



The Kansas Board of Regents Mandatory Retirement Plan

Voya Detailed Analysis

Vanguard Treasury Money Market Investor

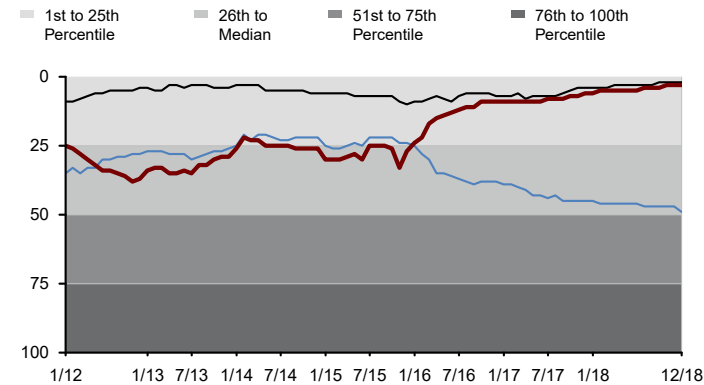
VUSXX

Index: BBgBarc US Treasury Bill 1-3 Mon TR USD

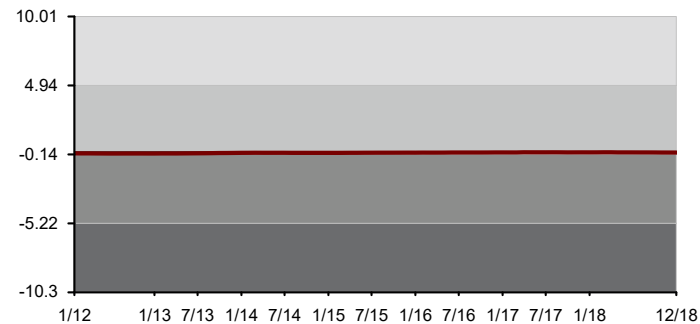
Category: Money Market-Taxable

Return Date: 12/31/2018

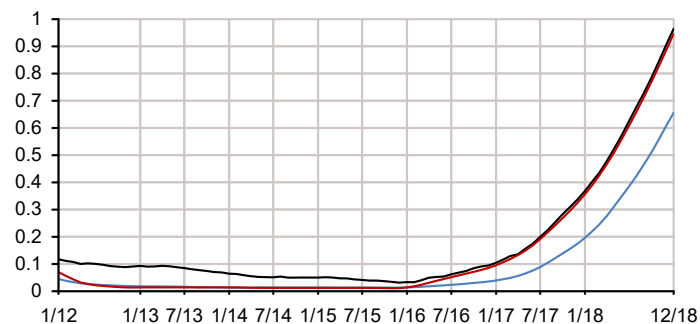
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



● Vanguard Treasury Money Market Investor
 ● BBgBarc US Treasury Bill 1-3 Mon TR USD
 ● Morningstar Money Market - Taxable

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	-	-
Holdings - Bonds	6.0	28.0	-
Holdings - Other	21.0	46.0	-
Turnover Ratio	-	20.8	-
Net Expense Ratio	0.1	0.5	-
Gross Expense Ratio	0.1	0.6	-
Avg Mkt Cap (\$MM)	-	-	-
Total Assets (\$MM)	23,262	21,914	-
P/E Ratio	-	-	-
P/B Ratio	-	-	-
P/S Ratio	-	-	-
P/CF Ratio	-	-	-
ROE %	-	-	-
ROA %	-	-	-
Dividend Yld	-	-	-

Sector Allocation (%)

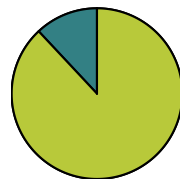
	Fund	Avg	Idx
Energy	0.0	-	-
Materials	0.0	-	-
Industrials	0.0	-	-
Cons Discretionary	0.0	0.0	-
Consumer Staples	0.0	0.0	-
Healthcare	0.0	-	-
Financials	0.0	-	-
Info Technology	0.0	-	-
Telecom Services	0.0	0.0	-
Utilities	0.0	-	-

Regional Allocation (%)

	Fund	Idx
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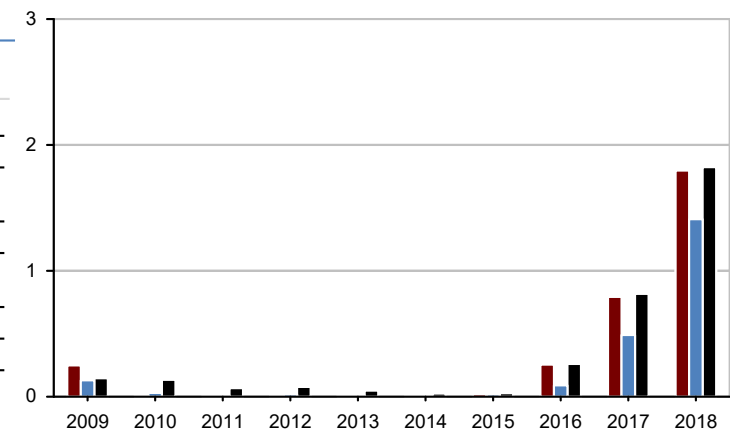
Asset Allocation

Portfolio Date: 08/31/2018



	%
Cash	88.03
Domestic Stock	-
Foreign Stock	-
Domestic Bond	11.97
Foreign Bond	-
Other	-

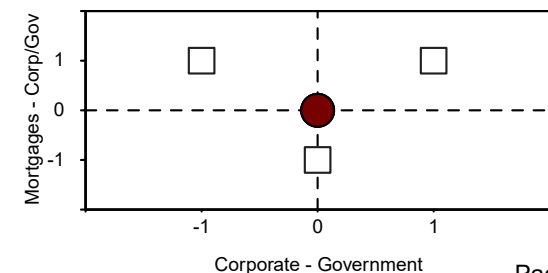
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	0.2	0.0	0.2	0.0
Beta	1.2	0.4	1.2	0.5
Alpha	-0.0	0.2	-0.0	0.1
Sharpe	-1.6	4.0	-1.5	1.6
Sortino	-1.7	1.1	-1.5	0.7
Info Ratio	-0.7	5.0	-0.7	2.3
Down Capture	0.0	5.7	-106.5	-85.3
Up Capture	98.1	33.6	97.1	33.7

Historical Style Analysis



PIMCO Real Return Instl

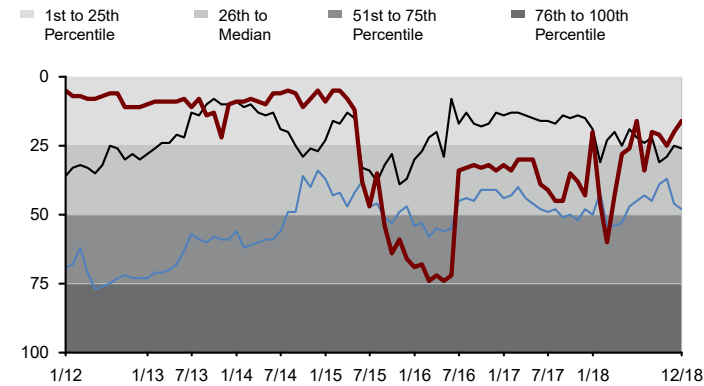
PRRIX

Index: BBgBarc US Treasury US TIPS TR USD

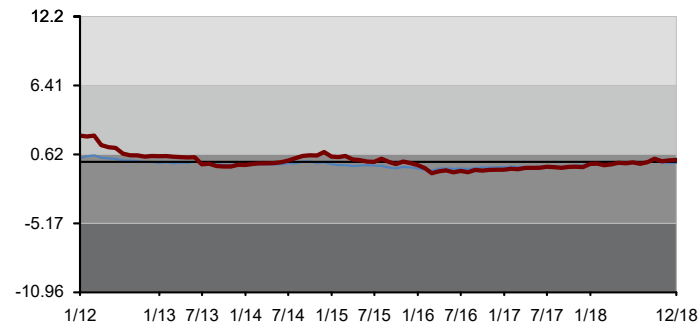
Category: Inflation-Protected Bon

Return Date: 12/31/2018

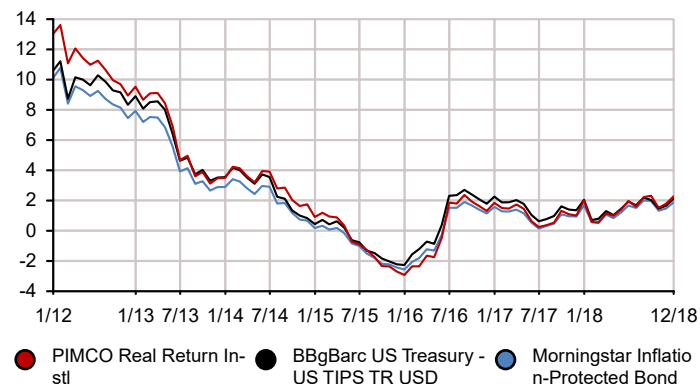
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

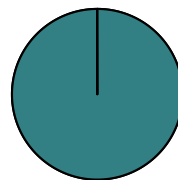


Sector Allocation (%)

Sector Weightings (%)	Fund	Avg
Cash & Equivalents	18.6	5.8
Government	45.4	69.9
Government Related	16.7	8.0
Muni Taxable	0.0	0.0
Muni Tax-Exempt	0.0	0.1
Bank Loan	0.0	1.3
Convertible	0.2	0.3
Corporated Bond	1.9	6.2
Preferred Stock	0.0	0.0
Agency MBS	8.0	2.0
Non-Agency MBS	0.6	0.4
Commercial MBS	0.0	1.3
Covered Bond	0.1	0.0
Asset-Backed	1.9	3.2

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	-
Domestic Stock	-
Foreign Stock	0.03
Domestic Bond	99.42
Foreign Bond	-
Other	0.01

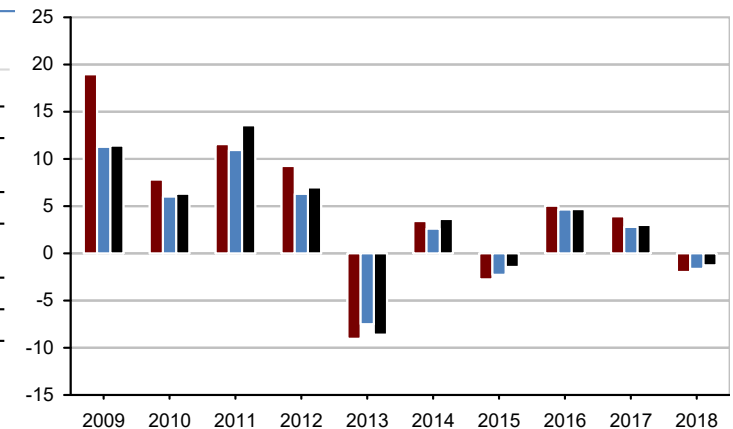
Portfolio Characteristics

	Fund	Avg
Holdings - Bonds	795.0	238.0
Holdings - Other	265.0	34.0
Total Assets (\$MMM)	9,917	2,288
Turnover Ratio	0.7	71.3
Net Expense Ratio	0.9	0.7
Gross Expense Ratio	0.9	0.9
Effective Duration	7.3	5.8
Effective Maturity	7.0	7.4
Avg Credit Quality	-	5.3
30 Day SEC Yield	2.4	2.1

Regional Exposure (%)

	Fund	Avg
United States	87.26	
United Kingdom	3.82	
Germany	1.75	
France	1.73	
Brazil	1.26	
Cayman Islands	0.82	
Australia	0.53	
New Zealand	0.46	
Netherlands	0.39	
Italy	0.36	

Calendar Year Returns



Risk Statistics

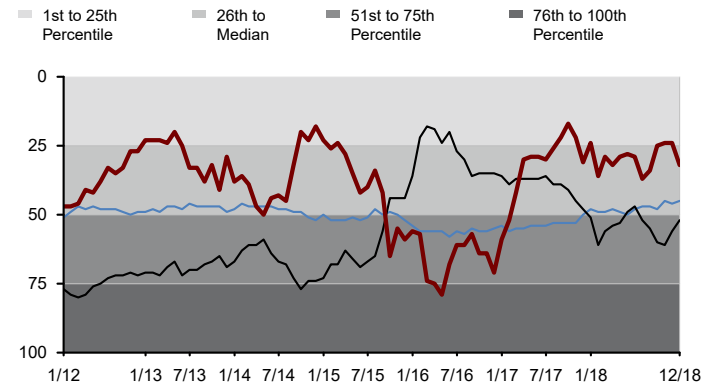
	3 Year		5 Year		Maturity Breakdown (%)	Credit Quality (%)			
	Fund	+/-Avg	Fund	+/-Avg		Fund	Avg		
Std Deviation	3.2	0.2	4.0	0.6	1-3 Yrs	15.5	AAA	88.0	80.7
Beta	1.0	0.1	1.1	0.2	3-5 Yrs	9.9	AA	1.0	3.9
Alpha	0.2	0.3	-0.3	0.1	5-7 Yrs	14.8	A	2.0	3.1
Sharpe	0.4	0.1	0.2	0.1	7-10 Yrs	21.1	BBB	4.0	6.8
Sortino	0.6	0.2	0.3	0.2	10-15 Yrs	9.0	BB	1.0	2.4
Info Ratio	0.2	0.7	-0.2	0.5	15-20 Yrs	1.5	B	1.0	1.7
Down Capture	93.0	9.3	114.9	21.4	20-30 Yrs	16.1	Below B	1.0	0.3
Up Capture	98.6	12.9	107.3	21.0	30+ Yrs	3.7	Not Rated	-	1.0

PIMCO Total Return Instl

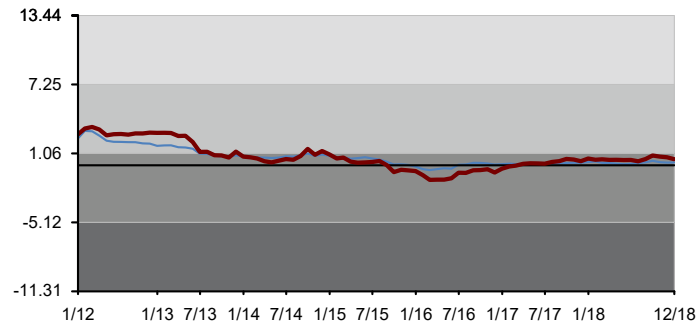
PTTRX

Index: BBgBarc US Agg Bond TR USD
 Category: Intermediate-Term Bond
 Return Date: 12/31/2018

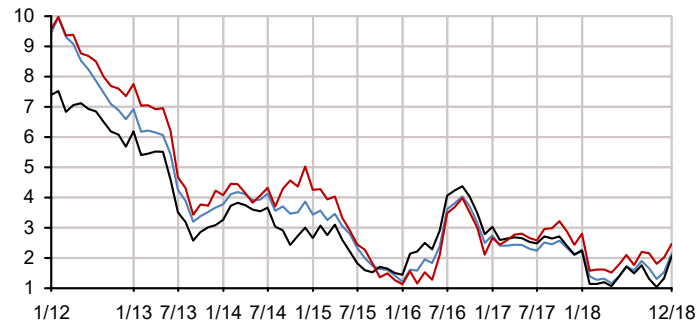
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



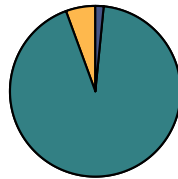
● PIMCO Total Return Instl ● BBgBarc US Agg Bond TR USD ● Morningstar Intermediate-Term Bond

Sector Allocation (%)

Sector Weightings (%)	Fund	Avg
Cash & Equivalents	15.0	5.6
Government	5.0	18.0
Government Related	27.2	8.2
Muni Taxable	0.0	0.2
Muni Tax-Exempt	0.6	1.4
Bank Loan	0.3	0.6
Convertible	0.3	0.4
Corporated Bond	9.5	27.9
Preferred Stock	0.0	0.1
Agency MBS	21.8	23.1
Non-Agency MBS	1.8	1.6
Commercial MBS	0.1	3.4
Covered Bond	0.1	0.1
Asset-Backed	5.3	8.5

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	-
Domestic Stock	1.55
Foreign Stock	-
Domestic Bond	91.81
Foreign Bond	-
Other	5.52

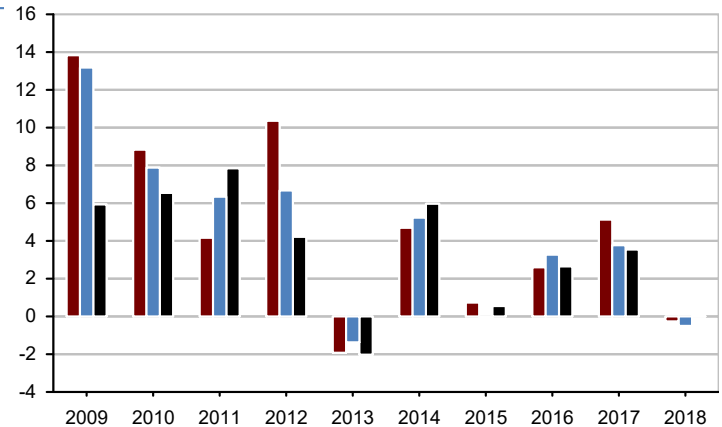
Portfolio Characteristics

	Fund	Avg
Holdings - Bonds	7379.0	1030.0
Holdings - Other	559.0	48.0
Total Assets (\$MMM)	66,639	5,835
Turnover Ratio	0.7	205.8
Net Expense Ratio	0.6	0.7
Gross Expense Ratio	0.6	1.8
Effective Duration	4.7	5.6
Effective Maturity	5.7	8.3
Avg Credit Quality	-	8.8
30 Day SEC Yield	3.1	3.1

Regional Exposure (%)

	Fund	Avg
United States	79.61	
Belize	6.65	
Germany	4.13	
United Kingdom	2.82	
Ireland	1.21	
Switzerland	0.79	
Japan	0.67	
Canada	0.57	
Cayman Islands	0.53	
Netherlands	0.38	

