

# MEETING MATERIALS

---

## Merced County Employees' Retirement Association

First Quarter 2019 Full Review

May 23, 2019



---

M E K E T A   I N V E S T M E N T   G R O U P

BOSTON  
MASSACHUSETTS

CHICAGO  
ILLINOIS

MIAMI  
FLORIDA

PORTLAND  
OREGON

SAN DIEGO  
CALIFORNIA

LONDON  
UNITED KINGDOM

[www.meketagroup.com](http://www.meketagroup.com)

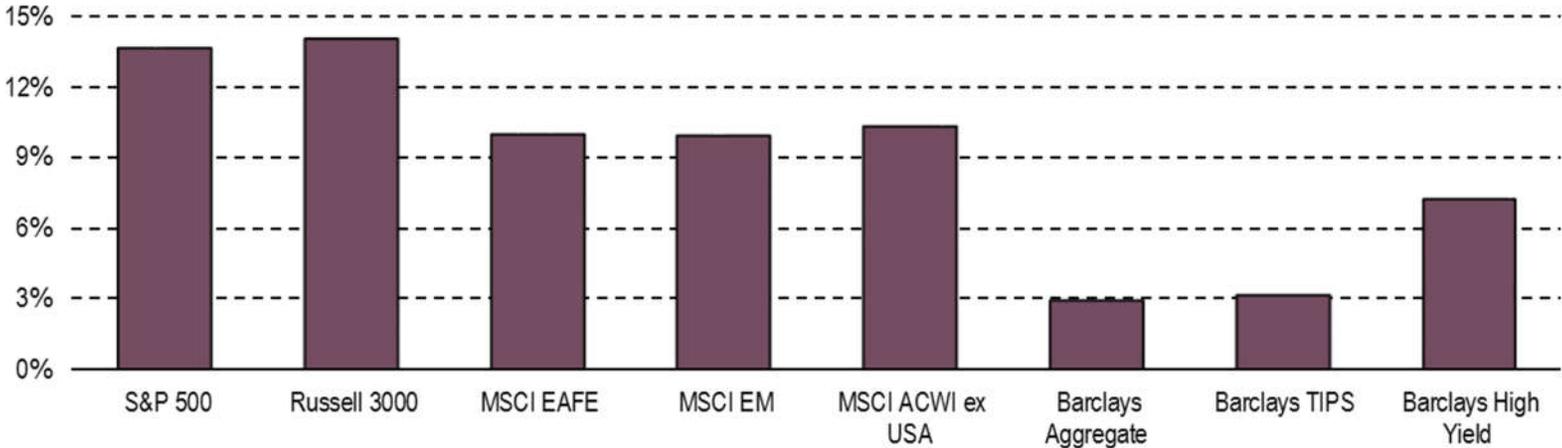
- 1. Executive Summary**
- 2. World Markets First Quarter of 2019**
- 3. Capital Markets Outlook & Risk Metrics**
- 4. Quarterly Review As of March 31, 2019**
- 5. Disclaimer, Glossary, and Notes**

## **Executive Summary**

### Market Review for the First Quarter 2019

During the first quarter, world stocks and credit markets rebounded considerably from the fourth quarter of 2018. Equity markets were up close to, or into, the double digits in many parts of the world. In the fixed income markets, interest rates generally fell, with lower quality bonds outpacing higher quality bonds. Major central banks appeared to be steering away from tighter monetary policy and there was more optimism that the trade war between the U.S. and China would eventually be resolved. Despite this new sense of optimism, there are still concerns over the slowing of global economic growth as well as the growing uncertainty relating to Brexit.

Q1 Returns for Major Indices



Growth > Value      US Treasury 10 yr: -28 basis points      Small Cap > Large Cap



## MCERA Portfolio Overview for Q1

**As of Q1 2019, total assets invested were at \$835.8 million.**

- The Fund returned +7.6% for the first quarter of 2019 (81st percentile among peers), while surpassing the policy benchmark by +1.1% during the quarter.
- The strong Q1 return was largely explained by the Total Equity portion of the portfolio in both absolute and relative terms. The U.S. Equity sleeve returned +14.6%, exceeding its benchmark by 50 basis points. The International Equity managers posted double digit returns as well, with Developed International reporting a +10.3% return and Emerging Markets Equity returning +13.8%. The former exceeded its benchmark by 30 basis points, the latter by 390 basis points.
- In the U.S. Equity space, Mellon Dynamic U.S. Equity delivered the strongest absolute and relative returns for the latest quarter at +15.9% versus +13.6% for the S&P 500. The combination of the extended U.S. Equity exposure and the long Treasury positions were additive and helped boost returns for the period. Based on Q1 returns, this manager was top decile in terms of peer rankings.
- As we mentioned in our preliminary March report, Wells Capital (Emerging Markets Equity manager) was a key contributor for the quarter as it had a very strong January (+10.8%). Notable positive contributions to relative performance in that month came from China/Hong Kong, India and Brazil. At the end of the quarter, Wells Capital had approximately 39.7% allocation to China/Hong Kong, with about half of the positive excess return explained by this exposure (mostly through selection). This fund was also top quartile versus its peers for the quarter.
- Although DFA U.S. Small Cap Trust posted positive double digit returns (+12.0%), it still trailed its benchmark by nearly 260 basis points. Stock selection in Health Care was a leading detractor, while both allocation and selection detracted in Financials.

### MCERA Portfolio Overview for Q1 (continued)

- The Fixed Income section posted positive returns at +2.6%, matching its benchmark. Barrow Hanley was able to generate a return of +3.1%, outpacing its benchmark by 20 basis points. The overweight corporate credit exposure helped provide the positive excess return during a period where spreads tightened, specifically in BBB and A securities.
- Through Q1, U.S. Equity, Private Equity, and Opportunistic Credit were out of policy ranges.
  - U.S. Equity has purposely been left overweight relative to the policy target as it will be one of the main sources of future Private Equity commitments, and equities are the most closely aligned asset class.
  - As you recall, it will take considerable time to fund up to the policy target for Private Equity, hence the significant underweight to the new asset allocation policy target.
  - The Board recently approved two new managers within Opportunistic Credit in the March meeting; we should see this space funded soon.

## Manager Updates / Recommendations / Watch List

### Barrow Hanley Update

- At the April Board meeting, BHMS provided a review on the existing Core Fixed Income mandate with MCERA and proposed the mandate allow for looser investment guidelines. Specifically, BHMS proposed allowing for an upper bound allocation of 15% of the portfolio to (non-investment grade) high yield instruments.
- The primary investment objectives for this strategy, and the role of BHMS within the context of the overall Plan program, is to provide both safety and liquidity to the portfolio. The Core mandate has offered consistent returns achieved through a low risk approach, and we recommend that the mandate remain unchanged.
- Additionally, with the recent approval of the Opportunistic Credit category and the selection of managers currently in the process of being funded, we believe extending BHMS' guidelines to allow for incremental returns is unnecessary.

### Asset Allocation Update

- Private Equity will take additional time to fund up to its new target; therefore, we expect this category to remain underweight relative to targets for the next several years. As such, other asset classes will be overweight during that time, including Public Equities and Fixed Income.
- After reviewing the SSgA Real Assets Fund, the Board approved to reduce the exposure to SSgA from \$32 million to \$16 million, with the proceeds used to bring Emerging Markets Equity to target and fund up the Vanguard Short-Term Bond Index for future capital call funding and new manager allocations.
- The two new International Small Cap Managers (Acadian and Driehaus) were funded in April with the proceeds from the full liquidation of Copper Rock. They appear in the April interim performance report.
- In April, the relative positioning between U.S. Equity and Developed International Equity was adjusted to correct the overweight to International Developed. Specifically, we moved \$10 million from Mellon International to Mellon Dynamic U.S Equity.

### **Manager Updates / Recommendations / Watch List (continued)**

- Also in April, Barrow Hanley was reduced by approximately half (\$67.5 million) to fund the Vanguard Total Bond Market Index Fund, mainly as a way of reducing fees.
- Once the new Opportunistic Funds (GoldenTree Multi-Sector Strategy and PIMCO Income) are established, they will be funded through Barrow Hanley. We will also incorporate the new Opportunistic Funds benchmark as a component to the overall Policy benchmark once the position is allocated.

### **Performance Report Update**

- Private Real Estate has been separated from the Real Assets category as the Board approved to have a specific allocation target for that category. Historical data prior to Jan 1, 2019 for Real Assets will still reflect Private Real Estate. Please note that this will have no impact to overall Fund level results.

### **Watch List**

No funds on the watch list.

## Active Manager Expectations

Manager	Strategy Description	Beta (High/Low/Neutral)	Tracking Error Range (bps)	Environments Manager Underperforms
<b>Domestic Equity</b>				
DFA U.S. Small Cap Trust	Very diversified small cap portfolio that tilts toward value	Neutral	2.0% to 2.7%	In growth-oriented markets
PanAgora U.S. Small Cap Core Stock Selector	Diversified, quantitatively managed small cap portfolio	Neutral	2.5% to 4.0%	In low quality rallies or at market inflection points
Mellon Capital MCM Dynamic U.S. Equity	Very diversified, quantitative, large cap core portfolio	Neutral (higher in more recent periods)	2.5% to 5.0%	When investors misprice forward looking return/risk characteristics; when returns are concentrated in one sector
<b>Developed Markets Equity (Non-U.S.)</b>				
Driehaus International Small Cap Growth	Diversified growth manager that seeks to invest in companies experiencing positive growth inflections, using a combination of fundamental and macroeconomic analysis.	Low	4.0% to 7.0%	At market inflection points, with abrupt leadership change. Deep value, low quality market environments.
Acadian ACWI ex US Small Cap Equity	Very diversified international small cap portfolio, employing highly adaptive quantitative models	Neutral	2.5% to 4.5%	During narrow markets, abrupt changes in leadership. In "value" challenged periods.
<b>Emerging Markets Equity</b>				
Wells Capital Berkeley St Emerging Markets	Diversified, quality-at-a-reasonable price manager	Low	3.5% to 4.0%	Deep value, low quality market environments
<b>Investment Grade Bonds</b>				
Barrow Hanley Core Fixed Income	Conservative, low tracking-error core strategy focused on bottom-up security selection	Neutral	0.2% to 0.7%	At market inflection points, but should track the index very closely

## Manager Monitor

Manager	Significant Events (Yes/No)	Last Meeting with Board of Retirement	Last Meeting with MIG	Comments
<b>Domestic Equity Assets</b>				
Mellon Capital BNY Mellon MCM Dynamic US Equity Fund	No	-	Mar 2017	Merger of smaller boutiques – Met Mellon in March 2017 to go over HY Beta Strategy & conference call for Carbon Efficiency strategy.
Mellon Capital EB DV Large Cap Stock Index Fund	No	-	Mar 2017	Merger of smaller boutiques – Met Mellon in March 2017 to go over HY Beta Strategy & conference call for Carbon Efficiency strategy.
DFA US Small Cap Trust	No	-	Aug 2018	Co-CEO resignation (8/17) – Our view is that the departure is immaterial to the investment thesis for DFA's products. Met with DFA to discuss non-U.S. equities in August of this year.
PanAgora US Small Cap Core Stock Selector	No	-	Aug 2018	CEO Eric Sorensen, who is credited with turning the firm around, has not announced a plan to retire and no formal succession plan is in place. We do not recommend any changes at this time.
<b>Developed Markets Equity (Non-U.S.) Assets</b>				
Driehaus International Small Cap Growth	No	-	May 2019	Regular onsite to discuss organizational update.
Acadian ACWI ex US Small Cap Equity	No	-	Mar 2019	Onsite meeting to go over Non-US small cap strategies.
Mellon Capital EB DV International Stock Index Fund	No	-	Mar 2017	Merger of smaller boutiques – Met Mellon in March 2017 to go over HY Beta Strategy & conference call for Carbon Efficiency strategy.
<b>Emerging Markets Equity Assets</b>				
Wells Capital Berkeley Street Emerging Markets Fund	No	-	June 2018	Met with Bob Hrabchak (product specialist) with overview of EM strategy – very quality oriented and valuation sensitive with a long-term view. Jerry Zhang is the lead portfolio manager who has been running the product for 12 years.
<b>US Fixed Income Assets</b>				
Barrow Hanley Core Fixed Income Fund	No	Apr 2019	Aug 2018	John Williams, founder of fixed income group retired in Feb 2018. Retirement was announced well in advance.
Vanguard Short Term Treasury Index Fund	No	-	July 2017	Review of Target Date Retirement Funds.
<b>Private Equity Program</b>	N/A	N/A	N/A	Oversight by Cliffwater.
<b>Real Assets Program</b>	N/A	N/A	N/A	Oversight by Cliffwater.
<b>Hedge Fund Program</b>	N/A	N/A	N/A	Oversight by Cliffwater.

## Active Manager Peer Rankings

Investment Managers	Product	Peer Group	Market Value (\$ mm)	YTD March	1 YR	3 YR	5 YR	10 YR	Client Inception	Years in portfolio
DFA	US Small Cap Equity Strategy	US Small Cap Core	17.5	81	64	69	61	44	Jun-14	4.8
PanAgora	US Small Cap Core Stock Selector	US Small Cap Core	17.7	39	55	55	44	10	Sep-13	5.6
Mellon Capital	Dynamic US Equity Strategy	US Large Cap Core	81.2	7	27	4	2	1	Dec-12	6.3
Copper Rock <sup>1</sup>	International Small Cap	EAFE Small Cap	20.4	29	58	97	93	84	Sep-13	5.6
Acadian <sup>2</sup>	All-Country World ex US Small Cap	Non-US Div Small Cap	--	44	49	15	32	10	May-19	--
Driehaus <sup>2</sup>	International Small Cap Growth	Non-US Div Small Cap	--	15	29	18	13	18	May-19	--
Wells Capital	Berkeley Street Emerging Markets	Emerging Markets	67.2	14	17	26	30	51	Mar-12	7.1
Barrow Hanley	Core Fixed Income	US Core Fixed Income	137.0	63	31	66	59	70	Mar-10	9.1

Source: eVestment universe data.

Shaded values are rankings prior to Client inception in the strategy.

Ranks are based on gross of fee returns for extended periods (shaded values).

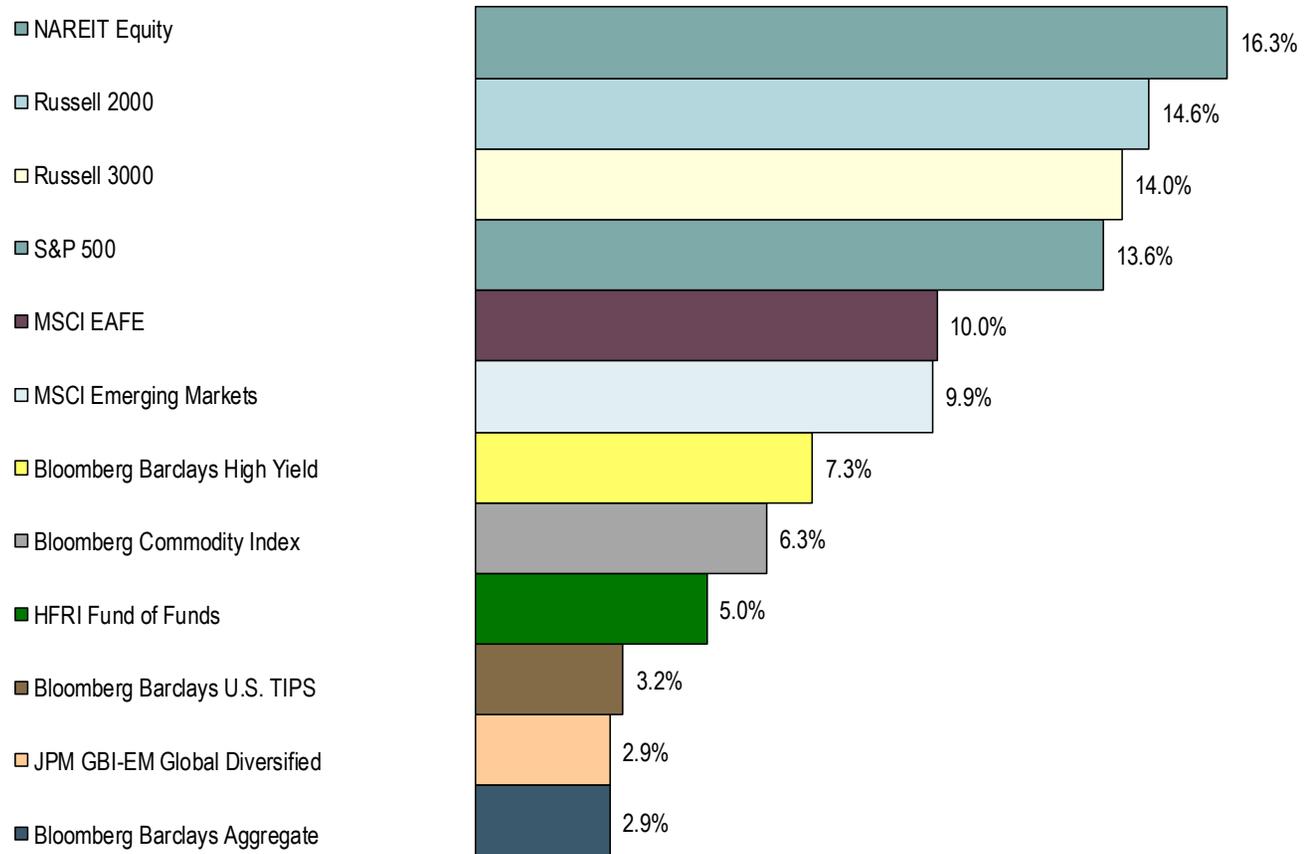
<sup>1</sup> Copper Rock as of April 2019 has been liquidated from the portfolio and has been replaced by Driehaus and Acadian.

<sup>2</sup> Acadian and Driehaus were funded in April 2019 – all results are based on strategy composite results.



**The World Markets  
First Quarter of 2019**

### The World Markets<sup>1</sup> First Quarter of 2019



<sup>1</sup> Source: InvestorForce.

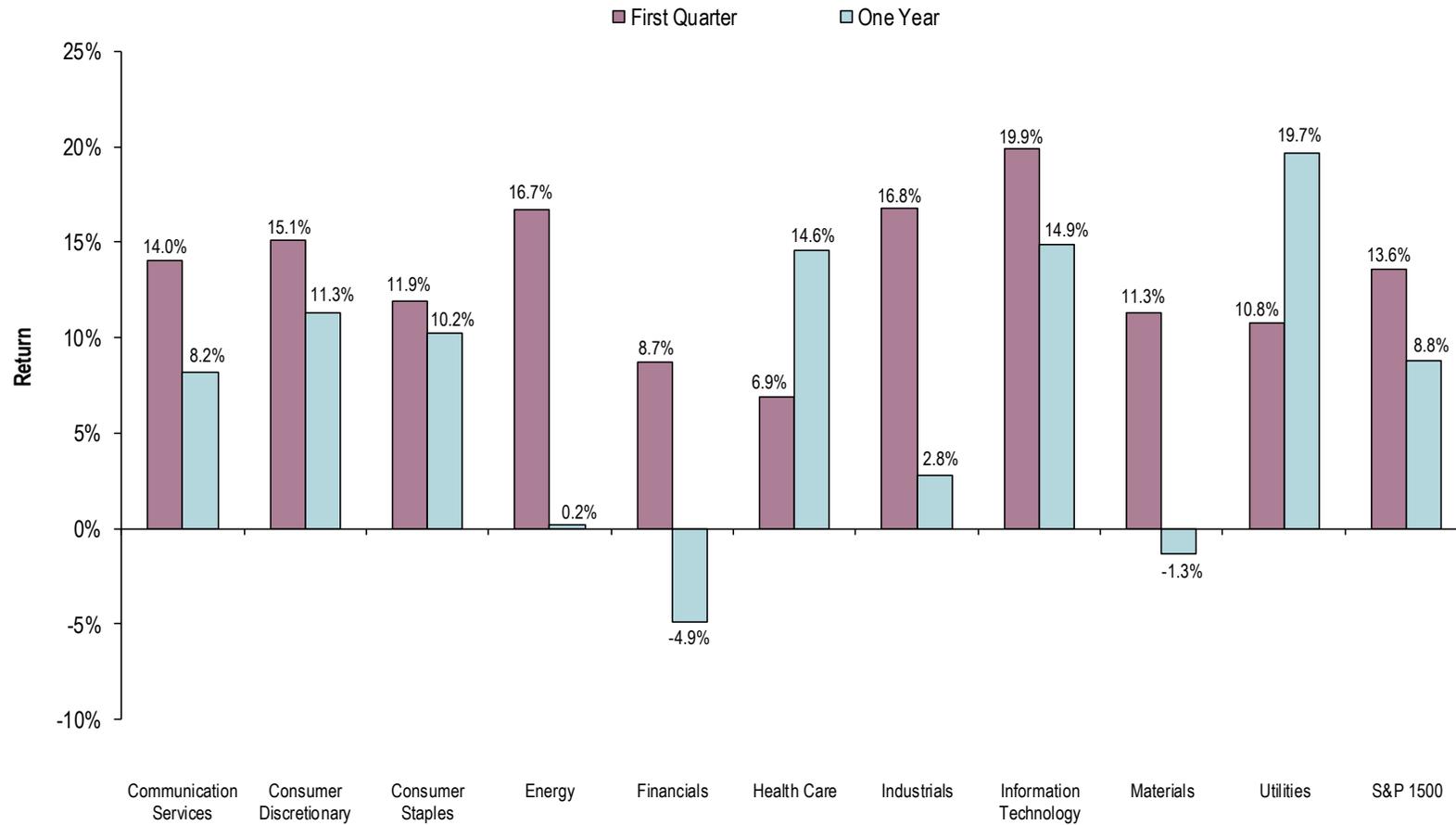


Index Returns<sup>1</sup>

	1Q19 (%)	1 YR (%)	3 YR (%)	5 YR (%)	10 YR (%)
<b>Domestic Equity</b>					
S&P 500	13.6	9.5	13.5	10.9	15.9
Russell 3000	14.0	8.8	13.5	10.4	16.0
Russell 1000	14.0	9.3	13.5	10.6	16.0
Russell 1000 Growth	16.1	12.7	16.5	13.5	17.5
Russell 1000 Value	11.9	5.7	10.5	7.7	14.5
Russell MidCap	16.5	6.5	11.8	8.8	16.9
Russell MidCap Growth	19.6	11.5	15.1	10.9	17.6
Russell MidCap Value	14.4	2.9	9.5	7.2	16.4
Russell 2000	14.6	2.0	12.9	7.1	15.4
Russell 2000 Growth	17.1	3.9	14.9	8.4	16.5
Russell 2000 Value	11.9	0.2	10.9	5.6	14.1
<b>Foreign Equity</b>					
MSCI ACWI (ex. U.S.)	10.3	-4.2	8.1	2.6	8.8
MSCI EAFE	10.0	-3.7	7.3	2.3	9.0
MSCI EAFE (Local Currency)	10.6	2.8	8.5	6.0	9.8
MSCI EAFE Small Cap	10.7	-9.4	7.5	4.5	12.8
MSCI Emerging Markets	9.9	-7.4	10.7	3.7	8.9
MSCI Emerging Markets (Local Currency)	10.1	-1.7	11.3	7.2	10.2
<b>Fixed Income</b>					
Bloomberg Barclays Universal	3.3	4.5	2.6	3.0	4.4
Bloomberg Barclays Aggregate	2.9	4.5	2.0	2.7	3.8
Bloomberg Barclays U.S. TIPS	3.2	2.7	1.7	1.9	3.4
Bloomberg Barclays High Yield	7.3	5.9	8.6	4.7	11.3
JPM GBI-EM Global Diversified	2.9	-7.6	3.3	-0.8	4.3
<b>Other</b>					
NAREIT Equity	16.3	20.3	6.0	9.0	18.2
Bloomberg Commodity Index	6.3	-5.3	2.2	-8.9	-2.6
HFRI Fund of Funds	5.0	0.5	4.1	2.3	3.6

<sup>1</sup> Source: InvestorForce.

### S&P Sector Returns<sup>1</sup>



<sup>1</sup> Source: InvestorForce. Represents S&P 1500 (All Cap) data.



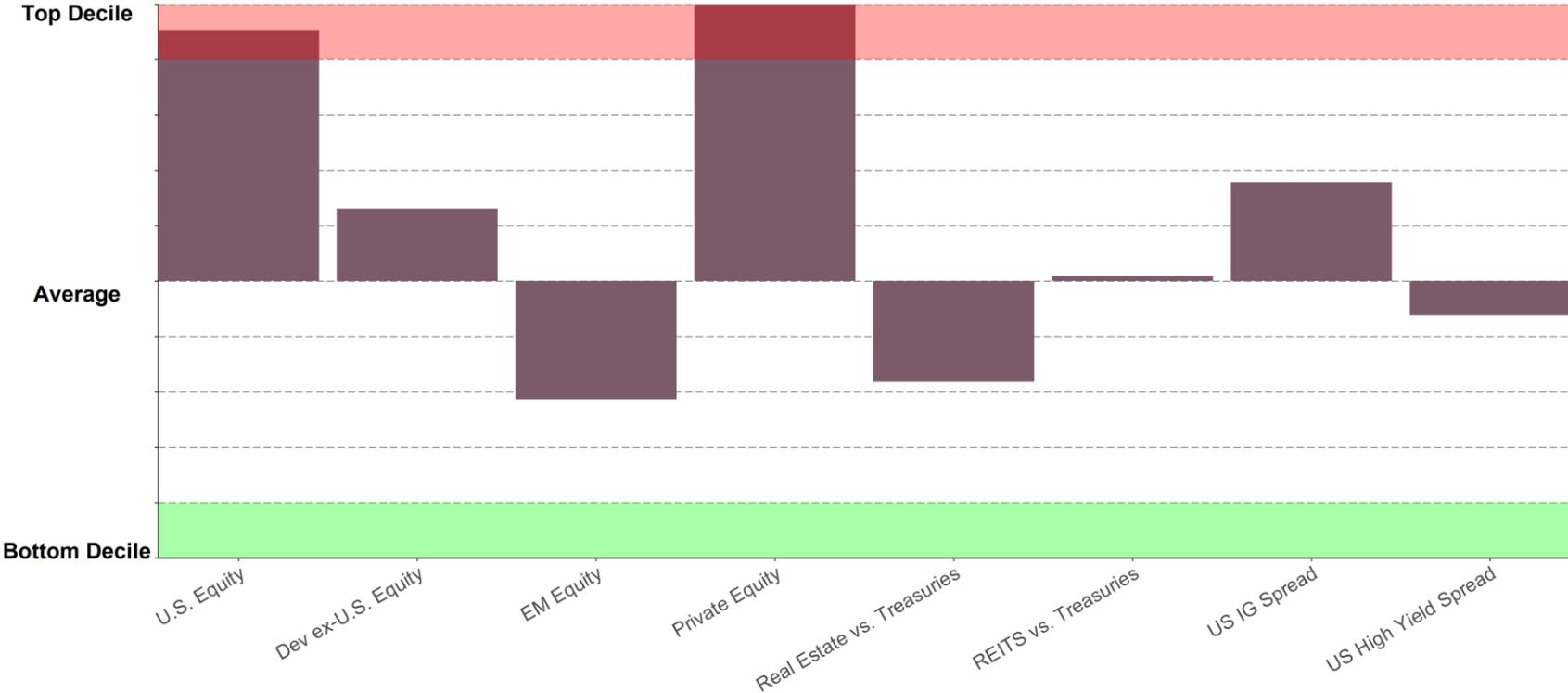
# Capital Markets Outlook & Risk Metrics

## Capital Market Outlook - Takeaways

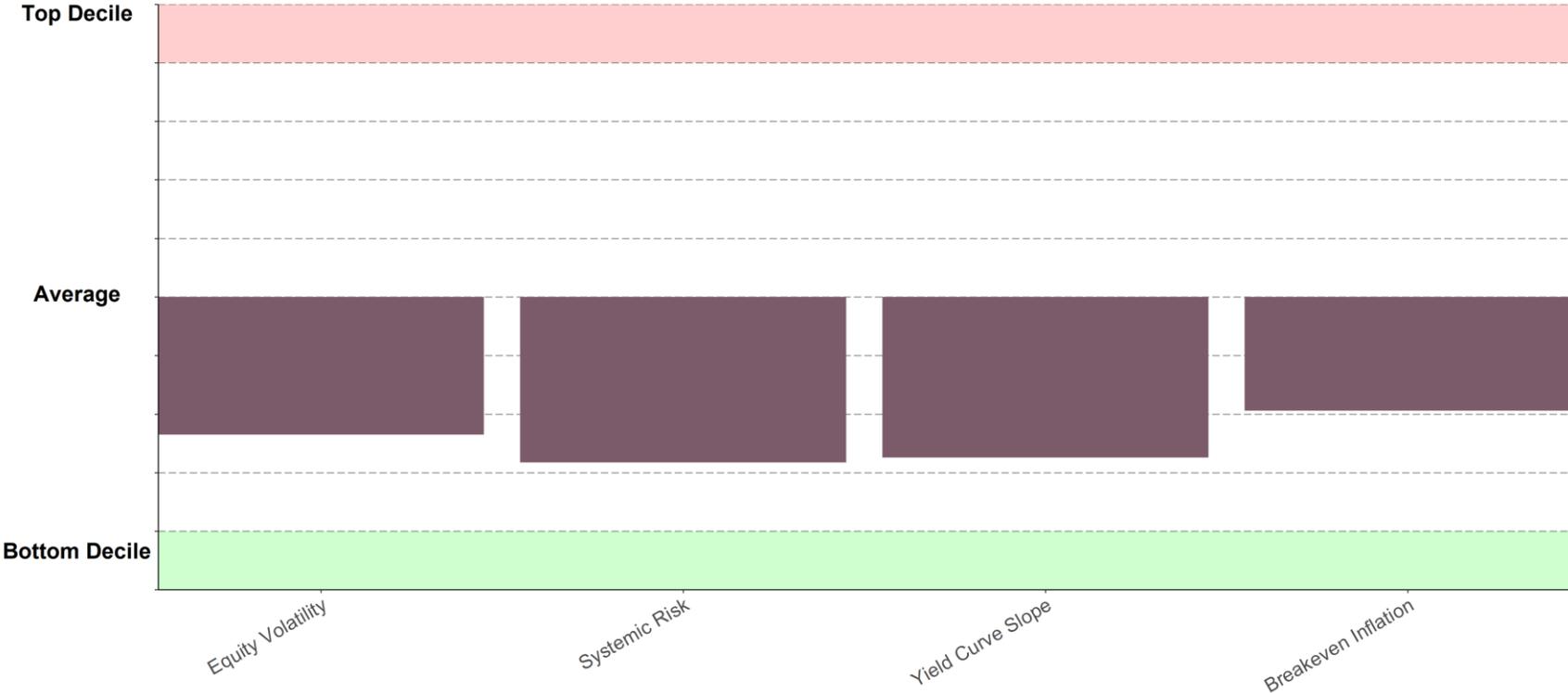
- April reverted back to several capital market themes of prior years: 1) U.S. Equity outperforming Non-U.S. Equity, 2) Growth outpacing Value, and 3) tepid returns to Fixed Income. In aggregate, April generally rewarded investors who took on equity and credit (i.e., economic growth) risks across the globe.
- After only four months, year-to-date returns for most risk-based assets are multiples (e.g., 2x) of annual expectations, with the exception of Emerging Markets Equity, which has produced year-to-date returns in-line with annual expectations.
- U.S. equity markets remain expensive whereas Non-U.S. equity markets remain reasonably valued.
- The U.S. yield curve remained relatively stable over the month, with only marginal increases ( $\approx 10$  basis points) on the long end of the curve. The yield curve remains at one of its flattest points since the Great Financial Crisis. Furthermore, because of the current low levels of long-term rates, interest rate risk remains at elevated levels for most high quality Fixed Income portfolios.
- Implied equity market volatility persisted at low levels throughout April, ranging from roughly 12.0% to 14.3% over the course of the month (end-of-day data). This range is materially below the long-term average level ( $\approx 19\%$ ).
- The Market Sentiment Indicator<sup>1</sup> returned to positive (**green**) as a result of positive year-over-year momentum in both equity and credit markets.
- **Market uncertainty is higher than numbers might indicate.** Diverging global economic growth, nuanced monetary policies, and ongoing geopolitical turmoil has resulted in increased uncertainty in the global capital markets. Moreover, equity and credit markets continue to produce different macroeconomic signals when compared to sovereign bond markets.

