

MEETING MATERIALS

Merced County Employees' Retirement Association

February 28, 2019



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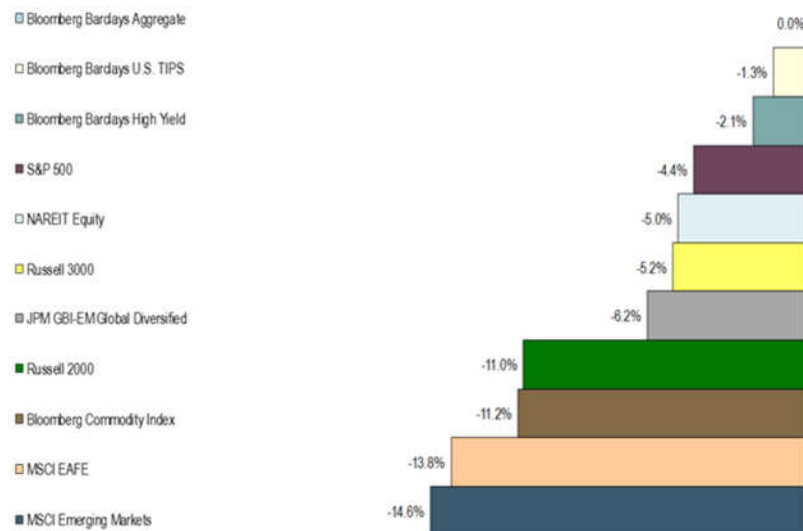
Executive Summary

2018 Market Themes

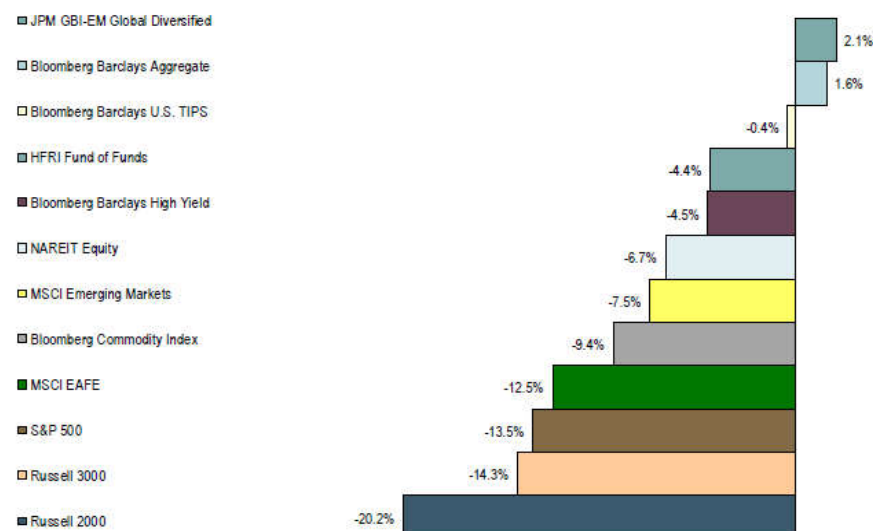
- The Return of Volatility
- Trade War Threats
- Normalization of Interest Rates
- Slowing Global Growth

What was the impact on the Markets?

1 Year



Q4



**All asset classes delivered negative returns for the year. For Q4, risk assets drove prices down
No Place to Hide - as all risk assets sold off**

MCERA Portfolio Overview

As of December 31, 2018, total assets invested were at \$778.2 million.

The Fund returned -7.5% for the fourth quarter (39th percentile among peers), trailing the policy benchmark by 0.4% during the quarter. Recall that in Q3, the Fund was a third quartile performer relative to peers, which could be an indication that the Fund was better positioned for market volatility vs peers. As a reminder, percentile ranks for short-term periods are subject to significant fluctuations. In the most recent quarter, Fixed Income and Private Equity were the main positive contributors from an absolute basis (+1.4% and +1.5%, respectively). On a relative basis, being overweight Public Equities for most of the period was the main detractor, while strong relative results from the Real Assets (including Real Estate) was the key contributor.

Calendar year 2018 ended with the Fund down -4.5%. Absolute results were disappointing for the year, but on a positive note, the Fund was able to outpace the passive 60/40 benchmark (MSCI ACWI/Barclays Agg) by 1.0%. One-year results ranked MCERA in the 64 percentile. On an absolute basis, International Public Equity was the key detractor, reporting a -15.2% return for the year. Fixed Income protected, providing modest positive returns (+0.4%), while Hedge Funds were flat for the year. Real Assets (including Real Estate) were able to produce positive results at +2.1%, while Private Equity (+18.3%) generated significant positive results, but we should note that the results are lagged for the Private Markets.

MCERA Portfolio Overview (continued)

During the fourth quarter, global equities endured a sharp decline. U.S. and International Equities were the main absolute detractors.

- The Fund's U.S. Equity portfolio reported significant negative returns, at -15.8%, with International Equity down -11.8%. Emerging Markets Equity (within International Equity) fared better, but still declined by -7.7%.
- Fixed Income was positive in the fourth quarter, at +1.4%. Within Fixed Income, both Barrow Hanley and Vanguard Short-Term Treasury Index Fund were up during the risk-off period.
- Hedge Funds in aggregate returned -4.8% in the quarter. Private Equity reported a +1.5% return, with Real Assets posting a -0.7% return.

Manager Updates / Recommendations / Watch List**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. We are also reviewing the exposure to the SSgA Real Assets Fund, to determine if any adjustments are warranted. If the Board decides to reduce the exposure to SSgA, the proceeds could be used to bring Emerging Markets Equity to target (please see section that highlights importance of Emerging Markets Equity). Part of the proceeds could also be used to help fund the new investments or it could be held in the Vanguard Short-Term Bond Index for future capital call funding. Please see the SSgA Review section for details.

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
Domestic Equity				
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
Developed Markets Equity (Non-U.S.)				
Copper Rock International Small Cap Strategy	Diversified, growth-at-a-reasonable price manager; combination of quantitative tools and fundamental research	Low	4.0% to 5.0%	At market inflection points, with abrupt leadership change. Deep value, low quality market environments (e.g. 2009, 2016)
Emerging Markets Equity				
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
Investment Grade Bonds				
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
Domestic Equity Assets				
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.
Developed Markets Equity (Non-U.S.) Assets				
Copper Rock International Small Cap Strategy	Yes	-	October 2018	Met onsite to discuss underperformance and asset growth. Watch List.
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.
Emerging Markets Equity Assets				
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.
US Fixed Income Assets				
Barrow Hanley Core Fixed Income Fund	No	-	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.
Private Equity Program	N/A	N/A	N/A	Oversight by Cliffwater.
Real Assets Program	N/A	N/A	N/A	Oversight by Cliffwater.
Hedge Fund Program	N/A	N/A	N/A	Oversight by Cliffwater.

Active Manager Peer Rankings

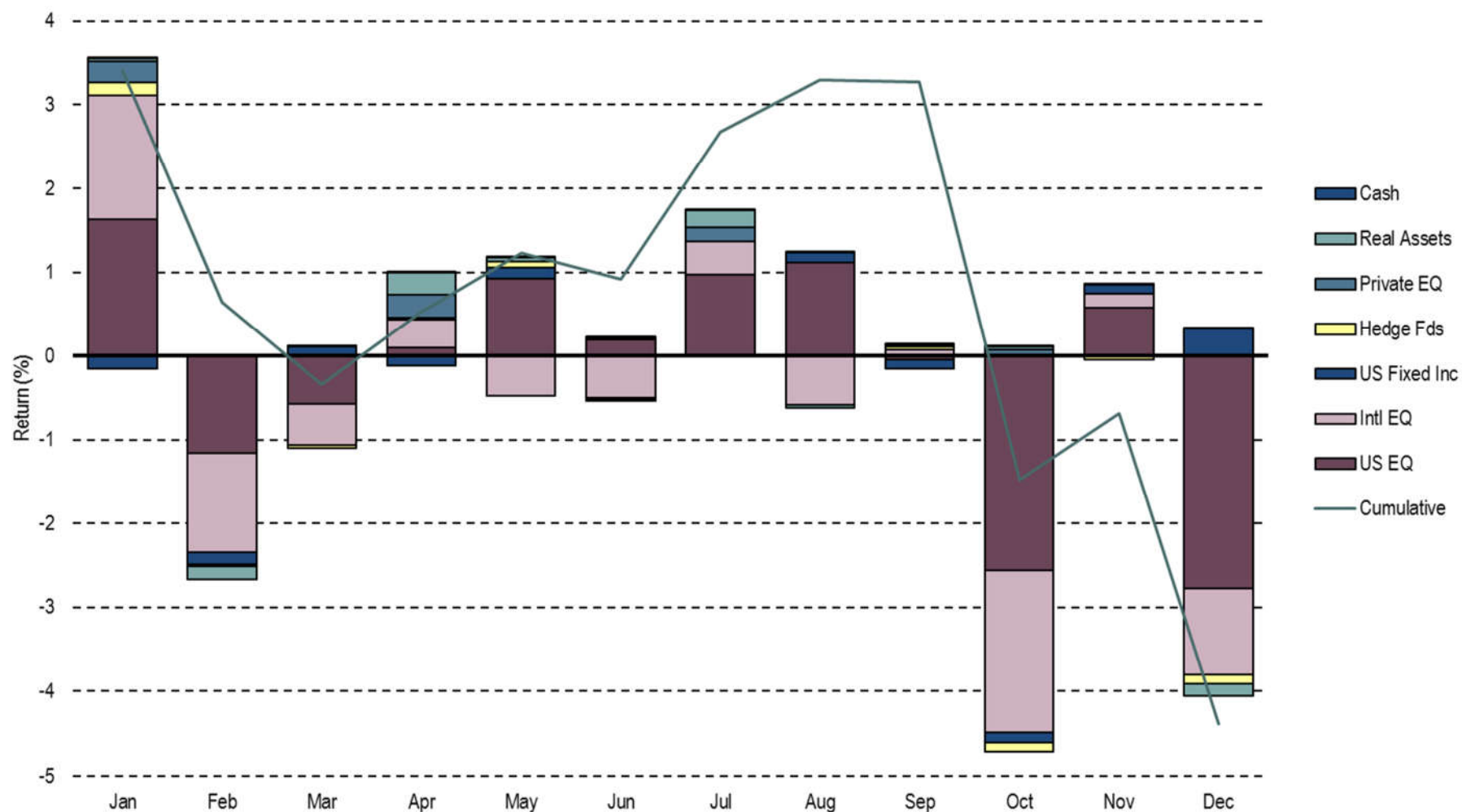
Investment Managers	Product	Peer Group	Market Value (\$ mm)	YTD December	1 YR	3 YR	5 YR	10 YR	Client Inception	Years in portfolio
DFA	US Small Cap Equity Strategy	US Small Cap Core	15.6	60	60	49	61	42	Jun-14	4.6
PanAgora	US Small Cap Core Stock Selector	US Small Cap Core	15.4	36	36	55	42	11	Sep-13	5.3
Mellon Capital	Dynamic US Equity Strategy	US Large Cap Core	69.9	60	60	3	2	2	Dec-12	6.1
Copper Rock	International Small Cap	EAFE Small Cap	18.2	85	85	99	91	82	Sep-13	5.3
Wells Capital	Berkeley Street Emerging Markets	Emerging Markets	53.7	38	38	28	45	51	Mar-12	6.8
Barrow Hanley	Core Fixed Income	US Core Fixed Income	134.0	42	42	66	66	68	Mar-10	8.8

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).

A Deeper Look at Results – Month by Month Total Return with Asset Class Contribution



A Deeper Look at 2018 Results – Month by Month Total Return with Asset Class Contribution (continued)

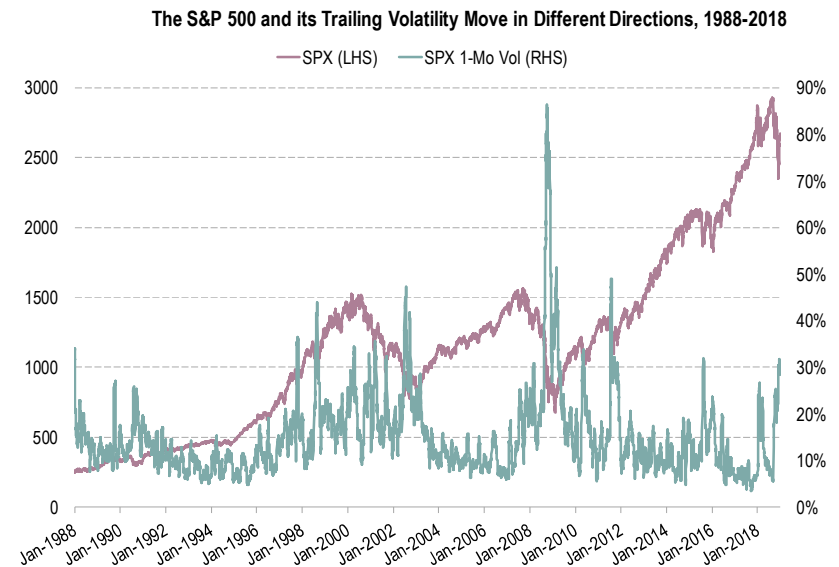
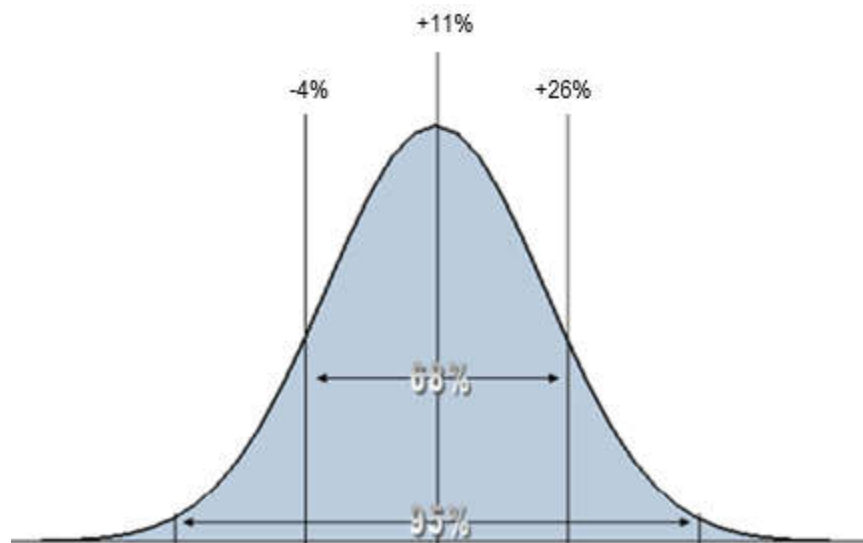
- For the calendar year, the Fund was down -4.5%.
- The chart on the previous page provides total returns on a monthly basis, with the contribution from each asset class embedded in each bar. For each month, any asset class beneath the horizontal axis at zero had a negative contribution; conversely, any asset class above would be positive. To help illustrate the point, you will notice that in December, the dark purple portion of the bar (which represents the U.S. Equity sleeve) was the main negative contributor of a notably down month.
- The line on the chart represents the cumulative growth of the portfolio throughout the year. The year started on a positive note in January, and then flattened during the second quarter with a modest upswing in the third quarter. Then the markets were roiled in the fourth quarter.
- As you can see, the equity sell-offs in October and December were the key drivers for what turned out to be a tumultuous year.
- For the year, the International Markets Equity allocation was the main detractor and not surprisingly, posted the worst return (-15.2%) among the different asset classes. U.S. Equity was also a noteworthy detractor, given the large weight and significant negative return.
- From a relative basis, the key drivers for the calendar year were Real Assets and International Equity. Real Assets was the main positive contributor as this part of the portfolio outperformed the benchmark by a sizeable margin. Hedge Funds also contributed, but to a lesser extent as the exposure was relatively smaller. The main relative detractor, as well as the most impactful, was the International Equity segment.

The Return of Volatility

Equity Markets Are Volatile

Since the end of World War II, the U.S. stock market¹ has returned nearly 11% per year on average, but with considerable annual variation.

- The standard deviation of returns, a measure of volatility, has been about 15% per year.
 - Implies that annual returns fall into the range of -4% to +26% about two-thirds of the time – which they have.
 - Implies that annual returns will be less than -4% about one-sixth of the time – which they have.
- Volatility often spikes when markets decline: an inverse relationship.



¹ Measured by the total return of the S&P 500 index.

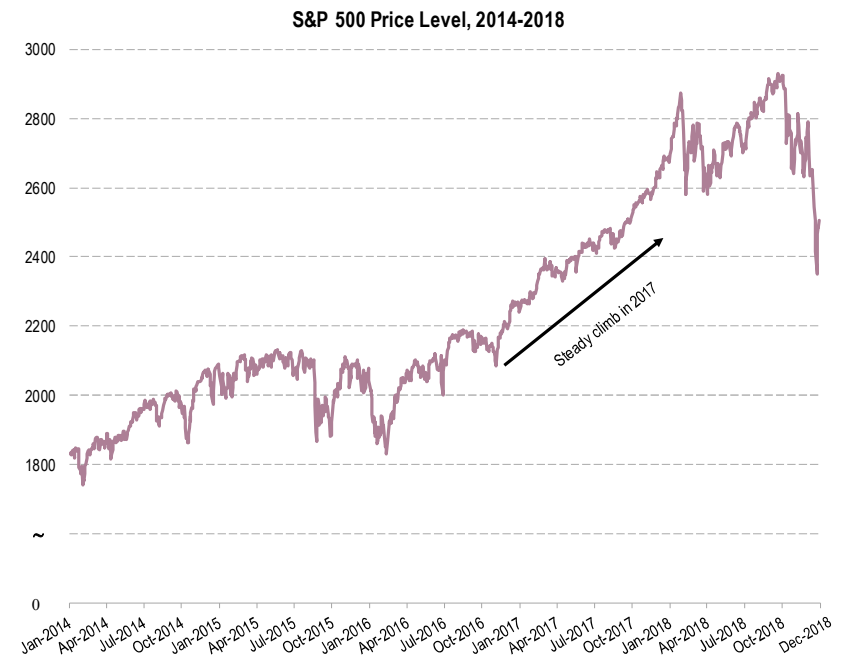
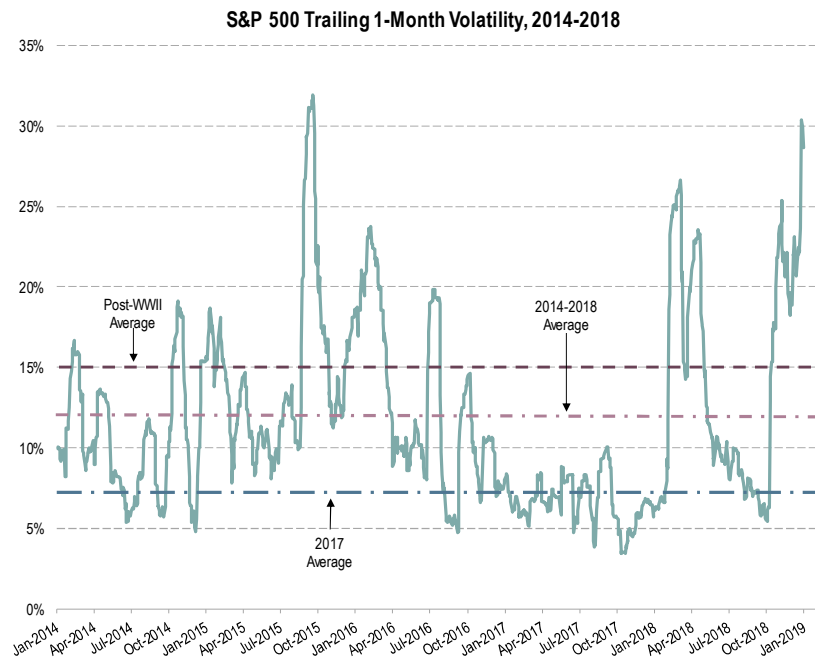
In Recent Years, Volatility Decreased Markedly

During 2014–2018, the S&P 500's trailing one-month volatility fell to an annualized rate of under 12%, on average, and to under 7% during 2017.

- In 2017, trailing one-month volatility was below 5% on 35 days, an extraordinarily low level. The prior annual record of sub-5% close was six days (in 1995).

The same period was marked by a long rise in the level of the S&P 500 with few setbacks.

- During 2017, the S&P 500 had a positive return every single month. This has never happened before.



The Return of Volatility is a Return to Normalcy

Equity markets move in cycles and suffer corrections – declines of over 10% from a peak – from time to time.

- Investors became accustomed to muted volatility and little downside in recent years.
- The corrections in both Jan-Apr 2018 and Sept-Dec 2018 felt like shocks, but both were “routine.”
- The average level of volatility 2018 was about 15, in line with the long-term average.
- In other words, the volatility that has been experienced “feels” particularly bad because it followed a period of historically low volatility.

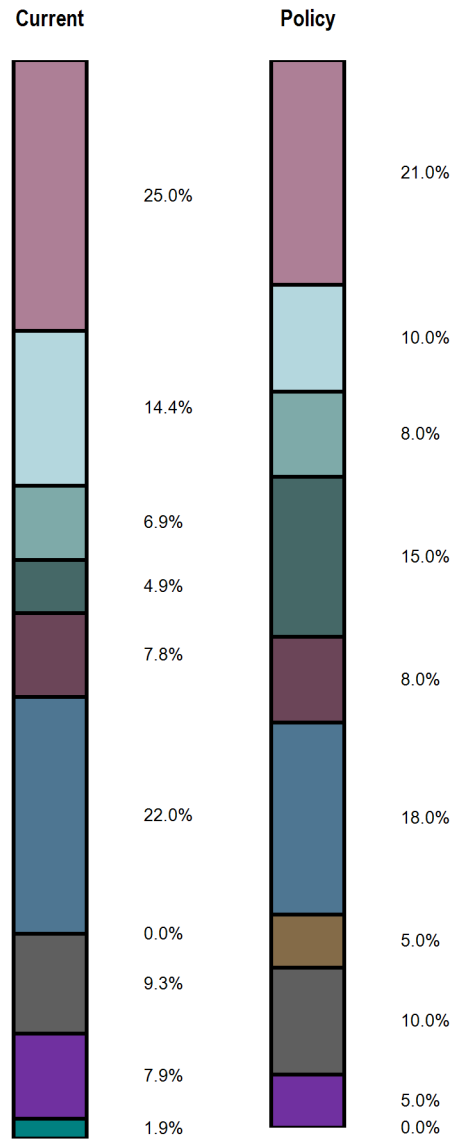
For investors who invest in risky assets (e.g., equities) in order to meet their objectives, it is worth remembering that the cost of doing so is volatility.

We recommend that investors:

- maintain a long-term outlook,
- remain patient during periods of heightened volatility, and
- continue to rebalance to targets, allowing them to buy assets on weakness.

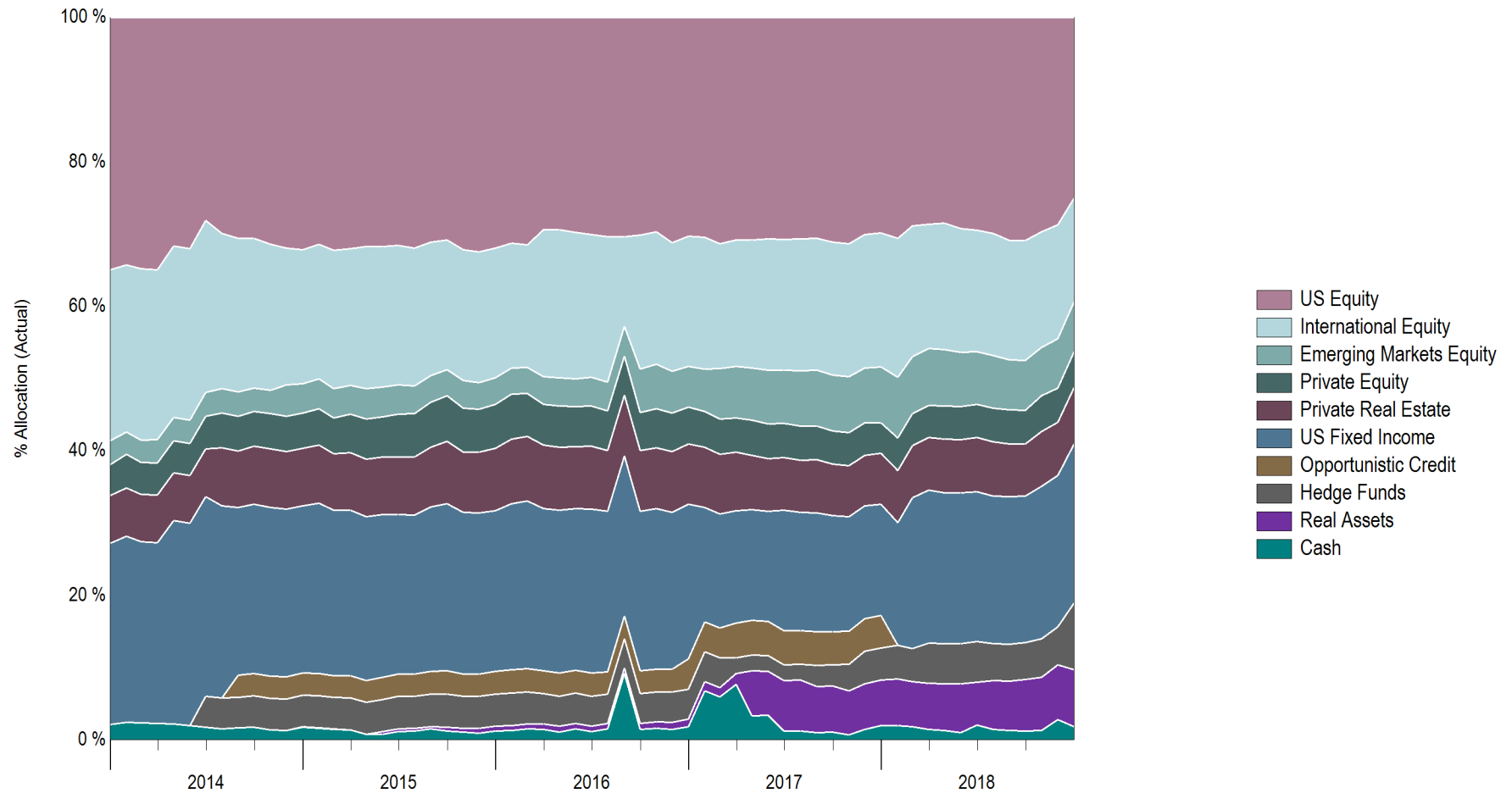
Quarterly Review As of December 31, 2018

As of December 31, 2018



Allocation vs. Targets and Policy							
	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?	
US Equity	\$194,880,658	25.0%	21.0%	4.0%	15.0% - 26.0%	Yes	
International Equity	\$111,683,723	14.4%	10.0%	4.4%	5.0% - 15.0%	Yes	
Emerging Markets Equity	\$53,681,177	6.9%	8.0%	-1.1%	4.0% - 12.0%	Yes	
Private Equity	\$38,411,563	4.9%	15.0%	-10.1%	5.0% - 20.0%	No	
Private Real Estate	\$60,595,456	7.8%	8.0%	-0.2%	6.0% - 10.0%	Yes	
US Fixed Income	\$171,152,385	22.0%	18.0%	4.0%	13.0% - 23.0%	Yes	
Opportunistic Credit	--	--	5.0%	-5.0%	3.0% - 7.0%	No	
Hedge Funds	\$72,155,163	9.3%	10.0%	-0.7%	5.0% - 15.0%	Yes	
Real Assets	\$61,172,657	7.9%	5.0%	2.9%	3.0% - 7.0%	No	
Cash	\$14,420,899	1.9%	0.0%	1.9%	0.0% - 5.0%	Yes	
Total	\$778,153,681	100.0%	100.0%				

Asset Allocation History
5 Years Ending December 31, 2018



As of December 31, 2018

Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund (Net)*	778,153,681	100.0	-7.5	-4.5	-5.3	-4.5	6.1	4.9	8.5	7.7	Dec-94
Total Fund (Gross)*			-7.4	-4.3	-5.2	-4.3	6.4	5.2	8.8	7.8	
<i>Policy Index</i>			<i>-7.1</i>	<i>-3.7</i>	<i>-4.8</i>	<i>-3.7</i>	<i>6.9</i>	<i>5.4</i>	<i>9.0</i>	<i>5.7</i>	<i>Dec-94</i>
Total Fund w/o Alternatives (Net)	531,397,943	68.3	-9.8	-7.4	-7.4	-7.4	5.9	4.3	--	--	Dec-94
Total Fund w/o Alternatives (Gross)			-9.7	-7.1	-7.3	-7.1	6.2	4.6	--	--	
<i>Policy Index w/o AI</i>			<i>-8.7</i>	<i>-6.2</i>	<i>-6.2</i>	<i>-6.2</i>	<i>6.2</i>	<i>4.4</i>	<i>--</i>	<i>--</i>	<i>Dec-94</i>
US Equity (Net)	194,880,658	25.0	-15.8	-6.6	-10.0	-6.6	9.6	8.4	13.7	9.4	Dec-94
US Equity (Gross)			-15.8	-6.4	-9.9	-6.4	9.8	8.6	13.9	9.5	
<i>80% R1000 / 20% R2000</i>			<i>-15.1</i>	<i>-6.0</i>	<i>-9.5</i>	<i>-6.0</i>	<i>8.8</i>	<i>7.6</i>	<i>13.0</i>	<i>9.4</i>	<i>Dec-94</i>
International Equity (Net)	165,364,900	21.3	-11.8	-15.2	-12.2	-15.2	3.8	0.3	6.8	4.6	Dec-98
International Equity (Gross)			-11.7	-14.8	-12.0	-14.8	4.3	0.9	7.3	4.8	
<i>International Equity Custom</i>			<i>-11.0</i>	<i>-13.6</i>	<i>-10.3</i>	<i>-13.6</i>	<i>5.5</i>	<i>1.4</i>	<i>6.5</i>	<i>3.8</i>	<i>Dec-98</i>
US Fixed Income (Net)	171,152,385	22.0	1.4	0.4	1.6	0.4	3.2	2.8	4.3	5.2	Dec-94
US Fixed Income (Gross)			1.5	0.6	1.6	0.6	3.4	3.0	4.7	5.4	
<i>US Fixed Custom</i>			<i>1.7</i>	<i>0.8</i>	<i>1.7</i>	<i>0.8</i>	<i>3.5</i>	<i>3.0</i>	<i>3.8</i>	<i>5.6</i>	<i>Dec-94</i>
Hedge Fund (Net)	72,155,163	9.3	-4.8	0.0	-4.1	0.0	3.6	--	--	3.1	Jun-14
Hedge Fund (Gross)			-4.7	0.2	-4.0	0.2	3.7	--	--	3.2	
<i>Hedge Fund Custom</i>			<i>-5.0</i>	<i>-3.8</i>	<i>-4.8</i>	<i>-3.8</i>	<i>2.2</i>	<i>--</i>	<i>--</i>	<i>1.8</i>	<i>Jun-14</i>
Private Equity (Net)	38,411,563	4.9	1.5	18.3	5.1	18.3	10.8	11.3	7.3	8.1	Jun-05
Private Equity (Gross)			1.5	18.3	5.1	18.3	10.8	11.3	7.6	8.2	
<i>Thomson Reuters Cambridge Private Equity Index</i>			<i>0.0</i>	<i>12.3</i>	<i>3.8</i>	<i>12.3</i>	<i>17.4</i>	<i>14.9</i>	<i>--</i>	<i>--</i>	<i>Jun-05</i>

Data prior to March 2018 provided by prior consultant.