Calendar Year Returns



Risk Statistics

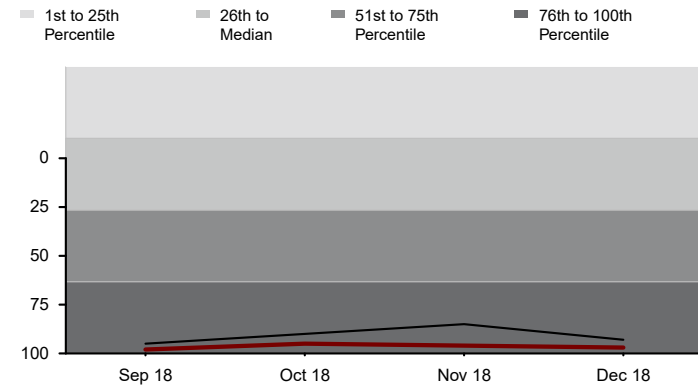
	3 Year		5 Year		Maturity Breakdown (%)	Credit Quality (%)			
	Fund	+/-Avg	Fund	+/-Avg		Fund	Fund Avg		
Std Deviation	2.8	0.1	2.9	0.3	1-3 Yrs	15.8	AAA	59.0	52.1
Beta	0.9	0.0	0.9	0.1	3-5 Yrs	7.0	AA	5.0	7.9
Alpha	0.5	0.3	0.2	0.1	5-7 Yrs	3.6	A	13.0	12.0
Sharpe	0.5	0.1	0.7	0.0	7-10 Yrs	1.9	BBB	11.0	18.4
Sortino	0.7	0.1	1.1	0.0	10-15 Yrs	3.5	BB	5.0	4.1
Info Ratio	0.3	0.4	0.0	0.4	15-20 Yrs	4.2	B	4.0	2.2
Down Capture	79.5	-2.0	96.0	8.3	20-30 Yrs	22.0	Below B	2.0	1.0
Up Capture	96.0	5.2	98.6	9.9	30+ Yrs	15.6	Not Rated	-	2.3

Amana Participation Institutional

AMIPX

Index: DJ Sukuk TR USD
Return Date: 12/31/2018

Fund Performance vs. Peer Group (Rolling 36 Months)



Sector Allocation (%)

Sector Weightings (%)	Fund
Cash & Equivalents	12.6
Government	0.0
Government Related	12.8
Muni Taxable	0.0
Muni Tax-Exempt	0.0
Bank Loan	0.0
Convertible	0.0
Corporated Bond	74.5
Preferred Stock	0.0
Agency MBS	0.0
Non-Agency MBS	0.0
Commercial MBS	0.0
Covered Bond	0.0
Asset-Backed	0.0

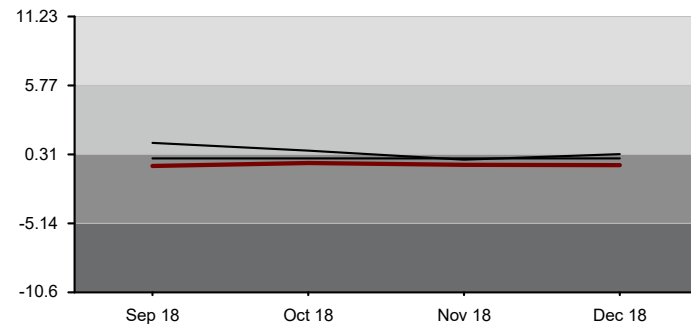
Portfolio Characteristics

	Fund	Avg
Holdings - Bonds	25.0	192.0
Holdings - Other	4.0	25.0
Total Assets (\$MMM)	65	805
Turnover Ratio	-	109.0
Net Expense Ratio	0.6	1.1
Gross Expense Ratio	0.6	4.1
Effective Duration	3.4	5.4
Effective Maturity	3.9	9.1
Avg Credit Quality	10.0	13.5
30 Day SEC Yield	3.4	5.8

Regional Exposure (%)

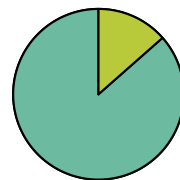
	Fund
United Arab Emirates	36.36
Cayman Islands	11.21
Qatar	10.33
Malaysia	10.19
Saudi Arabia	7.94
Supranational	5.9
United Kingdom	5.44
Indonesia	4.95
Oman	4.71
Vietnam	2.96

Alpha (Rolling 36 Months)



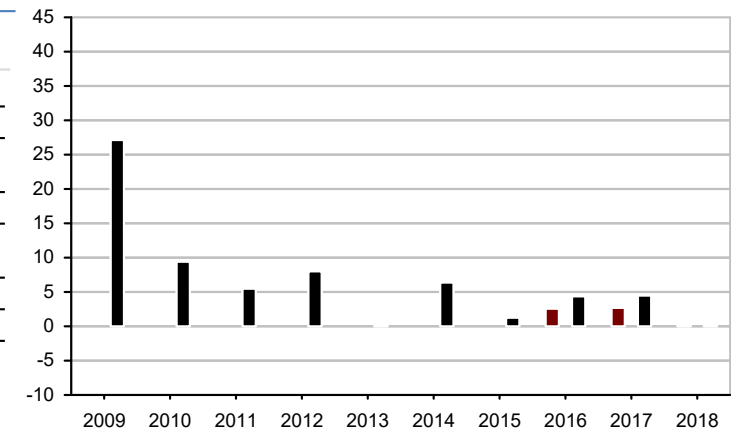
Asset Allocation

Portfolio Date: 11/30/2018

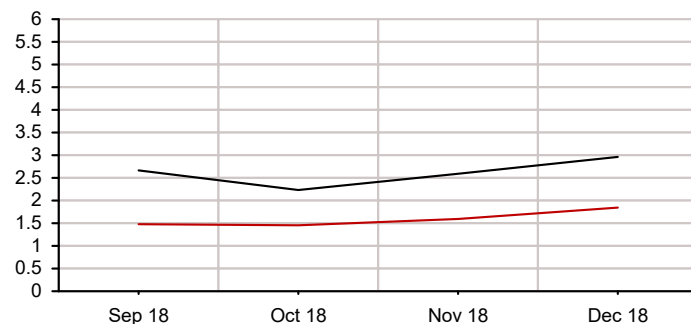


	%
Cash	13.5
Domestic Stock	-
Foreign Stock	-
Domestic Bond	-
Foreign Bond	86.5
Other	-

Calendar Year Returns



Returns (Rolling 36 Months)



● Amana Participation - Institutional ● DJ Sukuk TR USD ● Morningstar Emerging-Markets Bond

Risk Statistics

	3 Year Fund	5 Year Fund
Std Deviation	1.7	0.0
Beta	0.7	0.0
Alpha	-0.5	0.0
Sharpe	0.5	0.0
Sortino	0.8	0.0
Info Ratio	-1.3	0.0
Down Capture	76.3	0.0
Up Capture	67.3	0.0

Maturity Breakdown (%)

	Fund
1-3 Yrs	34.0
3-5 Yrs	12.8
5-7 Yrs	32.4
7-10 Yrs	15.1
10-15 Yrs	-
15-20 Yrs	-
20-30 Yrs	-
30+ Yrs	-

Credit Quality (%)

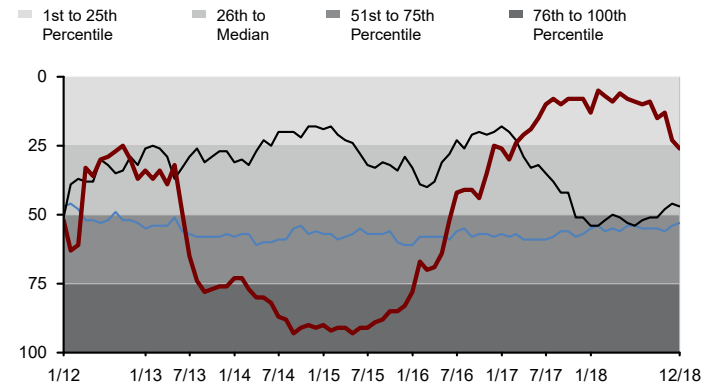
	Fund
AAA	8.3
AA	5.8
A	34.3
BBB	47.3
BB	-
B	4.3
Below B	-
Not Rated	2.6

BlackRock Equity Dividend Instl

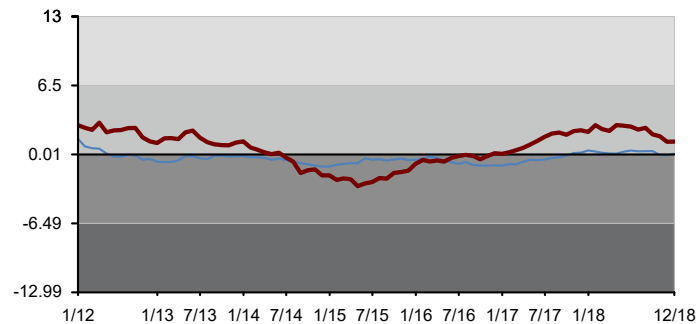
MADVX

Index: Russell 1000 Value TR USD
 Category: Large Value
 Return Date: 12/31/2018

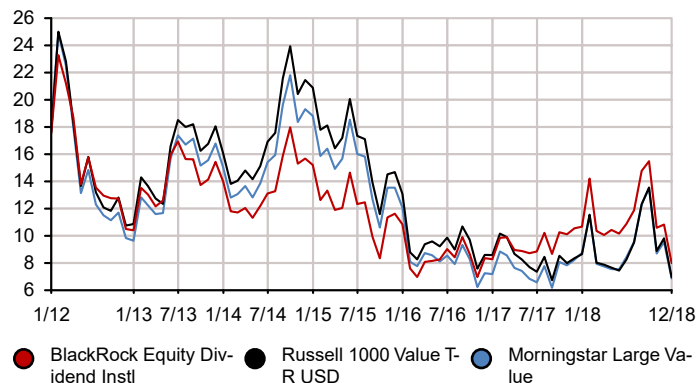
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	87.0	115.0	725.0
Holdings - Bonds	-	6.0	0.0
Holdings - Other	12.0	7.0	-
Turnover Ratio	36.0	58.5	-
Net Expense Ratio	0.7	1.0	-
Gross Expense Ratio	0.7	1.2	-
Avg Mkt Cap (\$MM)	93,196	64,959	56,845
Total Assets (\$MM)	17,618	3,630	-
P/E Ratio	15.7	15.6	13.4
P/B Ratio	2.0	2.2	1.8
P/S Ratio	1.5	1.8	1.5
P/CF Ratio	11.1	41.9	8.8
ROE %	18.6	14.7	-
ROA %	5.2	5.2	-
Dividend Yld	2.9	2.7	2.9

Sector Allocation (%)

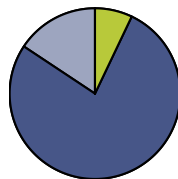
	Fund	Avg	Idx
Energy	11.6	9.8	9.4
Materials	1.6	3.3	3.8
Industrials	6.2	9.6	7.6
Cons Discretionary	4.8	6.9	-
Consumer Staples	11.8	9.9	-
Healthcare	22.3	14.8	15.6
Financials	26.8	21.3	22.2
Info Technology	11.6	11.1	9.2
Telecom Services	6.4	5.7	-
Utilities	4.1	5.0	6.4

Top 10 Holdings

	Fund %
Verizon Communications...	4.2
Pfizer Inc	4.2
JPMorgan Chase & Co	4.0
Wells Fargo & Co	3.5
Anthem Inc	3.1
Citigroup Inc	3.1
Bank of America Corpor...	3.0
Oracle Corp	2.6
Microsoft Corp	2.4
Suncor Energy Inc	2.2

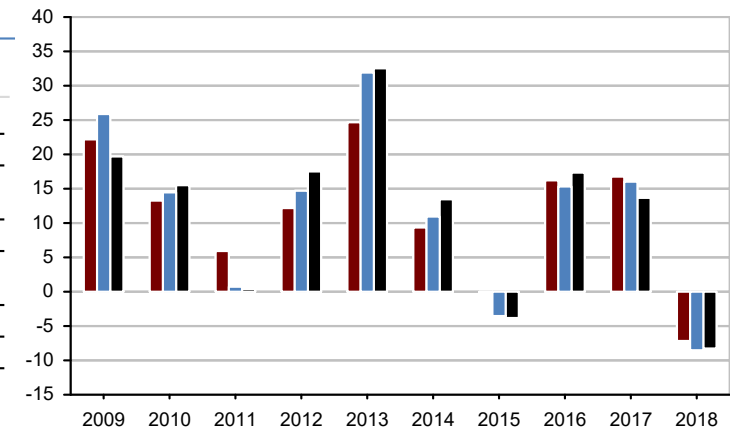
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	7.08
Domestic Stock	77.24
Foreign Stock	15.68
Domestic Bond	-
Foreign Bond	-
Other	-

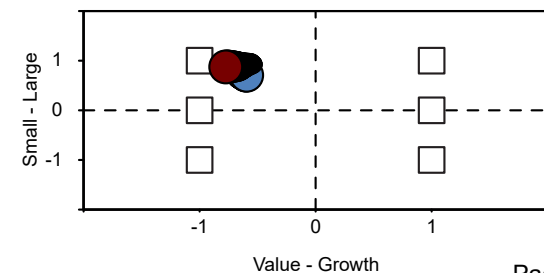
Calendar Year Returns



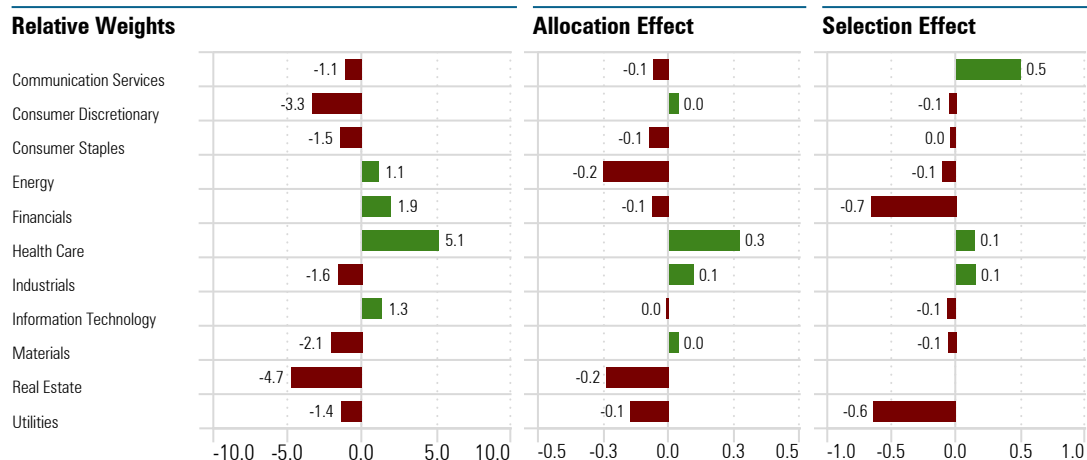
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	10.8	-0.6	10.7	-0.6
Beta	1.0	-0.0	1.0	-0.0
Alpha	1.2	1.2	0.8	1.2
Sharpe	0.7	0.1	0.6	0.1
Sortino	0.9	0.2	0.8	0.2
Info Ratio	0.4	0.5	0.3	0.5
Down Capture	92.2	-3.5	93.2	-4.8
Up Capture	100.6	4.1	98.6	3.4

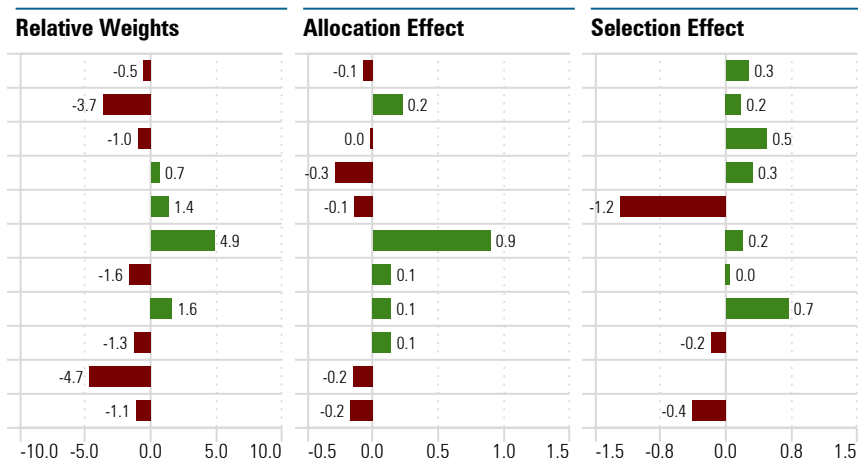
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
Verizon Communications Inc	4.11	6.45	0.21
BP PLC	2.09	-16.56	0.17
Enterprise Products Partners LP	1.32	-13.01	0.16
Pfizer Inc	4.33	-0.19	0.10
Arthur J. Gallagher & Co	0.71	-0.45	0.08
Williams Companies Inc	1.16	-17.75	0.06
AstraZeneca PLC	2.07	-3.81	0.06
Anthem Inc	3.15	-3.92	0.06
3M Co	0.69	-8.95	0.06
Marsh & McLennan Companies Inc	0.81	-3.10	0.06

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Microsoft Corp	2.54	20.27	0.42
Verizon Communications Inc	2.96	11.25	0.32
Dr Pepper Snapple Group Inc	0.38	26.31	0.31
AT&T Inc	0.01	1.11	0.29
Philip Morris International Inc	0.06	8.48	0.26
BP PLC	1.51	-6.14	0.25
Pfizer Inc	4.00	24.82	0.21
FirstEnergy Corp	1.24	27.83	0.19
Motorola Solutions Inc	0.96	29.63	0.18
Enterprise Products Partners LP	0.69	-12.25	0.18

Leading Detractors

Company	Rescaled Weight	Return	Active Return
PG&E Corp	1.04	-48.38	-0.51
Citigroup Inc	3.44	-26.94	-0.27
Royal Philips NV	1.97	-22.41	-0.26
Hess Corp	0.96	-43.14	-0.18
American International Group Inc	1.64	-25.33	-0.18
Devon Energy Corp	0.85	-43.40	-0.17
Altria Group Inc	1.24	-16.73	-0.15
Bayer AG	0.73	-22.10	-0.11
Procter & Gamble Co	0.89	11.43	-0.10
Mattel Inc	0.37	-36.37	-0.10