<sup>1</sup> See Appendix for the rationale for selection and calculation methodology used for the risk metrics.

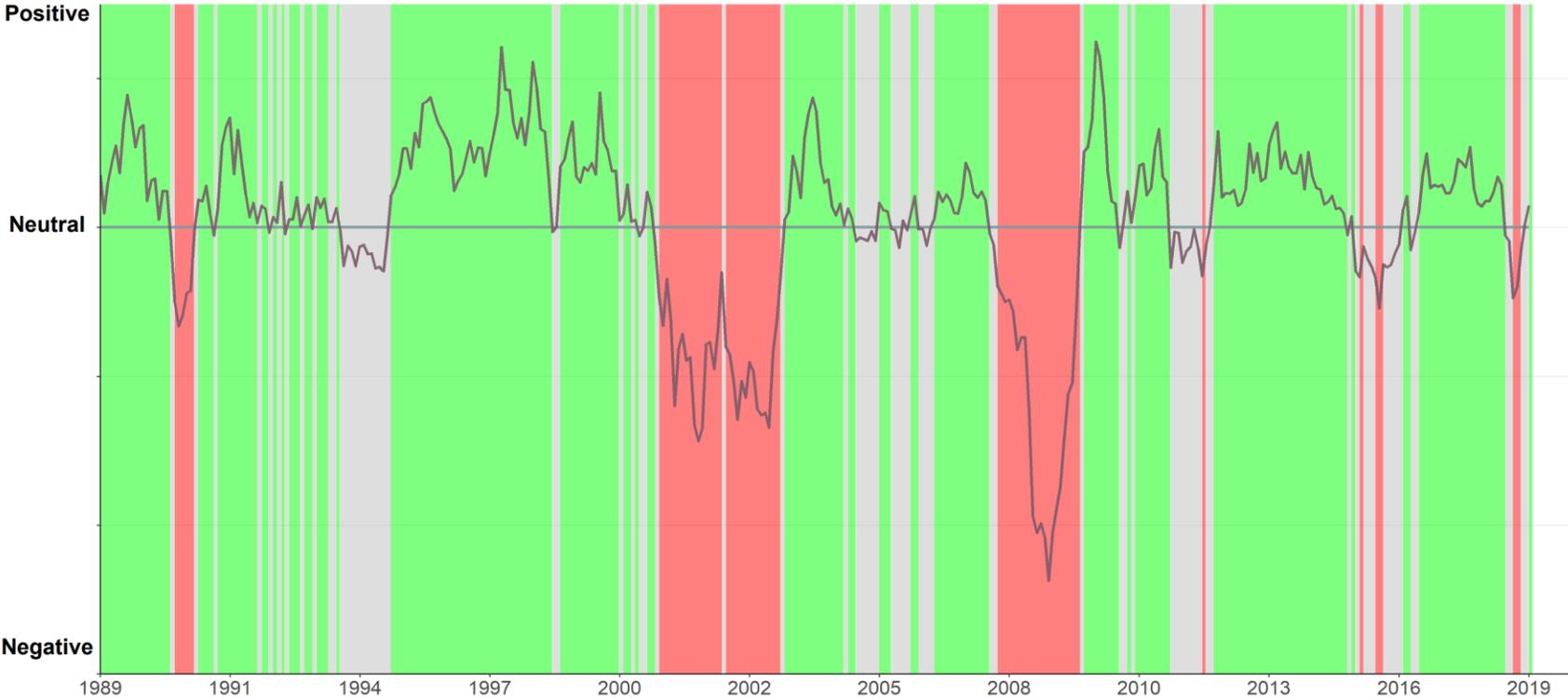
### Risk Overview/Dashboard (1)



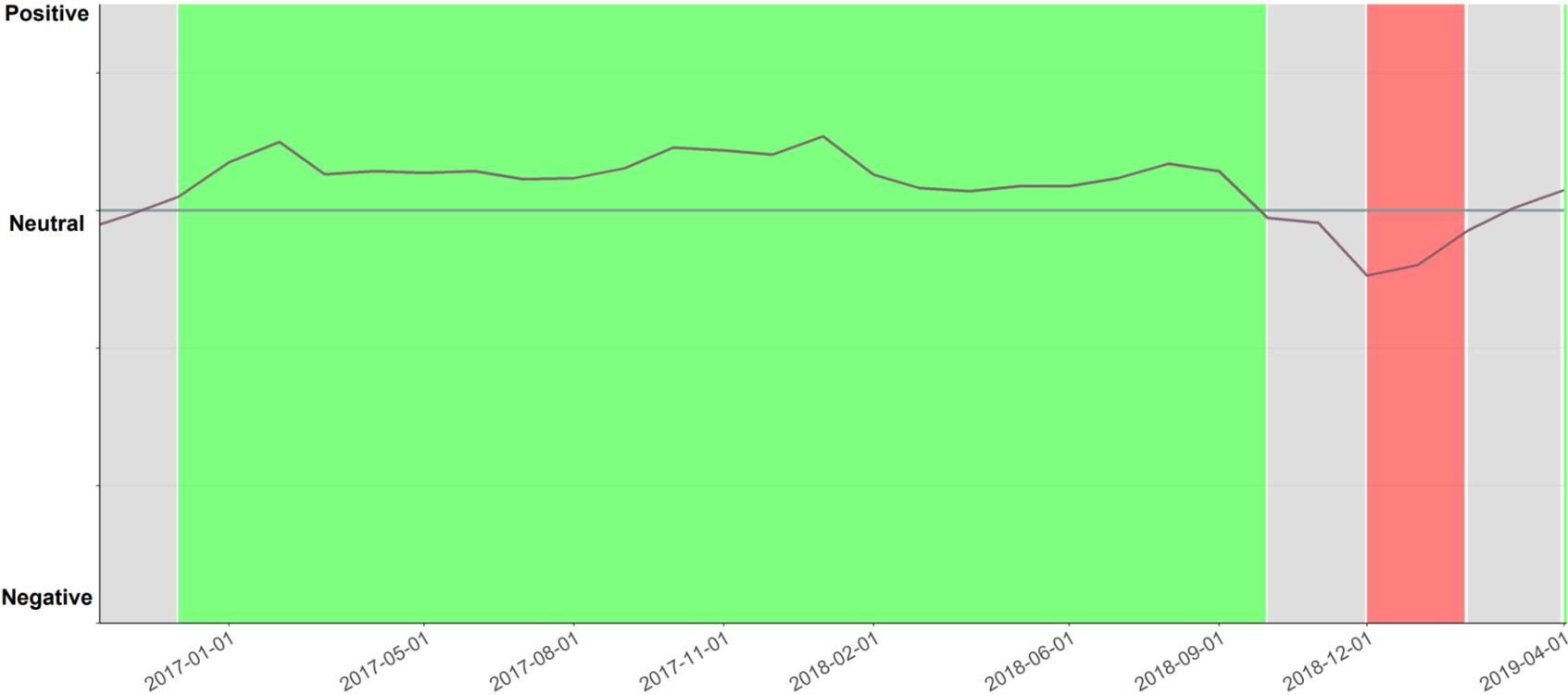
### Risk Overview/Dashboard (2)



### Market Sentiment Indicator (All History)



### Market Sentiment Indicator (Last Three Years)



### U.S. Equity Cyclically Adjusted P/E



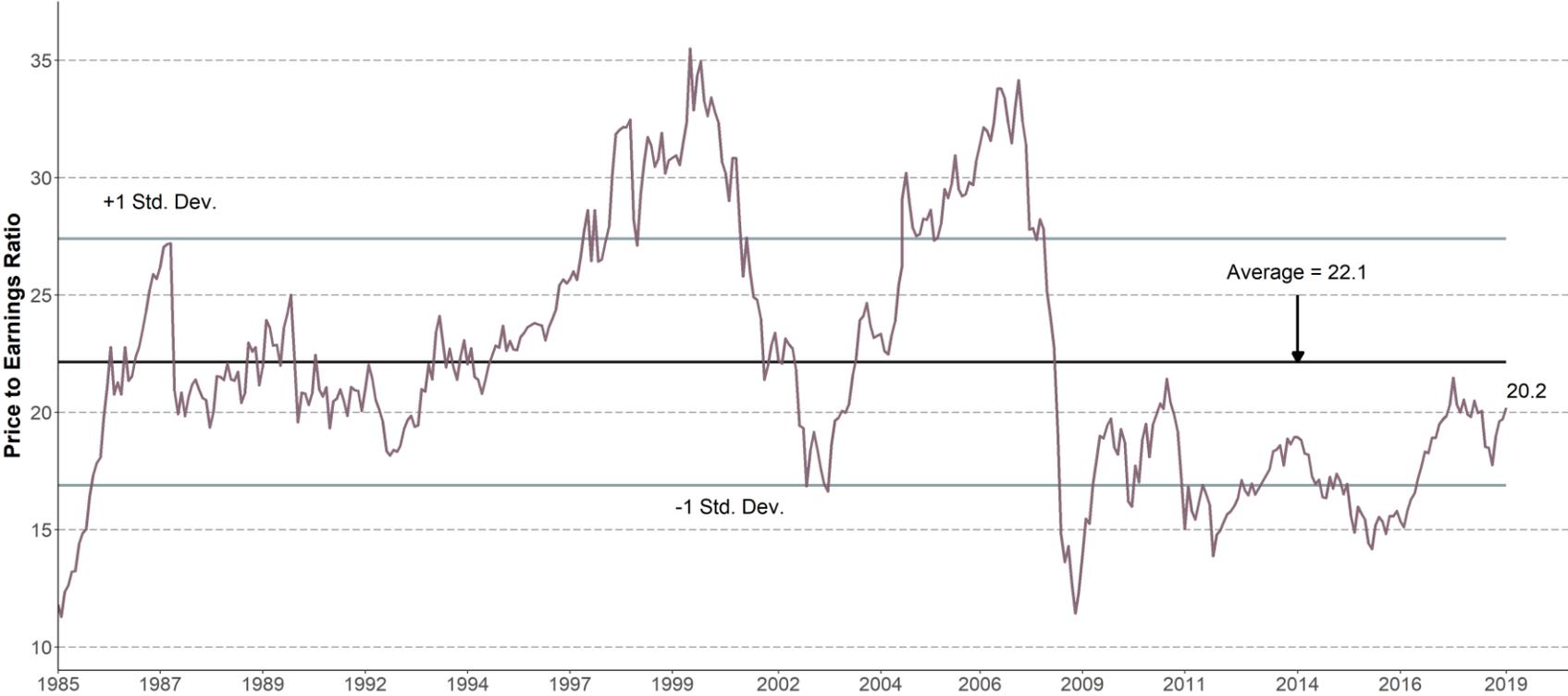
### Small Cap P/E vs. Large Cap P/E



### Growth P/E vs. Value P/E



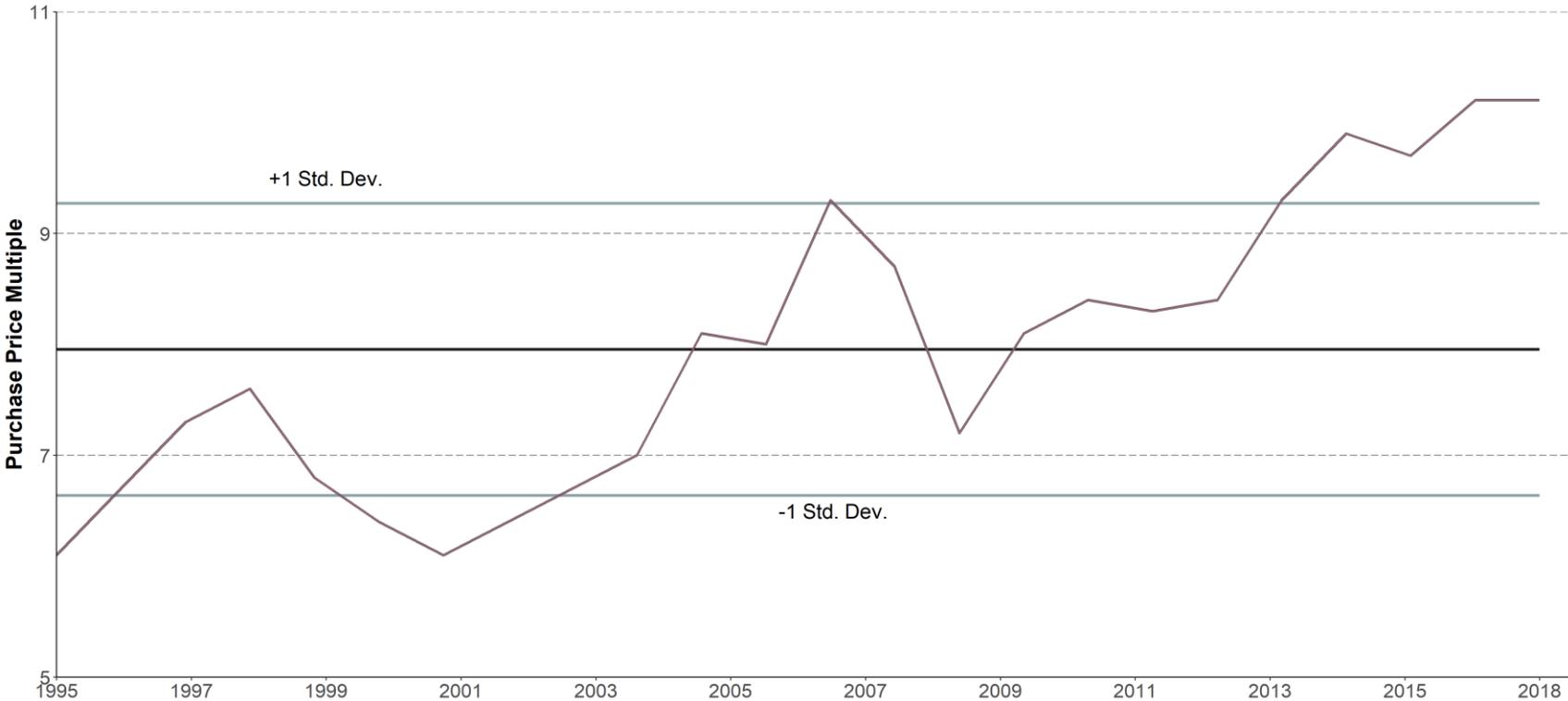
### Developed International Equity Cyclically Adjusted P/E



### Emerging Market Equity Cyclically Adjusted P/E



### Private Equity Multiples



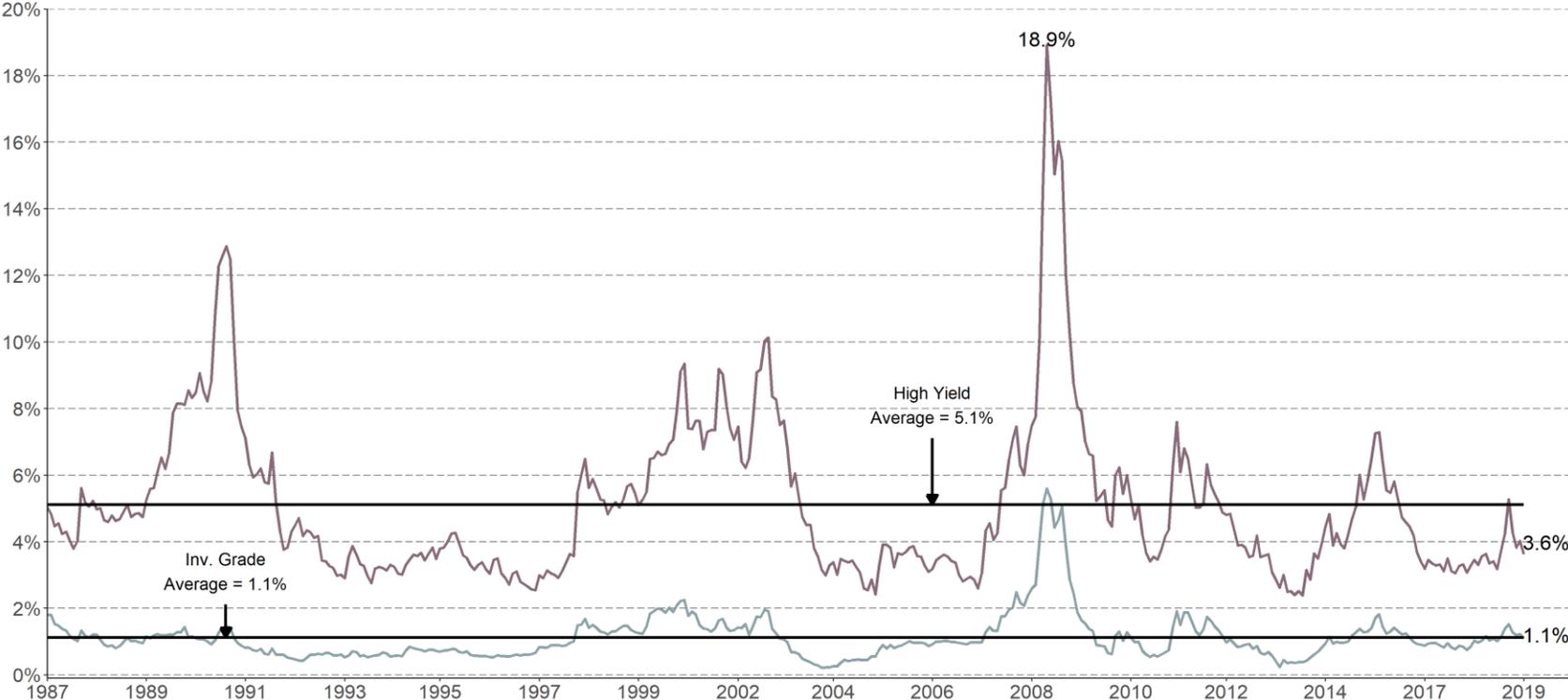
### Core Real Estate Spread vs. Ten-Year Treasury



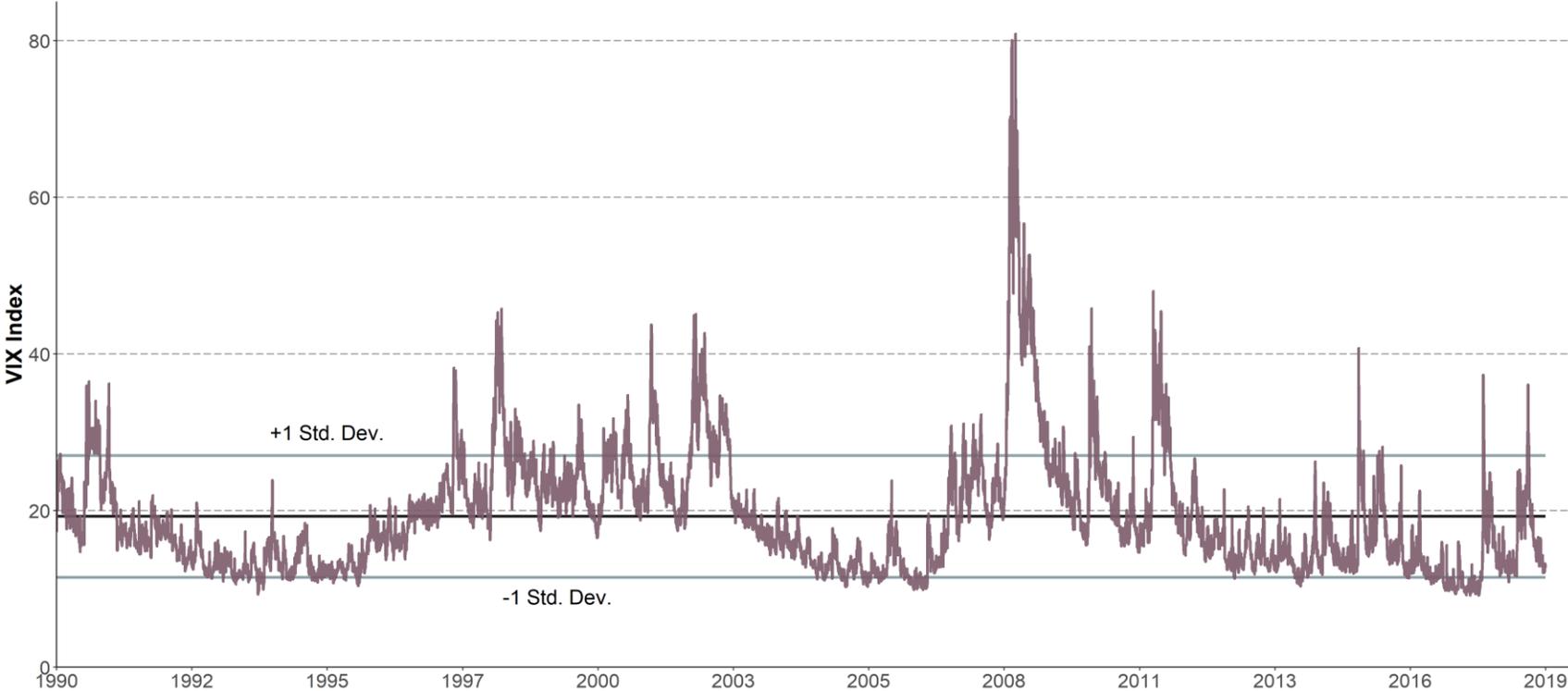
### REITs Dividend Yield Spread vs. Ten-Year Treasury



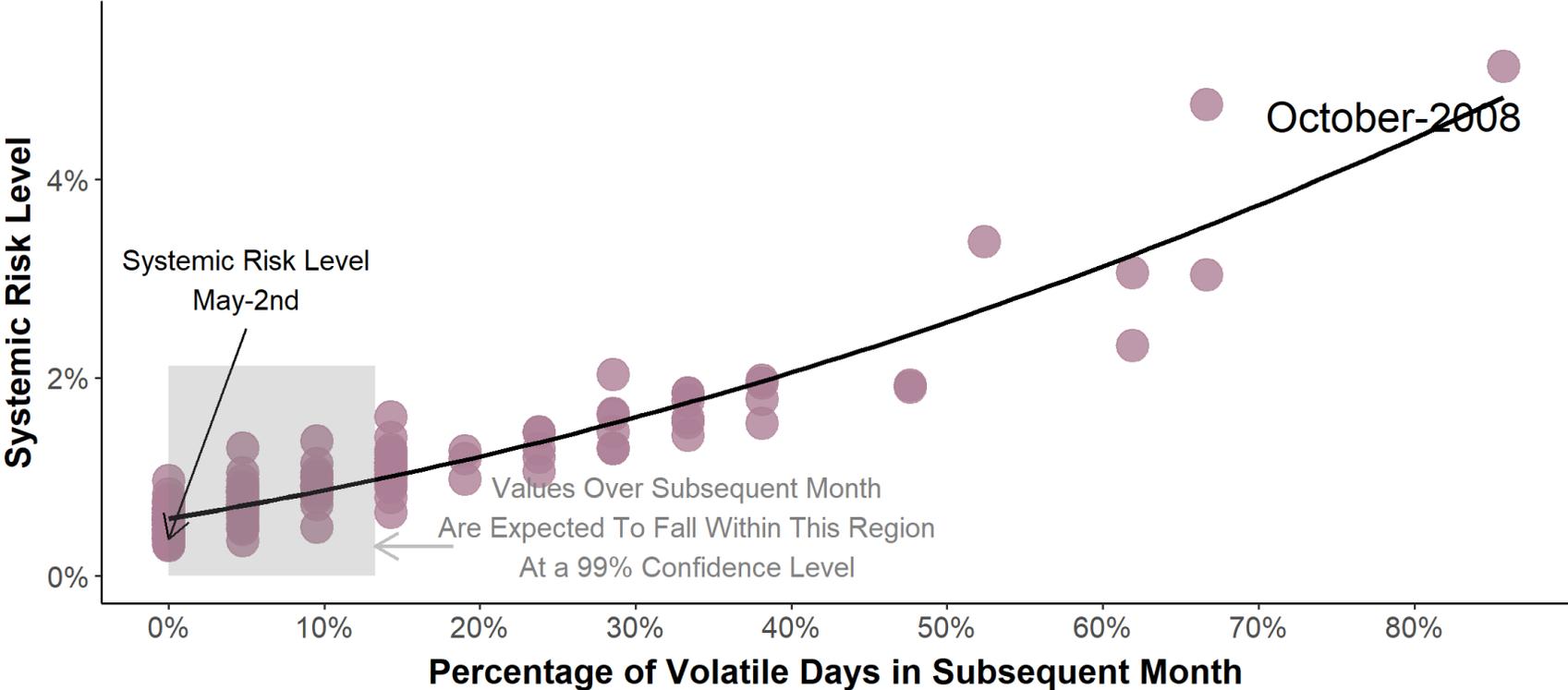
### Credit Spreads



### Equity Volatility



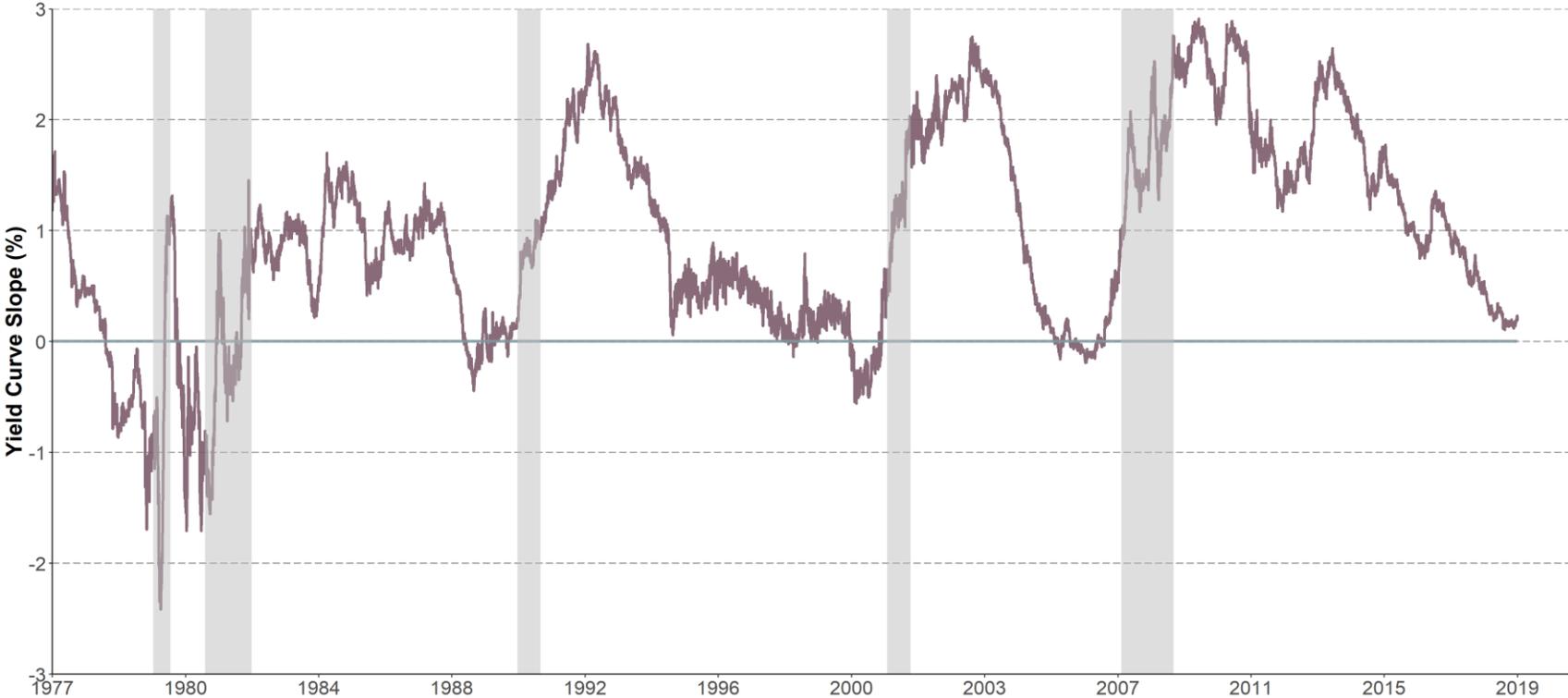
### Systemic Risk and Volatile Market Days<sup>1</sup>



<sup>1</sup> Source: Meketa Investment Group, as of April 30, 2019. Volatile days are defined as the top 10 percent of realized turbulence which is a multivariate distance between asset returns.