As of December 31, 2018

	Market Value (\$)	% of Portfolio	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Real Assets (Net)	121,768,114	15.6	-0.7	2.1	0.7	2.1	6.0	7.1	--	--	Mar-99
Real Assets (Gross)			-0.7	2.1	0.7	2.1	6.5	7.9	--	--	
<i>Real Asset Custom</i>			<i>-4.0</i>	<i>-0.7</i>	<i>-3.0</i>	<i>-0.7</i>	<i>8.5</i>	<i>6.4</i>	<i>--</i>	<i>--</i>	<i>Mar-99</i>
Private Real Estate (Net)	60,595,456	7.8	1.3	7.7	3.3	7.7	7.3	8.0	--	--	Mar-99
Private Real Estate (Gross)			1.3	7.7	3.3	7.7	7.8	8.8	7.6	8.7	
<i>NCREIF ODCE (net)</i>			<i>1.5</i>	<i>7.4</i>	<i>3.4</i>	<i>7.4</i>	<i>7.3</i>	<i>9.4</i>	<i>6.0</i>	<i>7.5</i>	<i>Mar-99</i>
Private Infrastructure (Net)	21,614,053	2.8	3.3	8.1	4.2	8.1	9.2	--	--	6.8	Dec-14
Private Infrastructure (Gross)			3.3	8.1	4.2	8.1	9.2	--	--	6.8	
<i>S&P Global Infrastructure Net TR USD</i>			<i>-5.3</i>	<i>-10.4</i>	<i>-7.0</i>	<i>-10.4</i>	<i>6.0</i>	<i>3.2</i>	<i>--</i>	<i>1.1</i>	<i>Dec-14</i>
Private Natural Resources (Net)	9,450,995	1.2	1.2	11.5	6.6	11.5	20.5	--	--	18.4	Sep-15
Private Natural Resources (Gross)			1.2	11.5	6.6	11.5	20.5	--	--	18.4	
<i>S&P Global Natural Resources Index TR USD</i>			<i>-16.8</i>	<i>-12.6</i>	<i>-15.7</i>	<i>-12.6</i>	<i>12.4</i>	<i>-0.5</i>	<i>3.1</i>	<i>11.6</i>	<i>Sep-15</i>
Cash (Net)	14,420,899	1.9	0.4	0.8	0.5	0.8	--	--	--	--	
Cash (Gross)			0.4	0.8	0.5	0.8	--	--	--	--	

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

As of December 31, 2018

Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund*	778,153,681	100.0	--	-7.5	-4.5	-5.3	-4.5	6.1	4.9	8.5	7.7	Dec-94
Policy Index				-7.1	-3.7	-4.8	-3.7	6.9	5.4	9.0	5.7	Dec-94
InvestorForce Public DB \$250mm-\$1B Gross Median				-7.9	-4.1	-5.1	-4.1	6.1	4.8	8.6	7.8	Dec-94
InvestorForce Public DB \$250mm-\$1B Gross Rank				39	64	56	64	50	47	60	65	Dec-94
Total Fund w/o Alternatives	531,397,943	68.3	68.3	-9.8	-7.4	-7.4	-7.4	5.9	4.3	--	--	Dec-94
Policy Index w/o AI				-8.7	-6.2	-6.2	-6.2	6.2	4.4	--	--	Dec-94
InvestorForce Public DB \$250mm-\$1B Net Median				-8.2	-4.4	-5.4	-4.4	5.8	4.5	8.3	7.3	Dec-94
InvestorForce Public DB \$250mm-\$1B Net Rank				89	97	89	97	44	68	--	--	Dec-94
US Equity	194,880,658	25.0	36.7	-15.8	-6.6	-10.0	-6.6	9.6	8.4	13.7	9.4	Dec-94
80% R1000 / 20% R2000				-15.1	-6.0	-9.5	-6.0	8.8	7.6	13.0	9.4	Dec-94
InvestorForce All DB US Eq Net Median				-14.8	-6.1	-9.2	-6.1	8.4	7.0	12.7	9.0	Dec-94
InvestorForce All DB US Eq Net Rank				80	62	68	62	7	5	8	25	Dec-94
Mellon Dynamic US Equity	69,946,631	9.0	35.9	-15.6	-6.6	-8.5	-6.6	11.1	10.4	--	14.7	Dec-12
S&P 500				-13.5	-4.4	-6.9	-4.4	9.3	8.5	13.1	12.2	Dec-12
eV US Large Cap Core Equity Net Median				-13.8	-5.8	-7.7	-5.8	7.8	7.3	12.2	11.1	Dec-12
eV US Large Cap Core Equity Net Rank				81	60	62	60	3	2	--	1	Dec-12
Mellon Large Cap	93,886,352	12.1	48.2	-14.3	-5.3	-7.9	-5.3	--	--	--	9.3	Mar-16
Russell 1000				-13.8	-4.8	-7.4	-4.8	9.1	8.2	13.3	9.5	Mar-16
eV US Large Cap Core Equity Net Median				-13.8	-5.8	-7.7	-5.8	7.8	7.3	12.2	8.4	Mar-16
eV US Large Cap Core Equity Net Rank				62	43	56	43	--	--	--	27	Mar-16
DFA Small Cap	15,633,216	2.0	8.0	-19.4	-12.0	-16.7	-12.0	7.0	--	--	4.5	Jun-14
Russell 2000				-20.2	-11.0	-17.3	-11.0	7.4	4.4	12.0	4.2	Jun-14
eV US Small Cap Core Equity Net Median				-19.9	-11.1	-16.8	-11.1	6.9	4.4	12.3	4.3	Jun-14
eV US Small Cap Core Equity Net Rank				39	60	50	60	49	--	--	44	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 December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
PanAgora	15,414,459	2.0	7.9	-22.2	-9.2	-19.9	-9.2	6.6	4.9	--	6.6	Sep-13
Russell 2000				-20.2	-11.0	-17.3	-11.0	7.4	4.4	12.0	5.9	Sep-13
eV US Small Cap Core Equity Net Median				-19.9	-11.1	-16.8	-11.1	6.9	4.4	12.3	6.0	Sep-13
eV US Small Cap Core Equity Net Rank				85	36	86	36	55	42	--	41	Sep-13
International Equity	165,364,900	21.3	31.1	-11.8	-15.2	-12.2	-15.2	3.8	0.3	6.8	4.6	Dec-98
International Equity Custom				-11.0	-13.6	-10.3	-13.6	5.5	1.4	6.5	3.8	Dec-98
InvestorForce All DB ex-US Eq Net Median				-12.2	-15.1	-12.0	-15.1	4.1	0.8	6.6	4.6	Dec-98
InvestorForce All DB ex-US Eq Net Rank				41	51	56	51	58	68	39	52	Dec-98
Copper Rock	18,224,785	2.3	11.0	-18.4	-23.1	-20.3	-23.1	-2.4	0.5	--	2.1	Sep-13
MSCI World ex USA Small Cap				-16.2	-18.1	-16.9	-18.1	3.8	2.3	10.1	3.2	Sep-13
eV EAFE Small Cap Equity Net Median				-17.2	-20.2	-18.1	-20.2	3.1	2.9	11.5	4.2	Sep-13
eV EAFE Small Cap Equity Net Rank				76	85	81	85	99	91	--	90	Sep-13
Mellon International	93,458,938	12.0	56.5	-12.5	-13.5	-11.3	-13.5	--	--	--	4.7	Mar-16
MSCI EAFE				-12.5	-13.8	-11.4	-13.8	2.9	0.5	6.3	4.3	Mar-16
eV All EAFE Equity Net Median				-14.0	-15.8	-13.5	-15.8	2.7	1.1	7.2	3.8	Mar-16
eV All EAFE Equity Net Rank				26	32	29	32	--	--	--	31	Mar-16
Wells Capital	53,681,177	6.9	32.5	-7.7	-15.2	-10.9	-15.2	9.0	1.6	--	1.3	Mar-12
MSCI Emerging Markets				-7.5	-14.6	-8.5	-14.6	9.2	1.6	8.0	1.4	Mar-12
eV Emg Mkts Equity Net Median				-7.6	-16.2	-10.6	-16.2	7.7	1.4	8.9	1.9	Mar-12
eV Emg Mkts Equity Net Rank				51	38	56	38	28	45	--	67	Mar-12

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
US Fixed Income	171,152,385	22.0	32.2	1.4	0.4	1.6	0.4	3.2	2.8	4.3	5.2	Dec-94
US Fixed Custom				1.7	0.8	1.7	0.8	3.5	3.0	3.8	5.6	Dec-94
InvestorForce All DB US Fix Inc Net Median				0.8	-0.1	1.1	-0.1	2.7	2.7	4.8	5.8	Dec-94
InvestorForce All DB US Fix Inc Net Rank				22	34	23	34	39	44	62	80	Dec-94
Barrow Hanley	133,976,457	17.2	78.3	1.5	-0.1	1.6	-0.1	2.0	2.5	--	3.1	Mar-10
BBgBarc US Aggregate TR				1.6	0.0	1.7	0.0	2.1	2.5	3.5	3.1	Mar-10
eV US Core Fixed Inc Net Median				1.3	-0.2	1.4	-0.2	2.1	2.5	4.1	3.3	Mar-10
eV US Core Fixed Inc Net Rank				27	42	33	42	66	66	--	71	Mar-10
Vanguard Short-Term Treasury Index Fund	37,175,928	4.8	21.7	1.3	--	1.5	--	--	--	--	1.9	Feb-18
BBgBarc US Govt 1-3 Yr TR				1.3	1.6	1.5	1.6	1.0	0.8	1.0	1.9	Feb-18
BBgBarc US Govt 1-5 Yr TR				1.7	1.5	1.8	1.5	1.1	1.1	1.4	2.2	Feb-18
eV US Short Duration Fixed Inc Net Median				0.9	1.4	1.3	1.4	1.4	1.3	2.0	1.8	Feb-18
eV US Short Duration Fixed Inc Net Rank				7	--	18	--	--	--	--	32	Feb-18
Hedge Fund	72,155,163	9.3	9.3	-4.8	0.0	-4.1	0.0	3.6	--	--	3.1	Jun-14
Hedge Fund Custom				-5.0	-3.8	-4.8	-3.8	2.2	--	--	1.8	Jun-14
InvestorForce All DB Hedge Funds Net Median				-4.7	-2.2	-3.8	-2.2	2.4	2.0	4.4	1.6	Jun-14
InvestorForce All DB Hedge Funds Net Rank				51	26	60	26	26	--	--	16	Jun-14
OZ Domestic II	9,287,389	1.2	12.9	-5.4	-2.2	-6.4	-2.2	4.8	--	--	4.1	Jun-14
Graham Absolute Return	6,987,486	0.9	9.7	-2.9	0.8	-4.3	0.8	--	--	--	-0.2	Aug-17
Wellington-Archipelago	10,763,722	1.4	14.9	-8.2	-2.6	-6.6	-2.6	--	--	--	-0.8	Aug-17
KLS Diversified	9,079,069	1.2	12.6	-5.2	1.4	-3.0	1.4	--	--	--	1.5	Oct-17

The market values for KLS Diversified, Winton, and Silver Point Capital have been adjusted to reflect the additional subscriptions that took place during the month.

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 December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Winton	6,058,693	0.8	8.4	-2.6	-0.6	-1.8	-0.6	--	--	--	1.7	Oct-17
Marshall Wace Eureka	3,014,045	0.4	4.2	-5.9	-0.6	-5.6	-0.6	--	--	--	0.1	Nov-17
Silver Point Capital	11,890,439	1.5	16.5	-6.0	-1.1	-4.6	-1.1	--	--	--	-0.5	Nov-17
HFRI Fund of Funds Composite Index				-5.0	-4.1	-4.8	-4.1	1.3	1.4	3.1	-3.0	Nov-17
Laurion Capital	5,111,320	0.7	7.1	1.3	--	--	--	--	--	--	3.2	Aug-18
Taconic Opportunity Fund	9,963,000	1.3	13.8	--	--	--	--	--	--	--	--	Dec-18
Private Equity	38,411,563	4.9	4.9	1.5	18.3	5.1	18.3	10.8	11.3	7.3	8.1	Jun-05
Thomson Reuters Cambridge Private Equity Index				0.0	12.3	3.8	12.3	17.4	14.9	--	--	Jun-05
InvestorForce All DB Private Eq Net Median				1.8	14.2	5.5	14.2	12.4	10.9	10.1	9.9	Jun-05
InvestorForce All DB Private Eq Net Rank				53	26	54	26	58	48	80	72	Jun-05
Adams Street	7,880,471	1.0	20.5	4.2	17.8	8.8	17.8	13.1	14.0	9.7	7.1	Sep-05
Invesco IV	474,703	0.1	1.2	-18.6	42.6	-19.1	42.6	6.2	10.6	7.4	8.4	Jun-05
Invesco VI	6,439,663	0.8	16.8	1.6	16.3	5.3	16.3	11.8	15.1	--	12.5	Jun-13
Ocean Avenue II	9,024,231	1.2	23.5	3.9	23.9	5.4	23.9	19.1	--	--	11.3	Jun-14
Pantheon I	1,019,139	0.1	2.7	0.0	6.5	3.9	6.5	6.5	6.4	5.0	3.8	Dec-05
Pantheon II	4,008,282	0.5	10.4	0.0	11.6	7.4	11.6	14.2	14.7	--	11.7	Dec-11

All private markets performance and market values reflect a 9/30/2018 capital account balance unless otherwise noted.

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

The market values for Pantheon I and Pantheon II reflect a 6/30/2018 capital account balance.

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

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 December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Pantheon Secondary	1,313,060	0.2	3.4	4.5	14.0	18.3	14.0	6.5	4.8	1.2	4.2	Jun-07
Raven Asset Fund II	3,385,915	0.4	8.8	2.1	14.8	4.0	14.8	-1.6	--	--	-2.0	Aug-14
Davidson Kempner Long-Term Distressed Opportunities Fund IV	1,639,602	0.2	4.3	3.5	--	12.0	--	--	--	--	12.8	Apr-18
GTCR Fund XII	713,916	0.1	1.9	0.0	--	0.0	--	--	--	--	0.0	Jun-18
Carrick Capital Partners III	762,581	0.1	2.0	-4.8	--	--	--	--	--	--	-4.8	Aug-18
Taconic CRE Dislocation Fund II	1,250,000	0.2	3.3	--	--	--	--	--	--	--	0.0	Nov-18
Cressey & Company Fund VI	500,000	0.1	1.3	--	--	--	--	--	--	--	--	Jan-19
Real Assets	121,768,114	15.6	15.6	-0.7	2.1	0.7	2.1	6.0	7.1	--	--	Mar-99
Real Asset Custom				-4.0	-0.7	-3.0	-0.7	8.5	6.4	--	--	Mar-99
eV Liquid Real Assets Net Median				-7.1	-5.6	-6.2	-5.6	3.8	1.8	--	--	Mar-99
eV Liquid Real Assets Net Rank				1	1	1	1	1	1	--	--	Mar-99
SSgA	30,107,609	3.9	24.7	-7.2	-7.4	-7.8	-7.4	--	--	--	-0.3	Apr-17
Real Asset Custom				-4.0	-0.7	-3.0	-0.7	8.5	6.4	--	4.9	Apr-17
Private Real Estate	60,595,456	7.8	49.8	1.3	7.7	3.3	7.7	7.3	8.0	--	--	Mar-99
NCREIF ODCE (net)				1.5	7.4	3.4	7.4	7.3	9.4	6.0	7.5	Mar-99
InvestorForce All DB Real Estate Pub+Priv Net Median				1.4	7.2	3.3	7.2	7.3	9.5	5.8	7.4	Mar-99
InvestorForce All DB Real Estate Pub+Priv Net Rank				58	33	50	33	51	88	--	--	Mar-99
Greenfield Gap VII	12,386,436	1.6	20.4	0.4	12.9	5.2	12.9	13.7	--	--	12.9	Dec-14
Patron Capital V	5,282,118	0.7	8.7	4.0	27.0	0.9	27.0	--	--	--	15.5	Jan-16
UBS Trumbull Property	42,653,574	5.5	70.4	1.4	4.9	3.2	4.9	5.1	7.5	5.5	7.3	Mar-99

As of December 31, 2018

	Market Value (\$)	% of Portfolio	% of Sector	QTD (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Carlyle Realty VIII	273,328	0.0	0.5	-23.9	-44.5	-23.9	-44.5	--	--	--	-44.5	Dec-17
NCREIF-ODCE				1.8	8.3	3.9	8.3	8.2	10.4	7.0	8.3	Dec-17
Private Infrastructure	21,614,053	2.8	17.8	3.3	8.1	4.2	8.1	9.2	--	--	6.8	Dec-14
S&P Global Infrastructure Net TR USD				-5.3	-10.4	-7.0	-10.4	6.0	3.2	--	1.1	Dec-14
KKR Global II	10,396,231	1.3	48.1	4.8	10.1	6.0	10.1	9.1	--	--	10.5	Dec-14
North Haven Infrastructure II	9,619,275	1.2	44.5	1.7	8.3	4.6	8.3	11.0	--	--	6.5	May-15
ISQ Global Infrastructure Fund II	1,252,108	0.2	5.8	2.7	--	-31.9	--	--	--	--	-31.9	Jul-18
DJ Brookfield Global Infrastructure Net TR USD				-5.9	-7.9	-6.7	-7.9	6.3	3.6	10.7	-6.7	Jul-18
KKR Global Infrastructure Investors III	346,439	0.0	1.6	--	--	--	--	--	--	--	--	Jan-19
Private Natural Resources	9,450,995	1.2	7.8	1.2	11.5	6.6	11.5	20.5	--	--	18.4	Sep-15
S&P Global Natural Resources Index TR USD				-16.8	-12.6	-15.7	-12.6	12.4	-0.5	3.1	11.6	Sep-15
EnCap XI	434,832	0.1	4.6	-4.8	-25.9	-9.9	-25.9	--	--	--	-37.7	Jul-17
EnCap IV	799,241	0.1	8.5	-1.2	--	-9.6	--	--	--	--	-17.0	Feb-18
GSO Energy Opportunities	4,504,791	0.6	47.7	1.5	11.7	5.0	11.7	19.5	--	--	19.0	Nov-15
Taurus Mining	2,223,173	0.3	23.5	1.9	14.9	9.7	14.9	20.2	--	--	17.9	Sep-15
Taurus Mining Annex	1,488,958	0.2	15.8	2.2	21.6	15.3	21.6	--	--	--	31.2	Jan-17
Cash	14,420,899	1.9	1.9	0.4	0.8	0.5	0.8	--	--	--	--	
Cash	7,839,966	1.0	54.4	0.6	1.2	0.8	1.2	1.0	0.7	--	--	Sep-03
Treasury Cash	6,580,933	0.8	45.6									

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

As of December 31, 2018

Benchmark History

As of December 31, 2018

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 / 13% Real Asset Custom
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
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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	62% NCREIF ODCE (net) / 19% S&P Global Natural Resources Index TR USD / 19% 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

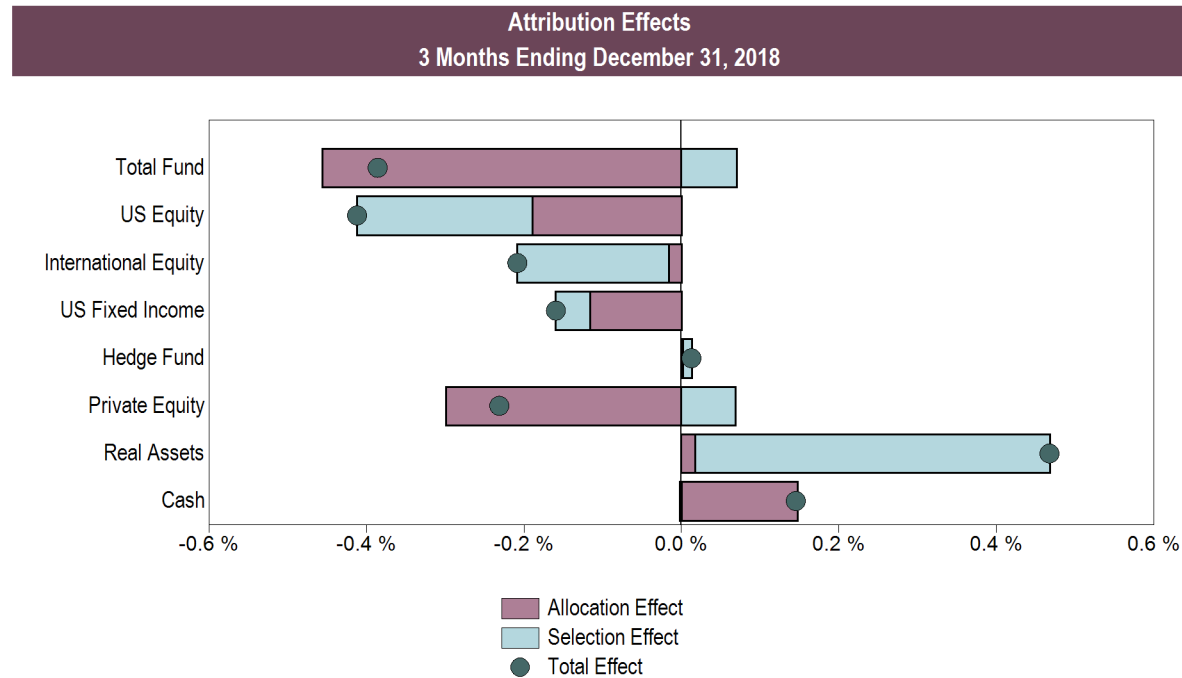


As of December 31, 2018

Statistics Summary
5 Years Ending December 31, 2018

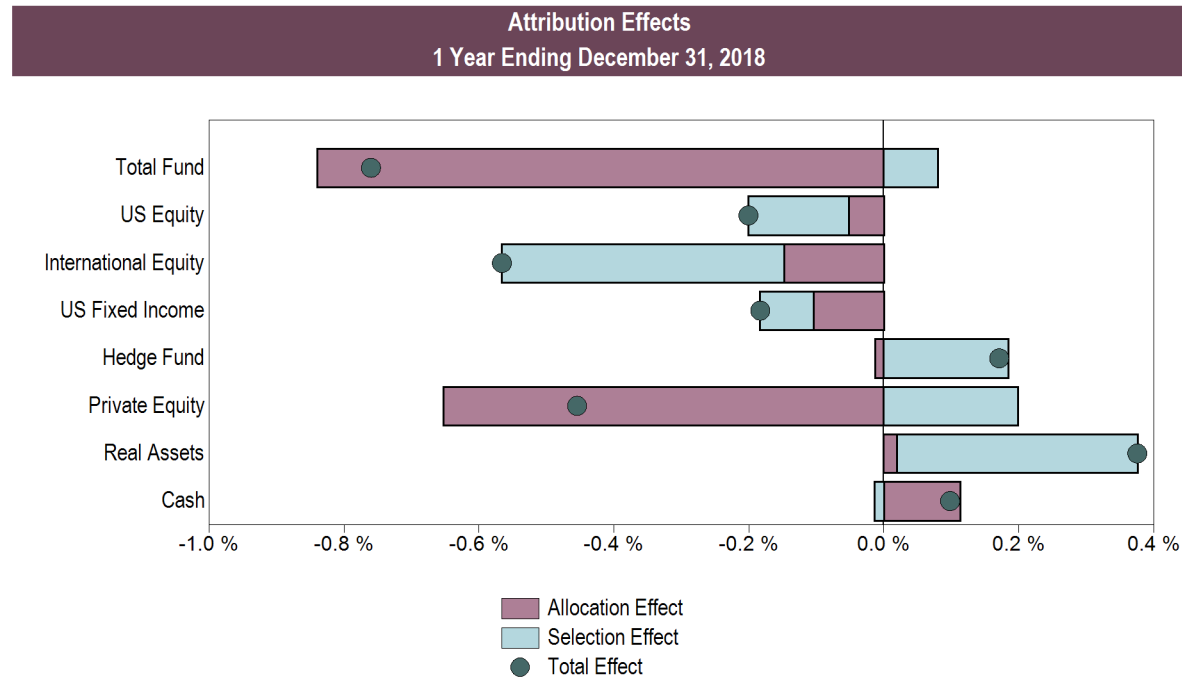
	Anlzd Return	Anlzd Standard Deviation	Information Ratio	Beta	Sharpe Ratio	Tracking Error
Total Fund	4.86%	6.39%	-0.59	1.04	0.66	0.96%
Policy Index	5.42%	6.08%	--	1.00	0.79	0.00%
InvestorForce Public DB \$250mm-\$1B Gross Median	4.82%	6.44%	0.08	1.00	0.65	1.15%