Leading Detractors

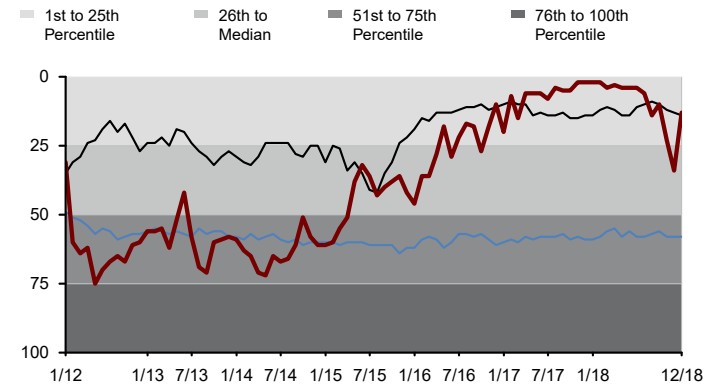
Company	Rescaled Weight	Return	Active Return
PG&E Corp	1.13	-47.02	-0.54
Bayer AG	0.55	-44.93	-0.35
American International Group Inc	1.90	-32.09	-0.32
Citigroup Inc	3.57	-28.49	-0.32
Chevron Corp	0.64	-2.69	-0.25
Cisco Systems Inc	0.52	5.96	-0.23
McKesson Corp	0.87	-28.39	-0.22
Altria Group Inc	1.01	-27.09	-0.20
Royal Philips NV	1.71	-4.53	-0.19
General Electric Co	1.05	-55.39	-0.15

American Funds Fundamental Invs R6

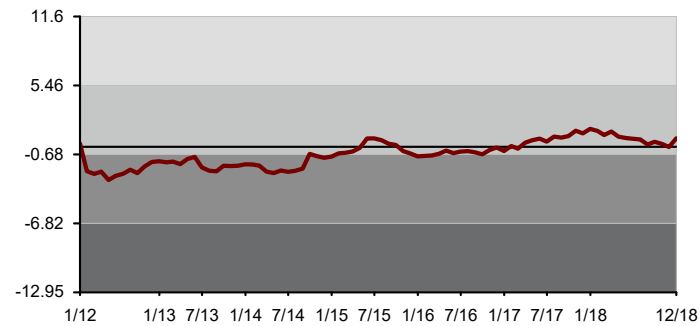
RFNGX

Index: S&P 500 TR USD
 Category: Large Blend
 Return Date: 12/31/2018

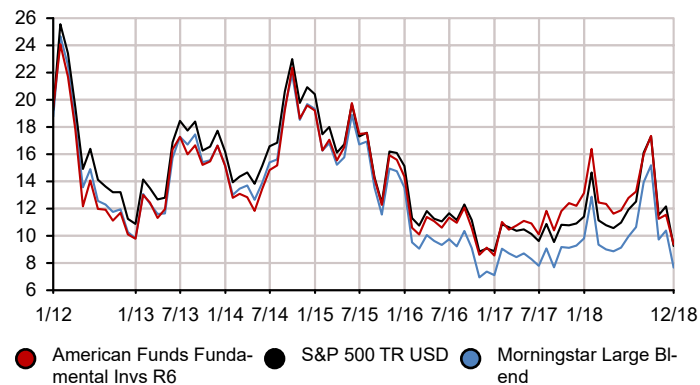
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

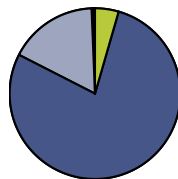


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	150.0	269.0	505.0
Holdings - Bonds	3.0	4.0	0.0
Holdings - Other	47.0	9.0	-
Turnover Ratio	29.0	55.0	-
Net Expense Ratio	0.3	0.9	-
Gross Expense Ratio	0.3	2.5	-
Avg Mkt Cap (\$MM)	118,632	77,281	93,688
Total Assets (\$MM)	88,296	9,701	-
P/E Ratio	16.5	18.6	17.2
P/B Ratio	2.7	3.0	2.7
P/S Ratio	2.5	2.0	2.0
P/CF Ratio	9.6	12.2	11.8
ROE %	24.1	23.8	-
ROA %	9.6	8.3	-
Dividend Yld	2.0	2.0	2.2

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	4.47
Domestic Stock	78.04
Foreign Stock	16.85
Domestic Bond	0.29
Foreign Bond	-
Other	0.35

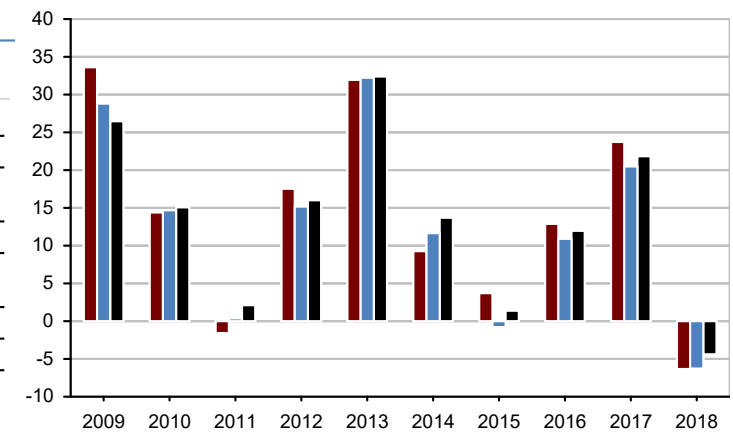
Sector Allocation (%)

	Fund	Avg	Idx
Energy	10.6	5.7	5.3
Materials	5.0	3.0	2.6
Industrials	8.6	11.6	9.9
Cons Discretionary	8.8	9.3	-
Consumer Staples	6.5	9.9	-
Healthcare	11.4	14.6	15.5
Financials	14.8	16.4	15.8
Info Technology	28.3	20.3	21.9
Telecom Services	5.8	5.9	-
Utilities	0.0	2.8	3.3

Top 10 Holdings

	Fund %
Microsoft Corp	5.5
Broadcom Inc	4.4
Amazon.com Inc	3.4
Berkshire Hathaway Inc A	2.8
Facebook Inc A	2.3
Intel Corp	2.2
Alphabet Inc Class C	2.0
Philip Morris Internat...	2.0
DowDuPont Inc	1.7
British American Tobac...	1.7

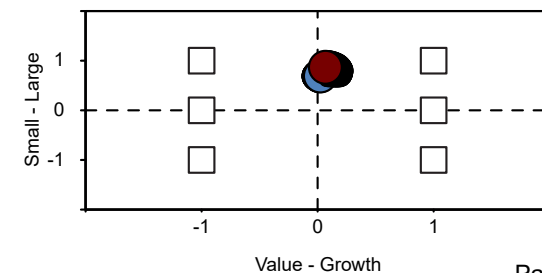
Calendar Year Returns



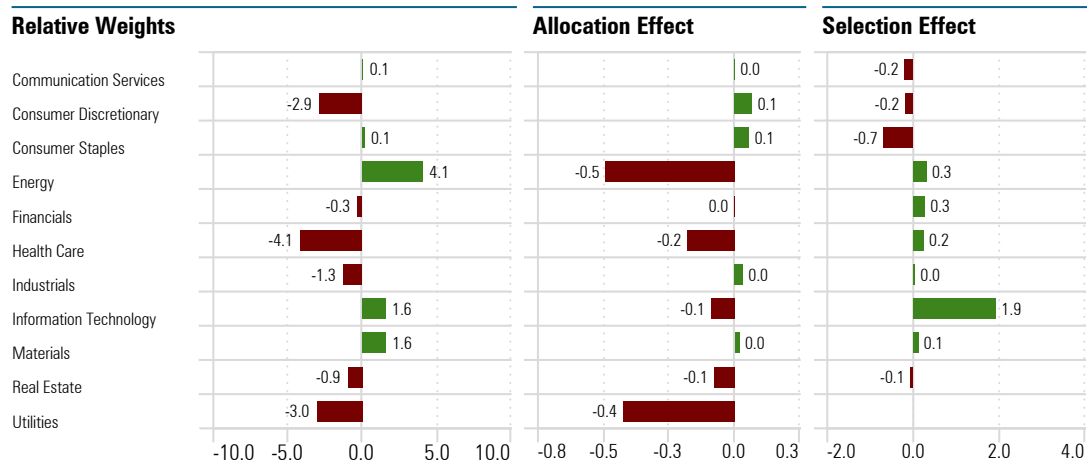
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	10.3	-1.0	10.8	-0.5
Beta	0.9	-0.1	1.0	-0.0
Alpha	0.8	1.9	-0.0	1.3
Sharpe	0.8	0.2	0.7	0.1
Sortino	1.1	0.3	1.1	0.3
Info Ratio	0.0	0.6	-0.1	0.4
Down Capture	94.7	-5.3	99.6	-2.9
Up Capture	97.4	5.0	98.1	4.8

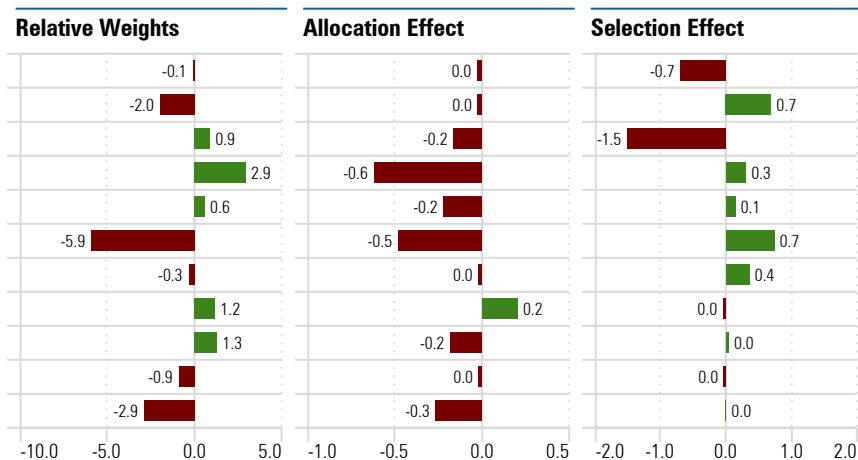
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
Broadcom Inc	4.60	4.15	0.91
Apple Inc	0.47	-29.88	0.54
Berkshire Hathaway Inc A	3.06	-4.38	0.26
Intel Corp	2.45	-0.13	0.22
Enbridge Inc	0.96	-2.19	0.21
CME Group Inc Class A	1.00	11.99	0.17
Itau Unibanco Holding SA ADR	0.41	25.04	0.13
Schlumberger Ltd	0.00		0.11
Merck & Co Inc	1.32	8.49	0.10
Microsoft Corp	5.88	-11.19	0.10

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Amazon.com Inc	3.80	28.43	0.51
Broadcom Inc	3.95	2.16	0.41
Berkshire Hathaway Inc A	2.59	2.82	0.36
Microsoft Corp	5.60	20.27	0.31
Boston Scientific Corp	1.25	42.56	0.30
CME Group Inc Class A	0.90	32.12	0.25
TransDigm Group Inc	0.81	23.83	0.23
Schlumberger Ltd	0.03	-3.20	0.21
General Electric Co	0.15	-33.55	0.19
ConocoPhillips	1.18	15.62	0.17

Leading Detractors

Company	Rescaled Weight	Return	Active Return
British American Tobacco PLC	1.69	-29.55	-0.43
Philip Morris International Inc	2.34	-16.83	-0.18
Chevron Corp	0.74	-10.18	-0.14
Concho Resources Inc	1.62	-32.71	-0.13
Amazon.com Inc	3.33	-25.01	-0.12
Procter & Gamble Co	0.31	11.43	-0.11
Charter Communications Inc A	1.61	-12.55	-0.11
SunTrust Banks Inc	0.89	-23.88	-0.08
Centene Corp	0.75	-20.36	-0.08
Verizon Communications Inc	0.36	6.45	-0.08

Leading Detractors

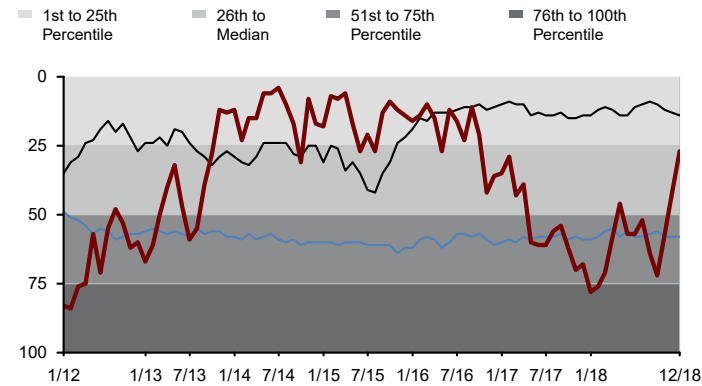
Company	Rescaled Weight	Return	Active Return
British American Tobacco PLC	1.90	-50.26	-1.03
Philip Morris International Inc	1.89	-33.24	-0.33
Baidu Inc ADR	0.86	-32.28	-0.25
Western Digital Corp	0.47	-51.91	-0.20
Concho Resources Inc	1.10	-31.57	-0.18
Capital One Financial Corp	1.33	-22.78	-0.16
Verizon Communications Inc	0.32	11.25	-0.14
Symantec Corp	0.31	-31.76	-0.13
BNP Paribas	0.48	-36.27	-0.13
Ryanair Holdings PLC ADR	0.36	-31.53	-0.13

Parnassus Core Equity Institutional

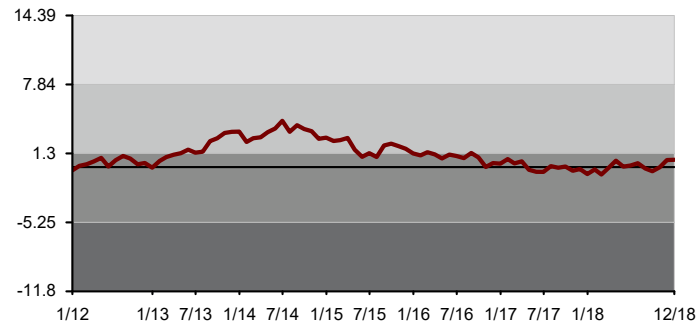
PRILX

Index: S&P 500 TR USD
 Category: Large Blend
 Return Date: 12/31/2018

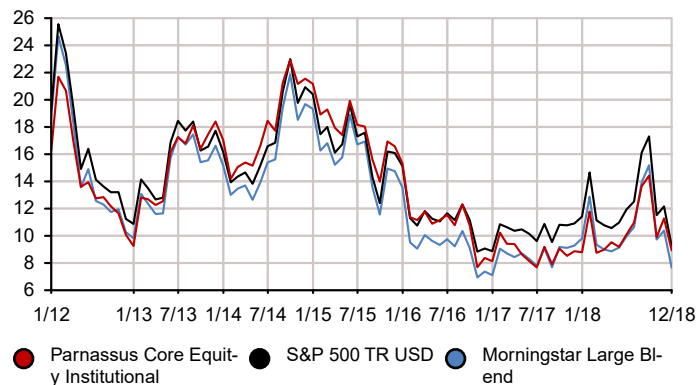
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

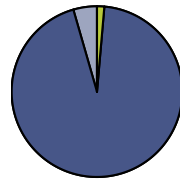


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	37.0	269.0	505.0
Holdings - Bonds	-	4.0	0.0
Holdings - Other	1.0	9.0	-
Turnover Ratio	24.5	55.0	-
Net Expense Ratio	0.6	0.9	-
Gross Expense Ratio	0.6	2.5	-
Avg Mkt Cap (\$MM)	48,247	77,281	93,688
Total Assets (\$MM)	14,723	9,701	-
P/E Ratio	25.9	18.6	17.2
P/B Ratio	4.4	3.0	2.7
P/S Ratio	2.3	2.0	2.0
P/CF Ratio	15.1	12.2	11.8
ROE %	27.8	23.8	-
ROA %	8.6	8.3	-
Dividend Yld	1.7	2.0	2.2

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.38
Domestic Stock	94.16
Foreign Stock	4.47
Domestic Bond	-
Foreign Bond	-
Other	-

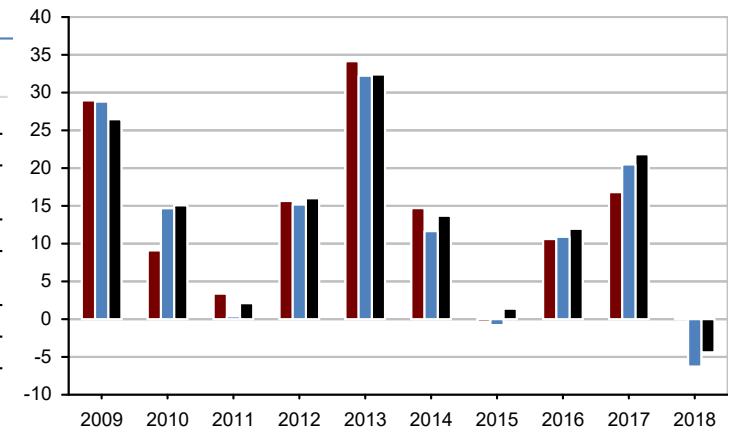
Sector Allocation (%)

	Fund	Avg	Idx
Energy	1.6	5.7	5.3
Materials	9.8	3.0	2.6
Industrials	17.9	11.6	9.9
Cons Discretionary	3.1	9.3	-
Consumer Staples	5.9	9.9	-
Healthcare	14.1	14.6	15.5
Financials	13.0	16.4	15.8
Info Technology	19.1	20.3	21.9
Telecom Services	11.2	5.9	-
Utilities	2.0	2.8	3.3