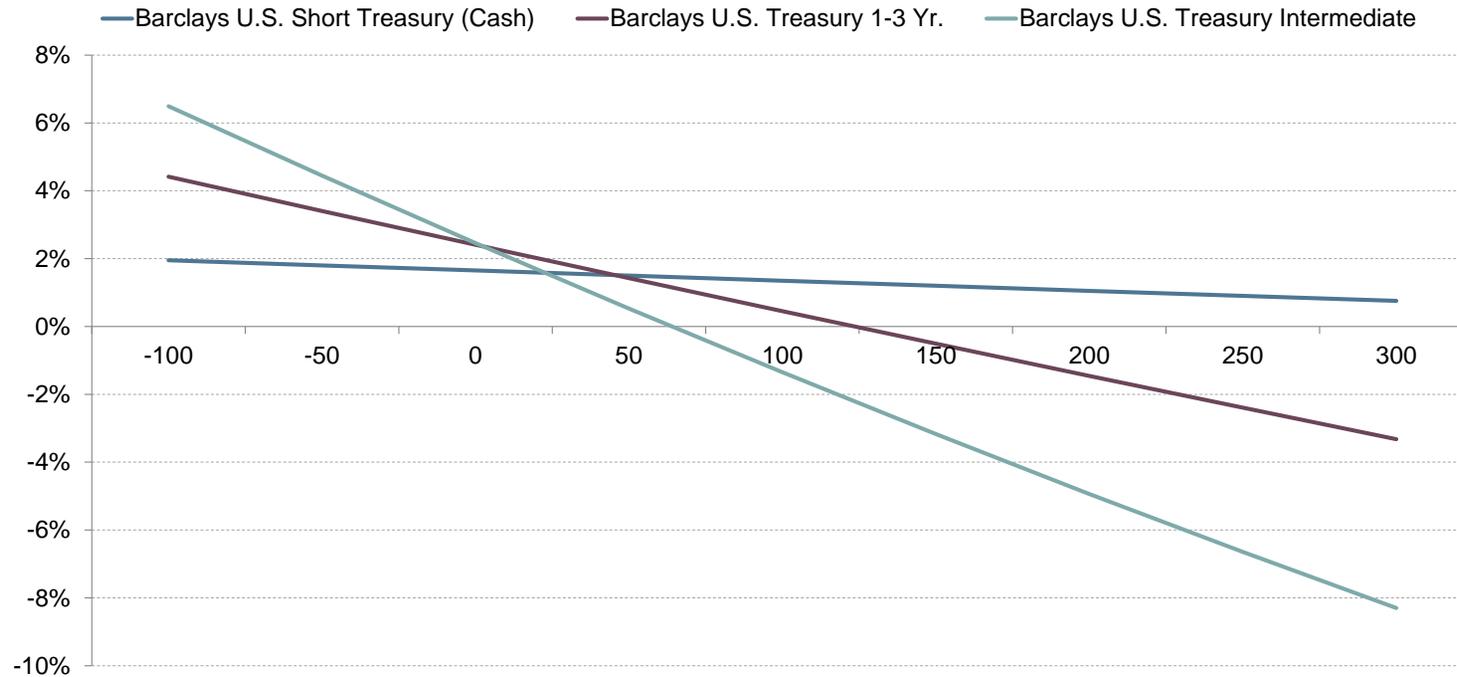
### Yield Curve Slope (Ten Minus Two)



### Ten-Year Breakeven Inflation



### Total Return Given Changes in Interest Rates (bps)<sup>1</sup>

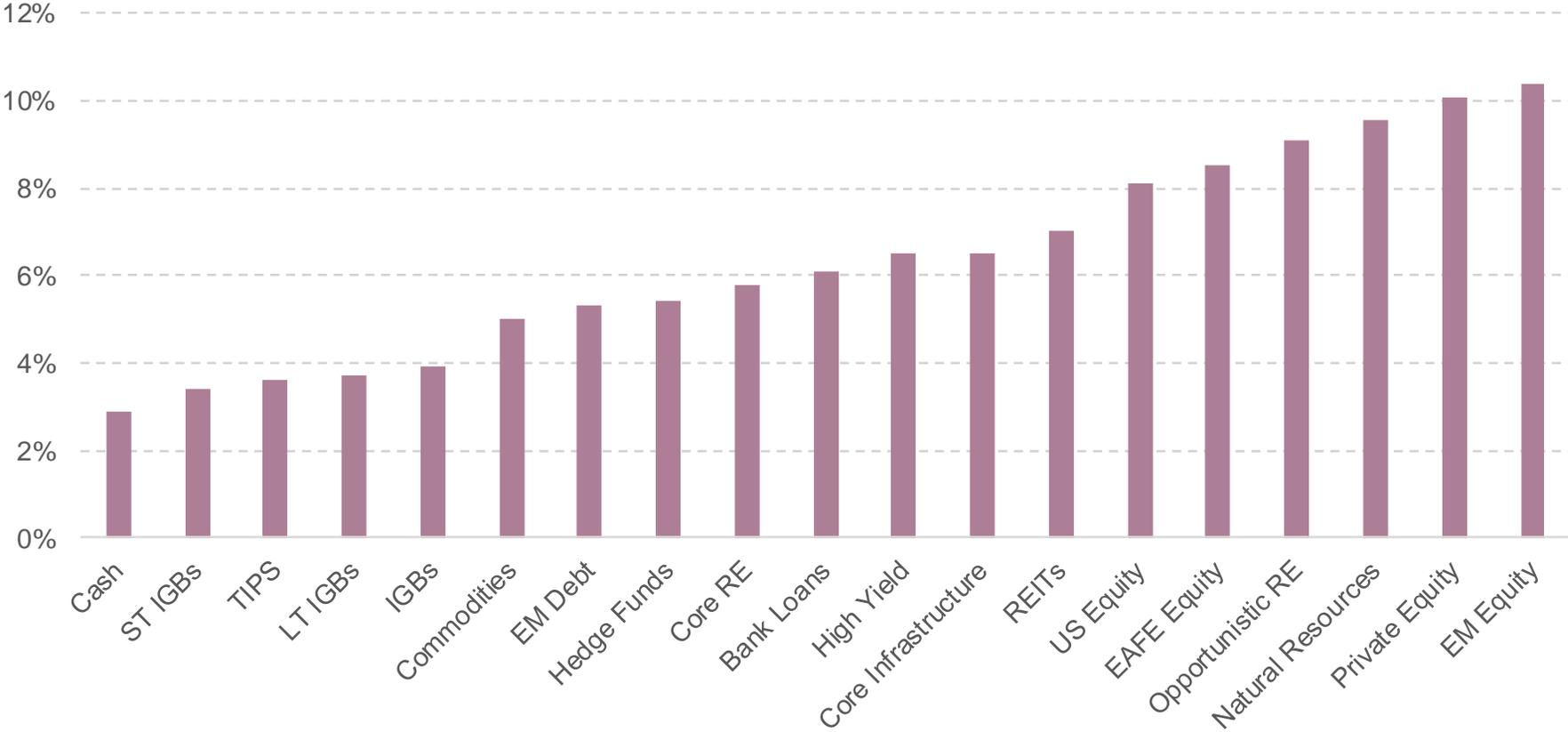


	Total Return for Given Changes in Interest Rates (bps)										Statistics	
	-100	-50	0	50	100	150	200	250	300	Duration	YTW	
Barclays U.S. Short Treasury (Cash)	2.7%	2.6%	2.4%	2.3%	2.1%	2.0%	1.8%	1.7%	1.5%	0.3	2.40%	
Barclays U.S. Treasury 1-3 Yr.	4.4%	3.4%	2.5%	1.5%	0.5%	-0.4%	-1.4%	-2.3%	-3.2%	1.95	2.47%	
Barclays U.S. Treasury Intermediate	6.3%	4.3%	2.3%	0.4%	-1.4%	-3.2%	-4.9%	-6.6%	-8.2%	3.84	2.34%	
Barclays U.S. Treasury Long	22.4%	12.1%	2.9%	-5.4%	-12.6%	-18.9%	-24.2%	-28.4%	-31.7%	17.5	2.87%	

<sup>1</sup> Data represents the expected total return from a given change in interest rates (shown in basis points) over a 12-month period assuming a parallel shift in rates. Data is as of May 1, 2019 via Barclays, Bloomberg, and Meketa Investment Group.



### Long-Term Outlook<sup>1</sup>



<sup>1</sup> Twenty-year expected returns based upon Meketa Investment Group's 2019 Annual Asset Study.



## Appendix – Data Sources and Explanations

### All Data as of April 30, 2019

- U.S. Equity Cyclically Adjusted P/E on S&P 500 Index – Source: Robert Shiller and Yale University.
- Small Cap P/E (Russell 2000 Index) vs. Large Cap P/E (Russell 1000 Index) - Source: Russell Investments. Earnings figures represent 12-month “as reported” earnings.
- Growth P/E (Russell 3000 Growth Index) vs. Value (Russell 3000 Value Index) P/E - Source: Bloomberg, MSCI, and Meketa Investment Group. Earnings figures represent 12-month “as reported” earnings.
- Developed International Equity (MSCI EAFE ex Japan Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Emerging Market Equity (MSCI Emerging Markets Index) Cyclically Adjusted P/E – Source: MSCI and Bloomberg. Earnings figures represent the average of monthly “as reported” earnings over the previous ten years.
- Private Equity Multiples – Source: S&P LCD Average EBITDA Multiples Paid in All LBOs
- Core Real Estate Spread vs. Ten-Year Treasury – Source: Real Capital Analytics, U.S. Treasury, Bloomberg, and Meketa Investment Group. Core Real Estate is proxied by weighted sector transaction based indices from Real Capital Analytics and Meketa Investment Group.
- REITs Dividend Yield Spread vs. Ten-Year Treasury – Source: NAREIT, U.S. Treasury. REITs are proxied by the yield for the NAREIT Equity index.
- Credit Spreads – Source: Barclays Capital. High Yield is proxied by the Barclays High Yield index and Investment Grade Corporates are proxied by the Barclays U.S. Corporate Investment Grade index.

**Appendix – Data Sources and Explanations (Continued)**  
**All Data as of April 30, 2019**

- Equity Volatility – Source: Bloomberg, and Meketa Investment Group. Equity Volatility proxied by VIX Index, a Measure of implied option volatility for U.S. equity markets.
- Systemic Risk and Volatile Market Days – Source: Meketa Investment Group, as of April 30, 2019. Volatile days are defined as the top 10 percent of realized turbulence, which is a multivariate distance between asset returns.
  - Systemic Risk, which measures risk across markets, is important because the more contagion of risk that exists between assets, the more likely it is that markets will experience volatile periods.
- Yield Curve Slope (Ten Minus Two) – Source: Bloomberg, and Meketa Investment Group. Yield curve slope is calculated as the difference between the 10-Year U.S. Treasury Yield and 2-Year U.S. Treasury Yield.
- Ten-Year Breakeven Inflation – Source: U.S. Treasury and Federal Reserve. Data is as of May 1, 2019 for TIPS and Treasuries. Inflation is measured by the Consumer Price Index (CPI-U NSA).

# **Meketa Market Sentiment Indicator**

## Explanation, Construction and Q&A

Meketa has created the MIG Market Sentiment Indicator (MIG-MSI) to complement our valuation-focused Risk Metrics. This measure of sentiment is meant to capture significant and persistent shifts in long-lived market trends of economic growth risk, either towards a risk-seeking trend or a risk-aversion trend.

This appendix explores:

- What is the Meketa Market Sentiment Indicator?
- How do I read the indicator graph?
- How is the Meketa Market Sentiment Indicator constructed?
- What do changes in the indicator mean?

**Meketa has created a market sentiment indicator for monthly publication (the MIG-MSI – see below) to complement Meketa’s Risk Metrics.**

Meketa’s Risk Metrics, which rely significantly on standard market measures of relative valuation, often provide valid early signals of increasing long-term risk levels in the global investment markets. However, as is the case with numerous valuation measures, the Risk Metrics may convey such risk concerns long before a market corrections take place. The MIG-MSI helps to address this early-warning bias by measuring whether the markets are beginning to acknowledge key Risk Metrics trends, and / or indicating non-valuation based concerns. Once the MIG-MSI indicates that the market sentiment has shifted, it is our belief that investors should consider significant action, particularly if confirmed by the Risk Metrics. Importantly, Meketa believes the Risk Metrics and MIG-MSI should always be used in conjunction with one another and never in isolation. The questions and answers below highlight and discuss the basic underpinnings of the Meketa MIG-MSI:

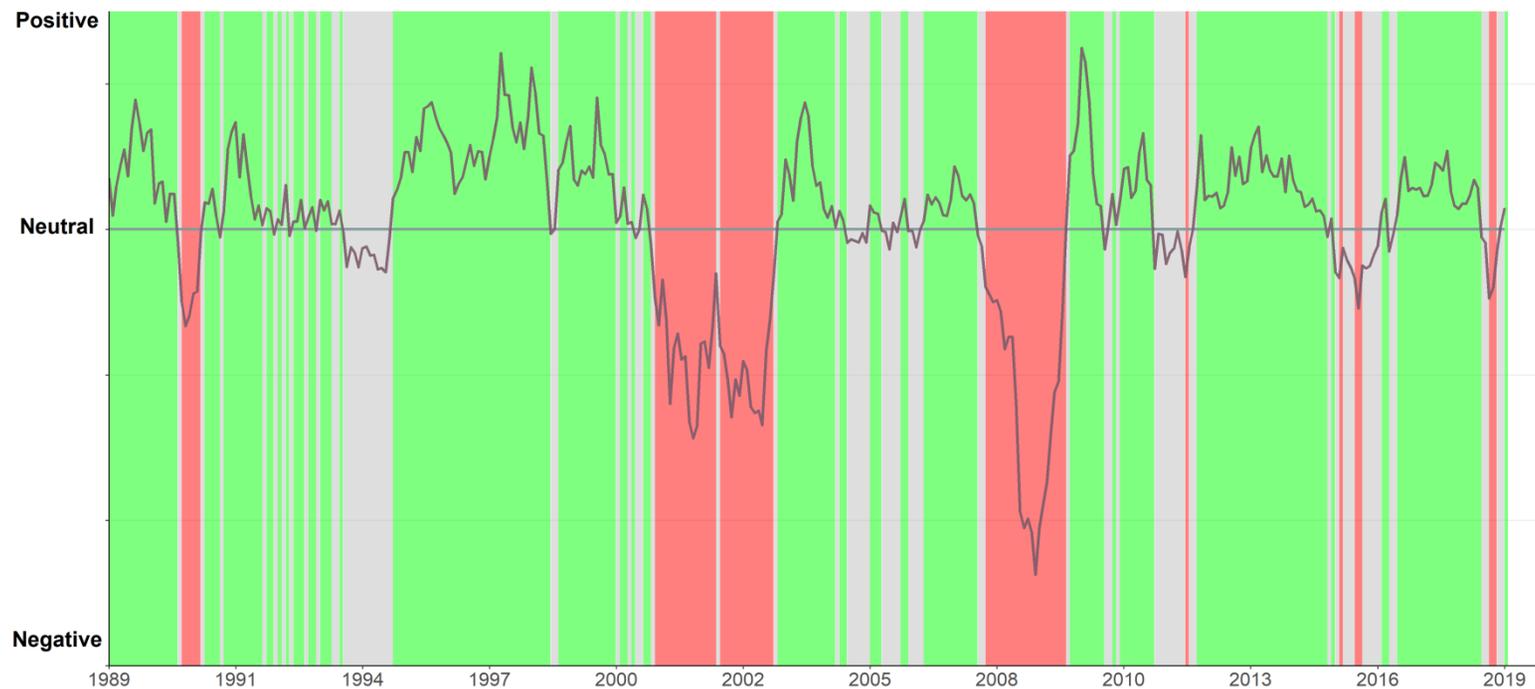
**What is the Meketa Market Sentiment Indicator (MIG-MSI)?**

The MIG-MSI is a measure meant to gauge the market’s sentiment regarding economic growth risk. Growth risk cuts across most financial assets, and is the largest risk exposure that most portfolios bear. The MIG-MSI takes into account the momentum (trend over time, positive or negative) of the economic growth risk exposure of publicly traded stocks and bonds, as a signal of the future direction of growth risk returns; either positive (risk seeking market sentiment), or negative (risk averse market sentiment).

## How do I read the Meketa Market Sentiment Indicator graph?

Simply put, the MIG-MSI is a color-coded indicator that signals the market's sentiment regarding economic growth risk. It is read left to right chronologically. A green indicator on the MIG-MSI indicates that the market's sentiment towards growth risk is positive. A gray indicator indicates that the market's sentiment towards growth risk is neutral or inconclusive. A red indicator indicates that the market's sentiment towards growth risk is negative. The black line on the graph is the level of the MIG-MSI. The degree of the signal above or below the neutral reading is an indication the signal's current strength.

Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.



## How is the Meketa Market Sentiment Indicator (MIG-MSI) Constructed?

The MIG-MSI is constructed from two sub-elements representing investor sentiment in stocks and bonds:

- Stock return momentum: Return momentum for the S&P 500 Equity Index (trailing 12-months)
- Bond yield spread momentum: Momentum of bond yield spreads (excess of the measured bond yield over the identical duration U.S. Treasury bond yield) for corporate bonds (trailing 12-months) for both investment grade bonds (75% weight) and high yield bonds (25% weight). The scale of this measure is adjusted to match that of the stock return momentum measure.

The black line reading on the graph is calculated as the average of the stock return momentum measure and the bonds spread momentum measure.<sup>1</sup> The color reading on the graph is determined as follows:

- If both stock return momentum and bond spread momentum are positive = GREEN (positive)
- If one of the momentum indicators is positive, and the other negative = GRAY (inconclusive)
- If both stock return momentum and bond spread momentum are negative = RED (negative)

---

<sup>1</sup> Momentum as we are defining it is the use of the past behavior of a series as a predictor of its future behavior.  
"Time Series Momentum" Moskowitz, Ooi, Pedersen, August 2010. <http://pages.stern.nyu.edu/~lpederse/papers/TimeSeriesMomentum.pdf>

**What does the Meketa Market Sentiment Indicator (MIG-MSI) mean? Why might it be useful?**

There is strong evidence that time series momentum is significant and persistent. In particular, across an extensive array of asset classes, the sign of the trailing 12-month return (positive or negative) is indicative of future returns (positive or negative) over the next 12-month period. The MIG-MSI is constructed to measure this momentum in stocks and corporate bond spreads. A reading of green or red is agreement of both the equity and bond measures, indicating that it is likely that this trend (positive or negative) will continue over the next 12 months. When the measures disagree, the indicator turns gray. A gray reading does not necessarily mean a new trend is occurring, as the indicator may move back to green, or into the red from there. The level of the reading (black line) and the number of months at the red or green reading, gives the user additional information on which to form an opinion, and potentially take action.

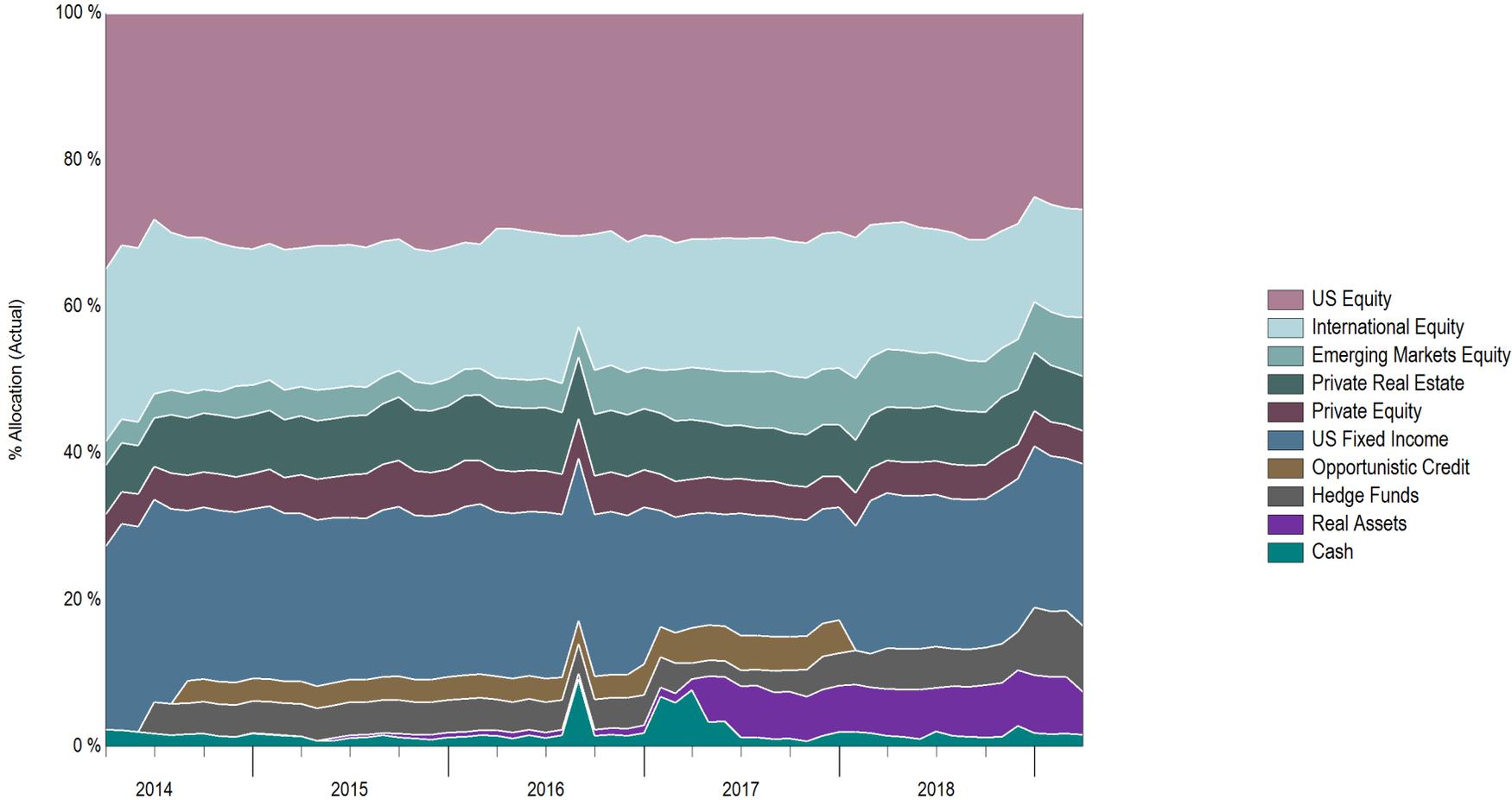
## **Quarterly Review As of March 31, 2019**



Allocation vs. Targets and Policy							
		Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
21.0%	US Equity	\$223,381,378	26.7%	21.0%	5.7%	15.0% - 26.0%	No
	International Equity	\$123,207,291	14.7%	10.0%	4.7%	5.0% - 15.0%	Yes
	Emerging Markets Equity	\$67,248,736	8.0%	8.0%	0.0%	4.0% - 12.0%	Yes
	Private Real Estate	\$61,912,343	7.4%	8.0%	-0.6%	6.0% - 10.0%	Yes
10.0%	Private Equity	\$38,017,768	4.5%	15.0%	-10.5%	5.0% - 20.0%	No
	US Fixed Income	\$184,574,864	22.1%	18.0%	4.1%	13.0% - 23.0%	Yes
	Opportunistic Credit	--	--	5.0%	-5.0%	3.0% - 7.0%	No
8.0%	Hedge Funds	\$74,906,340	9.0%	10.0%	-1.0%	5.0% - 15.0%	Yes
	Real Assets	\$48,786,849	5.8%	5.0%	0.8%	3.0% - 7.0%	Yes
8.0%	Cash	\$13,733,940	1.6%	0.0%	1.6%	0.0% - 5.0%	Yes
	<b>Total</b>	<b>\$835,769,508</b>	<b>100.0%</b>	<b>100.0%</b>			



Asset Allocation History  
5 Years Ending March 31, 2019



As of March 31, 2019

## Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund (Net)*</b>	<b>835,769,508</b>	<b>100.0</b>	<b>7.6</b>	<b>7.6</b>	<b>2.0</b>	<b>3.3</b>	<b>8.3</b>	<b>6.0</b>	<b>10.1</b>	<b>7.9</b>	<b>Dec-94</b>
<b>Total Fund (Gross)*</b>			<b>7.7</b>	<b>7.7</b>	<b>2.2</b>	<b>3.5</b>	<b>8.6</b>	<b>6.3</b>	<b>10.5</b>	<b>8.1</b>	
<i>Policy Index</i>			6.5	6.5	1.4	2.8	8.6	6.3	10.7	5.9	Dec-94
<b>Total Fund w/o Alternatives (Net)</b>	<b>598,412,270</b>	<b>71.6</b>	<b>9.7</b>	<b>9.7</b>	<b>1.8</b>	<b>2.5</b>	<b>8.8</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>Dec-94</b>
<b>Total Fund w/o Alternatives (Gross)</b>			<b>9.8</b>	<b>9.8</b>	<b>2.0</b>	<b>2.8</b>	<b>9.1</b>	<b>6.2</b>	<b>--</b>	<b>--</b>	
<i>Policy Index w/o AI</i>			9.3	9.3	2.5	3.1	8.9	5.9	--	--	Dec-94
<b>US Equity (Net)</b>	<b>223,381,378</b>	<b>26.7</b>	<b>14.6</b>	<b>14.6</b>	<b>3.4</b>	<b>7.9</b>	<b>13.9</b>	<b>11.1</b>	<b>16.4</b>	<b>9.9</b>	<b>Dec-94</b>
<b>US Equity (Gross)</b>			<b>14.6</b>	<b>14.6</b>	<b>3.6</b>	<b>8.1</b>	<b>14.1</b>	<b>11.3</b>	<b>16.6</b>	<b>10.0</b>	
<i>80% R1000 / 20% R2000</i>			14.1	14.1	3.3	7.9	13.5	10.0	15.8	9.9	Dec-94
<b>International Equity (Net)</b>	<b>190,456,027</b>	<b>22.8</b>	<b>11.4</b>	<b>11.4</b>	<b>-2.2</b>	<b>-4.7</b>	<b>8.0</b>	<b>2.3</b>	<b>9.4</b>	<b>5.1</b>	<b>Dec-98</b>
<b>International Equity (Gross)</b>			<b>11.6</b>	<b>11.6</b>	<b>-1.9</b>	<b>-4.4</b>	<b>8.4</b>	<b>2.8</b>	<b>10.0</b>	<b>5.3</b>	
<i>International Equity Custom</i>			10.1	10.1	-1.3	-4.4	9.0	3.3	9.2	4.3	Dec-98
<b>Developed International Equity (Net)</b>	<b>123,207,291</b>	<b>14.7</b>	<b>10.3</b>	<b>10.3</b>	<b>-3.8</b>	<b>-4.7</b>	<b>7.1</b>	<b>1.9</b>	<b>9.6</b>	<b>3.0</b>	<b>Jan-08</b>
<b>Developed International Equity (Gross)</b>			<b>10.4</b>	<b>10.4</b>	<b>-3.7</b>	<b>-4.6</b>	<b>7.4</b>	<b>2.3</b>	<b>10.1</b>	<b>3.4</b>	
<i>MSCI EAFE</i>			10.0	10.0	-2.5	-3.7	7.3	2.3	9.0	2.1	Jan-08
<b>Emerging Markets Equity (Net)</b>	<b>67,248,736</b>	<b>8.0</b>	<b>13.8</b>	<b>13.8</b>	<b>1.4</b>	<b>-5.0</b>	<b>11.6</b>	<b>4.5</b>	<b>--</b>	<b>3.4</b>	<b>Apr-12</b>
<b>Emerging Markets Equity (Gross)</b>			<b>14.0</b>	<b>14.0</b>	<b>2.1</b>	<b>-4.1</b>	<b>12.6</b>	<b>5.5</b>	<b>--</b>	<b>4.4</b>	
<i>MSCI Emerging Markets</i>			9.9	9.9	0.6	-7.4	10.7	3.7	8.9	2.9	Apr-12
<b>US Fixed Income (Net)</b>	<b>184,574,864</b>	<b>22.1</b>	<b>2.6</b>	<b>2.6</b>	<b>4.2</b>	<b>4.2</b>	<b>3.2</b>	<b>2.9</b>	<b>4.7</b>	<b>5.3</b>	<b>Dec-94</b>
<b>US Fixed Income (Gross)</b>			<b>2.6</b>	<b>2.6</b>	<b>4.3</b>	<b>4.4</b>	<b>3.4</b>	<b>3.1</b>	<b>5.1</b>	<b>5.4</b>	
<i>US Fixed Custom</i>			2.6	2.6	4.3	4.2	3.3	3.1	4.0	5.6	Dec-94
<b>Private Real Estate (Net)</b>	<b>61,912,343</b>	<b>7.4</b>	<b>2.4</b>	<b>2.4</b>	<b>5.8</b>	<b>7.8</b>	<b>7.2</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>Mar-99</b>
<b>Private Real Estate (Gross)</b>			<b>2.4</b>	<b>2.4</b>	<b>5.8</b>	<b>7.8</b>	<b>7.5</b>	<b>8.7</b>	<b>9.2</b>	<b>8.7</b>	
<i>NCREIF ODCE (net)</i>			1.2	1.2	4.7	6.6	7.0	9.2	7.7	7.5	Mar-99