As of December 31, 2018



3 Months Ending December 31, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
US Equity	-15.8%	-15.1%	-0.7%	-0.2%	-0.2%	-0.4%
International Equity	-11.8%	-11.0%	-0.8%	-0.2%	0.0%	-0.2%
US Fixed Income	1.4%	1.7%	-0.2%	0.0%	-0.1%	-0.2%
Hedge Fund	-4.8%	-5.0%	0.2%	0.0%	0.0%	0.0%
Private Equity	1.5%	0.0%	1.5%	0.1%	-0.3%	-0.2%
Real Assets	-0.7%	-4.0%	3.3%	0.4%	0.0%	0.5%
Cash	0.4%	0.6%	-0.1%	0.0%	0.1%	0.1%
Total	-7.5%	-7.1%	-0.4%	0.1%	-0.5%	-0.4%

As of December 31, 2018



1 Year Ending December 31, 2018						
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Total Effects
US Equity	-6.6%	-6.0%	-0.6%	-0.1%	-0.1%	-0.2%
International Equity	-15.2%	-13.6%	-1.6%	-0.4%	-0.1%	-0.6%
US Fixed Income	0.4%	0.8%	-0.4%	-0.1%	-0.1%	-0.2%
Hedge Fund	0.0%	-3.8%	3.7%	0.2%	0.0%	0.2%
Private Equity	18.3%	12.3%	6.0%	0.2%	-0.7%	-0.5%
Real Assets	2.1%	-0.7%	2.7%	0.4%	0.0%	0.4%
Cash	0.8%	1.9%	-1.1%	0.0%	0.1%	0.1%
Total	-4.5%	-3.7%	-0.8%	0.1%	-0.8%	-0.8%

As of December 31, 2018

Annual Investment Expense Analysis

As Of December 31, 2018

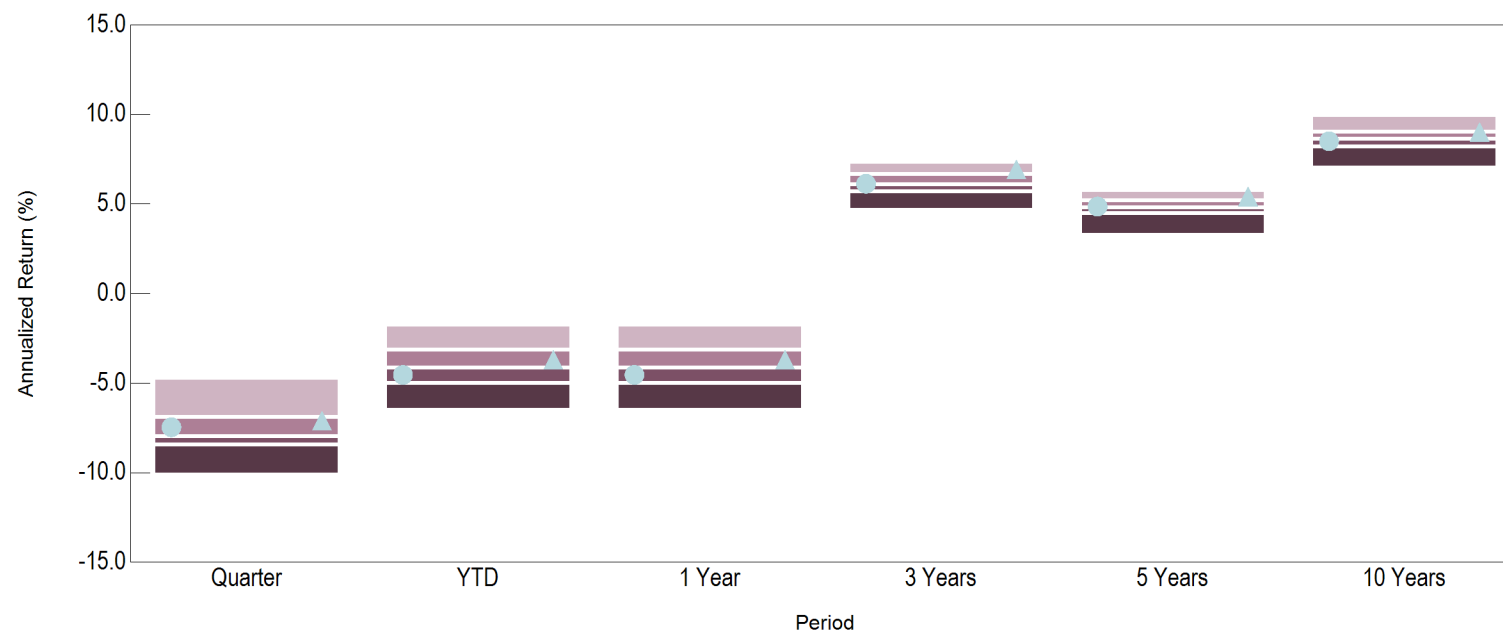
Name	Fee Schedule	Market Value	Estimated Fee	Estimated Fee Value
Total Fund w/o Alternatives		\$531,397,943		
US Equity		\$194,880,658		
Mellon Dynamic US Equity	0.30% of Assets	\$69,946,631	0.30%	\$209,840
Mellon Large Cap	0.04% of First 100.0 Mil, 0.02% Thereafter	\$93,886,352	0.04%	\$37,555
DFA Small Cap	0.35% of Assets	\$15,633,216	0.35%	\$54,716
PanAgora	0.80% of Assets	\$15,414,459	0.80%	\$123,316
International Equity		\$165,364,900		
Copper Rock	0.85% of Assets	\$18,224,785	0.85%	\$154,911
Mellon International	0.04% of Assets	\$93,458,938	0.04%	\$37,384
Wells Capital	0.90% of First 100.0 Mil, 0.85% Thereafter	\$53,681,177	0.90%	\$483,131
US Fixed Income		\$171,152,385		
Barrow Hanley	0.30% of First 50.0 Mil, 0.20% of Next 100.0 Mil, 0.15% Thereafter	\$133,976,457	0.24%	\$317,953
Vanguard Short-Term Treasury Index Fund	0.05% of Assets	\$37,175,928	0.05%	\$18,588
Hedge Fund		\$72,155,163		
OZ Domestic II	Performance-based 1.50 and 20.00	\$9,287,389	1.50%	\$139,311
Graham Absolute Return	Performance-based 1.75 and 20.00	\$6,987,486	1.75%	\$122,281
Wellington-Archipelago	Performance-based 1.00 and 20.00	\$10,763,722	1.00%	\$107,637
KLS Diversified	Performance-based 2.00 and 20.00	\$9,079,069	2.00%	\$181,581
Winton	Performance-based 0.90 and 20.00	\$6,058,693	0.90%	\$54,528
Marshall Wace Eureka	Performance-based 2.00 and 20.00	\$3,014,045	2.00%	\$60,281
Silver Point Capital	Performance-based 2.00 and 20.00	\$11,890,439	2.00%	\$237,809
Laurion Capital		\$5,111,320		
Taconic Opportunity Fund		\$9,963,000		
Invesco IV		\$474,703		
Invesco VI		\$6,439,663		

As of December 31, 2018

Name	Fee Schedule	Market Value	Estimated Fee	Estimated Fee Value
Ocean Avenue II		\$9,024,231		
Pantheon I		\$1,019,139		
Pantheon II		\$4,008,282		
Pantheon Secondary		\$1,313,060		
Raven Asset Fund II		\$3,385,915		
Davidson Kempner Long-Term Distressed Opportunities Fund IV		\$1,639,602		
GTCR Fund XII		\$713,916		
Carrick Capital Partners III		\$762,581		
Taconic CRE Dislocation Fund II		\$1,250,000		
Cressey & Company Fund VI		\$500,000		
Real Assets		\$121,768,114		
SSgA	0.30% of First 50.0 Mil, 0.27% of Next 50.0 Mil, 0.25% Thereafter	\$30,107,609	0.30%	\$90,323
Private Real Estate		\$60,595,456		
Greenfield Gap VII		\$12,386,436		
Patron Capital V		\$5,282,118		
UBS Trumbull Property		\$42,653,574		
Carlyle Realty VIII		\$273,328		
Private Infrastructure		\$21,614,053		
KKR Global II		\$10,396,231		
North Haven Infrastructure II		\$9,619,275		
ISQ Global Infrastructure Fund II		\$1,252,108		
KKR Global Infrastructure Investors III		\$346,439		
Private Natural Resources		\$9,450,995		
EnCap XI		\$434,832		
EnCap IV		\$799,241		
GSO Energy Opportunities		\$4,504,791		
Taurus Mining		\$2,223,173		
Taurus Mining Annex		\$1,488,958		

As of December 31, 2018

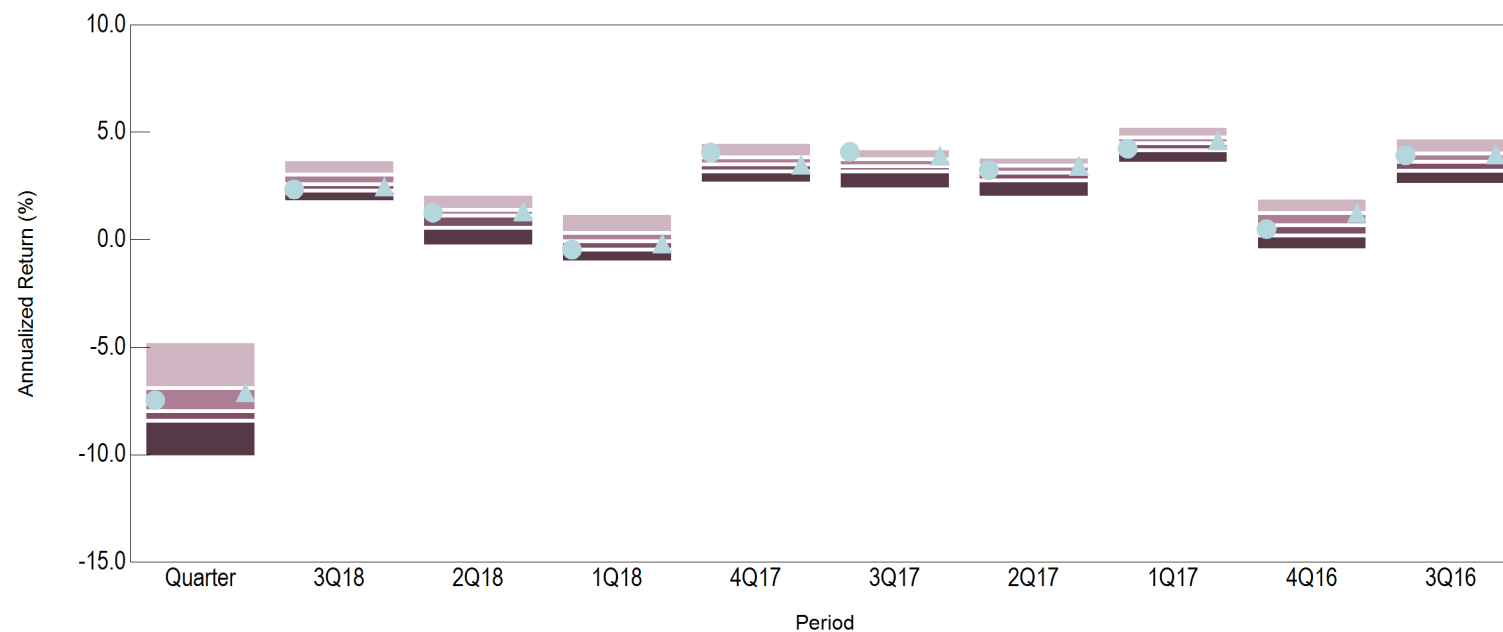
InvestorForce Public DB \$250mm-\$1B Gross Return Comparison
Ending December 31, 2018



	Return (Rank)											
5th Percentile	-4.7			-1.8			-1.8			7.3		
25th Percentile	-6.9			-3.1			-3.1			6.7		
Median	-7.9			-4.1			-4.1			6.1		
75th Percentile	-8.4			-5.0			-5.0			5.7		
95th Percentile	-10.1			-6.5			-6.5			4.7		
# of Portfolios	70			70			70			68		
● Total Fund	-7.5 (39)			-4.5 (64)			-4.5 (64)			6.1 (50)		
▲ Policy Index	-7.1 (33)			-3.7 (38)			-3.7 (38)			6.9 (13)		

As of December 31, 2018

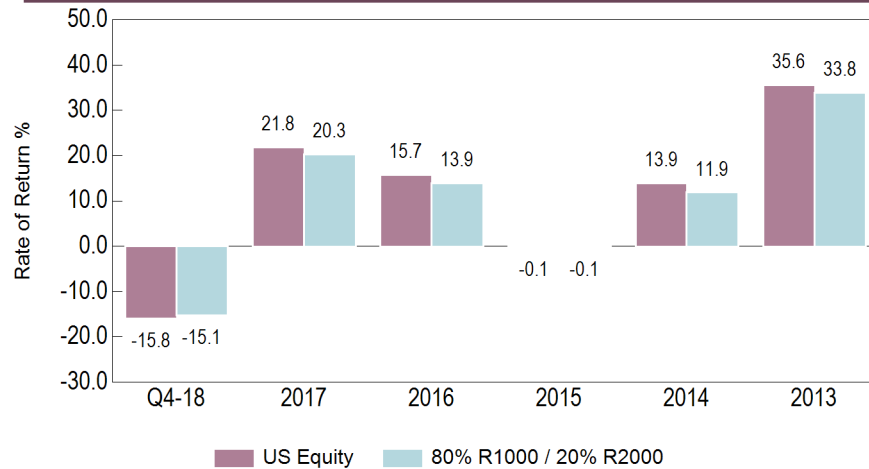
InvestorForce Public DB \$250mm-\$1B Gross Return Comparison
Ending December 31, 2018



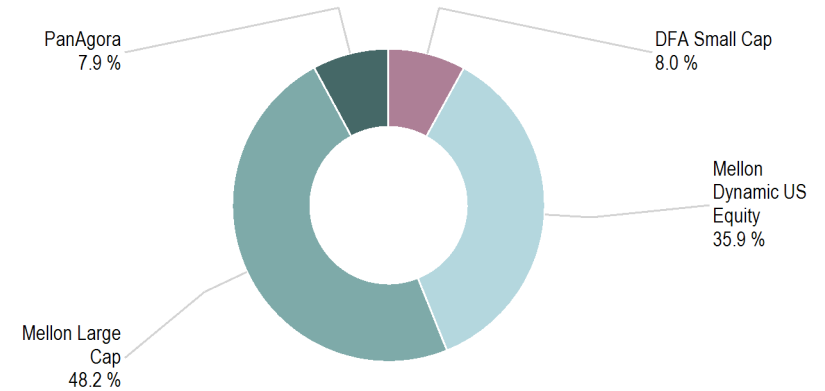
	Return (Rank)									
5th Percentile	-4.7	3.7	2.1	1.2	4.5	4.2	3.9	5.3	1.9	4.7
25th Percentile	-6.9	3.0	1.4	0.3	3.8	3.8	3.5	4.8	1.3	4.0
Median	-7.9	2.6	1.1	-0.1	3.5	3.4	3.1	4.5	0.7	3.6
75th Percentile	-8.4	2.3	0.6	-0.4	3.2	3.2	2.8	4.2	0.2	3.2
95th Percentile	-10.1	1.8	-0.3	-1.0	2.6	2.4	2.0	3.6	-0.5	2.6
# of Portfolios	70	65	67	61	67	72	69	74	68	70
● Total Fund	-7.5 (39)	2.3 (73)	1.3 (37)	-0.5 (76)	4.1 (20)	4.1 (11)	3.2 (40)	4.2 (71)	0.5 (58)	3.9 (32)
▲ Policy Index	-7.1 (33)	2.5 (62)	1.3 (31)	-0.2 (63)	3.5 (53)	3.9 (14)	3.4 (28)	4.6 (44)	1.3 (26)	4.0 (27)

As of December 31, 2018

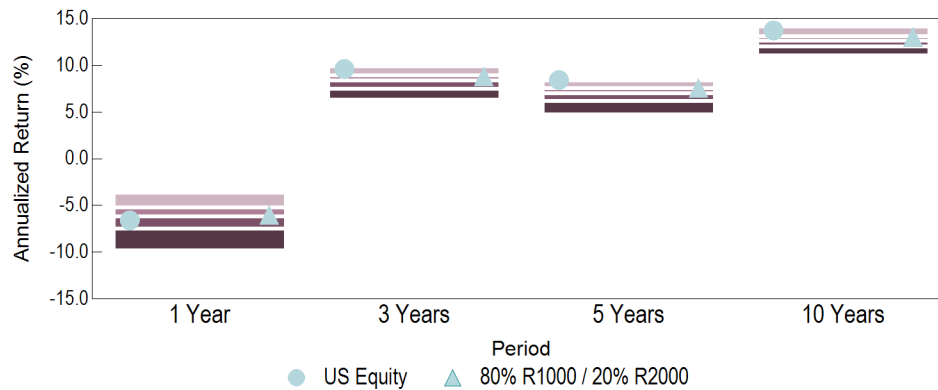
Return Summary



Current Allocation

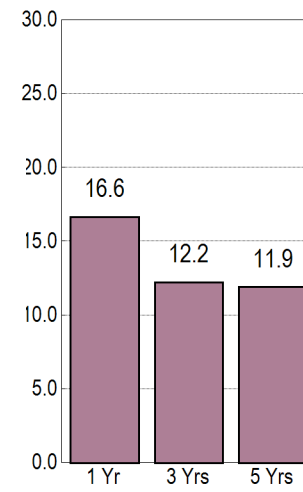


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
US Equity	-6.6	9.6	8.4	13.7
80% R1000 / 20% R2000	-6.0	8.8	7.6	13.0
InvestorForce All DB US Eq Net Median	-6.1	8.4	7.0	12.7
InvestorForce All DB US Eq Net Rank	62	7	5	8



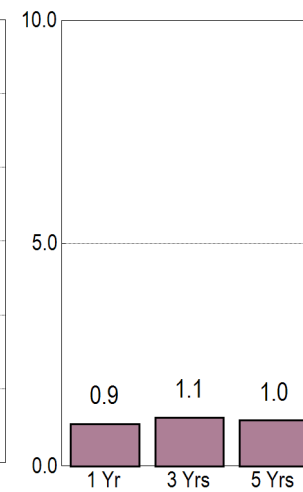
Anzld. Std. Deviation

US Equity



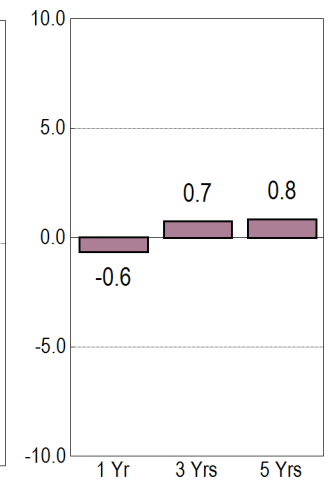
Tracking Error

US Equity



Information Ratio

US Equity



US Equity

As of December 31, 2018

US Equity Characteristics
vs Russell 3000

	Portfolio Q4-18	Index Q4-18
Characteristics		
Weighted Avg. Market Cap. (\$B)	143.9	154.7
Median Market Cap (\$B)	2.0	1.4
P/E Ratio	22.1	22.3
Yield	2.1	2.1
EPS Growth - 5 Yrs.	8.1	9.0
Price to Book	5.2	4.2
Beta (holdings; domestic)	1.0	1.0

US Equity Sector Distribution
vs Russell 3000

	Portfolio Q4-18	Index Q4-18
Sector Distribution		
Energy	4.6	5.0
Materials	2.9	3.0
Industrials	10.0	9.9
Consumer Discretionary	10.0	10.3
Consumer Staples	6.2	6.7
Health Care	13.7	15.1
Financials	13.4	13.9
Information Technology	17.7	19.9
Communication Services	8.0	9.1
Utilities	3.1	3.3
Real Estate	3.0	3.9

Top Holdings

CASH - USD	3.5%
UST Bill 03/14/19	2.7%
MICROSOFT	2.7%
APPLE	2.5%
AMAZON.COM	2.1%
BERKSHIRE HATHAWAY 'B'	1.4%
JOHNSON & JOHNSON	1.2%
JP MORGAN CHASE & CO.	1.1%
ALPHABET 'C'	1.1%
FACEBOOK CLASS A	1.1%

Best Performers

	Return %
TESARO	90.3%
ELECTRO SCIEN.INDS.	71.7%
FLUENT	67.4%
AMERICAN SUPERCONDUCTOR	60.4%
MITEK SYSTEMS	53.3%
DIGITAL TURBINE	47.6%
SMTC	41.2%
INOVALON HOLDINGS	41.1%
K12	40.1%
INVESTMENT TECH.GROUP	39.9%

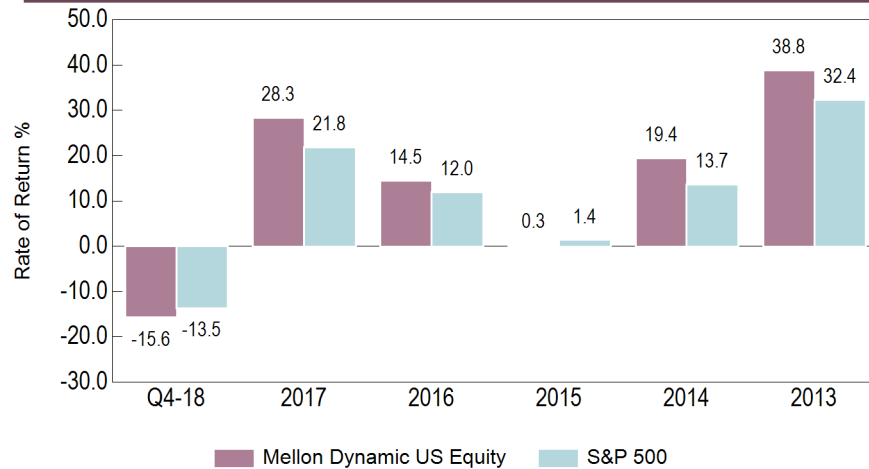
Worst Performers

	Return %
PARKER DRILLING (XSC)	-88.6%
SANCHEZ ENERGY	-88.3%
CLOUD PEAK ENERGY	-84.1%
CLEARSIDE BIOMEDICAL	-82.6%
FERROGLOBE	-80.5%
PHI NON-VOTING	-80.2%
BRISTOW GROUP	-80.0%
HORIZON GLOBAL	-79.9%
MELINTA THERAPEUTICS	-79.9%
TREVENA	-79.7%

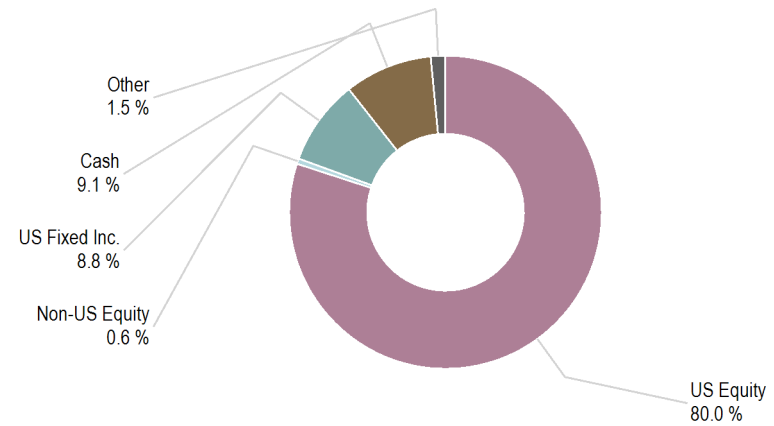
Mellon Dynamic US Equity

As of December 31, 2018

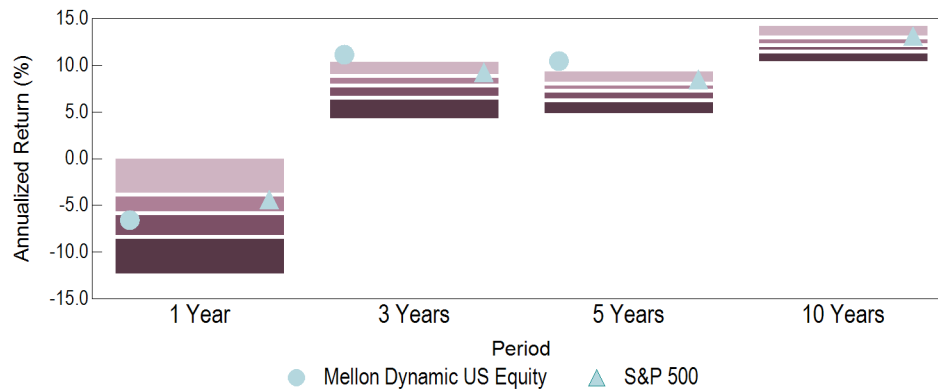
Return Summary



Current Allocation

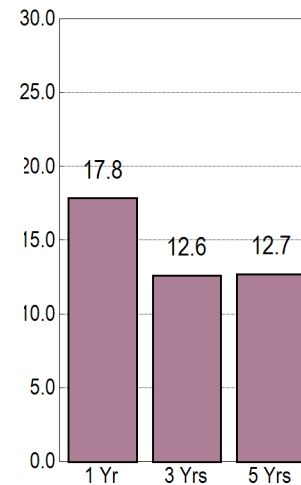


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon Dynamic US Equity	-6.6	11.1	10.4	--
S&P 500	-4.4	9.3	8.5	13.1
eV US Large Cap Core Equity Net Median	-5.8	7.8	7.3	12.2
eV US Large Cap Core Equity Net Rank	60	3	2	--



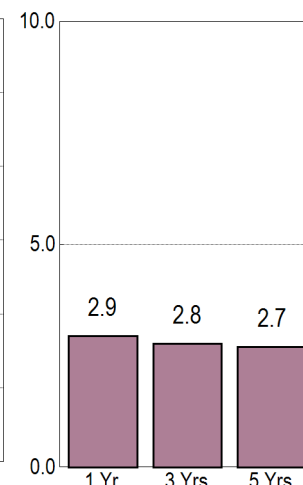
Anzld. Std. Deviation

Mellon Dynamic US Equity



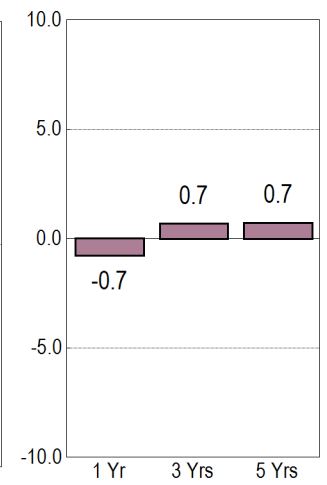
Tracking Error

Mellon Dynamic US Equity



Information Ratio

Mellon Dynamic US Equity



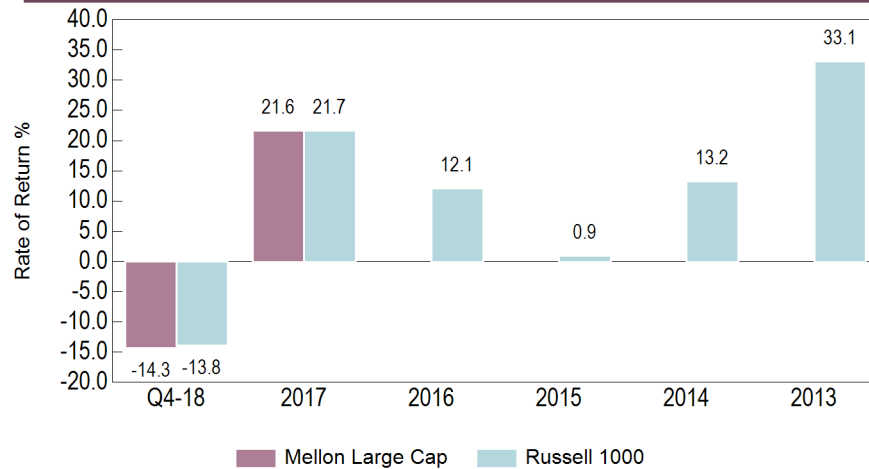
Mellon Dynamic US Equity

As of December 31, 2018

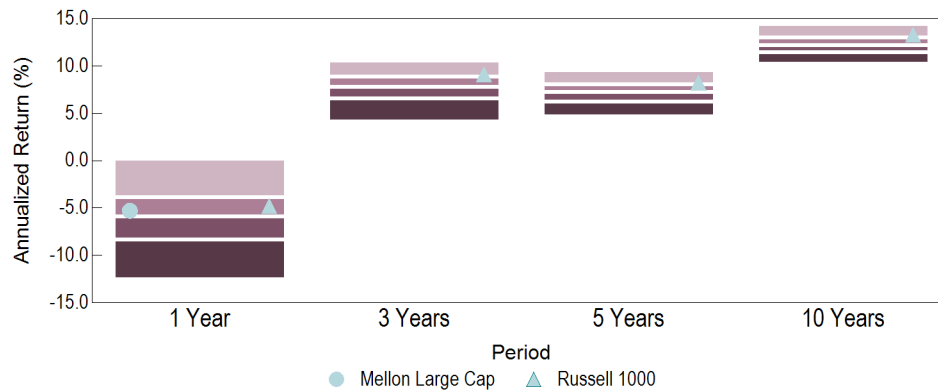
Account Information		Account Characteristics		Sector Distribution			
Account Name	Mellon Dynamic US Equity	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	12/31/12	Weighted Avg.	183.5	183.2	Energy	4.3	5.3
Account Type	US Equity	Market Cap. (\$B)			Materials	2.2	2.7
Benchmark	S&P 500	Median Market Cap (\$B)	18.4	18.5	Industrials	7.4	9.2
Universe	eV US Large Cap Core Equity Net	P/E Ratio	23.4	20.7	Consumer Discretionary	8.0	9.9
		Yield	2.2	2.2	Consumer Staples	6.0	7.4
		EPS Growth - 5 Yrs.	8.3	7.9	Health Care	12.5	15.5
		Price to Book	5.9	4.6	Financials	10.8	13.3
		Beta (holdings; domestic)	1.0	1.0	Information Technology	16.2	20.1
					Communication Services	8.1	10.1
					Utilities	2.7	3.3
					Real Estate	2.4	3.0