Top 10 Holdings

	Fund %
CVS Health Corp	5.2
Walt Disney Co	4.7
Linde PLC	4.5
3M Co	4.1
Clorox Co	3.8
American Express Co	3.6
Mastercard Inc A	3.5
Starbucks Corp	3.4
Synopsys Inc	3.2
Cadence Design Systems...	3.2

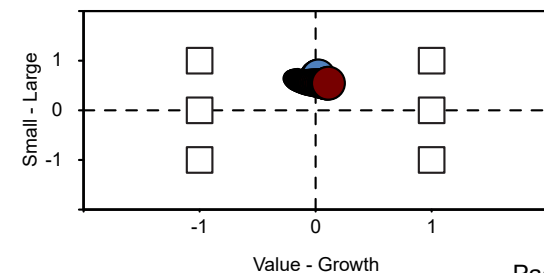
Calendar Year Returns



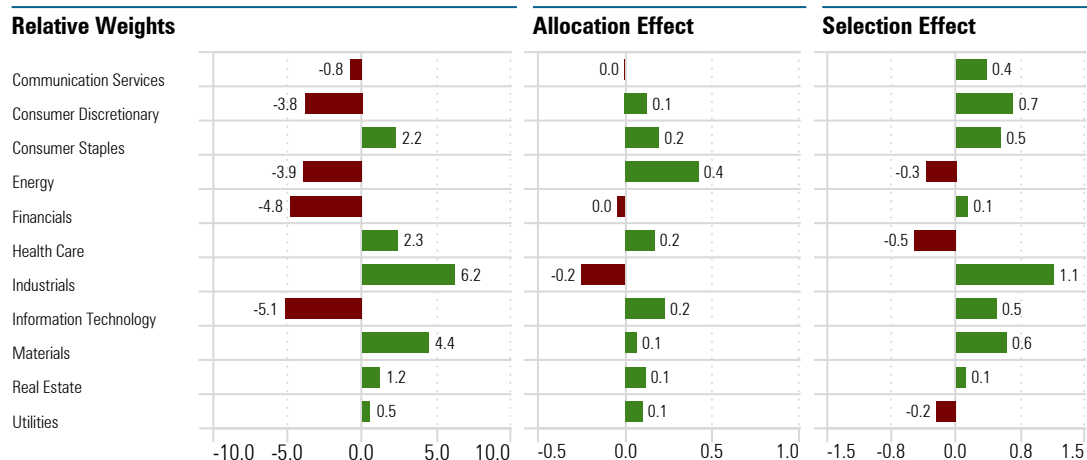
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	10.1	-1.3	10.0	-1.2
Beta	0.9	-0.1	0.9	-0.1
Alpha	0.7	1.9	0.6	1.9
Sharpe	0.8	0.2	0.8	0.2
Sortino	1.1	0.3	1.1	0.3
Info Ratio	-0.1	0.4	-0.1	0.4
Down Capture	84.5	-15.5	89.4	-13.2
Up Capture	89.0	-3.4	91.1	-2.2

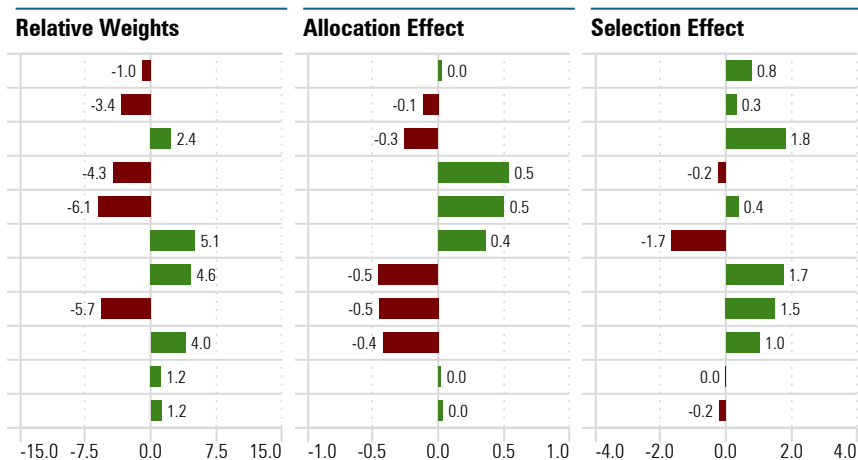
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
Starbucks Corp	3.18	13.91	0.78
Cadence Design Systems Inc	3.15	-4.06	0.44
Walt Disney Co	4.78	-5.50	0.43
Linde PLC	4.57	-2.41	0.39
Waste Management Inc	2.71	-1.02	0.38
Clorox Co	3.57	2.48	0.26
3M Co	4.02	-8.95	0.25
WD-40 Co	1.30	6.85	0.25
Hologic Inc	2.41	0.29	0.20
Verisk Analytics Inc	2.71	-9.55	0.19

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Mastercard Inc A	3.49	25.32	0.92
Linde PLC	4.84	2.99	0.74
WD-40 Co	1.14	57.67	0.72
Verisk Analytics Inc	2.83	13.58	0.69
Motorola Solutions Inc	2.34	29.63	0.62
Clorox Co	3.22	5.85	0.48
Cadence Design Systems Inc	1.61	8.54	0.43
Waste Management Inc	2.63	5.31	0.42
American Express Co	2.73	-1.18	0.41
3M Co	2.32	0.03	0.41

Leading Detractors

Company	Rescaled Weight	Return	Active Return
National Oilwell Varco Inc	1.81	-40.25	-0.34
CVS Health Corp	5.28	-16.19	-0.34
Gilead Sciences Inc	3.09	-18.30	-0.26
VF Corp	3.08	-23.15	-0.22
Microsoft Corp	0.00	-0.21	-0.21
Sysco Corp	2.59	-14.03	-0.18
Sempra Energy	2.15	-4.09	-0.11
Mastercard Inc A	3.69	-15.16	-0.08
Charles Schwab Corp	2.96	-15.28	-0.07
Cerner Corp	2.63	-18.58	-0.01

Leading Detractors

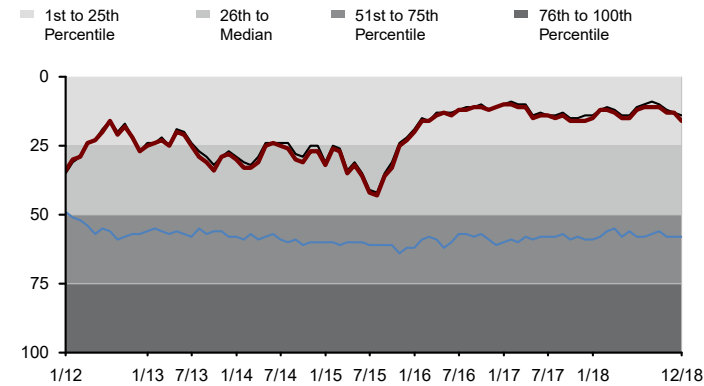
Company	Rescaled Weight	Return	Active Return
Gilead Sciences Inc	4.46	-9.92	-0.55
Microsoft Corp	0.00	-0.53	-0.53
CVS Health Corp	4.71	-7.03	-0.47
Charles Schwab Corp	2.98	-18.43	-0.25
National Oilwell Varco Inc	1.64	-28.27	-0.24
Hologic Inc	2.36	-3.86	-0.21
Wells Fargo & Co	0.68	-3.15	-0.21
Novartis AG ADR	2.54	12.94	-0.18
Pentair PLC	1.74	-18.22	-0.15
VF Corp	3.75	-1.29	-0.14

Vanguard Institutional Index I

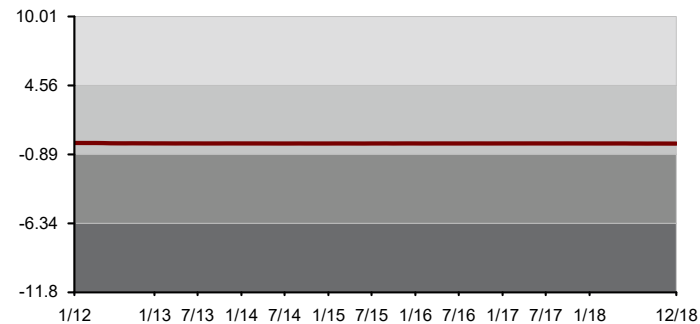
VINIX

Index: S&P 500 TR USD
 Category: Large Blend
 Return Date: 12/31/2018

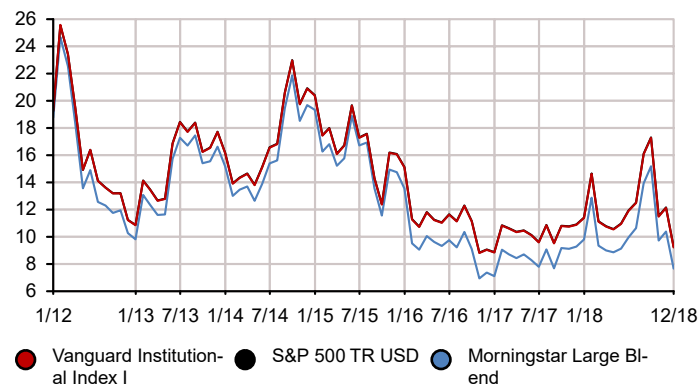
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	508.0	269.0	505.0
Holdings - Bonds	2.0	4.0	0.0
Holdings - Other	1.0	9.0	-
Turnover Ratio	5.0	55.0	-
Net Expense Ratio	0.0	0.9	-
Gross Expense Ratio	0.0	2.5	-
Avg Mkt Cap (\$MM)	101,945	77,281	93,688
Total Assets (\$MM)	200,004	9,701	-
P/E Ratio	18.8	18.6	17.2
P/B Ratio	3.0	3.0	2.7
P/S Ratio	2.2	2.0	2.0
P/CF Ratio	13.0	12.2	11.8
ROE %	23.8	23.8	-
ROA %	8.2	8.3	-
Dividend Yld	2.0	2.0	2.2

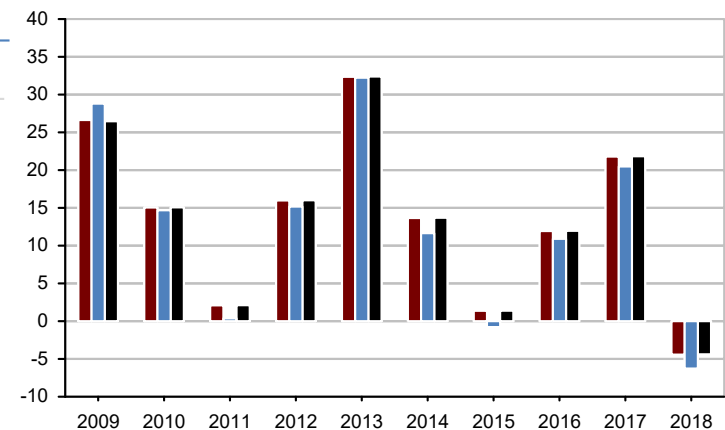
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.5	5.7	5.3
Materials	2.4	3.0	2.6
Industrials	10.1	11.6	9.9
Cons Discretionary	8.4	9.3	-
Consumer Staples	11.4	9.9	-
Healthcare	15.5	14.6	15.5
Financials	16.1	16.4	15.8
Info Technology	21.7	20.3	21.9
Telecom Services	6.0	5.9	-
Utilities	3.1	2.8	3.3

Top 10 Holdings

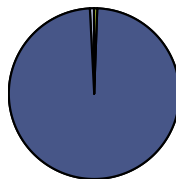
	Fund %
Microsoft Corp	3.6
Apple Inc	3.5
Amazon.com Inc	3.0
Berkshire Hathaway Inc B	1.8
Johnson & Johnson	1.7
JPMorgan Chase & Co	1.6
Facebook Inc A	1.4
Alphabet Inc Class C	1.4
Exxon Mobil Corp	1.4
Alphabet Inc A	1.4

Calendar Year Returns



Asset Allocation

Portfolio Date: 11/30/2018

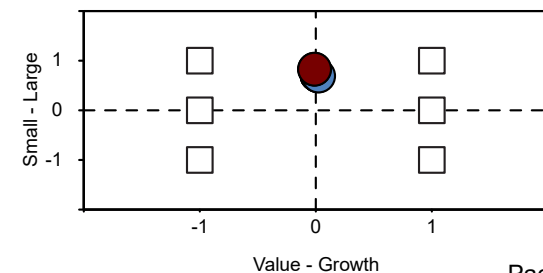


	%
Cash	0.58
Domestic Stock	98.6
Foreign Stock	0.79
Domestic Bond	0.02
Foreign Bond	-
Other	-

Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	11.0	-0.4	10.9	-0.3
Beta	1.0	0.0	1.0	0.0
Alpha	-0.0	1.1	-0.0	1.3
Sharpe	0.8	0.1	0.7	0.2
Sortino	1.0	0.2	1.1	0.3
Info Ratio	-4.0	-3.5	-2.9	-2.3
Down Capture	100.1	0.1	100.1	-2.5
Up Capture	99.9	7.5	99.9	6.6

Historical Style Analysis



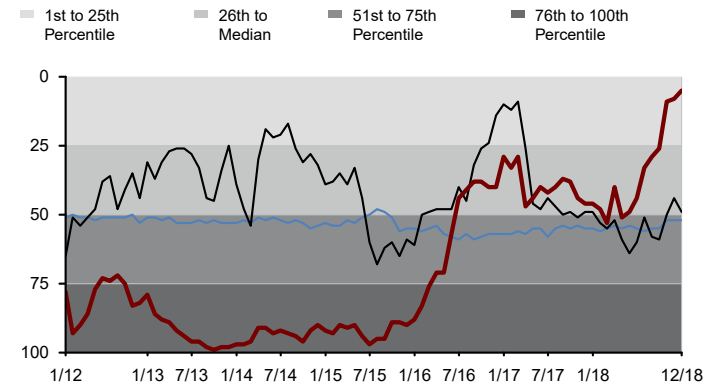
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Amana Growth Institutional

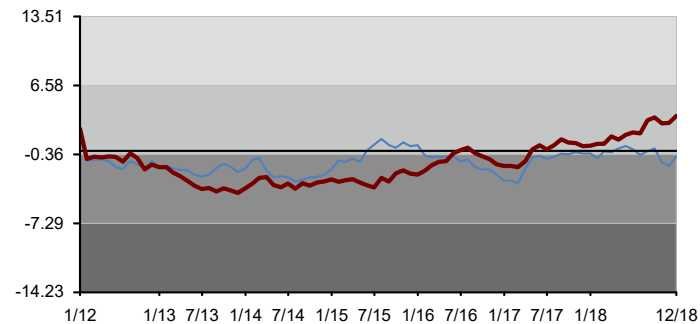
AMIGX

Index: S&P 500 TR USD
 Category: Large Growth
 Return Date: 12/31/2018

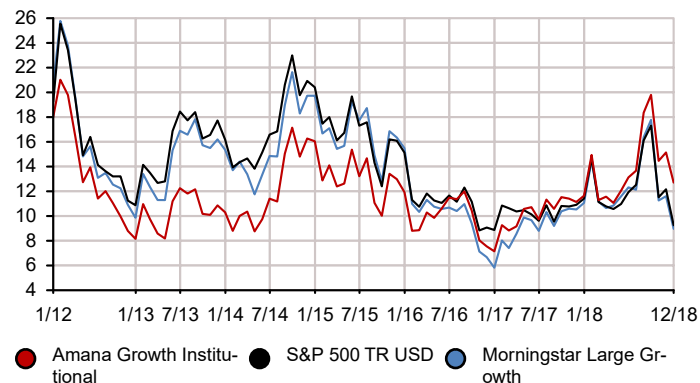
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

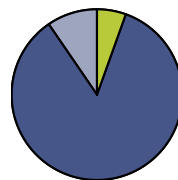


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	34.0	104.0	505.0
Holdings - Bonds	-	-	0.0
Holdings - Other	1.0	7.0	-
Turnover Ratio	-	54.3	-
Net Expense Ratio	0.9	1.1	-
Gross Expense Ratio	0.9	1.7	-
Avg Mkt Cap (\$MM)	66,254	87,396	93,688
Total Assets (\$MM)	1,711	6,022	-
P/E Ratio	27.0	26.2	17.2
P/B Ratio	5.8	5.2	2.7
P/S Ratio	3.4	3.4	2.0
P/CF Ratio	18.6	16.8	11.8
ROE %	28.1	23.8	-
ROA %	11.4	8.3	-
Dividend Yld	1.5	1.0	2.2

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	5.48
Domestic Stock	84.96
Foreign Stock	9.56
Domestic Bond	-
Foreign Bond	-
Other	-

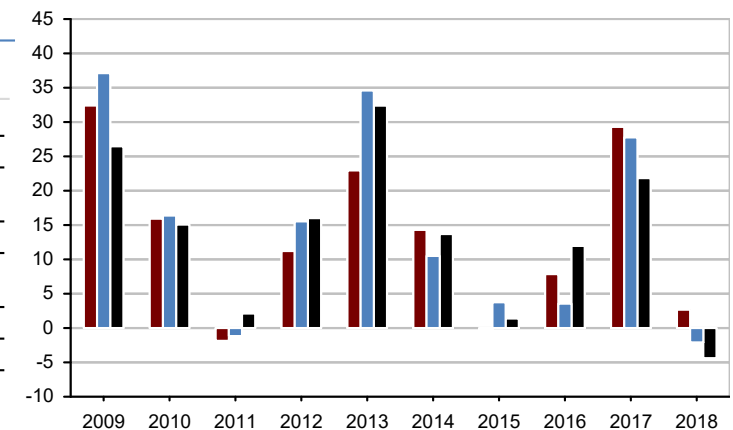
Sector Allocation (%)

	Fund	Avg	Idx
Energy	0.0	2.3	5.3
Materials	0.0	2.1	2.6
Industrials	12.3	10.2	9.9
Cons Discretionary	0.0	12.0	-
Consumer Staples	0.0	8.2	-
Healthcare	20.2	16.0	15.5
Financials	0.0	12.8	15.8
Info Technology	49.3	31.5	21.9
Telecom Services	0.0	8.2	-
Utilities	0.0	0.5	3.3