Data prior to March 2018 provided by prior consultant.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Equity (Net)</b>	<b>38,017,768</b>	<b>4.5</b>	<b>0.7</b>	<b>0.7</b>	<b>6.1</b>	<b>12.8</b>	<b>11.2</b>	<b>9.5</b>	<b>7.9</b>	<b>8.0</b>	<b>Jun-05</b>
<b>Private Equity (Gross)</b>			<b>0.7</b>	<b>0.7</b>	<b>6.1</b>	<b>12.8</b>	<b>11.2</b>	<b>9.5</b>	<b>8.1</b>	<b>8.2</b>	
<i>Thomson Reuters Cambridge Private Equity Index</i>			<i>0.0</i>	<i>0.0</i>	<i>3.8</i>	<i>9.4</i>	<i>14.7</i>	<i>12.6</i>	<i>--</i>	<i>--</i>	<i>Jun-05</i>
<b>Hedge Fund (Net)</b>	<b>74,906,340</b>	<b>9.0</b>	<b>3.8</b>	<b>3.8</b>	<b>-0.5</b>	<b>1.5</b>	<b>6.4</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jun-14</b>
<b>Hedge Fund (Gross)</b>			<b>3.8</b>	<b>3.8</b>	<b>-0.4</b>	<b>1.6</b>	<b>6.5</b>	<b>--</b>	<b>--</b>	<b>3.8</b>	
<i>Hedge Fund Custom</i>			<i>4.6</i>	<i>4.6</i>	<i>-0.3</i>	<i>0.2</i>	<i>4.3</i>	<i>--</i>	<i>--</i>	<i>2.7</i>	<i>Jun-14</i>
<b>Real Assets (Net)</b>	<b>48,786,849</b>	<b>5.8</b>	<b>4.6</b>	<b>4.6</b>	<b>5.3</b>	<b>7.6</b>	<b>6.7</b>	<b>7.5</b>	<b>--</b>	<b>--</b>	<b>Mar-99</b>
<b>Real Assets (Gross)</b>			<b>4.6</b>	<b>4.6</b>	<b>5.4</b>	<b>7.7</b>	<b>7.0</b>	<b>8.2</b>	<b>--</b>	<b>--</b>	
<i>Real Asset Custom</i>			<i>13.2</i>	<i>13.2</i>	<i>9.8</i>	<i>12.9</i>	<i>11.3</i>	<i>8.5</i>	<i>--</i>	<i>--</i>	<i>Mar-99</i>
<b>Private Infrastructure (Net)</b>	<b>21,463,361</b>	<b>2.6</b>	<b>0.3</b>	<b>0.3</b>	<b>4.5</b>	<b>6.1</b>	<b>9.8</b>	<b>--</b>	<b>--</b>	<b>6.5</b>	<b>Dec-14</b>
<b>Private Infrastructure (Gross)</b>			<b>0.3</b>	<b>0.3</b>	<b>4.5</b>	<b>6.1</b>	<b>9.8</b>	<b>--</b>	<b>--</b>	<b>6.5</b>	
<i>S&amp;P Global Infrastructure Net TR USD</i>			<i>13.8</i>	<i>13.8</i>	<i>5.8</i>	<i>8.2</i>	<i>7.7</i>	<i>4.5</i>	<i>--</i>	<i>4.2</i>	<i>Dec-14</i>
<b>Private Natural Resources (Net)</b>	<b>10,744,485</b>	<b>1.3</b>	<b>1.2</b>	<b>1.2</b>	<b>7.9</b>	<b>10.1</b>	<b>16.9</b>	<b>--</b>	<b>--</b>	<b>17.4</b>	<b>Sep-15</b>
<b>Private Natural Resources (Gross)</b>			<b>1.2</b>	<b>1.2</b>	<b>7.9</b>	<b>10.1</b>	<b>16.9</b>	<b>--</b>	<b>--</b>	<b>17.4</b>	
<i>S&amp;P Global Natural Resources Index TR USD</i>			<i>12.4</i>	<i>12.4</i>	<i>-5.2</i>	<i>-0.1</i>	<i>13.4</i>	<i>1.8</i>	<i>4.9</i>	<i>14.4</i>	<i>Sep-15</i>
<b>Cash (Net)</b>	<b>13,733,940</b>	<b>1.6</b>	<b>0.3</b>	<b>0.3</b>	<b>0.8</b>	<b>0.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	
<b>Cash (Gross)</b>			<b>0.3</b>	<b>0.3</b>	<b>0.8</b>	<b>0.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	

\*One or more accounts have been excluded from the composite for the purposes of performance calculations and market value.

Real Assets includes State Street Real Asset NL Fund



As of March 31, 2019

## Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Total Fund*</b>	<b>835,769,508</b>	<b>100.0</b>	<b>--</b>	<b>7.6</b>	<b>7.6</b>	<b>2.0</b>	<b>3.3</b>	<b>8.3</b>	<b>6.0</b>	<b>10.1</b>	<b>7.9</b>	<b>Dec-94</b>
<i>Policy Index</i>				6.5	6.5	1.4	2.8	8.6	6.3	10.7	5.9	Dec-94
<i>InvestorForce Public DB \$250mm-\$1B Net Median</i>				8.3	8.3	2.5	3.6	8.3	5.7	9.9	7.4	Dec-94
<i>InvestorForce Public DB \$250mm-\$1B Net Rank</i>				77	77	71	61	43	34	40	36	Dec-94
<b>Total Fund w/o Alternatives</b>	<b>598,412,270</b>	<b>71.6</b>	<b>71.6</b>	<b>9.7</b>	<b>9.7</b>	<b>1.8</b>	<b>2.5</b>	<b>8.8</b>	<b>5.9</b>	<b>--</b>	<b>--</b>	<b>Dec-94</b>
<i>Policy Index w/o AI</i>				9.3	9.3	2.5	3.1	8.9	5.9	--	--	Dec-94
<i>InvestorForce Public DB \$250mm-\$1B Net Median</i>				8.3	8.3	2.5	3.6	8.3	5.7	9.9	7.4	Dec-94
<i>InvestorForce Public DB \$250mm-\$1B Net Rank</i>				9	9	84	88	25	41	--	--	Dec-94
<b>US Equity</b>	<b>223,381,378</b>	<b>26.7</b>	<b>37.3</b>	<b>14.6</b>	<b>14.6</b>	<b>3.4</b>	<b>7.9</b>	<b>13.9</b>	<b>11.1</b>	<b>16.4</b>	<b>9.9</b>	<b>Dec-94</b>
<i>80% R1000 / 20% R2000</i>				14.1	14.1	3.3	7.9	13.5	10.0	15.8	9.9	Dec-94
<i>InvestorForce All DB US Eq Net Median</i>				14.0	14.0	3.6	7.5	13.0	9.5	15.4	9.6	Dec-94
<i>InvestorForce All DB US Eq Net Rank</i>				24	24	54	41	16	4	7	27	Dec-94
Mellon Dynamic US Equity	81,155,671	9.7	36.3	15.9	15.9	6.1	9.6	15.5	13.4	--	17.0	Dec-12
<i>S&amp;P 500</i>				13.6	13.6	5.9	9.5	13.5	10.9	15.9	13.9	Dec-12
<i>eV US Large Cap Core Equity Net Median</i>				13.1	13.1	4.1	6.9	12.1	9.4	14.8	12.9	Dec-12
<i>eV US Large Cap Core Equity Net Rank</i>				7	7	31	27	4	2	--	1	Dec-12
Mellon Large Cap	107,058,152	12.8	47.9	14.0	14.0	5.6	9.3	13.5	--	--	13.5	Mar-16
<i>Russell 1000</i>				14.0	14.0	5.5	9.3	13.5	10.6	16.0	13.5	Mar-16
<i>eV US Large Cap Core Equity Net Median</i>				13.1	13.1	4.1	6.9	12.1	9.4	14.8	12.1	Mar-16
<i>eV US Large Cap Core Equity Net Rank</i>				27	27	37	30	20	--	--	20	Mar-16
DFA Small Cap	17,511,053	2.1	7.8	12.0	12.0	-6.8	-0.2	10.5	--	--	6.8	Jun-14
<i>Russell 2000</i>				14.6	14.6	-5.3	2.0	12.9	7.1	15.4	7.0	Jun-14
<i>eV US Small Cap Core Equity Net Median</i>				13.6	13.6	-5.6	1.0	11.7	6.9	15.6	6.9	Jun-14
<i>eV US Small Cap Core Equity Net Rank</i>				81	81	66	64	69	--	--	53	Jun-14

Historical returns for the US Equity Composite prior to January 2012 and for the International Equity Composite prior to December 2010 are gross only.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
PanAgora	17,656,502	2.1	7.9	14.3	14.3	-8.4	0.5	11.4	7.2	--	8.9	Sep-13
<i>Russell 2000</i>				14.6	14.6	-5.3	2.0	12.9	7.1	15.4	8.2	Sep-13
<i>eV US Small Cap Core Equity Net Median</i>				13.6	13.6	-5.6	1.0	11.7	6.9	15.6	8.4	Sep-13
<i>eV US Small Cap Core Equity Net Rank</i>				39	39	78	55	55	44	--	42	Sep-13
<b>International Equity</b>	<b>190,456,027</b>	<b>22.8</b>	<b>31.8</b>	<b>11.4</b>	<b>11.4</b>	<b>-2.2</b>	<b>-4.7</b>	<b>8.0</b>	<b>2.3</b>	<b>9.4</b>	<b>5.1</b>	<b>Dec-98</b>
<i>International Equity Custom</i>				10.1	10.1	-1.3	-4.4	9.0	3.3	9.2	4.3	Dec-98
<i>InvestorForce All DB ex-US Eq Net Median</i>				10.6	10.6	-2.5	-5.9	7.9	2.7	9.1	5.1	Dec-98
<i>InvestorForce All DB ex-US Eq Net Rank</i>				27	27	39	28	46	68	35	49	Dec-98
<b>Developed International Equity</b>	<b>123,207,291</b>	<b>14.7</b>	<b>64.7</b>	<b>10.3</b>	<b>10.3</b>	<b>-3.8</b>	<b>-4.7</b>	<b>7.1</b>	<b>1.9</b>	<b>9.6</b>	<b>3.0</b>	<b>Jan-08</b>
<i>MSCI EAFE</i>				10.0	10.0	-2.5	-3.7	7.3	2.3	9.0	2.1	Jan-08
Mellon International	102,853,121	12.3	83.5	10.0	10.0	-2.4	-3.2	7.7	--	--	7.7	Mar-16
<i>MSCI EAFE</i>				10.0	10.0	-2.5	-3.7	7.3	2.3	9.0	7.3	Mar-16
<i>eV All EAFE Equity Net Median</i>				10.1	10.1	-4.5	-5.6	6.9	3.0	9.9	6.9	Mar-16
<i>eV All EAFE Equity Net Rank</i>				52	52	31	29	31	--	--	31	Mar-16
Copper Rock	20,354,170	2.4	16.5	11.8	11.8	-10.9	-12.3	2.6	1.8	--	4.1	Sep-13
<i>MSCI World ex USA Small Cap</i>				10.9	10.9	-7.8	-8.7	7.3	3.7	12.2	5.0	Sep-13
<i>eV EAFE Small Cap Equity Net Median</i>				10.1	10.1	-9.4	-11.9	7.3	4.7	13.9	6.0	Sep-13
<i>eV EAFE Small Cap Equity Net Rank</i>				29	29	68	58	97	93	--	87	Sep-13
<b>Emerging Markets Equity</b>	<b>67,248,736</b>	<b>8.0</b>	<b>35.3</b>	<b>13.8</b>	<b>13.8</b>	<b>1.4</b>	<b>-5.0</b>	<b>11.6</b>	<b>4.5</b>	<b>--</b>	<b>3.4</b>	<b>Apr-12</b>
<i>MSCI Emerging Markets</i>				9.9	9.9	0.6	-7.4	10.7	3.7	8.9	2.9	Apr-12

Developed International Equity and Emerging Markets Equity composites were only reported as one composite prior to March 2018.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Wells Capital	67,248,736	8.0	100.0	13.8	13.8	1.4	-5.0	11.6	4.5	--	3.1	Mar-12
<i>MSCI Emerging Markets</i>				9.9	9.9	0.6	-7.4	10.7	3.7	8.9	2.7	Mar-12
<i>eV Emg Mkts Equity Net Median</i>				10.3	10.3	-0.3	-8.6	9.9	3.7	9.8	3.3	Mar-12
<i>eV Emg Mkts Equity Net Rank</i>				14	14	30	17	26	30	--	55	Mar-12
<b>US Fixed Income</b>	<b>184,574,864</b>	<b>22.1</b>	<b>30.8</b>	<b>2.6</b>	<b>2.6</b>	<b>4.2</b>	<b>4.2</b>	<b>3.2</b>	<b>2.9</b>	<b>4.7</b>	<b>5.3</b>	<b>Dec-94</b>
<i>US Fixed Custom</i>				2.6	2.6	4.3	4.2	3.3	3.1	4.0	5.6	Dec-94
<i>InvestorForce All DB US Fix Inc Net Median</i>				3.2	3.2	4.3	4.3	3.0	2.9	5.2	5.8	Dec-94
<i>InvestorForce All DB US Fix Inc Net Rank</i>				73	73	59	59	44	52	64	86	Dec-94
Barrow Hanley	136,991,243	16.4	74.2	3.1	3.1	4.7	4.6	2.0	2.7	--	3.3	Mar-10
<i>BBgBarc US Aggregate TR</i>				2.9	2.9	4.6	4.5	2.0	2.7	3.8	3.3	Mar-10
<i>eV US Core Fixed Inc Net Median</i>				3.2	3.2	4.6	4.4	2.2	2.8	4.3	3.6	Mar-10
<i>eV US Core Fixed Inc Net Rank</i>				63	63	41	31	66	59	--	69	Mar-10
Vanguard Short-Term Treasury Index Fund	47,583,621	5.7	25.8	1.0	1.0	2.5	2.7	--	--	--	2.7	Feb-18
<i>BBgBarc US Govt 1-3 Yr TR</i>				1.0	1.0	2.5	2.7	1.0	1.0	1.1	2.7	Feb-18
<i>BBgBarc US Govt 1-5 Yr TR</i>				1.2	1.2	3.0	3.2	1.0	1.3	1.5	3.2	Feb-18
<i>eV US Short Duration Fixed Inc Net Median</i>				1.4	1.4	2.8	3.1	1.6	1.4	2.1	3.0	Feb-18
<i>eV US Short Duration Fixed Inc Net Rank</i>				90	90	76	84	--	--	--	79	Feb-18

Historical returns for the US Fixed Income Composite prior to December 2010 and for Barrow Hanley prior to June 2010 are gross only.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Real Estate</b>	<b>61,912,343</b>	<b>7.4</b>	<b>7.4</b>	<b>2.4</b>	<b>2.4</b>	<b>5.8</b>	<b>7.8</b>	<b>7.2</b>	<b>7.9</b>	<b>--</b>	<b>--</b>	<b>Mar-99</b>
<i>NCREIF ODCE (net)</i>				1.2	1.2	4.7	6.6	7.0	9.2	7.7	7.5	Mar-99
<i>InvestorForce All DB Real Estate Pub+Priv Net Median</i>				1.4	1.4	4.8	6.9	6.9	9.1	7.5	7.5	Mar-99
<i>InvestorForce All DB Real Estate Pub+Priv Net Rank</i>				17	17	19	30	45	88	--	--	Mar-99
Greenfield Gap VII	11,073,596	1.3	17.9	4.0	4.0	9.4	10.2	12.6	--	--	13.2	Dec-14
Patron Capital V	5,703,497	0.7	9.2	5.6	5.6	6.5	13.4	17.2	--	--	16.2	Jan-16
UBS Trumbull Property	42,952,430	5.1	69.4	1.7	1.7	5.0	6.8	5.1	7.4	6.8	7.3	Mar-99
Carlyle Realty VIII	414,355	0.0	0.7	-6.4	-6.4	-28.7	-28.7	--	--	--	-40.8	Dec-17
Taconic CRE Dislocation Fund II	1,691,598	0.2	2.7	-0.7	-0.7	--	--	--	--	--	-0.7	Nov-18
Carmel Partners Investment Fund VII	76,866	0.0	0.1	--	--	--	--	--	--	--	--	Apr-19
<b>Private Equity</b>	<b>38,017,768</b>	<b>4.5</b>	<b>4.5</b>	<b>0.7</b>	<b>0.7</b>	<b>6.1</b>	<b>12.8</b>	<b>11.2</b>	<b>9.5</b>	<b>7.9</b>	<b>8.0</b>	<b>Jun-05</b>
<i>Thomson Reuters Cambridge Private Equity Index</i>				0.0	0.0	3.8	9.4	14.7	12.6	--	--	Jun-05
<i>InvestorForce All DB Private Eq Net Median</i>				-0.1	-0.1	5.9	10.0	11.4	10.6	10.8	10.4	Jun-05
<i>InvestorForce All DB Private Eq Net Rank</i>				23	23	49	29	53	62	95	80	Jun-05
Adams Street	7,466,397	0.9	19.6	-1.5	-1.5	7.1	10.8	11.8	12.0	10.4	6.9	Sep-05
Invesco IV	474,703	0.1	1.2	0.0	0.0	-19.1	-16.1	5.7	7.1	7.6	8.2	Jun-05

Private Real Estate results prior to 1/1/2019 were included in the Real Assets composite. All results for the Private Real Estate composite that include the period prior to 1/1/2019 will reflect only the latest lineup of managers that Meketa received information for, therefore it may not reflect the entire Private Real Estate composite at that given time.

All private markets performance and market values reflect a 12/31/2018 capital account balance unless otherwise noted.

Historical returns for Invesco IV prior to April 2012 are gross only.

The market values for Invesco IV and Invesco VI reflect a 9/30/2018 capital account balance.

Adams Street includes Adams Street 2005, Adams Street 2007, and Adams Street 2011.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Invesco VI	5,976,760	0.7	15.7	0.0	0.0	5.3	10.4	11.8	13.3	--	11.9	Jun-13
Ocean Avenue II	9,730,272	1.2	25.6	8.0	8.0	13.8	32.7	22.0	--	--	12.5	Jun-14
Pantheon I	977,851	0.1	2.6	-3.0	-3.0	1.9	5.0	6.1	5.0	5.2	3.5	Dec-05
Pantheon II	3,998,727	0.5	10.5	0.9	0.9	11.0	15.9	14.3	11.6	--	11.8	Dec-11
Pantheon Secondary	1,167,621	0.1	3.1	-4.2	-4.2	13.3	10.5	4.9	3.3	1.3	3.7	Jun-07
Raven Asset Fund II	3,429,925	0.4	9.0	2.9	2.9	6.9	8.9	0.8	--	--	-1.2	Aug-14
Davidson Kempner Long-Term Distressed Opportunities Fund IV	2,895,578	0.3	7.6	2.8	2.8	15.1	15.9	--	--	--	15.9	Apr-18
GTCR Fund XII	696,498	0.1	1.8	-32.5	-32.5	-32.5	--	--	--	--	-32.5	Jun-18
Carrick Capital Partners III	733,208	0.1	1.9	-7.0	-7.0	--	--	--	--	--	-11.4	Aug-18
Cressey & Company Fund VI	444,228	0.1	1.2	-11.2	-11.2	--	--	--	--	--	-11.2	Jan-19
TCV X	26,000	0.0	0.1	--	--	--	--	--	--	--	--	Apr-19
<b>Hedge Fund</b>	<b>74,906,340</b>	<b>9.0</b>	<b>9.0</b>	<b>3.8</b>	<b>3.8</b>	<b>-0.5</b>	<b>1.5</b>	<b>6.4</b>	<b>--</b>	<b>--</b>	<b>3.7</b>	<b>Jun-14</b>
<i>Hedge Fund Custom</i>				4.6	4.6	-0.3	0.2	4.3	--	--	2.7	Jun-14
<i>InvestorForce All DB Hedge Funds Net Median</i>				3.1	3.1	-0.3	1.1	4.6	2.4	5.1	2.2	Jun-14
<i>InvestorForce All DB Hedge Funds Net Rank</i>				40	40	52	45	18	--	--	19	Jun-14
OZ Domestic II	10,144,211	1.2	13.5	9.2	9.2	2.3	4.3	9.0	--	--	5.8	Jun-14
Graham Absolute Return	7,234,742	0.9	9.7	3.3	3.3	-1.1	1.0	--	--	--	1.9	Aug-17

Pantheon I includes Pantheon US Fund VI and Pantheon Europe Fund IV.

Pantheon II Includes Pantheon US Fund IX, Pantheon Asia Fund VI, and Pantheon Europe Fund VII.

Pantheon Secondary includes Pantheon GLO SEC III B.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Wellington-Archipelago	11,697,160	1.4	15.6	8.6	8.6	1.4	1.6	--	--	--	4.7	Aug-17
KLS Diversified	9,124,788	1.1	12.2	0.5	0.5	-2.5	1.6	--	--	--	1.6	Oct-17
Winton	6,075,612	0.7	8.1	0.3	0.3	-1.5	0.8	--	--	--	1.6	Oct-17
Marshall Wace Eureka	3,148,339	0.4	4.2	4.5	4.5	-1.4	0.1	--	--	--	3.4	Nov-17
Silver Point Capital	12,138,007	1.5	16.2	2.1	2.1	-2.7	-0.8	--	--	--	1.2	Nov-17
Laurion Capital	5,189,381	0.6	6.9	1.5	1.5	--	--	--	--	--	4.8	Aug-18
Taconic Opportunity Fund	10,154,101	1.2	13.6	1.9	1.9	--	--	--	--	--	--	Dec-18
<b>Real Assets</b>	<b>48,786,849</b>	<b>5.8</b>	<b>5.8</b>	<b>4.6</b>	<b>4.6</b>	<b>5.3</b>	<b>7.6</b>	<b>6.7</b>	<b>7.5</b>	<b>--</b>	<b>--</b>	<b>Mar-99</b>
<i>Real Asset Custom</i>				13.2	13.2	9.8	12.9	11.3	8.5	--	--	Mar-99
SSgA	16,579,003	2.0	34.0	8.9	8.9	0.4	3.7	--	--	--	4.3	Apr-17
<i>Real Asset NL Custom Blended Index</i>				9.0	9.0	0.6	4.1	--	--	--	4.5	Apr-17
<b>Private Infrastructure</b>	<b>21,463,361</b>	<b>2.6</b>	<b>44.0</b>	<b>0.3</b>	<b>0.3</b>	<b>4.5</b>	<b>6.1</b>	<b>9.8</b>	<b>--</b>	<b>--</b>	<b>6.5</b>	<b>Dec-14</b>
<i>S&amp;P Global Infrastructure Net TR USD</i>				13.8	13.8	5.8	8.2	7.7	4.5	--	4.2	Dec-14
KKR Global II	10,268,249	1.2	47.8	0.3	0.3	6.3	8.0	9.2	--	--	10.0	Dec-14
North Haven Infrastructure II	9,619,275	1.2	44.8	0.0	0.0	4.6	6.0	11.9	--	--	6.0	May-15
ISQ Global Infrastructure Fund II	1,267,229	0.2	5.9	5.7	5.7	-28.0	--	--	--	--	-28.0	Jul-18
KKR Global Infrastructure Investors III	308,608	0.0	1.4	-10.9	-10.9	--	--	--	--	--	-10.9	Jan-19

The market value for North Haven Infrastructure II reflects a 9/30/2018 capital account balance.



As of March 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
<b>Private Natural Resources</b>	<b>10,744,485</b>	<b>1.3</b>	<b>22.0</b>	<b>1.2</b>	<b>1.2</b>	<b>7.9</b>	<b>10.1</b>	<b>16.9</b>	<b>--</b>	<b>--</b>	<b>17.4</b>	<b>Sep-15</b>
<i>S&amp;P Global Natural Resources Index TR USD</i>				12.4	12.4	-5.2	-0.1	13.4	1.8	4.9	14.4	Sep-15
EnCap XI	598,054	0.1	5.6	-4.6	-4.6	-14.0	-19.2	--	--	--	-35.0	Jul-17
EnCap IV	827,735	0.1	7.7	0.6	0.6	-9.1	-16.5	--	--	--	-15.4	Feb-18
GSO Energy Opportunities	4,429,328	0.5	41.2	-1.8	-1.8	3.1	5.4	19.5	--	--	16.8	Nov-15
Taurus Mining	2,729,061	0.3	25.4	4.9	4.9	15.0	18.7	14.6	--	--	18.1	Sep-15
Taurus Mining Annex	2,160,307	0.3	20.1	7.3	7.3	23.7	28.3	--	--	--	31.4	Jan-17
<b>Cash</b>	<b>13,733,940</b>	<b>1.6</b>	<b>1.6</b>	<b>0.3</b>	<b>0.3</b>	<b>0.8</b>	<b>0.8</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>	
Cash	8,438,358	1.0	61.4	0.4	0.4	1.2	1.3	1.1	0.8	--	--	Sep-03
Treasury Cash	5,295,581	0.6	38.6									

\*One or more accounts have been excluded from the composite for the purposes of performance calculations and market value.

