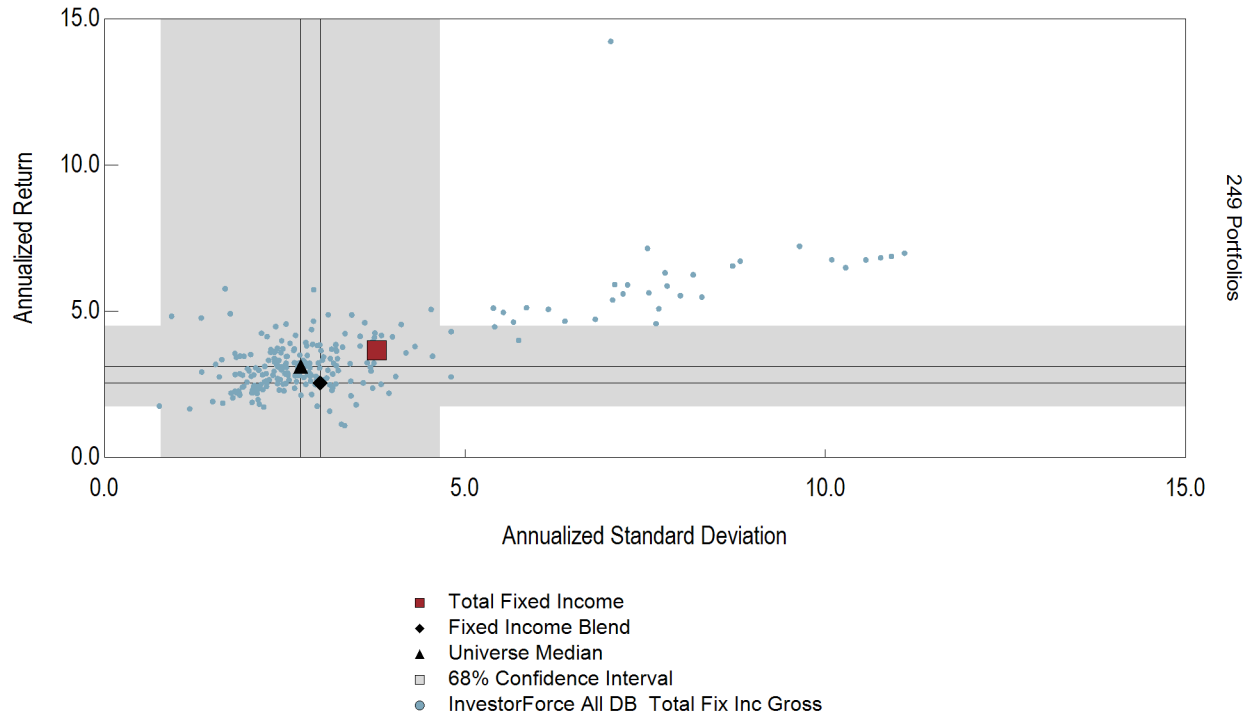
Period Ending: March 31, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	4.01%	38	3.74%	83	0.74	53	0.96	41	1.54%	56
Fixed Income Blend	2.52%	76	3.16%	77	0.41	75	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	3.58%	--	2.58%	--	0.79	--	0.87	--	1.36%	--

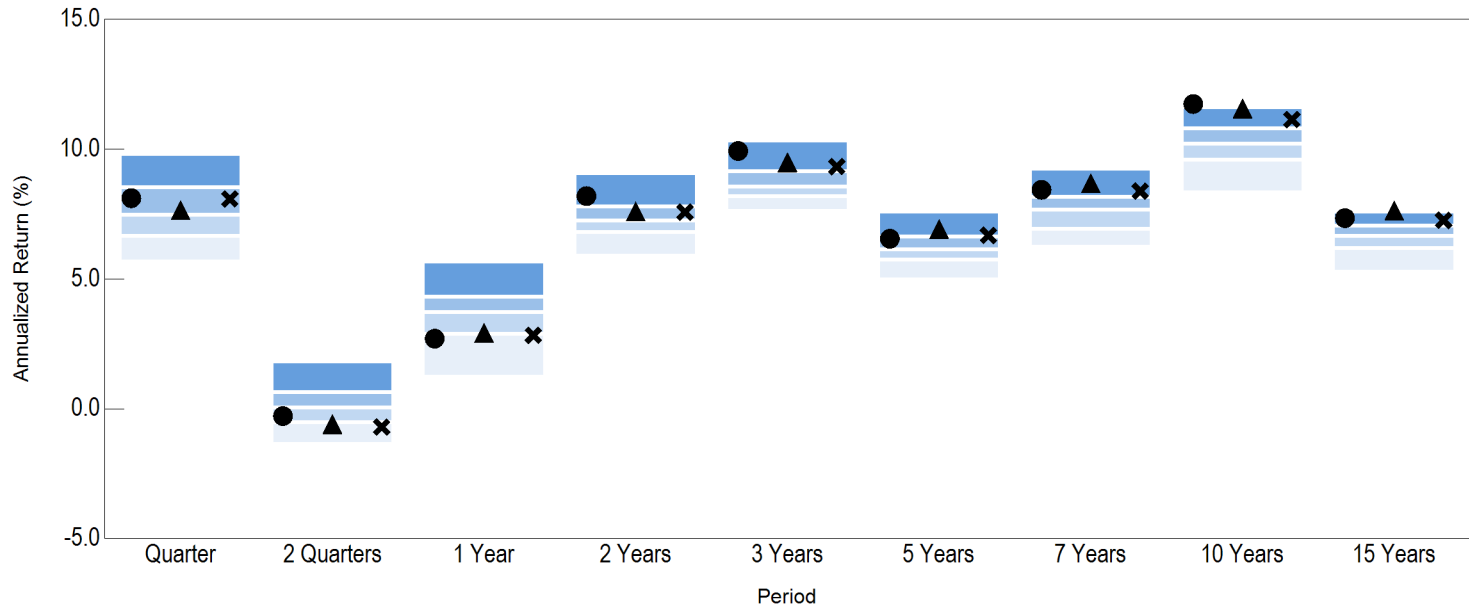
Total Fixed Income  
Risk vs. Return (5 Years)

Period Ending: March 31, 2019



	Anlzd Return	Anlzd Return Rank	Anlzd Standard Deviation	Anlzd Standard Deviation Rank	Sharpe Ratio	Sharpe Ratio Rank	Information Ratio	Information Ratio Rank	Tracking Error	Tracking Error Rank
Total Fixed Income	3.65%	31	3.78%	83	0.77	59	0.65	20	1.71%	57
Fixed Income Blend	2.55%	77	2.99%	65	0.60	85	--	--	0.00%	1
InvestorForce All DB Total Fix Inc Gross Median	3.12%	--	2.72%	--	0.81	--	0.28	--	1.50%	--

InvestorForce Public DB > \$1B Gross Return Comparison

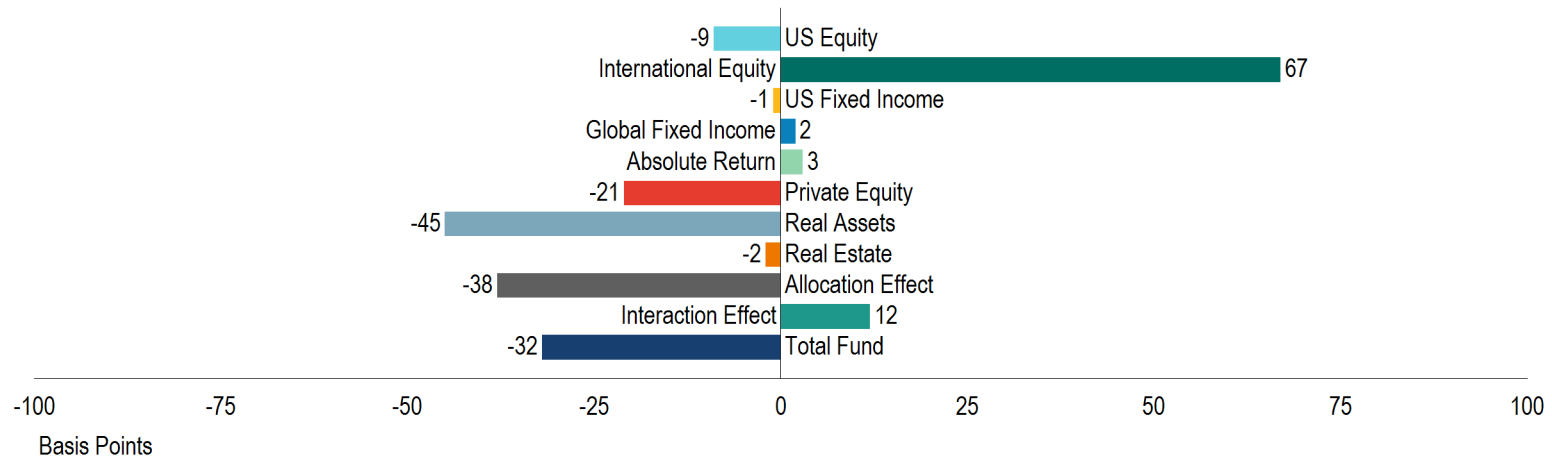


Return (Rank)

5th Percentile	9.81	1.81	5.66	9.07	10.32	7.59	9.24	11.60	7.58
25th Percentile	8.55	0.67	4.34	7.81	9.16	6.64	8.17	10.81	7.06
Median	7.49	0.07	3.75	7.26	8.57	6.16	7.68	10.22	6.68
75th Percentile	6.68	-0.50	2.89	6.81	8.19	5.76	6.93	9.61	6.21
95th Percentile	5.70	-1.34	1.26	5.90	7.64	5.00	6.25	8.34	5.29
# of Portfolios	92	91	91	91	91	89	87	83	78
● Total Fund	8.11 (34)	-0.28 (64)	2.70 (80)	8.19 (14)	9.93 (9)	6.55 (30)	8.43 (17)	11.74 (4)	7.34 (13)
▲ Policy Index	7.65 (45)	-0.59 (82)	2.93 (75)	7.60 (34)	9.49 (16)	6.93 (17)	8.69 (12)	11.56 (7)	7.64 (3)
✕ Allocation Index	8.08 (35)	-0.70 (85)	2.83 (77)	7.57 (37)	9.33 (19)	6.68 (23)	8.38 (18)	11.14 (14)	7.26 (15)

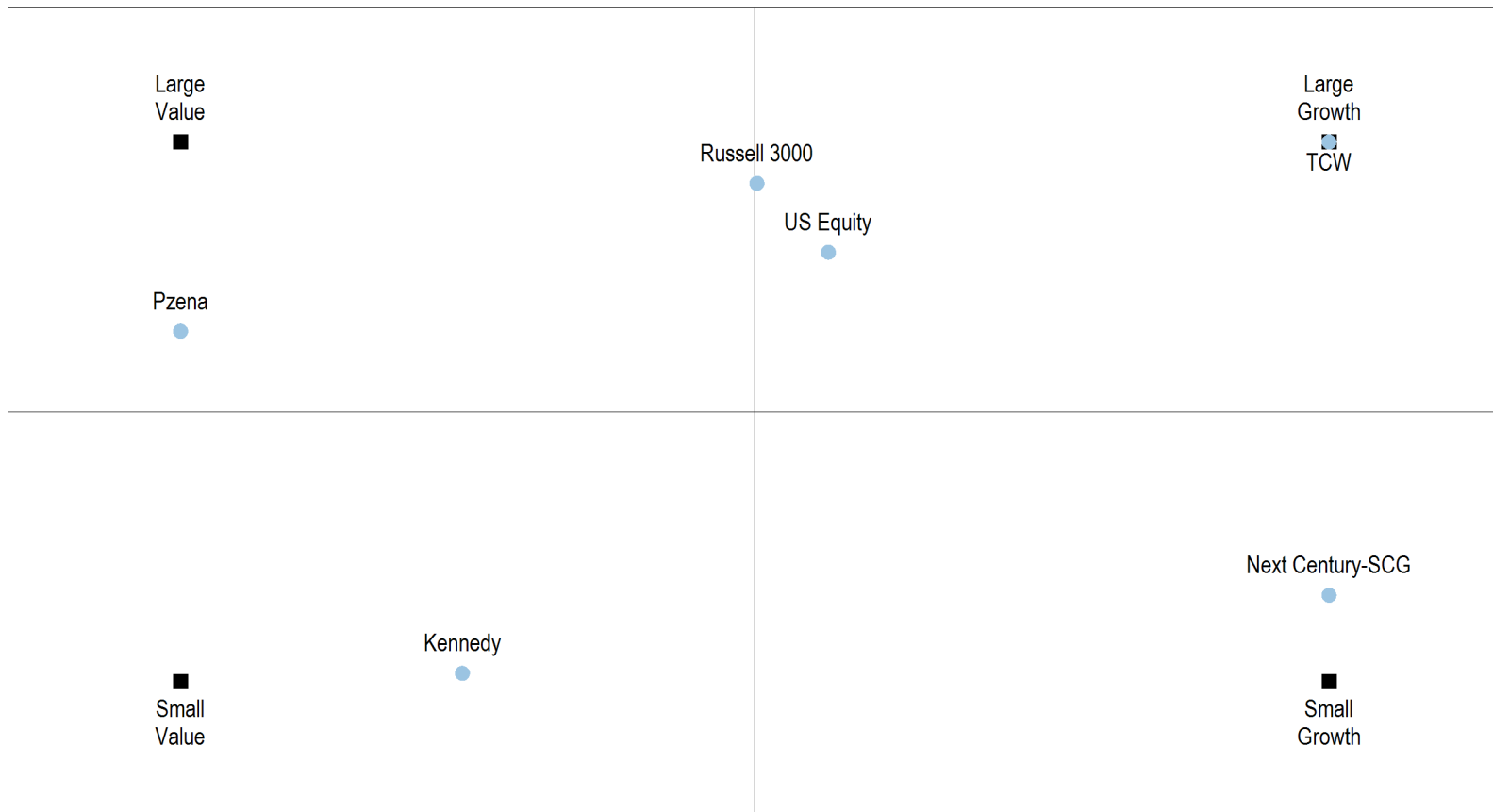
Total Fund  
Performance Attribution (6 Months)

Period Ending: March 31, 2019

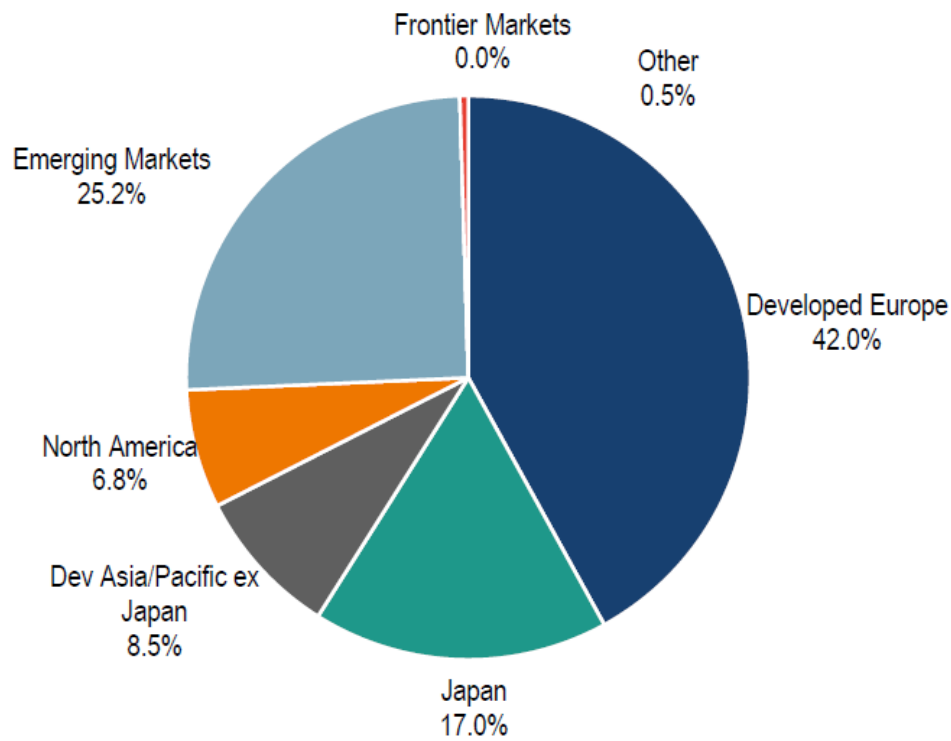


	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
US Equity	-2.51%	-2.11%	-0.40%	-0.09%	-0.17%	-0.03%	-0.29%
International Equity	0.16%	-2.37%	2.54%	0.67%	0.00%	0.02%	0.69%
US Fixed Income	3.89%	3.95%	-0.07%	-0.01%	-0.04%	0.00%	-0.05%
Global Fixed Income	3.43%	2.47%	0.95%	0.02%	0.02%	0.02%	0.06%
Absolute Return	-0.32%	-0.74%	0.43%	0.03%	-0.01%	-0.02%	0.00%
Private Equity	0.06%	2.36%	-2.30%	-0.21%	-0.08%	0.02%	-0.27%
Real Assets	-7.59%	0.70%	-8.29%	-0.45%	-0.01%	0.10%	-0.36%
Real Estate	5.15%	5.36%	-0.21%	-0.02%	-0.09%	0.00%	-0.10%
<b>Total</b>	<b>-0.12%</b>	<b>0.19%</b>	<b>-0.32%</b>	<b>-0.05%</b>	<b>-0.38%</b>	<b>0.12%</b>	<b>-0.32%</b>

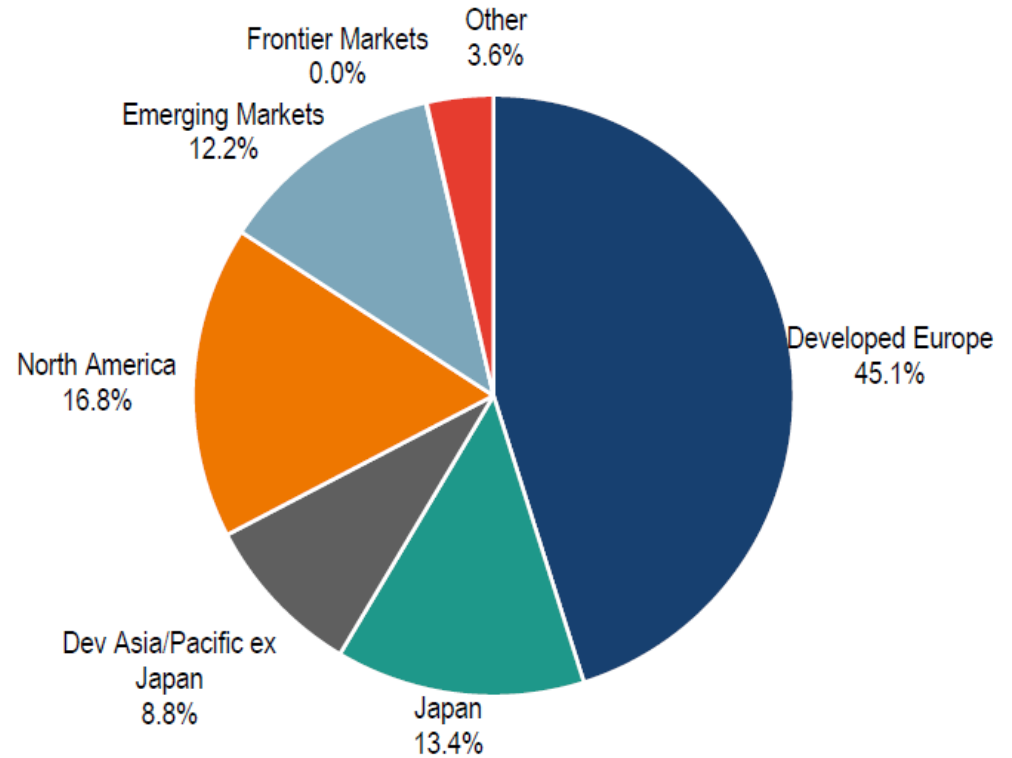
US Effective Style Map



International Equity



MSCI ACWI ex US IMI





# Total Fund Performance Summary

Period Ending: March 31, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
<b>Total Fund (Gross)</b>	<b>8.11</b>	<b>34</b>	<b>-0.28</b>	<b>64</b>	<b>2.70</b>	<b>80</b>	<b>9.93</b>	<b>9</b>	<b>6.55</b>	<b>30</b>	<b>8.43</b>	<b>17</b>	<b>11.74</b>	<b>4</b>	<b>9.57</b>	<b>Sep-85</b>
<b>Total Fund (Net)</b>	<b>8.08</b>	<b>35</b>	<b>-0.34</b>	<b>68</b>	<b>2.54</b>	<b>80</b>	<b>9.67</b>	<b>15</b>	<b>6.27</b>	<b>45</b>	<b>8.13</b>	<b>27</b>	<b>11.42</b>	<b>8</b>	<b>9.37</b>	
<i>Policy Index</i>	7.65	45	-0.59	82	2.93	75	9.49	16	6.93	17	8.69	12	11.56	7	9.84	Sep-85
<i>Allocation Index</i>	8.08	35	-0.70	85	2.83	77	9.33	19	6.68	23	8.38	18	11.14	14	--	Sep-85
<i>InvestorForce Public DB &gt; \$1B Gross Median</i>	7.49		0.07		3.75		8.57		6.16		7.68		10.22		8.59	Sep-85
<b>US Equity (Gross)</b>	<b>14.62</b>	<b>23</b>	<b>-2.55</b>	<b>43</b>	<b>7.82</b>	<b>47</b>	<b>14.92</b>	<b>9</b>	<b>10.09</b>	<b>38</b>	<b>12.50</b>	<b>33</b>	<b>16.40</b>	<b>17</b>	<b>11.61</b>	<b>Sep-85</b>
<b>US Equity (Net)</b>	<b>14.61</b>	<b>23</b>	<b>-2.59</b>	<b>44</b>	<b>7.66</b>	<b>51</b>	<b>14.62</b>	<b>12</b>	<b>9.78</b>	<b>52</b>	<b>12.18</b>	<b>54</b>	<b>16.07</b>	<b>31</b>	<b>--</b>	
<i>Russell 3000</i>	14.04	53	-2.27	33	8.77	27	13.48	40	10.35	26	12.63	26	16.00	36	11.12	Sep-85
<i>InvestorForce All DB US Eq Gross Median</i>	14.05		-2.75		7.66		13.26		9.80		12.23		15.71		10.81	Sep-85
BlackRock Russell 1000 Index Fund (Gross)	14.02	27	-1.72	42	--	--	--	--	--	--	--	--	--	--	8.99	Apr-18
BlackRock Russell 1000 Index Fund (Net)	14.01	27	-1.72	42	--	--	--	--	--	--	--	--	--	--	8.98	
<i>Russell 1000</i>	14.00	27	-1.76	42	9.30	36	13.52	36	10.63	38	12.79	43	16.05	32	8.93	Apr-18
<b>Large Cap Active Equity (Gross)</b>	<b>15.57</b>	<b>--</b>	<b>-3.21</b>	<b>--</b>	<b>5.87</b>	<b>--</b>	<b>14.65</b>	<b>--</b>	<b>10.06</b>	<b>--</b>	<b>12.15</b>	<b>--</b>	<b>16.53</b>	<b>--</b>	<b>7.77</b>	<b>Mar-00</b>
<b>Large Cap Active Equity (Net)</b>	<b>15.57</b>	<b>--</b>	<b>-3.31</b>	<b>--</b>	<b>5.45</b>	<b>--</b>	<b>14.22</b>	<b>--</b>	<b>9.66</b>	<b>--</b>	<b>11.74</b>	<b>--</b>	<b>16.11</b>	<b>--</b>	<b>7.35</b>	
<i>Russell 1000</i>	14.00	--	-1.76	--	9.30	--	13.52	--	10.63	--	12.79	--	16.05	--	5.60	Mar-00
Pzena (Gross)	11.57	52	-6.67	92	-5.40	98	11.41	40	7.11	74	10.83	65	15.23	36	5.32	Jan-06
Pzena (Net)	11.57	52	-6.83	93	-5.91	98	10.91	55	6.64	80	10.36	77	14.77	48	4.89	
<i>Russell 1000 Value</i>	11.93	43	-1.19	28	5.67	36	10.45	65	7.72	60	11.14	57	14.52	55	6.86	Jan-06

<sup>1</sup> See Policy Index and Benchmark History.