Top 10 Holdings

	Fund %
Adobe Inc	6.0
Intuit Inc	5.2
Apple Inc	4.8
Church & Dwight Co Inc	4.3
Amgen Inc	4.0
Cisco Systems Inc	3.8
TJX Companies Inc	3.7
The Estee Lauder Compa...	3.5
Agilent Technologies Inc	3.5
Johnson & Johnson	3.3

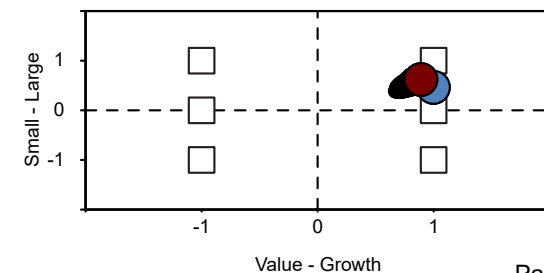
Calendar Year Returns



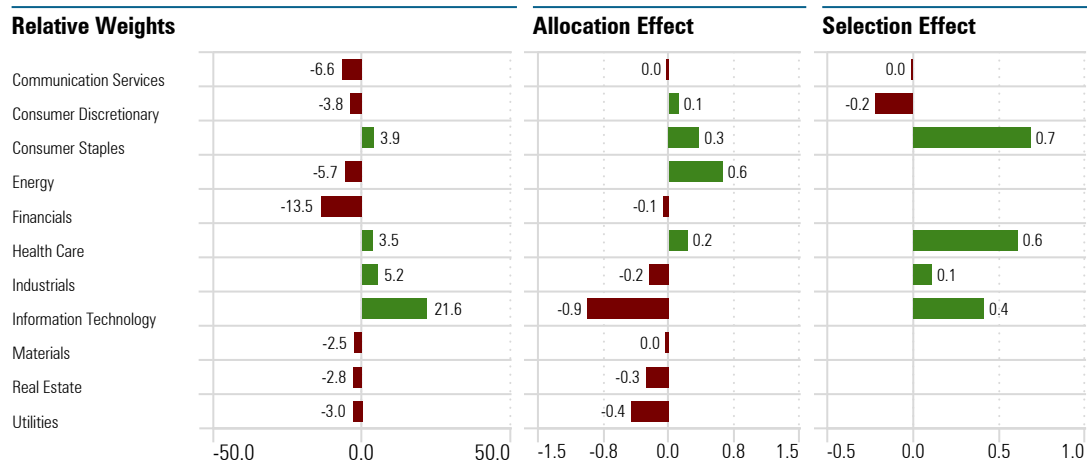
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	11.2	-1.8	11.4	-1.1
Beta	1.0	-0.0	1.0	-0.0
Alpha	3.5	5.4	1.8	3.8
Sharpe	1.0	0.4	0.9	0.2
Sortino	1.6	0.7	1.4	0.4
Info Ratio	0.9	1.5	0.5	1.1
Down Capture	89.4	-15.2	96.7	-8.9
Up Capture	111.8	19.0	107.5	14.8

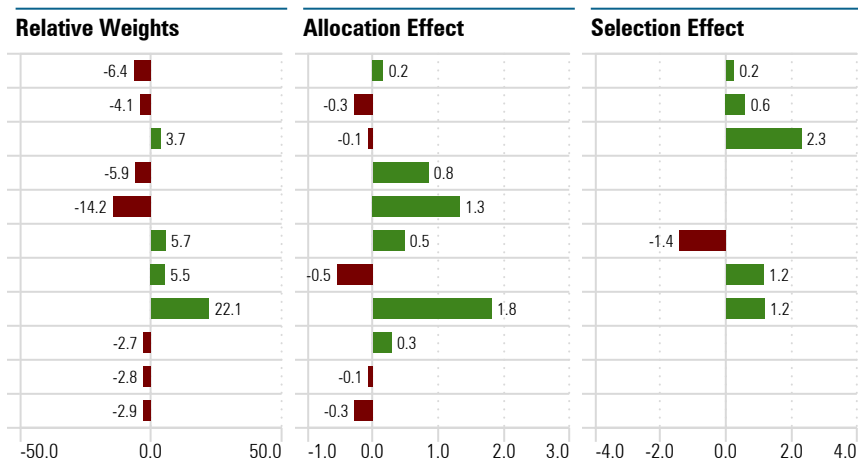
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

	Rescaled Weight	Return	Active Return
Church & Dwight Co Inc	4.15	11.13	0.62
Xilinx Inc	2.89	6.68	0.61
Apple Inc	5.85	-29.88	0.38
Intuit Inc	5.48	-13.25	0.25
Eli Lilly and Co	2.19	8.39	0.25
Keysight Technologies Inc	1.73	-6.34	0.20
Novo Nordisk A/S ADR	2.56	-2.27	0.17
Clorox Co	2.17	2.48	0.15
Agilent Technologies Inc	3.49	-4.13	0.15
Fastenal Co	1.89	-9.16	0.14

Leading Contributors

	Rescaled Weight	Return	Active Return
Church & Dwight Co Inc	3.74	33.23	1.46
Adobe Inc	6.09	29.10	1.30
Intuit Inc	5.10	25.85	1.15
Xilinx Inc	2.59	28.77	0.72
Keysight Technologies Inc	1.61	49.23	0.66
TJX Companies Inc	3.79	18.95	0.53
Norfolk Southern Corp	2.73	5.22	0.44
The Estee Lauder Companies Inc Class A	3.78	3.38	0.40
Eli Lilly and Co	2.21	40.45	0.35
Union Pacific Corp	2.55	5.27	0.31

Leading Detractors

	Rescaled Weight	Return	Active Return
Trimble Inc	3.32	-24.28	-0.22
The Estee Lauder Companies Inc Class A	3.64	-10.20	-0.16
TJX Companies Inc	4.17	-19.83	-0.15
Celgene Corp	0.87	-28.38	-0.12
EMCOR Group Inc	2.79	-20.44	-0.10
Stryker Corp	2.89	-11.48	-0.07
Lowe's Companies Inc	2.27	-19.17	-0.07
Harris Corp	3.35	-20.05	-0.07
Qualcomm Inc	2.88	-20.13	-0.04
SAP SE ADR	1.97	-19.07	-0.02

Leading Detractors

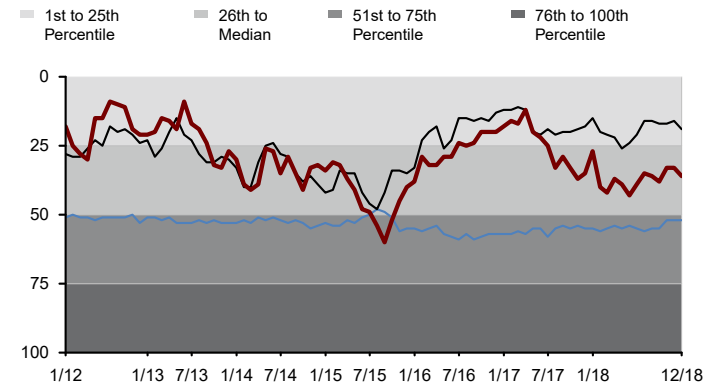
	Rescaled Weight	Return	Active Return
Trimble Inc	3.31	-19.02	-0.67
Novo Nordisk A/S ADR	2.86	-11.88	-0.55
EMCOR Group Inc	3.05	-26.68	-0.54
Dentsply Sirona Inc	0.52	-47.08	-0.39
Celgene Corp	1.02	-38.59	-0.33
ASML Holding NV ADR	3.45	-9.67	-0.28
SAP SE ADR	2.07	-10.05	-0.19
Agilent Technologies Inc	3.53	1.46	-0.15
Qualcomm Inc	2.88	-7.59	-0.11
Stryker Corp	2.92	2.43	-0.11

Voya Large Cap Growth Port I

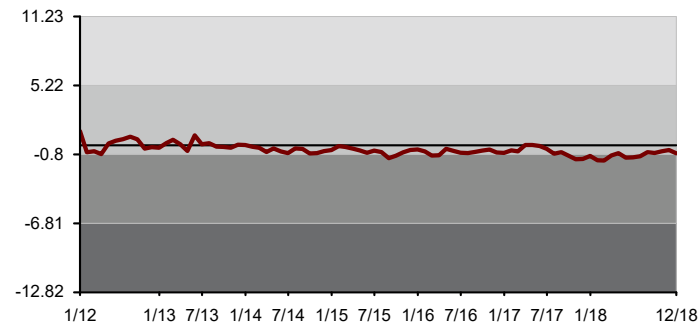
IEOHX

Index: Russell 1000 Growth TR USD
 Category: Large Growth
 Return Date: 12/31/2018

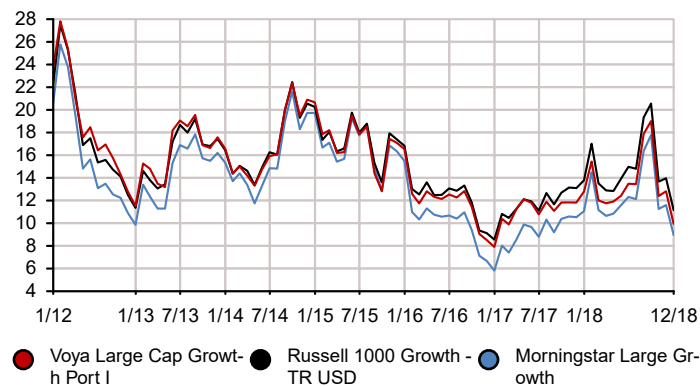
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	51.0	104.0	546.0
Holdings - Bonds	-	-	0.0
Holdings - Other	1.0	7.0	-
Turnover Ratio	65.0	54.3	-
Net Expense Ratio	0.7	1.1	-
Gross Expense Ratio	0.7	1.7	-
Avg Mkt Cap (\$MM)	118,071	87,396	93,288
Total Assets (\$MM)	5,094	6,022	-
P/E Ratio	29.0	26.2	22.4
P/B Ratio	6.7	5.2	5.5
P/S Ratio	3.5	3.4	2.8
P/CF Ratio	17.8	16.8	14.7
ROE %	31.1	30.9	-
ROA %	11.1	10.6	-
Dividend Yld	1.0	1.0	1.4

Sector Allocation (%)

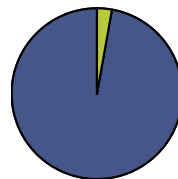
	Fund	Avg	Idx
Energy	0.8	2.3	0.8
Materials	0.4	2.1	1.7
Industrials	16.6	10.2	12.9
Cons Discretionary	10.3	12.0	-
Consumer Staples	8.8	8.2	-
Healthcare	14.0	16.0	14.1
Financials	8.3	12.8	9.0
Info Technology	35.8	31.5	34.8
Telecom Services	7.0	8.2	-
Utilities	0.0	0.5	0.0

Top 10 Holdings

	Fund %
Microsoft Corp	7.3
Amazon.com Inc	6.8
Apple Inc	5.6
Alphabet Inc A	5.0
Mastercard Inc A	3.5
The Home Depot Inc	3.2
Altria Group Inc	2.7
UnitedHealth Group Inc	2.7
Boeing Co	2.6
Biogen Inc	2.2

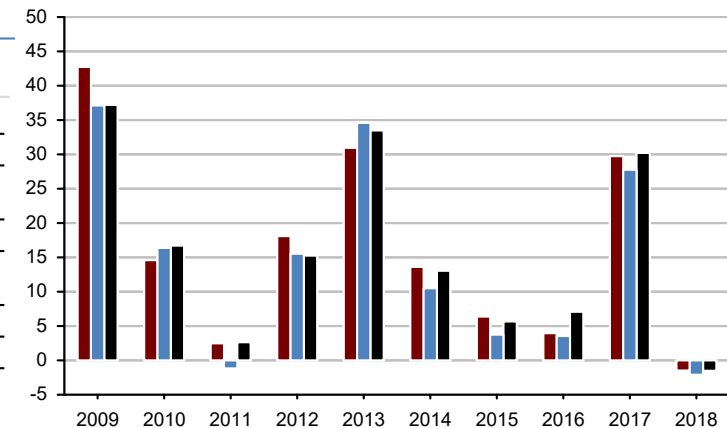
Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	2.81
Domestic Stock	97.19
Foreign Stock	-
Domestic Bond	-
Foreign Bond	-
Other	-

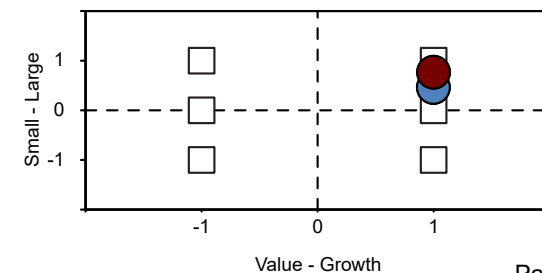
Calendar Year Returns



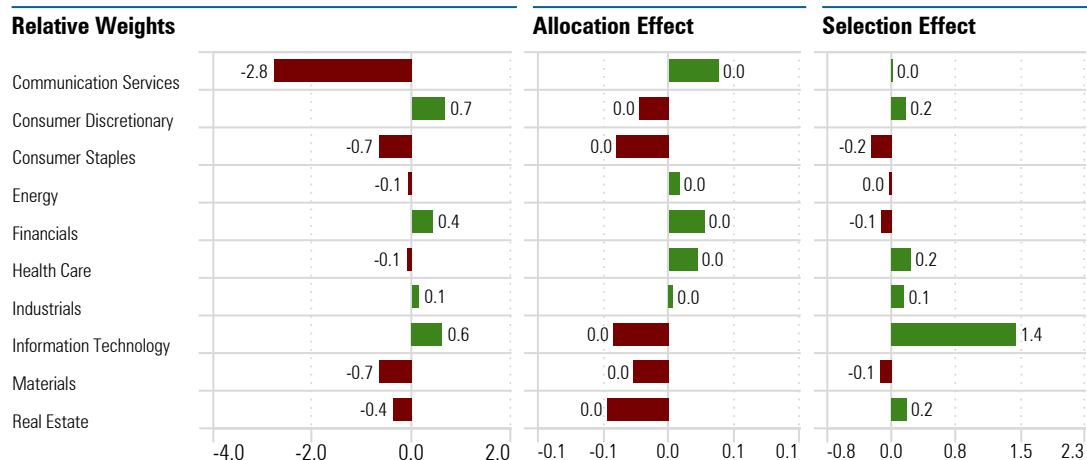
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	11.9	-1.0	11.8	-0.8
Beta	1.0	-0.0	1.0	-0.0
Alpha	-0.7	1.1	-0.2	1.7
Sharpe	0.8	0.1	0.8	0.2
Sortino	1.1	0.2	1.2	0.3
Info Ratio	-0.6	0.0	-0.2	0.4
Down Capture	105.3	0.7	102.7	-2.9
Up Capture	97.7	4.9	99.5	6.8

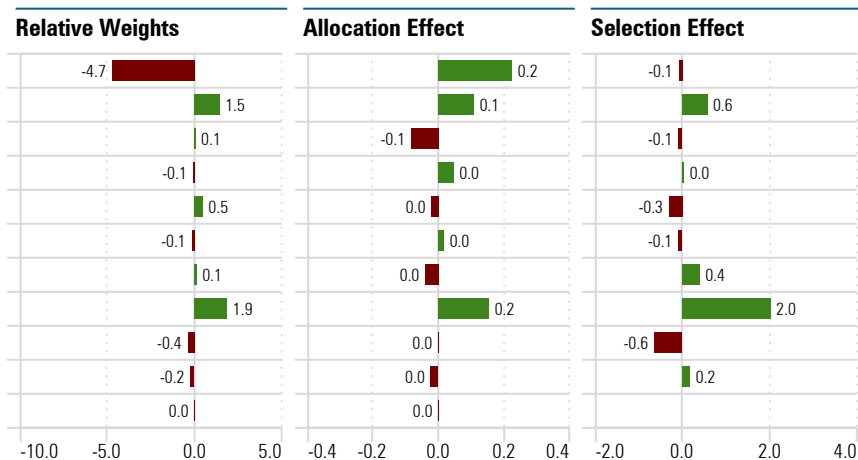
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
VMware Inc	1.62	5.05	0.36
AutoZone Inc	1.47	8.08	0.32
Waste Management Inc	1.90	-1.02	0.23
Fidelity National Information Services Inc	2.18	-5.69	0.22
Apple Inc	5.58	-29.88	0.21
Alphabet Inc A	5.13	-13.43	0.16
Microsoft Corp	7.70	-11.19	0.14
Church & Dwight Co Inc	0.97	11.13	0.14
Fiserv Inc	2.17	-10.79	0.10
Hilton Worldwide Holdings Inc	1.68	-10.93	0.10

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Burlington Stores Inc	1.57	32.22	0.50
Boston Scientific Corp	1.72	42.56	0.46
Salesforce.com Inc	1.92	33.98	0.42
AutoZone Inc	1.26	29.24	0.39
Intuit Inc	1.73	25.85	0.37
Facebook Inc A	1.87	-25.71	0.35
Microsoft Corp	7.12	20.27	0.35
Palo Alto Networks Inc	1.40	29.95	0.34
Church & Dwight Co Inc	1.15	33.23	0.34
NetApp Inc	0.44	27.70	0.30

Leading Detractors

Company	Rescaled Weight	Return	Active Return
XPO Logistics Inc	0.83	-50.04	-0.28
Altria Group Inc	2.93	-16.73	-0.19
Amazon.com Inc	6.54	-25.01	-0.13
Electronic Arts Inc	0.94	-34.51	-0.13
Monster Beverage Corp	1.40	-15.55	-0.11
Huntsman Corp	0.38	-28.55	-0.07
Alphabet Inc Class C	1.52	-13.23	-0.07
Mastercard Inc A	3.50	-15.16	-0.06
Progressive Corp	2.10	-15.08	-0.05
W.W. Grainger Inc	1.27	-20.63	-0.05