As of March 31, 2019

## Benchmark History

As of March 31, 2019

Total Fund		
1/1/2019	Present	21% US Equity Custom / 18% International Equity Custom / 23% US Fixed Custom / 10% Hedge Fund Custom / 15% Thomson Reuters Cambridge Private Equity Index / 5% Real Asset Custom / 8% NCREIF ODCE (net)
1/1/2017	12/31/2018	27% US Equity Custom / 23% International Equity Custom / 22% US Fixed Custom / 5% Hedge Fund Custom / 9% Thomson Reuters Cambridge Private Equity Index / 14% Real Asset Custom
7/1/2014	12/31/2016	22.7% Russell 1000 / 5.7% Russell 2000 / 23.6% International Equity Custom / 28.5% US Fixed Custom / 4.5% Hedge Fund Custom / 8% NCREIF ODCE (net) / 7% Cambridge Assoc. U.S. Private Equity Index
US Equity		
12/31/1994	Present	80% Russell 1000 / 20% Russell 2000
International Equity		
1/1/2019	Present	56% MSCI EAFE Gross / 44% MSCI Emerging Markets Gross
1/1/2017	12/31/2018	69.56% MSCI EAFE Gross / 30.44% MSCI Emerging Markets Gross
7/1/2013	12/31/2016	MSCI ACWI ex USA Gross
US Fixed Income		
3/1/2018	Present	77.27% BBgBarc US Aggregate TR / 22.73% BBgBarc US Govt 1-5 Yr TR
1/1/2017	2/28/2018	77.27% BBgBarc US Aggregate TR / 22.73% Credit Suisse Leveraged Loans
8/1/2014	12/31/2016	71.93% BBgBarc US Aggregate TR / 17.54% ICE BofAML US High Yield TR / 10.53% Credit Suisse Leveraged Loans
Hedge Fund		
7/1/2017	Present	100% HFRI Fund of Funds Composite Index
1/1/2015	6/30/2017	50% HFRI Fund of Funds Composite Index / 50% HFRI RV: Multi-Strategy Index
Real Assets		
1/1/2019	Present	50% S&P Global Natural Resources Index TR USD / 50% S&P Global Infrastructure TR USD
6/1/2013	12/31/2018	57.14% NCREIF ODCE (net) / 21.43% S&P Global Natural Resources Index TR USD / 21.43% S&P Global Infrastructure TR USD



**Benchmark History**  
As of March 31, 2019

SSgA		
4/30/2017	Present	25% Bloomberg Roll Select Commodities Index TR USD / 25% S&P Global LargeMidCap Commodity and Resources NR USD / 10% S&P Global Infrastructure TR USD / 15% DJ US Select REIT TR USD / 25% BBgBarc US TIPS TR



As of March 31, 2019

**Statistics Summary**  
5 Years Ending March 31, 2019

	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Fund	6.00%	6.50%	-0.30	1.04	0.81	0.99%
Policy Index	6.30%	6.15%	--	1.00	0.90	0.00%
InvestorForce Public DB \$250mm-\$1B Net Median	5.74%	6.64%	-0.26	1.00	0.76	0.98%

As of March 31, 2019

## Annual Investment Expense Analysis

As Of March 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee	Estimated Fee Value
<b>Total Fund w/o Alternatives</b>		<b>\$598,412,270</b>		
<b>US Equity</b>		<b>\$223,381,378</b>		
Mellon Dynamic US Equity	0.30% of Assets	\$81,155,671	0.30%	\$243,467
Mellon Large Cap	0.04% of First 100.0 Mil, 0.02% Thereafter	\$107,058,152	0.04%	\$41,412
DFA Small Cap	0.35% of Assets	\$17,511,053	0.35%	\$61,289
PanAgora	0.80% of Assets	\$17,656,502	0.80%	\$141,252
<b>International Equity</b>		<b>\$190,456,027</b>		
<b>Developed International Equity</b>		<b>\$123,207,291</b>		
Mellon International	0.04% of Assets	\$102,853,121	0.04%	\$41,141
Copper Rock	0.85% of Assets	\$20,354,170	0.85%	\$173,010
<b>Emerging Markets Equity</b>		<b>\$67,248,736</b>		
Wells Capital	0.90% of First 100.0 Mil, 0.85% Thereafter	\$67,248,736	0.90%	\$605,239
<b>US Fixed Income</b>		<b>\$184,574,864</b>		
Barrow Hanley	0.30% of First 50.0 Mil, 0.20% of Next 100.0 Mil, 0.15% Thereafter	\$136,991,243	0.24%	\$323,982
Vanguard Short-Term Treasury Index Fund	0.05% of Assets	\$47,583,621	0.05%	\$23,792
<b>Private Real Estate</b>		<b>\$61,912,343</b>		
Greenfield Gap VII		\$11,073,596		
Patron Capital V		\$5,703,497		
UBS Trumbull Property		\$42,952,430		
Carlisle Realty VIII		\$414,355		
Taconic CRE Dislocation Fund II		\$1,691,598		
Carmel Partners Investment Fund VII		\$76,866		
Invesco IV		\$474,703		
Invesco VI		\$5,976,760		
Ocean Avenue II		\$9,730,272		

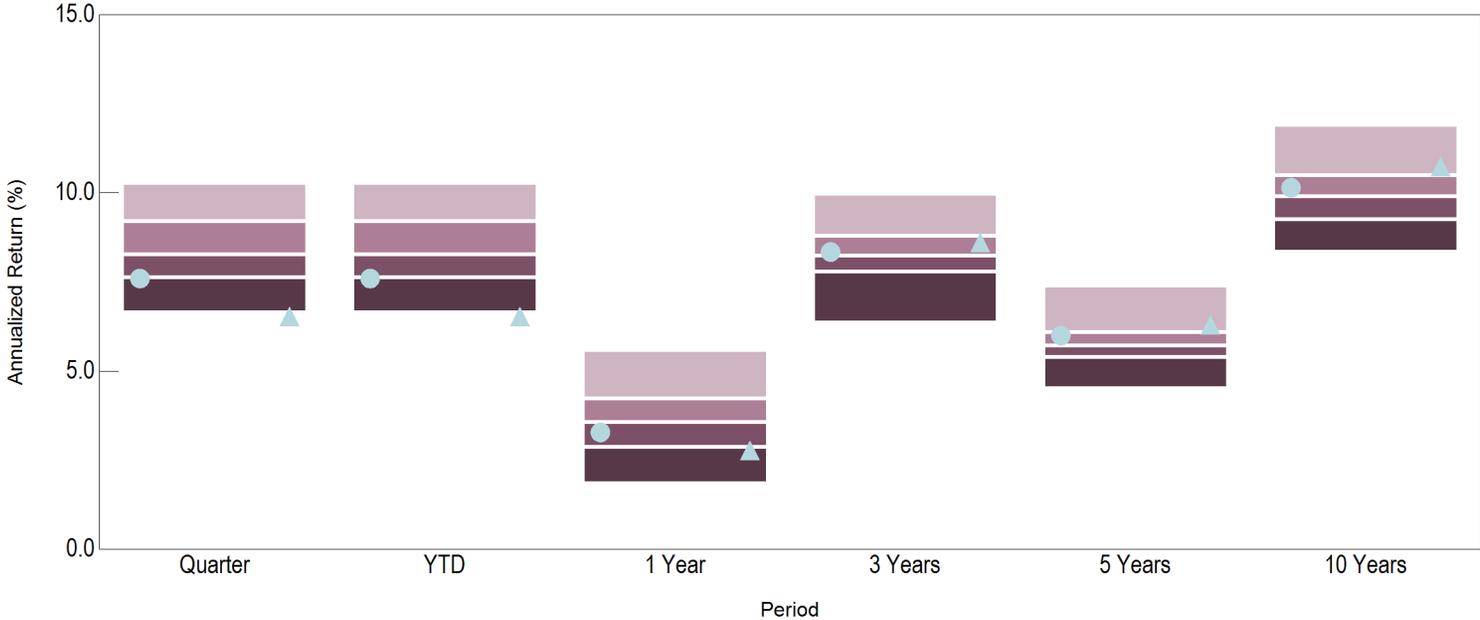


As of March 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee	Estimated Fee Value
Pantheon I		\$977,851		
Pantheon II		\$3,998,727		
Pantheon Secondary		\$1,167,621		
Raven Asset Fund II		\$3,429,925		
Davidson Kempner Long-Term Distressed Opportunities Fund IV		\$2,895,578		
GTCR Fund XII		\$696,498		
Carrick Capital Partners III		\$733,208		
Cressey & Company Fund VI		\$444,228		
TCV X		\$26,000		
<b>Hedge Fund</b>		<b>\$74,906,340</b>		
OZ Domestic II	Performance-based 1.50 and 20.00	\$10,144,211	1.79%	\$181,444
Graham Absolute Return	Performance-based 1.75 and 20.00	\$7,234,742	1.75%	\$126,608
Wellington-Archipelago	Performance-based 1.00 and 20.00	\$11,697,160	1.25%	\$146,297
KLS Diversified	Performance-based 2.00 and 20.00	\$9,124,788	2.00%	\$182,496
Winton	Performance-based 0.90 and 20.00	\$6,075,612	1.27%	\$76,888
Marshall Wace Eureka	Performance-based 2.00 and 20.00	\$3,148,339	2.31%	\$72,802
Silver Point Capital	Performance-based 2.00 and 20.00	\$12,138,007	2.04%	\$247,206
Laurion Capital		\$5,189,381		
Taconic Opportunity Fund		\$10,154,101		
<b>Real Assets</b>		<b>\$48,786,849</b>		
SSgA	0.30% of First 50.0 Mil, 0.27% of Next 50.0 Mil, 0.25% Thereafter	\$16,579,003	0.30%	\$49,737
<b>Private Infrastructure</b>		<b>\$21,463,361</b>		
KKR Global II		\$10,268,249		
North Haven Infrastructure II		\$9,619,275		
ISQ Global Infrastructure Fund II		\$1,267,229		
KKR Global Infrastructure Investors III		\$308,608		
<b>Private Natural Resources</b>		<b>\$10,744,485</b>		

Name	Fee Schedule	Market Value	Estimated Fee	Estimated Fee Value
EnCap XI		\$598,054		
EnCap IV		\$827,735		
GSO Energy Opportunities		\$4,429,328		
Taurus Mining		\$2,729,061		
Taurus Mining Annex		\$2,160,307		
<b>Cash</b>		<b>\$13,733,940</b>		
Cash		\$8,438,358		
Treasury Cash		\$5,295,581		

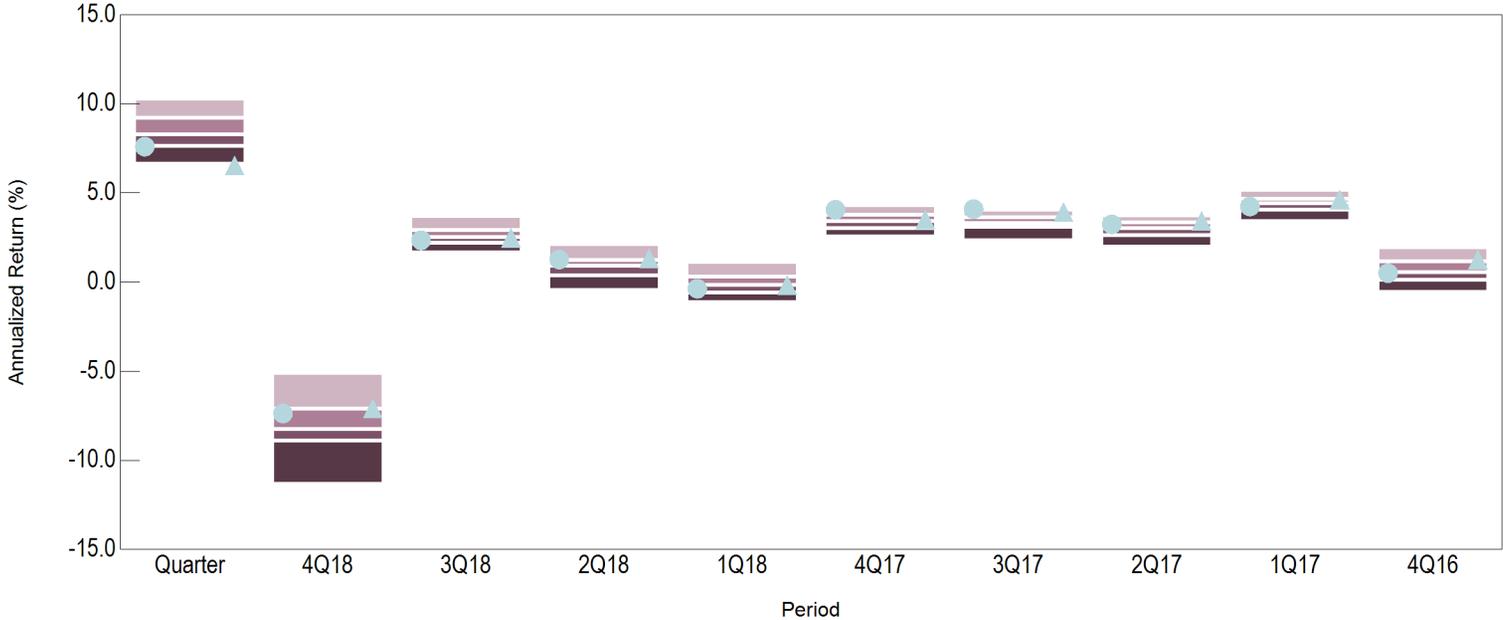
**InvestorForce Public DB \$250mm-\$1B Net Return Comparison**  
Ending March 31, 2019



	Quarter		YTD		1 Year		3 Years		5 Years		10 Years	
<b>5th Percentile</b>	10.3		10.3		5.6		10.0		7.4		11.9	
<b>25th Percentile</b>	9.2		9.2		4.2		8.8		6.1		10.5	
<b>Median</b>	8.3		8.3		3.6		8.3		5.7		9.9	
<b>75th Percentile</b>	7.6		7.6		2.9		7.8		5.4		9.3	
<b>95th Percentile</b>	6.7		6.7		1.9		6.4		4.5		8.4	
<b># of Portfolios</b>	77		77		77		75		68		52	
<b>● Total Fund</b>	7.6	(77)	7.6	(77)	3.3	(61)	8.3	(43)	6.0	(34)	10.1	(40)
<b>▲ Policy Index</b>	6.5	(96)	6.5	(96)	2.8	(79)	8.6	(29)	6.3	(22)	10.7	(18)



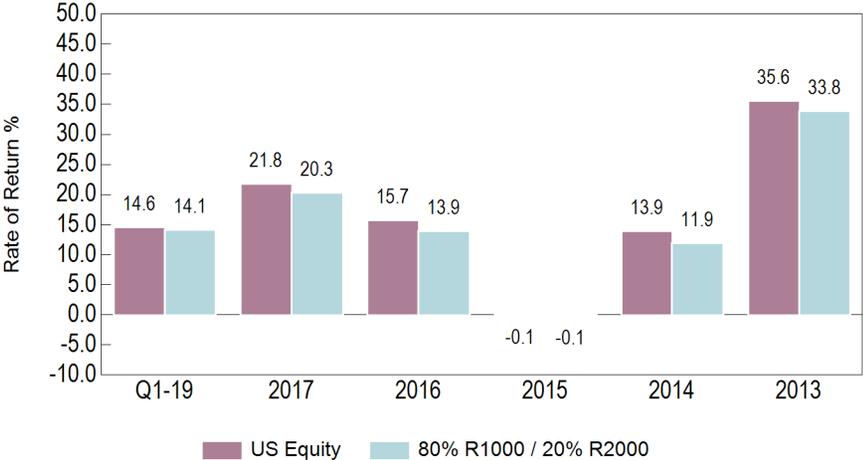
**InvestorForce Public DB \$250mm-\$1B Net Return Comparison**  
Ending March 31, 2019



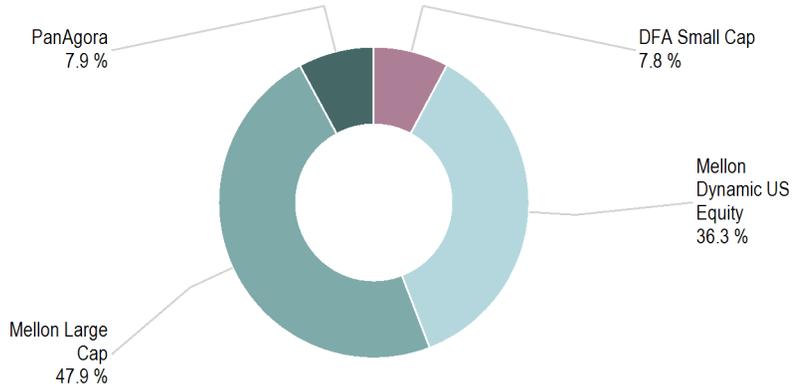
	Return (Rank)										
	Quarter	4Q18	3Q18	2Q18	1Q18	4Q17	3Q17	2Q17	1Q17	4Q16	
<b>5th Percentile</b>	10.3	-5.1	3.7	2.1	1.1	4.3	4.1	3.7	5.1	1.9	
<b>25th Percentile</b>	9.2	-7.1	2.9	1.3	0.3	3.8	3.6	3.4	4.7	1.2	
<b>Median</b>	8.3	-8.2	2.5	0.9	-0.1	3.4	3.3	3.0	4.4	0.6	
<b>75th Percentile</b>	7.6	-8.9	2.2	0.4	-0.6	3.1	3.1	2.7	4.1	0.1	
<b>95th Percentile</b>	6.7	-11.3	1.7	-0.4	-1.1	2.6	2.4	2.0	3.5	-0.5	
<b># of Portfolios</b>	77	73	57	61	56	59	61	61	64	57	
<b>● Total Fund</b>	7.6 (77)	-7.4 (33)	2.3 (68)	1.3 (25)	-0.4 (66)	4.1 (16)	4.1 (4)	3.2 (29)	4.2 (65)	0.5 (54)	
<b>▲ Policy Index</b>	6.5 (96)	-7.1 (28)	2.5 (56)	1.3 (23)	-0.2 (54)	3.5 (43)	3.9 (10)	3.4 (23)	4.6 (35)	1.3 (22)	



Return Summary

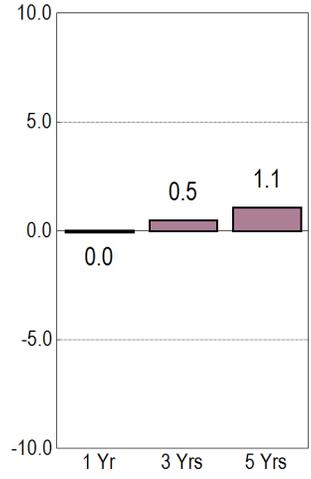
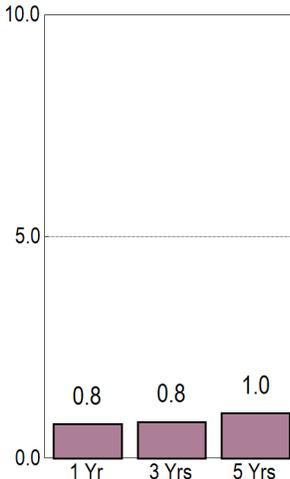
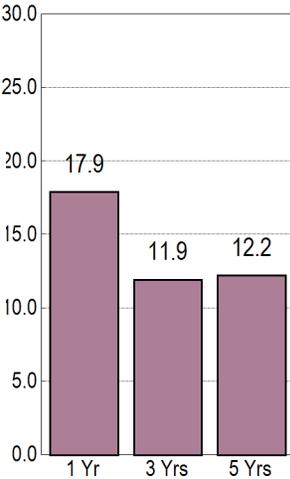
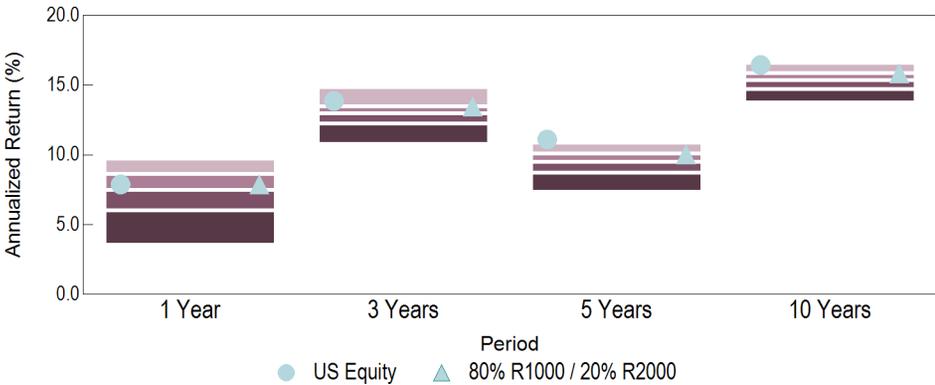


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>US Equity</b>	<b>7.9</b>	<b>13.9</b>	<b>11.1</b>	<b>16.4</b>
80% R1000 / 20% R2000	7.9	13.5	10.0	15.8
InvestorForce All DB US Eq Net Median	7.5	13.0	9.5	15.4
InvestorForce All DB US Eq Net Rank	41	16	4	7

Anzld. Std. Deviation	Tracking Error	Information Ratio
US Equity	US Equity	US Equity



As of March 31, 2019

US Equity Characteristics  
vs Russell 3000

	Portfolio Q1-19	Index Q1-19
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	161.6	178.6
Median Market Cap (\$B)	2.2	1.6
P/E Ratio	19.6	20.2
Yield	1.9	1.9
EPS Growth - 5 Yrs.	12.2	12.5
Price to Book	3.1	3.3
Beta (holdings; domestic)	1.0	1.0

US Equity Sector Distribution  
vs Russell 3000

	Portfolio Q1-19	Index Q1-19
<b>Sector Distribution</b>		
Energy	4.6	5.1
Materials	2.9	3.0
Industrials	10.6	10.1
Consumer Discretionary	10.0	10.4
Consumer Staples	5.9	6.5
Health Care	13.3	14.3
Financials	13.1	13.2
Information Technology	18.3	21.1
Communication Services	8.0	9.1
Utilities	3.1	3.2
Real Estate	3.1	4.0

## Top Holdings

CASH - USD	3.8%
UST Bill 03/14/19	2.8%
MICROSOFT	2.6%
APPLE	2.5%
AMAZON.COM	2.1%
BERKSHIRE HATHAWAY 'B'	1.2%
FACEBOOK CLASS A	1.2%
JOHNSON & JOHNSON	1.1%
JP MORGAN CHASE & CO.	1.1%
ALPHABET 'C'	1.1%

## Best Performers

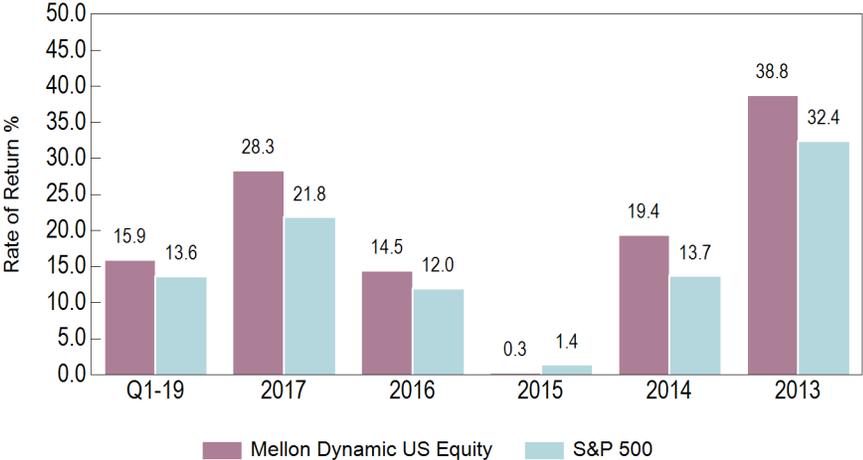
	Return %
IMMUNE DESIGN	350.0%
DIEBOLD NIXDORF	344.6%
TREVENA	262.8%
PROFESSIONAL DIVERSITY NETWORK	221.0%
SCYNEXIS	213.5%
FLOTEK INDUSTRIES	197.2%
SPARK THERAPEUTICS	191.0%
ION GEOPHYSICAL	178.8%
CATALYST PHARMACEUTICAL PARTNERS	165.6%
PIER 1 IMPORTS	149.7%

## Worst Performers

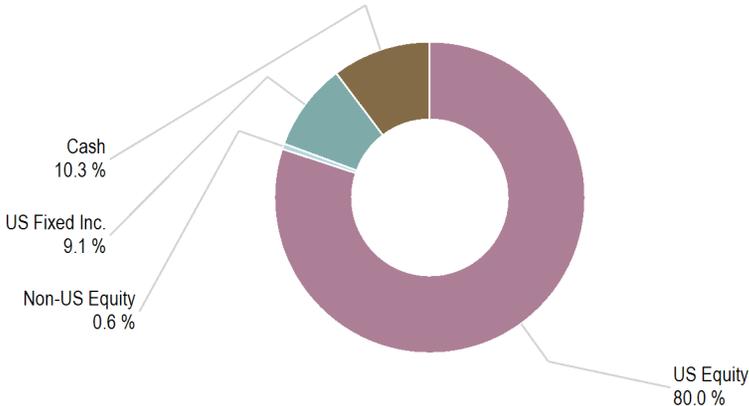
	Return %
ACETO	-79.3%
PHI NON-VOTING	-76.8%
CLOUD PEAK ENERGY (XSC)	-71.3%
NOVAVAX	-70.1%
ATLAS FINANCIAL (NAS) HOLDINGS	-69.6%
GLOBAL EAGLE ENTM.	-68.2%
FTD COMPANIES	-65.5%
ARLO TECHNOLOGIES	-58.6%
ASCENA RETAIL GROUP	-57.0%
DIPLOMAT PHARMACY	-56.8%



Return Summary

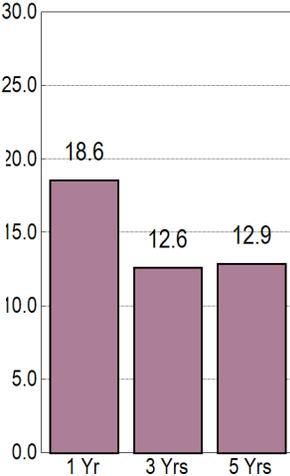
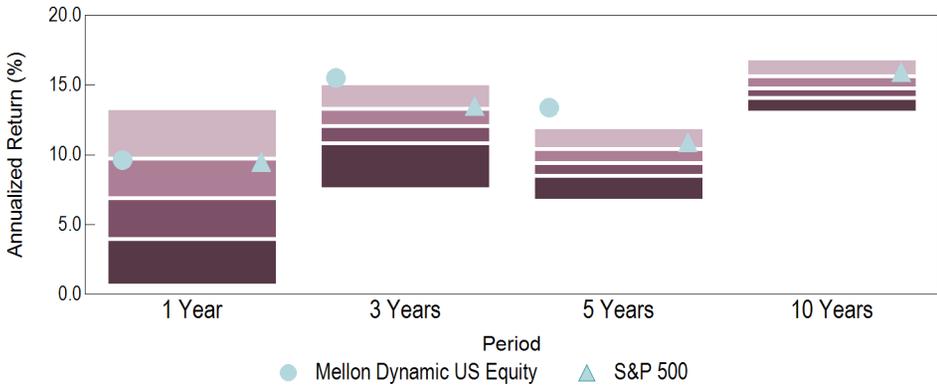


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon Dynamic US Equity	9.6	15.5	13.4	--
S&P 500	9.5	13.5	10.9	15.9
eV US Large Cap Core Equity Net Median	6.9	12.1	9.4	14.8
eV US Large Cap Core Equity Net Rank	27	4	2	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
Mellon Dynamic US Equity	Mellon Dynamic US Equity	Mellon Dynamic US Equity



## Mellon Dynamic US Equity

As of March 31, 2019

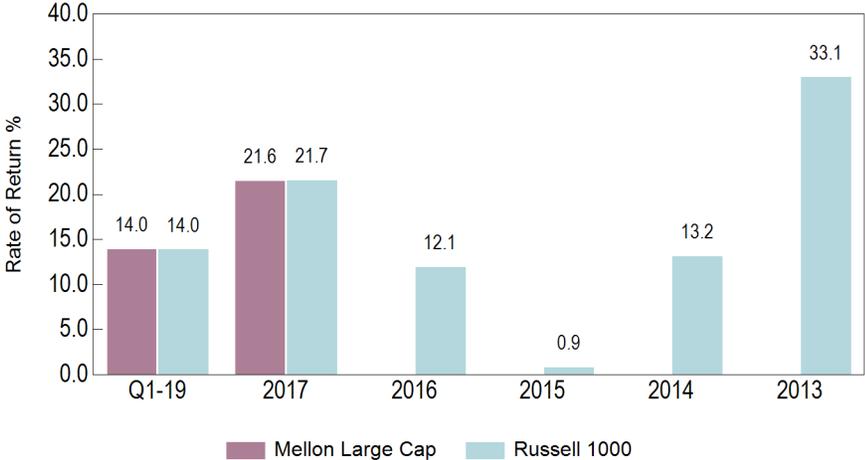
Account Information		Account Characteristics		Sector Distribution			
Account Name	Mellon Dynamic US Equity	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q1-19	Q1-19	Q1-19	Q1-19		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	12/31/12	Weighted Avg.	206.4	211.5	Energy	4.4	5.4
Account Type	US Equity	Market Cap. (\$B)			Materials	2.2	2.6
Benchmark	S&P 500	Median Market Cap (\$B)	21.2	21.2	Industrials	7.9	9.5
Universe	eV US Large Cap Core Equity Net	P/E Ratio	20.0	20.2	Consumer	8.0	10.1
		Yield	2.0	2.0	Discretionary		
		EPS Growth - 5 Yrs.	12.2	12.3	Consumer Staples	5.8	7.3
		Price to Book	3.4	3.5	Health Care	11.9	14.6
		Beta (holdings; domestic)	1.0	1.0	Financials	10.8	12.7
					Information Technology	16.6	21.2
					Communication Services	8.1	10.1
					Utilities	2.6	3.3
					Real Estate	2.4	3.1

Top Holdings		Best Performers		Worst Performers	
CASH - USD	10.3%		Return %		Return %
UST Bill 03/14/19	7.8%	COTY CL.A	77.3%	PG&E	-25.1%
MICROSOFT	3.0%	CHIPOTLE MEXN.GRILL	64.5%	KRAFT HEINZ	-23.2%
APPLE	2.7%	XEROX	63.1%	BIOGEN	-21.4%
AMAZON.COM	2.3%	HESS	49.4%	CENTURYLINK	-19.3%
BERKSHIRE HATHAWAY 'B'	1.3%	XILINX	49.3%	MACY'S	-18.0%
FACEBOOK CLASS A	1.3%	ARISTA NETWORKS	49.2%	CVS HEALTH	-17.1%
UST Bill 03/07/19	1.3%	CELGENE	47.2%	NEWELL BRANDS (XSC)	-16.3%
JOHNSON & JOHNSON	1.3%	CADENCE DESIGN SYS.	46.1%	CIGNA	-15.3%
JP MORGAN CHASE & CO.	1.2%	HANESBRANDS	43.8%	ABIOMED	-12.1%
		ULTA BEAUTY	42.4%	CME GROUP	-12.1%

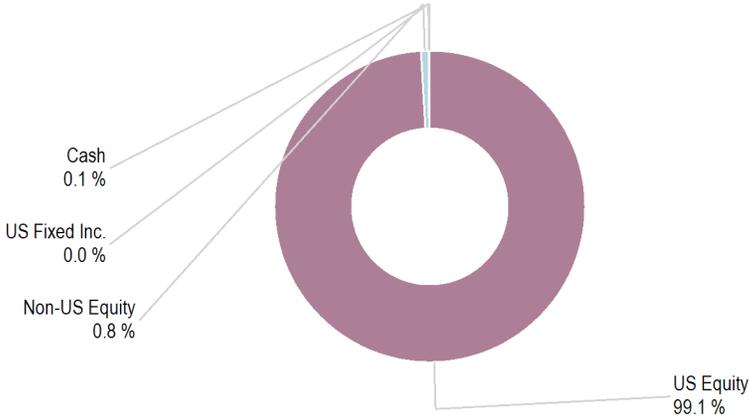
Current Allocations do not depict asset class weights based on long/short positions.