Total Fund  
Performance Summary

Period Ending: March 31, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
TCW (Gross)	19.40	6	0.51	22	17.48	9	17.93	28	13.17	45	13.41	64	17.34	38	7.52	Jun-99
TCW (Net)	19.40	6	0.51	22	17.17	10	17.56	32	12.85	51	13.08	70	16.99	50	--	
<i>Russell 1000 Growth</i>	16.10	49	-2.34	64	12.75	47	16.53	49	13.50	38	14.34	39	17.52	34	5.38	Jun-99
<b>Small Cap Equity (Gross)</b>	<b>18.26</b>	<b>--</b>	<b>-7.71</b>	<b>--</b>	<b>4.46</b>	<b>--</b>	<b>15.40</b>	<b>--</b>	<b>7.32</b>	<b>--</b>	<b>11.37</b>	<b>--</b>	<b>16.00</b>	<b>--</b>	<b>13.40</b>	<b>Jul-85</b>
<b>Small Cap Equity (Net)</b>	<b>18.26</b>	<b>--</b>	<b>-7.96</b>	<b>--</b>	<b>3.54</b>	<b>--</b>	<b>14.36</b>	<b>--</b>	<b>6.43</b>	<b>--</b>	<b>10.46</b>	<b>--</b>	<b>15.12</b>	<b>--</b>	<b>--</b>	
<i>Russell 2000</i>	14.58	--	-8.56	--	2.05	--	12.92	--	7.05	--	10.74	--	15.36	--	9.46	Jul-85
Kennedy (Gross)	14.09	27	-9.45	63	-4.60	84	9.88	49	5.94	57	11.02	35	--	--	11.90	Sep-10
Kennedy (Net)	14.09	27	-9.69	66	-5.43	87	8.91	71	5.09	76	10.13	64	--	--	11.02	
<i>Russell 2000 Value</i>	11.93	69	-8.97	56	0.17	39	10.86	33	5.59	66	9.61	76	14.12	88	10.37	Sep-10
Next Century-SCG (Gross)	22.26	16	-6.09	44	14.00	28	20.79	31	8.63	74	10.69	91	15.80	90	11.81	Oct-02
Next Century-SCG (Net)	22.26	16	-6.37	45	13.00	32	19.70	35	7.71	84	9.77	95	14.83	96	10.85	
<i>Russell 2000 Growth</i>	17.14	56	-8.22	68	3.85	82	14.87	75	8.41	77	11.79	80	16.52	83	11.09	Oct-02
<b>International Equity (Gross)</b>	<b>12.54</b>	<b>9</b>	<b>0.41</b>	<b>8</b>	<b>-2.40</b>	<b>13</b>	<b>10.13</b>	<b>10</b>	<b>4.25</b>	<b>17</b>	<b>6.82</b>	<b>14</b>	<b>10.25</b>	<b>23</b>	<b>8.18</b>	<b>Dec-90</b>
<b>International Equity (Net)</b>	<b>12.48</b>	<b>10</b>	<b>0.27</b>	<b>9</b>	<b>-2.69</b>	<b>14</b>	<b>9.74</b>	<b>15</b>	<b>3.87</b>	<b>25</b>	<b>6.42</b>	<b>21</b>	<b>9.85</b>	<b>38</b>	<b>--</b>	
<i>MSCI ACWI ex USA IMI Gross</i>	10.43	61	-2.63	52	-4.50	32	8.44	42	3.13	52	5.37	62	9.44	56	6.20	Dec-90
<i>InvestorForce All DB ex-US Eq Gross Median</i>	10.67		-2.60		-5.29		8.19		3.15		5.69		9.56		6.71	Dec-90
Bivium Intl Equity (Gross)	10.92	50	--	--	--	--	--	--	--	--	--	--	--	--	5.11	Oct-18
Bivium Intl Equity (Net)	10.83	56	--	--	--	--	--	--	--	--	--	--	--	--	5.02	
<i>MSCI ACWI ex USA Gross</i>	10.44	64	-2.16	36	-3.74	41	8.61	42	3.05	71	5.21	79	9.35	83	6.49	Oct-18
AQR (Gross)	11.58	40	-3.81	67	-8.14	91	7.73	49	3.15	58	6.31	33	10.71	36	1.89	Oct-07
AQR (Net)	11.58	40	-3.95	72	-8.66	93	7.18	63	2.64	75	5.81	53	10.20	50	1.41	
<i>MSCI ACWI ex USA Gross</i>	10.44	65	-2.16	36	-3.74	28	8.61	32	3.05	59	5.21	83	9.35	70	1.04	Oct-07

1 See Policy Index and Benchmark History.

# Total Fund Performance Summary

Period Ending: March 31, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Capital Group (Gross)	15.59	8	4.04	2	2.08	4	13.95	4	5.78	21	7.98	23	10.56	59	8.58	Dec-90
Capital Group (Net)	15.59	8	4.04	2	2.01	4	13.75	4	5.53	23	7.69	30	10.23	64	--	
MSCI ACWI ex USA Gross	10.44	63	-2.16	30	-3.74	35	8.61	46	3.05	65	5.21	79	9.35	78	6.20	Dec-90
MSCI ACWI ex USA Growth Gross	12.42	32	-1.25	20	-2.66	24	8.82	43	4.39	39	6.06	61	9.85	70	--	Dec-90
Mondrian (Gross)	9.22	44	-0.40	14	-2.34	10	7.17	48	2.70	33	5.19	62	9.08	44	7.05	Nov-03
Mondrian (Net)	9.02	49	-0.67	16	-2.70	13	6.76	60	2.33	51	4.84	76	8.74	50	6.75	
MSCI ACWI ex USA Gross	10.44	13	-2.16	25	-3.74	24	8.61	31	3.05	21	5.21	62	9.35	41	6.76	Nov-03
MSCI ACWI ex USA Value Gross	8.46	66	-3.07	35	-4.82	29	8.37	34	1.66	71	4.32	95	8.81	46	6.54	Nov-03
Templeton (Gross)	13.15	31	-3.01	13	-8.58	44	8.09	63	4.50	61	7.65	79	--	--	6.09	Apr-11
Templeton (Net)	13.15	31	-3.19	14	-9.08	46	7.40	73	3.83	69	6.94	88	--	--	5.39	
MSCI ACWI ex US Small Cap Gross	10.36	69	-5.51	40	-9.13	46	7.41	73	3.64	71	6.43	94	12.25	94	3.90	Apr-11
<b>Total Fixed Income (Gross)</b>	<b>3.38</b>	<b>48</b>	<b>3.85</b>	<b>49</b>	<b>1.91</b>	<b>94</b>	<b>4.01</b>	<b>38</b>	<b>3.65</b>	<b>31</b>	<b>4.33</b>	<b>23</b>	<b>7.61</b>	<b>10</b>	<b>7.29</b>	<b>Sep-86</b>
<b>Total Fixed Income (Net)</b>	<b>3.33</b>	<b>50</b>	<b>3.75</b>	<b>54</b>	<b>1.73</b>	<b>96</b>	<b>3.80</b>	<b>44</b>	<b>3.46</b>	<b>37</b>	<b>4.13</b>	<b>26</b>	<b>7.41</b>	<b>12</b>	<b>--</b>	
Fixed Income Blend	3.16	58	4.15	38	3.25	77	2.52	76	2.55	77	2.50	87	4.28	80	6.40	Sep-86
InvestorForce All DB Total Fix Inc Gross Median	3.31		3.83		4.12		3.58		3.12		3.40		5.37		6.78	Sep-86
<b>US Fixed Income (Gross)</b>	<b>3.46</b>	<b>44</b>	<b>4.35</b>	<b>39</b>	<b>4.38</b>	<b>63</b>	<b>4.18</b>	<b>25</b>	<b>4.04</b>	<b>25</b>	<b>4.68</b>	<b>21</b>	<b>7.70</b>	<b>13</b>	<b>7.20</b>	<b>Sep-86</b>
<b>US Fixed Income (Net)</b>	<b>3.42</b>	<b>46</b>	<b>4.26</b>	<b>42</b>	<b>4.21</b>	<b>74</b>	<b>4.00</b>	<b>29</b>	<b>3.87</b>	<b>28</b>	<b>4.51</b>	<b>24</b>	<b>7.52</b>	<b>15</b>	<b>--</b>	
BBgBarc US Aggregate TR	2.94	65	4.63	28	4.48	55	2.03	80	2.74	72	2.48	80	3.77	84	6.15	Sep-86
InvestorForce All DB US Fix Inc Gross Median	3.28		4.12		4.54		3.22		3.26		3.40		5.34		6.61	Sep-86
Baird Advisors (Gross)	3.15	60	4.71	37	4.70	48	3.04	16	3.73	8	3.86	7	6.10	8	5.05	Oct-01
Baird Advisors (Net)	3.13	62	4.66	43	4.62	59	2.95	18	3.65	9	3.77	9	6.01	10	4.96	
BBgBarc US Aggregate TR	2.94	79	4.63	48	4.48	75	2.03	86	2.74	89	2.48	93	3.77	93	4.19	Oct-01

<sup>1</sup> See Policy Index and Benchmark History.

Total Fund  
Performance Summary

Period Ending: March 31, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Loomis Sayles (Gross)	4.06	4	3.62	98	3.73	98	6.34	1	4.60	2	6.24	1	10.73	1	8.19	Dec-00
Loomis Sayles (Net)	3.98	5	3.45	99	3.40	99	5.98	1	4.27	3	5.90	1	10.38	1	7.84	
<i>BBgBarc US Credit BAA TR</i>	5.82	1	4.87	21	4.99	19	4.51	2	3.90	5	4.22	4	7.56	2	6.24	Dec-00
<b>Global Fixed Income (Gross)</b>	<b>3.17</b>	<b>69</b>	<b>2.35</b>	<b>65</b>	<b>-5.08</b>	<b>94</b>	<b>3.32</b>	<b>75</b>	<b>2.41</b>	<b>62</b>	<b>3.23</b>	<b>60</b>	<b>7.39</b>	<b>26</b>	<b>7.28</b>	<b>Nov-01</b>
<b>Global Fixed Income (Net)</b>	<b>3.10</b>	<b>73</b>	<b>2.20</b>	<b>72</b>	<b>-5.28</b>	<b>97</b>	<b>3.04</b>	<b>81</b>	<b>2.14</b>	<b>76</b>	<b>2.94</b>	<b>78</b>	<b>7.09</b>	<b>46</b>	<b>6.98</b>	
<i>FTSE WGBI TR</i>	1.74	89	3.53	43	-1.57	85	0.95	99	0.59	97	0.52	99	2.20	99	4.44	Nov-01
<i>InvestorForce All DB Gbl Fix Inc Gross Median</i>	4.10		3.13		2.14		4.82		2.71		3.33		7.00		6.62	Nov-01
Brandywine (Gross)	3.17	57	2.35	62	-5.08	91	3.32	51	2.41	52	3.23	50	7.39	29	7.28	Nov-01
Brandywine (Net)	3.10	58	2.20	64	-5.28	92	3.04	56	2.14	56	2.94	53	7.09	30	6.98	
<i>FTSE WGBI TR</i>	1.74	87	3.53	35	-1.57	77	0.95	91	0.59	83	0.52	92	2.20	95	4.44	Nov-01
<b>Absolute Return (Gross)</b>	<b>0.86</b>	<b>82</b>	<b>-0.74</b>	<b>40</b>	<b>-2.89</b>	<b>82</b>	<b>3.22</b>	<b>72</b>	<b>2.57</b>	<b>57</b>	<b>4.06</b>	<b>61</b>	<b>--</b>	<b>--</b>	<b>3.27</b>	<b>Sep-11</b>
<b>Absolute Return (Net)</b>	<b>0.86</b>	<b>82</b>	<b>-0.74</b>	<b>40</b>	<b>-2.89</b>	<b>82</b>	<b>3.22</b>	<b>72</b>	<b>2.57</b>	<b>57</b>	<b>4.06</b>	<b>61</b>	<b>--</b>	<b>--</b>	<b>3.27</b>	
<i>HFRI Fund of Funds Composite Index</i>	4.62	33	-0.55	37	0.15	66	3.94	66	2.20	63	3.10	72	3.55	85	3.28	Sep-11
<i>InvestorForce All DB Hedge Funds Gross Median</i>	3.25		-1.56		1.41		4.90		2.96		4.45		5.21		4.88	Sep-11

# Total Fund Performance Summary

Period Ending: March 31, 2019

	3 Mo (%)	Rank	6 Mo (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	7 Yrs (%)	Rank	10 Yrs (%)	Rank	Inception (%)	Inception Date
Private Equity (Gross)	-3.58	--	0.06	--	8.89	--	12.39	--	14.13	--	14.40	--	6.20	--	3.11	Nov-08
Private Equity (Net)	-3.58	--	0.06	--	8.89	--	12.39	--	14.13	--	14.40	--	6.20	--	3.11	
<i>Thomson Reuters CJA Global All PE 1 Qtr Lag</i>	-4.41	--	-1.77	--	3.67	--	9.89	--	7.59	--	9.72	--	11.05	--	7.48	Nov-08
Real Assets (Gross)	1.19	--	-9.93	--	-7.38	--	0.04	--	-6.54	--	-6.33	--	--	--	-5.15	Sep-11
Real Assets (Net)	1.19	--	-9.93	--	-7.38	--	0.04	--	-6.54	--	-6.33	--	--	--	-5.15	
<i>Real Asset Blend</i>	12.05	--	-1.04	--	2.44	--	8.25	--	6.59	--	6.07	--	--	--	6.00	Sep-11
Cash (Gross)	0.62	--	1.09	--	1.94	--	1.24	--	0.77	--	0.58	--	0.46	--	3.17	Sep-85
Cash (Net)	0.62	--	1.09	--	1.94	--	1.24	--	0.77	--	0.58	--	0.46	--	3.17	
<i>91 Day T-Bills</i>	0.59	--	1.17	--	2.15	--	1.23	--	0.76	--	0.56	--	0.42	--	3.27	Sep-85
Real Estate (Gross)	1.67	36	3.50	36	7.66	50	8.35	29	10.89	20	11.44	20	9.25	28	7.11	Mar-86
Real Estate (Net)	1.67	36	3.50	36	7.66	50	8.11	41	10.33	33	10.73	40	8.46	46	6.05	
<i>NCREIF-ODCE</i>	1.42	58	3.20	51	7.52	56	7.97	43	10.17	35	10.77	39	8.73	38	7.32	Mar-86
<i>InvestorForce All DB Real Estate Pub+Priv Gross Median</i>	1.55		3.22		7.65		7.64		9.79		10.41		8.35		7.51	Mar-86

<sup>1</sup> See Policy Index and Benchmark History.

Manager Compliance Checklist

Period Ending: March 31, 2019

MANAGER	INDEX OUTPERFORMANCE						DATABASE BENCHMARK		MANAGER TO BE PLACED ON WATCH LIST
	AFTER FEE VS. INDEX		BEFORE FEE VS. INDEX		RISK ADJUSTED (SHARPE RATIO)		MEDIAN		
	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	3 YEAR	5 YEAR	
AQR (MSCI ACWI EX US GROSS)	NO	NO	NO	YES	NO	NO	YES	NO	NO
BAIRD ADVISORS (BBGBARC US AGGREGATE)	YES	YES	YES	YES	YES	YES	YES	YES	NO
BRANDYWINE FIXED INCOME (FTSE WGBI)	YES	YES	YES	YES	YES	YES	NO	NO	NO
CAPITAL GROUP (MSCI ACWI EX US GROSS)	YES	YES	YES	YES	YES	YES	YES	YES	NO
KENNEDY (RUSSELL 2000 VALUE)	NO	NO	NO	YES	NO	NO	YES	NO	NO
LOOMIS SAYLES (BBGBARC US CREDIT BAA)	YES	YES	YES	YES	YES	NO	YES	YES	NO
MONDRIAN (MSCI ACWI EX US GROSS)	NO	NO	NO	NO	NO	YES	YES	YES	NO
NEXT CENTURY-SCG <sup>1</sup> (RUSSELL 2000 GROWTH)	YES	NO	YES	YES	YES	NO	YES	NO	NO
PZENA (RUSSELL 1000 VALUE)	YES	NO	YES	NO	NO	NO	YES	NO	YES
TCW (RUSSELL 1000 GROWTH)	YES	NO	YES	NO	NO	NO	YES	YES	YES
TEMPLETON (MSCI ACWI EX US SMALL CAP GROSS)	NO	YES	YES	YES	YES	YES	NO	NO	YES

<sup>1</sup> Next Century will be replaced by William Blair

# Policy Index and Benchmark History

Period Ending: March 31, 2019

Total Plan Policy Index	As of:													
	10/1/17	7/1/16	1/1/13	10/1/11	4/1/11	1/1/09	7/1/06	4/1/03	6/1/01	10/1/97	1/1/96	10/1/94	1/1/92	1/1/80
91-day US T-Bill										1%	1%	1%	1%	2%
BBgBarc Aggregate	11.25%	11.25%	11.25%	15%	18%	18%	21%	23%	26%	33%	29%	32%	37%	30%
BBgBarc High Yield	1.50%	1.50%	1.50%	2.0%	2.4%	2%	3%	3%	3%					
Bloomberg Commodity	0.75%	0.75%												
FTSE WGBI	2.25%	2.25%	2.25%	3%	3.6%	3.6%	4%	4%	5%					
CPI-U +3% (RR)			5.00%	5%										
MSCI ACWI ex US						23%	22%	22%	22%					
MSCI ACWI ex US IMI	26.00%	26.00%	27.00%	25%	23%									
MSCI EAFE										10%	10%	10%	10%	
MSCI Emg Mkts Free ex Malaysia										3%				
MSCI World net														10%
NCREIF					6%	6%	9%	9%	9%					
NCREIF ODCE	8.00%	8.00%	6.00%	6%										
Russell 3000	28.00%	28.00%	32.00%	34%	37%	37%	41%	39%	35%	42%	49%	47%	40%	
HFRI FoF Composite	9.00%													
Thomson Reuters CJA Global All PE	9.00%													
Russell 3000 +1% (PE)		18.00%	15.00%	10%										
Russell 3000 +1.5% (PE)					10%	10%								
Russell 3000 +4% (AI)										2%				
S&P 500														55%
S&P Global Infrastructure	1.75%	1.75%												
S&P Global Natural Resources	2.50%	2.50%												
Wilshire RE										9%	11%	10%	12%	3%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

# Glossary

---

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



## Disclaimer

---

This report contains confidential and proprietary information and is subject to the terms and conditions of the Consulting Agreement. It is being provided for use solely by the customer. The report may not be sold or otherwise provided, in whole or in part, to any other person or entity without written permission from Verus Advisory, Inc., (hereinafter Verus) or as required by law or any regulatory authority. The information presented does not constitute a recommendation by Verus and cannot be used for advertising or sales promotion purposes. This does not constitute an offer or a solicitation of an offer to buy or sell securities, commodities or any other financial instruments or products.

The information presented has been prepared using data from third party sources that Verus believes to be reliable. While Verus exercised reasonable professional care in preparing the report, it cannot guarantee the accuracy of the information provided by third party sources. Therefore, Verus makes no representations or warranties as to the accuracy of the information presented. Verus takes no responsibility or liability (including damages) for any error, omission, or inaccuracy in the data supplied by any third party. Nothing contained herein is, or should be relied on as a promise, representation, or guarantee as to future performance or a particular outcome. Even with portfolio diversification, asset allocation, and a long-term approach, investing involves risk of loss that the investor should be prepared to bear.

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

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

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



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



PERIOD ENDING: MARCH 31, 2019

Absolute Return Performance Report

**Alameda County Employees' Retirement Association**

# Table of Contents



---

VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

---

2018 Hedge Fund Environment **PAGE 3**

---

ACERA Performance **PAGE 9**

---

Appendix **PAGE 14**

---

***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. and Verus Investors, LLC (“Verus”) file a single form ADV under the United States Investment Advisors Act of 1940, as amended. Additional information about Verus Advisory, Inc. and Verus Investors, LLC is available on the SEC’s website at [www.adviserinfo.sec.gov](http://www.adviserinfo.sec.gov). Verus – also known as Verus Advisory™ or Verus Investors™.*

# Hedge Fund Environment

# Markets volatile, rates back to 2017 levels

## Outlook

Our hedge fund outlook combines our views of macroeconomic, geopolitical, and capital market conditions along with hedge fund industry metrics and trends across the strategy set. Key observations include:

- **Trade tensions** - Markets move day to day on trade deal rumors between the U.S. and China as escalations continued, diminishing expectations of any imminent resolution.
- **Synchronized growth no longer** - Reversing from 2017 and early 2018, global growth has softened amid continued economic and political uncertainty around the world. Central bank policy expectations has followed this softening with markets expecting rate cuts, rather than continued hiking, from the Fed in 2019 and beyond.
- **Factor struggles drive alt risk premia underperformance** – Value, Momentum, and Trend continue to drive underperformance of the alternative beta universe relative to both expectations and the broader hedge fund universe. Hedge funds have been able to outperform equity markets over the six month period of Q418/Q119, taking advantage of the significant market swings during that time.

# Summary of findings

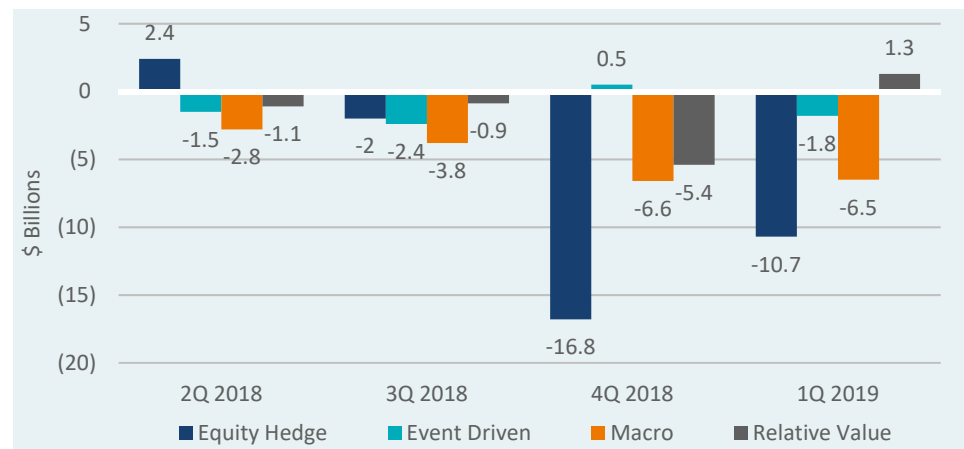
Strategy	Role in HF allocation	Outlook/Implementation	View
<b>Equity Hedge Funds</b>	Return Driver	Equity hedge funds that held or added to their positions on 4Q weakness were rewarded in Q1 2019 as markets rebounded. Most of the value going forward will be their natural risk-reducing nature by being less than 100% net long. Managers who have outperformed long-only markets have done so by investing in privates or focused on activism. We have a more positive view on the alpha environment in non-US markets.	<b>Neutral</b>
<b>Fixed Income Hedge Funds</b>	Diversifier	We have a positive view on Fixed Income hedge fund universe which holds several distinct advantages over traditional Fixed Income products. We believe there is a premium for the ability to invest in less liquid, less traveled areas of the market such as structured credit, and traditional managers of any decent size are unable to invest in these ripe areas or trade meaningfully due to their asset base and liquidity requirements.	<b>Positive</b>
<b>Asymmetric Hedge Funds</b>	Diversifier	We have a positive view on Macro strategies, particularly in their roles as diversifiers both within portfolios and in relation to the current market environment. We favor managers with wide opportunity sets, expertise in less crowded niche segments, strong capital allocation skills, and risk management practices. Market neutral strategies have generally struggled and access to top-tier managers remains crucial for success.	<b>Positive</b>
<b>Diversifying Alternative Strategies</b>	Diversifier	Cheaper quantitative strategies such as Alternative Beta have underperformed our expectations by some margin over the past 18-24 months. This dispersion between the comparable hedge fund universe and these newer strategies may be signs that the alpha-seeking hedge funds have evolved or moved away from the more well-known factors popularized by the emergence of alternative beta strategies. The dispersion within the alt beta universe means there is significant value in diversifying exposure across managers. As fees for hedge funds come down and transparency and reporting improve, the value gap between them and alt beta narrows.	<b>Neutral</b>

# Hedge fund allocation trends & flows

## Outflows continue

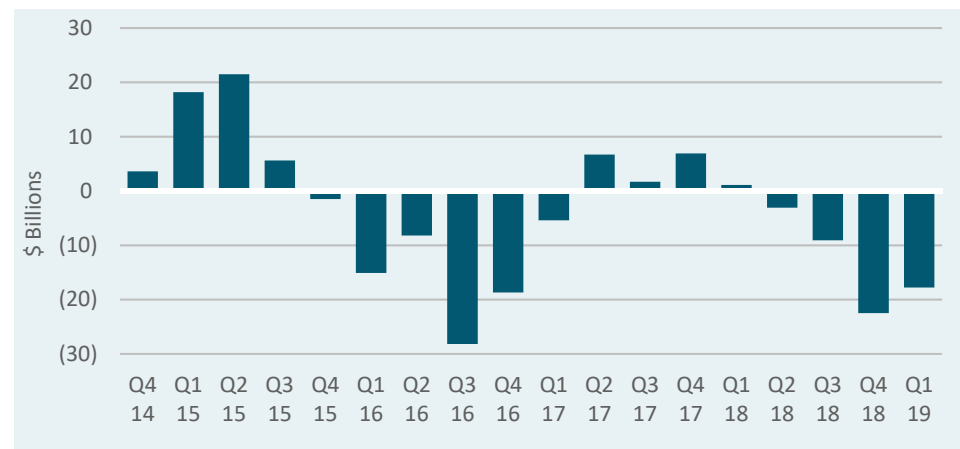
- Flows turned in their fourth negative quarter in a row, following four slightly positive quarters prior to that. Strategies that saw the largest outflows were Equity Hedge, which is the largest hedge fund group, and Macro, which has seen four significant quarterly outflows in a row. Event Driven and Relative Value remain relative bright spots for flows, although they have still experienced cumulative outflows over the past few years.
- Despite two large quarterly outflows in a row hedge fund assets remain near all time highs, according to HFR. This is due to the strong performance in the first quarter of 2019, which was the best start to the year for the HFRI Fund Weighted Composite since 2006.
- Industry measures aside, we still believe there is tremendous demand from investors for top-tier funds and appetite for institutional quality, absolute-return oriented hedge funds remains robust. Alt beta remains a preferred option for clients who seek a more cost effective and transparent exposure.