Leading Detractors

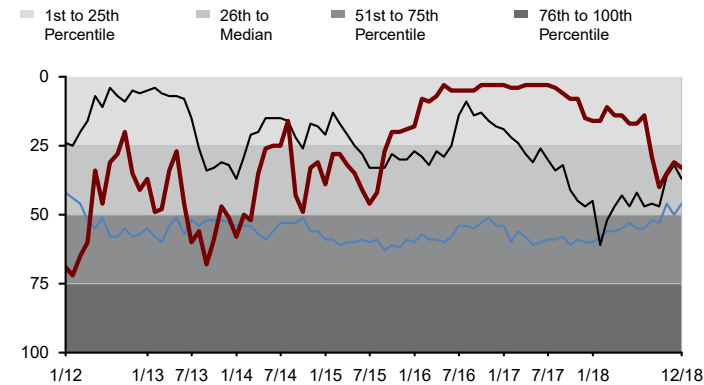
Company	Rescaled Weight	Return	Active Return
Crown Holdings Inc	0.74	-26.10	-0.37
Berry Global Group Inc	0.47	-21.70	-0.36
Red Hat Inc	0.49	-8.85	-0.34
Ameriprise Financial Inc	0.61	-16.47	-0.32
Monster Beverage Corp	1.65	-22.23	-0.27
XPO Logistics Inc	0.61	-36.71	-0.24
Lam Research Corp	0.66	-5.36	-0.23
Johnson & Johnson	1.71	-5.14	-0.23
Celgene Corp	0.74	-23.90	-0.22
Parker Hannifin Corp	1.04	-6.69	-0.21

American Century Mid Cap Value I

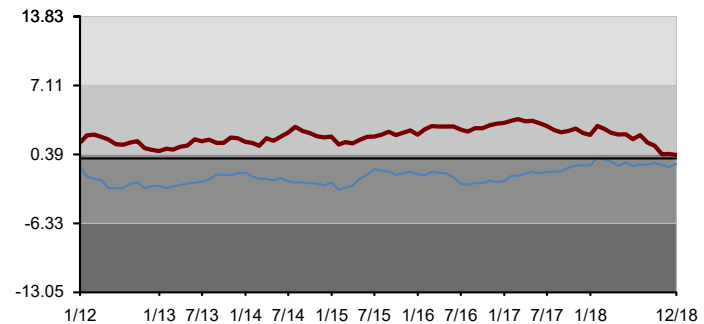
AVUAX

Index: Russell Mid Cap Value TR USD
 Category: Mid-Cap Value
 Return Date: 12/31/2018

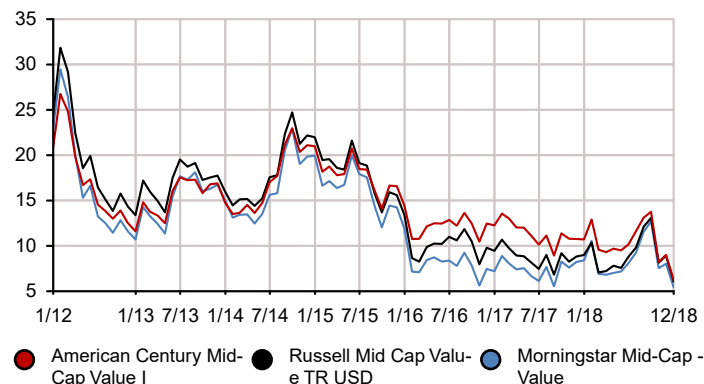
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



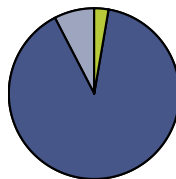
● American Century Mid-Cap Value I ● Russell Mid Cap Value TR USD ● Morningstar Mid-Cap Value

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	102.0	148.0	592.0
Holdings - Bonds	-	-	0.0
Holdings - Other	6.0	3.0	-
Turnover Ratio	47.0	61.1	-
Net Expense Ratio	0.8	1.1	-
Gross Expense Ratio	0.8	2.3	-
Avg Mkt Cap (\$MM)	14,695	11,715	10,776
Total Assets (\$MM)	6,792	1,689	-
P/E Ratio	16.7	14.9	13.1
P/B Ratio	2.2	1.9	1.6
P/S Ratio	1.3	1.3	1.3
P/CF Ratio	10.4	8.4	6.6
ROE %	16.4	12.5	-
ROA %	5.6	4.2	-
Dividend Yld	2.3	2.2	2.7

Asset Allocation

Portfolio Date:09/30/2018



	%
Cash	2.7
Domestic Stock	89.7
Foreign Stock	7.6
Domestic Bond	-
Foreign Bond	-
Other	-

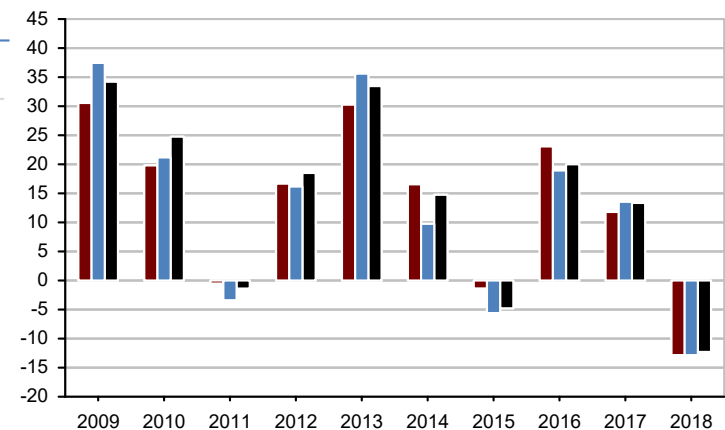
Sector Allocation (%)

	Fund	Avg	Idx
Energy	10.0	7.1	6.0
Materials	1.8	5.0	5.3
Industrials	15.3	14.1	12.7
Cons Discretionary	8.8	8.2	-
Consumer Staples	12.0	11.1	-
Healthcare	8.7	8.2	6.5
Financials	24.0	20.0	16.6
Info Technology	9.4	10.3	8.0
Telecom Services	2.1	2.2	-
Utilities	7.7	6.3	11.7

Top 10 Holdings

	Fund %
Zimmer Biomet Holdings...	3.2
iShares Russell Mid-Ca...	2.8
Hubbell Inc	2.3
Northern Trust Corp	2.2
Invesco Ltd	2.0
BB&T Corp	2.0
WestRock Co A	1.8
Ameriprise Financial Inc	1.6
Weyerhaeuser Co	1.6
Johnson Controls Inter...	1.5

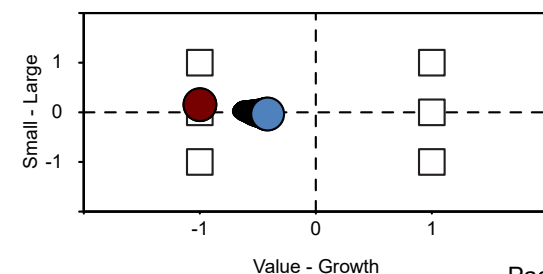
Calendar Year Returns



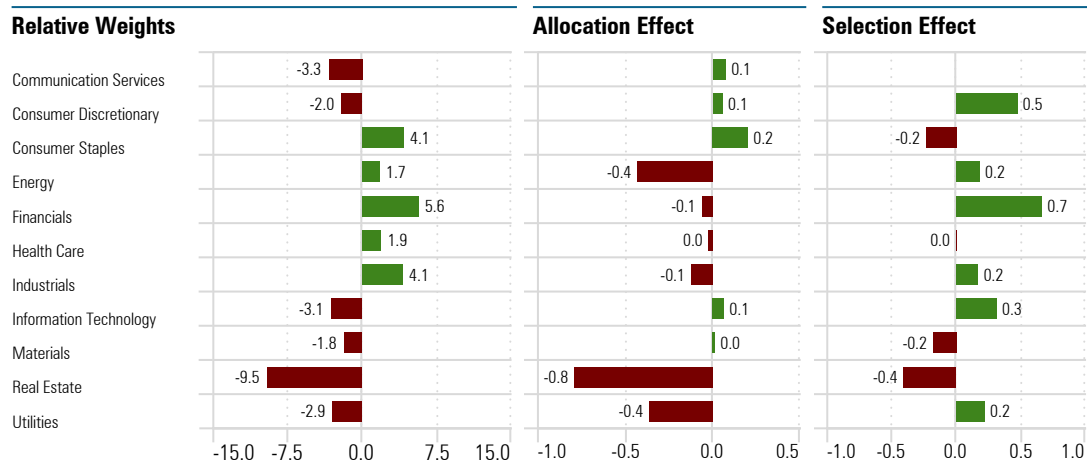
Risk Statistics

	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	12.1	-0.9	11.2	-1.2
Beta	1.0	-0.0	1.0	-0.1
Alpha	0.3	0.9	1.3	2.9
Sharpe	0.5	0.1	0.6	0.2
Sortino	0.6	0.1	0.8	0.4
Info Ratio	0.1	0.2	0.4	0.8
Down Capture	92.9	-6.2	90.6	-15.1
Up Capture	95.6	-0.1	99.5	4.0

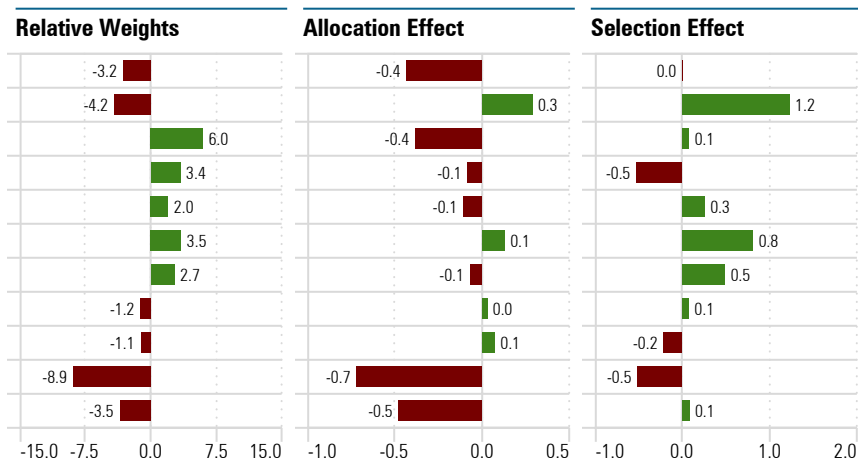
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
PulteGroup Inc	1.10	5.38	0.22
Chubb Ltd	1.55	-2.77	0.21
Capitol Federal Financial Inc	0.99	3.99	0.19
EQT Corp	1.33	-20.15	0.18
Sonoco Products Co	1.30	-3.58	0.16
BB&T Corp	2.20	-10.03	0.14
Genuine Parts Co	1.10	-2.71	0.12
Imperial Oil Ltd	0.76	-21.31	0.12
Maxim Integrated Products Inc	1.44	-9.09	0.11
Westamerica Bancorp	1.18	-6.83	0.11

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Advance Auto Parts Inc	1.20	58.22	0.64
Keysight Technologies Inc	1.03	49.23	0.31
Sysco Corp	1.47	5.47	0.30
HCA Healthcare Inc	0.63	59.89	0.28
LifePoint Health Inc	0.99	30.24	0.25
Sonoco Products Co	1.17	3.07	0.24
Dr Pepper Snapple Group Inc	0.34	26.31	0.24
Commerce Bancshares Inc	1.14	7.52	0.22
Target Corp	0.83	3.81	0.22
Capitol Federal Financial Inc	0.87	2.66	0.19

Leading Detractors

Company	Rescaled Weight	Return	Active Return
Conagra Brands Inc	1.59	-36.75	-0.25
Weyerhaeuser Co	1.47	-31.40	-0.18
Hubbell Inc	2.14	-25.04	-0.18
Invesco Ltd	2.07	-25.78	-0.17
WestRock Co A	1.69	-28.65	-0.17
Ameriprise Financial Inc	1.53	-28.81	-0.13
Zimmer Biomet Holdings Inc	3.18	-20.92	-0.12
Thor Industries Inc	0.56	-37.05	-0.11
Target Corp	0.56	-25.08	-0.10
Southwest Airlines Co	1.15	-25.35	-0.10

Leading Detractors

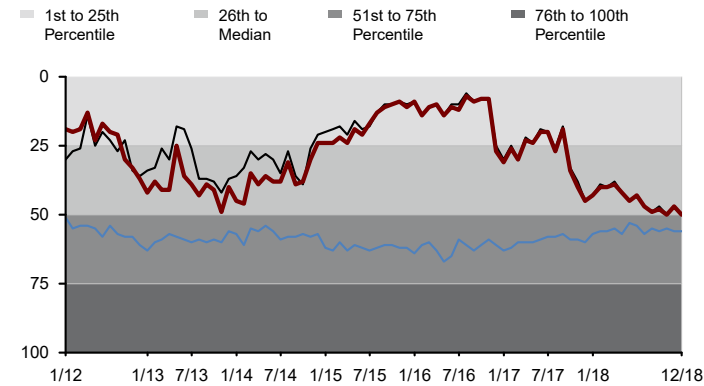
Company	Rescaled Weight	Return	Active Return
Invesco Ltd	1.92	-52.04	-0.75
WestRock Co A	1.77	-38.36	-0.34
Conagra Brands Inc	1.81	-41.98	-0.27
General Mills Inc	1.07	-31.55	-0.27
Ameriprise Financial Inc	1.38	-36.83	-0.27
Hubbell Inc	1.87	-24.61	-0.27
Teradyne Inc	0.83	-24.37	-0.21
Cimarex Energy Co	0.88	-49.15	-0.19
Weyerhaeuser Co	1.97	-35.47	-0.18
McKesson Corp	0.93	-28.39	-0.17

Vanguard Mid Cap Index Institutional

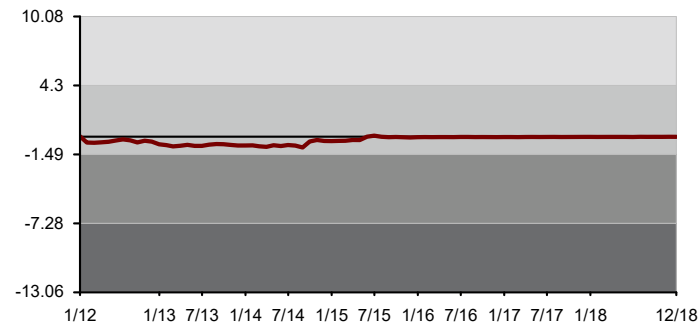
VMCIX

Index: CRSP US Mid Cap TR USD
 Category: Mid-Cap Blend
 Return Date: 12/31/2018

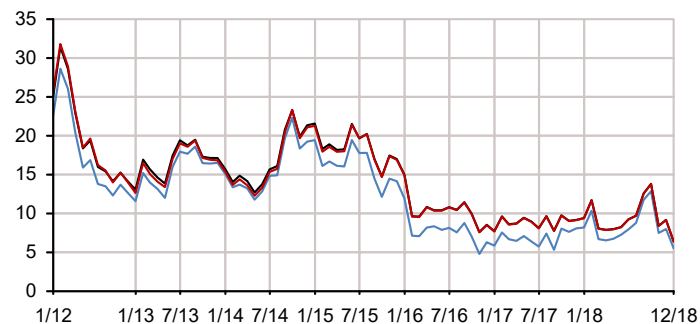
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



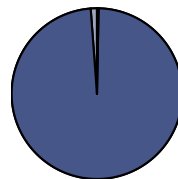
● Vanguard Mid Cap Index Institutional ● CRSP US Mid Cap TR USD ● Morningstar Mid-Cap Blend

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	364.0	262.0	359.0
Holdings - Bonds	-	-	0.0
Holdings - Other	4.0	4.0	-
Turnover Ratio	14.0	63.7	-
Net Expense Ratio	0.0	1.0	-
Gross Expense Ratio	0.0	1.2	-
Avg Mkt Cap (\$MM)	14,292	9,627	13,042
Total Assets (\$MM)	86,953	3,049	-
P/E Ratio	18.1	17.0	16.4
P/B Ratio	2.6	2.3	2.3
P/S Ratio	1.8	1.5	1.6
P/CF Ratio	8.5	10.0	7.7
ROE %	16.8	16.9	-
ROA %	5.9	6.0	-
Dividend Yld	1.6	1.6	1.8

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	0.3
Domestic Stock	98.52
Foreign Stock	1.18
Domestic Bond	-
Foreign Bond	-
Other	-

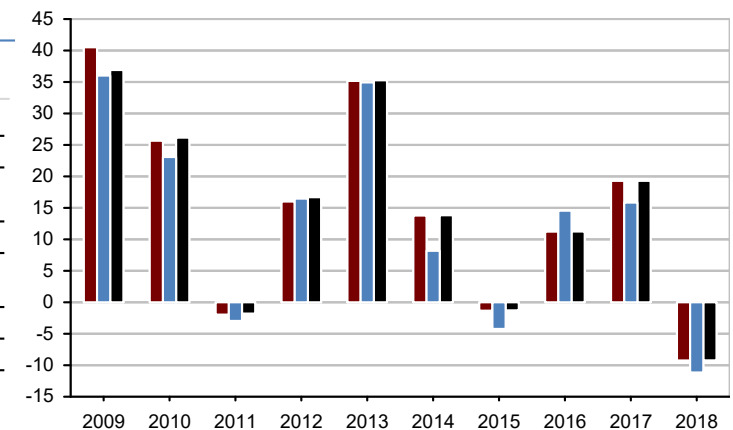
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.5	5.3	5.0
Materials	4.4	5.4	4.5
Industrials	14.2	15.3	14.1
Cons Discretionary	10.4	9.5	-
Consumer Staples	9.8	10.0	-
Healthcare	9.8	10.2	10.1
Financials	13.8	16.3	13.2
Info Technology	18.3	14.9	18.5
Telecom Services	2.6	3.5	-
Utilities	5.8	4.1	6.6

Top 10 Holdings

	Fund %
Edwards Lifesciences Corp	0.8
Fiserv Inc	0.8
Red Hat Inc	0.8
Autodesk Inc	0.8
Roper Technologies Inc	0.8
Centene Corp	0.7
Amphenol Corp Class A	0.6
Concho Resources Inc	0.6
Moody's Corporation	0.6
Worldpay Inc Class A	0.6