Return Summary

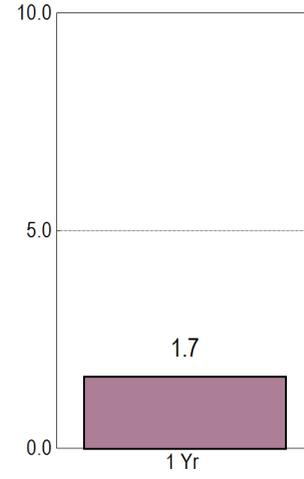
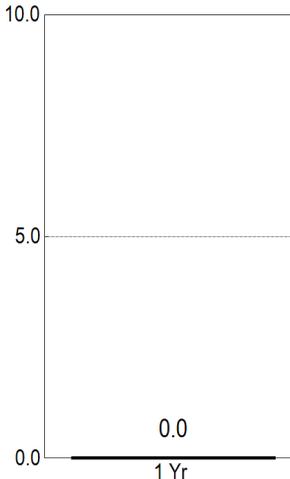
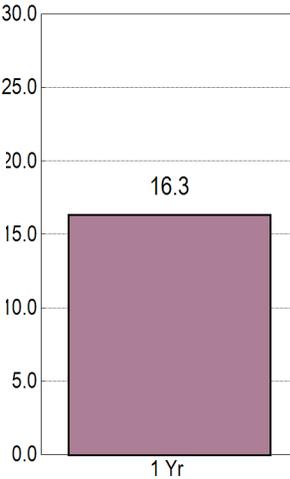
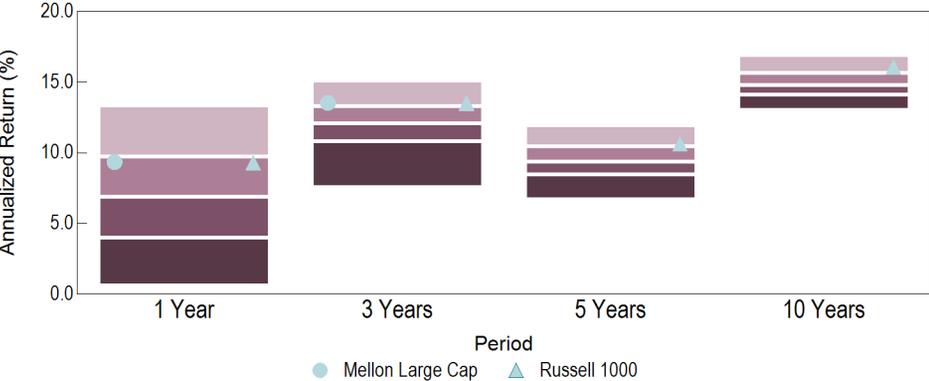


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon Large Cap	9.3	13.5	--	--
Russell 1000	9.3	13.5	10.6	16.0
eV US Large Cap Core Equity Net Median	6.9	12.1	9.4	14.8
eV US Large Cap Core Equity Net Rank	30	20	--	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
Mellon Large Cap	Mellon Large Cap	Mellon Large Cap



## Mellon Large Cap

As of March 31, 2019

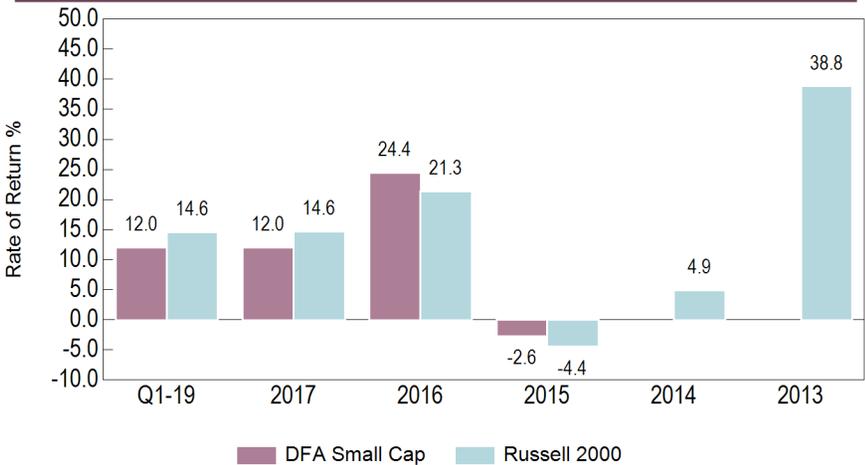
Account Information		Account Characteristics			Sector Distribution		
Account Name	Mellon Large Cap		Portfolio	Index		Portfolio	Index
Account Structure	Commingled Fund		Q1-19	Q1-19		Q1-19	Q1-19
Investment Style	Passive	Characteristics			Sector Distribution		
Inception Date	3/31/16	Weighted Avg.	186.8	192.0	Energy	5.1	5.2
Account Type	US Stock Large	Market Cap. (\$B)			Materials	2.9	2.9
Benchmark	Russell 1000	Median Market Cap (\$B)	10.0	10.0	Industrials	10.1	9.8
Universe	eV US Large Cap Core Equity Net	P/E Ratio	20.1	20.3	Consumer Discretionary	10.1	10.2
		Yield	2.0	1.9	Consumer Staples	6.7	6.8
		EPS Growth - 5 Yrs.	12.4	12.5	Health Care	14.3	14.2
		Price to Book	3.4	3.4	Financials	13.5	12.9
		Beta (holdings; domestic)	1.0	1.0	Information Technology	20.9	21.5
					Communication Services	9.5	9.5
					Utilities	3.1	3.2
					Real Estate	3.6	3.8

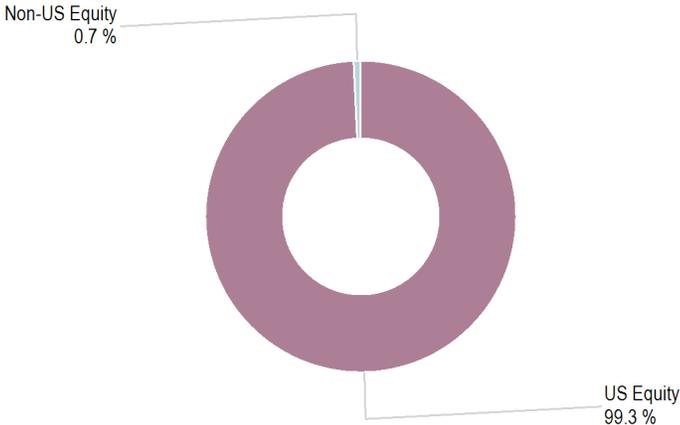
Top Holdings		Best Performers		Worst Performers	
MICROSOFT	3.3%		Return %		Return %
APPLE	3.1%	VERSUM MATERIALS	81.9%	UNITI GROUP	-27.8%
AMAZON.COM	2.6%	COTY CL.A	77.3%	PG&E	-25.1%
BERKSHIRE HATHAWAY 'B'	1.5%	NABORS INDUSTRIES	72.5%	KRAFT HEINZ	-23.2%
FACEBOOK CLASS A	1.5%	SAGE THERAPEUTICS	66.0%	REALOGY HOLDINGS	-21.8%
JOHNSON & JOHNSON	1.4%	WAYFAIR CL.A	64.8%	NU SKIN ENTERPRISES 'A'	-21.5%
JP MORGAN CHASE & CO.	1.3%	CHIPOTLE MEXN.GRILL	64.5%	BIOGEN	-21.4%
ALPHABET 'C'	1.3%	UNIVERSAL DISPLAY	63.5%	CENTENNIAL RSO.DEV.CL.A	-20.2%
EXXON MOBIL	1.3%	XEROX	63.1%	CENTURYLINK	-19.3%
ALPHABET A	1.3%	FLOOR & DECOR HOLDINGS 'A'	59.2%	QURATE RETAIL SERIES A	-18.1%
		BLUEBIRD BIO	58.6%	MACY'S	-18.0%



Return Summary

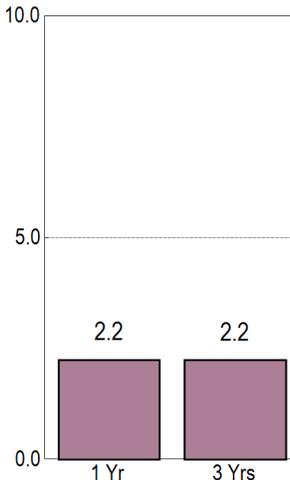
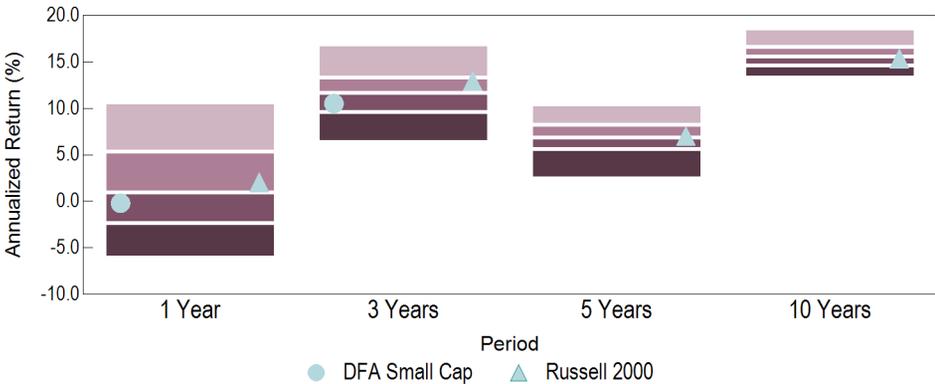


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
DFA Small Cap	-0.2	10.5	--	--
Russell 2000	2.0	12.9	7.1	15.4
eV US Small Cap Core Equity Net Median	1.0	11.7	6.9	15.6
eV US Small Cap Core Equity Net Rank	64	69	--	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
DFA Small Cap	DFA Small Cap	DFA Small Cap



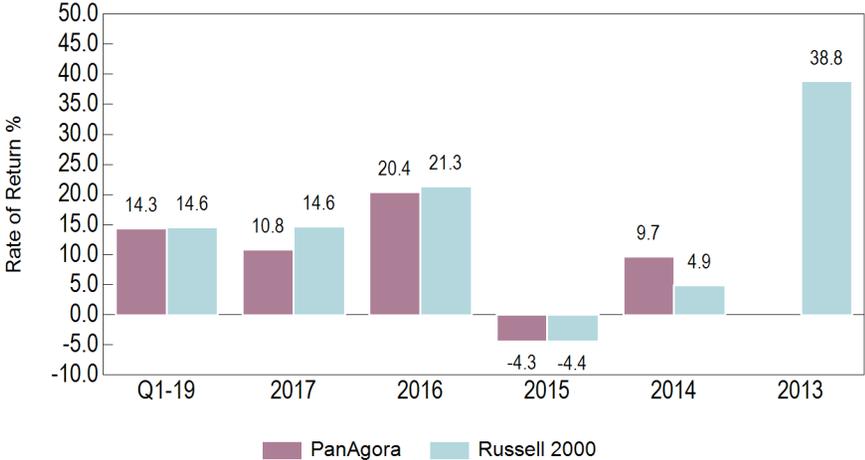
As of March 31, 2019

Account Information		Account Characteristics		Sector Distribution			
Account Name	DFA Small Cap	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q1-19	Q1-19	Q1-19	Q1-19		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	6/30/14	Weighted Avg.	2.1	2.4	Energy	4.8	3.6
Account Type	US Stock Small	Market Cap. (\$B)			Materials	5.5	3.8
Benchmark	Russell 2000	Median Market Cap (\$B)	0.7	0.8	Industrials	20.8	14.4
Universe	eV US Small Cap Core Equity Net	P/E Ratio	17.1	18.4	Consumer	14.6	12.0
		Yield	1.4	1.4	Discretionary		
		EPS Growth - 5 Yrs.	9.2	10.1	Consumer Staples	4.7	2.8
		Price to Book	2.2	2.4	Health Care	8.3	16.0
		Beta (holdings; domestic)	1.1	1.2	Financials	19.1	17.1
					Information Technology	13.5	15.6
					Communication Services	3.8	3.3
					Utilities	4.0	3.8
					Real Estate	0.8	7.6

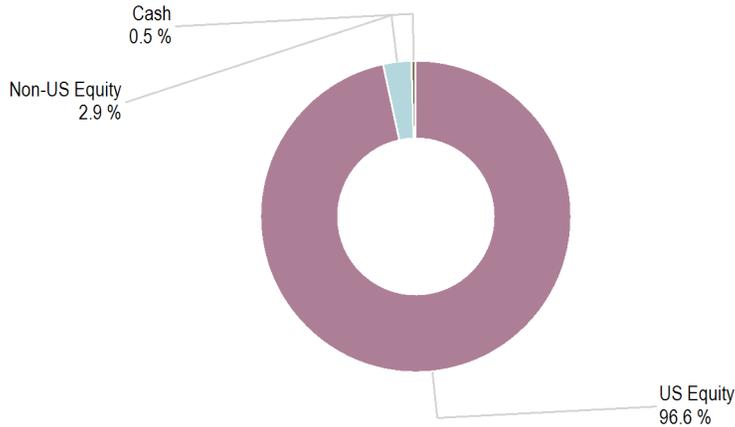
  

Top Holdings		Best Performers		Worst Performers	
NEXSTAR MEDIA GROUP CL.A	0.3%		Return %		Return %
PNM RESOURCES	0.3%	IMMUNE DESIGN	350.0%	ACETO	-79.3%
FIRSTCASH	0.3%	DIEBOLD NIXDORF	344.6%	PHI NON-VOTING	-76.8%
DECKERS OUTDOOR	0.3%	TREVENA	262.8%	CLOUD PEAK ENERGY (XSC)	-71.3%
SEABOARD	0.3%	PROFESSIONAL DIVERSITY NETWORK	221.0%	ATLAS FINANCIAL (NAS) HOLDINGS	-69.6%
ACI WORLDWIDE	0.3%	SCYNEXIS	213.5%	GLOBAL EAGLE ENTM.	-68.2%
INTEGRATED DEVICE TECH.	0.3%	FLOTEK INDUSTRIES	197.2%	FTD COMPANIES	-65.5%
MOOG 'A'	0.3%	SPARK THERAPEUTICS	191.0%	ARLO TECHNOLOGIES	-58.6%
ARMSTRONG WORLD INDS.	0.3%	ION GEOPHYSICAL	178.8%	ASCENA RETAIL GROUP	-57.0%
AARON'S	0.3%	CATALYST PHARMACEUTICAL PARTNERS	165.6%	DIPLOMAT PHARMACY	-56.8%
		PIER 1 IMPORTS	149.7%	MAIDEN HOLDINGS	-55.0%

Return Summary

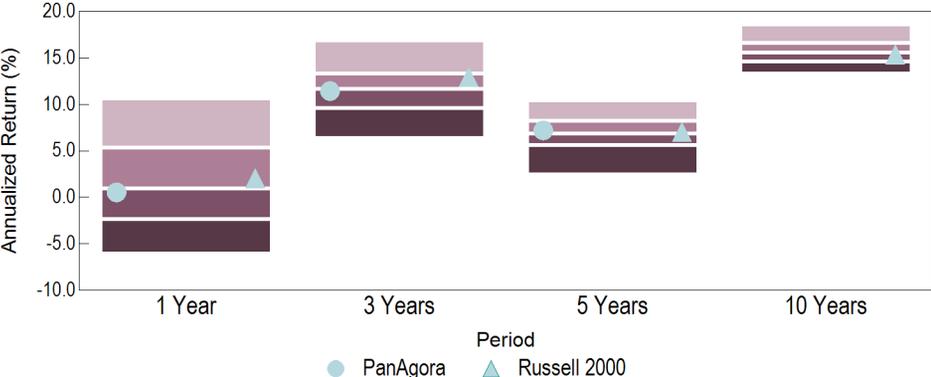
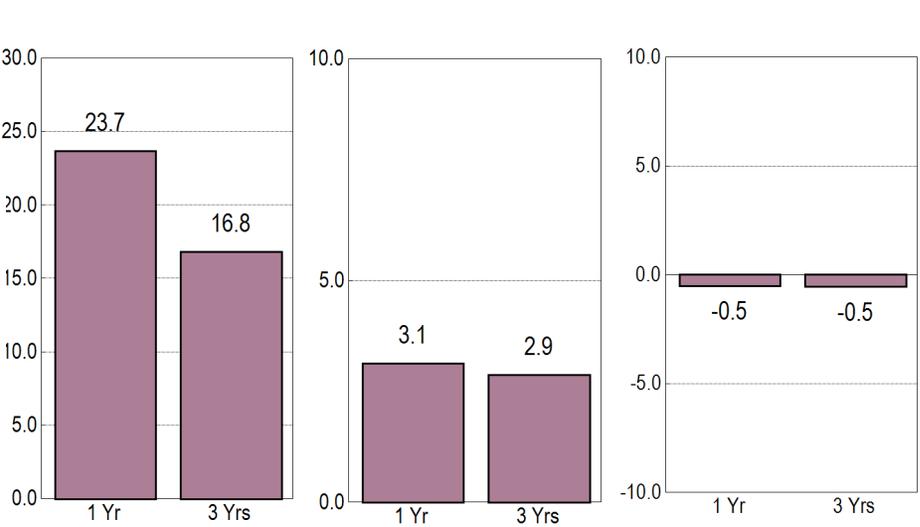


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
PanAgora	0.5	11.4	7.2	--
Russell 2000	2.0	12.9	7.1	15.4
eV US Small Cap Core Equity Net Median	1.0	11.7	6.9	15.6
eV US Small Cap Core Equity Net Rank	55	55	44	--

Anzld. Std. Deviation      Tracking Error      Information Ratio



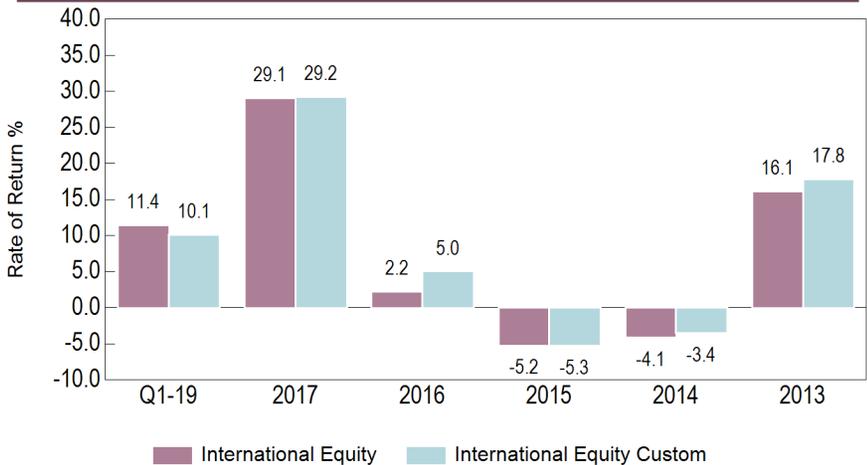
As of March 31, 2019

Account Information		Account Characteristics		Sector Distribution			
Account Name	PanAgora	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q1-19	Q1-19	Q1-19	Q1-19		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	9/30/13	Weighted Avg.	2.1	2.4	Energy	2.7	3.6
Account Type	US Stock Small Cap Core	Market Cap. (\$B)			Materials	3.0	3.8
Benchmark	Russell 2000	Median Market Cap (\$B)	0.8	0.8	Industrials	16.0	14.4
Universe	eV US Small Cap Core Equity Net	P/E Ratio	17.9	18.4	Consumer	14.5	12.0
		Yield	1.3	1.4	Discretionary		
		EPS Growth - 5 Yrs.	12.5	10.1	Consumer Staples	3.3	2.8
		Price to Book	2.4	2.4	Health Care	18.0	16.0
		Beta (holdings; domestic)	1.2	1.2	Financials	15.3	17.1
					Information Technology	14.8	15.6
					Communication Services	2.7	3.3
					Utilities	3.6	3.8
					Real Estate	5.7	7.6

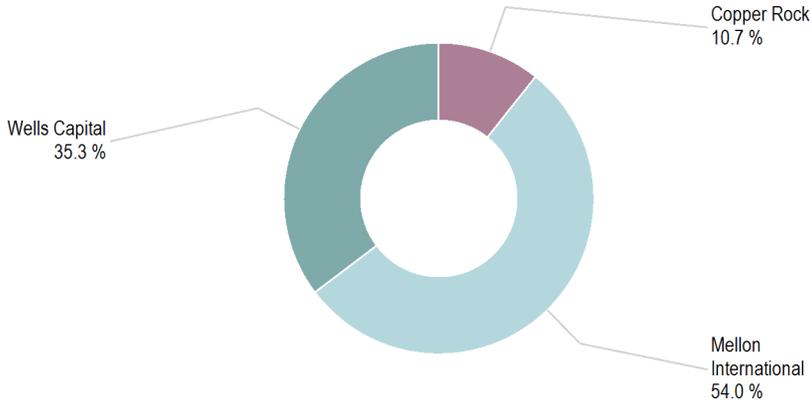
  

Top Holdings		Best Performers		Worst Performers	
INSPIRITY	1.6%		Return %		Return %
PORTLAND GEN.ELEC.	1.4%	IMMUNE DESIGN	350.0%	NOVAVAX	-70.1%
HORIZON THERAPEUTICS PUBLIC	1.4%	CATALYST PHARMACEUTICAL PARTNERS	165.6%	WEIGHT WATCHERS INTERNATIONAL	-47.7%
PNM RESOURCES	1.3%	ROKU	110.5%	STAMPS.COM	-47.7%
WOODWARD	1.3%	VERACYTE	98.9%	IMMUNOGEN	-43.5%
FIVE BELOW	1.2%	DERMIRA	88.5%	VANDA PHARMACEUTICALS	-29.6%
VERINT SYSTEMS	1.2%	ACHILLION PHARMS.	86.2%	USANA HEALTH SCIENCES	-28.8%
GEO GROUP	1.2%	MONGODB A	75.6%	KIRKLAND'S	-26.2%
COMMVault SYSTEMS	1.2%	ARQULE	72.9%	CENTRAL GDN.& PET	-25.8%
DECKERS OUTDOOR	1.2%	BOOT BARN HOLDINGS	72.9%	TOWN SPORTS INTL.HDG.	-25.6%
		ARRAY BIOPHARMA	71.1%	CENTRAL GDN.& PET 'A' NV.	-25.6%

Return Summary

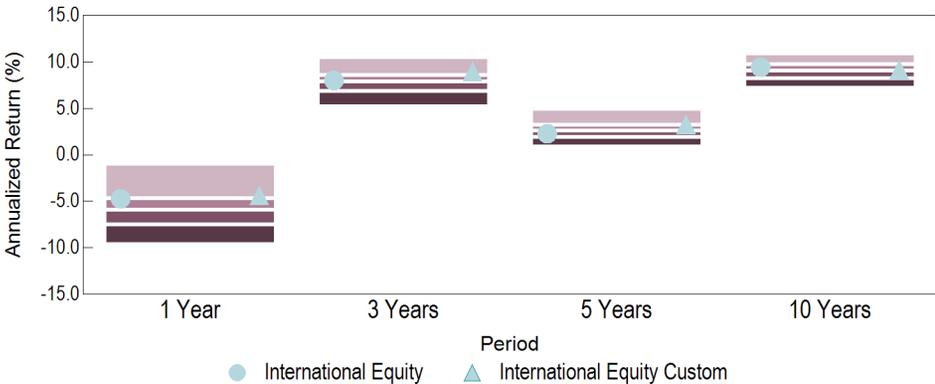
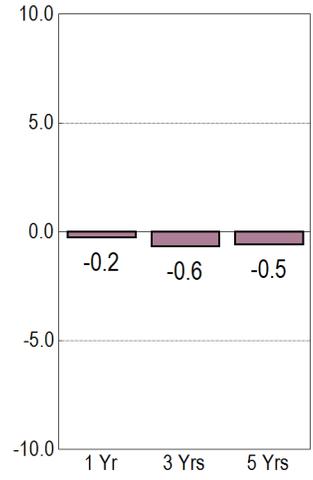
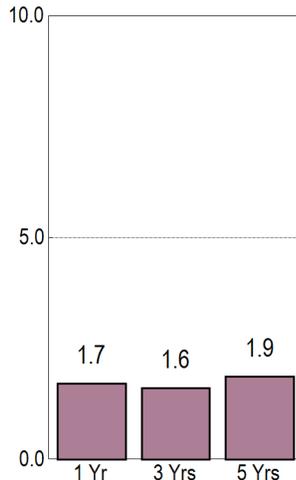
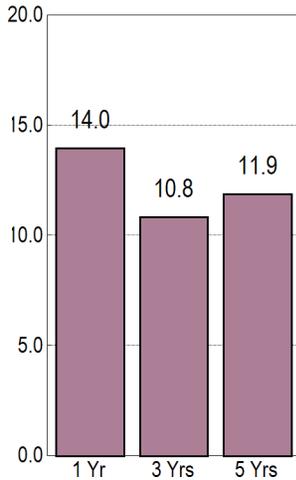


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>International Equity</b>	<b>-4.7</b>	<b>8.0</b>	<b>2.3</b>	<b>9.4</b>
<i>International Equity Custom</i>	-4.4	9.0	3.3	9.2
<i>InvestorForce All DB ex-US Eq Net Median</i>	-5.9	7.9	2.7	9.1
<i>InvestorForce All DB ex-US Eq Net Rank</i>	28	46	68	35

Anzld. Std. Deviation	Tracking Error	Information Ratio
<b>International Equity</b>	<b>International Equity</b>	<b>International Equity</b>



As of March 31, 2019

International Equity Characteristics  
vs MSCI ACWI ex USA

	Portfolio Q1-19	Index Q1-19
<b>Characteristics</b>		
Weighted Avg. Market Cap. (\$B)	59.9	64.4
Median Market Cap (\$B)	9.2	7.7
P/E Ratio	15.7	14.6
Yield	2.9	3.2
EPS Growth - 5 Yrs.	10.2	10.8
Price to Book	2.4	2.2
Beta (holdings; domestic)	1.0	1.0

International Equity Sector Distribution  
vs MSCI ACWI ex USA

	Portfolio Q1-19	Index Q1-19
<b>Sector Distribution</b>		
Energy	5.8	7.4
Materials	4.9	7.6
Industrials	11.0	11.7
Consumer Discretionary	12.8	11.1
Consumer Staples	13.3	9.9
Health Care	7.6	8.4
Financials	18.3	21.7
Information Technology	9.3	8.4
Communication Services	10.2	7.0
Utilities	2.5	3.4
Real Estate	3.3	3.4

## Top Holdings

SAMSUNG ELECTRONICS	1.6%
AIA GROUP	1.3%
TENCENT HOLDINGS	1.3%
CHINA MOBILE	1.2%
NESTLE 'R'	1.1%
HDFC BANK ADR 1:3	1.1%
TAIWAN SEMICON.SPN.ADR 1:5	1.1%
ALIBABA GROUP HLDG.SPN. ADR 1:1	0.9%
RELIANCE INDS.GDR 144A	0.9%
WH GROUP	0.9%

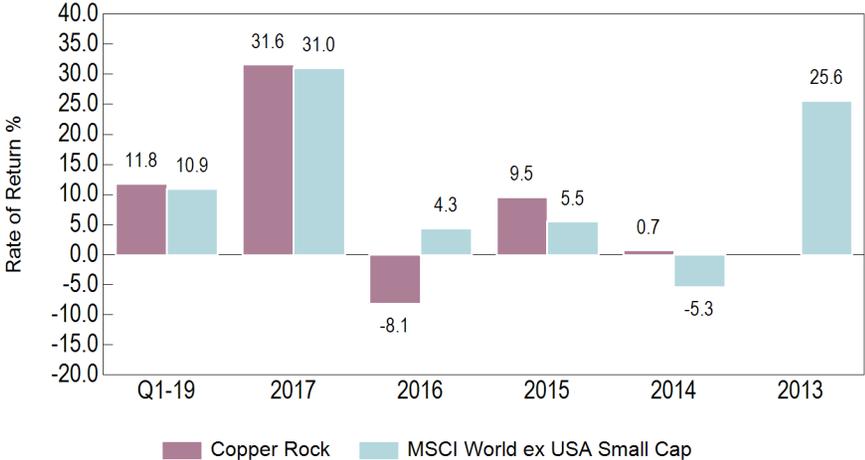
## Best Performers

	Return %
SEA 'A' SPN.ADR 1:1	107.8%
FORTESCUE METALS GP.	79.7%
MERCADOLIBRE	73.4%
NEW ORIENTAL ED.& TECH. GP.ADS 1:1	64.4%
CTRIP.COM INTL.ADR 8:1	61.5%
IQIYI ADS.1:7	60.9%
BEACH ENERGY	55.3%
ZALANDO	52.4%
MICRO FOCUS INTL.	51.3%
HITACHI CHEMICAL	48.2%