NET FLOWS TO HFR SUB-STRATEGIES, LAST 4 QUARTERS



Source: HFR

QUARTERLY NET FLOWS TO HEDGE FUNDS



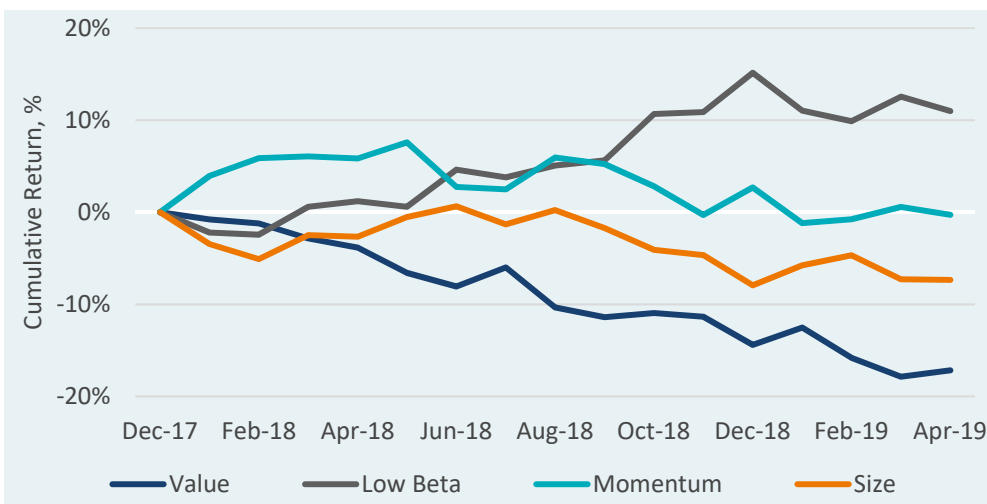
Source: HFR

# Alternative beta

## Recent performance trends

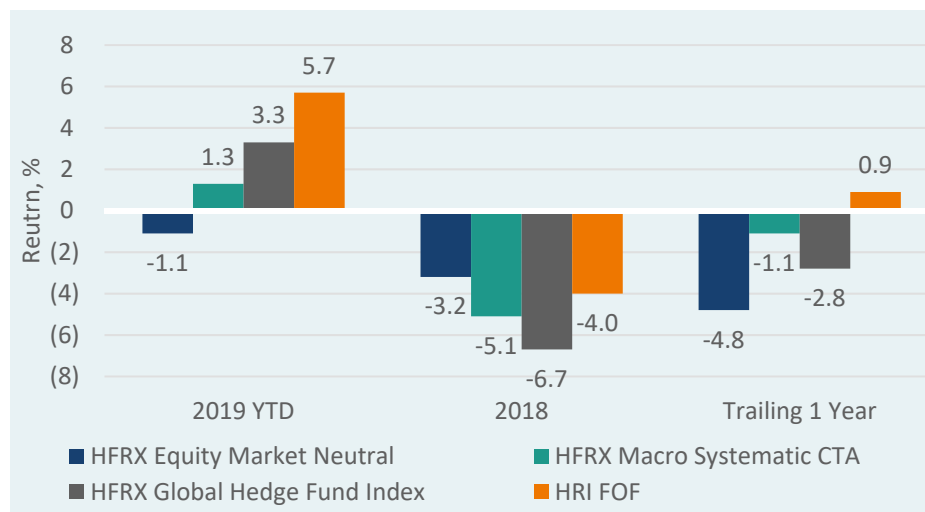
- Alternative Betas are derived from the ongoing effort to explain additional components of return generated by portfolios of securities over longer periods of time. Most of these betas, or factors, are well-known academically and have been a common source of what historically had been deemed “alpha”. These strategies use leverage to go long and short large numbers of securities, isolating the alternative betas while minimizing broad market beta exposure.
- The Dow Jones US Thematic Market Neutral indexes are a good proxy for the style factors that these strategies attempt to harvest. The last 1-2 years have been challenging for the most commonly used factors, Value and Momentum, which historically have offered attractive diversification power to each other.
- Trend following in global markets is another area these funds seek exposure to, and that too has offered little help offsetting market neutral losses.

MARKET NEUTRAL FACTOR PERFORMANCE, SINCE JAN-2018



Source: DJ US Market Neutral Thematic Indexes

KEY HEDGE FUND PERFORMANCE – AS OF APRIL 2019





# Alt beta correlations

CORRELATION, TRAILING 3 YEARS AS OF DEC-18

	Alt Beta 1	Alt Beta 2	Alt Beta 3	Alt Beta 4	Alt Beta 5	Alt Beta 6	Alt Beta 7	Alt Beta 8	Alt Beta 9	Alt Beta 10	S&P 500	US Long Treasuries
Alt Beta 1		0.67	0.40	0.58	0.62	0.50	0.00	0.64	0.46	0.39	0.21	0.17
Alt Beta 2	0.67		0.34	0.43	0.48	0.18	-0.09	0.65	0.31	0.22	0.26	-0.02
Alt Beta 3	0.40	0.34		0.45	0.55	0.46	0.23	0.49	0.55	0.32	-0.06	0.01
Alt Beta 4	0.58	0.43	0.45		0.72	0.35	0.07	0.64	0.71	0.32	-0.14	0.34
Alt Beta 5	0.62	0.48	0.55	0.72		0.51	0.29	0.69	0.74	0.47	-0.10	0.52
Alt Beta 6	0.50	0.18	0.46	0.35	0.51		0.62	0.46	0.46	0.60	0.20	-0.01
Alt Beta 7	0.00	-0.09	0.23	0.07	0.29	0.62		0.29	0.35	0.54	0.13	0.18
Alt Beta 8	0.64	0.65	0.49	0.64	0.69	0.46	0.29		0.65	0.59	0.32	0.25
Alt Beta 9	0.46	0.31	0.55	0.71	0.74	0.46	0.35	0.65		0.53	-0.28	0.34
Alt Beta 10	0.39	0.22	0.32	0.32	0.47	0.60	0.54	0.59	0.53		0.14	0.10
S&P 500	0.21	0.26	-0.06	-0.14	-0.10	0.20	0.13	0.32	-0.28	0.14		-0.22
US Long Treasuries	0.17	-0.02	0.01	0.34	0.52	-0.01	0.18	0.25	0.34	0.10	-0.22	

Correlations between alt beta strategies are moderately positive in most cases while consistently uncorrelated to the equity and rates markets.

However, in reality this has meant experiencing suboptimal results while most markets have risen over the last three years.

# ACERA Performance

# Allocations

## Target

Sub-categories	Target Allocations	Min./Max. Ranges
<b>AR Portfolio</b>	<b>9.0%</b>	<b>5% to 10.5%</b>
▪ <i>Alternative Premia Strategies</i>	4.5%	2% to 6%
▪ <i>Fund of Funds</i>	3.6%	2% to 6%
▪ <i>Other Alternatives/Oppportunistic</i>	0.9%	0% to 4.5%

## Current (as of 3/31/2019)

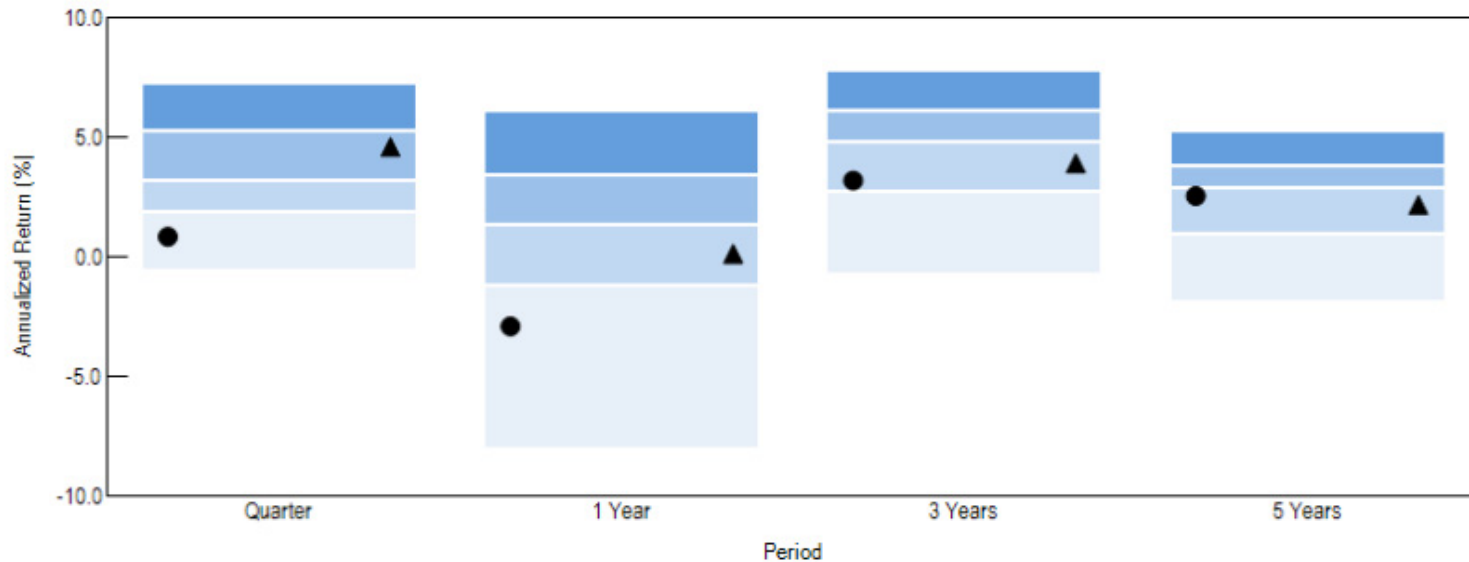
Sub-categories	Current Allocations	Min./Max. Ranges
<b>AR Portfolio</b>	<b>9.2%</b>	<b>5% to 10.5%</b>
▪ <i>Alternative Premia Strategies</i>	2.1%	2% to 6%
▪ <i>Fund of Funds</i>	3.6%	2% to 6%
▪ <i>Other Alternatives/Oppportunistic</i>	2.9%	0% to 4.5%

# Performance Summary

	Market Value (\$)	% of Portfolio	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Ending March 31, 2019					Inception (%)	Inception Date
										2018 (%)	2017 (%)	2016 (%)	2015 (%)	2014 (%)		
Absolute Return*	703,082,579	100.0	0.9	0.9	0.9	-2.9	3.2	2.6	-	-2.2	3.3	5.4	0.7	6.7	3.3	Sep-11

# Relative Performance

InvestorForce All DB Hedge Funds Gross Return Comparison  
Ending March 31, 2019



	Return (Rank)			
	Quarter	1 Year	3 Years	5 Years
5th Percentile	7.3	6.1	7.8	5.3
25th Percentile	5.3	3.5	6.2	3.9
Median	3.3	1.4	4.9	3.0
75th Percentile	1.9	-1.1	2.8	1.1
95th Percentile	-0.5	-8.0	-0.6	-1.9
# of Portfolios	223	218	205	193
● Absolute Return	0.9 (82)	-2.9 (82)	3.2 (72)	2.6 (57)
▲ HFRI Fund of Funds Composite Index	4.6 (33)	0.1 (66)	3.9 (66)	2.2 (63)

# Portfolio Statistics\* (as of 3/31/19)

	Benchmark	
	HFRI FoF Composite	Absolute Return Portfolio
<b>Max Drawdown</b>	-19.4	-7.0
<b>Sharpe Ratio</b>	0.18	0.72
<b>Beta</b>	0.25	0.09
<b>Correlation to MSCI ACWI</b>	0.82	0.38
<b>Annualized StDev</b>	5.0	3.7

\*Since inception of AR Portfolio (9/2011)

Portfolio performance and risk targets are:

AR portfolio returns to exceed benchmark

Correlation to global equities less than or equal to 0.5

# Appendix

# Glossary

**Beta** - A measure of systematic (undiversifiable) 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.

**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 optimize the benefits of diversification when constructing an investment portfolio.

**Internal Rate of Return (IRR)** – the interest rate which is the net present value of all the cash flows (both positive and negative) of an investment.

**Maximum Drawdown** – the maximum loss from a peak to a trough of a portfolio before a new peak attained. Maximum drawdown measures the downside risk over a specified time period.

**Standard Deviation** - A measure of volatility, or risk. Measures 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 and within 2 standard deviations 95% of the time. 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%.



# Glossary

**Sharpe Ratio** - A measure of that explains the return of an investment compared to its risk. The Sharpe Ratio indicates excess portfolio return for each unit of risk over the risk free rate (usually short-term Treasuries or LIBOR) per unit of volatility. The higher the Sharpe Ratio, the greater its risk-adjusted return.

**Time Weighted Return** – A measure of the compound rate of growth in a portfolio, which eliminates the distorting effects of growth rates created by inflows and outflows of money.



**PERSPECTIVES  
THAT DRIVE  
ENTERPRISE  
SUCCESS**



PERIOD ENDING: DECEMBER 31, 2018

Private Equity Performance Review

**Alameda County Employees' Retirement Association**

# Table of Contents



VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

---

Market Commentary	3	Private Equity Portfolio Diversification	10
Private Equity Strategies	7	— PE Portfolio Diversification by Strategy	
— Portfolio Overview		— PE Portfolio Diversification by Geography	
— Portfolio Summary		— PE Portfolio Diversification by Industry	
— Portfolio Activity		— PE Portfolio Diversification by Vintage Year	
Private Equity Portfolio Performance	8	Significant Events / Material Exceptions to Policy	14

---

*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. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended.*

**DEBT RELATED**

- **HY and leveraged/syndicated loan issuance were down.** In 2018, US high yield issuance of \$168 billion<sup>1</sup>, the lowest issuance total since 2009, was down 40.2% versus 2017. The institutional issuance of \$730 billion<sup>1</sup>, 21% off 2017's record level.
- **Spreads loosened across the board except for CCC index.** US HY Credit Index loosened by 166 bps or 44.5%<sup>2</sup> versus the same period last year. Except for CCC index tightened by 44bps, a 3.6%<sup>2</sup> decrease versus 2H 2017, BB, B loosened by 146 bps and 140 bps respectively, a 54.5%<sup>2</sup> and 32.7%<sup>2</sup> increase versus the same period last year.
- **Slight increase in LBO debt, but improvement in interest coverage.** US total leverage (Debt / EBITDA) for 2018 at 5.8x<sup>3</sup> up 1.4% from the same time last year. Interest coverage ratio (EBITDA / Cash Interest) ended Q4'18 at 2.7x<sup>3</sup>, down 6.2% from 3.1x<sup>3</sup> at the end of 2017.

**GLOBAL**

- **Investment activity up.** During 2018, PE firms globally invested in \$729.6 billion<sup>6&13</sup> worth of deals, 5.9% from the same time prior year and closed on 19,995 transactions<sup>6&13</sup>, up 6.5% from 2017.
- **Mixed movement of purchase price multiples by region.** As of December 31, 2018, global median purchase price multiples (Enterprise Value / EBITDA) was 10.8x<sup>1</sup>, a 1.8% decrease from the same time last year. This was driven by a 0.1% decrease in US purchase multiples at 10.6x<sup>7</sup>, a 15.8% increase in purchase price multiples in Europe at 11.5x<sup>11</sup>, and a 17.5% decrease in the rest of the world at 9.2x<sup>11</sup>.
- **Increase in dry powder in all regions, slightly down in the rest of world.** For 2018, global total PE dry powder was at \$1.36 trillion<sup>4</sup>, up (14.9%) from end of 2017. Total PE dry powder was: up in the US 14.4% to \$735.9 billion<sup>4</sup>; up in Europe by 15.7% to \$281.3 billion<sup>4</sup>; up in Asia by 18.1% to \$302.2 billion<sup>4</sup>; and down the rest of world by 1.8% to \$43.2 billion<sup>4</sup>.

**US BUYOUTS**

- **Fundraising down significantly.** In 2018, US buyout firms raised \$123.2 billion<sup>5</sup>, down by 30.2% from same time prior year. Both the number of funds closed and average fund size decreased from 1H 2017 to 1H 2018, 117<sup>5</sup> to 112<sup>5</sup> and \$1.51 billion<sup>5</sup> to \$1.1 billion<sup>5</sup>, respectively.
- **Slight decline in LBO price multiples.** As of December 31, 2018, US LBO purchase price multiples (Enterprise Value / EBITDA) were at 10.6x<sup>7</sup>, a -0.1% decrease from 2017.

- **Investment activity up.** During 2018, US buyout firms invested in \$264.0 billion<sup>6</sup> worth of deals, up 50.9% from the same time last year and closed on 2,787 transactions<sup>6</sup>, up 22.0% versus the same time in 2017. Keurig Dr Pepper, Inc. (\$21.0 billion<sup>6</sup>), Refinitiv (\$17.0 billion<sup>6</sup>), and Johnson Controls' Power Solutions business (\$13.2 billion<sup>6</sup>) contributed to the increase in capital deployed.
- **Dry powder up.** For 2018, US buyout dry powder was \$402.4 billion<sup>4</sup>, up by 12.2% from the same time in 2017.
- **Exits activity strong.** In 2018, US buyout firms exited 928 companies<sup>6</sup>, representing \$178.4 billion<sup>6</sup> in total transaction value. This represented a 19.3% increase in the number of exits and a 26.1% increase in total transaction value compared to the same time last year.

#### US VENTURE CAPITAL

- **Fundraising increased.** US VC firms raised \$41.5 billion<sup>5</sup> during 2018, a 37.6% increase from the same period last year. 342 funds<sup>5</sup> closed in 2018, a 54.1% increase from the same period last year. The average US VC fund size decreased by 10.7% at \$121.4 million<sup>5</sup> versus the same period last year.
- **Dry powder up.** As of Q4 2018, US VC dry powder was at \$110.8 billion<sup>4</sup>, up 10.7% from the last year.
- **Investment activity up sharply from last year.** US VC firms deployed \$113.0 billion<sup>12</sup> in capital during 2018, a 47.2% increase from 2017. The number of rounds closed at 5,510<sup>12</sup>, a 28.1% increase from the same time last year. The average investment per deal increased 15% from last year, to \$20.6 million<sup>12</sup>.
- **All stages valuations were up.** Compared to 2017, the average pre-money valuations increased across all stages in 2018: up 16.7% at \$7.0 million<sup>8</sup> for Seed stage, 29.0% at \$20.0 million<sup>8</sup> for Series A, 37.9% at \$55.5 million for Series B, 36.9% at \$115.0 million<sup>8</sup> for Series C, and 45.4% at \$325.0 million<sup>8</sup> for Series D. Over the past 3 years, the average pre-money valuations of Seed stage, Series A, Series B, Series C and Series D investments were up 40.0%, 56.6%, 44.9%, 64.3% and 95.6%, respectively<sup>9</sup>.
- **Exit activity up.** US VC firms exited 662 companies<sup>12</sup> in 2018, down by 2.1% from the same period last year, representing \$87.6 billion<sup>12</sup> in transaction value, up 69.4% from the same period 2017.



## EX-US

- **Fundraising up in Asia and ROW, down in Europe.** For 2018, Ex-US fundraising was up 2.3% to \$185.5 billion<sup>5</sup> compared to same time prior year. The increase was led by Asian funds which raised \$80.0 billion<sup>5</sup>, up 25.1% from same time last year. The increase was offset by a decrease in funds in Europe which raised \$89.5 billion<sup>5</sup>, down 17.3% from 2017. Fundraising in the rest of the world was up 74.0% to \$16.0 billion<sup>5</sup> compared to 2017.
- **Ex-US dry powder grew, but less than dry powder in the US.** PE dry powder outside the US grew to \$626.7 billion<sup>4</sup> for Q4 2018, a 15.4% increase versus last year. However, dry powder outside the US was still slightly less than dry powder in the US (\$735.9 billion<sup>4</sup>) by 14.8%.
  - **Dry powder of buyout, VC and growth equity in Asia increased.** At the end of 2018, Asia buyout dry power was \$85.6 billion<sup>4</sup>, up by 35.7% from last year. VC dry powder in Asia increased to \$81.1 billion<sup>4</sup>, up by 13.1% from prior year. Growth equity dry powder grew to \$113.6 billion<sup>4</sup>, a 13.8% increase from 2017.
  - **Europe buyout and VC dry powders up.** For 2018, Europe buyout dry power was \$189.3 billion<sup>4</sup>, up by 15.7% from last year. Same time, VC dry powder in Europe grew to \$26.4 billion<sup>4</sup>, a 15.8% increase from prior year. Growth equity dry powder grew to \$20.4 billion<sup>4</sup>, a 36.9% increase from 2017.
- **Investments up in all key sectors and geographies, except for Asia buyout.** Number of deals increased in both Europe and Asia buyout and venture capital. Aggregate deal volume increased in 2018 in European buyout and venture capital and Asia venture capital.
  - **Europe buyout and VC investments increased.** In 2018, Europe buyout firms transacted on \$136.7 billion<sup>6</sup> in aggregate value, up by 39.4% from 2017. VC investment activity was up from \$17.7 billion in 2017 to \$22.4 billion<sup>12</sup> during 2018, an increase of 26.7%.
  - **Asia average buyout deal value was down, while VC investment activities was up.** During 2018, Asia VC investment activity was \$115.9 billion<sup>12</sup>, up from \$75.2 billion in 2017, an increase of 54.1%. Buyout firms closed on \$39.1 billion<sup>6</sup> in aggregate value, down by 37.5% from the same time of last year's \$62.5 billion<sup>6</sup>.
- **Leverage multiples in Europe moved up, loan volume slightly down.** European LBO leverage multiples (Debt / EBITDA) have averaged 5.7x<sup>10</sup> during 2018, an increase of 6.5% from the same time last year and a 7.7% decrease from the peak (6.1x<sup>11</sup>) in 2007. European LBO Loan volume at \$76.4 billion<sup>11</sup> is down 2.8% versus 2017, an decrease of 44.5% versus the peak of \$137.7 billion<sup>11</sup> in of 2007.
- **Exit activity stronger in Europe and Asia.** In 2018, Europe PE firms aggregate exit value amounted to \$122.3 billion<sup>6&12</sup>, a 48.0% increase from the same time last year, while Asia PE firms' exits were up 174.4% from 2017 to \$84.3<sup>6&12</sup> billion in the same time.

## Outlook

- **Momentum of increase in PE allocations plateaus.** A recent survey of institutional investors conducted on December 31, 2018 indicated that 46%<sup>13</sup> intend to increase their allocation for private equity compared to 53%<sup>13</sup> during the same period last year. 49%<sup>13</sup> intend to maintain their allocation for private equity compared to 43%<sup>13</sup> during the same period last year.
- **Institutional investors most interested in investing in North America and like small- to mid-market buyouts.** Based on the survey conducted on December 31, 2018, Institutional investors view US as the most attractive location to invest in the current economic climate with 67%<sup>13</sup> (versus Western Europe 49%<sup>13</sup>) choosing it as their preferred developed markets investment destination, and with 49%<sup>13</sup> choosing China (versus India 30%<sup>13</sup>) as their preferred emerging markets investment destination. In the same survey, 54%<sup>13</sup> of institutional investors also cited the small to mid-market buyout strategy as presenting the best opportunities in the current financial climate. venture capital strategy was mentioned next with 46%<sup>13</sup> of institutional investors believing it presented the best opportunities.

## Notes

1. *Leveraged Loan Monthly Refinitiv LPC*
2. *Guggenheim High-Yield Bank Loan Outlook*
3. *LCD's Leveraged Buyout Review*
4. *Preqin Dry powder by Geography (Preqin Website) Dry powder includes Buyout, Distressed PE, Growth, Mezzanine, Co-investments, Balanced, and Venture Strategies.*
5. *Preqin Private Equity Fundraising*
6. *Preqin Private Equity-Backed Buyout Deals and Exits*
7. *US LBO Review*
8. *PitchBook-NVCA Venture Monitor*
9. *PitchBook's VC Valuations*
10. *LCD European Leveraged Buyout Review*
11. *European Leveraged Lending Review*
  - a. *Ex US Multiples were estimated utilizing a number of sources including Preqin Private Equity-Backed Buyout Deals and Exits Factsheet, LCD's Leveraged*
  - b. *Buyout Review, Europe Leverage Lending Review and Leveraged Loan Monthly Refinitiv LPC.*
12. *Preqin Venture Capital Deals and Exits*
13. *Preqin Investor Outlook: Alternative Assets*

	Policy Target	Policy Range	Market Value %	Market Value \$(000)	Unfunded Commitment \$(000)	Market Value + Unfunded \$(000)
<b>ACERA Plan Assets - Total</b>				<b>\$7,609,664</b>		
<b>Private Equity:</b>	<b>9.0%</b>	<b>0-13%</b>	<b>6.8%</b>	<b>\$519,871</b>	<b>\$540,057</b>	<b>\$1,059,929</b>
Buyouts	60.0%	30-80%	57.3%	\$297,969	\$284,145	\$582,114
Venture Capital	20.0%	0-40%	32.9%	\$170,793	\$37,651	\$208,444
Debt-Related/Special Situations	20.0%	0-70%	9.8%	\$51,110	\$218,261	\$269,371

### Portfolio Summary

- As of December 31, 2018, the Private Equity portfolio had a total market value of \$519.9 million, with \$298.0 million in Buyouts, \$170.8 million in Venture Capital, and \$51.1 million in Debt-Related / Special Situations. Total market value is the current reported value of investments, excluding the remaining amount of unfunded commitments.
- Since its initial allocation to Private Equity in Q4 2008 (10 years ago), ACERA has contributed \$708.8 million towards its Private Equity commitments, with \$384.8 million to Buyouts, \$145.7 million to Venture Capital, and \$178.3 million in Debt-Related / Special Situations. Unfunded commitments total \$540.1 million.

### Portfolio Activity

- ACERA made two new commitments to Private Equity in the second half of 2018: \$25.0 million to Audax Private Equity Fund VI-A (Buyout) and \$33.0 million to ABRY Advanced Securities Fund IV (Debt-Related/Special Situations).