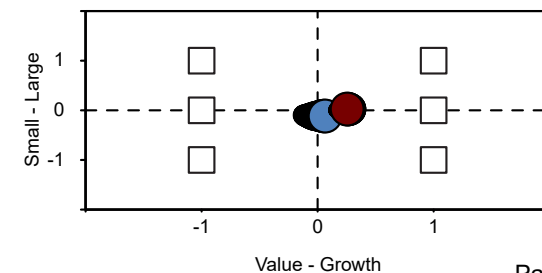
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	12.2	-0.7	11.7	-0.8
Beta	1.0	-0.0	1.0	-0.0
Alpha	-0.0	1.3	-0.0	2.1
Sharpe	0.5	0.1	0.5	0.2
Sortino	0.6	0.1	0.7	0.3
Info Ratio	-0.3	0.1	-0.6	-0.0
Down Capture	100.0	0.2	100.0	-6.2
Up Capture	99.9	8.2	99.8	7.7

Historical Style Analysis



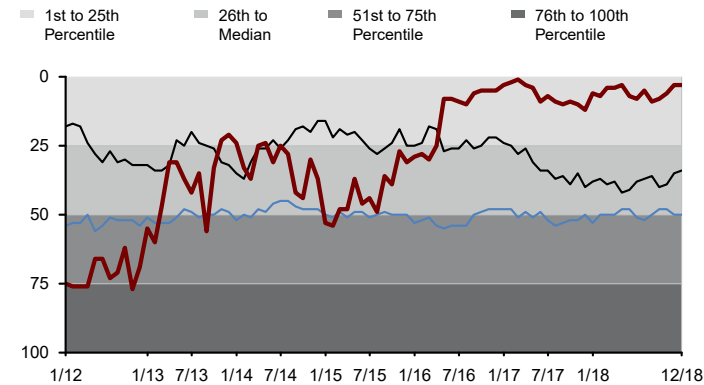
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Champlain Mid Cap Institutional

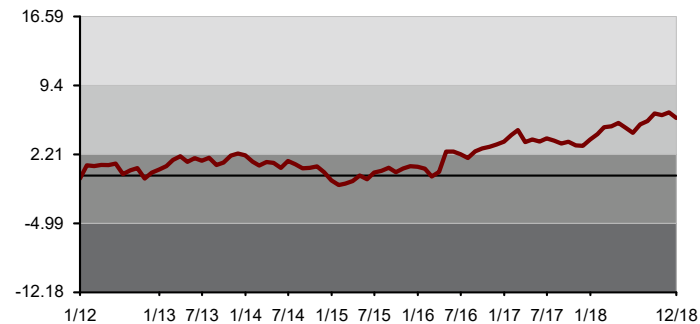
CIPIX

Index: Russell Mid Cap Growth TR USD
 Category: Mid-Cap Growth
 Return Date: 12/31/2018

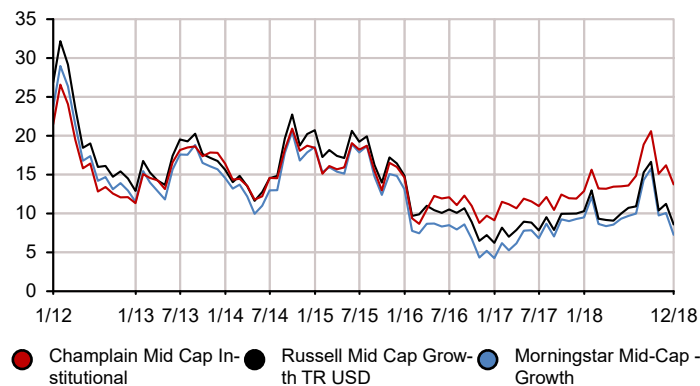
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	61.0	109.0	418.0
Holdings - Bonds	1.0	-	0.0
Holdings - Other	1.0	4.0	-
Turnover Ratio	33.0	58.5	-
Net Expense Ratio	0.9	1.2	-
Gross Expense Ratio	0.9	2.5	-
Avg Mkt Cap (\$MM)	9,972	11,559	12,253
Total Assets (\$MM)	2,576	2,169	-
P/E Ratio	25.2	24.8	20.7
P/B Ratio	3.3	4.4	4.9
P/S Ratio	2.5	2.7	2.1
P/CF Ratio	15.3	15.6	13.6
ROE %	9.9	24.7	-
ROA %	3.8	8.2	-
Dividend Yld	0.9	0.7	1.0

Sector Allocation (%)

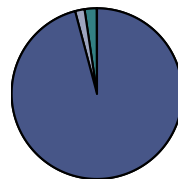
	Fund	Avg	Idx
Energy	1.2	2.1	1.5
Materials	1.9	3.0	3.0
Industrials	14.3	17.2	18.4
Cons Discretionary	0.0	13.0	-
Consumer Staples	0.0	8.4	-
Healthcare	18.5	15.6	13.7
Financials	12.2	9.8	7.4
Info Technology	27.8	26.3	29.9
Telecom Services	0.0	3.8	-
Utilities	0.0	0.5	0.0

Top 10 Holdings

	Fund %
Red Hat Inc	3.4
Hormel Foods Corp	3.0
Everest Re Group Ltd	2.8
Splunk Inc	2.7
Arthur J. Gallagher & Co	2.5
AptarGroup Inc	2.5
Integra Lifesciences H...	2.5
Nordson Corp	2.4
Workday Inc Class A	2.4
Waters Corp	2.4

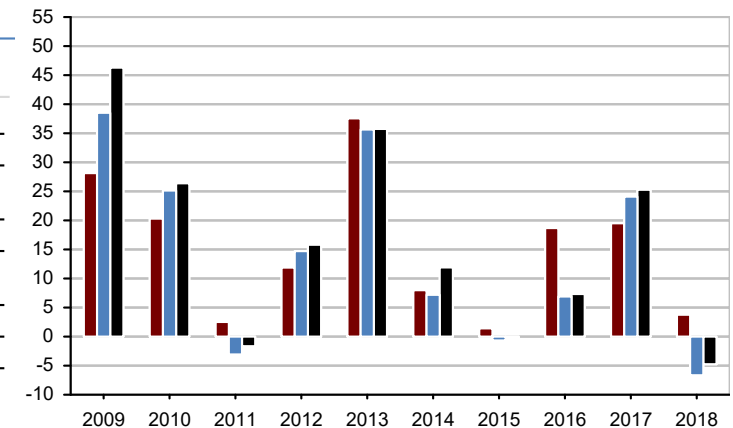
Asset Allocation

Portfolio Date: 10/31/2018



	%
Cash	0.05
Domestic Stock	95.87
Foreign Stock	1.79
Domestic Bond	2.29
Foreign Bond	-
Other	-

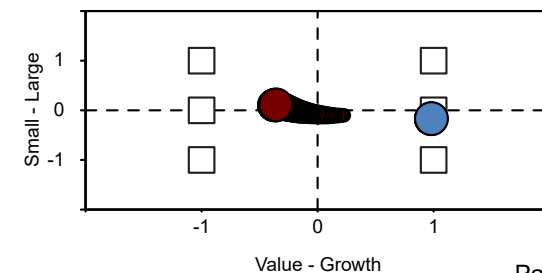
Calendar Year Returns



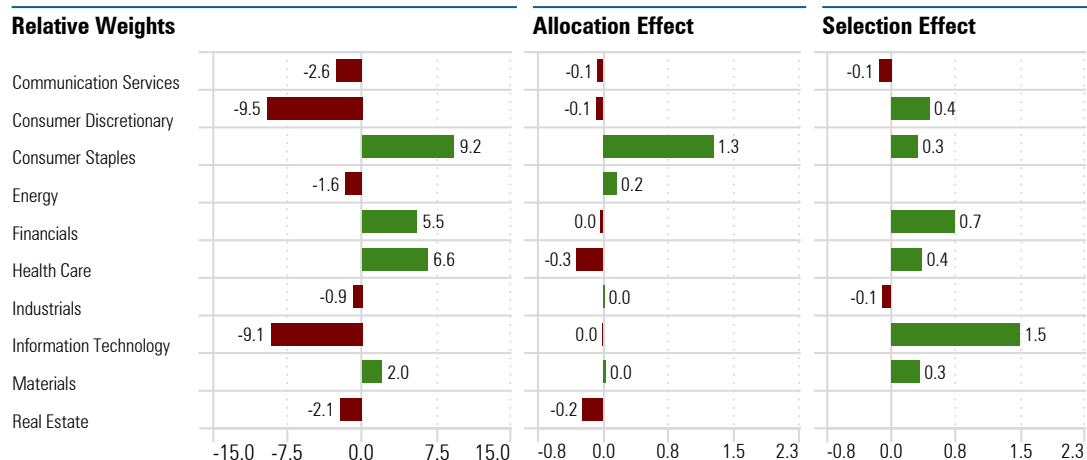
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	11.5	-2.6	11.4	-2.1
Beta	0.8	-0.2	0.8	-0.2
Alpha	6.0	7.2	3.5	5.1
Sharpe	1.1	0.6	0.8	0.4
Sortino	1.6	1.0	1.3	0.7
Info Ratio	1.0	1.4	0.5	1.0
Down Capture	46.2	-55.7	65.1	-40.6
Up Capture	88.3	-6.5	87.3	-7.8

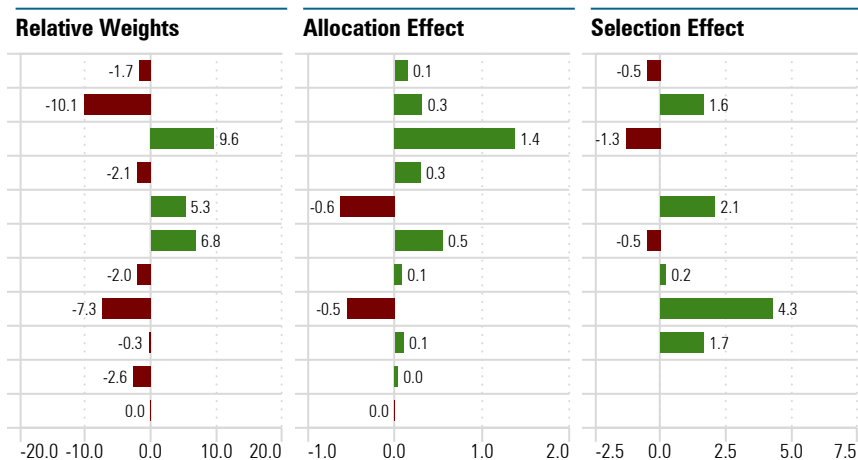
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
Red Hat Inc	3.16	28.88	0.83
Workday Inc Class A	2.64	9.38	0.45
Arthur J. Gallagher & Co	2.52	-0.45	0.41
Everest Re Group Ltd	2.83	-4.07	0.34
Waters Corp	2.43	-3.10	0.30
Hormel Foods Corp	2.94	8.81	0.27
Dentsply Sirona Inc	1.40	-1.17	0.26
The Cooper Companies Inc	1.87	-8.17	0.21
Tableau Software Inc A	1.22	7.39	0.20
Valvoline Inc	1.18	-9.57	0.19

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Red Hat Inc	3.12	46.24	0.98
Advance Auto Parts Inc	1.73	58.22	0.93
Okta Inc A	1.11	149.12	0.89
Workday Inc Class A	2.39	56.95	0.81
Arthur J. Gallagher & Co	2.37	19.19	0.81
Tableau Software Inc A	1.57	73.41	0.69
AptarGroup Inc	2.98	10.54	0.61
Splunk Inc	2.96	26.57	0.55
Palo Alto Networks Inc	2.58	29.95	0.51
Veeva Systems Inc Class A	1.41	42.09	0.49

Leading Detractors

Company	Rescaled Weight	Return	Active Return
Blackbaud Inc	1.42	-37.91	-0.36
Integra Lifesciences Holdings Corp	2.65	-31.53	-0.31
Stericycle Inc	1.18	-37.47	-0.25
Pure Storage Inc A	1.08	-38.03	-0.24
Gates Industrial Corp PLC	1.36	-32.10	-0.23
Catalent Inc	1.48	-31.55	-0.16
NuVasive Inc	1.40	-30.18	-0.16
Bio-Techne Corp	1.66	-28.97	-0.13
Laboratory Corp of America Holdings	1.69	-27.25	-0.12
JM Smucker Co	1.60	-8.20	-0.12

Leading Detractors

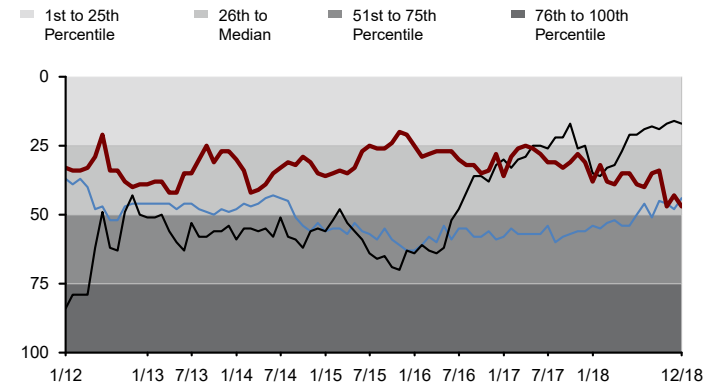
Company	Rescaled Weight	Return	Active Return
Dentsply Sirona Inc	1.85	-43.00	-1.24
Molson Coors Brewing Co B	1.88	-29.89	-0.80
Stericycle Inc	1.37	-46.04	-0.69
Blackbaud Inc	1.61	-33.08	-0.61
JM Smucker Co	1.70	-22.58	-0.55
Laboratory Corp of America Holdings	2.22	-20.78	-0.45
Catalent Inc	1.48	-24.10	-0.40
John Wiley & Sons Inc Class A	1.76	-26.91	-0.36
Nordson Corp	2.54	-17.65	-0.34
LogMeIn Inc	1.10	-27.89	-0.34

American Beacon Small Cp Val Inst

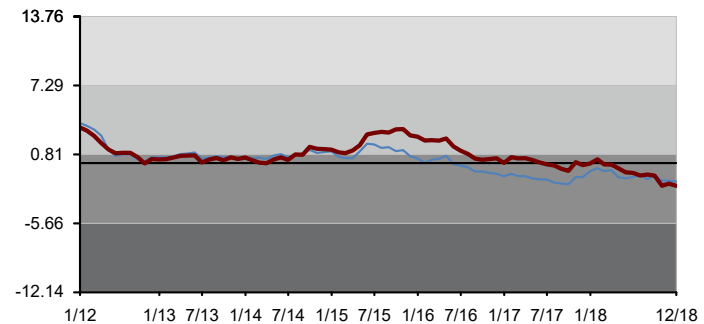
AVFIX

Index: Russell 2000 Value TR USD
 Category: Small Value
 Return Date: 12/31/2018

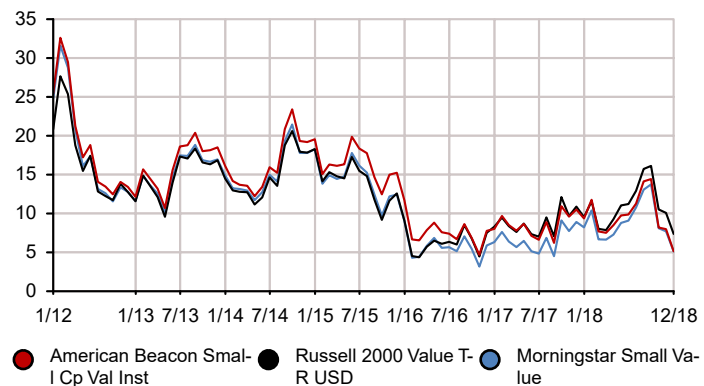
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



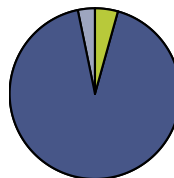
● American Beacon Small Cp Val Inst ● Russell 2000 Value TR USD ● Morningstar Small Value

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	544.0	231.0	1385.0
Holdings - Bonds	-	2.0	0.0
Holdings - Other	3.0	5.0	-
Turnover Ratio	48.0	81.8	-
Net Expense Ratio	0.8	1.2	-
Gross Expense Ratio	0.8	2.5	-
Avg Mkt Cap (\$MM)	2,194	2,127	1,444
Total Assets (\$MM)	5,558	1,231	-
P/E Ratio	13.7	14.3	11.7
P/B Ratio	1.5	1.5	1.2
P/S Ratio	0.8	0.9	0.8
P/CF Ratio	7.3	7.3	5.7
ROE %	11.0	7.6	-
ROA %	4.0	2.3	-
Dividend Yld	1.9	2.0	2.5

Asset Allocation

Portfolio Date: 10/31/2018



	%
Cash	4.33
Domestic Stock	92.44
Foreign Stock	3.24
Domestic Bond	-
Foreign Bond	-
Other	-

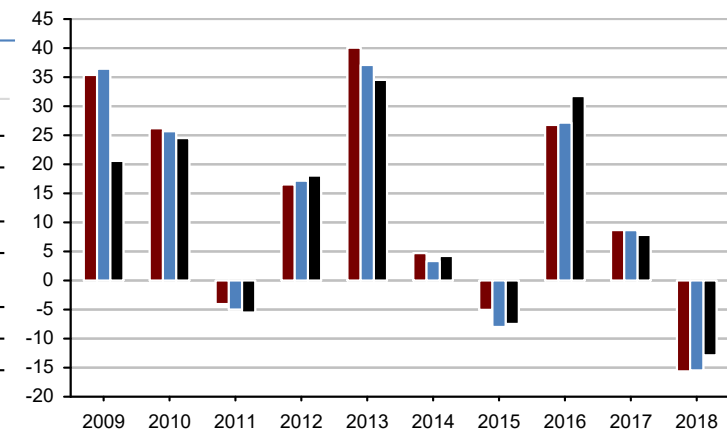
Sector Allocation (%)