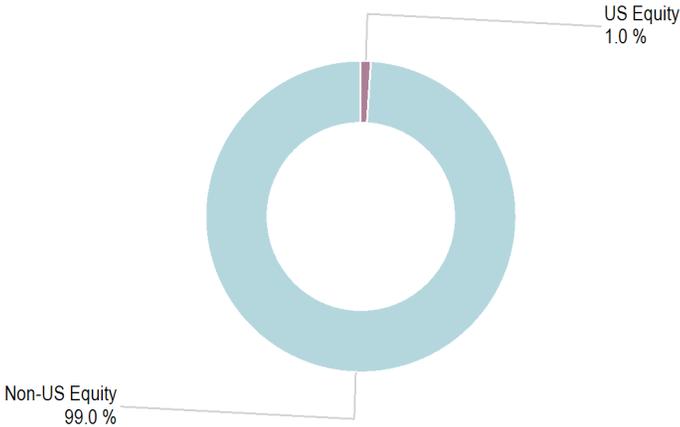
## Worst Performers

	Return %
SWEDBANK A	-29.6%
ILIAD	-28.3%
TUI (LON)	-28.1%
BEZEQ ISRAELI TELECOMMUNICATION	-28.0%
ST BARBARA	-27.0%
EISAI	-26.6%
MATAHARI DEPARTMENT SOE.	-26.2%
WELCIA HOLDINGS	-24.6%
ORION ENGINEERED CARBONS	-24.2%
YAMAZAKI BAKING	-22.8%

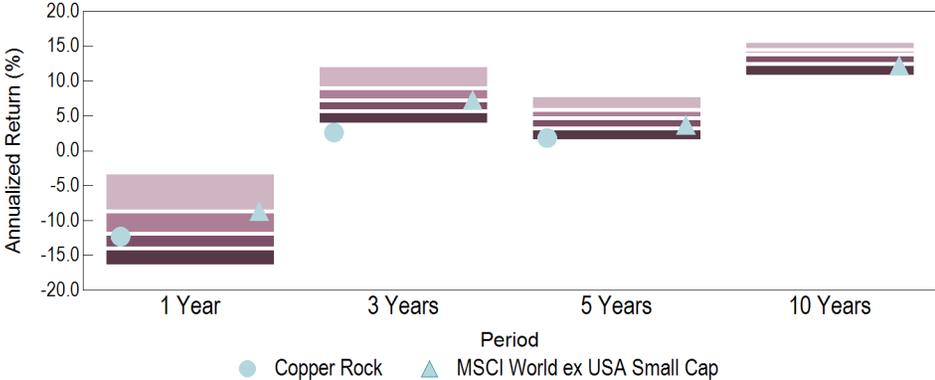
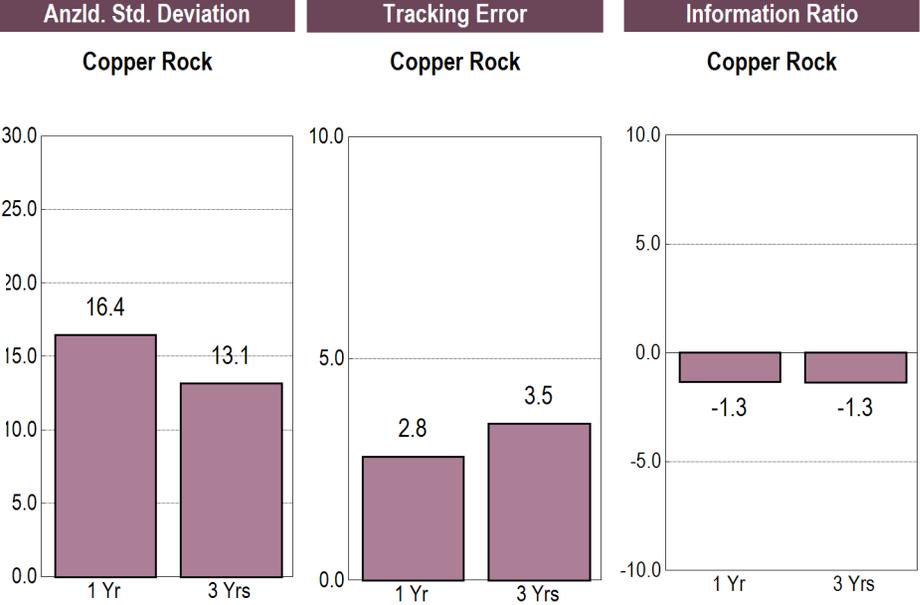
Return Summary



Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Copper Rock	-12.3	2.6	1.8	--
MSCI World ex USA Small Cap	-8.7	7.3	3.7	12.2
eV EAFE Small Cap Equity Net Median	-11.9	7.3	4.7	13.9
eV EAFE Small Cap Equity Net Rank	58	97	93	--



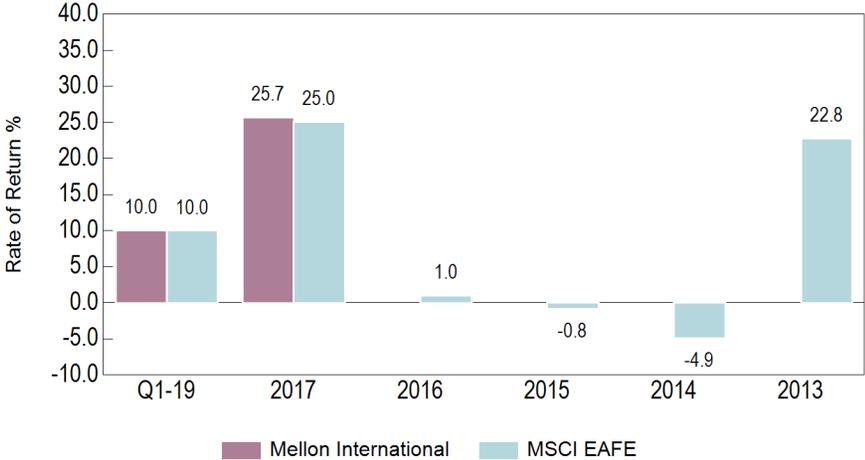
As of March 31, 2019

Account Information		Account Characteristics		Sector Distribution			
Account Name	Copper Rock	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q1-19	Q1-19	Q1-19	Q1-19		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	9/30/13	Weighted Avg.	3.2	2.6	Energy	4.6	3.7
Account Type	International Small Stocks	Market Cap. (\$B)			Materials	3.3	9.7
Benchmark	MSCI World ex USA Small Cap	Median Market Cap (\$B)	3.3	1.0	Industrials	20.4	20.5
Universe	eV EAFE Small Cap Equity Net	P/E Ratio	15.6	15.2	Consumer	9.9	12.4
		Yield	2.3	2.8	Discretionary		
		EPS Growth - 5 Yrs.	17.2	13.1	Consumer Staples	9.1	6.3
		Price to Book	2.5	2.1	Health Care	11.4	7.2
		Beta (holdings; domestic)	1.0	0.9	Financials	9.1	10.9
					Information Technology	14.9	9.3
					Communication Services	5.9	4.7
					Utilities	4.6	2.9
					Real Estate	6.3	12.4

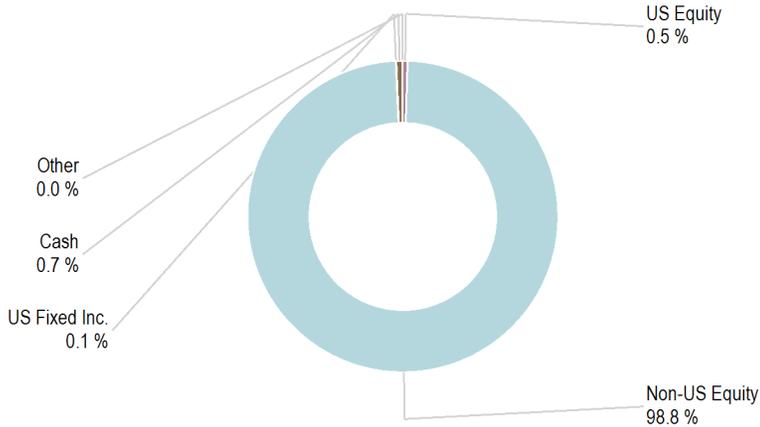
  

Top Holdings		Best Performers		Worst Performers	
NIPPON SUISAN KAISHA	1.9%		Return %		Return %
MARUI GROUP	1.7%	BEACH ENERGY	55.3%	ST BARBARA	-27.0%
NIHON UNISYS	1.7%	LI NING	46.3%	ORION ENGINEERED CARBONS	-24.2%
BRITVIC	1.6%	KATITAS	45.9%	ORION	-18.1%
CHARTER HALL GROUP STAPLED UNITS	1.5%	TECHNOPRO HOLDINGS	44.6%	SUNRISE COMMUNICATIONS	-16.1%
CLEANAWAY WASTE MANAGEMENT	1.5%	PREMIER OIL	44.4%	HOKKAIDO ELEC.POWER	-15.8%
ALTEN	1.5%	SIMCORP	43.1%	SEGA SAMMY HDG.	-14.4%
STOREBRAND	1.4%	SOITEC	41.7%	BIC	-12.5%
BEACH ENERGY	1.4%	CHARTER HALL GROUP STAPLED UNITS	39.7%	KANDENKO	-10.9%
DECHRA PHARMACEUTICALS	1.4%	NIPPON SUISAN KAISHA	37.1%	ROHTO PHARMACEUTICAL	-5.6%
		CLEANAWAY WASTE MANAGEMENT	35.5%	LEROY SEAFOOD GROUP	-4.6%

Return Summary

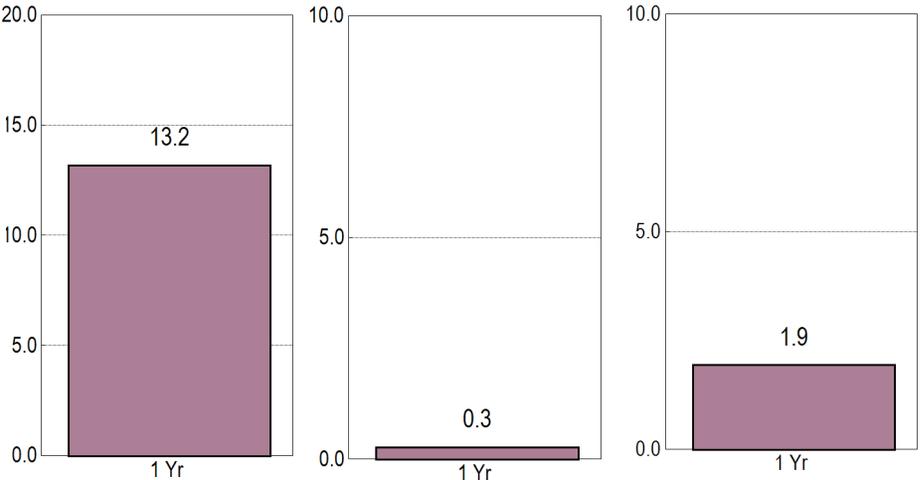
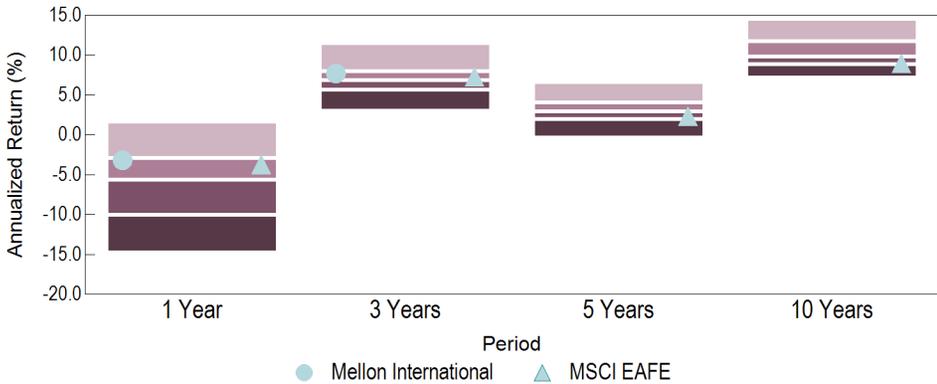


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon International	-3.2	7.7	--	--
MSCI EAFE	-3.7	7.3	2.3	9.0
eV All EAFE Equity Net Median	-5.6	6.9	3.0	9.9
eV All EAFE Equity Net Rank	29	31	--	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
Mellon International	Mellon International	Mellon International

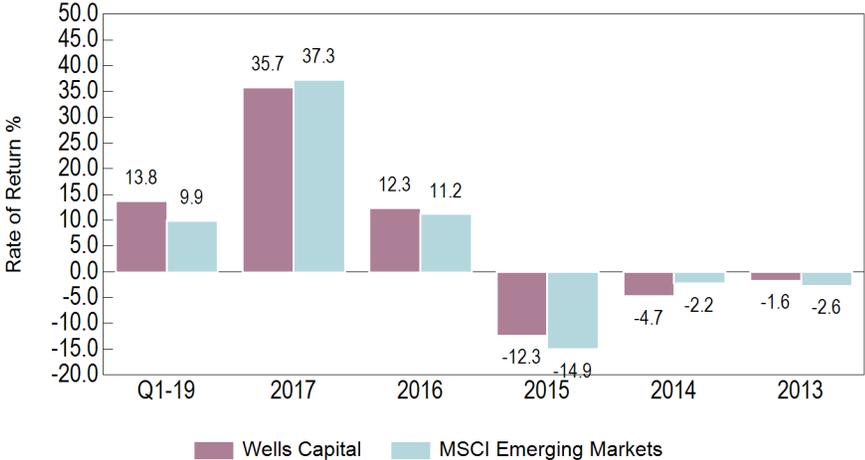


As of March 31, 2019

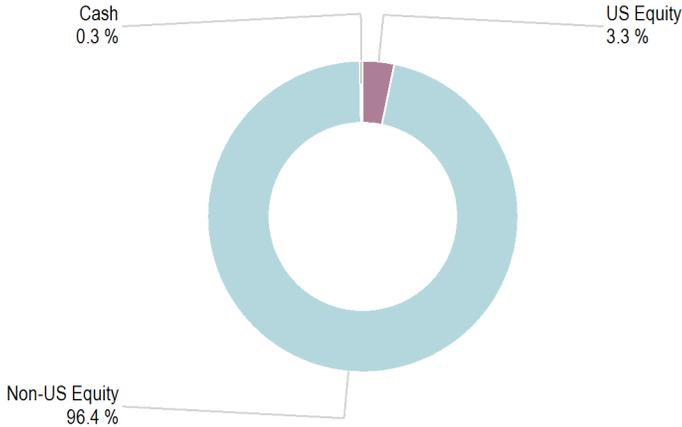
Account Information		Account Characteristics			Sector Distribution		
Account Name	Mellon International		Portfolio	Index		Portfolio	Index
Account Structure	Commingled Fund		Q1-19	Q1-19		Q1-19	Q1-19
Investment Style	Passive	Characteristics			Sector Distribution		
Inception Date	3/31/16	Weighted Avg.	58.1	58.8	Energy	5.8	5.8
Account Type	International	Market Cap. (\$B)			Materials	7.4	7.4
Benchmark	MSCI EAFE	Median Market Cap (\$B)	10.1	10.1	Industrials	14.3	14.3
Universe	eV All EAFE Equity Net	P/E Ratio	14.9	15.1	Consumer Discretionary	11.1	10.9
		Yield	3.5	3.4	Consumer Staples	11.3	11.9
		EPS Growth - 5 Yrs.	9.2	9.3	Health Care	11.1	11.3
		Price to Book	2.2	2.2	Financials	19.4	18.9
		Beta (holdings; domestic)	1.0	1.0	Information Technology	6.1	6.3
					Communication Services	5.4	5.4
					Utilities	3.6	3.8
					Real Estate	3.7	3.8

Top Holdings		Best Performers		Worst Performers	
NESTLE 'R'	2.0%		Return %		Return %
NOVARTIS 'R'	1.4%	FORTESCUE METALS GP.	79.7%	SWEDBANK A	-29.6%
ROCHE HOLDING	1.4%	ZALANDO	52.4%	ILIAD	-28.3%
HSBC HOLDINGS	1.2%	MICRO FOCUS INTL.	51.3%	TUI (LON)	-28.1%
ROYAL DUTCH SHELL A(LON)	1.0%	HITACHI CHEMICAL	48.2%	BEZEQ ISRAELI TELECOMMUNICATION	-28.0%
BP	1.0%	SHIMADZU	46.5%	EISAI	-26.6%
TOYOTA MOTOR	1.0%	SOFTBANK GROUP	46.1%	WELCIA HOLDINGS	-24.6%
TOTAL	1.0%	DAIICHI SANKYO	45.1%	YAMAZAKI BAKING	-22.8%
AIA GROUP	0.9%	ADYEN	44.3%	SUMITOMO DAINIPPON PHA.	-22.1%
ROYAL DUTCH SHELL B	0.9%	AKER BP	44.0%	TELEFONICA DTL.HLDG.	-19.5%
		NEXT	43.0%	OSRAM LICHT	-19.3%

Return Summary

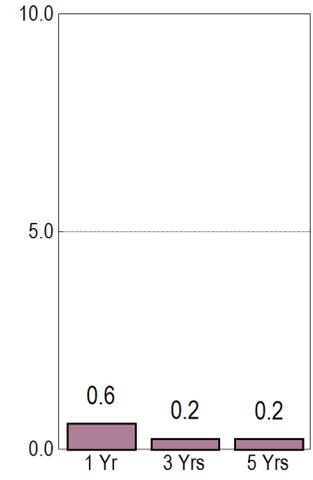
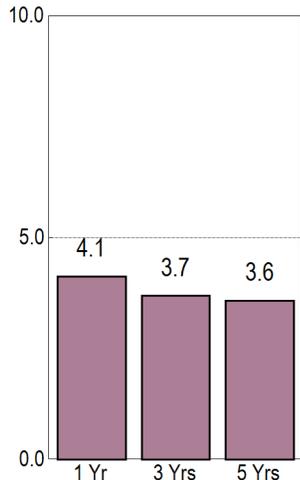


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Wells Capital	-5.0	11.6	4.5	--
MSCI Emerging Markets	-7.4	10.7	3.7	8.9
eV Emg Mkts Equity Net Median	-8.6	9.9	3.7	9.8
eV Emg Mkts Equity Net Rank	17	26	30	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
Wells Capital	Wells Capital	Wells Capital



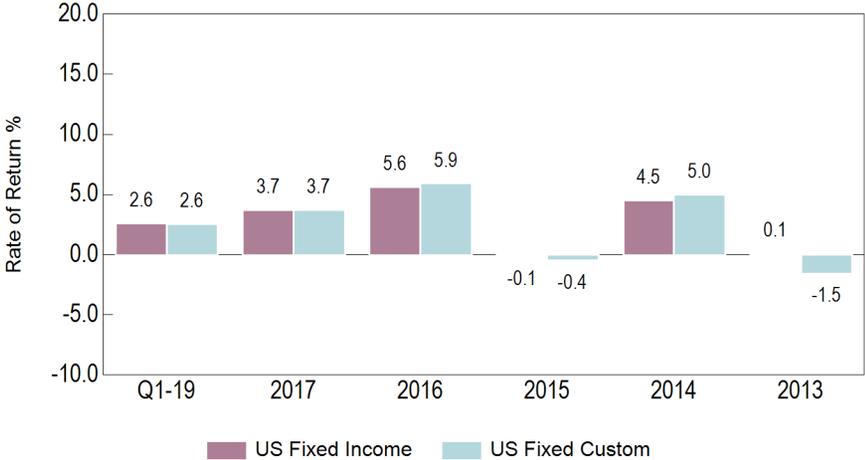
As of March 31, 2019

Account Information		Account Characteristics		Sector Distribution			
Account Name	Wells Capital	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q1-19	Q1-19	Q1-19	Q1-19		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	3/31/12	Weighted Avg.	81.4	84.9	Energy	6.1	8.1
Account Type	International Emerging Stocks	Market Cap. (\$B)			Materials	1.2	7.4
Benchmark	MSCI Emerging Markets	Median Market Cap (\$B)	10.2	5.8	Industrials	2.6	5.5
Universe	eV Emg Mkts Equity Net	P/E Ratio	17.6	13.3	Consumer	16.5	13.3
		Yield	2.1	2.7	Discretionary		
		EPS Growth - 5 Yrs.	9.6	14.3	Consumer Staples	17.9	6.4
		Price to Book	2.6	2.4	Health Care	0.6	2.6
		Beta (holdings; domestic)	1.0	1.1	Financials	19.6	24.3
					Information Technology	12.6	14.6
					Communication Services	19.3	12.1
					Utilities	0.0	2.6
					Real Estate	1.7	3.1

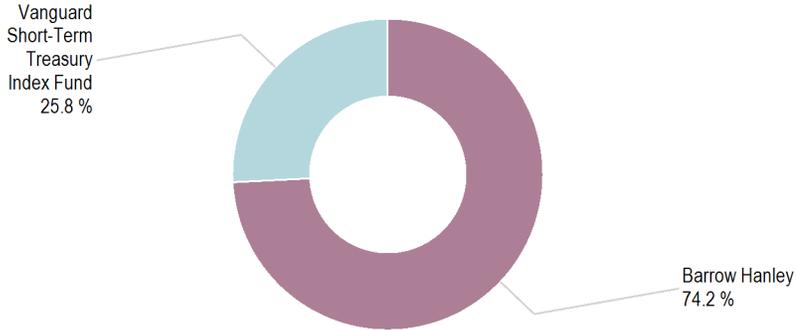
  

Top Holdings		Best Performers		Worst Performers	
SAMSUNG ELECTRONICS	4.6%		Return %		Return %
TENCENT HOLDINGS	3.8%	SEA 'A' SPN.ADR 1:1	107.8%	MATAHARI DEPARTMENT SOE.	-26.2%
CHINA MOBILE	3.4%	MERCADOLIBRE	73.4%	SHOPRITE	-16.0%
HDFC BANK ADR 1:3	3.2%	NEW ORIENTAL ED.& TECH. GP.ADS 1:1	64.4%	LOJAS AMERICANAS PN REP1 PN	-14.9%
TAIWAN SEMICON.SPN.ADR 1:5	3.1%	CTRIP.COM INTL.ADR 8:1	61.5%	KT ADR 2:1	-12.5%
ALIBABA GROUP HLDG.SPN. ADR 1:1	2.8%	IQIYI ADS.1:7	60.9%	PETROBRAS DISTRIBUIDORA ON	-10.3%
RELIANCE INDS.GDR 144A	2.6%	VIPSHOP HOLDINGS ADR 5:1	47.1%	ASTRA INTERNATIONAL	-10.1%
WH GROUP	2.4%	LI NING	46.3%	LINK NET PT	-7.5%
AIA GROUP	2.4%	THAI BEVERAGE PUBLIC	41.4%	SUN ART RETAIL GROUP	-4.4%
CHINA LIFE INSURANCE 'H'	2.2%	WH GROUP	38.9%	CEMEX ADR 1:10	-3.7%
		BANCOLOMBIA PF.SPN.ADR 1:4	34.0%	MULTIPLAN EMPE. IMOBS.ON	-3.7%

Return Summary

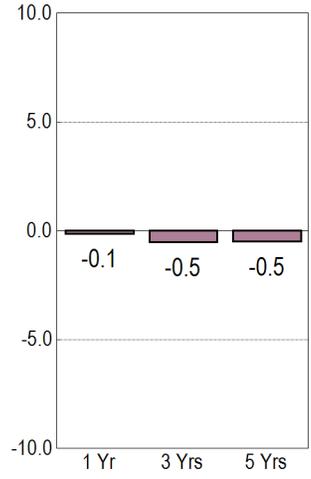
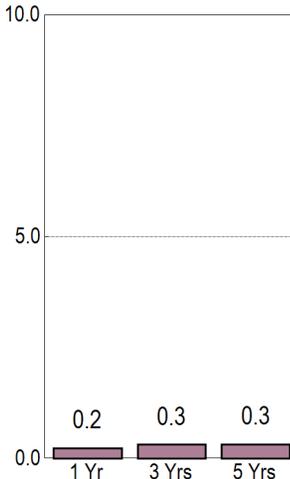
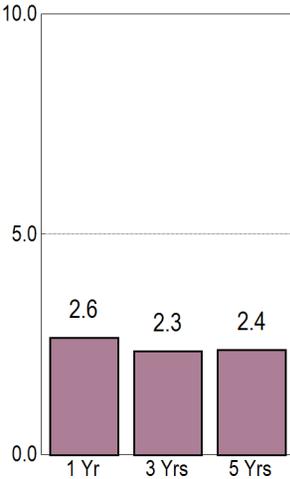


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>US Fixed Income</b>	<b>4.2</b>	<b>3.2</b>	<b>2.9</b>	<b>4.7</b>
<i>US Fixed Custom</i>	4.2	3.3	3.1	4.0
<i>InvestorForce All DB US Fix Inc Net Median</i>	4.3	3.0	2.9	5.2
<i>InvestorForce All DB US Fix Inc Net Rank</i>	59	44	52	64

Anzld. Std. Deviation	Tracking Error	Information Ratio
US Fixed Income	US Fixed Income	US Fixed Income



## US Fixed Income

As of March 31, 2019

**US Fixed Income Fixed Income Characteristics**  
 vs. BBgBarc US Aggregate TR

	Portfolio	Index	Portfolio	Index
	Q1-19	Q1-19	Q4-18	Q4-18
<b>Fixed Income Characteristics</b>				
Yield to Maturity	2.84	2.93	3.19	3.26
Average Duration	4.86	5.82	4.97	5.87
Average Quality	AA	AA	AA	AA
Weighted Average Maturity	9.27	13.00	7.64	12.93

**US Fixed Income Fixed Income Duration**  
 vs. BBgBarc US Aggregate TR

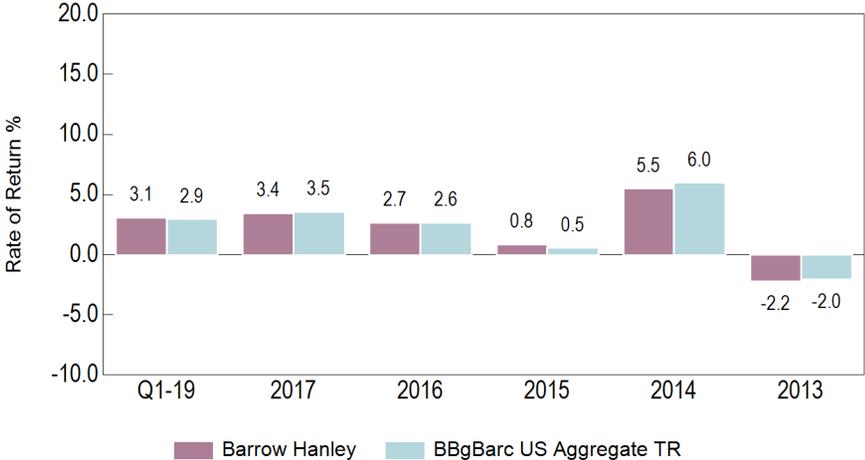
	Portfolio	Index	Portfolio	Index
	Q1-19	Q1-19	Q4-18	Q4-18
<b>Credit Quality Allocation</b>				
AAA	73.06	72.45	70.18	72.81
AA	2.75	3.42	3.37	3.59
A	12.25	10.55	12.76	10.02
BBB	11.95	13.57	13.70	13.59

**US Fixed Income Fixed Income Sector Allocation**  
 vs. BBgBarc US Aggregate TR

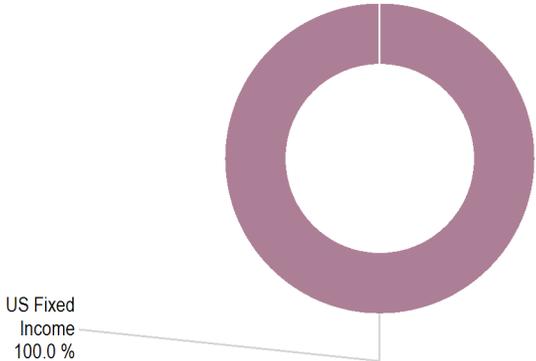
	Portfolio	Index	Portfolio	Index
	Q1-19	Q1-19	Q4-18	Q4-18
<b>US Sector Allocation</b>				
UST/Agency	42.40	41.73	42.13	41.68
Corporate	26.47	24.70	29.41	24.31
MBS	25.64	29.78	22.52	30.21
ABS	3.64	0.50	4.01	0.52
Foreign	0.22	2.37	0.23	2.39
Muni	0.88	0.92	0.92	0.90
Cash	0.75	--	0.78	--



Return Summary

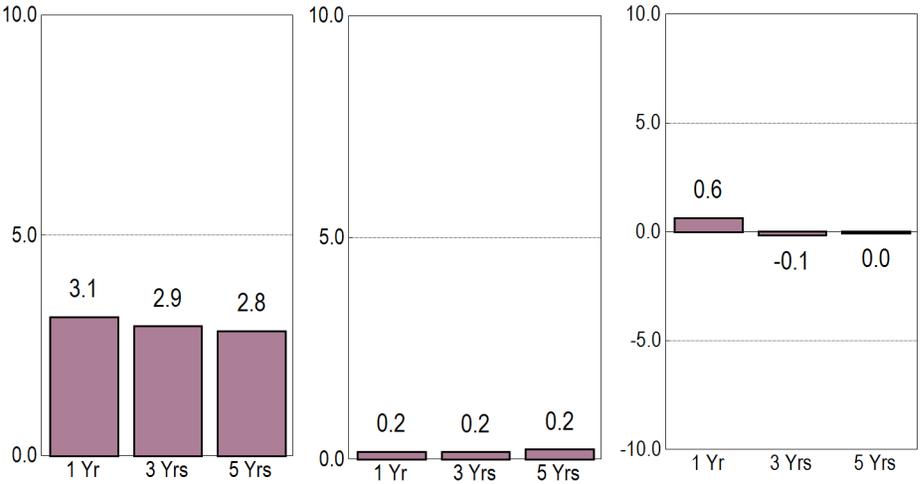


Current Allocation



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Barrow Hanley	4.6	2.0	2.7	--
BBgBarc US Aggregate TR	4.5	2.0	2.7	3.8
eV US Core Fixed Inc Net Median	4.4	2.2	2.8	4.3
eV US Core Fixed Inc Net Rank	31	66	59	--

Anzld. Std. Deviation	Tracking Error	Information Ratio
Barrow Hanley	Barrow Hanley	Barrow Hanley



As of March 31, 2019

Account Information		Fixed Income Characteristics			Fixed Income Characteristics		
Account Name	Barrow Hanley		Portfolio	Index		Portfolio	Index
Account Structure	Separate Account		Q1-19	Q1-19		Q1-19	Q1-19
Investment Style	Active						
Inception Date	3/31/10	Fixed Income Characteristics			Credit Quality Allocation		
Account Type	US Fixed Income Core	Yield to Maturity	3.03	2.93	AAA	63.80	72.45
Benchmark	BBgBarc US Aggregate TR	Average Duration	5.88	5.82	AA	3.70	3.42
Universe	eV US Core Fixed Inc Net	Average Quality	AA	AA	A	16.50	10.55
		Weighted Average Maturity	9.27	13.00	BBB	16.00	13.57

## Vanguard Short-Term Treasury Index Fund

As of March 31, 2019

## Description:

The investment seeks to track the performance of a market-weighted government bond index with a short-term dollar-weighted average maturity.