Top Holdings		Best Performers		Worst Performers	
CASH - USD	9.1%		Return %		Return %
UST Bill 03/14/19	7.5%	RED HAT	28.9%	NVIDIA	-52.4%
MICROSOFT	3.0%	SCANA	23.2%	NEWFIELD EXPLORATION	-49.2%
APPLE	2.7%	NEWMONT MINING	15.2%	PG&E	-48.4%
AMAZON.COM	2.4%	STARBUCKS	13.9%	COTY CL.A	-47.0%
GENERIC OPTION	1.5%	REALTY INCOME	12.0%	ALIGN TECHNOLOGY	-46.5%
BERKSHIRE HATHAWAY 'B'	1.5%	CME GROUP	12.0%	NEKTAR THERAPEUTICS	-46.1%
JOHNSON & JOHNSON	1.3%	PROCTER & GAMBLE	11.4%	PERRIGO	-45.1%
UST Bill 03/07/19	1.3%	CHURCH & DWIGHT CO.	11.1%	CAPRI HOLDINGS	-44.7%
JP MORGAN CHASE & CO.	1.2%	DOLLAR TREE	10.8%	APACHE	-44.6%
		LAMB WESTON HOLDINGS	10.7%	FLUOR	-44.3%

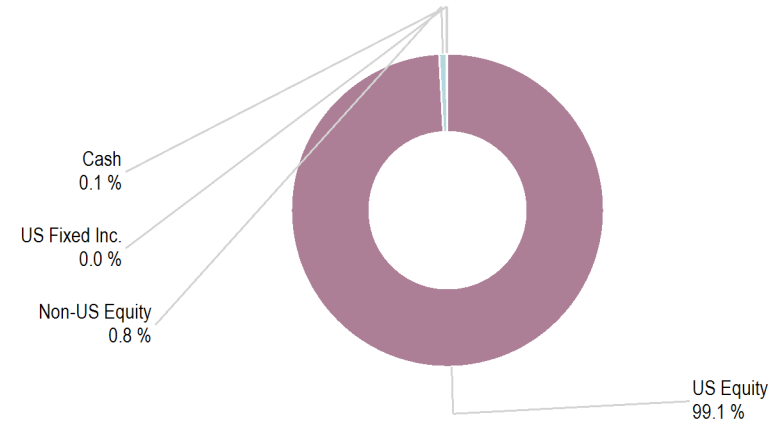
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon Large Cap	-5.3	--	--	--
Russell 1000	-4.8	9.1	8.2	13.3
eV US Large Cap Core Equity Net Median	-5.8	7.8	7.3	12.2
eV US Large Cap Core Equity Net Rank	43	--	--	--

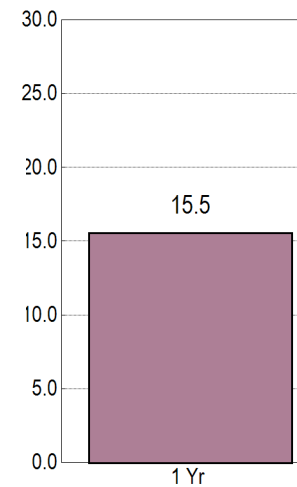


Current Allocation



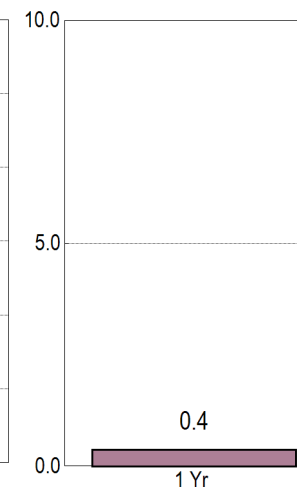
Anzld. Std. Deviation

Mellon Large Cap



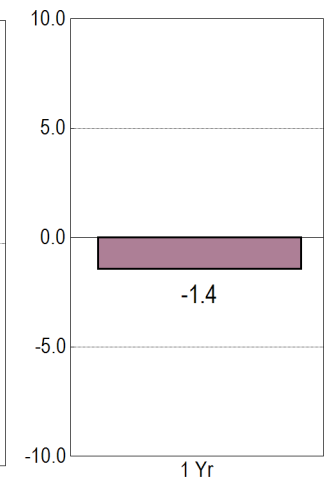
Tracking Error

Mellon Large Cap



Information Ratio

Mellon Large Cap



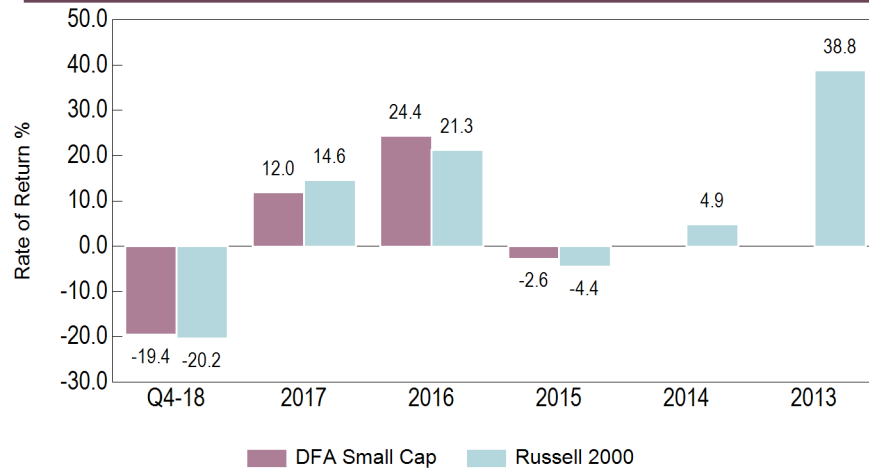
Mellon Large Cap

As of December 31, 2018

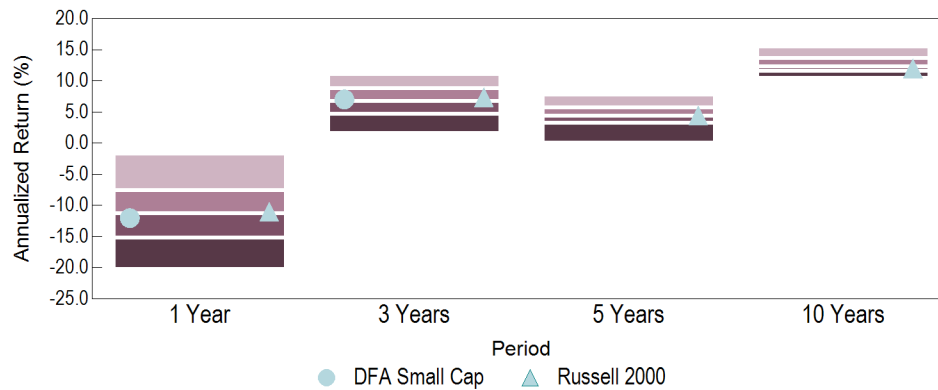
Account Information		Account Characteristics		Sector Distribution	
Account Name	Mellon Large Cap	Portfolio	Index	Portfolio	Index
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18
Investment Style	Passive	Characteristics		Sector Distribution	
Inception Date	3/31/16	Weighted Avg.	166.5	Energy	5.1
Account Type	US Stock Large	Market Cap. (\$B)	166.3	Materials	3.0
Benchmark	Russell 1000	Median Market Cap (\$B)	8.8	Industrials	9.6
Universe	eV US Large Cap Core Equity Net	P/E Ratio	22.6	Consumer Discretionary	10.1
		Yield	2.2	Consumer Staples	7.0
		EPS Growth - 5 Yrs.	8.4	Health Care	15.0
		Price to Book	5.8	Financials	13.5
		Beta (holdings; domestic)	1.0	Information Technology	20.2
				Communication Services	9.6
				Utilities	3.3
				Real Estate	3.6

Top Holdings		Best Performers		Worst Performers	
MICROSOFT	3.3%		Return %		Return %
APPLE	3.2%	TESARO	90.3%	WEATHERFORD INTL.	-79.4%
AMAZON.COM	2.6%	RED HAT	28.9%	NABORS INDUSTRIES	-66.8%
BERKSHIRE HATHAWAY 'B'	1.7%	VIRTU FINANCIAL CL.A	27.1%	EXTRACTION OIL & GAS	-62.0%
JOHNSON & JOHNSON	1.5%	TESLA	25.7%	ADIANT	-61.4%
JP MORGAN CHASE & CO.	1.4%	SCANA	23.2%	WHITING PETROLEUM	-57.2%
ALPHABET 'C'	1.3%	TRIBUNE MEDIA CL.A	18.9%	KOSMOS ENERGY	-56.5%
ALPHABET A	1.3%	MARKETAXESS HOLDINGS	18.6%	CHESAPEAKE ENERGY	-53.2%
FACEBOOK CLASS A	1.3%	ARRIS INTERNATIONAL	17.6%	CONDUENT	-52.8%
EXXON MOBIL	1.2%	UNITED STATES CELLULAR	16.1%	NVIDIA	-52.4%
		NEWMONT MINING	15.2%	SM ENERGY	-50.8%

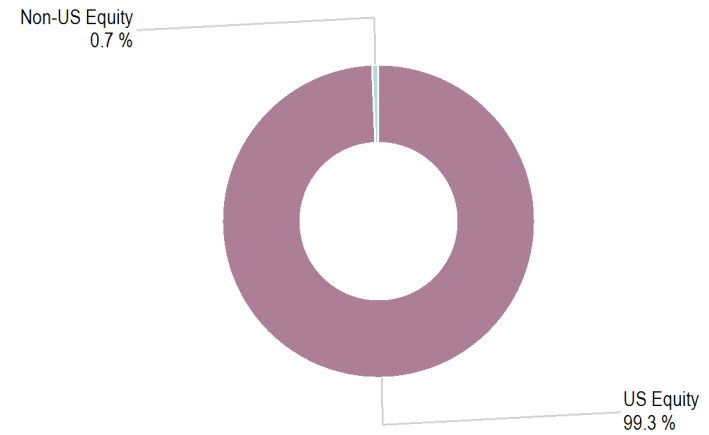
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
DFA Small Cap	-12.0	7.0	--	--
Russell 2000	-11.0	7.4	4.4	12.0
eV US Small Cap Core Equity Net Median	-11.1	6.9	4.4	12.3
eV US Small Cap Core Equity Net Rank	60	49	--	--

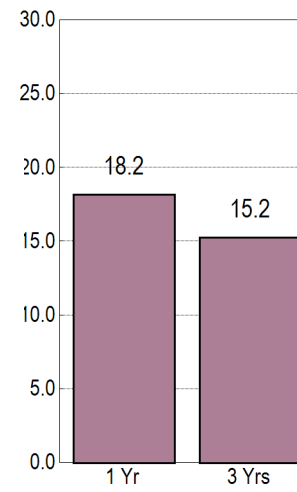


Current Allocation



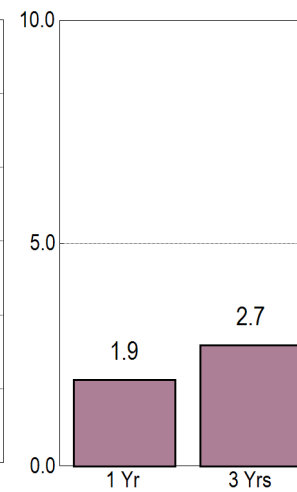
Anzld. Std. Deviation

DFA Small Cap



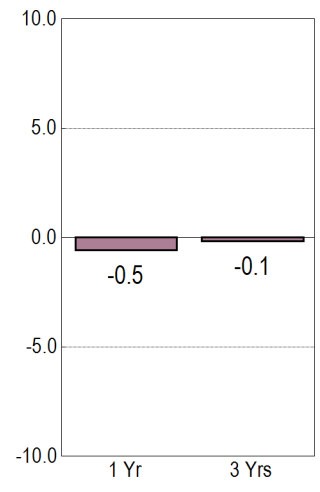
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DFA Small Cap



Information Ratio

DFA Small Cap



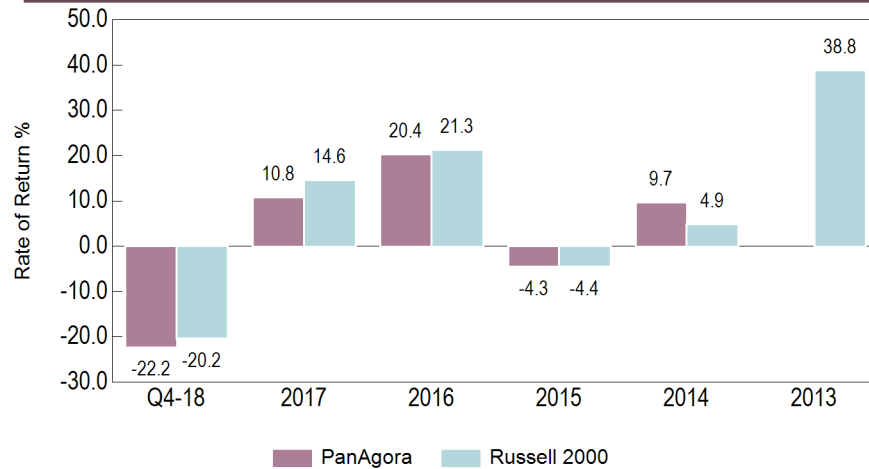
DFA Small Cap

As of December 31, 2018

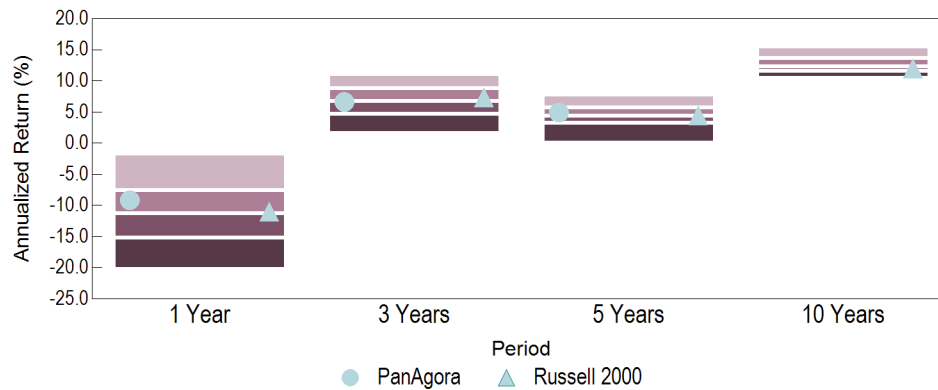
Account Information		Account Characteristics		Sector Distribution			
Account Name	DFA Small Cap	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	6/30/14	Weighted Avg.	1.9	2.0	Energy	4.2	3.4
Account Type	US Stock Small	Market Cap. (\$B)			Materials	5.0	3.7
Benchmark	Russell 2000	Median Market Cap (\$B)	0.7	0.7	Industrials	20.6	14.8
Universe	eV US Small Cap Core Equity Net	P/E Ratio	18.3	14.3	Consumer Discretionary	14.8	12.2
		Yield	1.5	1.4	Consumer Staples	5.0	2.9
		EPS Growth - 5 Yrs.	6.7	8.3	Health Care	8.6	15.6
		Price to Book	2.8	2.6	Financials	20.5	18.3
		Beta (holdings; domestic)	1.1	1.2	Information Technology	12.8	14.7
					Communication Services	3.7	3.3
					Utilities	4.2	3.8
					Real Estate	0.7	7.2

Top Holdings		Best Performers		Worst Performers	
INTEGRATED DEVICE TECH.	0.3%		Return %		Return %
DECKERS OUTDOOR	0.3%	ELECTRO SCIEN.INDS.	71.7%	PARKER DRILLING (XSC)	-88.6%
PNM RESOURCES	0.3%	AMERICAN SUPERCONDUCTOR	60.4%	SANCHEZ ENERGY	-88.3%
SELECTIVE IN.GP.	0.3%	MITEK SYSTEMS	53.3%	CLOUD PEAK ENERGY	-84.1%
FIRSTCASH	0.3%	DIGITAL TURBINE	47.6%	CLEARSIDE BIOMEDICAL	-82.6%
MOOG 'A'	0.3%	SMTC	41.2%	FERROGLOBE	-80.5%
SEABOARD	0.3%	INOVALON HOLDINGS	41.1%	PHI NON-VOTING	-80.2%
HELEN OF TROY	0.3%	K12	40.1%	BRISTOW GROUP	-80.0%
CIENA	0.3%	INVESTMENT TECH.GROUP	39.9%	HORIZON GLOBAL	-79.9%
NEXSTAR MEDIA GROUP CL.A	0.3%	UNIVERSAL TCHN.INST.	37.2%	MELINTA THERAPEUTICS	-79.9%
		BELMOND 'A'	37.2%	TREVENA	-79.7%

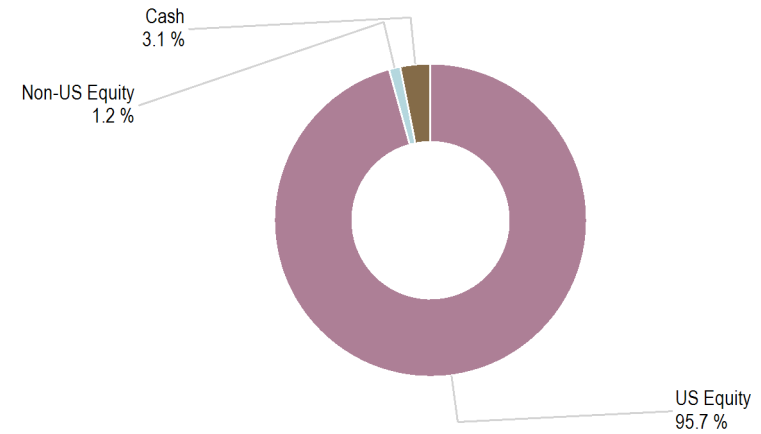
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
PanAgora	-9.2	6.6	4.9	--
Russell 2000	-11.0	7.4	4.4	12.0
eV US Small Cap Core Equity Net Median	-11.1	6.9	4.4	12.3
eV US Small Cap Core Equity Net Rank	36	55	42	--

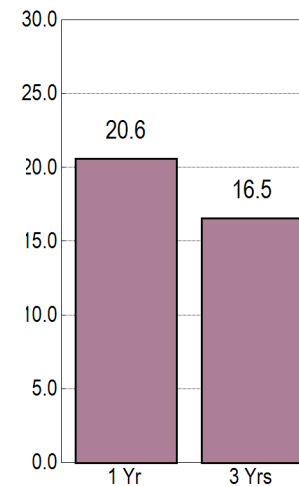


Current Allocation



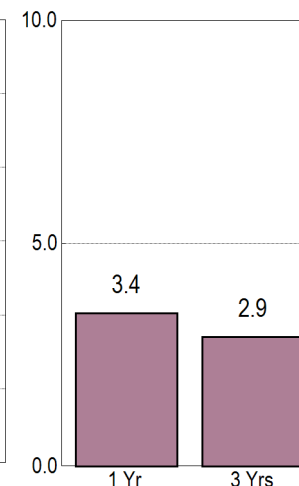
Anzld. Std. Deviation

PanAgora



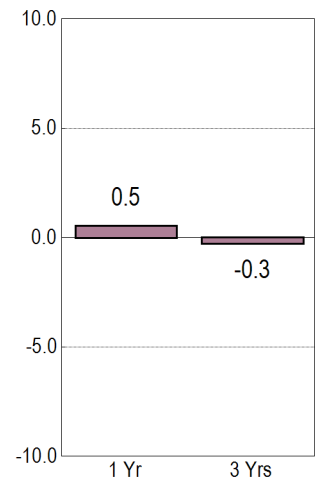
Tracking Error

PanAgora



Information Ratio

PanAgora

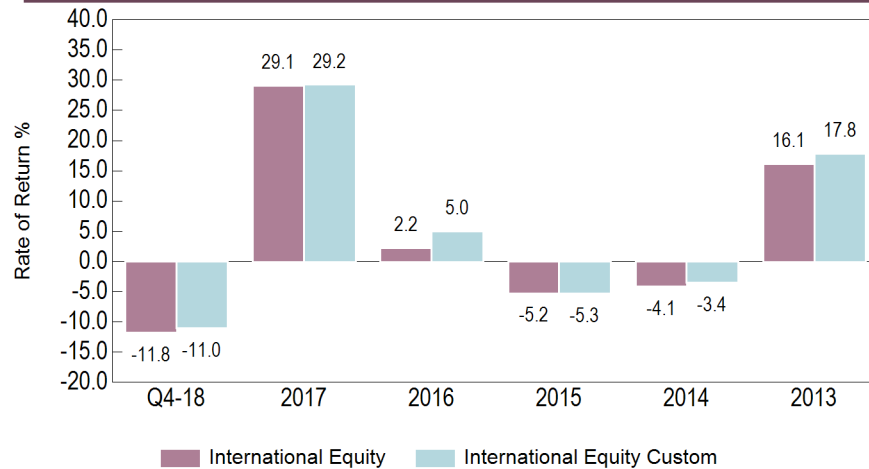


As of December 31, 2018

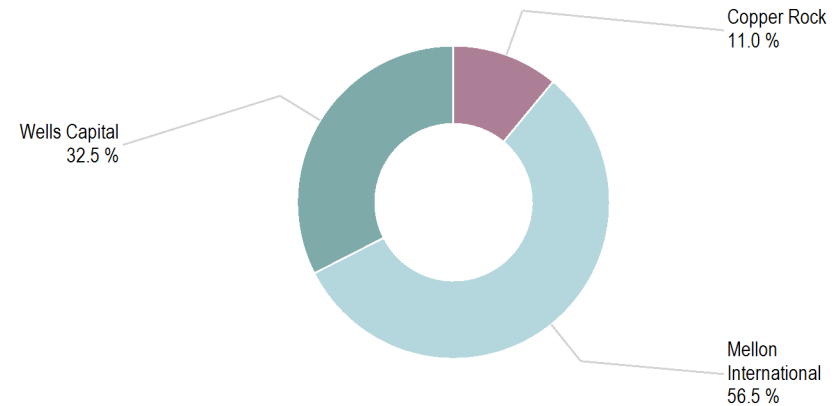
Account Information		Account Characteristics		Sector Distribution			
Account Name	PanAgora	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18		
Investment Style	Active	Characteristics		Sector Distribution			
Inception Date	9/30/13	Weighted Avg.	1.9	2.0	Energy	3.9	3.4
Account Type	US Stock Small Cap Core	Market Cap. (\$B)			Materials	3.1	3.7
Benchmark	Russell 2000	Median Market Cap (\$B)	0.7	0.7	Industrials	14.0	14.8
Universe	eV US Small Cap Core Equity Net	P/E Ratio	17.7	14.3	Consumer Discretionary	13.7	12.2
		Yield	1.4	1.4	Consumer Staples	4.4	2.9
		EPS Growth - 5 Yrs.	6.9	8.3	Health Care	16.8	15.6
		Price to Book	3.4	2.6	Financials	17.3	18.3
		Beta (holdings; domestic)	1.2	1.2	Information Technology	13.7	14.7
					Communication Services	2.1	3.3
					Utilities	3.5	3.8
					Real Estate	4.4	7.2

Top Holdings		Best Performers		Worst Performers	
CASH - USD	3.1%		Return %		Return %
PORTLAND GEN.ELEC.	1.3%	FLUENT	67.4%	AKORN	-73.9%
INSPERITY	1.3%	MITEK SYSTEMS	53.3%	DENBURY RES.	-72.4%
PNM RESOURCES	1.3%	K12	40.1%	SUPERIOR INDS.INT.	-71.6%
ISHARES RSL.2000 VALUE	1.2%	INVESTMENT TECH.GROUP	39.9%	ION GEOPHYSICAL	-66.7%
GEO GROUP	1.2%	BELMOND 'A'	37.2%	CIVEO	-65.5%
CORECIVIC	1.1%	VERACYTE	31.7%	CALIFORNIA RESOURCES	-64.9%
FIRST CTZN.BCSH.A	1.1%	EMC INSURANCE GROUP	30.1%	IMMUNE DESIGN	-62.3%
INGEVITY	1.0%	IMPERVA	19.9%	PIONEER ENERGY SERVICES	-58.3%
VERINT SYSTEMS	1.0%	FLUIDIGM	15.1%	W&T OFFSHORE	-57.3%
		VANDA PHARMACEUTICALS	13.9%	ENDO INTERNATIONAL	-56.6%

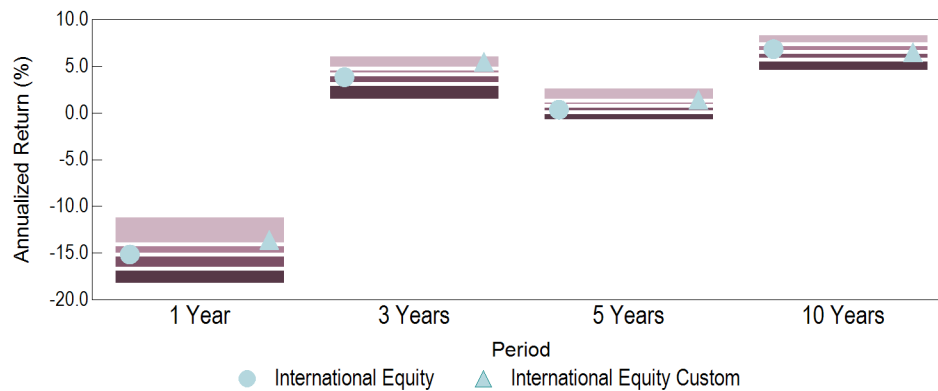
Return Summary



Current Allocation

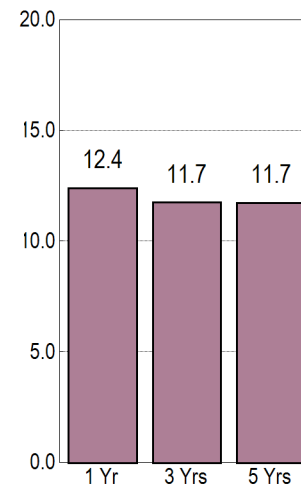


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
International Equity	-15.2	3.8	0.3	6.8
<i>International Equity Custom</i>	-13.6	5.5	1.4	6.5
<i>InvestorForce All DB ex-US Eq Net Median</i>	-15.1	4.1	0.8	6.6
<i>InvestorForce All DB ex-US Eq Net Rank</i>	51	58	68	39