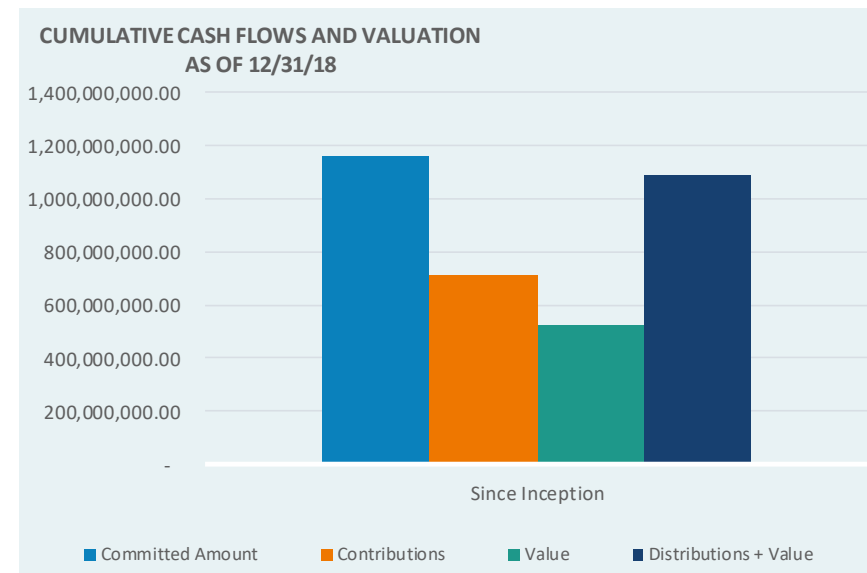
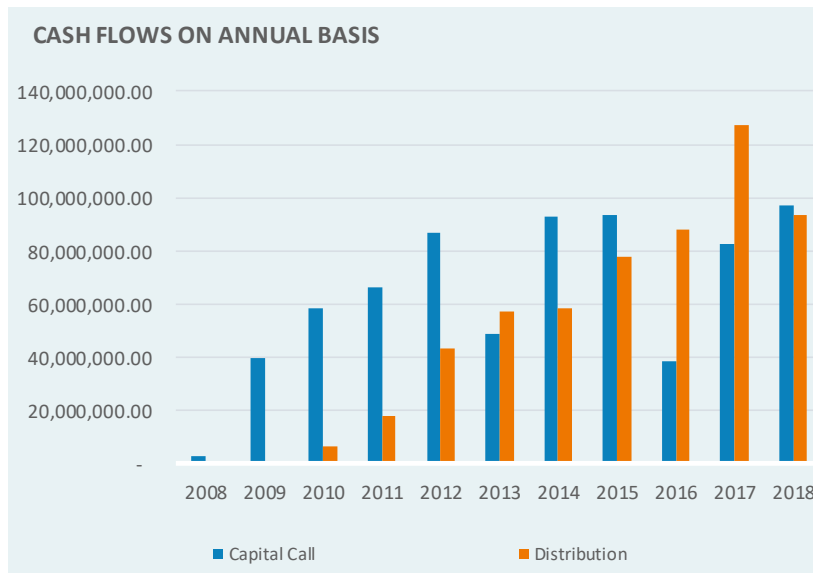
# Private Equity Portfolio Performance

Period Ending: December 31, 2018

## Performance

- Current Private Equity portfolio is valued at \$519.9 million. Portfolio investments have a capital-weighted average life of 4.4 years.
  - Since inception, the portfolio has produced +14.83% net IRR, outperforming its Thomson Reuters C|A Global PE benchmark pooled IRR of 13.45% by 138 basis points. Portfolio returns rank above Median on net IRR and Total Value Multiple (TVPI); and above Top-Quartile on Distribution Multiple (DPI).
  - Relative to the global benchmark peers in the same Vintage Years since inception (2008), the net IRR, TVPI, and DPI of the Buyout portfolio ranks above Median; Venture Capital ranks above Top-Quartile on TVPI and DPI, and above Median on IRR; Debt-Related / Special Situations ranks above Median on all measures.
- Together with \$570.1 million in realized distributions (0.80x cost), Private Equity’s Total Value at \$1,089.9 million is approximately \$381.2 million above \$708.8 million cost (1.54x cost), net of fees. Return drivers include:
  - Venture Capital up \$155.28 million/+106.6% versus cost (Third Rock II & III, General Catalyst VI, Great Hill IV, NEA 13 & 14, and Khosla Ventures IV &

- Seed B leading), with 89.3% of called capital realized and distributed. Since inception, this portfolio produced 20.54% net IRR versus its peer global benchmark of 16.65% pooled IRR.
  - Buyouts up \$165.19 million/+42.9% versus cost (Sycamore I, ABRY Partners VII, Great Hill V, and Insight Equity II leading), with 65.5% of called capital realized and distributed. Since inception, the Buyouts portfolio produced 14.02% net IRR versus its peer global benchmark of 14.69% pooled IRR.
  - Debt-Related / Special Situations was up \$60.71 million/+34.1% versus cost (ABRY Advanced Securities II, Centerbridge, ABRY Senior Equity IV, and OHA Strategic Credit IB leading), with 105.4% of called capital realized and distributed. Since inception, this portfolio produced 10.46% net IRR versus its peer global benchmark of 10.99% pooled IRR.
- Within Private Equity, the current allocation of invested capital is 57% to Buyouts, 33% to Venture Capital and 10% to Debt / Special Situations. Of \$570.1 million in cash distributions, 44% were from Buyouts, 33% from Debt-Related/Special Situations, and 23% from Venture Capital.



## Private Equity – Portfolio Performance vs. Pooled Benchmark IRR

Period Ending: December 31, 2018

	1-Year	3-Year	5-Year	10-Year	Since Inception <sup>2</sup>
<b>Buyout</b>	<b>10.27%</b>	<b>10.76%</b>	<b>13.66%</b>	<b>N/A</b>	<b>14.02%</b>
<i>Thomson Reuters C/A Global Buyout Benchmark<sup>1</sup></i>	10.43%	17.35%	15.07%	15.56%	14.69%
<b>Venture Capital</b>	<b>19.65%</b>	<b>14.92%</b>	<b>22.18%</b>	<b>20.68%</b>	<b>20.54%</b>
<i>Thomson Reuters C/A Global Venture Capital &amp; Growth Equity Benchmark<sup>1</sup></i>	19.03%	14.35%	16.73%	16.89%	16.65%
<b>Debt-Related / Special Situation</b>	<b>-7.50%</b>	<b>10.29%</b>	<b>6.65%</b>	<b>10.64%</b>	<b>10.46%</b>
<i>Thomson Reuters C/A Global Mezzanine &amp; Distressed Benchmark<sup>1</sup></i>	4.09%	10.10%	8.07%	12.01%	10.99%
<b>Total Private Equity</b>	<b>11.30%</b>	<b>12.20%</b>	<b>15.16%</b>	<b>14.92%</b>	<b>14.83%</b>
<i>Thomson Reuters C/A Global All Private Equity Benchmark<sup>1</sup></i>	11.19%	14.40%	13.01%	14.08%	13.45%

*Identical cash flows from portfolio inception through 12/31/2018 invested in Russell 3000 Total Return index would yield 12.12% (Long Nickels). The result is an over performance of the portfolio of 2.71% relative to the index. Analysis provided by Solovis.*

<sup>1</sup> Benchmarks: Thomson Reuters C/A as of 12/31/18, vintage 2008 through present.

<sup>2</sup> ACERA's inception date of November 21, 2008 vs. Thomson Reuters C/A's inception date of January 1, 2008.

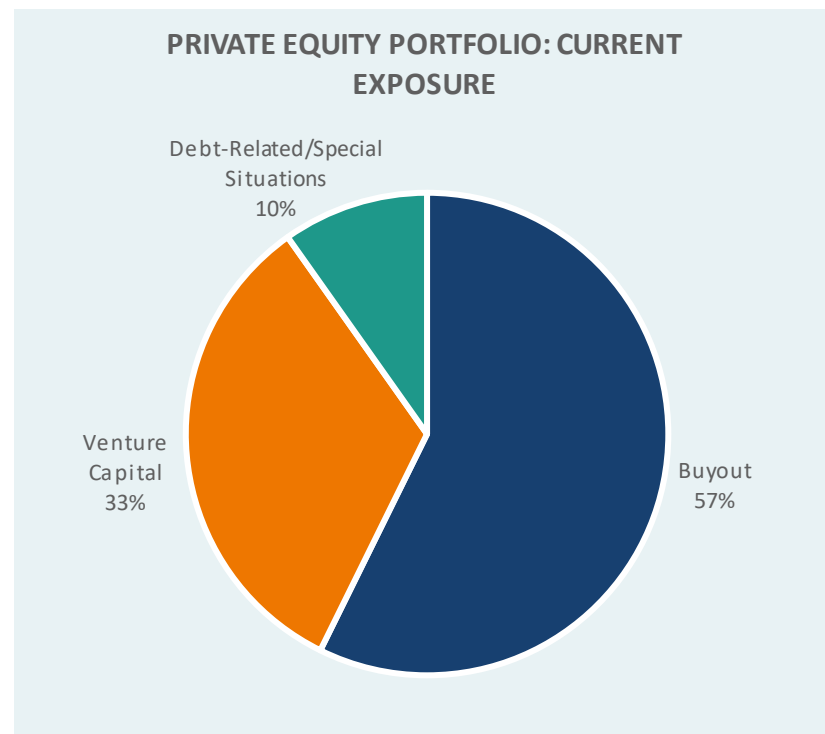
# Strategy

## Portfolio Diversification

Period Ending: December 31, 2018

Investment Type	Commitment	Current Exposure	Current Exposure as % of Private Equity
Buyout	623,525,000	297,968,513	57.3%
Venture Capital	183,100,000	170,792,672	32.9%
Debt-Related/Special Situations	354,647,152	51,110,253	9.8%
<b>Total Private Equity</b>	<b>1,161,272,152</b>	<b>519,871,438</b>	<b>100.0%</b>

Investment Type	Target Range	Target Exposure	Current Exposure as % of Target	Difference
Buyout	4%-8%	5.4%	3.7%	-1.7%
Venture Capital	0%-3%	1.8%	2.1%	0.3%
Debt-Related/Special Situations	1%-3%	1.8%	0.6%	-1.2%
<b>Total Private Equity</b>	<b>0%-13%</b>	<b>9.0%</b>	<b>6.4%</b>	<b>-2.6%</b>

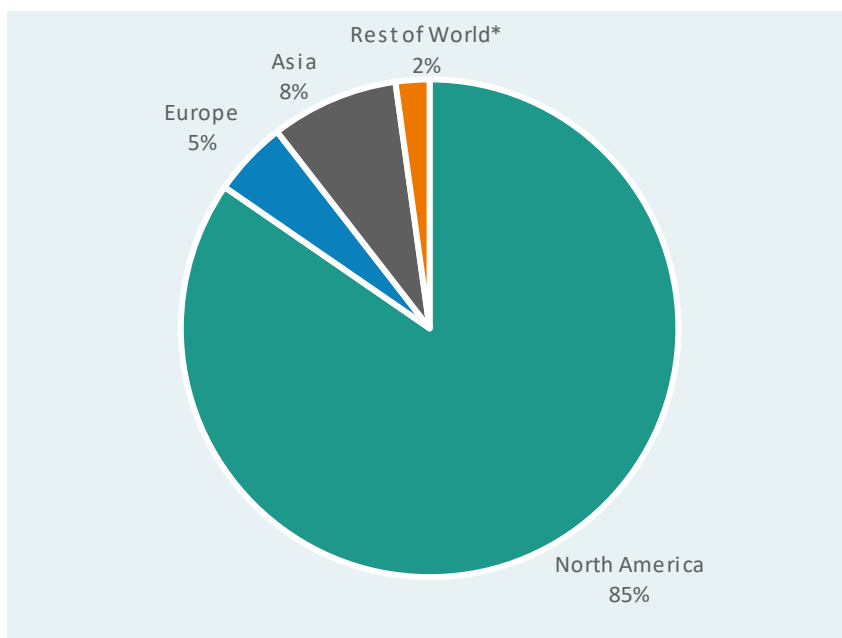


# Geography

## Private Equity Portfolio Diversification

Period Ending: December 31, 2018

Geography	Current Exposure
North America	424,584,915
Europe	24,707,293
Asia	41,420,353
Rest of World*	11,176,284
<b>Total Private Equity</b>	<b>501,888,845</b>



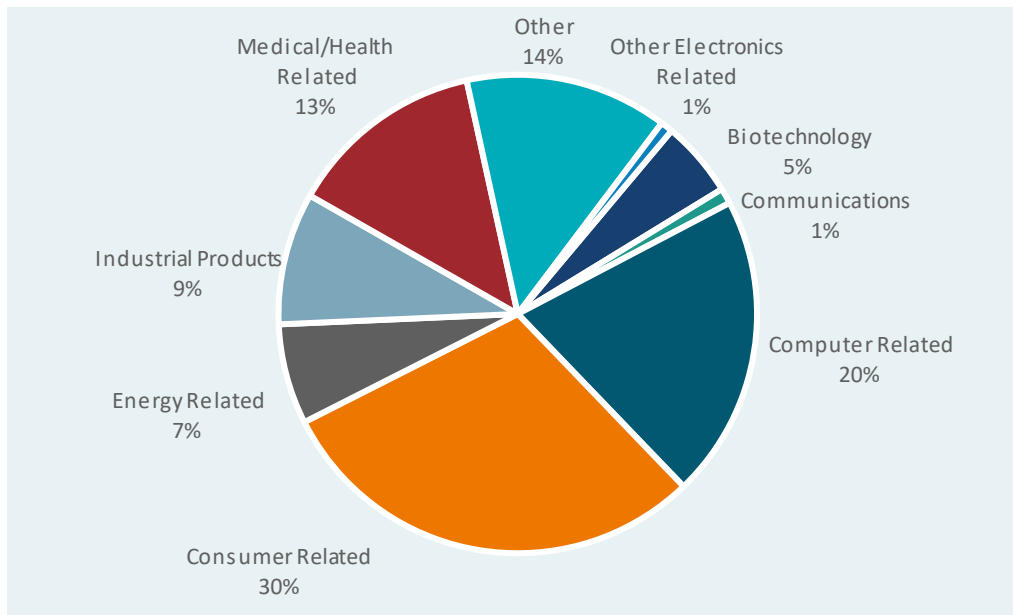
Based on the value of private equity portfolio companies as of December 31, 2018, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed geography breakdown.

\* Rest of World includes: Brazil, New Zealand, Kenya, Israel, United Arab Emirates, Australia, and Turkey.

# Industry Private Equity Portfolio Diversification

Period Ending: December 31, 2018

Industry	Current Exposure
Biotechnology	25,832,063
Communications	5,293,106
Computer Related	102,869,989
Consumer Related	149,187,112
Energy Related	34,007,667
Industrial Products	44,845,719
Medical/Health Related	66,868,403
Other	68,839,574
Other Electronics Related	4,145,210
<b>Total Private Equity</b>	<b>501,888,843</b>

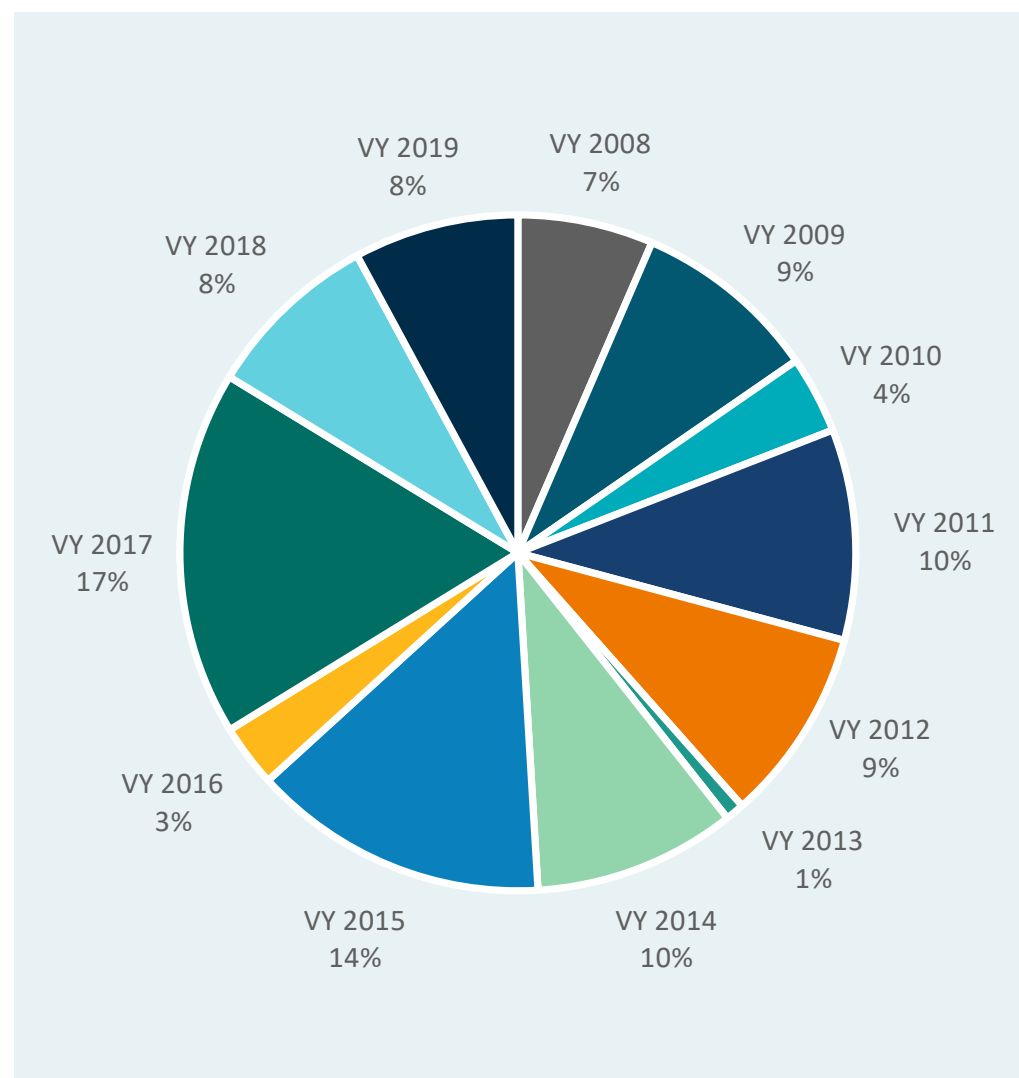


Based on the value of private equity portfolio companies as of December 31, 2018, as provided by the partnerships. Differences between reported value and the private equity portfolio valuation is due to temporary cash funds, fees, other expenses, and holdings with undisclosed industry breakdown.

# Vintage Year Private Equity Portfolio Diversification

Period Ending: December 31, 2018

Vintage Year	Commitment as of 12/31/18	% of Portfolio Commitment	Reported Value as of 12/31/18
2008	75,000,000	6.5%	10,407,357
2009	103,500,000	8.9%	37,581,392
2010	42,500,000	3.7%	8,597,532
2011	117,500,000	10.1%	62,566,484
2012	108,500,000	9.3%	124,289,277
2013	10,000,000	0.9%	10,893,110
2014	112,500,000	9.7%	98,827,145
2015	163,250,000	14.2%	103,047,066
2016	35,000,000	3.0%	4,917,096
2017	203,522,152	17.5%	52,454,006
2018	98,000,000	8.4%	6,290,974
2019	92,000,000	7.9%	0
<b>Total Private Equity</b>	<b>1,161,272,152</b>	<b>100%</b>	<b>519,871,438</b>



- **As of December 31, 2018, the Private Equity Portfolio is below its neutral target allocation of 9.0%, as commitments continue to be made to various funds. The allocation target increased from 6.0% to 9.0% in September 2017.**





# PERSPECTIVES THAT DRIVE ENTERPRISE SUCCESS



PERIOD ENDING: DECEMBER 31, 2018

Real Assets Review

**Alameda County Employees' Retirement Association**



# Table of Contents



VERUSINVESTMENTS.COM

SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

---

Real Assets Market Overview 3

---

Real Assets Portfolio Performance 8

---

Real Assets Portfolio Diversification 10

- RA Portfolio Diversification by Strategy
- RA Portfolio Diversification by Geography
- RA Portfolio Diversification by Vintage Year

---

Real Assets Program Update 13

*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. and Verus Investors, LLC ("Verus") file a single form ADV under the United States Investment Advisors Act of 1940, as amended.*

## Observations driving our outlook

### Deflation concerns weigh more on the minds of investors than inflation

Inflation fears have been subdued in the market over the past year. Both core CPI and headline CPI have been declining over the past nine months and came in at 2.0% and 1.9% respectively in March. Over the past twelve months, core CPI has ranged between 2.0 and 2.3%, near the Fed's inflation target. At this stage of the market cycle, we view the risk of deflation from an economic slowdown to be of greater concern than unanticipated inflation.

### Commodity price volatility testing the patience of many investors

Commodity futures likely hold the title for the worst performing asset class over the last 5, 7 and 10-year periods. The Bloomberg Commodity Index has returned a negative 3.8% annually over the trailing 10 years. While it is tempting to conclude that commodities present an opportunity, given the significant underperformance of the asset class, it is difficult to determine whether commodities offer value in the current environment. Our inability to estimate a fair value or confidently project future price movements has led us to a bearish stance in this year's outlook. For investors who are able and willing to take on additional equity risk, we believe investing in commodity producers may be a preferred approach for gaining commodity exposure in the current environment.

### We remain conservatively positioned in real estate

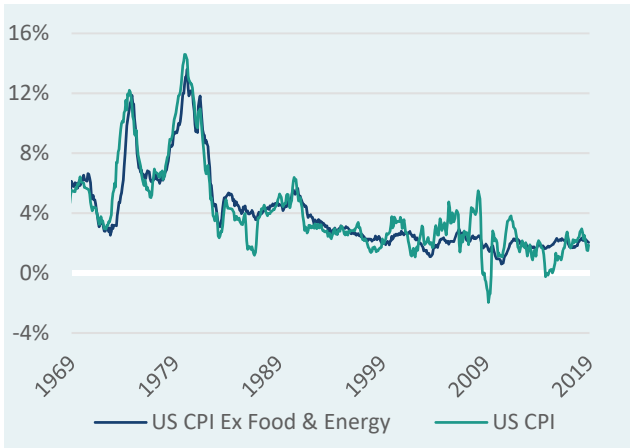
Real estate fundamentals have remained fairly stable with overall declining vacancies and increasing NOI. Valuations continue to climb, and cap rate spreads have returned to average levels. New supply has been moderate with some pockets of excess. Our outlook has changed to neutral as returns have continued to moderate to "normal" levels. Appreciation continues to slow with income becoming a larger portion of overall returns. We favor more conservative strategies with strong cash flows and hands-on asset management. We remain cautious with leverage, illiquidity, quality and long duration value creation strategies.

### Oil/Gas industry investment conundrum

It is fair to say that the least popular industry, at the moment, is the oil/gas industry. Listed Exploration & Production (E&P) companies appear quite cheap, despite improved balance sheets, greater capital discipline and higher oil prices. Fundraising within private energy is as challenging as we've seen in many years. Many institutions from endowments to public pensions are slowing or halting new commitments to upstream energy funds. M&A activity in the upstream market has stalled. In most other industries this would create an attractive investment opportunity, but we would practice restraint.

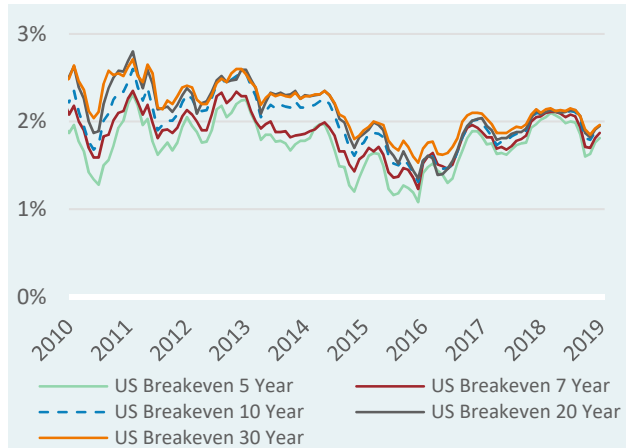
- Core CPI has remained in a tight range between 2.0% and 2.3% for each of the last 12 months, most recently coming in at 2.0% in March.
- Headline CPI moved up to between 2.5% and 2.9% in mid 2018 but has since fallen to a range of 1.5% to 2.5% since. In March, headline CPI was 1.9%, still at levels below that seen in typical late-cycle periods. The Fed appears hesitant to hike interest rates, and has indicated a willingness to let inflation drift slightly higher than the stated 2% inflation target. However, we believe weaker inflation is more likely to materialize.
- In most late-stage business cycles, real assets are often the best performing asset classes due to rising inflation. This cycle appears unique for a number of secular reasons (globalization, automation, low GDP growth, etc.) but there is always some probability that we are wrong, and history repeats itself, in which case it will be advantageous to have exposure to assets which perform well when inflation exceeds expectations.