The fund employs an indexing investment approach designed to track the performance of the Bloomberg Barclays US Treasury 1-3 Year Bond Index. This index includes fixed income securities issued by the U.S. Treasury (not including inflation-protected securities), all with maturities between 1 and 3 years. At least 80% of the fund's assets will be invested in bonds included in the index.

Portfolio Fund Information as of March 31, 2019		Top Holdings as of March 31, 2019		Fund Characteristics as of March 31, 2019	
Ticker	VSBIX	UNITED STATES TREASURY NOTES 1.25%	2.66%	Sharpe Ratio (3 Year)	
Morningstar Category	Short Government	UNITED STATES TREASURY NOTES 2.62%	2.43%	Average Duration	1.93
Average Market Cap (\$mm)		UNITED STATES TREASURY NOTES 1.38%	2.32%	Effective Duration	1.93
Net Assets (\$mm)	825.65	UNITED STATES TREASURY NOTES 2.12%	2.26%	Modified Duration	
% Assets in Top 10 Holdings	21.50	UNITED STATES TREASURY NOTES 2.5%	2.19%	Average Coupon	2.07%
Total Number of Holdings	94	UNITED STATES TREASURY NOTES 1.25%	2.03%	Average Effective Maturity	2.00
Manager Name	Joshua C. Barrickman	UNITED STATES TREASURY NOTES 2.88%	2.02%	R-Squared (3 Year)	
Manager Tenure	6	UNITED STATES TREASURY NOTES 1.75%	1.92%	Alpha (3 Year)	
Expense Ratio	0.05%	UNITED STATES TREASURY NOTES 3.5%	1.85%	Beta (3 Year)	
Closed to New Investors	No	UNITED STATES TREASURY NOTES 1.75%	1.83%		

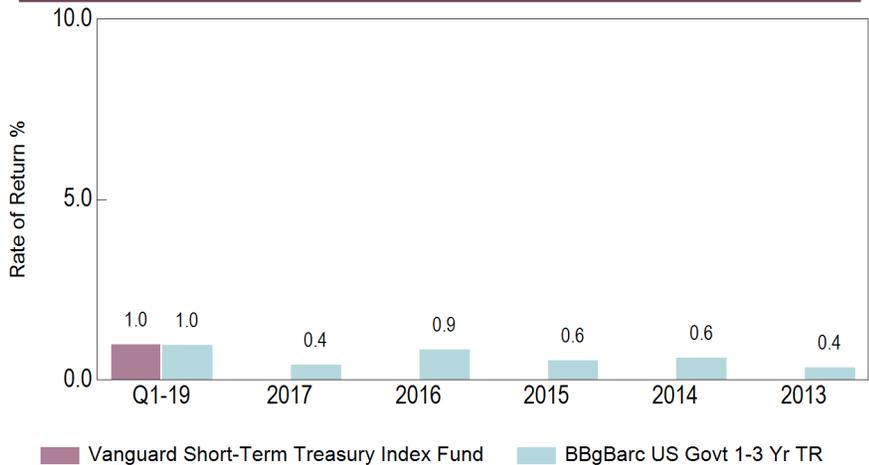
Maturities as of March 31, 2019		Fixed Income Sectors as of March 31, 2019		Credit Quality as of March 31, 2019	
1 to 3 Years	98.68%	GOVERNMENT	99.71%	AAA	99.71%
3 to 5 Years	1.32%	MUNICIPAL	0.00%	AA	0.00%
5 to 7 Years	0.00%	CORPORATE	0.00%	A	0.00%
7 to 10 Years	0.00%	SECURITIZED	0.00%	BBB	0.29%
10 to 15 Years	0.00%	CASH & EQUIVALENTS	0.29%	BB	0.00%
15 to 20 Years	0.00%	DERIVATIVE	0.00%	B	0.00%
20 to 30 Years	0.00%			Below B	0.00%
Greater than 30 Years	0.00%			Not Rated	0.00%



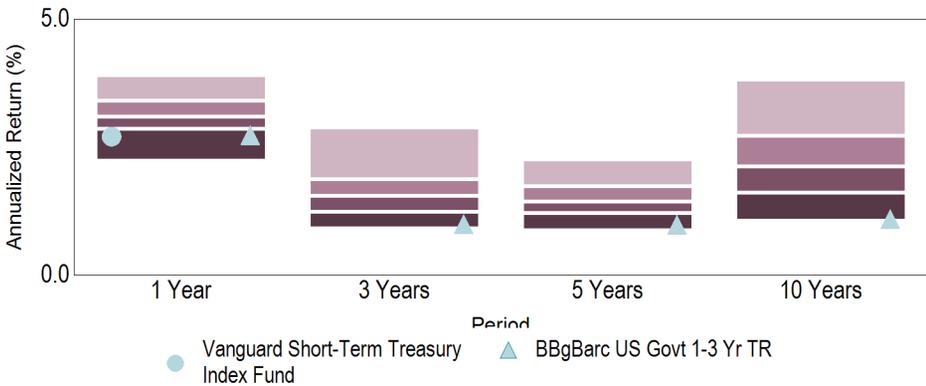
Vanguard Short-Term Treasury Index Fund

As of March 31, 2019

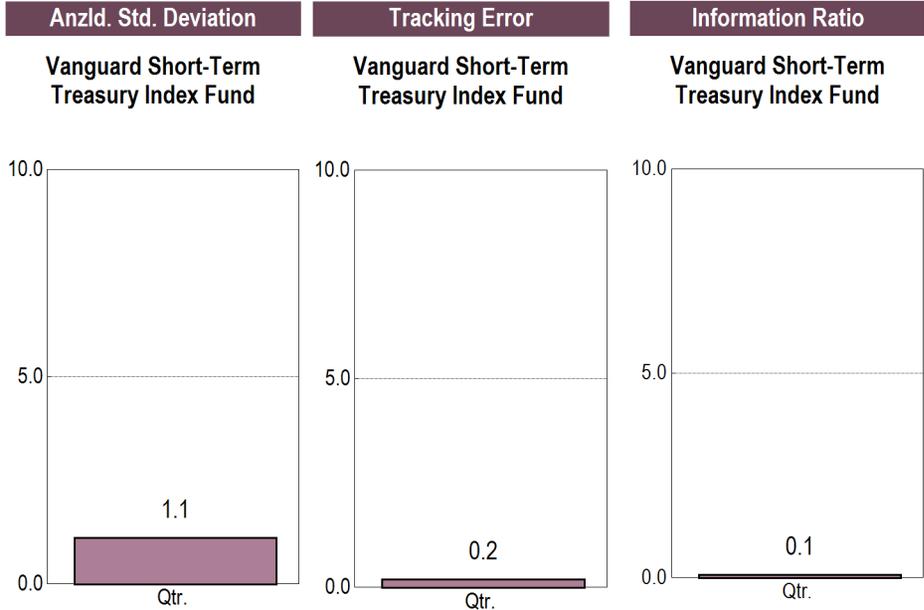
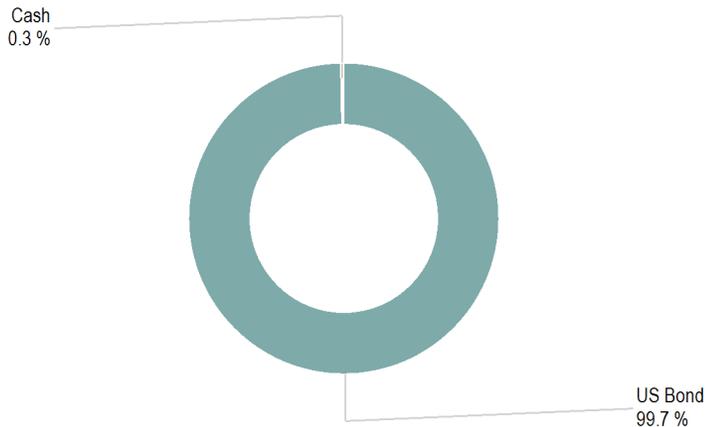
Return Summary



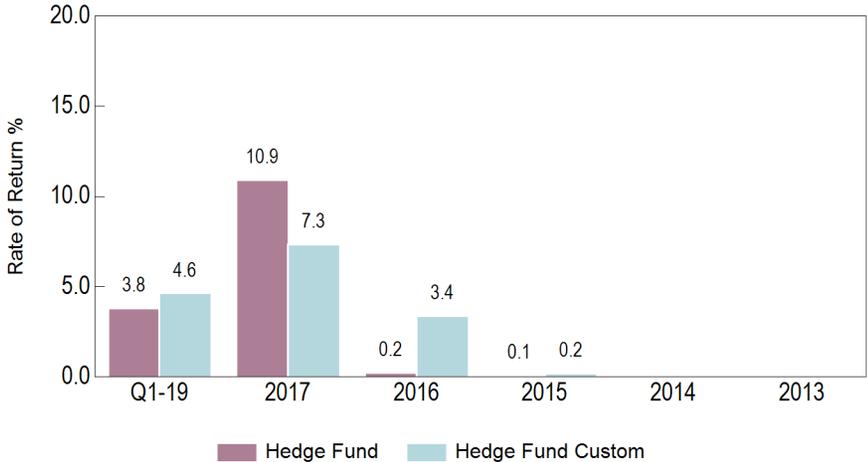
	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Vanguard Short-Term Treasury Index Fund	2.7	--	--	--
BBgBarc US Govt 1-3 Yr TR	2.7	1.0	1.0	1.1
eV US Short Duration Fixed Inc Net Median	3.1	1.6	1.4	2.1
eV US Short Duration Fixed Inc Net Rank	84	--	--	--



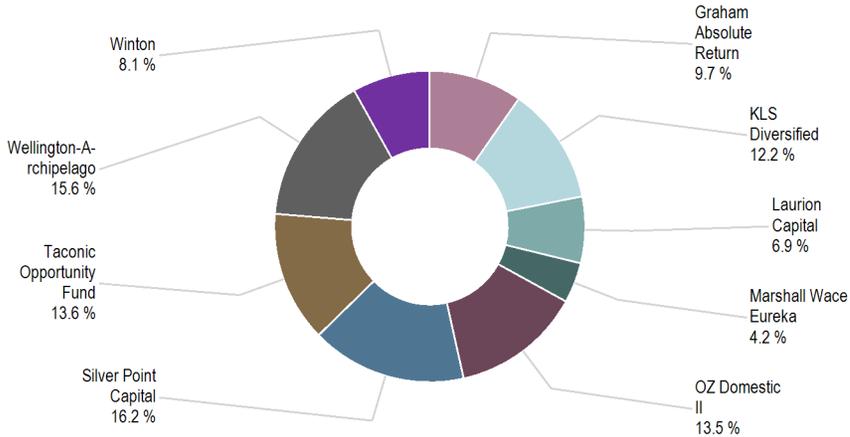
Mutual Fund Allocation as of March 31, 2019



**Return Summary**

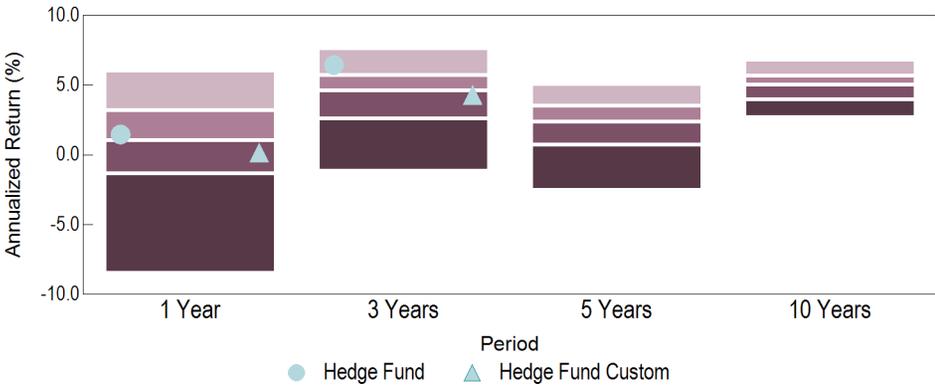
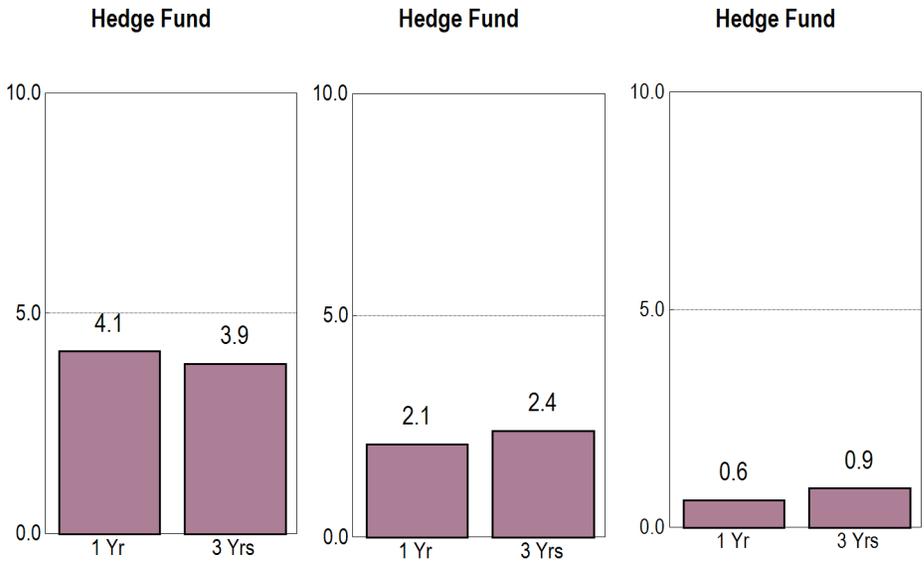


**Current Allocation**

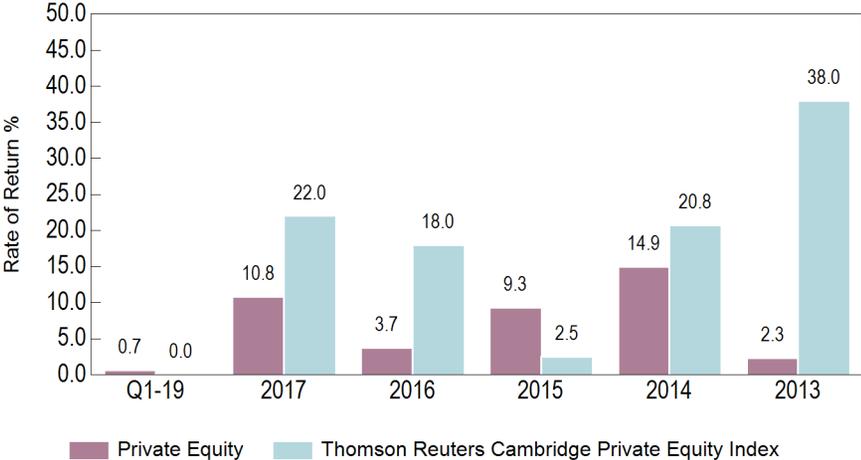


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Hedge Fund</b>	1.5	6.4	--	--
<i>Hedge Fund Custom</i>	0.2	4.3	--	--
<i>InvestorForce All DB Hedge Funds Net Median</i>	1.1	4.6	2.4	5.1
<i>InvestorForce All DB Hedge Funds Net Rank</i>	45	18	--	--

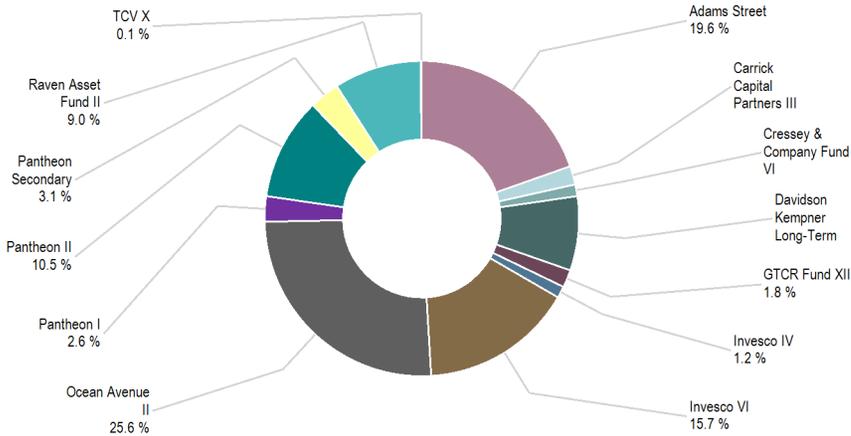
**Anzld. Std. Deviation      Tracking Error      Information Ratio**



Return Summary

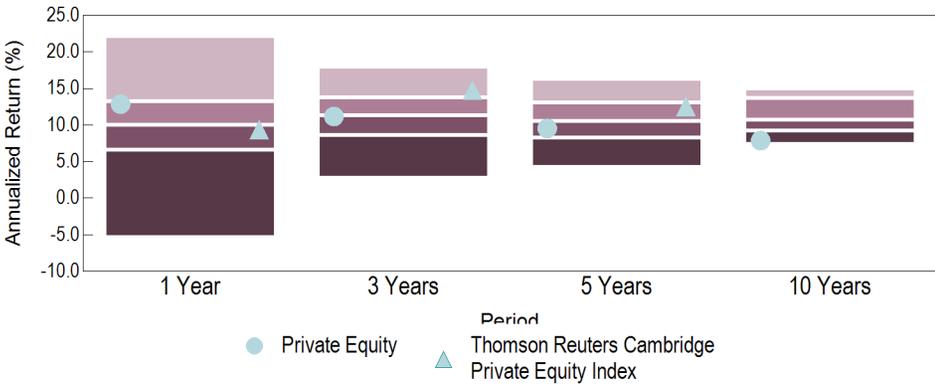
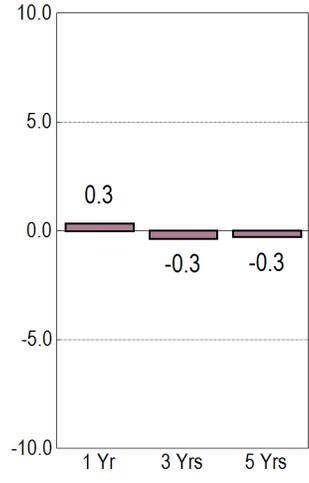
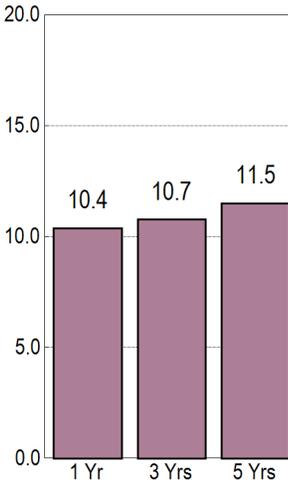
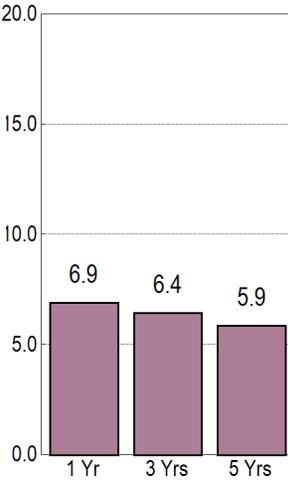


Current Allocation

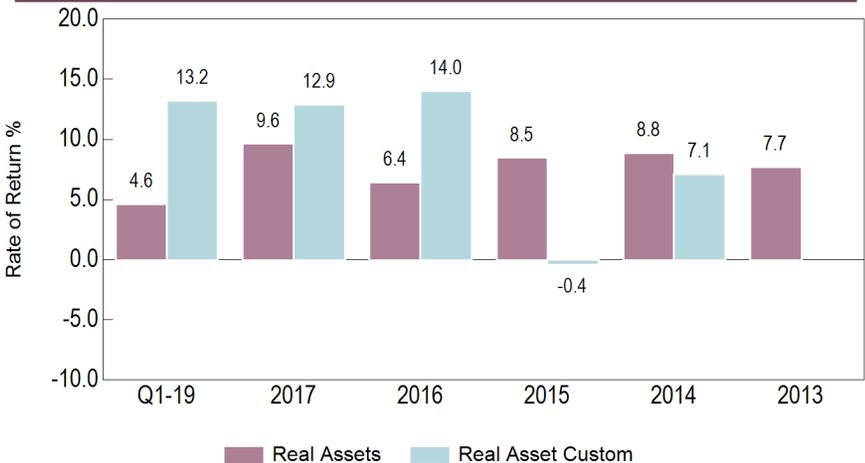


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
<b>Private Equity</b>	<b>12.8</b>	<b>11.2</b>	<b>9.5</b>	<b>7.9</b>
Thomson Reuters Cambridge Private Equity Index	9.4	14.7	12.6	--
InvestorForce All DB Private Eq Net Median	10.0	11.4	10.6	10.8
InvestorForce All DB Private Eq Net Rank	29	53	62	95

Anzld. Std. Deviation	Tracking Error	Information Ratio
Private Equity	Private Equity	Private Equity

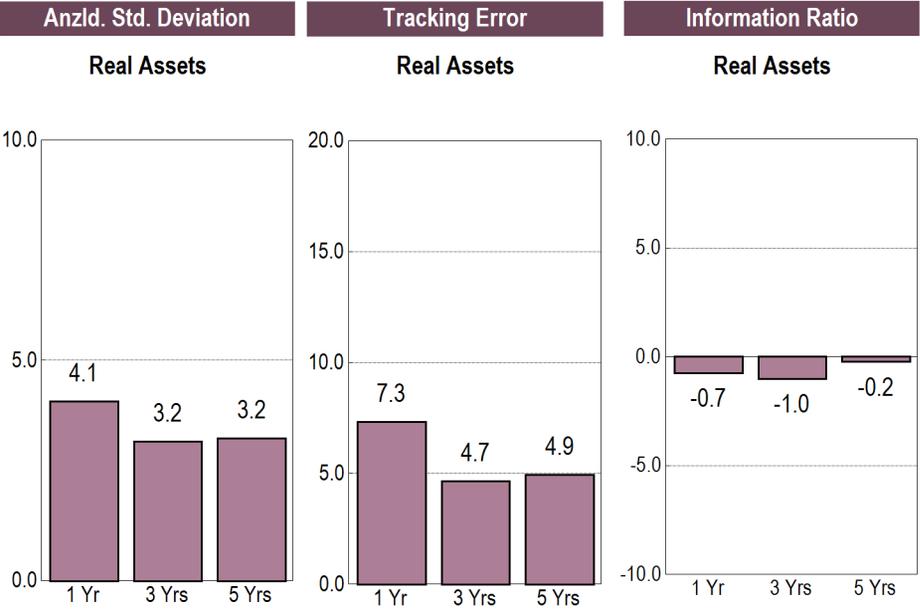
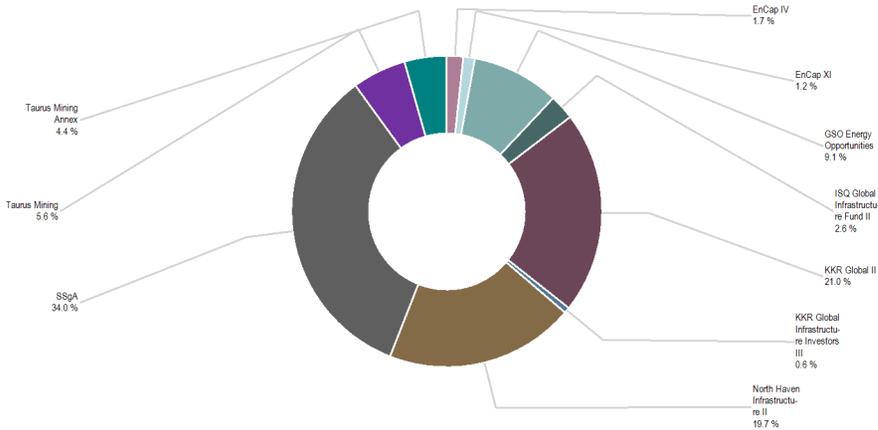


Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Real Assets	7.6	6.7	7.5	--
Real Asset Custom	12.9	11.3	8.5	--

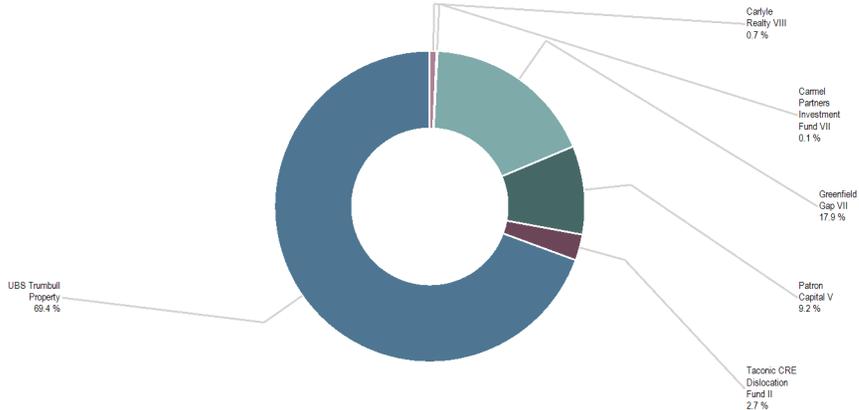
Current Allocation



**Return Summary**

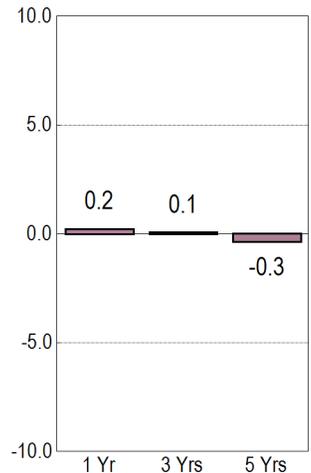
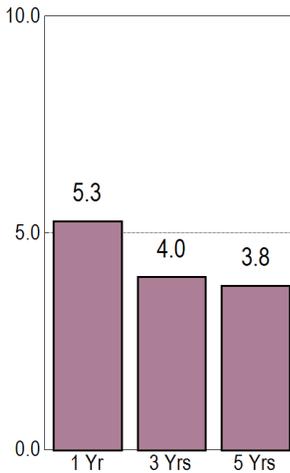


**Current Allocation**



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Private Real Estate	7.8	7.2	7.9	--
NCREIF ODCE (net)	6.6	7.0	9.2	7.7

Anzld. Std. Deviation	Tracking Error	Information Ratio
Private Real Estate	Private Real Estate	Private Real Estate



## **Disclaimer, Glossary, and Notes**

WE HAVE PREPARED THIS QUARTERLY REPORT FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT MERCED COUNTY EMPLOYEES' RETIREMENT ASSOCIATION.

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT AND THAT IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. ANY OPINIONS OR RECOMMENDATIONS PRESENTED HEREIN REPRESENT OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND ARE SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK. THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

INFORMATION USED TO PREPARE THIS REPORT WAS OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY OF ALL SOURCE INFORMATION CONTAINED HEREIN.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD - LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM", "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE" OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD - LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS PRESENTATION.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.



**Credit Risk:** Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security.)

**Duration:** Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

**Information Ratio:** This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

**Jensen's Alpha:** A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk.  $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$ .

**Market Capitalization:** For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

**Market Weighted:** Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

**Maturity:** The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

**Prepayment Risk:** The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

**Price-Book Value (P/B) Ratio:** The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

**Price-Earnings (P/E) Ratio:** A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

**Quality Rating:** The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

**Sharpe Ratio:** A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

**Standard Deviation:** A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

**STIF Account:** Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

**Style:** The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

**Yield to Maturity:** The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.  
[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991.

The Russell Indices<sup>®</sup>, TM, SM are trademarks/service marks of the Frank Russell Company.

Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.