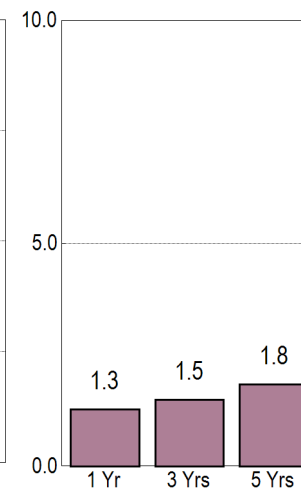
Anzld. Std. Deviation

International Equity



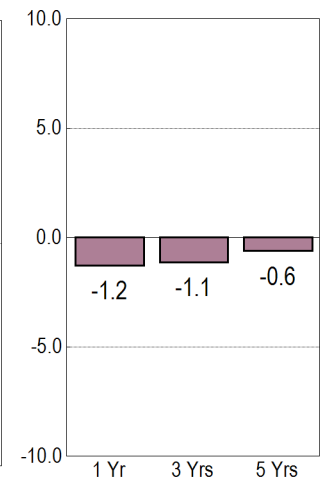
Tracking Error

International Equity



Information Ratio

International Equity



International Equity

As of December 31, 2018

International Equity Characteristics
vs MSCI ACWI ex USA

	Portfolio Q4-18	Index Q4-18
Characteristics		
Weighted Avg. Market Cap. (\$B)	52.0	56.1
Median Market Cap (\$B)	8.3	7.0
P/E Ratio	17.4	16.4
Yield	3.1	3.4
EPS Growth - 5 Yrs.	8.5	9.5
Price to Book	3.0	2.4
Beta (holdings; domestic)	1.0	1.0

International Equity Sector Distribution
vs MSCI ACWI ex USA

	Portfolio Q4-18	Index Q4-18
Sector Distribution		
Energy	5.9	7.3
Materials	5.0	7.7
Industrials	11.2	11.7
Consumer Discretionary	12.5	10.6
Consumer Staples	13.4	9.8
Health Care	8.2	8.4
Financials	18.2	22.2
Information Technology	8.7	8.0
Communication Services	10.0	7.6
Utilities	2.6	3.4
Real Estate	3.3	3.3

Top Holdings

SAMSUNG ELECTRONICS	1.6%
CHINA MOBILE	1.2%
AIA GROUP	1.2%
NESTLE 'R'	1.1%
TENCENT HOLDINGS	1.1%
HDFC BANK ADR 1:3	1.0%
TAIWAN SEMICON.SPN.ADR 1:5	0.9%
NOVARTIS 'R'	0.8%
ROCHE HOLDING	0.8%
RELIANCE INDS.GDR 144A	0.8%

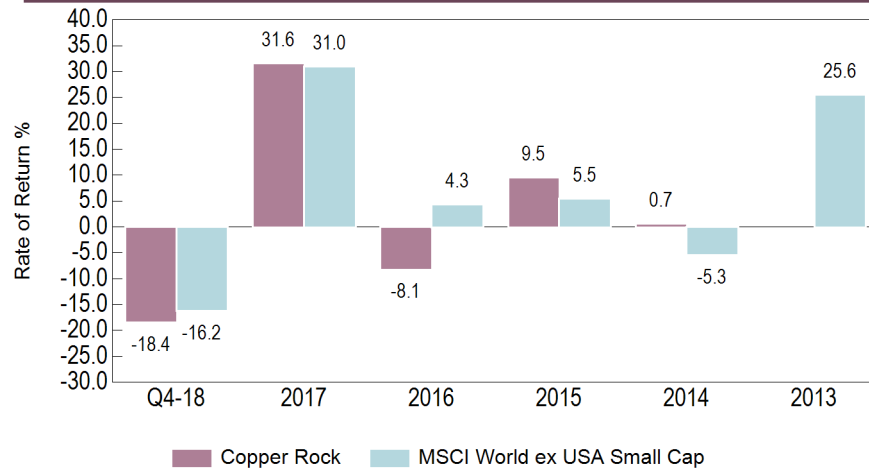
Best Performers

	Return %
BK BRA.OPEAS.A RTR. ON	58.8%
B2W COMPANHIA DIGITAL ON	56.3%
ANGLOGOLD ASHANTI SPN. ADR.1:1	46.3%
BNC.BRADESCO PF.SPN.ADR 1:1	42.7%
LOJAS RENNER ON	41.2%
SUMITOMO DAINIPPON PHA.	38.7%
PETROBRAS DISTRIBUIDORA ON	38.7%
HAPVIDA PARTP.E INVMS.ON	34.8%
MULTIPLAN EMPE. IMOBS.ON	33.9%
ST BARBARA	31.0%

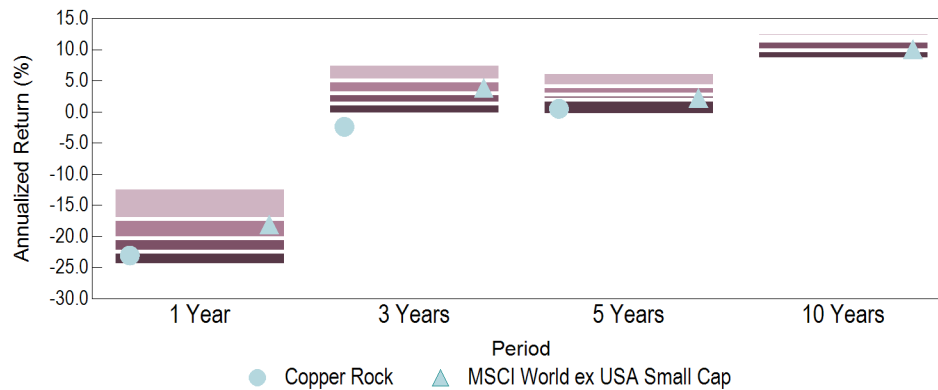
Worst Performers

	Return %
GRIDSUM HOLDING UNSP.ADR 1:1	-65.3%
CHINA RAPID FINANCE ADR 'A'1:1	-64.3%
PREMIER OIL	-53.1%
SHARP	-50.6%
COSMO ENERGY HOLDINGS	-49.8%
IQIYI ADS.1:7	-45.1%
SHOWA DENKO KK	-44.3%
SYSMEX	-44.2%
CYBERDYNE	-44.0%
ROYAL MAIL	-42.8%

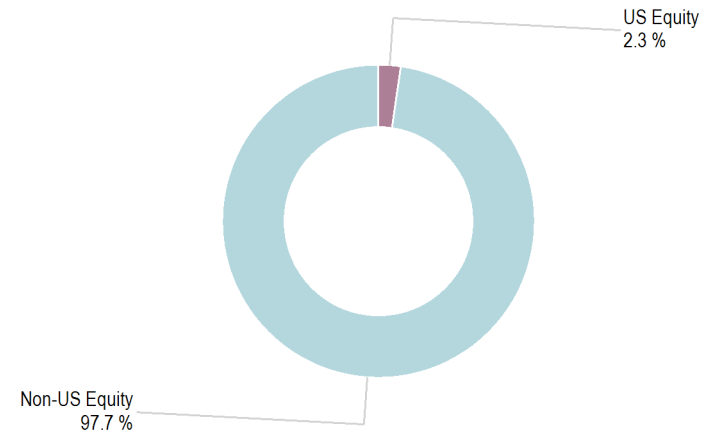
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Copper Rock	-23.1	-2.4	0.5	--
MSCI World ex USA Small Cap	-18.1	3.8	2.3	10.1
eV EAFE Small Cap Equity Net Median	-20.2	3.1	2.9	11.5
eV EAFE Small Cap Equity Net Rank	85	99	91	--

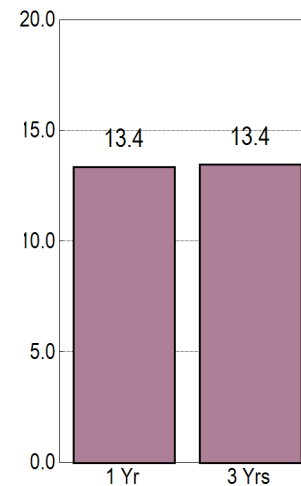


Current Allocation



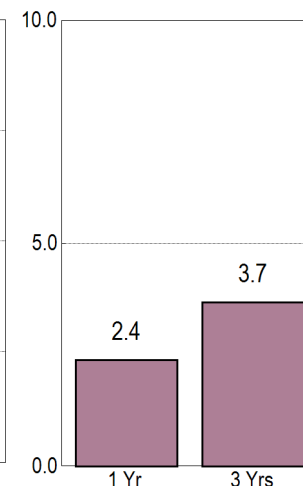
Anzld. Std. Deviation

Copper Rock



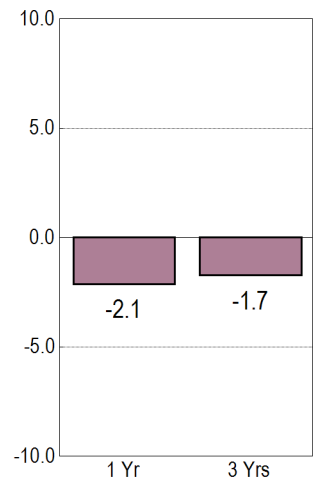
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Copper Rock



Information Ratio

Copper Rock

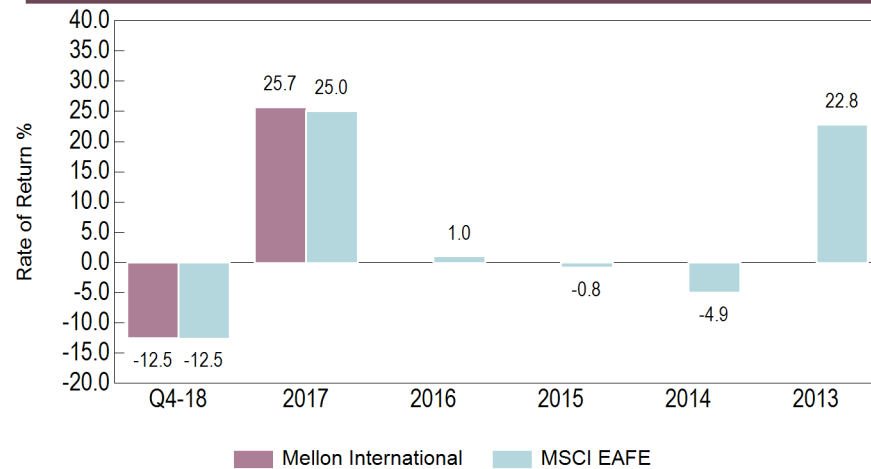


As of December 31, 2018

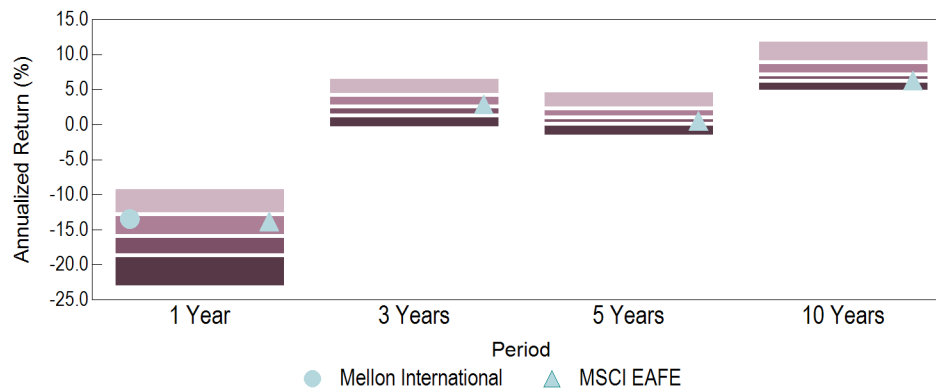
Account Information		Account Characteristics		Sector Distribution	
Account Name	Copper Rock	Portfolio	Index	Portfolio	Index
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18
Investment Style	Active	Characteristics		Sector Distribution	
Inception Date	9/30/13	Weighted Avg.	3.0	Energy	6.5
Account Type	International Small Stocks	Market Cap. (\$B)	2.2	Materials	3.9
Benchmark	MSCI World ex USA Small Cap	Median Market Cap (\$B)	0.9	Industrials	20.1
Universe	eV EAFE Small Cap Equity Net	P/E Ratio	16.6	Consumer Discretionary	10.4
		Yield	2.5	Consumer Staples	9.4
		EPS Growth - 5 Yrs.	16.1	Health Care	13.2
		Price to Book	2.8	Financials	8.8
		Beta (holdings; domestic)	0.9	Information Technology	10.1
				Communication Services	6.6
				Utilities	4.3
				Real Estate	6.2
					12.0

Top Holdings		Best Performers		Worst Performers	
CHARTER HALL GROUP STAPLED UNITS	2.0%		Return %		Return %
NIPPON SUISAN KAISHA	1.8%	ST BARBARA	31.0%	PREMIER OIL	-53.1%
MARUI GROUP	1.6%	DIALOG SEMICON.	18.7%	COSMO ENERGY HOLDINGS	-49.8%
SUNRISE COMMUNICATIONS	1.6%	MORINAGA	15.4%	WORLEYPARSONS	-42.6%
SPARK NEW ZEALAND	1.6%	ORION	13.1%	TOKAI CARBON	-41.5%
NIHON UNISYS	1.5%	HOKKAIDO ELEC.POWER	9.9%	SEVEN GROUP HOLDINGS	-39.0%
TAKARA BIO	1.5%	AMER SPORTS	7.3%	BEACH ENERGY	-38.8%
LION	1.5%	ITALGAS	5.2%	ENCE ENERGIA Y CELULOSA	-37.4%
KANDENKO	1.5%	AIR FRANCE-KLM	4.0%	BLUESCOPE STEEL	-37.2%
ASR NEDERLAND	1.5%	KYORITSU MAINTENANCE	3.9%	ENERPLUS	-36.8%
		SPARK NEW ZEALAND	3.6%	SULZER 'R'	-34.4%

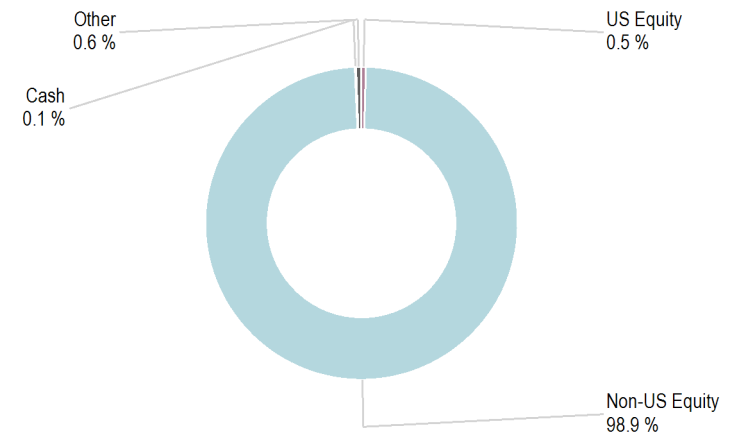
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Mellon International	-13.5	--	--	--
MSCI EAFE	-13.8	2.9	0.5	6.3
eV All EAFE Equity Net Median	-15.8	2.7	1.1	7.2
eV All EAFE Equity Net Rank	32	--	--	--

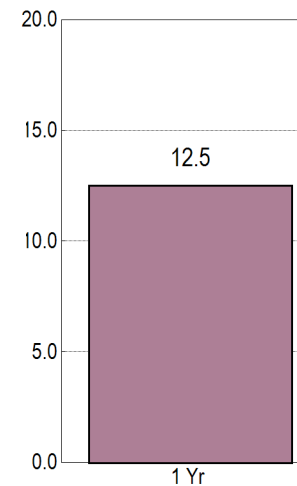


Current Allocation



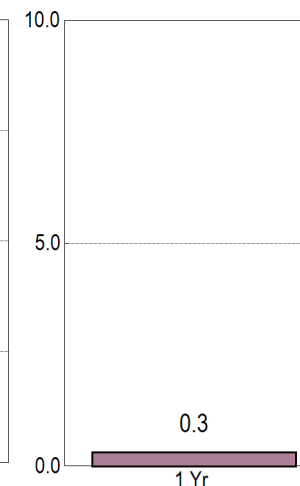
Anzld. Std. Deviation

Mellon International



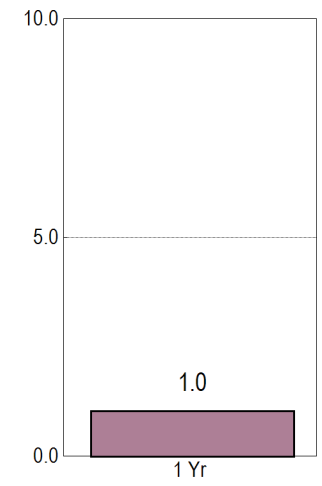
Tracking Error

Mellon International



Information Ratio

Mellon International



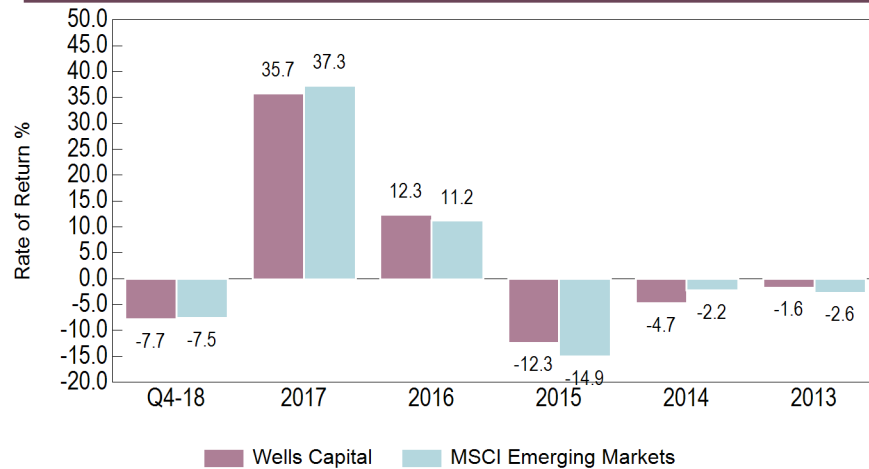
Mellon International

As of December 31, 2018

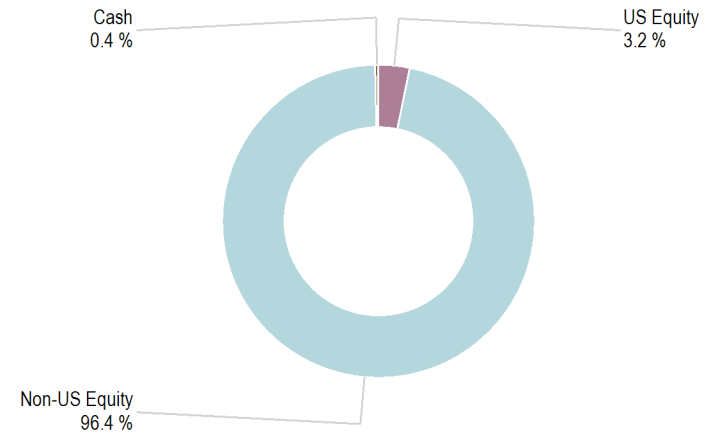
Account Information		Account Characteristics		Sector Distribution			
Account Name	Mellon International	Portfolio	Index	Portfolio	Index		
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18		
Investment Style	Passive	Characteristics		Sector Distribution			
Inception Date	3/31/16	Weighted Avg.	52.7	52.6	Energy	5.8	5.9
Account Type	International	Market Cap. (\$B)			Materials	7.3	7.4
Benchmark	MSCI EAFE	Median Market Cap (\$B)	9.1	9.1	Industrials	14.2	14.3
Universe	eV All EAFE Equity Net	P/E Ratio	17.0	16.7	Consumer Discretionary	11.1	11.2
		Yield	3.6	3.6	Consumer Staples	11.5	11.6
		EPS Growth - 5 Yrs.	7.3	8.6	Health Care	11.3	11.2
		Price to Book	2.7	2.3	Financials	19.3	19.5
		Beta (holdings; domestic)	1.0	1.0	Information Technology	5.9	6.0
					Communication Services	5.5	5.6
					Utilities	3.7	3.8
					Real Estate	3.6	3.7

Top Holdings		Best Performers		Worst Performers	
NESTLE 'R'	2.0%		Return %		Return %
NOVARTIS 'R'	1.5%	SUMITOMO DAINIPPON PHA.	38.7%	SHARP	-50.6%
ROCHE HOLDING	1.4%	COLRUYT	25.7%	SHOWA DENKO KK	-44.3%
HSBC HOLDINGS	1.3%	PAN PACIFIC INTERNATIONAL HOLDINGS	22.9%	SYSMEX	-44.2%
ROYAL DUTCH SHELL A(LON)	1.1%	FAMILYMART UNY HOLDINGS	21.7%	CYBERDYNE	-44.0%
TOYOTA MOTOR	1.1%	MEIJI HOLDINGS	21.6%	ROYAL MAIL	-42.8%
TOTAL	1.0%	TOKYO ELECTRIC POWER CO. HDG.	21.2%	WORLEYPARSONS	-42.6%
BP	1.0%	RANDGOLD RESOURCES SUSP - SUSP 31/12/18	17.3%	LENDLEASE GROUP STAPLED UNITS	-42.4%
ROYAL DUTCH SHELL B	0.9%	TOHO	15.6%	CONVATEC GROUP	-41.6%
AIA GROUP	0.8%	BANDAI NAMCO HDG.	15.5%	M3	-40.8%
		YUE YUEN INDL.HDG.	15.1%	HOSHIZAKI ELECTRIC	-40.5%

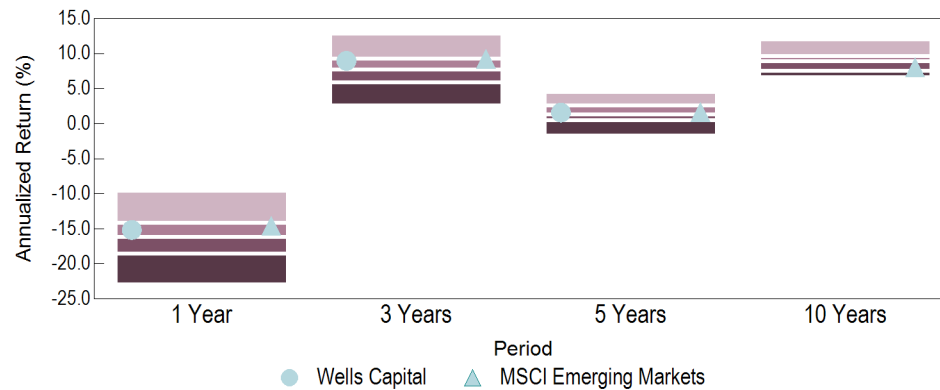
Return Summary



Current Allocation

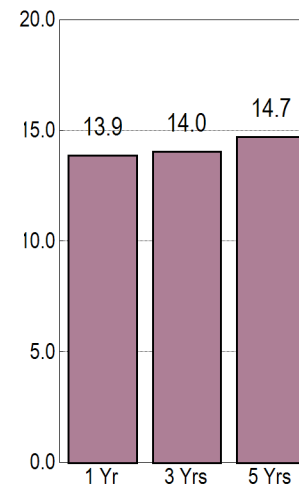


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Wells Capital	-15.2	9.0	1.6	--
MSCI Emerging Markets	-14.6	9.2	1.6	8.0
eV Emg Mkts Equity Net Median	-16.2	7.7	1.4	8.9
eV Emg Mkts Equity Net Rank	38	28	45	--



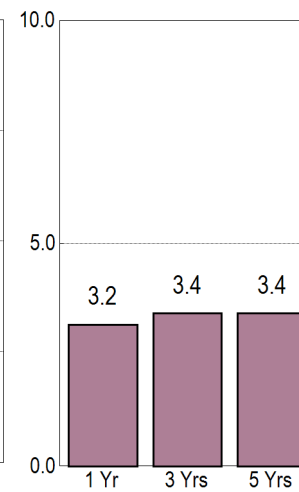
Anzld. Std. Deviation

Wells Capital



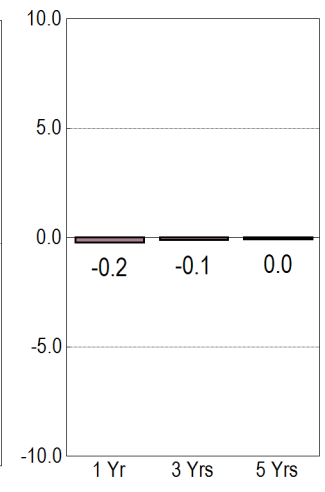
Tracking Error

Wells Capital



Information Ratio

Wells Capital

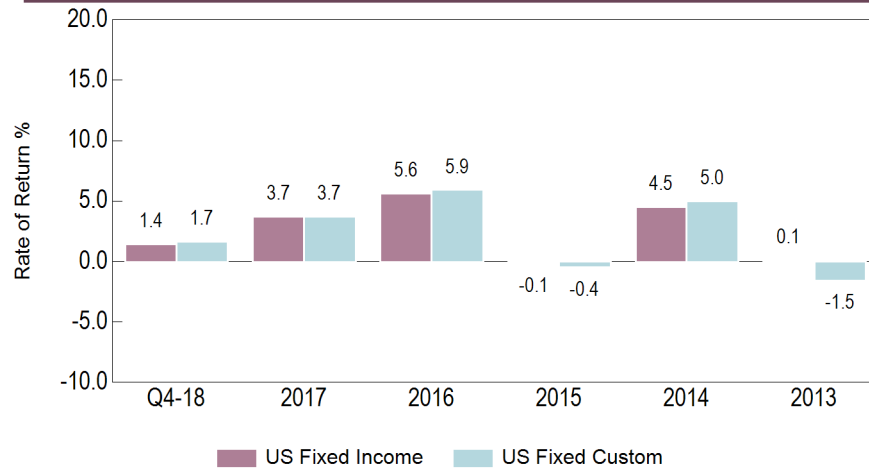


As of December 31, 2018

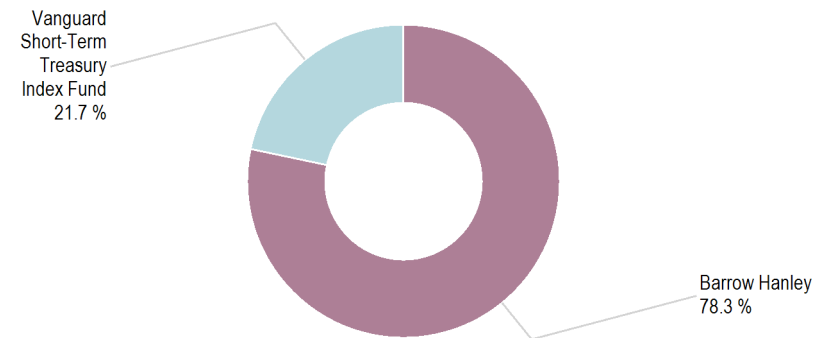
Account Information		Account Characteristics		Sector Distribution	
Account Name	Wells Capital	Portfolio	Index	Portfolio	Index
Account Structure	Commingled Fund	Q4-18	Q4-18	Q4-18	Q4-18
Investment Style	Active	Characteristics		Sector Distribution	
Inception Date	3/31/12	Weighted Avg.	68.6	Energy	5.7
Account Type	International Emerging Stocks	Market Cap. (\$B)	70.0	Materials	1.2
Benchmark	MSCI Emerging Markets	Median Market Cap (\$B)	8.7	Industrials	2.5
Universe	eV Emg Mkts Equity Net	P/E Ratio	18.5	Consumer Discretionary	15.7
		Yield	2.5	Consumer Staples	18.2
		EPS Growth - 5 Yrs.	9.8	Health Care	0.6
		Price to Book	3.4	Financials	19.6
		Beta (holdings; domestic)	1.0	Information Technology	13.2
				Communication Services	19.5
				Utilities	0.0
				Real Estate	1.7
					3.0