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



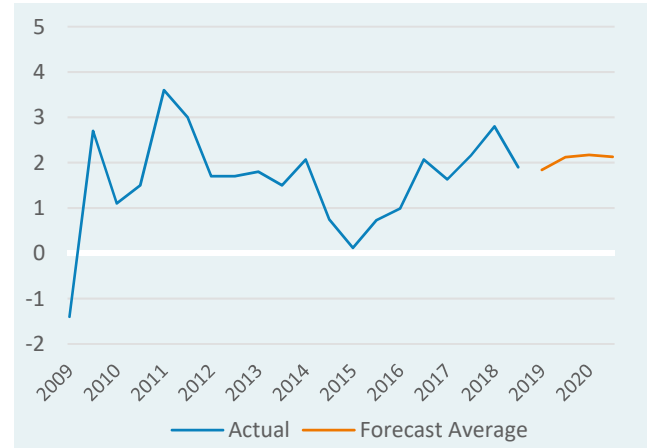
Source: FRED, as of 3/31/19

**U.S. TIPS BREAKEVEN RATES**



Source: FRED, as of 3/31/19

**INFLATION EXPECTATIONS**



Source: Wall Street Journal, 3/31/19

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Private Real Estate</b>	Real estate fundamentals have remained fairly stable with overall declining vacancies and increasing NOI. Valuations continue to climb, and cap rate spreads have returned to average levels. New supply has been moderate with some pockets of excess.	<ul style="list-style-type: none"> <li>— A general economic slowdown may drastically impact demand for real estate.</li> <li>— New supply could increase ahead of current projections and outpace demand.</li> <li>— A sharp rise in interest rates could lead to increased cap rates, hurting values.</li> </ul>	Our outlook has changed to neutral as returns have continued to moderate to “normal” levels. Appreciation continues to slow and income is a larger portion of overall returns. We favor more conservative strategies with strong cash flows and hands on asset management. We remain cautious with leverage, illiquidity, quality and long duration value creation strategies.	<b>Neutral</b>
<b>REITs</b>	REITs started the year as the top performing major asset class in 1Q’19. This is following several years of underperforming the equity markets. REITs have benefitted from the overall strength of the real estate market but were depressed by concerns over rising interest rates and a rotation away from yield-oriented assets. REITs now appear to be fairly valued-to-slightly overvalued.	<ul style="list-style-type: none"> <li>— Rising interest rates can have a negative effect on REITs and all yield-sensitive assets over short time periods.</li> <li>— REITs are sensitive to economic decline and general equity market volatility.</li> </ul>	We remain neutral on REITs given current valuations appear fair-to-slightly overvalued. REITs can provide liquid exposure to real estate with the following caveats: high sensitivity to equity market volatility over shorter holding periods, higher leverage and higher exposures to non-core sectors such as hotels, self-storage, for-rent residential, etc.	<b>Neutral</b>
<b>Commodities</b>	Commodities futures have had lackluster performance over the last decade. An upward sloping futures curve for most of the last decade has created a headwind for the asset class. In most commodities, contango continues to create a drag on performance.	<ul style="list-style-type: none"> <li>— Supply responses surprising the market to the upside.</li> <li>— Global growth slowing down, reducing demand for energy and industrial metals.</li> </ul>	Commodity futures continue to face headwinds as futures trade in contango across most commodities. The uptick in interest rates has helped margin returns and prices have stabilized across metals and energy but we expect the asset class to generate low returns going forward.	<b>Negative</b>
<b>TIPS</b>	Low nominal interest rates combined with low to moderate inflation has led to a depressed return environment for TIPS.	<ul style="list-style-type: none"> <li>— Decreasing inflation expectations or rising nominal interest rates would be a headwind to TIPS. Continued low rates create a high cost of carry.</li> </ul>	Low current yields and modest inflation expectations has led to other real assets offering higher total return potential than TIPS.	<b>Negative</b>

## Outlook Summary (continued)

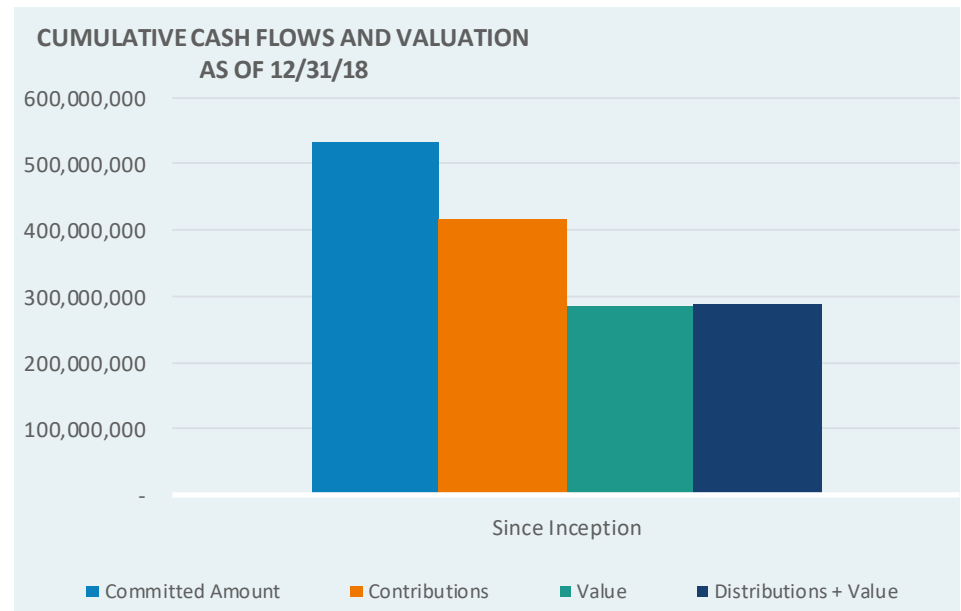
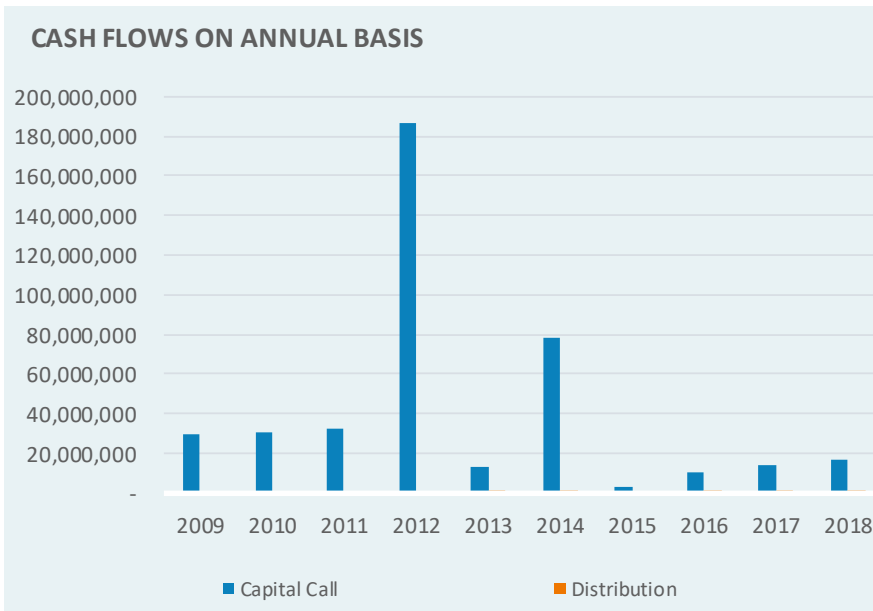
Period Ending: December 31, 2018

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Infrastructure</b>	The early sell-off in listed infrastructure equities during 2018 appeared to signal a welcomed revaluation in the industry but public equities have largely recovered since. Meanwhile, valuations stayed elevated within private markets throughout the volatility. Large sums of capital continue to pour into the private infrastructure market intensifying an already competitive market.	<ul style="list-style-type: none"> <li>— Last year we highlighted rising rates as a headwind to yield-oriented investments. That appears to have dissipated as central banks focus more on slowing economic growth</li> <li>— Assets that are sensitive to growth in GDP carry greater risk today. We would be cautious about deals in transportation where valuations remain rich despite heightened risk of an economic slowdown.</li> </ul>	The asset class offers a compelling return profile that aligns well with long duration pools of capital. We favor private infrastructure funds that have capabilities to improve operations and manage complex deal structures. We would avoid heavy exposure to GDP sensitive assets where volume and pricing risk are present.	<b>Neutral</b>
<b>Oil &amp; Gas</b>	Oil prices have rebounded nicely in 2019, most recently trading around \$65/bbl for WTI. Gas prices have reversed course after reaching seasonal highs and are now trading around \$2.3/Mbtu. Up till now, the energy upstream industry has faced a hostile public and private market as fund flows into the sector have trended away. Whether capital returns in 2019 and company valuations re-rate higher is an open question. Until then, it is likely that private energy funds will struggle to find liquidity for their holdings.	<ul style="list-style-type: none"> <li>— Last year we highlighted the significant volume of dry powder that was waiting to be invested. Given the challenging fundraising environment in 2018, dry powder is less of a concern. However, transactions in the industry have collapsed leading to a scarcity of exit options for private funds.</li> <li>— Future demand growth is a key risk that is incredibly difficult to project. The impact of shifts in oil consumption could lead to significant terminal value risk.</li> </ul>	Given valuations and a lack of access to capital, there will be interesting investment opportunities within the upstream energy market. Given our concerns around terminal value risk, we would look for shorter duration investment opportunities. Investments where the bulk of your capital can be returned within 3-5 years represents a more attractive risk/return.	<b>Neutral</b>
<b>Mining</b>	Despite some fits and starts in the last 3 years, mining has been a challenged sector since 2013. Excess supply in several metals has contributed to low prices, low capital expenditure and weak capital flows. A slowdown in global GDP could present a headwind to the industry but the supply/demand dynamics look favorable for several industrial metals longer term.	<ul style="list-style-type: none"> <li>— Global GDP growth and the economy in China are the two biggest risks in the sector. China represents a disproportionately large buyer of industrial metals, so its economy has a large impact on metal prices.</li> </ul>	Longer-term, we think the supply picture looks favorable for several industrial metals. Investing in mining private equity is challenging, not only because the sector is especially volatile, but the pool of attractive GPs is quite small. Our primary exposure to the sector is to invest through the debt side of a mining project. Mining project finance offers an attractive mid-teen return with high income and an equity kicker.	<b>Positive</b>

Strategy	Current Environment	Potential Risks	Outlook/Implementation	View
<b>Midstream Energy / MLPs</b>	We highlighted a tactical opportunity in MLPs in April of last year. The sector moved higher during the summer but sold-off again in Q418. We still believe there is a compelling opportunity within the asset class, especially relative to private midstream where transactions are priced well above public market comps.	<ul style="list-style-type: none"> <li>— Falling oil/gas prices could curtail drilling programs and reduce production volumes which would hurt MLP cash flows.</li> <li>— Regulatory risk is low and though recent headlines around the Federal Energy Regulatory Commission (FERC) rules changing cost pass-throughs created selling pressure the end result was de minimis for most MLPs.</li> </ul>	MLPs are currently providing a healthy 7+% dividend yield and distribution growth has recovered to a range of 4-6%. In addition, nearly 90% of the MLP sector has eliminated their IDRs and simplified their ownership structure. The sector has made impressive changes in a short time period by improving financial strength, growing cash flow and creating better alignment of interests.	<b>Positive</b>
<b>Timberland</b>	Timber markets in North America continue to face challenges from excess inventory, low interest rates and unfavorable transaction market. Trade wars have impacted timber prices in regions that export trees while somewhat benefiting growers that sell into the U.S. market. Our outlook on timber has been negative for several years due to the headwinds the asset class has faced. Despite broadly negative sentiment towards the timber industry, we struggle to make a case for returns to reach higher than mid-single digits.	<ul style="list-style-type: none"> <li>— Trade wars have both helped and hurt domestic timber markets depending on whether you export or sell into the U.S. market. Investors should be more concerned with homebuilding trends which will have a greater impact on most timber holdings in the U.S.</li> <li>— Timber markets outside the U.S. face varying degrees of currency and political risk which in many cases has resulted in disappointing returns for investors. With few exceptions, returns do not justify the additional risk.</li> </ul>	For most investors, high single-digit expected returns for timberland in the U.S. is too low for the illiquidity and risk assumed within the asset class. However, the unique return drivers and potential for higher than expected prices in softwood lumber may be attractive for some investors with sufficient liquidity and a low cost of capital.	<b>Negative</b>
<b>Agriculture</b>	Farmland prices in the Midwest leveled off after 2014 but remain too expensive for the income and return potential. We are interested in opportunities where we can control more of the value-chain associated with food production.	<ul style="list-style-type: none"> <li>— Similar to timber markets, we have concerns around valuations and the risk/return proposition for farmland investments.</li> <li>— The income potential within farmland is more attractive than timber and the global growth in food is a more compelling macro trend than pulp and paper but we remain bearish on the sector, in general.</li> </ul>	Currently we find the asset class to be broadly expensive. Selectively looking at agriculture business investments where crop and land are a component of a broader value-add investment strategy.	<b>Negative</b>

## Performance

- ACERA’s Real Asset Pool has produced a -6.01% IRR since inception. The portfolio’s poor performance has been driven primarily by the large weighting in commodity futures (Gresham and AQR) and from earlier investments in energy (Sheridan). More recent investments in CIM Infrastructure, Quantum Energy, and ISQ Global Infrastructure have emerged from their j-curve but are still too early in their fund life to gauge performance.
- New commitment to Taurus Mining Finance II in February will be ACERA’s first mining investment. Taurus’ strategy also helps to mitigate the broader portfolio’s j-curve due to the unique cash flow structure within project finance loans.



## Real Assets Performance vs. Pooled Benchmark IRR

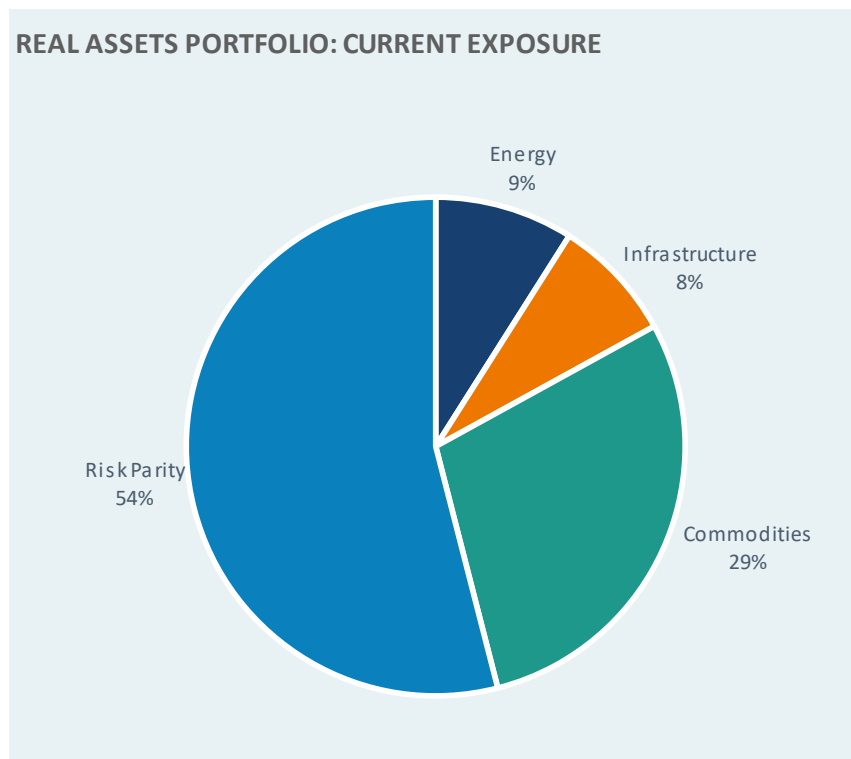
Period Ending: December 31, 2018

	1-Year	3-Year	5-Year	10-Year	Since Inception
<b>Natural Resources Funds</b>	<b>-25.27%</b>	<b>-4.81%</b>	<b>-14.09%</b>	<b>N/A</b>	<b>-16.11%</b>
<i>S&amp;P Global Natural Resources Index</i> <sup>1</sup>	-14.78%	4.32%	-1.36%	-1.00%	-1.00%
<b>Infrastructure Funds</b>	<b>9.84%</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>5.54%</b>
<i>S&amp;P Global Infrastructure Index</i> <sup>1</sup>	-9.13%	-1.20%	-1.20%	-1.20%	-1.20%
<b>Liquid Pool Funds</b>	<b>-9.52%</b>	<b>0.32%</b>	<b>-6.58%</b>	<b>N/A</b>	<b>-5.57%</b>
<i>Bloomberg Commodity Index</i> <sup>1</sup>	-11.25%	0.30%	-9.12%	-7.97%	-7.97%
<b>Total Real Assets</b>	<b>-10.27%</b>	<b>0.22%</b>	<b>-6.76%</b>	<b>N/A</b>	<b>-6.01%</b>

<sup>1</sup> Benchmarks: Identical cash flows invested in the appropriate benchmarks through the life of the portfolio up through 12/31/18. Analysis provided by Solovis.



Investment Type	Commitment	Current Exposure	Current Exposure as % of Portfolio
Energy	74,000,000	25,491,937	9.0%
Infrastructure	110,000,000	21,434,148	7.5%
Commodities	123,700,000	83,643,416	29.4%
Risk Parity	223,979,858	153,898,517	54.1%
<b>Total Portfolio</b>	<b>531,679,858</b>	<b>284,468,018</b>	<b>100.0%</b>



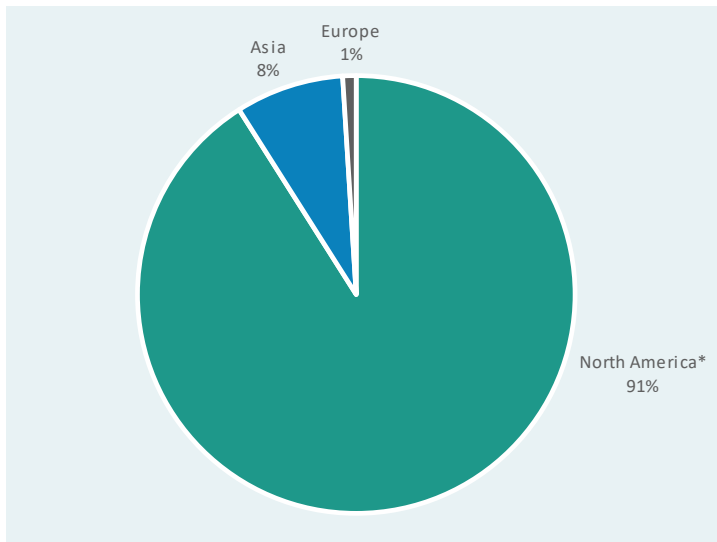
# Geography Portfolio Diversification

Period Ending: December 31, 2018

Geography	Reported Fair Value
North America*	42,906,481
Asia	3,577,159
Europe	442,445
<b>Total Portfolio**</b>	<b>46,926,085</b>

\* North America includes 100% market value from Sheridan II-B.

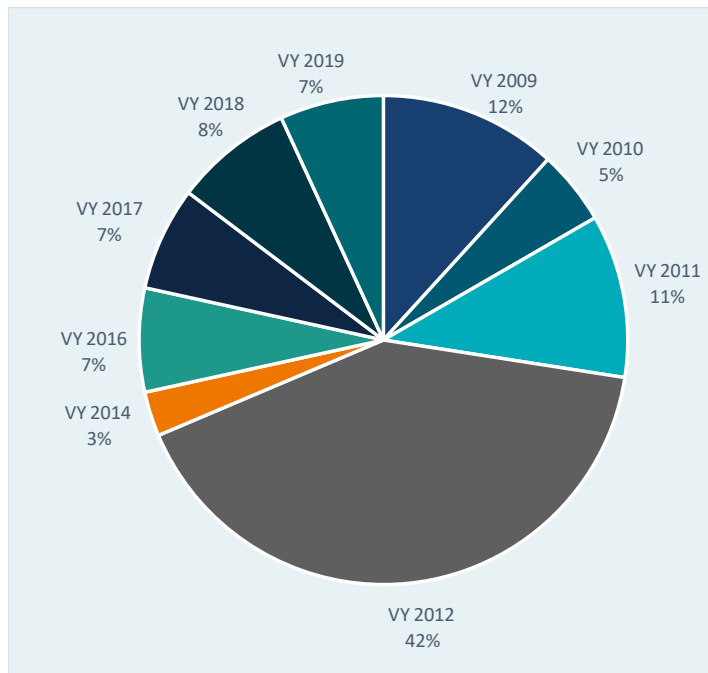
\*\* Excludes Liquid assets.



# Vintage Year Portfolio Diversification

Period Ending: December 31, 2018

Vintage Year	Commitment as of 12/31/18	% of Portfolio Commitment	Reported Value as of 12/31/18
2009	62,900,000	11.8%	47,407,146
2010	24,000,000	4.5%	1,575,000
2011	60,800,000	11.4%	36,236,270
2012	223,979,858	42.1%	153,898,517
2014	15,000,000	2.8%	10,685,402
2016	35,000,000	6.6%	10,845,768
2017	35,000,000	6.6%	13,231,535
2018	40,000,000	7.5%	10,588,380
2019	35,000,000	6.6%	0
<b>Total Portfolio</b>	<b>531,679,858</b>	<b>100%</b>	<b>284,468,018</b>



- ACERA committed to Taurus Mining Finance II in February which marked the portfolios first mining investment and the first dedicated debt fund.
- We are actively looking at an opportunity in Core Infrastructure which we may bring to the Board in August.
- Valuations across most asset classes has made it challenging to find attractive opportunities. There has been a slowing of capital deployed among private market funds, generally, reflecting a highly competitive market that is valued richly. For now, we are being patient which could result in a reduced level of commitments.



June 2019

**Semiannual Real Estate  
Performance Measurement Review**

Callan

**PUBLIC VERSION**

---

**Avery Robinson, CAIA**  
Senior Vice President

# Real Estate Market Overview

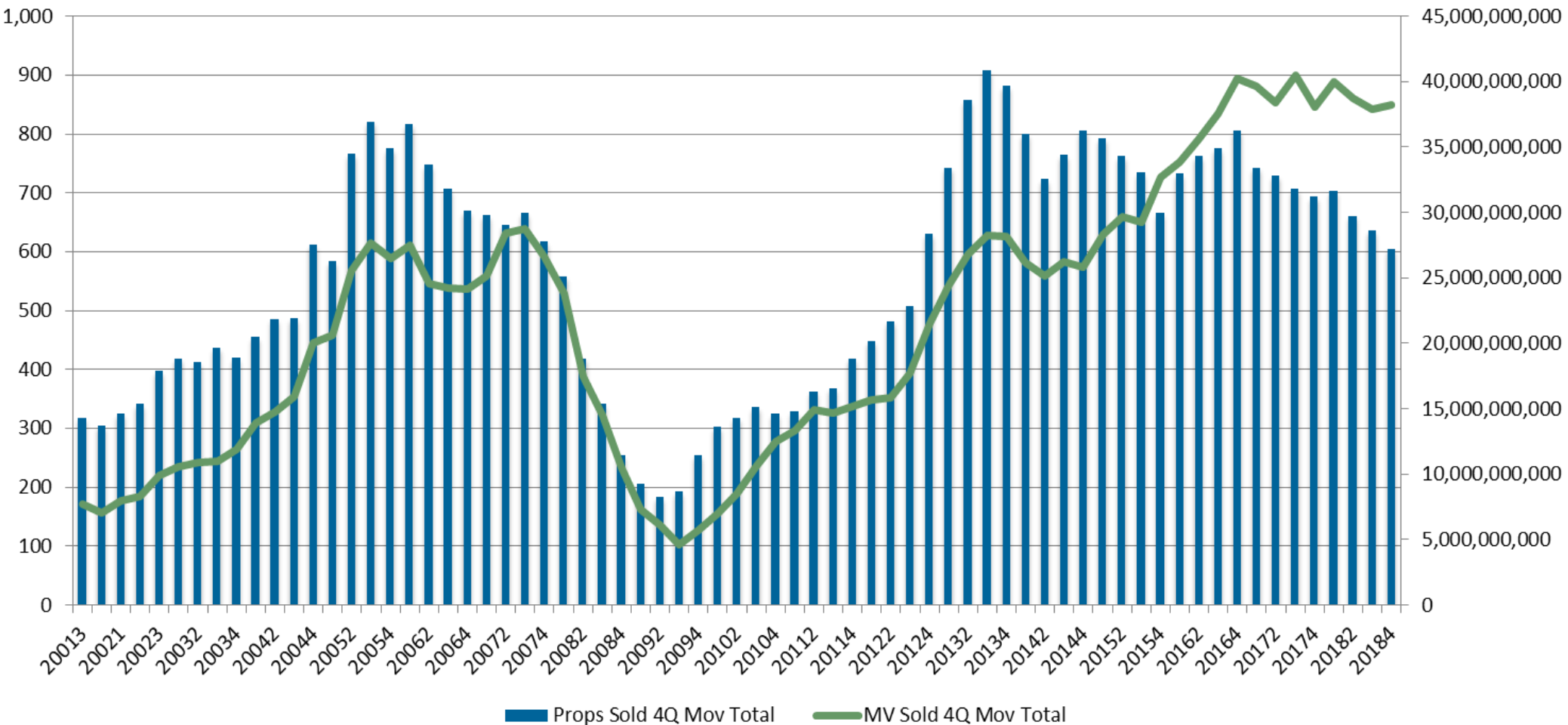
---

- U.S. real estate fundamentals are healthy. The real estate sector continued to see steady returns driven by above inflation-level rent growth in many metropolitan areas.
- Within the NPI, the vacancy rate for U.S. property was 5.8% in the fourth quarter of 2018, near its lowest level since 2001. Vacancies were below their 20-year average in every major sector, however the rate of absorption has flattened.
- Net operating income has been growing annually, and is expected to be the primary driver of returns going forward as the real estate cycle is in a mature phase and appreciation has been moderating.
- Valuations continue to creep higher, although there is a dispersion between property sectors. The office sector has had varying levels of performance based on location, suburban versus CBD (Central Business District), as well as market, primary or secondary/tertiary. Industrial performance has been strong and multi-family may benefit from increased demand in the presence of declining home affordability.
- Supply and demand fundamentals are balanced but peaking. Supply is in check and aided by strict commercial real estate lending standards. Demand continues on the back of synchronized domestic growth.
- The industrial sector is performing the strongest, benefitting as structural shifts in the economy, property markets, and consumer habits continue to dampen demand for traditional retail space. Office is performing as expected late in the cycle and tenant improvements and other capital expenditures are increasingly eroding cash flow. Multifamily remains strong due to positive demographic trends, except for the Class A luxury segment in prime markets such as New York. Retail is the laggard.