Top Holdings		Best Performers		Worst Performers	
SAMSUNG ELECTRONICS	5.0%		Return %		Return %
CHINA MOBILE	3.8%	BK BRA.OPEAS.A RTR. ON	58.8%	GRIDSUM HOLDING UNSP.ADR 1:1	-65.3%
TENCENT HOLDINGS	3.5%	B2W COMPANHIA DIGITAL ON	56.3%	CHINA RAPID FINANCE ADR 'A'1:1	-64.3%
HDFC BANK ADR 1:3	3.1%	ANGLOGOLD ASHANTI SPN. ADR.1:1	46.3%	IQIYI ADS.1:7	-45.1%
TAIWAN SEMICON.SPN.ADR 1:5	3.0%	BNC.BRADESCO PF.SPN.ADR 1:1	42.7%	GENTING MALAYSIA	-39.4%
RELIANCE INDS.GDR 144A	2.5%	LOJAS RENNER ON	41.2%	PPDAI GROUP ADR A 1:5	-33.1%
AIA GROUP	2.3%	PETROBRAS DISTRIBUIDORA ON	38.7%	GPO FINANCE BANORTE	-32.8%
UNI-PRESIDENT ENTS.	2.2%	HAPVIDA PARTP.E INVMS.ON	34.8%	CEMEX ADR 1:10	-31.5%
ALIBABA GROUP HLDG.SPN. ADR 1:1	2.2%	MULTIPLAN EMPE. IMOBS.ON	33.9%	BAIDU 'A' ADR 10:1	-30.6%
TAIWAN SEMICON.MNFG.	2.2%	IRB BRASIL RESSEGUROS ON	30.5%	BEST ADR 1:1	-30.6%
		LOJAS AMERICANAS PN REP1 PN	27.9%	CTRIIP.COM INTL.ADR 8:1	-27.2%

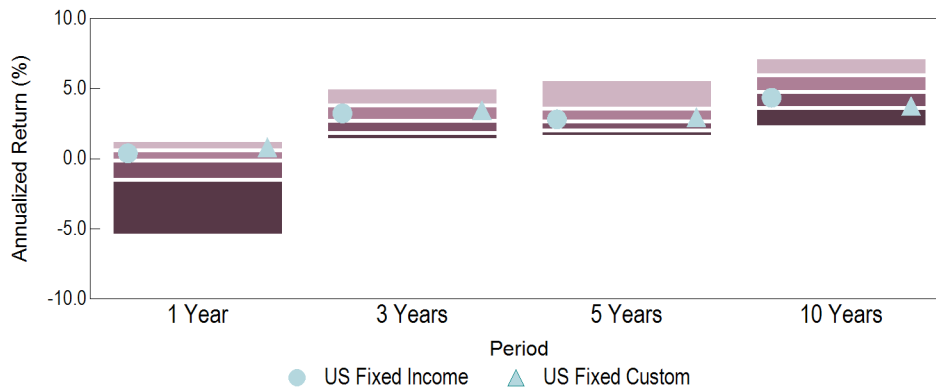
Return Summary



Current Allocation

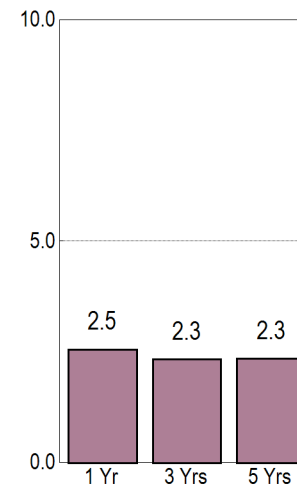


	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
US Fixed Income	0.4	3.2	2.8	4.3
<i>US Fixed Custom</i>	<i>0.8</i>	<i>3.5</i>	<i>3.0</i>	<i>3.8</i>
<i>InvestorForce All DB US Fix Inc Net Median</i>	<i>-0.1</i>	<i>2.7</i>	<i>2.7</i>	<i>4.8</i>
<i>InvestorForce All DB US Fix Inc Net Rank</i>	<i>34</i>	<i>39</i>	<i>44</i>	<i>62</i>



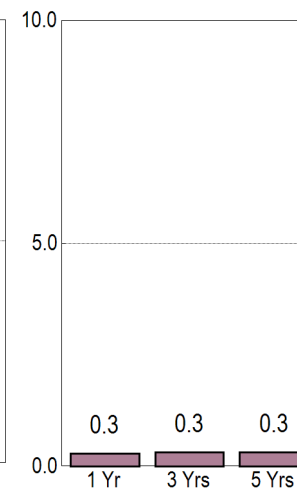
Anzld. Std. Deviation

US Fixed Income



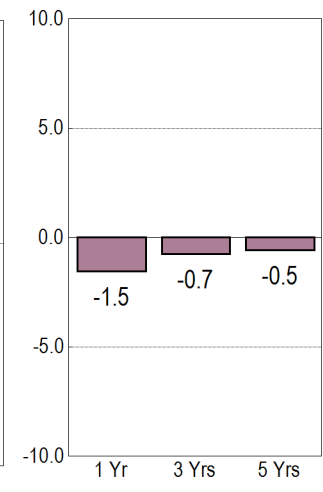
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US Fixed Income



Information Ratio

US Fixed Income



US Fixed Income

As of December 31, 2018

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

	Portfolio	Index	Portfolio	Index
	Q4-18	Q4-18	Q3-18	Q3-18
Fixed Income Characteristics				
Yield to Maturity	3.19	3.26	3.33	3.45
Average Duration	4.97	5.87	5.07	6.03
Average Quality	AA	AA	AA	AA
Weighted Average Maturity	7.64	12.93	7.53	12.94

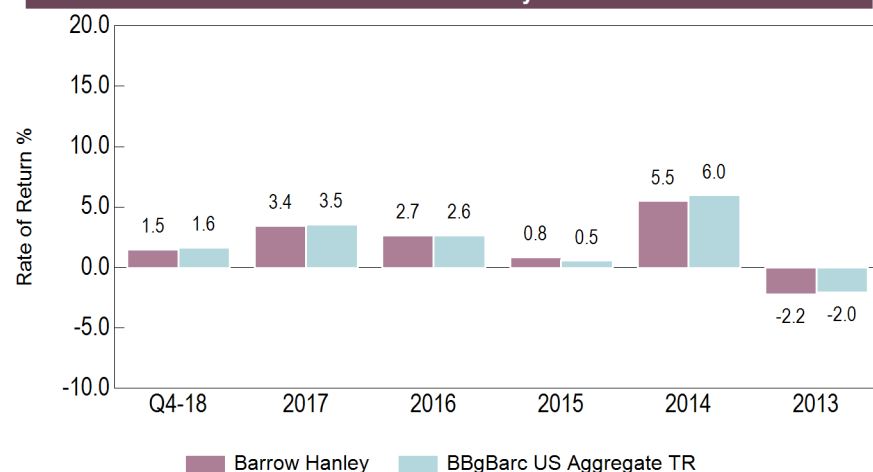
US Fixed Income Fixed Income Duration
vs. BBgBarc US Aggregate TR

	Portfolio	Index	Portfolio	Index
	Q4-18	Q4-18	Q3-18	Q3-18
Credit Quality Allocation				
AAA	70.18	72.81	66.55	71.93
AA	3.37	3.59	3.92	3.73
A	12.76	10.02	13.72	10.84
BBB	13.70	13.59	13.70	13.51
Not Rated	--	--	2.12	--

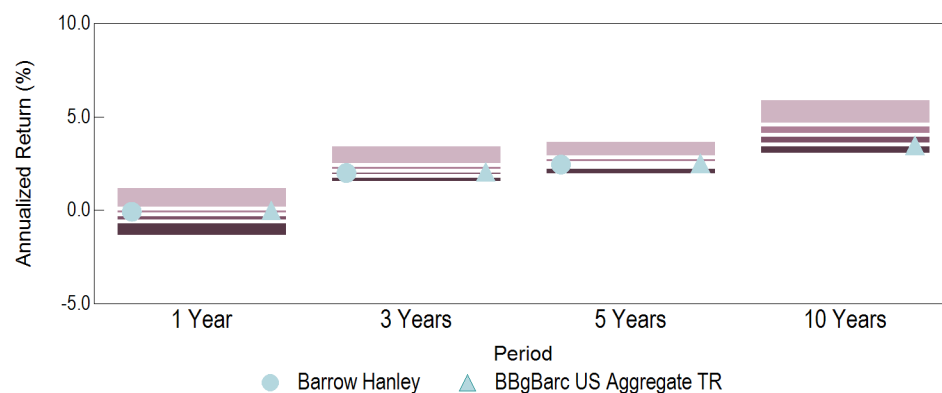
US Fixed Income Fixed Income Sector Allocation
vs. BBgBarc US Aggregate TR

	Portfolio	Index	Portfolio	Index
	Q4-18	Q4-18	Q3-18	Q3-18
US Sector Allocation				
UST/Agency	42.13	41.68	40.82	40.95
Corporate	29.41	24.31	31.02	25.13
MBS	22.52	30.21	22.10	30.03
ABS	4.01	0.52	4.11	0.51
Foreign	0.23	2.39	0.23	2.47
Muni	0.92	0.90	0.92	0.91
Cash	0.78	--	0.81	--

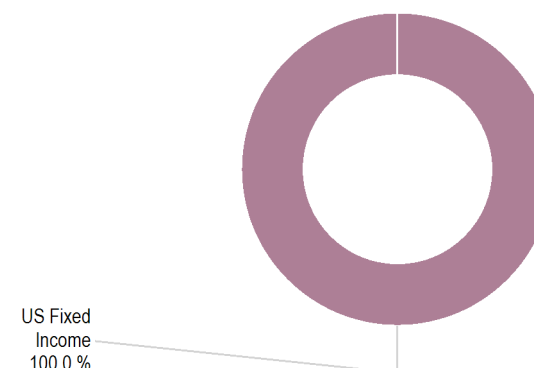
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Barrow Hanley	-0.1	2.0	2.5	--
BBgBarc US Aggregate TR	0.0	2.1	2.5	3.5
eV US Core Fixed Inc Net Median	-0.2	2.1	2.5	4.1
eV US Core Fixed Inc Net Rank	42	66	66	--

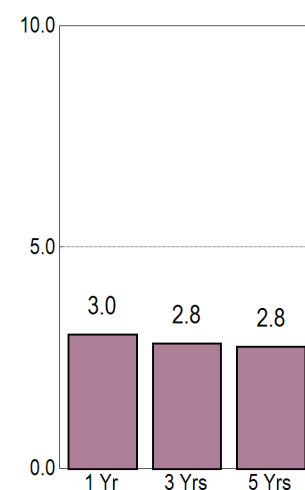


Current Allocation



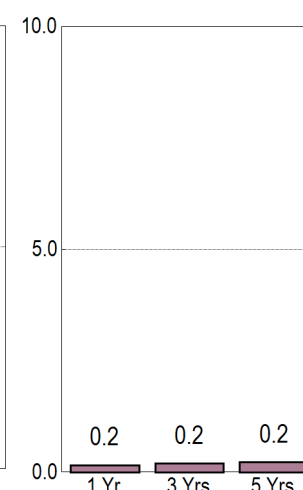
Anzld. Std. Deviation

Barrow Hanley



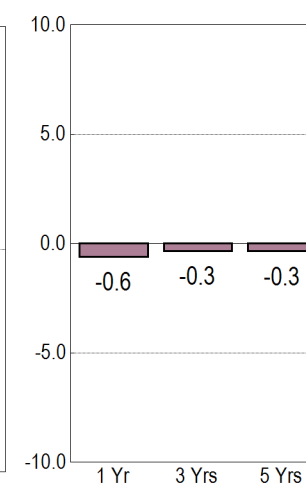
Tracking Error

Barrow Hanley



Information Ratio

Barrow Hanley



As of December 31, 2018

Account Information		Fixed Income Characteristics		Fixed Income Characteristics			
Account Name	Barrow Hanley	Portfolio	Index	Portfolio	Index		
Account Structure	Separate Account	Q4-18	Q4-18	Q4-18	Q4-18		
Investment Style	Active						
Inception Date	3/31/10	Fixed Income Characteristics		Credit Quality Allocation			
Account Type	US Fixed Income Core	Yield to Maturity	3.37	3.26	AAA	61.90	72.81
Benchmark	BBgBarc US Aggregate TR	Average Duration	5.82	5.87	AA	4.30	3.59
Universe	eV US Core Fixed Inc Net	Average Quality	AA	AA	A	16.30	10.02
		Weighted Average Maturity	7.64	12.93	BBB	17.50	13.59

Vanguard Short-Term Treasury Index Fund

As of December 31, 2018

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.

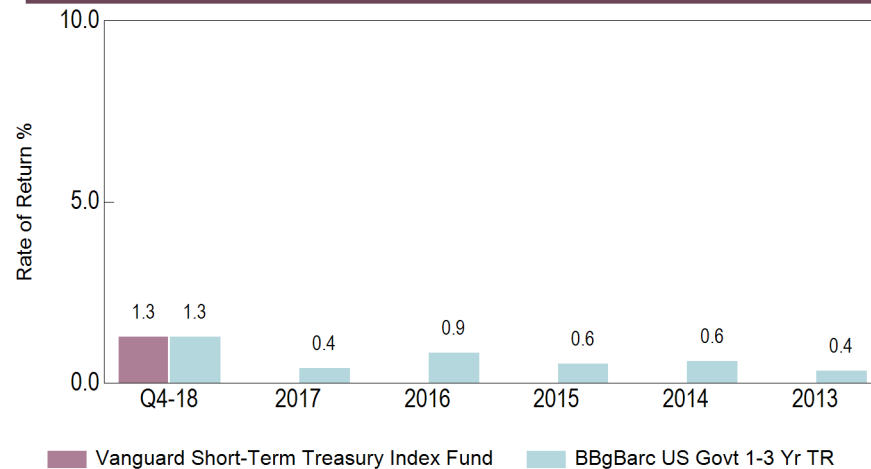
Portfolio Fund Information as of December 31, 2018		Top Holdings as of December 31, 2018		Fund Characteristics as of December 31, 2018	
Ticker	VSBIX	UNITED STATES TREASURY NOTES 1.25%	2.50%	Sharpe Ratio (3 Year)	
Morningstar Category	Short Government	UNITED STATES TREASURY NOTES 2.62%	2.38%	Average Duration	1.93
Average Market Cap (\$mm)		UNITED STATES TREASURY NOTES 3.62%	2.34%	Effective Duration	1.93
Net Assets (\$mm)	781.17	UNITED STATES TREASURY NOTES 2.12%	2.13%	Modified Duration	
% Assets in Top 10 Holdings	20.87	UNITED STATES TREASURY NOTES 1.12%	2.06%	Average Coupon	2.02%
Total Number of Holdings	93	UNITED STATES TREASURY NOTES 1.25%	1.98%	Average Effective Maturity	2.00
Manager Name	Joshua C. Barrickman	UNITED STATES TREASURY NOTES 1.62%	1.92%	R-Squared (3 Year)	
Manager Tenure	6	UNITED STATES TREASURY NOTES 2.88%	1.90%	Alpha (3 Year)	
Expense Ratio	0.05%	UNITED STATES TREASURY NOTES 1.38%	1.84%	Beta (3 Year)	
Closed to New Investors	No	UNITED STATES TREASURY NOTES 1.5%	1.83%		

Maturities as of December 31, 2018		Fixed Income Sectors as of December 31, 2018		Credit Quality as of December 31, 2018	
1 to 3 Years	99.71%	GOVERNMENT	99.59%	AAA	100.00%
3 to 5 Years	0.29%	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	0.00%
10 to 15 Years	0.00%	CASH & EQUIVALENTS	0.41%	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%

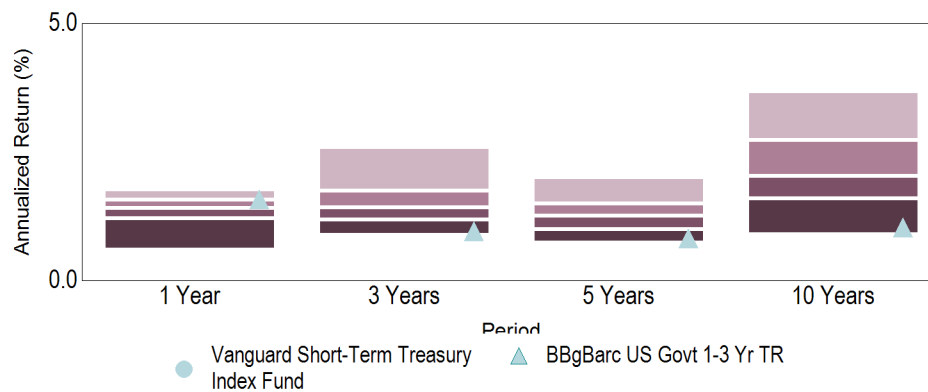
Vanguard Short-Term Treasury Index Fund

As of December 31, 2018

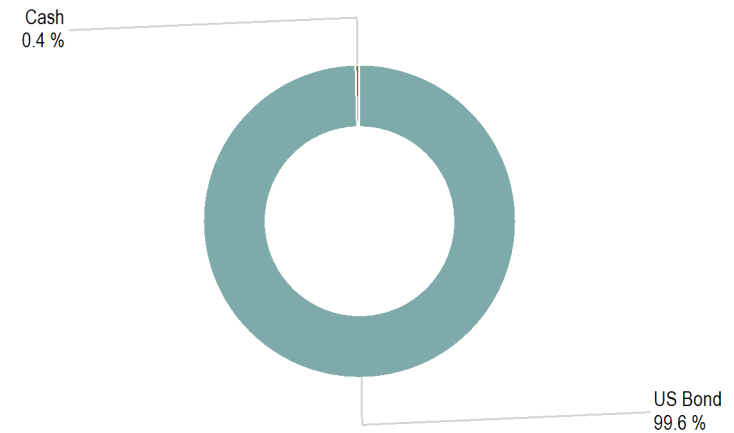
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Vanguard Short-Term Treasury Index Fund	--	--	--	--
BBgBarc US Govt 1-3 Yr TR	1.6	1.0	0.8	1.0
eV US Short Duration Fixed Inc Net Median	1.4	1.4	1.3	2.0
eV US Short Duration Fixed Inc Net Rank	--	--	--	--

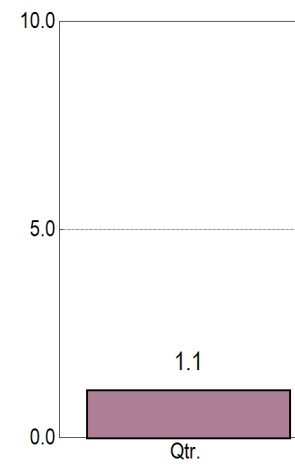


Mutual Fund Allocation as of December 31, 2018



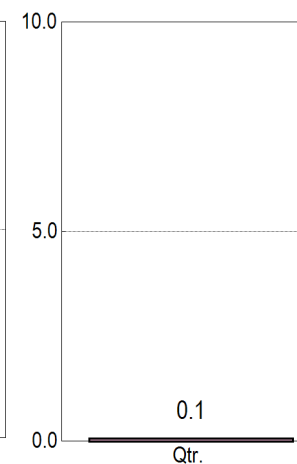
Anzld. Std. Deviation

Vanguard Short-Term Treasury Index Fund



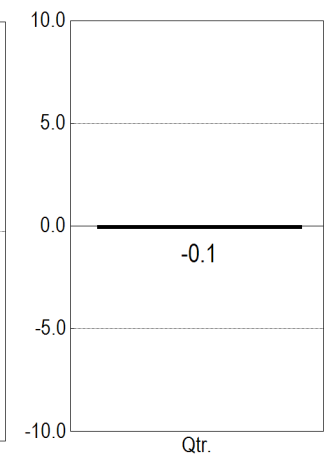
Tracking Error

Vanguard Short-Term Treasury Index Fund



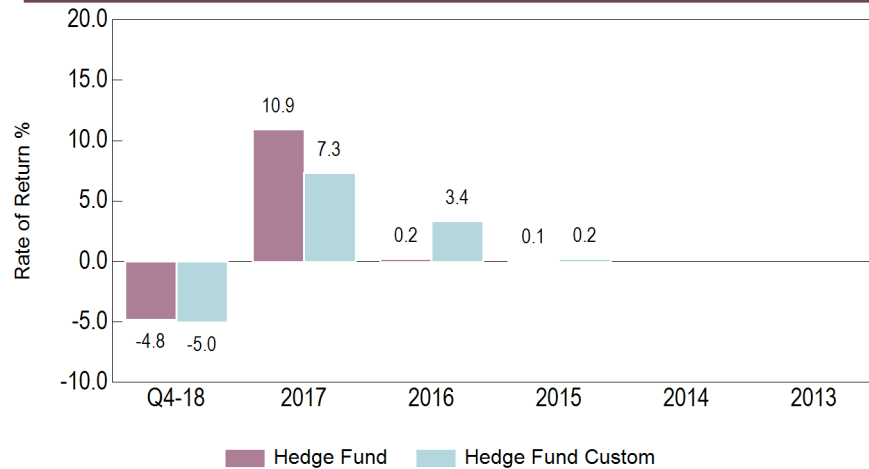
Information Ratio

Vanguard Short-Term Treasury Index Fund

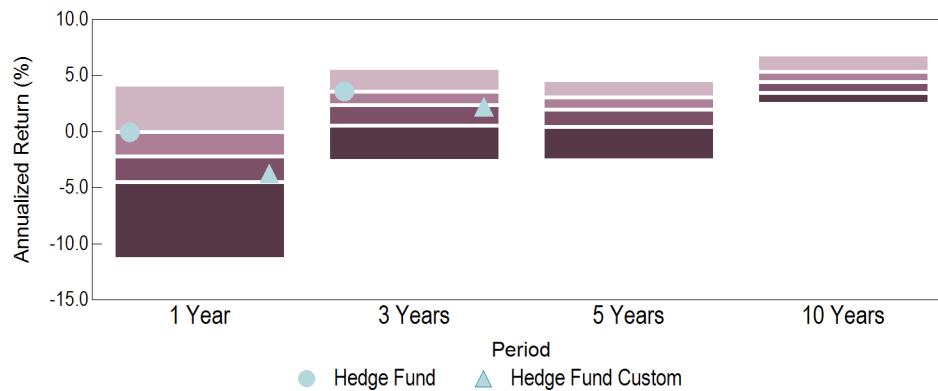


As of December 31, 2018

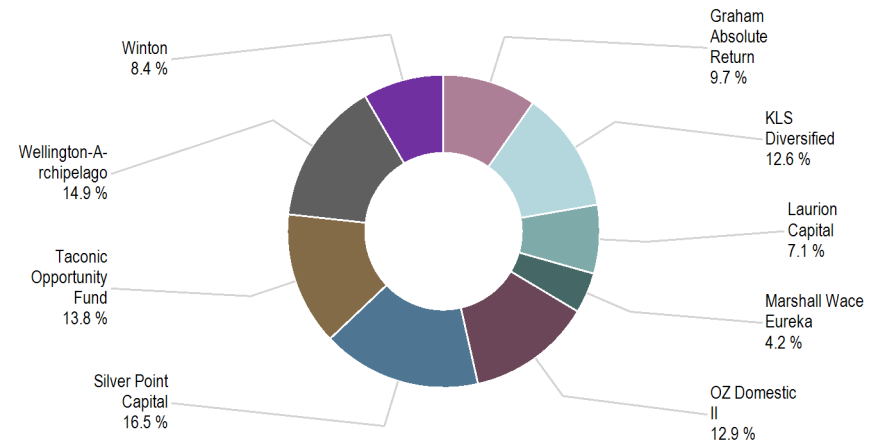
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Hedge Fund	0.0	3.6	--	--
<i>Hedge Fund Custom</i>	-3.8	2.2	--	--
<i>InvestorForce All DB Hedge Funds Net Median</i>	-2.2	2.4	2.0	4.4
<i>InvestorForce All DB Hedge Funds Net Rank</i>	26	26	--	--

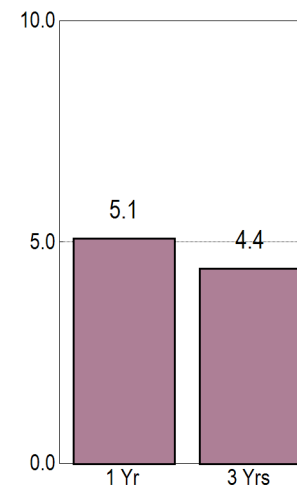


Current Allocation



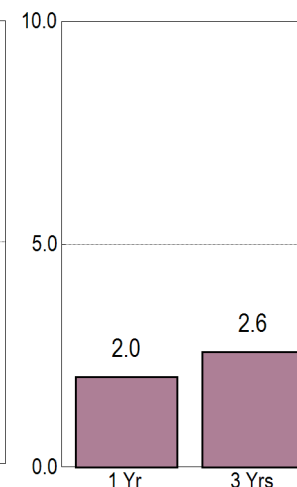
Anzld. Std. Deviation

Hedge Fund



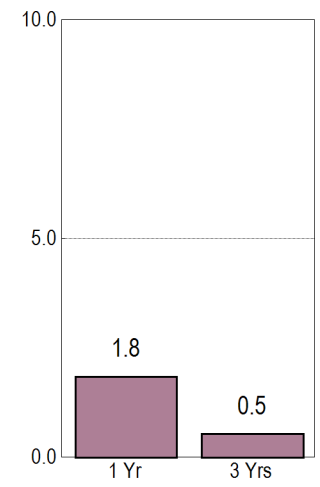
Tracking Error

Hedge Fund



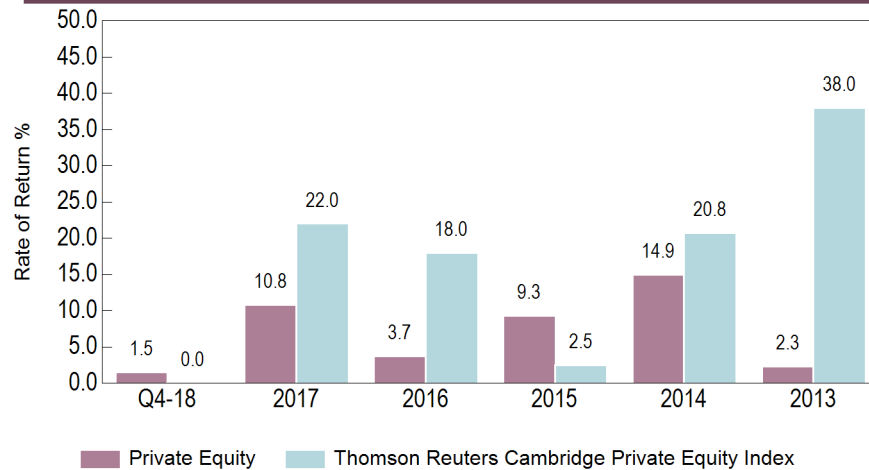
Information Ratio

Hedge Fund

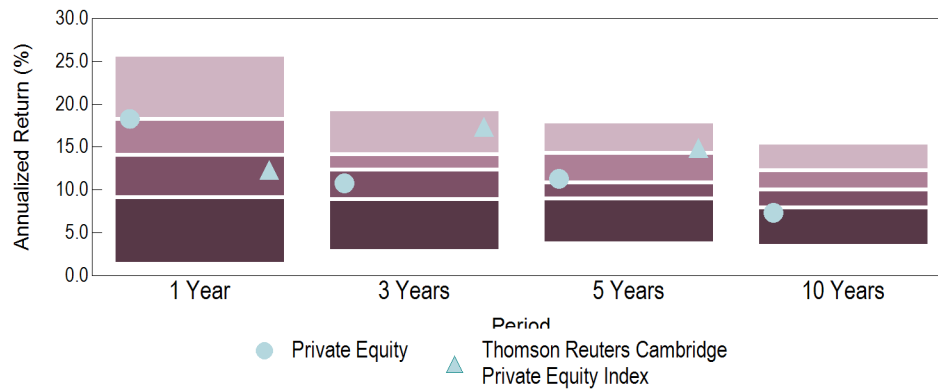


As of December 31, 2018

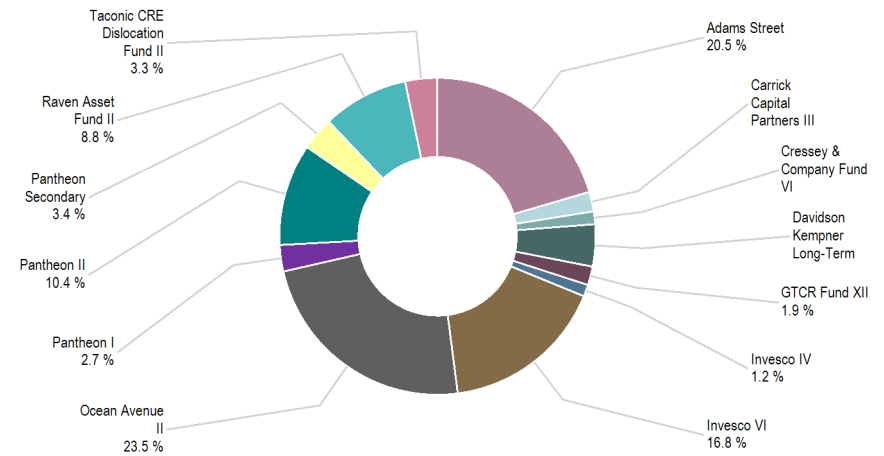
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Private Equity	18.3	10.8	11.3	7.3
Thomson Reuters Cambridge Private Equity Index	12.3	17.4	14.9	--
InvestorForce All DB Private Eq Net Median	14.2	12.4	10.9	10.1
InvestorForce All DB Private Eq Net Rank	26	58	48	80