# Real Estate Capital Markets

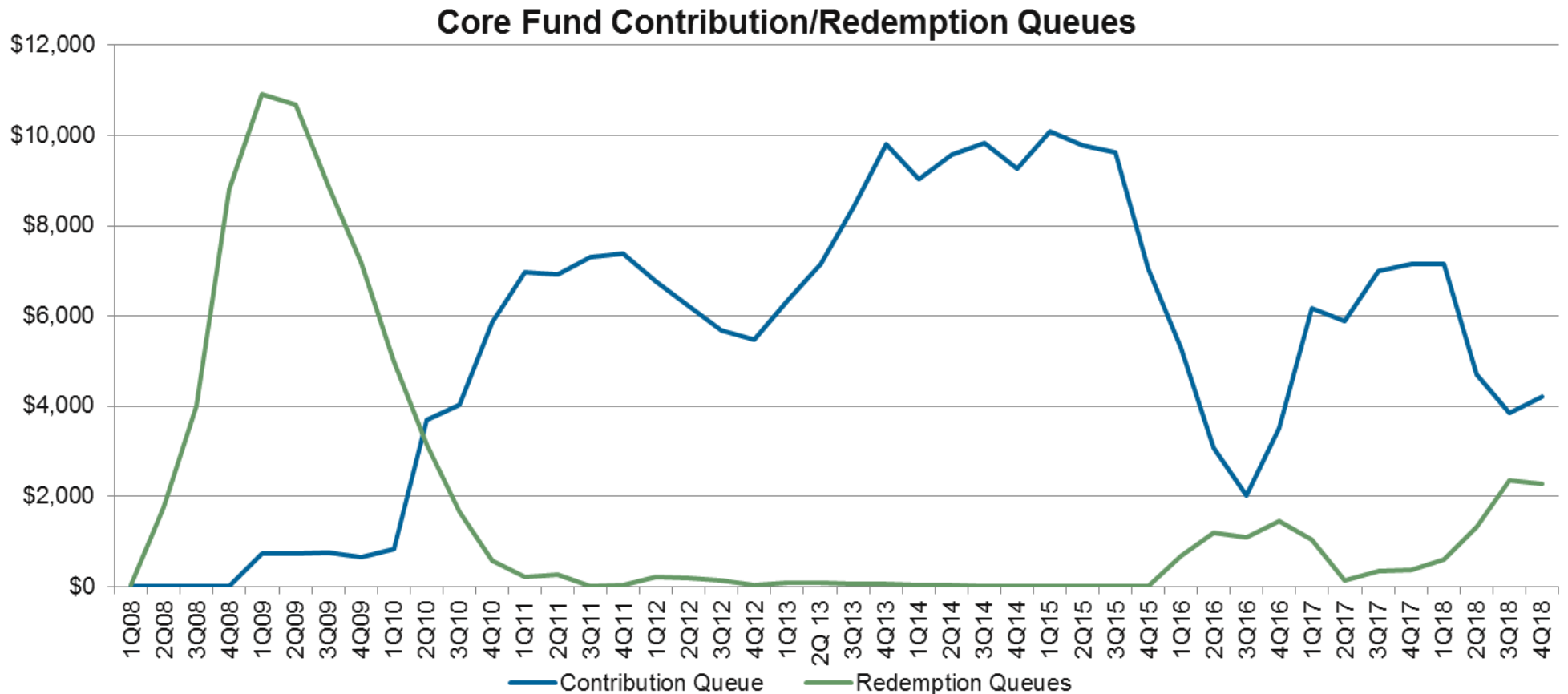
Transaction volume in 2018 was 12.7% below volume in 2017

## Property Sales(annualized)



Source: NCREIF

# Core Open-End Funds Continue to Attract Capital



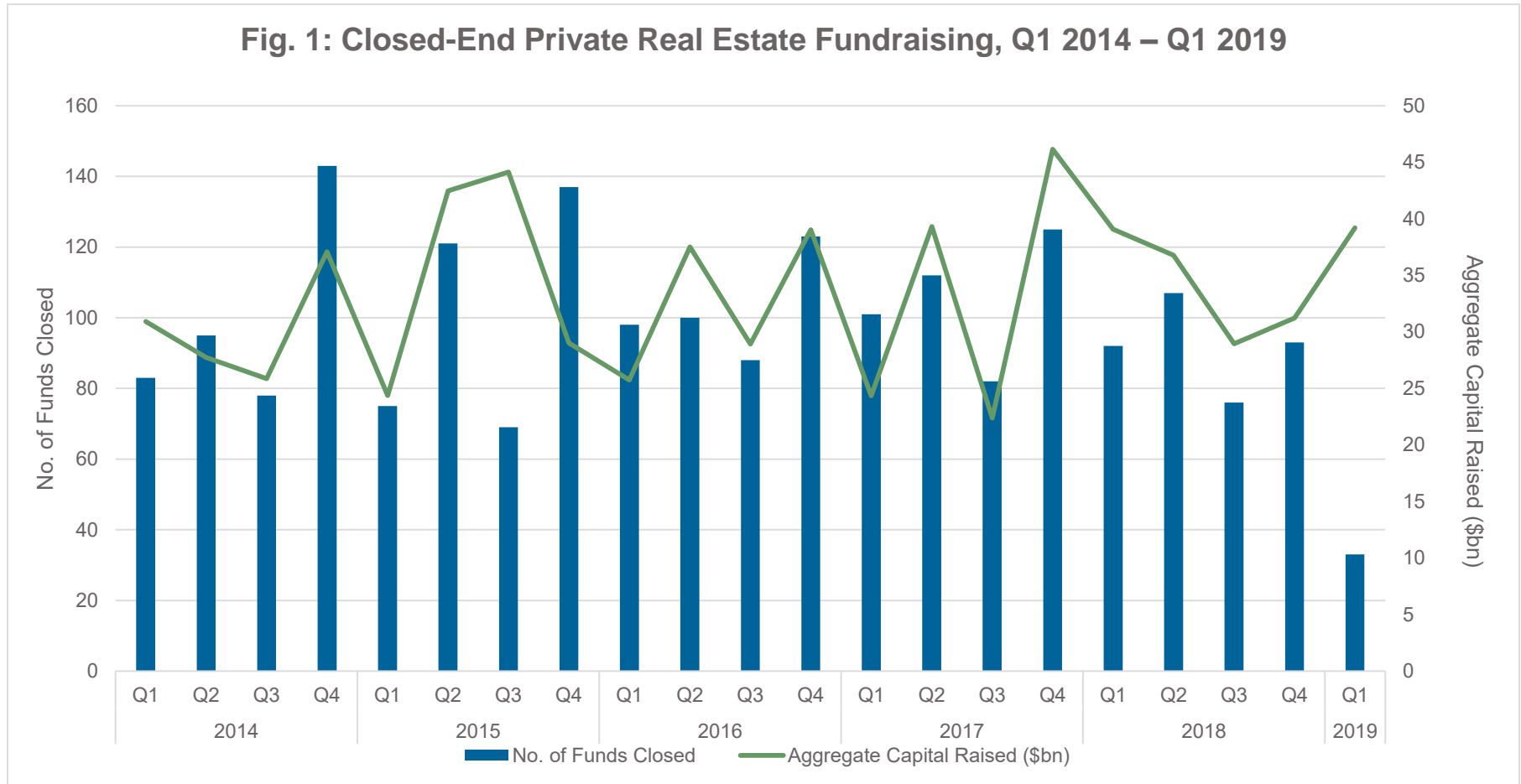
- Investor appetite for core real estate leveled out as redemption cues increased, indicating reduced demand for real estate
  - Institutional investors, who previously reached their target allocations, are now feeling the “denominator effect”
  - However, concern about core pricing remains a factor

Source: Callan research, as of Q4 2018



# Closed-End Real Estate Fundraising Moderated in Q1 2019

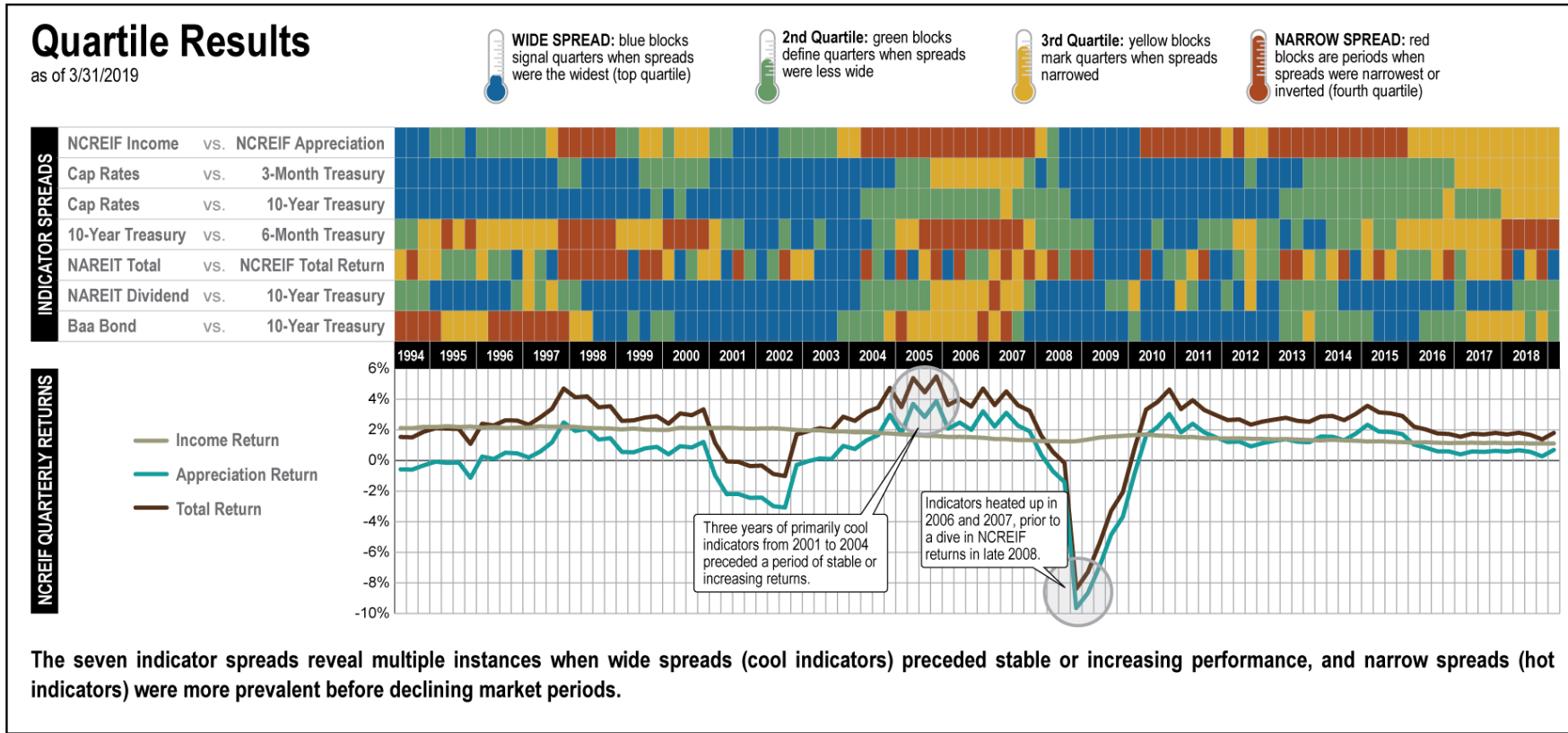
Closed-End Private Real Estate Fundraising, by Date of Final Close, Q1 2014 – Q1 2019



- Dry powder was estimated at \$275 billion at June 2018, the highest level recorded during the past 10 years

Source: Preqin, as of Q1 2019

# Real Estate Indicators



# International Real Estate

---

## The U.S. Remains a Dominant Market in Global Real Estate, Asia is Increasingly Important

### Asia

- The growth of the middle class in Asia is steady and the demand for institutional quality real estate is commensurate.
- The number of open-end core funds focused on the Asia Pacific market have increased over recent years and include both sector-diversified and sector-specific (e.g. logistics) funds, supporting the development of the institutional real estate market in the region. During Q1 2019, India had the first successful IPO for a REIT which substantiates the institutionalization of the asset class in India.

### Europe

- Political uncertainty continues to weigh on overall growth throughout Europe, but real estate fundamentals remain strong in key gateway markets given the continued lack of new supply. Cap rates for prime real estate remain low, as real estate continues to be an attractive asset class as a result of low interest rates throughout the region.
- Office rents continue to steadily rise year-over-year, while retail rental growth has lagged. Rental growth for industrial assets has been positive but well below the breakneck pace of the U.S.

# Alameda County Employees' Retirement Association Performance Measurement Report Summary

---

## Portfolio Measurement Presentation

This is the Performance Measurement Report presentation for the Alameda County Employees' Retirement Association ("ACERA") Real Estate Portfolio ("Portfolio") Quarter ending December 31, 2018 ("Quarter").

## Funding Status as of December 31, 2018

	(\$) Millions	(%)
ACERA Plan Assets	7,609.312	100.00%
Real Estate Target <sup>(1)</sup>	608.745	8.00%
Plan's Real Estate Market Value	568.125	7.47%
Net Unfunded Commitments	60.723	0.79%
RE Market Value & Unfunded Commitments	628.848	8.26%
Remaining Allocation	40.619	0.53%

## Portfolio Composition

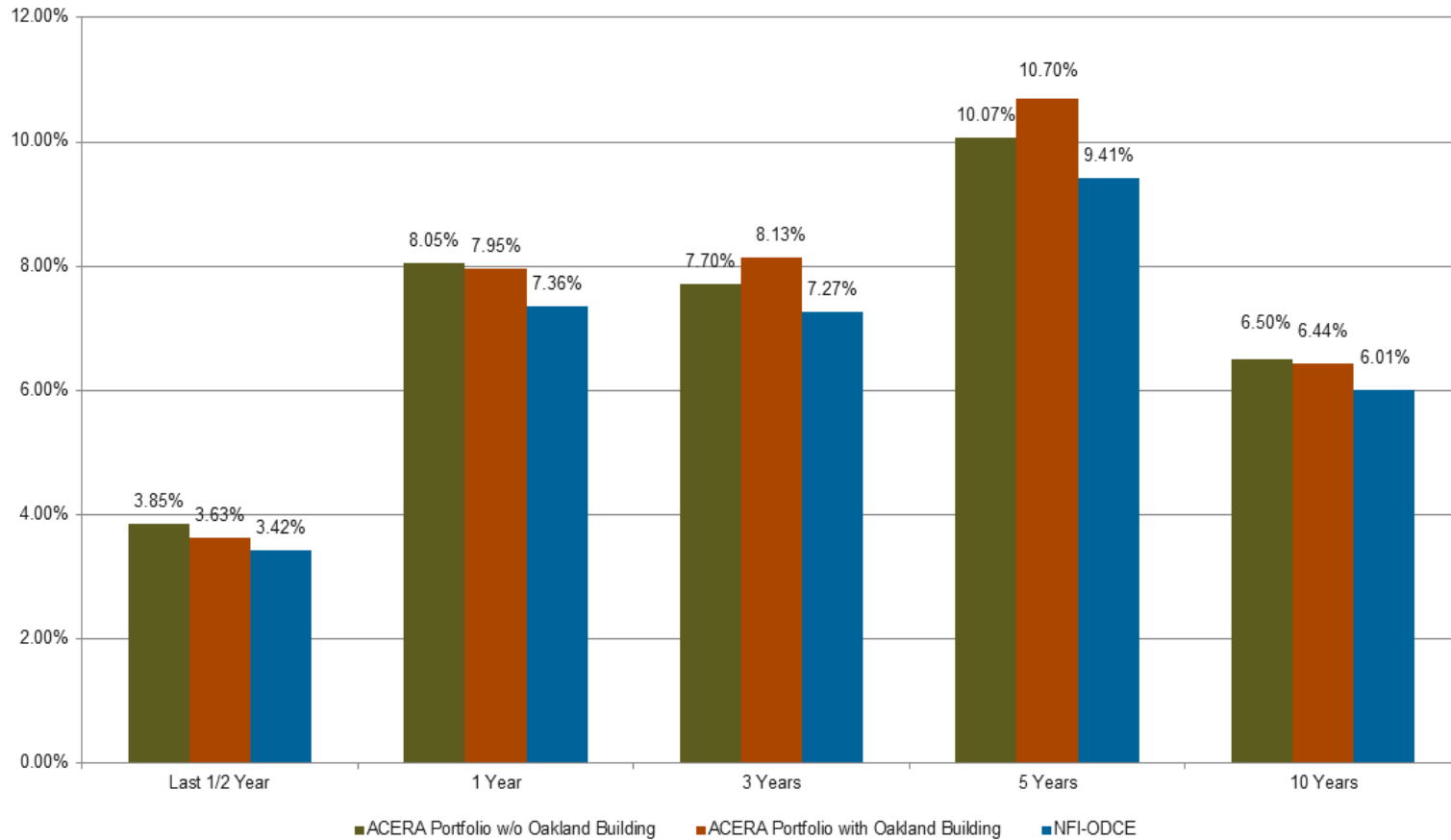
	Target	Funded	Funded & Committed
Core	70.00%	81.39%	69.66%
Non-Core	30.00%	18.61%	30.34%

1. The Real Estate Target increase from 6% to 8% was adopted in August 2015.
2. In July 2018 the Board adopted the recommendation to invest \$35 million in Angelo Gordon Realty Value Fund X.

# Portfolio Net Returns

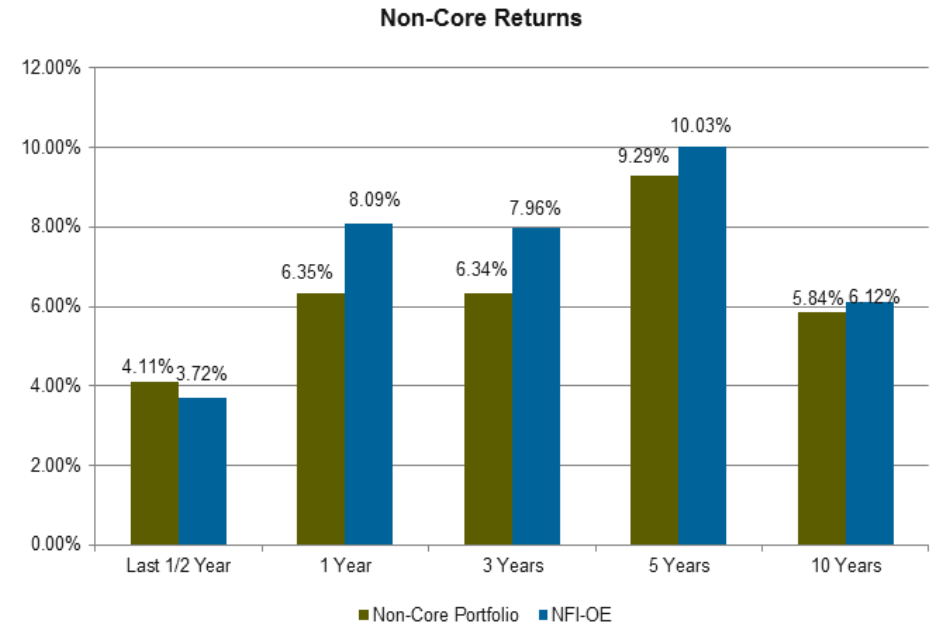
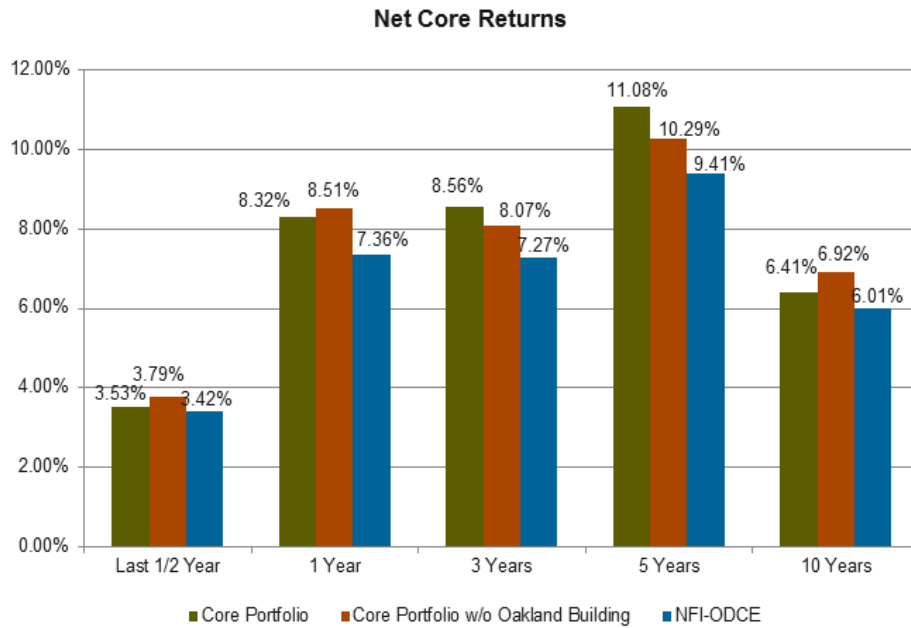
For Period Ended December 31, 2018

### Total Net Real Estate Portfolio Returns



# Portfolio Returns by Style

For Period Ended December 31, 2018



Net Portfolio w/o Oakland Building	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio w/o Oakland Building	3.79%	8.51%	8.07%	10.29%	6.92%
Non-Core Portfolio	4.11%	6.35%	6.34%	9.29%	5.84%
<b>Total Portfolio w/o Oakland Building</b>	<b>3.85%</b>	<b>8.05%</b>	<b>7.70%</b>	<b>10.07%</b>	<b>6.50%</b>

Net Total Portfolio	Last ½ Year	1 Year	3 Years	5 Years	10 Years
Core Portfolio	3.53%	8.32%	8.56%	11.08%	6.41%
Non-Core Portfolio	4.11%	6.35%	6.34%	9.29%	5.84%
<b>Total Portfolio</b>	<b>3.63%</b>	<b>7.95%</b>	<b>8.13%</b>	<b>10.70%</b>	<b>6.44%</b>

# Performance Drivers and Detractors by Style

---

## Core Portfolio (Excluding Oakland Building)

- The ACERA Core Portfolio has outperformed the benchmark during every period over the last ten years and it continued that trend this during the second half of 2018 beating the benchmark by 19 bps.
- The Lion Industrial Trust was the strongest performer during the second half of last year.
- The PGIM Prisa Fund was also a strong performer.
- The UBS Trumbull Property Fund was a weak performer for the Core Portfolio.

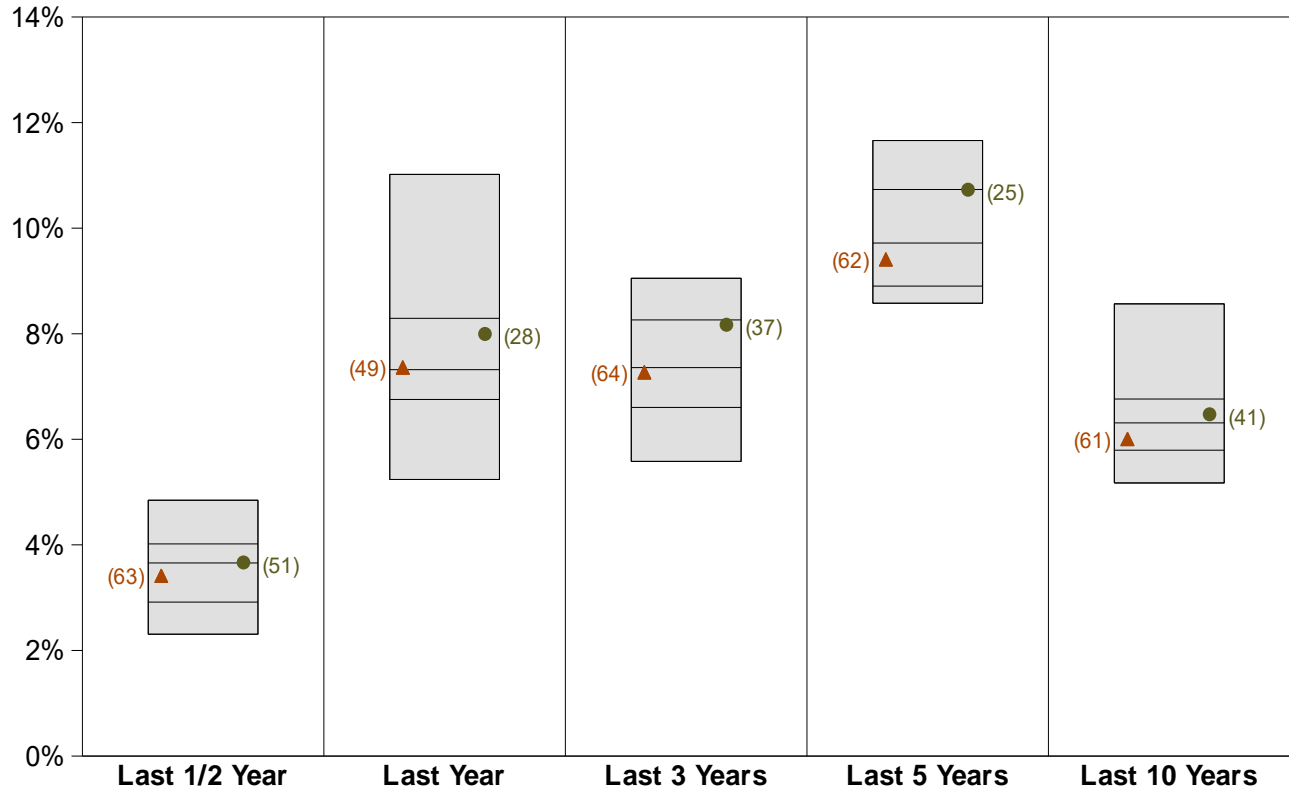
## Non-Core Portfolio

- The portfolio's outperformance was driven mainly by the CIM VI – 2 (Urban REIT) Fund.

# Performance vs. Peer Group

For Period Ended December 31, 2018

Performance vs Callan Open End Core Cmmingled Real Est

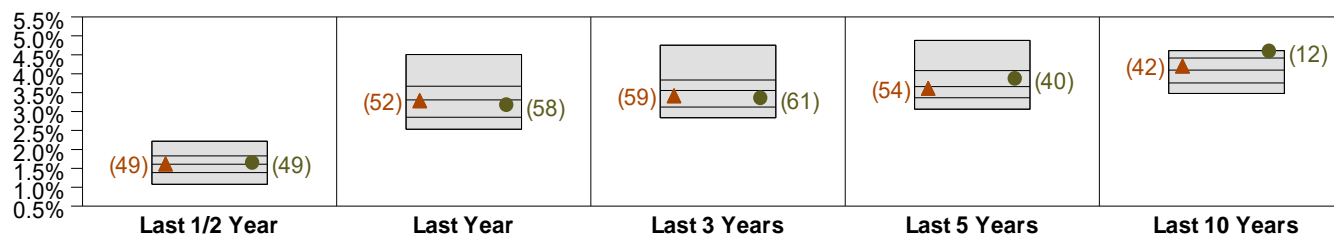


	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	4.85	11.02	9.05	11.66	8.57
25th Percentile	4.02	8.29	8.26	10.73	6.76
Median	3.66	7.32	7.36	9.72	6.31
75th Percentile	2.92	6.75	6.60	8.90	5.79
90th Percentile	2.31	5.24	5.58	8.58	5.17
<b>ACERA Total RE Portfolio</b> ●	3.63	7.97	8.14	10.70	6.44
NCREIF NFI-ODCE Val Wt Nt ▲	3.42	7.36	7.27	9.41	6.01



# Performance vs. Peer Group

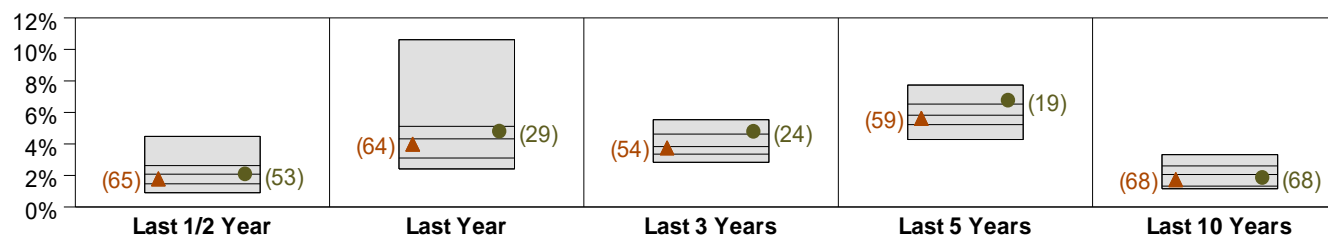
## Income Rankings vs Callan OE Core Cmngld RE Periods ended December 31, 2018



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	2.21	4.51	4.76	4.88	4.61
25th Percentile	1.83	3.67	3.84	4.08	4.42
Median	1.61	3.31	3.56	3.66	4.10
75th Percentile	1.38	2.85	3.12	3.36	3.75
90th Percentile	1.08	2.53	2.84	3.06	3.48

<b>ACERA Total RE Portfolio</b> ●	1.61	3.14	3.32	3.83	4.56
NCREIF NFI-ODCE Val Wt Nt ▲	1.62	3.29	3.42	3.62	4.20

## Appreciation Rankings vs Callan OE Core Cmngld RE Periods ended December 31, 2018



	Last 1/2 Year	Last Year	Last 3 Years	Last 5 Years	Last 10 Years
10th Percentile	4.48	10.62	5.55	7.74	3.32
25th Percentile	2.63	5.12	4.63	6.53	2.61
Median	2.09	4.33	3.84	5.83	2.07
75th Percentile	1.48	3.11	3.36	5.23	1.33
90th Percentile	0.90	2.42	2.83	4.28	1.16

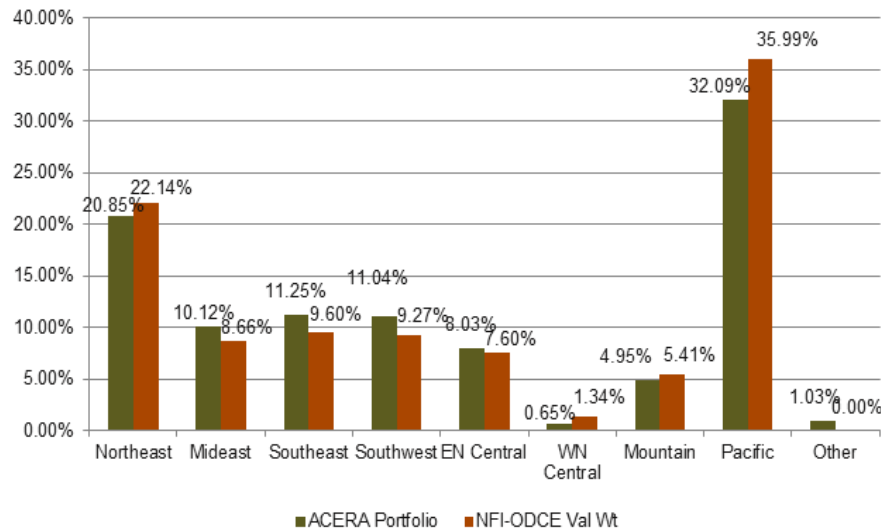
<b>ACERA Total RE Portfolio</b> ●	2.00	4.71	4.70	6.68	1.77
NCREIF NFI-ODCE Val Wt Nt ▲	1.79	3.99	3.75	5.63	1.74

# Diversification & Debt

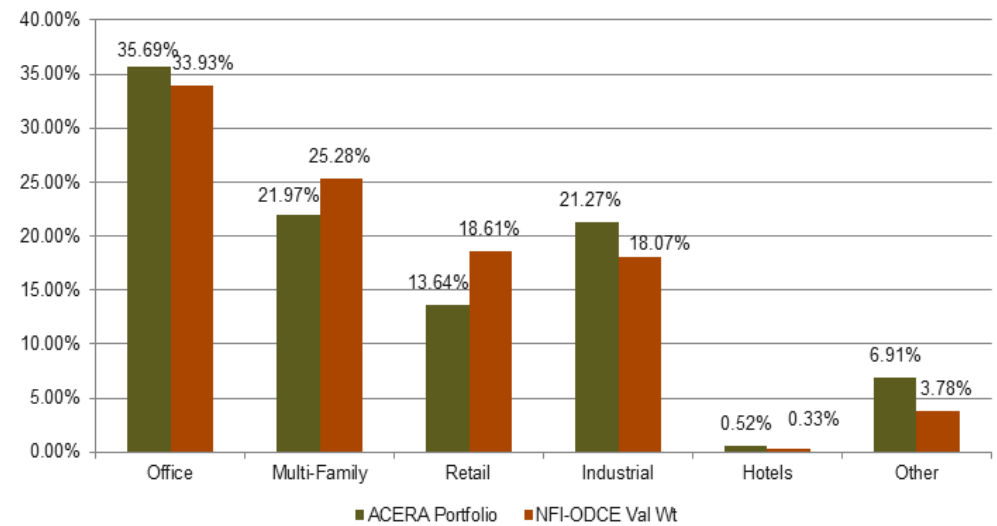
## Diversification – Total Portfolio (excluding Oakland Building)

- The ACERA Portfolio is well diversified by both property type and region.

Geographic Diversification



Property Type Diversification



## Debt Compliance

- The ACERA Strategic Plan limits leverage to 40.0% at the Portfolio level. As of December 31, 2018, the loan-to-value (“LTV”) ratio of the Portfolio was 25.22%.

# ACERA Real Estate Portfolio Snapshot – 4Q2018

Total Plan Assets	Allocation		Market Value		Unfunded Commitments		Remaining Allocation	
7,609,312,745	608,745,020	8.00%	568,125,986	7.47%	60,723,741	0.80%	40,619,034	0.53%

Performance Summary	1/2 Year		1 Year		3 Years		5 Years		10 Years	
	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET	TGRS	TNET
ACERA	4.14%	3.63%	9.18%	7.95%	9.25%	8.13%	11.80%	10.70%	7.49%	6.44%
NFI-ODCE	3.88%	3.42%	8.35%	7.36%	8.24%	7.27%	10.41%	9.41%	7.00%	6.01%

Funding Status (\$)	Investment Vintage Year	Commitment Amount	Funded Amount	Unfunded Amount	Capital Returned	Market Value	Market Value (%)	Market Value + Unfunded		Net IRR	Equity Multiple
								Commitments (%)	Net IRR		
Core Portfolio											
ACERA Oakland Building Portfolio	2001	31700,000	31700,000	\$0	41445,934	69,084,790	12.6%	12.6%	9.40%	2.2x	
<b>Total Core Portfolio</b>	<b>1986</b>	<b>331,700,000</b>	<b>331,700,000</b>	<b>\$0</b>	<b>120,910,175</b>	<b>462,422,028</b>	<b>81.39%</b>	<b>82.60%</b>			
Non-Core Portfolio											
<b>Total Non-Core Portfolio</b>	<b>1987</b>	<b>207,748,644</b>	<b>162,179,418</b>	<b>45,569,226</b>	<b>73,798,226</b>	<b>96,745,454</b>	<b>18.61%</b>	<b>37.09%</b>			
<b>Total Current Portfolio</b>	<b>1986</b>	<b>564,448,644</b>	<b>503,724,903</b>	<b>60,723,741</b>	<b>201,564,887</b>	<b>568,125,986</b>	<b>100.00%</b>				

Quarterly Cash Flow Activity (\$)	Beginning		Net Operating				Ending Market		LTV
	Market Value	Contributions	Income	Manager Fees	Appreciation	Distributions	Value	Value	
Core Portfolio									
ACERA Oakland Building Portfolio	68,829,981	\$0	846,248	91,439	0	500,000	69,084,790	-	
<b>Core Portfolio</b>	<b>453,845,033</b>	<b>5,000,000</b>	<b>5,087,142</b>	<b>959,567</b>	<b>3,158,950</b>	<b>3,709,532</b>	<b>462,422,026</b>		
Non-Core Portfolio									
<b>Non-Core Portfolio</b>	<b>93,843,110</b>	<b>813,207</b>	<b>612,847</b>	<b>334,511</b>	<b>2,237,858</b>	<b>427,056</b>	<b>96,745,455</b>		
<b>Total Current Portfolio</b>	<b>555,880,842</b>	<b>6,630,742</b>	<b>5,797,173</b>	<b>1,367,874</b>	<b>5,520,636</b>	<b>4,335,534</b>	<b>568,125,985</b>	<b>25.22%</b>	

Quarterly Cash Flow Activity (\$)	Beginning		Net Operating				Ending Market		LTV
	Market Value	Contributions	Income	Manager Fees	Appreciation	Distributions	Value	Value	
Core Portfolio									
ACERA Oakland Building Portfolio	68,829,981	\$0	846,248	91,439	0	500,000	69,084,790	-	
<b>Core Portfolio</b>	<b>453,845,033</b>	<b>5,000,000</b>	<b>5,087,142</b>	<b>959,567</b>	<b>3,158,950</b>	<b>3,709,532</b>	<b>462,422,026</b>		
Non-Core Portfolio									
<b>Non-Core Portfolio</b>	<b>93,843,110</b>	<b>813,207</b>	<b>612,847</b>	<b>334,511</b>	<b>2,237,858</b>	<b>427,056</b>	<b>96,745,455</b>		
<b>Total Current Portfolio</b>	<b>555,880,842</b>	<b>6,630,742</b>	<b>5,797,173</b>	<b>1,367,874</b>	<b>5,520,636</b>	<b>4,335,534</b>	<b>568,125,985</b>	<b>25.22%</b>	

# ACERA Real Estate Portfolio Snapshot – 4Q2018

Quarterly Cash Flow Activity (\$)	Beginning Market Value	Contributions	Net Operating Income	Manager Fees	Appreciation	Distributions	Ending Market Value	LTV
<b>Core Portfolio</b>								
ACERA Oakland Building Portfolio	68,829,981	\$0	846,248	91,439	0	500,000	69,084,790	-
<b>Core Portfolio</b>	<b>453,845,033</b>	<b>5,000,000</b>	<b>5,087,142</b>	<b>959,567</b>	<b>3,158,950</b>	<b>3,709,532</b>	<b>462,422,026</b>	
<b>Non-Core Portfolio</b>								
<b>Non-Core Portfolio</b>	<b>93,843,110</b>	<b>813,207</b>	<b>612,847</b>	<b>334,511</b>	<b>2,237,858</b>	<b>427,056</b>	<b>96,745,455</b>	
<b>Total Current Portfolio</b>	<b>555,880,842</b>	<b>6,630,742</b>	<b>5,797,173</b>	<b>1,367,874</b>	<b>5,520,636</b>	<b>4,335,534</b>	<b>568,125,985</b>	<b>25.22%</b>

# ACERA Property Diversification – 4Q2018

Property Type Diversification	Office	Multi-Family	Retail	Industrial	Hotel	Other
<b>Core Portfolio</b>						
ACERA Oakland Building Portfolio	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
<b>Core Portfolio</b>	<b>37.76%</b>	<b>17.05%</b>	<b>14.52%</b>	<b>24.81%</b>	<b>0.31%</b>	<b>5.55%</b>
<b>Non-Core Portfolio</b>						
<b>Non-Core Portfolio</b>	<b>26.60%</b>	<b>43.53%</b>	<b>9.80%</b>	<b>5.73%</b>	<b>1.43%</b>	<b>12.91%</b>
<b>Total Current Portfolio</b>						
ACERA Portfolio w/o Oakland Bldg.	26.78%	25.01%	15.53%	24.21%	0.59%	7.87%
ACERA Portfolio with Oakland Bldg.	35.69%	21.97%	13.64%	21.26%	0.52%	6.92%
<b>ODCE Index</b>	<b>33.93%</b>	<b>25.28%</b>	<b>18.61%</b>	<b>18.07%</b>	<b>0.33%</b>	<b>3.78%</b>

Geographic Diversification	Northeast	Midwest	Southeast	Southwest	EN Central	WN Central	Mountain	Pacific	Other
<b>Core Portfolio</b>									
ACERA Oakland Building Portfolio	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
<b>Core Portfolio</b>	<b>17.38%</b>	<b>7.78%</b>	<b>9.89%</b>	<b>8.91%</b>	<b>7.48%</b>	<b>0.70%</b>	<b>4.80%</b>	<b>43.07%</b>	<b>0.00%</b>
<b>Non-Core Portfolio</b>									
<b>Non-Core Portfolio</b>	<b>22.40%</b>	<b>14.44%</b>	<b>9.88%</b>	<b>13.05%</b>	<b>5.17%</b>	<b>0.00%</b>	<b>2.35%</b>	<b>27.83%</b>	<b>4.89%</b>
<b>Total Current Portfolio</b>									
ACERA Portfolio w/o Oakland Bldg.	20.85%	10.27%	11.25%	11.02%	8.03%	0.65%	4.95%	31.96%	1.03%
ACERA Portfolio with Oakland Bldg.	18.31%	9.02%	9.88%	9.68%	7.05%	0.57%	4.34%	40.24%	0.91%
<b>ODCE Index</b>	<b>22.14%</b>	<b>8.66%</b>	<b>9.60%</b>	<b>9.27%</b>	<b>7.60%</b>	<b>1.34%</b>	<b>5.41%</b>	<b>35.99%</b>	<b>0.00%</b>

# Detailed Returns

	1/2 Year			1 Year			3 Year			5 Year			NET IRR	Mult.
	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET	INC	APP	TNET		
<b>Core Portfolio</b>														
Oakland Building Portfolio	2.07%	0.00%	2.07%	4.36%	2.72%	7.17%	3.69%	7.58%	11.48%	4.69%	11.00%		9.40%	2.21x
<b>Core Portfolio</b>	<b>1.80%</b>	<b>1.71%</b>	<b>3.53%</b>	<b>3.59%</b>	<b>4.61%</b>	<b>8.32%</b>	<b>3.60%</b>	<b>4.83%</b>	<b>8.56%</b>	<b>3.96%</b>	<b>6.92%</b>	<b>11.08%</b>		
<b>Core Portfolio w/o Oakland Building</b>	<b>1.76%</b>	<b>2.02%</b>	<b>3.79%</b>	<b>3.44%</b>	<b>4.94%</b>	<b>8.51%</b>	<b>3.59%</b>	<b>4.36%</b>	<b>8.07%</b>	<b>3.85%</b>	<b>6.26%</b>	<b>10.29%</b>		
<b>NFI-ODCE Value Weight Net</b>	<b>1.62%</b>	<b>1.79%</b>	<b>3.42%</b>	<b>3.34%</b>	<b>4.28%</b>	<b>7.71%</b>	<b>3.46%</b>	<b>4.26%</b>	<b>7.83%</b>	<b>3.67%</b>	<b>5.88%</b>	<b>9.71%</b>		
<b>Non-Core Portfolio</b>														
<b>Non-Core Portfolio</b>	<b>0.77%</b>	<b>3.33%</b>	<b>4.11%</b>	<b>1.01%</b>	<b>5.29%</b>	<b>6.33%</b>	<b>2.03%</b>	<b>4.24%</b>	<b>6.34%</b>	<b>3.17%</b>	<b>5.98%</b>	<b>9.29%</b>		
<b>NFI-OE Value Weight Net</b>	<b>1.61%</b>	<b>2.10%</b>	<b>3.72%</b>	<b>3.35%</b>	<b>4.98%</b>	<b>8.45%</b>	<b>3.49%</b>	<b>4.89%</b>	<b>8.51%</b>	<b>3.67%</b>	<b>6.47%</b>	<b>10.33%</b>		
<b>Total Current Portfolio</b>														
ACERA Portfolio w/o Oakland Bldg.	1.55%	2.29%	3.85%	2.93%	5.02%	8.05%	3.26%	4.33%	7.70%	3.73%	6.17%	10.07%		
ACERA Portfolio with Oakland Bldg.	1.61%	2.00%	3.63%	3.11%	4.73%	7.95%	3.31%	4.70%	8.13%	3.83%	6.68%	10.70%		
<b>NFI-ODCE Value Weight Net</b>	<b>1.62%</b>	<b>1.79%</b>	<b>3.42%</b>	<b>3.34%</b>	<b>4.28%</b>	<b>7.71%</b>	<b>3.46%</b>	<b>4.26%</b>	<b>7.83%</b>	<b>3.67%</b>	<b>5.88%</b>	<b>9.71%</b>		

# Definitions

---

## Performance

Capitalization rate: Commonly known as cap rate, is a rate that helps in evaluating a real estate investment.  $\text{Cap rate} = \text{Net operating income} / \text{Current market value (Sale price) of the asset}$ .

Net operating income: Commonly known as NOI, is the annual income generated by an income-producing property, taking into account all income collected from operations, and deducting all expenses incurred from operations.

Real Estate Appraisal: The act of estimating the value of a property. A real estate appraisal may take into account the quality of the property, values of surrounding properties, and market conditions in the area.

Income Return (“INC”): Net operating income net of debt service before deduction of capital items (e.g., roof replacement, renovations, etc.)

Appreciation Return (“APP”): Increase or decrease in an investment's value based on internal or third party appraisal, recognition of capital expenditures which did not add value, uncollectible accrued income, or realized gain or loss from sales.

Total Gross Return (“TGRS”): The sum of the income return and appreciation return before adjusting for fees paid to and/or accrued by the manager.

Total Net Return (“TNET”): Total gross return less Advisor fees reported. All fees are requested (asset management, accrued incentives, paid incentives). No fee data is verified. May not include any fees paid directly by the investor as opposed to those paid from cash flows.

Inception Returns: The total net return for an investment or portfolio over the period of time the client has had funds invested. Total portfolio Inception Returns may include returns from investments no longer held in the current portfolio.

Net IRR: IRR after advisory fees, incentive, and promote. This includes actual cash flows and a reversion representing the LP Net Assets at market value as of the period end reporting date.

Equity Multiple: The ratio of Total Value to Paid-in-Capital (TVPIC). It represents the Total Return of the investment to the original investment not taking into consideration the time invested. Total Value is computed by adding the Residual Value and Distributions. It is calculated net of all investment advisory and incentive fees and promote.

# Definitions

---

## **Style Groups**

The Style Groups consist of returns from commingled funds with similar risk/return investment strategies. Investor portfolios/investments are compared to comparable style groupings.

Core: Direct investments in operating, fully leased, office, retail, industrial, or multifamily properties using little or no leverage (normally less than 30%).

Value-Added: Core returning investments that take on moderate additional risk from one or more of the following sources: leasing, re-development, exposure to non-traditional property types, the use of leverage.

Opportunistic: Investments that take on additional risk in order to achieve a higher return. Typical sources of risks are: development, land investing, operating company investing, international exposure, high leverage, distressed properties.



# Definitions

---

## Indices

Stylized Index: Weights the various style group participants so as to be comparable to the investor's portfolio holdings for each period.

Open-End Diversified Core Equity Index ("ODCE"): A core index that includes only open-end diversified core strategy funds with at least 95% of their investments in U.S. markets. The ODCE is the first of the NCREIF Fund Database products, created in May 2005, and is an index of investment returns reporting on both a historical and current basis (24 active vehicles). The ODCE Index is capitalization-weighted and is reported gross and net of fees. Measurement is time-weighted and includes leverage.

NCREIF Fund Index Open-End Index ("OE"): NFI-OE is an aggregate of open-end, commingled equity real estate funds with diverse investment strategies. Funds comprising NFI-OE have varied concentrations of sector and region, core and non-core, leverage, and life cycle.

NAREIT Equity Index: This is an index of Equity Real Estate Investment Trust returns reflecting the stock value changes of REIT issues as determined through public market transactions.

# Definitions

---

## **Cash Flow Statements**

Beginning Market Value: Value of real estate, cash, and other holdings from prior period end.

Contributions: Cash funded to the investment for acquisition and capital items (i.e., initial investment cost or significant capital improvements).

Distributions: Actual cash returned from the investment, representing distributions of income from operations.

Withdrawals: Cash returned from the investment, representing returns of capital or net sales proceeds.

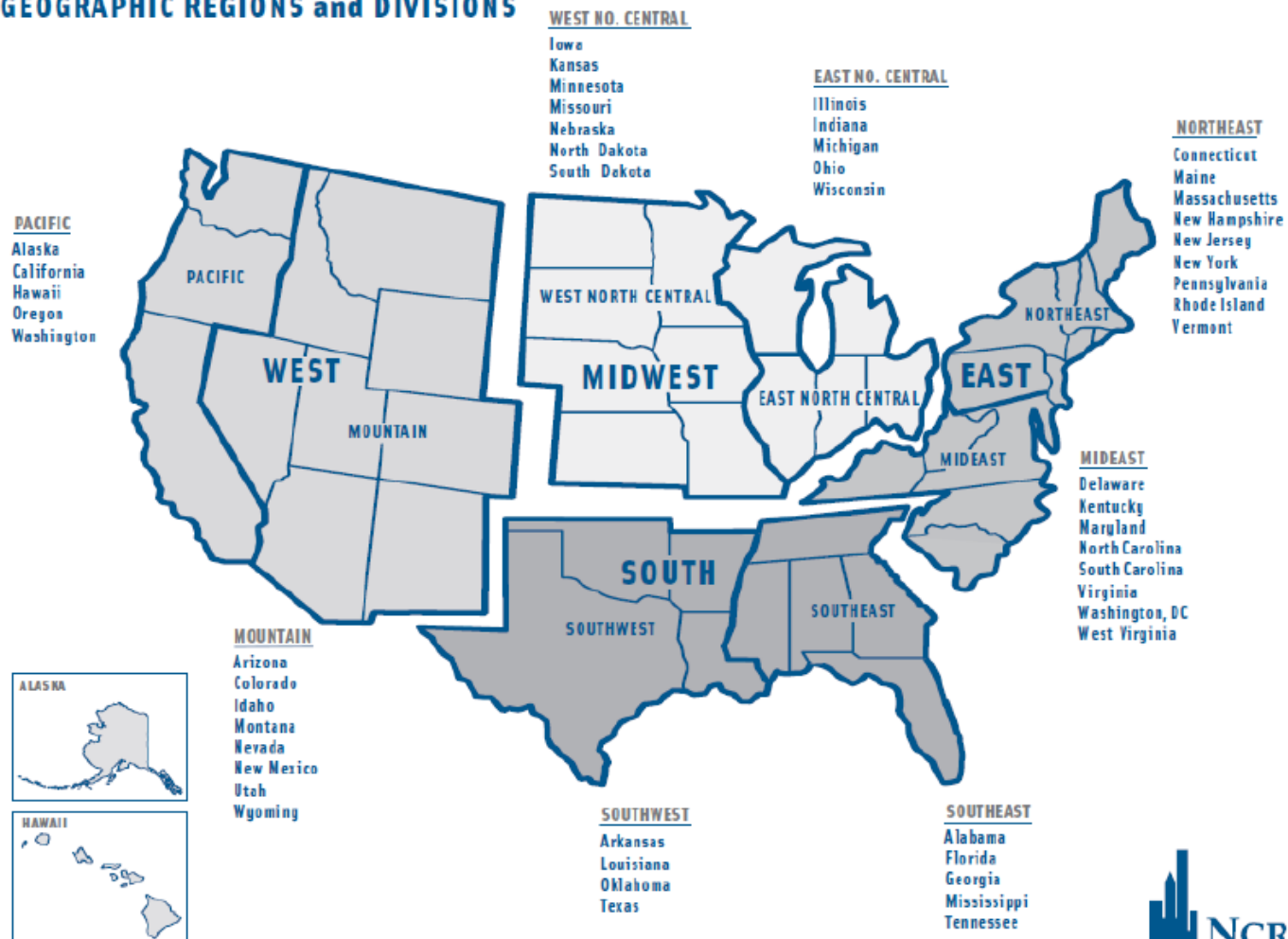
Ending Market Value: The value of an investment as determined by actual sales dollars invested and withdrawn plus the effects of appreciation and reinvestment; market value is equal to the ending cumulative balance of the cash flow statement (NAV).

Unfunded Commitments: Capital allocated to managers which has not yet been called for investment. Amounts are as reported by managers.

Remaining Allocation: The difference between the ending market value + the unfunded commitments and the target allocation. This figure represents dollars available for allocation.

# NCREIF Region Map

## GEOGRAPHIC REGIONS and DIVISIONS





**INVESTMENT MANAGER,  
CONSULTANT, AND CUSTODIAN FEES**  
For Quarter Ending March 31, 2019

**INVESTMENT NET ASSET VALUE AND INVESTMENT MANAGER FEES  
FOR THE QUARTER ENDED MAR 31, 2019**

For the Quarter Ended March 31, 2019	NAV <sup>2</sup> (\$) As of 3/31/19	Q1 - Total Fees (\$)	bps of NAV
Name of Fund			
<b>Domestic Equity<sup>1</sup></b>			
BlackRock R1000 Index Fund	1,939,070,552	40,358	0.21
Kennedy Capital	111,814,917	216,630	19.37
NCG Small Cap	124,705,518	274,682	22.03
Pzena	165,287,966	198,098	11.99
Trust Co. of the West	173,887,228	175,117	10.07
Total Domestic Equity	2,514,766,181	904,886	3.60
<b>International Equity<sup>1</sup></b>			
AQR International Equity	410,575,792	503,946	12.27
Bivium International Equity	71,048,187	144,248	20.30
Capital Group	888,788,327	1,237,979	13.93
Franklin Templeton Inv.	202,371,196	307,674	15.20
Mondrian	655,384,429	552,109	8.42
Total International Equity	2,228,167,931	2,745,955	12.32
<b>Fixed Income<sup>1</sup></b>			
Baird Advisors	661,837,829	132,102	2.00
Loomis Sayles	345,442,633	268,531	7.77
Brandywine Global FI	333,487,201	229,383	6.88
Total Fixed Income	1,340,767,663	630,016	4.70
<b>Real Estate<sup>5,6</sup></b>			
Total Real Estate	575,212,636	1,400,965	24.36
<b>Private Equity<sup>4,5,6</sup></b>			
Total Private Equity	540,589,978	6,286,583	116.29
<b>Absolute Return<sup>5,6</sup></b>			
Total Absolute Return	703,082,609	1,976,324	28.11
<b>Real Assets<sup>4,5,6</sup></b>			
Total Real Assets	284,468,018	1,081,600	38.02
<b>Cash</b>			
	10,082,991		
<b>TOTAL<sup>7</sup></b>	<b>8,197,138,008</b>	<b>15,026,330</b>	<b>18.33</b>

Notes:

\*BlackRock fees are paid on one quarter lag (e.g. 4th quarter fees are paid in the following 1st quarter)

1. Domestic, International Equity, and Fixed Income managers' fees are based on staff validated manager invoices.
2. NAVs may use estimates at the time of this report's production.
3. Some accounts contain submanaged funds; the fees shown include all assets in the account.
4. Sometimes fees may be estimates. According to the Limited Partnership Agreements, management fees are based on committed amounts and/or assets under management.
5. Detailed records regarding these investments of public pension funds are exempt from disclosure under California Government Code Section 6254.26
6. Fees may include management, incentive fees, and expenses as applicable.
7. Previous quarter's amounts may change as estimates are tried up to actual amounts. Each true up is made using the most recent information.

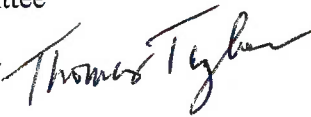
**CONSULTANT/CUSTODIAN FEES  
FOR THE QUARTER ENDED MAR 31, 2019**

	<b>Q1 - Fees (\$)</b>
<b>Consultant</b>	
Doug McCalla	12,367
Callan Associates	56,250
Verus Advisory, Inc.	165,000
Institutional Shareholders Services	13,575
Zeno Consulting Group	11,250
Sub-total Consultant	258,442
<b>Custodian</b>	
State Street Bank	140,000
<b>TOTAL OF CONSULTANT / CUSTODIAN FEES <sup>1</sup></b>	<b>398,442</b>

Notes:

1. Previous quarter's amounts may change as estimates are trueed up to actual amounts. Each true up is made using the most recent information.