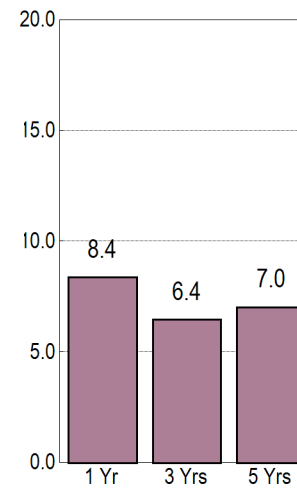


Current Allocation



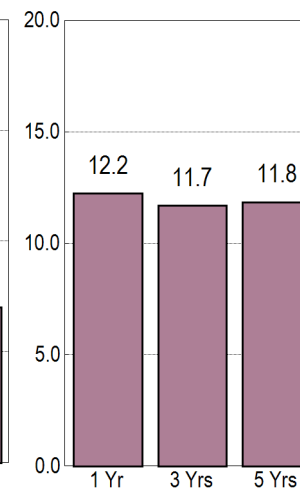
Anzld. Std. Deviation

Private Equity



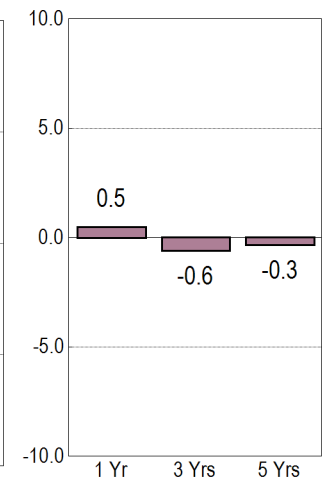
Tracking Error

Private Equity



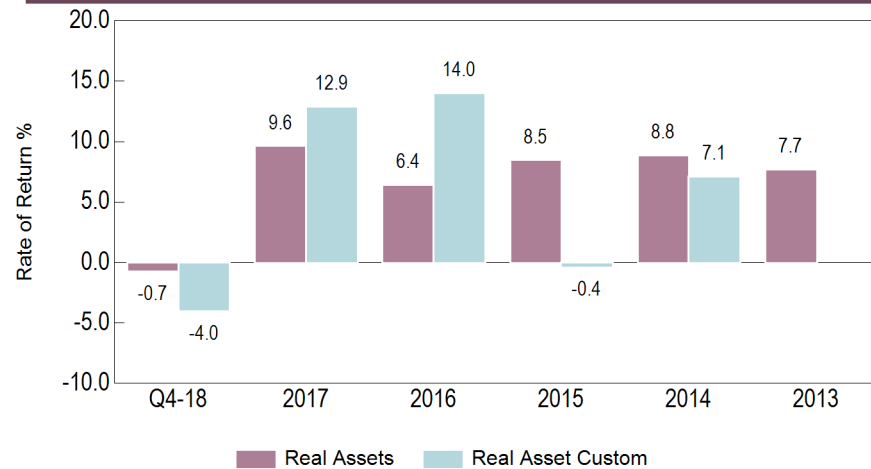
Information Ratio

Private Equity

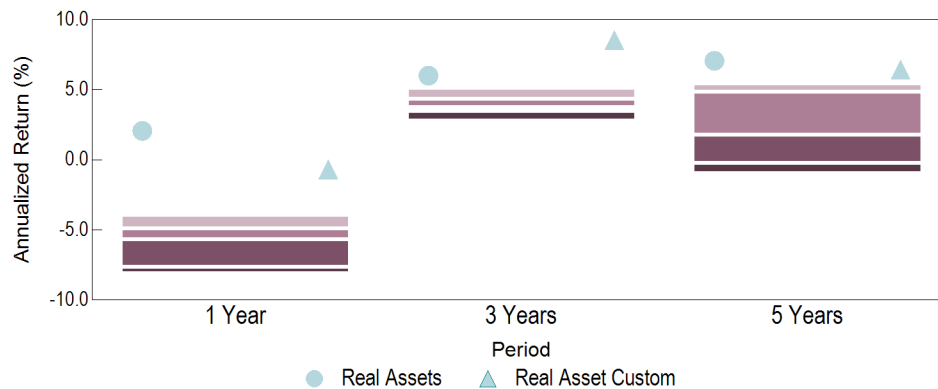


As of December 31, 2018

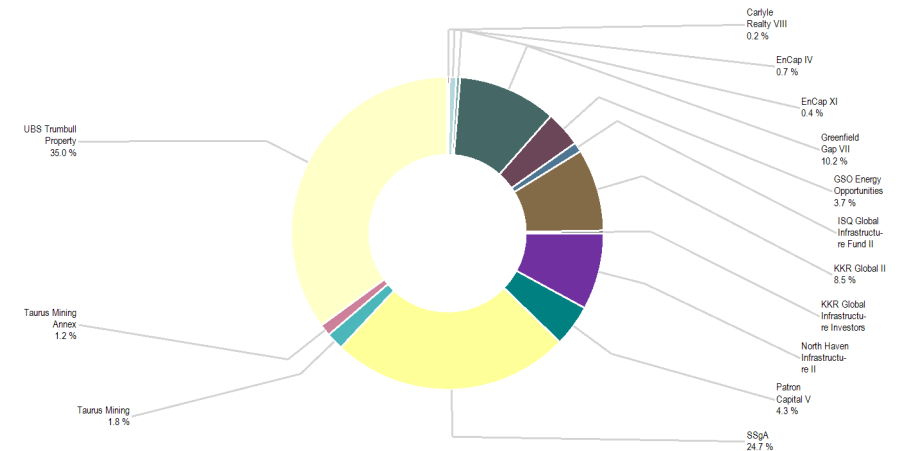
Return Summary



	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)
Real Assets	2.1	6.0	7.1	--
<i>Real Asset Custom</i>	-0.7	8.5	6.4	--
<i>eV Liquid Real Assets Net Median</i>	-5.6	3.8	1.8	--
<i>eV Liquid Real Assets Net Rank</i>	1	1	1	--

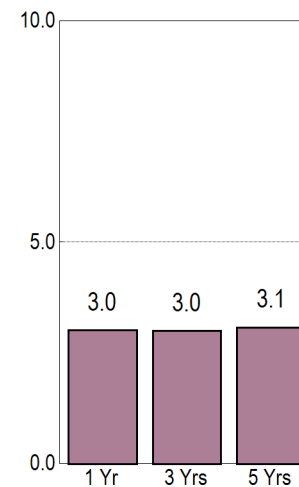


Current Allocation



Anzld. Std. Deviation

Real Assets



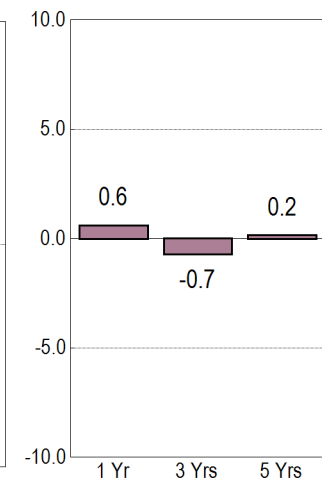
Tracking Error

Real Assets



Information Ratio

Real Assets



Performance Highlights

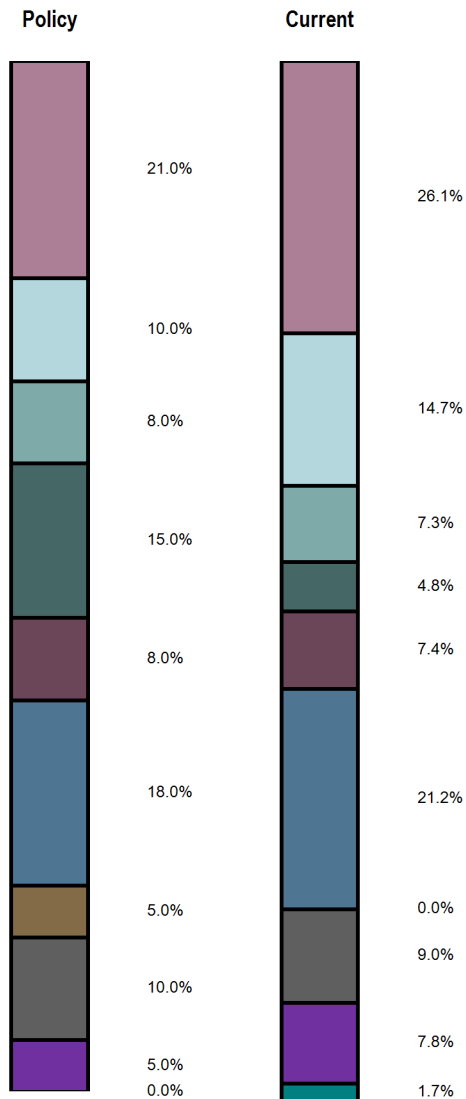
As of January 31, 2019

Preliminary Performance Summary for January 2019:

- Global stocks rebounded in January, recovering some of the losses from the tumultuous end to 2018. Improving sentiments with China over the trade war and the Fed signaling a hold on rate increases, helped boost global equities. For the month, the Fund recorded a 4.6% return, which exceed the policy benchmark by 40 basis points.
- Both U.S. and International Equities within the Fund posted strong returns (+8.9% and +8.2%, respectively) for the month, contributing positively on an absolute basis.
- Despite the markets starting 2018 in a risk-on fashion, the fixed income sleeve was still able to record a positive return (+1.0%) as U.S. Treasury rates fell across the yield curve.

Performance Review
As of January 31, 2019

As of January 31, 2019

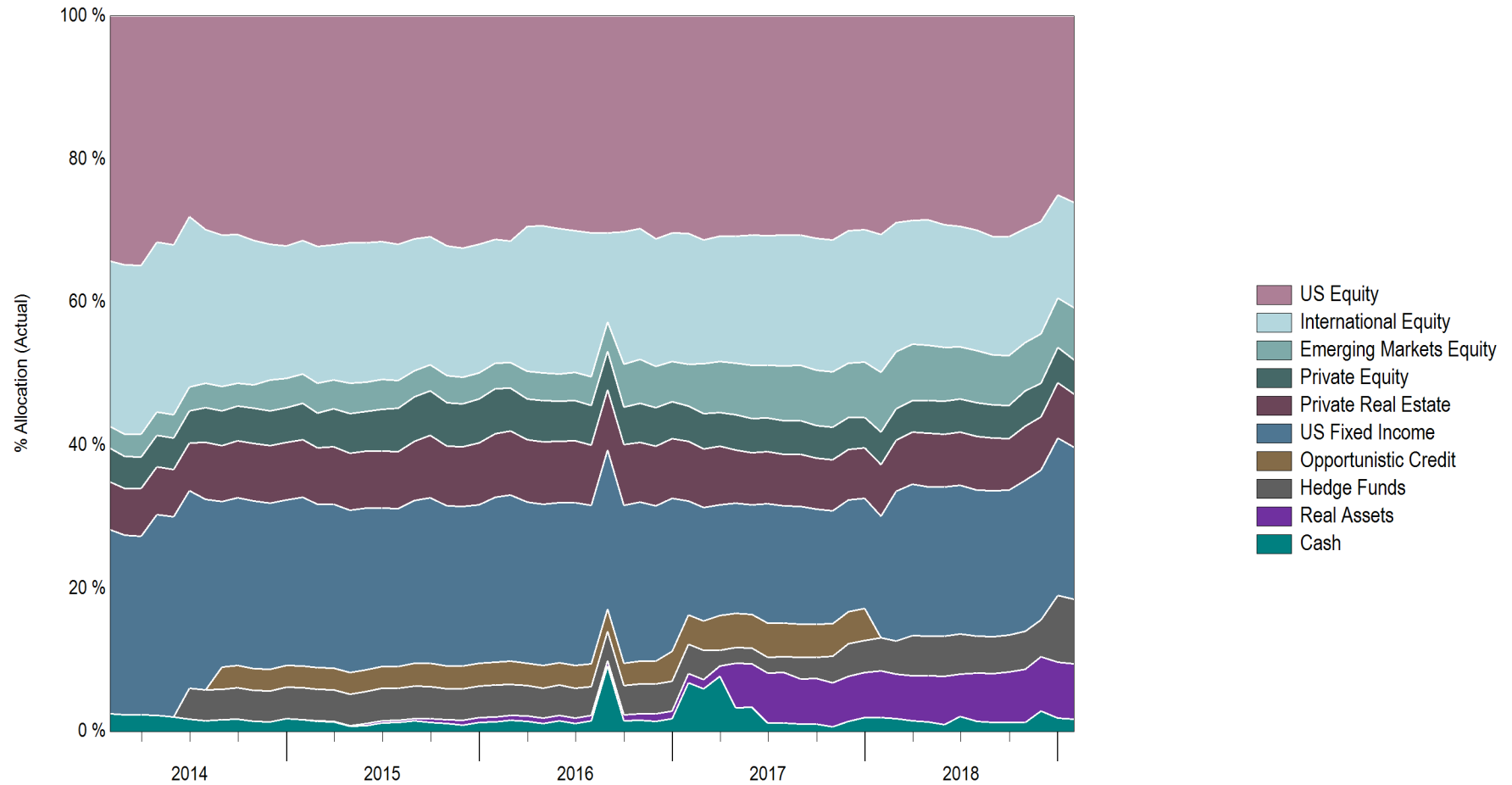


Cash range displayed for illustrative purposes only.

Allocation vs. Targets and Policy

	Current Balance	Current Allocation	Policy	Difference	Policy Range	Within IPS Range?
US Equity	\$212,245,572	26.1%	21.0%	5.1%	15.0% - 26.0%	No
International Equity	\$119,490,355	14.7%	10.0%	4.7%	5.0% - 15.0%	Yes
Emerging Markets Equity	\$59,456,783	7.3%	8.0%	-0.7%	4.0% - 12.0%	Yes
Private Equity	\$38,804,495	4.8%	15.0%	-10.2%	5.0% - 20.0%	No
Private Real Estate	\$60,446,256	7.4%	8.0%	-0.6%	6.0% - 10.0%	Yes
US Fixed Income	\$172,448,126	21.2%	18.0%	3.2%	13.0% - 23.0%	Yes
Opportunistic Credit	--	--	5.0%	-5.0%	3.0% - 7.0%	No
Hedge Funds	\$73,346,901	9.0%	10.0%	-1.0%	5.0% - 15.0%	Yes
Real Assets	\$63,189,921	7.8%	5.0%	2.8%	3.0% - 7.0%	No
Cash	\$13,739,968	1.7%	0.0%	1.7%	0.0% - 5.0%	Yes
Total	\$813,168,376	100.0%	100.0%			

Asset Allocation History
5 Years Ending January 31, 2019



As of January 31, 2019

Asset Class Performance Summary

	Market Value (\$)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund (Net)*	813,168,376	100.0	4.6	-1.0	4.6	-3.2	8.9	6.1	9.6	7.8	Dec-94
Total Fund (Gross)*			4.6	-0.8	4.6	-3.0	9.2	6.5	9.9	8.0	
<i>Policy Index</i>			4.2	-0.8	4.2	-2.5	9.4	6.6	9.5	5.8	Dec-94
Total Fund w/o Alternatives (Net)	563,640,835	69.3	6.1	-1.7	6.1	-5.4	9.4	6.0	--	--	Dec-94
Total Fund w/o Alternatives (Gross)			6.1	-1.6	6.1	-5.2	9.7	6.3	--	--	
<i>Policy Index w/o AI</i>			6.0	-0.6	6.0	-4.0	9.7	6.0	--	--	Dec-94
US Equity (Net)	212,245,572	26.1	8.9	-2.0	8.9	-3.6	14.7	11.0	15.6	9.8	Dec-94
US Equity (Gross)			8.9	-1.8	8.9	-3.3	15.0	11.2	15.8	9.8	
<i>80% R1000 / 20% R2000</i>			9.0	-1.4	9.0	-2.4	14.3	10.1	15.0	9.7	Dec-94
International Equity (Net)	178,947,137	22.0	8.2	-5.0	8.2	-13.1	9.1	2.8	8.8	5.0	Dec-98
International Equity (Gross)			8.2	-4.8	8.2	-12.8	9.6	3.4	9.3	5.2	
<i>International Equity Custom</i>			7.6	-3.6	7.6	-12.3	10.6	3.9	8.4	4.2	Dec-98
US Fixed Income (Net)	172,448,126	21.2	1.0	2.5	1.0	2.1	3.4	2.7	4.5	5.3	Dec-94
US Fixed Income (Gross)			1.0	2.6	1.0	2.3	3.6	2.9	4.9	5.4	
<i>US Fixed Custom</i>			0.9	2.6	0.9	2.4	3.5	2.9	3.9	5.6	Dec-94
Hedge Fund (Net)	73,346,901	9.0	1.6	-2.6	1.6	-1.8	5.1	--	--	3.4	Jun-14
Hedge Fund (Gross)			1.7	-2.5	1.7	-1.5	5.2	--	--	3.5	
<i>Hedge Fund Custom</i>			2.6	-2.3	2.6	-3.6	3.7	--	--	2.3	Jun-14
Private Equity (Net)	38,804,495	4.8	0.0	5.1	0.0	11.8	10.8	9.3	7.3	8.0	Jun-05
Private Equity (Gross)			0.0	5.1	0.0	11.8	10.8	9.3	7.6	8.2	
<i>Thomson Reuters Cambridge Private Equity Index</i>			0.0	3.8	0.0	12.3	14.4	13.9	--	--	Jun-05
Real Assets (Net)	123,636,177	15.2	1.6	2.3	1.6	3.4	6.7	7.5	--	--	Mar-99
Real Assets (Gross)			1.6	2.3	1.6	3.4	6.9	8.2	--	--	
<i>Real Asset Custom</i>			3.5	0.4	3.5	1.4	10.4	7.4	--	--	Mar-99

Data prior to March 2018 provided by prior consultant



As of January 31, 2019

	Market Value (\$)	% of Portfolio	1 Mo (%)	Fiscal YTD (%)	YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Real Estate (Net)	60,446,256	7.4	0.0	3.3	0.0	5.2	7.4	8.0	--	--	Mar-99
Private Real Estate (Gross)			0.0	3.3	0.0	5.2	7.6	8.8	7.7	8.7	
<i>NCREIF ODCE (net)</i>			<i>0.0</i>	<i>3.4</i>	<i>0.0</i>	<i>7.4</i>	<i>7.3</i>	<i>9.4</i>	<i>6.0</i>	<i>7.5</i>	<i>Mar-99</i>
Private Infrastructure (Net)	21,516,152	2.6	0.0	4.2	0.0	5.8	9.7	--	--	6.7	Dec-14
Private Infrastructure (Gross)			0.0	4.2	0.0	5.8	9.7	--	--	6.7	
<i>S&P Global Infrastructure Net TR USD</i>			<i>8.7</i>	<i>1.0</i>	<i>8.7</i>	<i>-3.7</i>	<i>9.2</i>	<i>5.1</i>	<i>--</i>	<i>3.2</i>	<i>Dec-14</i>
Private Natural Resources (Net)	9,623,144	1.2	0.0	6.6	0.0	8.7	20.8	--	--	17.9	Sep-15
Private Natural Resources (Gross)			0.0	6.6	0.0	8.7	20.8	--	--	17.9	
<i>S&P Global Natural Resources Index TR USD</i>			<i>9.6</i>	<i>-7.6</i>	<i>9.6</i>	<i>-8.9</i>	<i>18.7</i>	<i>2.5</i>	<i>4.6</i>	<i>14.4</i>	<i>Sep-15</i>
Cash (Net)	13,739,968	1.7	0.1	0.6	0.1	0.9	--	--	--	--	
Cash (Gross)			0.1	0.6	0.1	0.9	--	--	--	--	

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

As of January 31, 2019

Trailing Net Performance

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Fund(Net)*	813,168,376	100.0	--	4.6	-1.0	-3.2	8.9	6.1	9.6	7.8	Dec-94
<i>Policy Index</i>				4.2	-0.8	-2.5	9.4	6.6	9.5	5.8	Dec-94
Total Fund w/o Alternatives(Net)	563,640,835	69.3	69.3	6.1	-1.7	-5.4	9.4	6.0	--	--	Dec-94
<i>Policy Index w/o AI</i>				6.0	-0.6	-4.0	9.7	6.0	--	--	Dec-94
US Equity(Net)	212,245,572	26.1	37.7	8.9	-2.0	-3.6	14.7	11.0	15.6	9.8	Dec-94
<i>80% R1000 / 20% R2000</i>				9.0	-1.4	-2.4	14.3	10.1	15.0	9.7	Dec-94
Mellon Dynamic US Equity(Net)	76,220,461	9.4	35.9	8.9	-0.3	-4.4	15.8	13.2	--	16.1	Dec-12
<i>S&P 500</i>				8.0	0.6	-2.3	14.0	11.0	15.0	13.4	Dec-12
Mellon Large Cap(Net)	101,767,952	12.5	47.9	8.4	-0.2	-2.7	--	--	--	12.1	Mar-16
<i>Russell 1000</i>				8.4	0.3	-2.2	14.1	10.7	15.2	12.3	Mar-16
DFA Small Cap(Net)	17,219,764	2.1	8.1	10.1	-8.3	-5.0	12.9	--	--	6.7	Jun-14
<i>Russell 2000</i>				11.2	-8.0	-3.5	14.7	7.3	14.5	6.6	Jun-14
PanAgora(Net)	17,037,396	2.1	8.0	10.5	-11.5	-4.1	12.9	7.6	--	8.4	Sep-13
<i>Russell 2000</i>				11.2	-8.0	-3.5	14.7	7.3	14.5	7.9	Sep-13
International Equity(Net)	178,947,137	22.0	31.7	8.2	-5.0	-13.1	9.1	2.8	8.8	5.0	Dec-98
<i>International Equity Custom</i>				7.6	-3.6	-12.3	10.6	3.9	8.4	4.2	Dec-98
Copper Rock(Net)	19,886,095	2.4	11.1	9.1	-13.1	-19.7	3.3	2.7	--	3.7	Sep-13
<i>MSCI World ex USA Small Cap</i>				8.5	-9.8	-15.1	9.6	4.3	11.6	4.7	Sep-13
Mellon International(Net)	99,604,259	12.2	55.7	6.6	-5.5	-12.2	--	--	--	6.9	Mar-16
<i>MSCI EAFE</i>				6.6	-5.5	-12.5	7.7	2.7	8.1	6.5	Mar-16
Wells Capital(Net)	59,456,783	7.3	33.2	10.7	-1.4	-12.7	14.7	5.4	--	2.8	Mar-12
<i>MSCI Emerging Markets</i>				8.8	-0.5	-14.2	14.9	4.8	9.7	2.6	Mar-12

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 January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
US Fixed Income(Net)	172,448,126	21.2	30.6	1.0	2.5	2.1	3.4	2.7	4.5	5.3	Dec-94
<i>US Fixed Custom</i>				0.9	2.6	2.4	3.5	2.9	3.9	5.6	Dec-94
Barrow Hanley(Net)	135,179,627	16.6	78.4	1.1	2.7	2.3	2.0	2.4	--	3.2	Mar-10
<i>BBgBarc US Aggregate TR</i>				1.1	2.7	2.3	2.0	2.4	3.7	3.2	Mar-10
Vanguard Short-Term Treasury Index Fund(Net)	37,268,499	4.6	21.6	0.2	1.7	--	--	--	--	2.2	Feb-18
<i>BBgBarc US Govt 1-3 Yr TR</i>				0.3	1.8	2.2	0.8	0.8	1.1	2.2	Feb-18
Hedge Fund(Net)	73,346,901	9.0	9.0	1.6	-2.6	-1.8	5.1	--	--	3.4	Jun-14
<i>Hedge Fund Custom</i>				2.6	-2.3	-3.6	3.7	--	--	2.3	Jun-14
OZ Domestic II(Net)	9,646,203	1.2	13.2	3.9	-2.7	-1.9	6.8	--	--	4.9	Jun-14
Graham Absolute Return(Net)	7,233,928	0.9	9.9	3.3	-1.1	-2.3	--	--	--	2.2	Aug-17
Wellington-Archipelago(Net)	11,272,073	1.4	15.4	4.6	-2.2	-1.0	--	--	--	2.5	Aug-17
KLS Diversified(Net)	9,207,185	1.1	12.6	1.4	-1.6	1.5	--	--	--	2.5	Oct-17
Winton(Net)	5,912,575	0.7	8.1	-2.4	-4.2	-7.1	--	--	--	-0.4	Oct-17
Marshall Wace Eureka(Net)	3,062,842	0.4	4.2	1.6	-4.1	-2.7	--	--	--	1.5	Nov-17
Silver Point Capital(Net)	11,943,126	1.5	16.3	0.4	-4.2	-2.2	--	--	--	-0.1	Nov-17
<i>HFRI Fund of Funds Composite Index</i>				2.6	-2.3	-3.8	3.1	2.0	3.3	-0.6	Nov-17
Laurion Capital(Net)	5,074,480	0.6	6.9	-0.7	--	--	--	--	--	2.4	Aug-18
Taconic Opportunity Fund(Net)	9,994,488	1.2	13.6	0.3	--	--	--	--	--	--	Dec-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 January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity(Net)	38,804,495	4.8	4.8	0.0	5.1	11.8	10.8	9.3	7.3	8.0	Jun-05
<i>Thomson Reuters Cambridge Private Equity Index</i>				0.0	3.8	12.3	14.4	13.9	--	--	Jun-05
Adams Street(Net)	7,860,903	1.0	20.3	0.0	8.8	12.5	12.3	12.4	9.7	7.1	Sep-05
Invesco IV(Net)	474,703	0.1	1.2	0.0	-19.1	-16.1	5.7	7.1	7.4	8.3	Jun-05
Invesco VI(Net)	6,439,663	0.8	16.6	0.0	5.3	10.4	11.8	13.3	--	12.3	Jun-13
Ocean Avenue II(Net)	8,724,231	1.1	22.5	0.0	5.4	22.9	19.0	--	--	11.1	Jun-14
Pantheon I(Net)	1,019,139	0.1	2.6	0.0	3.9	7.0	6.7	5.4	5.0	3.7	Dec-05
Pantheon II(Net)	4,008,282	0.5	10.3	0.0	7.4	12.2	13.1	10.9	--	11.6	Dec-11
Pantheon Secondary(Net)	1,313,060	0.2	3.4	0.0	18.3	15.3	6.4	4.2	1.2	4.2	Jun-07
Raven Asset Fund II(Net)	3,385,915	0.4	8.7	0.0	4.0	5.9	-0.2	--	--	-1.9	Aug-14
Davidson Kempner Long-Term Distressed Opportunities Fund IV(Net)	2,039,602	0.3	5.3	0.0	12.0	--	--	--	--	12.8	Apr-18
GTCR Fund XII(Net)	1,026,416	0.1	2.6	0.0	0.0	--	--	--	--	0.0	Jun-18
Carrick Capital Partners III(Net)	762,581	0.1	2.0	0.0	--	--	--	--	--	-4.8	Aug-18
Taconic CRE Dislocation Fund II(Net)	1,250,000	0.2	3.2	0.0	--	--	--	--	--	0.0	Nov-18

All private markets performance and market values reflect a 9/30/2018 capital account balance unless otherwise noted.