TO: Members of the Investment Committee  
FROM: Thomas Taylor, Investment Officer   
DATE: June 12, 2019  
SUBJECT: Summary of Rebalancing and Cash Activities Completed in 1Q2019

---

**Recommendation:**

Not Applicable – This is an information item.

**Background/Discussion:**

1. There was no action required to rebalance the Total Fund for the quarter ending March 31, 2019. In accordance with ACERA's General Investment Guidelines, Policies and Procedures, Section V: Asset Allocation and Rebalancing, Schedule IA: Asset Allocation Targets, and Schedule IC: Asset Allocation Portfolio Rebalancing, there were no rebalancing signals received during 1Q2019 as all traditionally managed accounts remained within their respective target ranges.
2. Regarding significant cash-flows for 1Q2019, Staff implemented the following changes to manage excess cash, make the supplemental month-end retiree benefits and administrative payroll, and to meet the capital calls and provide operating funds:
  - a. **Month-end payroll:** Staff withdrew a net \$47.0 million from the Total Fund to supplement for month-end payroll for the three-months ending March 31, 2019. Staff wired out \$16.5M in January, \$15.5M in February, and \$15.0M in March to ACERA'S Wells Fargo Bank account. Fiscal Services wired-in \$4.5M from Wells Fargo Bank back to State Street Bank (#HI1A).
  - b. **Total Fund Drawdowns:**<sup>1</sup> To meet fund operating cash requirements (capital calls, new investment, month-end payroll), Staff withdrew \$13.0M from the ACERA's traditional active equity manager TCW to fund capital needs.
  - c. **Capital Calls and Distributions:** In general, aggregated wire-payments of \$27.5M were made to meet capital calls to ACERA's Private Equity, Absolute Return, Real Assets, and Real Estate funds and pay quarterly management fees. Cash and in-kind distributions and recyclable capital received from the same investments were \$42.7M. This dollar amount does not include other incidental income<sup>2</sup>.

Reporting of rebalancing activities will continue to be submitted to the Investment Committee on a quarterly basis.

---

<sup>1</sup> An interim change to normal drawdown of capital to fund and meet various obligations, Staff, with the concurrences of the Rebalancing Consultant and Verus, withdraws from the most overweight active managed account (vs. index account) in the most overweight of the traditional asset classes. This will continue until all traditional accounts are at or close to target. For example, in the U.S. Equity asset class, the Russell 1000 moves up to 80% from the 70% current allocation.

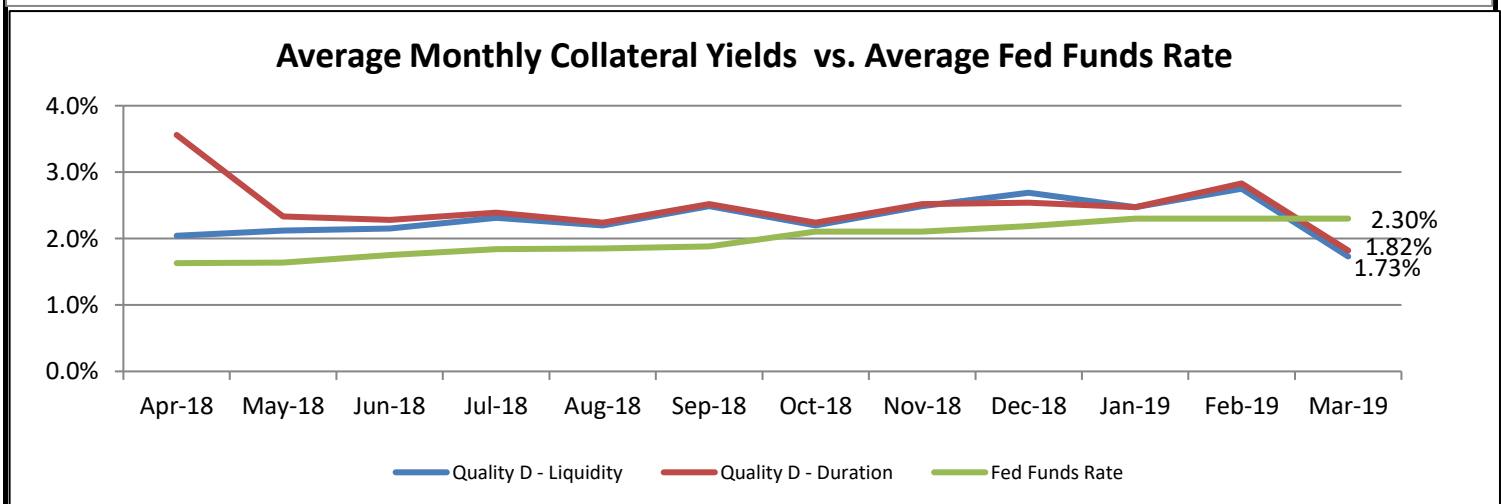
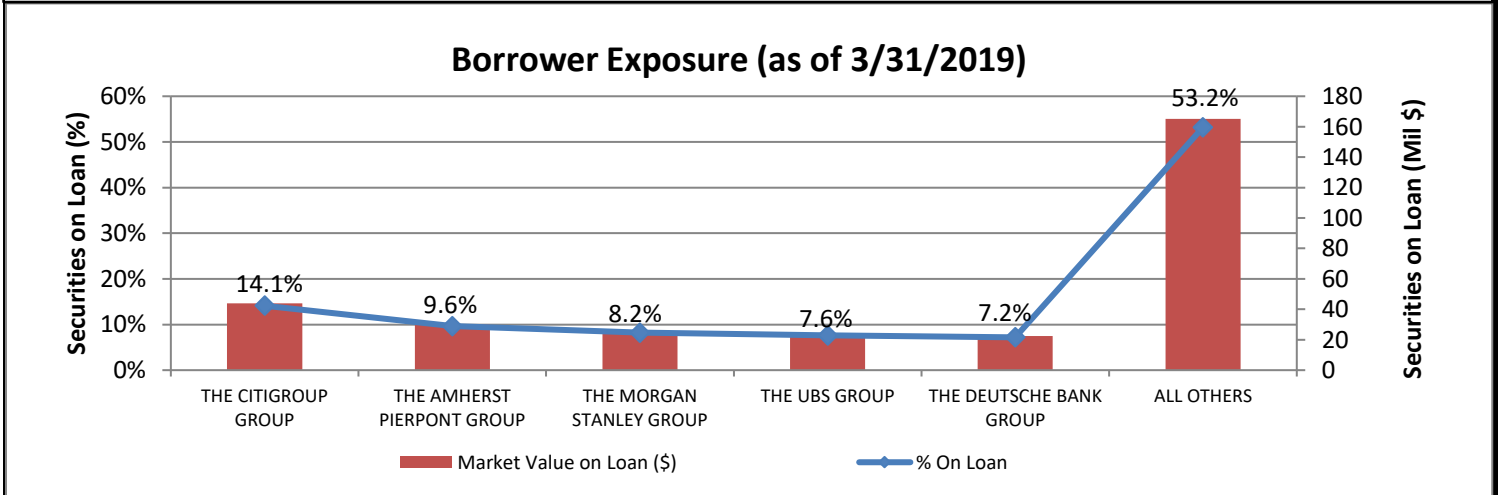
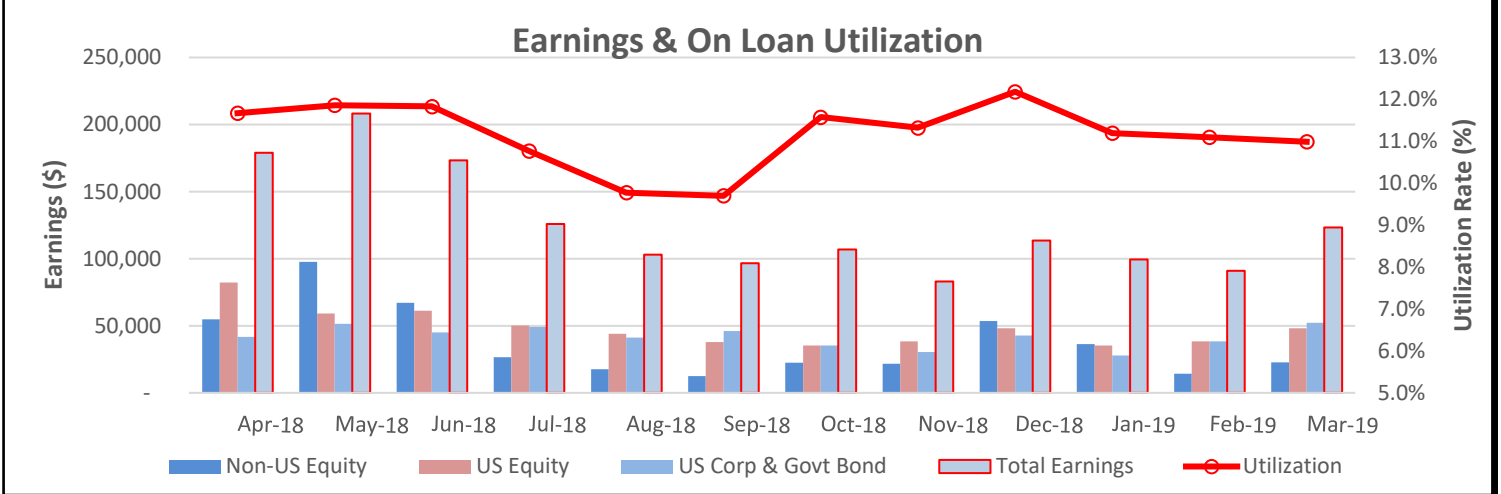
<sup>2</sup> Securities Lending Income (\$322.49K), Commission Recapture Income (\$5.97K), and Securities Litigation Income (\$325.3K), totaled \$653.8 thousand. Incremental income does not include dividend and interest income from traditional managed accounts, which are reinvested.

# Alameda County Employees' Retirement Association

## 1st Quarter 2019 Securities Lending Report

### Quarterly Summary

In 1Q2019, ACERA's earnings from Securities Lending activities were \$313,774.79. US Equity generated the highest earnings of \$121,671.66. As of March 31, 2019, the average market value of securities on loan was \$315,262,140.00. Citigroup was the largest borrower of ACERA's securities with 14.1% as of the last day of the quarter.



**Notes:**

- (1) Quality D Liquidity and Quality D Duration Funds are managed by an affiliate of State Street Bank (SSB); these funds are common pools in which many securities lending clients of SSB invest their cash collateral generated from their security lending activities. ACERA invests the cash collateral received from its security lending activities into Quality D Liquidity and Quality D Duration Funds. As of 3/31/2019, ACERA's combined NAV per unit of the Quality D Liquidity (1.0004) and Quality D Duration Funds (0.9329) was \$1.0001. As of 3/31/2019, Quality D Liquidity had 223,484,138.62 units and Quality D Duration had 1,009,788.32 units.
- (2) Data represents past performance and is not necessarily indicative of future results.
- (3) Data Source: my.statestreet.com and Securities Finance Business Intelligence

*Securities Lending Report Provided by Staff*

ICM 6/12/2019



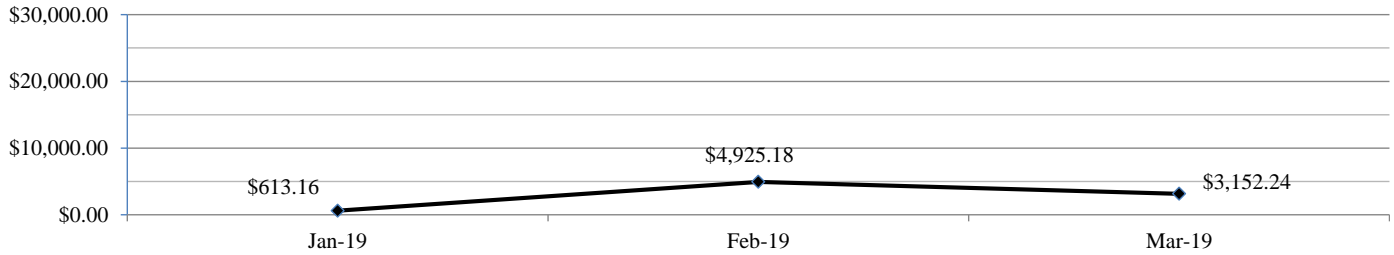


## Alameda County Employees' Retirement Association First Quarter 2019 Directed Brokerage Report

### Quarterly Commentary

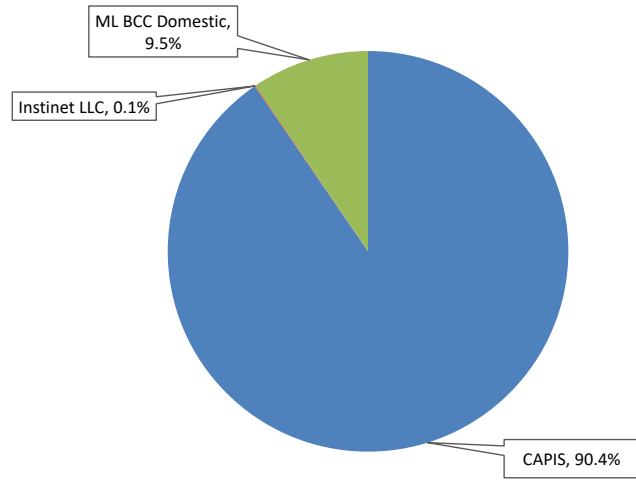
In 1Q19, the total recaptured dollar amount for ACERA's Directed Brokerage (DB) Program was \$8,690.58. Since inception<sup>1</sup>, ACERA has recaptured \$2,017,654.32. For the quarter, TCW directed the highest percentage (28.6%) of trading volume and Pzena generated the largest recaptured directed commission dollar amount (\$6,130.86). CAPIS received the majority of ACERA's directed trades (90.4%) among all correspondent brokers within the network. The program continues to operate in compliance with ACERA's DB Policy.

### Monthly Recaptured



Directed Commission \$ <sup>2</sup>			Directed % <sup>3</sup>	
Manager	1Q2019	YTD		
Capital Group	11.11	11.11	0.04	10.00
Kennedy	5,506.66	5,506.66	0.00	10.00
NCG Small Cap	0.00	0.00	0.00	10.00
Pzena	6,130.86	6,130.86	24.70	30.00
TCW	1,222.72	1,222.72	28.60	25.00
<b>Total</b>	<b>\$12,871.35</b>	<b>\$12,871.35</b>		

### Directed % to Correspondent Brokers<sup>4</sup>



- Andes Capital Group
- B. Riley & Co.
- Barclays (US Algo/DMA)
- BIDS Trading
- Bley Investment Group
- Cabrera Capital Markets
- CAPIS
- CAPIS Step Out
- CF Global Trading
- Commission Direct, Inc.
- Cowen Securities (U.S.)
- Drexel Hamilton
- HSBC James Capel
- ICAP (U.S.)
- Imperial Capital
- Instinet LLC
- ITG, Inc.
- Kota Global Securities
- LAM Securities
- Liquidnet
- Merrill Lynch (U.S.)
- Mischler Financial Group
- Northeast Securities
- O'Neil Securities
- Penserra Securities, LLC
- Pershing, LLC
- Piper Jaffray & Co.
- Societe Generale
- State Street Global Markets (Europe)
- Virtu Securities
- Weeden & Co LP

**Brokers are selected at the discretion of the Investment Managers, pursuant to Best Execution and ACERA's DB Policy.**

1. ACERA's DB Program began in September 2006. AQR Int'l, Mondrian, Bivium Cupps & Vulcan do not participate in Commission Recapture; Mellon and Templeton are not SMA.  
 2. Data provided by CAPIS. Directed Commission \$ - Dollar amount of commissions from directed trades - this amount is split among ACERA (67.52% for 1Q2019), CAPIS, & the Correspondent Brokers.  
 3. Data provided by Zeno Consulting Group (Zeno). Directed % - Calculated by dividing Manager's directed trading volume by its total trading volume and compared to its assigned target. Target percentages are ranges (e.g. up to 30% for Pzena).  
 4. Data provided by CAPIS.



**ALAMEDA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

475 14th Street, Suite 1000, Oakland, CA 94612    800/838-1932    510/628-3000    fax: 510/268-9574    www.acera.org

TO:            Members of the Investment Committee  
FROM:        Agnes Ducanes – Administrative Specialist II *ADucanes*  
DATE:        June 12, 2019  
SUBJECT:     Quarterly report on ACERA's Investment Products and Services  
                 Introductions (IPSI) Program

In the first quarter of 2019, Staff received 29 investment products and services inquiries from prospective providers. We met with 3 managers who presented through the IPSI process. Since we had staff turnovers, the IPSI meetings has been scheduled according to staff's availabilities.

The purpose of IPSI is to provide prospective vendors an opportunity to gain a better understanding of ACERA's investment objectives and for Staff to learn about the vendors' investment products/services through face-to-face meetings, teleconferences, or video conferences. Staff has designated the morning of the third Wednesday of every month as ACERA's IPSI day. Each introductory session is approximately 45 minutes.

Below please find a chart depicting the types of IPSI sessions that were held in the first quarter of 2019.

<b>ASSET CLASS</b>	<b>Q1 '19</b>	<b>Q2 '19</b>	<b>Q3 '19</b>	<b>Q4'19</b>	<b>TOTAL</b>
<b>U.S. Equities</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Int'l Equities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Fixed Income</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Real Estate</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Private Equities</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Absolute Return</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Real Assets</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>Other Services</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>TOTAL:</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>



## Proposed Investment Committee Workplan for 2019

June 12, 2019

	<b>Action Items</b>	<b>Information Items</b>
January 9	<ol style="list-style-type: none"> <li>1. Interview of the Finalists for ACERA’s U.S. Small Cap Growth Manager Search – Domestic Equities and Possible Motion by the Investment Committee to Recommend one Finalist to the Board</li> </ol>	<ol style="list-style-type: none"> <li>1. Discussion on Asset – Liability Introduction and Enterprise Risk Tolerance</li> <li>2. Proposed Investment Committee Workplan for 2019</li> </ol>
February 13	<ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Approve an up to \$33 million Investment in Genstar Capital Partners IX as part of ACERA’s Private Equity Portfolio – Buyouts</li> <li>2. Discussion of and Possible Motion to Recommend that the Board Approve an up to \$30 million Investment in Taurus Mining Finance Fund No. 2 as part of ACERA’s Real Assets Portfolio – Natural Resources</li> </ol>	<ol style="list-style-type: none"> <li>1. 2019 Capital Market Assumptions</li> <li>2. Investment Committee Workplan 2019</li> </ol>
March 13 (meeting cancelled)		<ol style="list-style-type: none"> <li>1. <i>Report of ACERA’s Proxy Voting Activities in 2018</i></li> <li>2. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the fourth quarter of 2018</i></li> <li>3. <i>Quarterly report on ACERA’s rebalancing activities for the fourth quarter of 2018</i></li> <li>4. <i>Quarterly report on ACERA’s securities lending activities for the fourth quarter of 2018</i></li> <li>5. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the fourth quarter of 2018</i></li> <li>6. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the fourth quarter of 2018</i></li> <li>7. <i>Updated Investment Committee Workplan 2019</i></li> </ol>



## Proposed Investment Committee Workplan for 2019

June 12, 2019

<b>Action Items</b>	<b>Information Items</b>
<p>April 17</p> <ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio – Core Plus Debt (JP Morgan Mezzanine Debt)</li> </ol>	<ol style="list-style-type: none"> <li>1. Asset – Liability Integration</li> <li>2. Discussion of an establishment of a working group to evaluate a possible ESG Policy</li> <li>3. Closed Session: Govt. Code section 54956.81 – Consider the purchase or sale of a specific pension fund investment, and Govt. Code section 54957.1(d) (4) – Anticipated litigation (1 matter)</li> </ol>
<p>May 15 (meeting moved to third Wednesday due to SACRS Conference)</p> <ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$60 million Investment in Great Hill Equity Partners VII as part of ACERA’s Private Equity Portfolio – Buyouts and Venture Capital</li> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt Alternative #2 in the Asset – Liability Integration Study</li> </ol>	<ol style="list-style-type: none"> <li>1. Education Session: Timberland</li> <li>2. Real Assets Policy Update: Modification of Index Name in Benchmark Composite</li> </ol>
<p>June 12</p> <ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt an up to \$33 million Investment in Altas Partner Holdings II as part of ACERA’s Private Equity Portfolio – Buyouts</li> </ol>	<ol style="list-style-type: none"> <li>1. Review of Pzena Investment Management, LLC (Traditional Manager – Large Cap Value)</li> <li>2. Semiannual Performance Review for the Period Ending March 31, 2019 – Equities and Fixed Income</li> <li>3. Semiannual Performance Review for the Period Ending December 31, 2018 – Private Equities</li> <li>4. Semiannual Performance Review for the Period Ending March 31, 2019 – Absolute Return</li> <li>5. Semiannual Performance Review for the Period Ending December 31, 2018 – Real Assets</li> <li>6. Semiannual Performance Review for the Period Ending March 31, 2019 – Real Estate</li> <li>7. Closed Session: Govt. Code section 54956.81 – Consider the purchase or sale of a specific pension</li> </ol>



## Proposed Investment Committee Workplan for 2019

June 12, 2019

### Action Items

### Information Items

	Action Items	Information Items
		fund investment, and Govt. Code section 54957.1(d) (4) – Anticipated litigation (1 matter) 8. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian fees for the first quarter of 2019</i> 9. <i>Quarterly report on ACERA’s rebalancing activities for the first quarter of 2019</i> 10. <i>Quarterly report on ACERA’s securities lending activities for the first quarter of 2019</i> 11. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the first quarter of 2019</i> 12. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the first quarter of 2019</i> 13. <i>Updated Investment Committee Workplan 2019</i>
July 10	1. Discussion of and Possible Motion to Recommend to the Board to Adopt Private Credit Investment Policy	1. Review of Trust Company of the West (Traditional Manager – Large Cap Growth) 2. Report on ACERA’s U.S. Large Cap Value Manager Search (tentative)
August 14	1. Discussion of and Possible Motion to Adopt the proposed timeline, search criteria, and evaluation matrix for ACERA’s U.S. Large Cap Value Manager Search (tentative) 2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Estate Portfolio 3. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Real Assets Portfolio	1. Review of State Street Bank and Trust Company 2. Review of the Emerging Investment Manager Policy (tentative) 3. Review of ESG Mission Statement (tentative)



## Proposed Investment Committee Workplan for 2019

June 12, 2019

	<b>Action Items</b>	<b>Information Items</b>
September 11	<ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Adopt Amendments on ACERA’s Emerging Manager Policy</li> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equities Portfolio</li> </ol>	<ol style="list-style-type: none"> <li>1. Review on Hedge Fund/Absolute Return</li> <li>2. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the second quarter of 2019</i></li> <li>3. <i>Quarterly report on ACERA’s rebalancing activities for the second quarter of 2019</i></li> <li>4. <i>Quarterly report on ACERA’s securities lending activities for the second quarter of 2019</i></li> <li>5. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the second quarter of 2019</i></li> <li>6. <i>Quarterly report on Investment Products and Services Introduction (IPSI) for the second quarter of 2019</i></li> <li>7. <i>Updated Investment Committee Workplan for 2019</i></li> </ol>
October 9	<ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board a possible Extension of the Custody Contract with State Street Bank and Trust Company (tentative)</li> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equities Portfolio – Private Credit</li> </ol>	<ol style="list-style-type: none"> <li>1. Education Session: Investment Due Diligence</li> </ol>
November 6 (meeting moved to first Wednesday due to SACRS Conference)	<ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to approve a short list of candidates for ACERA’s U.S. Large Cap Value Manager Search (tentative)</li> <li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA’s Private Equities Portfolio</li> </ol>	



## Proposed Investment Committee Workplan for 2019

June 12, 2019

	<b>Action Items</b>	<b>Information Items</b>
December 11	<ol style="list-style-type: none"> <li>1. Discussion of and Possible Motion to Recommend to the Board to Approve the Finalists for ACERA’s U.S. Large Cap Value Manager Search (tentative)</li> </ol>	<ol style="list-style-type: none"> <li>1. Semiannual Performance Review for the Period Ending September 30, 2019 – Equities and Fixed Income</li> <li>2. Semiannual Performance Review for the Period Ending June 30, 2019 – Private Equity</li> <li>3. Semiannual Performance Review for the Period Ending September 30, 2019 – Absolute Return</li> <li>4. Semiannual Performance Review for the Period Ending June 30, 2019 – Real Assets</li> <li>5. Semiannual Performance Review for the Period Ending September 30, 2019 – Real Estate</li> <li>6. CA Gov. Code § 7514.7 Information Report</li> <li>7. <i>Quarterly report of ACERA’s investment manager, consultant, and custodian bank fees for the third quarter of 2019</i></li> <li>8. <i>Quarterly report on ACERA’s rebalancing activities for the third quarter 2019</i></li> <li>9. <i>Quarterly report on ACERA’s securities lending activities for the third quarter of 2019</i></li> <li>10. <i>Quarterly report on ACERA’s Directed Brokerage (DB) Program for the third quarter of 2019</i></li> <li>11. <i>Quarterly report on Investment Products and Services Introductions (IPSI) for the third quarter of 2019</i></li> <li>12. <i>Updated Investment Committee Workplan for 2019</i></li> </ol>

**Notes:**

1. This workplan is subject to change without prior notice. Periodic rearrangements of agenda items will be made to the workplan to provide a reasonable length of time for each meeting.
2. Meeting date is assumed to be the second Wednesday of each month.
3. Educational sessions may be added to the Agenda from time-to-time e.g., Portable Alpha, Market and Currency Overlay, Equity Overlay, and Emerging Managers in Private Equity investments. Recommendations and reports on ACERA’s Real Estate, Private Equity, Absolute Return, and Real Assets investments will be added to the Agenda from time-to-time.



## Proposed Investment Committee Workplan for 2019

June 12, 2019

### Action Items

### Information Items

Future Items:	Action Items	Information Items
	<ol style="list-style-type: none"><li>1. Interview of the Finalists for ACERA's U.S. Large Cap Value Manager Search and Possible Motion by the Investment Committee to Recommend one Finalist to the Board (tentative)</li><li>2. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Estate (Placeholder)</li><li>3. Discussion and Possible Motion to Recommend to the Board to Adopt an Investment in Private Equities Portfolio (Placeholder)</li><li>4. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Assets Portfolio (Placeholder)</li><li>5. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Absolute Return (Placeholder)</li><li>6. Discussion of and Possible Motion to Recommend to the Board to Adopt an Investment in ACERA's Real Estate (Placeholder)</li></ol>	