The market values for the following funds reflect a 6/30/2018 capital account balance: Pantheon I and Pantheon II.

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

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

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 January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Cressey & Company Fund VI(Net)	500,000	0.1	1.3	0.0	--	--	--	--	--	0.0	Jan-19
Real Assets(Net)	123,636,177	15.2	15.2	1.6	2.3	3.4	6.7	7.5	--	--	Mar-99
Real Asset Custom				3.5	0.4	1.4	10.4	7.4	--	--	Mar-99
SSgA(Net)	32,050,625	3.9	25.9	6.4	-1.9	-2.4	--	--	--	3.4	Apr-17
Real Asset Custom				3.5	0.4	1.4	10.4	7.4	--	6.8	Apr-17
Private Real Estate(Net)	60,446,256	7.4	48.9	0.0	3.3	5.2	7.4	8.0	--	--	Mar-99
NCREIF ODCE (net)				0.0	3.4	7.4	7.3	9.4	6.0	7.5	Mar-99
Greenfield Gap VII(Net)	12,386,436	1.5	20.5	0.0	5.2	5.9	11.1	--	--	12.6	Dec-14
Patron Capital V(Net)	5,405,552	0.7	8.9	0.0	0.9	7.4	15.1	--	--	15.1	Jan-16
UBS Trumbull Property(Net)	42,214,117	5.2	69.8	0.0	3.2	4.9	5.2	7.5	5.5	7.3	Mar-99
Carlyle Realty VIII(Net)	440,151	0.1	0.7	0.0	-23.9	-23.9	--	--	--	-41.9	Dec-17
NCREIF-ODCE				0.0	3.9	8.3	8.2	10.4	7.0	7.7	Dec-17
Private Infrastructure(Net)	21,516,152	2.6	17.4	0.0	4.2	5.8	9.7	--	--	6.7	Dec-14
S&P Global Infrastructure Net TR USD				8.7	1.0	-3.7	9.2	5.1	--	3.2	Dec-14
KKR Global II(Net)	10,298,330	1.3	47.9	0.0	6.0	7.7	9.1	--	--	10.3	Dec-14
North Haven Infrastructure II(Net)	9,619,275	1.2	44.7	0.0	4.6	6.0	11.9	--	--	6.3	May-15
ISQ Global Infrastructure Fund II(Net)	1,252,108	0.2	5.8	0.0	-31.9	--	--	--	--	-31.9	Jul-18
DJ Brookfield Global Infrastructure Net TR USD				9.4	2.1	0.8	9.7	5.6	12.2	2.1	Jul-18
KKR Global Infrastructure Investors III(Net)	346,439	0.0	1.6	0.0	--	--	--	--	--	0.0	Jan-19
Private Natural Resources(Net)	9,623,144	1.2	7.8	0.0	6.6	8.7	20.8	--	--	17.9	Sep-15
S&P Global Natural Resources Index TR USD				9.6	-7.6	-8.9	18.7	2.5	4.6	14.4	Sep-15
EnCap XI(Net)	583,370	0.1	6.1	0.0	-9.9	-15.3	--	--	--	-36.1	Jul-17

As of January 31, 2019

	Market Value (\$)	% of Portfolio	% of Sector	1 Mo (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
EnCap IV(Net)	822,852	0.1	8.6	0.0	-9.6	--	--	--	--	-17.0	Feb-18
GSO Energy Opportunities(Net)	4,504,791	0.6	46.8	0.0	5.0	7.4	20.3	--	--	18.4	Nov-15
Taurus Mining(Net)	2,223,173	0.3	23.1	0.0	9.7	13.2	20.2	--	--	17.4	Sep-15
Taurus Mining Annex(Net)	1,488,958	0.2	15.5	0.0	15.3	19.5	--	--	--	29.7	Jan-17
Cash(Net)	13,739,968	1.7	1.7	0.1	0.6	0.9	--	--	--	--	
Cash(Net)	7,577,352	0.9	55.1	0.2	1.0	1.3	1.1	0.8	--	--	Sep-03
Treasury Cash(Net)	6,162,616	0.8	44.9								

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

Merced County Employees' Retirement Association

As of January 31, 2019

Benchmark History

As of January 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 / 13% Real Asset Custom
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
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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	62% NCREIF ODCE (net) / 19% S&P Global Natural Resources Index TR USD / 19% 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



As of January 31, 2019

Annual Investment Expense Analysis
As Of January 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Total Fund w/o Alternatives		\$563,640,835		
US Equity		\$212,245,572		
Mellon Dynamic US Equity	0.30% of Assets	\$76,220,461	\$228,661	0.30%
Mellon Large Cap	0.04% of First 100.0 Mil, 0.02% Thereafter	\$101,767,952	\$40,354	0.04%
DFA Small Cap	0.35% of Assets	\$17,219,764	\$60,269	0.35%
PanAgora	0.80% of Assets	\$17,037,396	\$136,299	0.80%
International Equity		\$178,947,137		
Copper Rock	0.85% of Assets	\$19,886,095	\$169,032	0.85%
Mellon International	0.04% of Assets	\$99,604,259	\$39,842	0.04%
Wells Capital	0.90% of First 100.0 Mil, 0.85% Thereafter	\$59,456,783	\$535,111	0.90%
US Fixed Income		\$172,448,126		
Barrow Hanley	0.30% of First 50.0 Mil, 0.20% of Next 100.0 Mil, 0.15% Thereafter	\$135,179,627	\$320,359	0.24%
Vanguard Short-Term Treasury Index Fund	0.05% of Assets	\$37,268,499	\$18,634	0.05%
Hedge Fund		\$73,346,901		
OZ Domestic II	Performance-based 1.50 and 20.00	\$9,646,203	\$215,440	2.23%
Graham Absolute Return	Performance-based 1.75 and 20.00	\$7,233,928	\$177,621	2.46%
Wellington-Archipelago	Performance-based 1.00 and 20.00	\$11,272,073	\$219,193	1.94%
KLS Diversified	Performance-based 2.00 and 20.00	\$9,207,185	\$210,129	2.28%
Winton	Performance-based 0.90 and 20.00	\$5,912,575	\$53,213	0.90%
Marshall Wace Eureka	Performance-based 2.00 and 20.00	\$3,062,842	\$71,174	2.32%
Silver Point Capital	Performance-based 2.00 and 20.00	\$11,943,126	\$249,447	2.09%
Laurion Capital		\$5,074,480		
Taconic Opportunity Fund		\$9,994,488		

As of January 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
Invesco IV		\$474,703		
Invesco VI		\$6,439,663		
Ocean Avenue II		\$8,724,231		
Pantheon I		\$1,019,139		
Pantheon II		\$4,008,282		
Pantheon Secondary		\$1,313,060		
Raven Asset Fund II		\$3,385,915		
Davidson Kempner Long-Term Distressed Opportunities Fund IV		\$2,039,602		
GTCR Fund XII		\$1,026,416		
Carrick Capital Partners III		\$762,581		
Taconic CRE Dislocation Fund II		\$1,250,000		
Cressey & Company Fund VI		\$500,000		
Real Assets		\$123,636,177		
SSgA	0.30% of First 50.0 Mil, 0.27% of Next 50.0 Mil, 0.25% Thereafter	\$32,050,625	\$96,152	0.30%
Private Real Estate		\$60,446,256		
Greenfield Gap VII		\$12,386,436		
Patron Capital V		\$5,405,552		
UBS Trumbull Property		\$42,214,117		
Carlyle Realty VIII		\$440,151		
Private Infrastructure		\$21,516,152		
KKR Global II		\$10,298,330		

As of January 31, 2019

Name	Fee Schedule	Market Value	Estimated Fee Value	Estimated Fee
North Haven Infrastructure II		\$9,619,275		
ISQ Global Infrastructure Fund II		\$1,252,108		
KKR Global Infrastructure Investors III		\$346,439		
Private Natural Resources		\$9,623,144		
EnCap XI		\$583,370		
EnCap IV		\$822,852		
GSO Energy Opportunities		\$4,504,791		
Taurus Mining		\$2,223,173		
Taurus Mining Annex		\$1,488,958		
Cash		\$13,739,968		
Cash		\$7,577,352		
Treasury Cash		\$6,162,616		

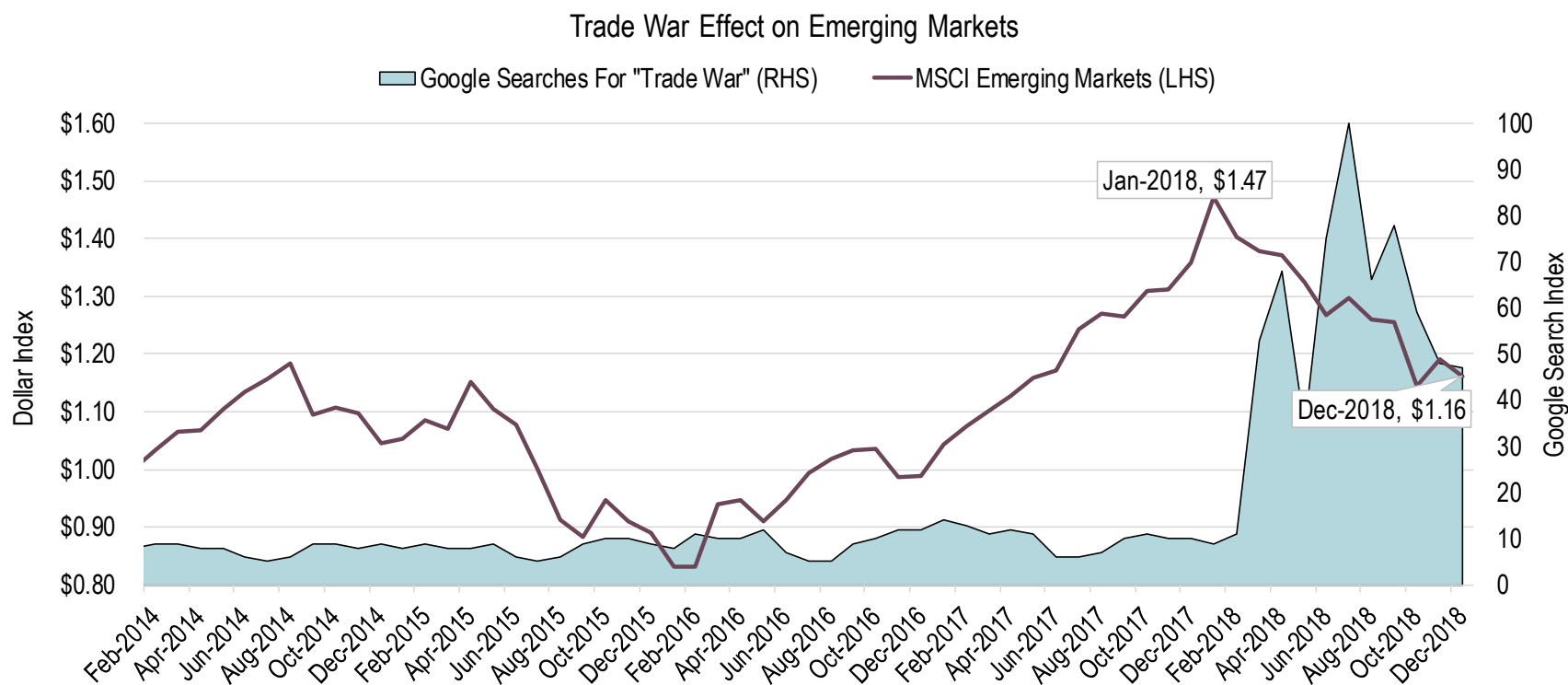
Emerging Market Equity

Emerging Market Equity – What Happened?

- Emerging Market Equity fell by 14.6% in 2018¹.
- What happened?
 - As always in financial markets, it was a combination of factors.
- The major contributors were:
 - Trade War Threats
 - Declining Chinese Growth
 - The Return of Market Volatility

¹ Proxied by the MSCI Emerging Markets Index.

Trade War



- As a proxy, we show an index of Google searches for the term "Trade War"¹.
 - Trade wars are very rare events, but this certainly had a negative impact for EM Equity.

¹ <https://trends.google.com/trends/explore?date=all&q=trade%20war>.

Why Trade Wars Matter

- Because of political frictions around trade, the International Monetary Fund (IMF) has lowered its growth projections in the World Economic Outlook.
 - The reduction for global growth was 20 basis points, from 3.7% to 3.5%.
- Future growth expectations are especially important for equities because equities represent investment in future earnings.
 - Therefore, if future earnings are expected to fall, the value of equities is lower.
- Trade is especially important to emerging markets.
 - For many of the largest economies in this group (e.g., China, India, Russia), the percent of GDP driven by trade is roughly double that of the U.S.¹

¹ <https://data.worldbank.org/indicator/NE.TRD.GNFS.ZS?end=2017&locations=CN-BR-IN-RU-US&start=1994>.

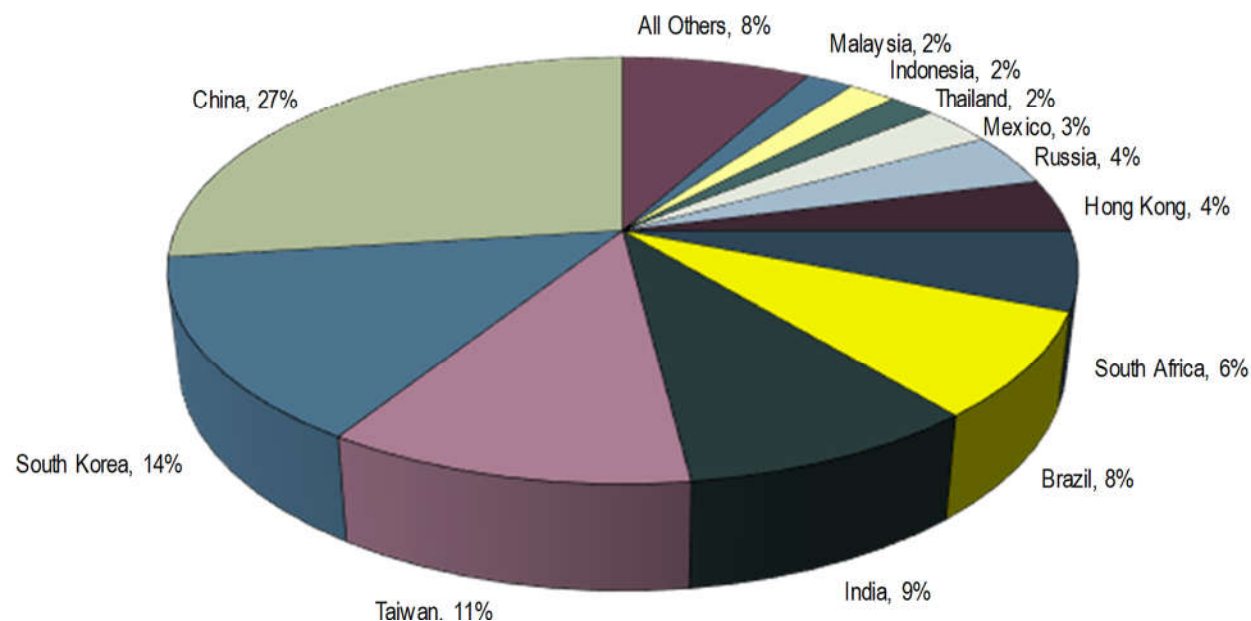
Falling Chinese Growth



- China is undoubtedly the most important economy in the Emerging Market asset class.
 - In 2018 specifically, as part of a longer-term trend, growth in China continued to slow.

China is the Largest Member of EM

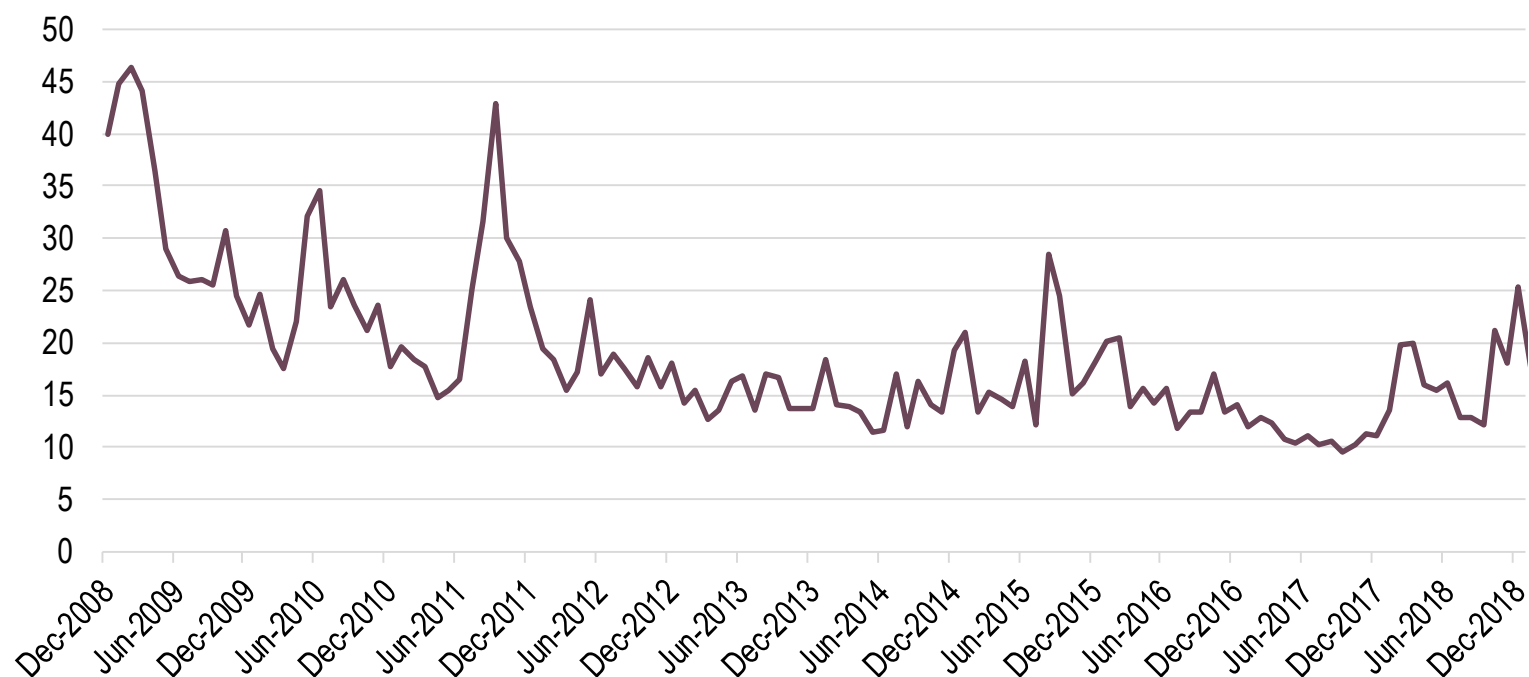
MSCI Emerging Markets By Country Weight



- Measuring the Market Capitalization of the MSCI Emerging Market Index shows China is by far the largest member.
 - As a result, falling growth in China has an outsized impact on this index.

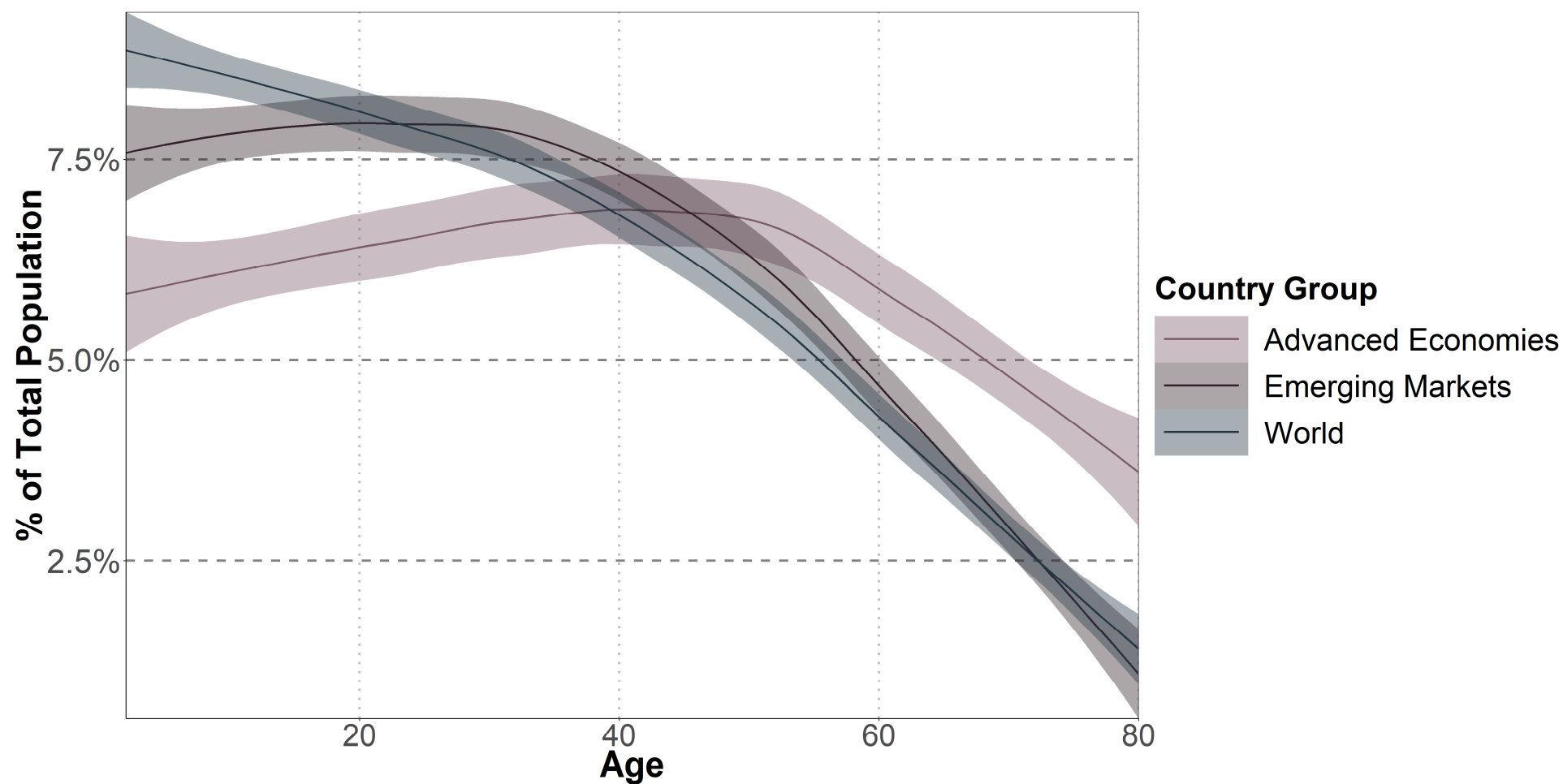
Return of Volatility

CBOE SPX VOLATILITY INDEX



- Another reason for underperformance of the asset class was volatility.
- As shown by the VIX index, 2018 saw a strong resurgence in market volatility.
 - While the VIX measures U.S. equity volatility, all geographies' equities experienced higher volatility.

The Case for EM Equity: Demographics Still Favorable



- While the entire world is aging, emerging markets are still younger than the developed markets.

The Case for EM Equity: Low Debt

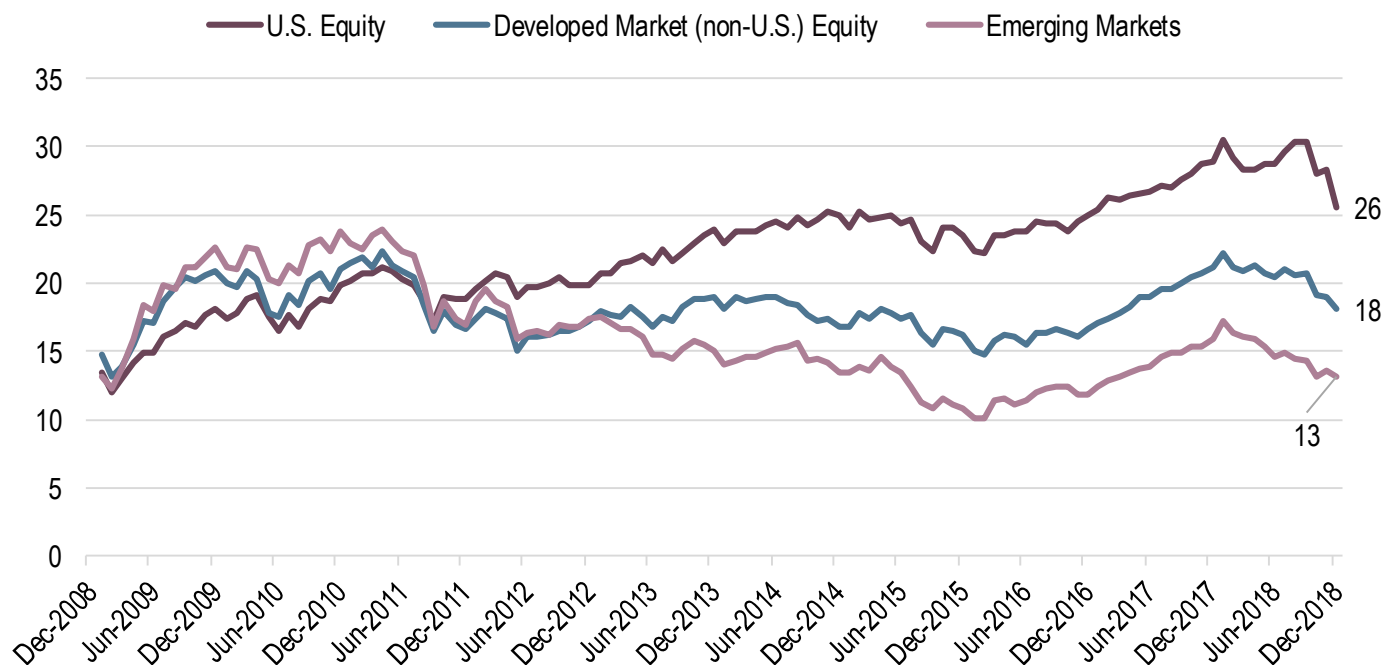
MSCI Region	Average Debt Burden ¹ (% of GDP)
United States	71
Developed Markets ex. U.S.	82
Emerging Markets	48

- The debt burden is also lower for these economies.
- This means that the ‘drag’ on the economy from required debt payments is low.

¹ This measure uses public debt less repayments. Data from CIA world fact book 2014 data.

The Case for EM Equity: Lower Price

Price to Average 10 Year Earnings (PE10)



- This ratio is the price multiple paid for average earnings.
- Indicates future expected earnings from Emerging Markets companies are less expensive.

Conclusions

- Emerging markets had a disappointing year in 2018.
 - A number of factors combined to cause this, of which some of the most important were:
 - The initiation of a trade war – where EM gets more growth
 - Declining Chinese growth – which is the largest component of EM
 - Return of market volatility – which tends to impact EM more than other assets
- The future for emerging markets is still strong.
 - Demographics are still more favorable.
 - Emerging markets have relatively low debt.
 - They also have lower valuations.
- The outlook for the asset class remains strong but its trajectory will likely continue to include such volatile years in the future.

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. 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.

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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.