	Fund	Avg	Idx
Energy	7.6	6.2	4.1
Materials	6.2	6.5	4.5
Industrials	18.9	16.7	12.8
Cons Discretionary	10.2	9.2	-
Consumer Staples	9.0	10.0	-
Healthcare	4.1	4.7	3.8
Financials	27.0	23.8	27.2
Info Technology	13.5	11.1	11.2
Telecom Services	2.8	2.4	-
Utilities	2.2	3.7	7.3

Top 10 Holdings

	Fund %
E-Mini Russ 2000 Dec18...	3.8
Portland General Elect...	1.0
ARRIS International PLC	1.0
American Axle & Mfg Ho...	0.8
Associated Banc-Corp	0.8
Ciena Corp	0.8
Brooks Automation Inc	0.8
II-VI Inc	0.8
Enstar Group Ltd	0.7
Whiting Petroleum Corp	0.7

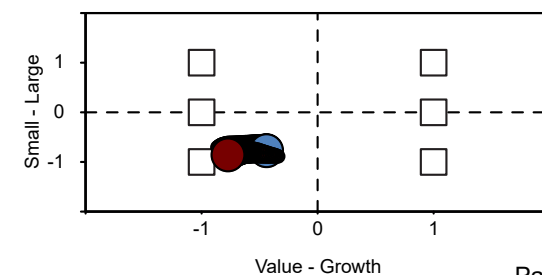
Calendar Year Returns



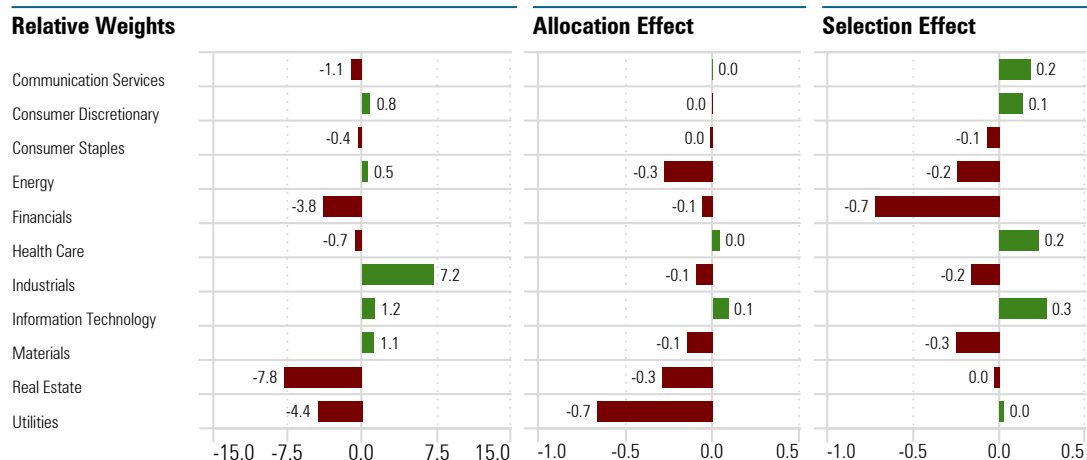
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	16.3	0.3	15.2	-0.0
Beta	1.0	0.1	1.0	0.1
Alpha	-2.1	-0.4	-0.6	0.8
Sharpe	0.3	-0.0	0.2	0.1
Sortino	0.4	-0.0	0.2	0.1
Info Ratio	-1.0	-0.4	-0.3	0.0
Down Capture	101.6	5.2	97.6	2.4
Up Capture	91.3	4.1	94.3	7.3

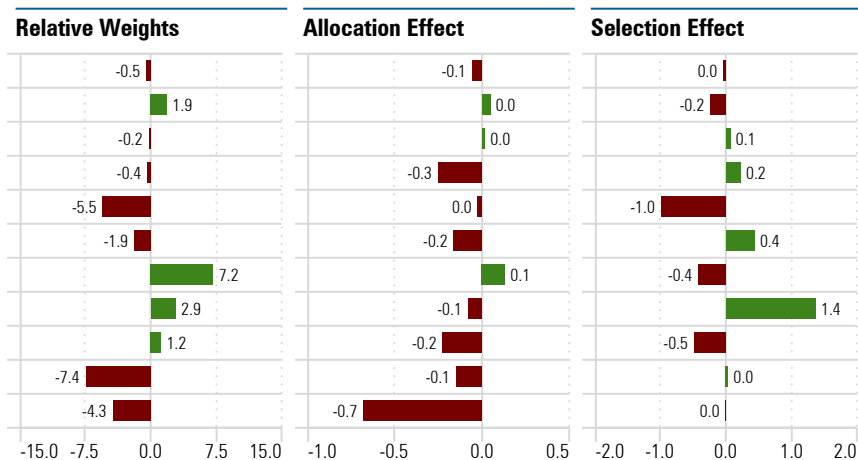
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

	Rescaled Weight	Return	Active Return
ARRIS International PLC	1.09	17.62	0.32
Embraer SA ADR	0.42	13.02	0.11
Air Transport Services Group Inc	0.37	6.24	0.10
Diodes Inc	0.76	-3.09	0.08
AMN Healthcare Services Inc	0.23	3.58	0.07
Encompass Health Corp	0.68	-20.50	0.07
McDermott International Inc	0.06	-64.51	0.07
Foot Locker Inc	0.29	5.09	0.07
LHC Group Inc	0.30	-8.85	0.06
Popular Inc	0.79	-7.43	0.06

Leading Contributors

	Rescaled Weight	Return	Active Return
ARRIS International PLC	0.88	19.00	0.32
Whiting Petroleum Corp	0.79	-14.31	0.23
Popular Inc	0.58	35.81	0.21
Encompass Health Corp	0.63	26.87	0.20
Boston Beer Co Inc Class A	0.37	26.03	0.19
Amedisys Inc	0.20	122.18	0.17
Ciena Corp	0.52	62.02	0.16
McDermott International Inc	0.09	-63.58	0.15
Trex Co Inc	0.33	9.53	0.14
Frank's International NV	0.58	-21.50	0.14

Leading Detractors

	Rescaled Weight	Return	Active Return
Ferroglobe PLC	0.25	-80.54	-0.20
Texas Capital Bancshares Inc	0.62	-38.19	-0.15
II-VI Inc	0.85	-31.37	-0.14
Whiting Petroleum Corp	0.76	-57.22	-0.13
Colfax Corp	0.47	-42.04	-0.12
Seritage Growth Properties A	0.68	-31.40	-0.12
American Axle & Mfg Holdings Inc	0.87	-36.35	-0.12
Invacare Corp	0.23	-70.42	-0.11
Faro Technologies Inc	0.46	-36.85	-0.10
Bank of N.T Butterfield & Son Ltd	0.40	-39.00	-0.10

Leading Detractors

	Rescaled Weight	Return	Active Return
Ferroglobe PLC	0.43	-90.05	-0.48
Spirit Airlines Inc	0.03	29.22	-0.25
Texas Capital Bancshares Inc	0.85	-42.53	-0.24
Invacare Corp	0.31	-74.40	-0.21
Colfax Corp	0.39	-47.25	-0.17
Terex Corp	0.46	-42.21	-0.17
II-VI Inc	0.86	-30.86	-0.16
Deluxe Corp	0.32	-48.98	-0.14
American Axle & Mfg Holdings Inc	0.78	-34.82	-0.13
United Natural Foods Inc	0.45	-78.51	-0.12

Vanguard Small Cap Index I

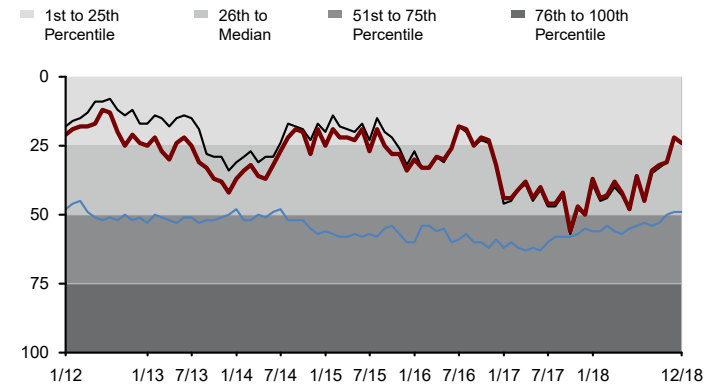
VSCIX

Index: CRSP US Small Cap TR USD

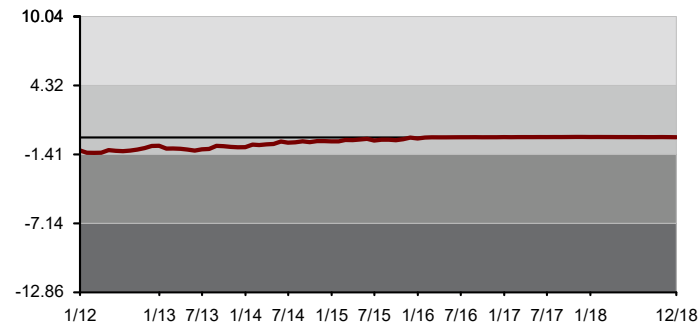
Category: Small Blend

Return Date: 12/31/2018

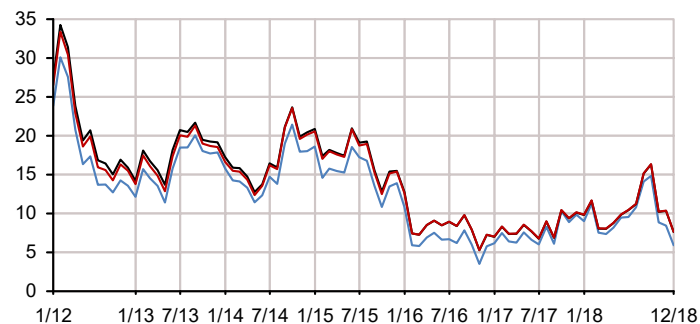
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



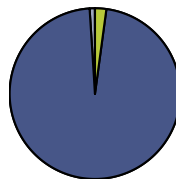
● Vanguard Small Cap I-ndex I ● CRSP US Small Cap TR-USD ● Morningstar Small Blend

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	1409.0	383.0	1388.0
Holdings - Bonds	-	3.0	0.0
Holdings - Other	6.0	6.0	-
Turnover Ratio	0.0	58.5	-
Net Expense Ratio	0.0	1.1	-
Gross Expense Ratio	0.0	2.9	-
Avg Mkt Cap (\$MM)	3,745	2,286	3,345
Total Assets (\$MM)	77,891	1,280	-
P/E Ratio	15.7	16.7	14.1
P/B Ratio	2.1	2.0	1.9
P/S Ratio	1.4	1.2	1.2
P/CF Ratio	9.3	8.9	8.3
ROE %	12.2	11.9	-
ROA %	3.7	3.6	-
Dividend Yld	1.7	1.5	1.9

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	2.14
Domestic Stock	96.86
Foreign Stock	0.99
Domestic Bond	-
Foreign Bond	-
Other	0.02

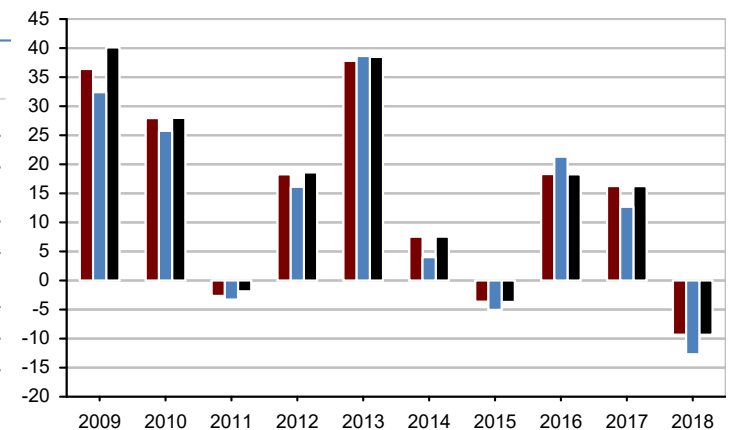
Sector Allocation (%)

	Fund	Avg	Idx
Energy	3.9	4.2	3.6
Materials	5.2	6.0	5.2
Industrials	15.6	17.6	15.4
Cons Discretionary	8.9	9.6	-
Consumer Staples	10.4	10.2	-
Healthcare	11.4	11.0	11.1
Financials	14.0	18.2	14.1
Info Technology	16.5	14.8	17.0
Telecom Services	3.3	3.0	-
Utilities	3.7	2.4	3.8

Top 10 Holdings

	Fund %
Burlington Stores Inc	0.3
NRG Energy Inc	0.3
Atmos Energy Corp	0.3
IDEX Corp	0.3
UGI Corp	0.3
STERIS PLC	0.3
Zebra Technologies Corp	0.3
PerkinElmer Inc	0.3
Exact Sciences Corp	0.3
Leidos Holdings Inc	0.3

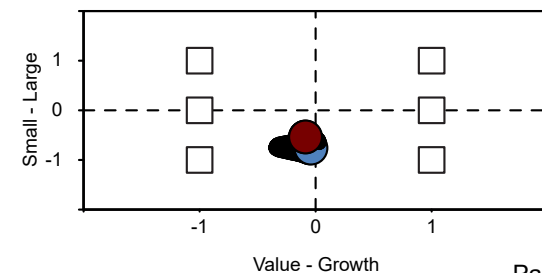
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	14.3	-1.0	13.6	-1.1
Beta	1.0	0.1	1.0	0.1
Alpha	0.0	0.9	0.0	0.9
Sharpe	0.5	0.1	0.4	0.1
Sortino	0.6	0.2	0.5	0.2
Info Ratio	0.7	1.2	0.7	1.0
Down Capture	100.0	8.1	100.0	8.6
Up Capture	100.1	13.2	100.1	14.0

Historical Style Analysis



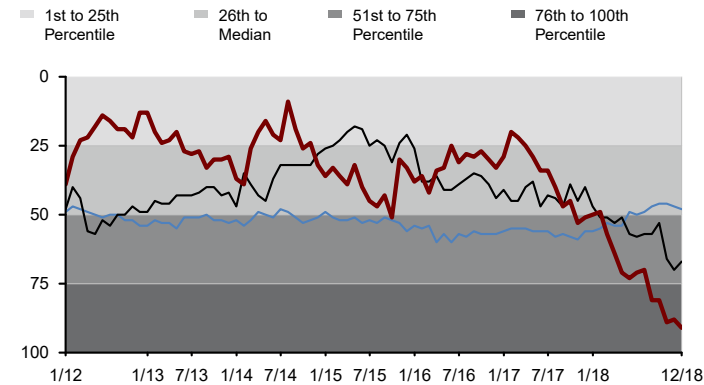
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Voya SmallCap Opportunities Port I

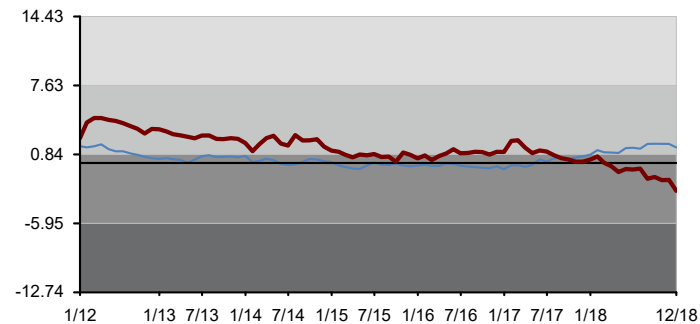
IVSOX

Index: Russell 2000 Growth TR USD
 Category: Small Growth
 Return Date: 12/31/2018

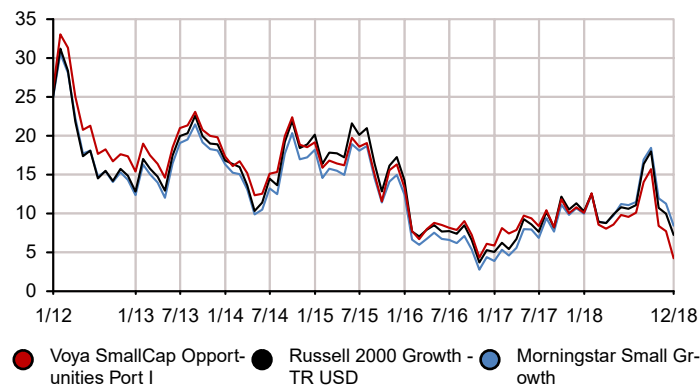
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	144.0	179.0	1257.0
Holdings - Bonds	-	-	0.0
Holdings - Other	2.0	4.0	-
Turnover Ratio	85.0	71.5	-
Net Expense Ratio	0.9	1.2	-
Gross Expense Ratio	0.9	1.9	-
Avg Mkt Cap (\$MM)	2,837	2,942	1,794
Total Assets (\$MM)	318	1,261	-
P/E Ratio	22.4	24.6	18.3
P/B Ratio	3.3	3.5	3.2
P/S Ratio	1.7	2.2	1.4
P/CF Ratio	11.7	14.3	10.5
ROE %	6.9	7.5	-
ROA %	-0.1	-0.2	-
Dividend Yld	0.7	0.6	0.8

Sector Allocation (%)

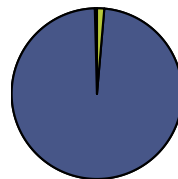
	Fund	Avg	Idx
Energy	1.7	2.2	1.6
Materials	6.4	4.2	5.6
Industrials	17.6	15.6	15.5
Cons Discretionary	14.8	10.7	-
Consumer Staples	8.5	9.1	-
Healthcare	19.3	20.4	24.0
Financials	9.8	9.1	7.7
Info Technology	22.3	26.1	21.4
Telecom Services	3.3	4.1	-
Utilities	0.0	0.6	0.5

Top 10 Holdings

	Fund %
j2 Global Inc	1.4
iShares Russell 2000 G...	1.4
HubSpot Inc	1.3
Teladoc Health Inc	1.3
EMCOR Group Inc	1.2
American Eagle Outfitt..	1.2
ASGN Inc	1.2
Woodward Inc	1.2
Marriott Vacations Wor...	1.1
Envestnet Inc	1.1

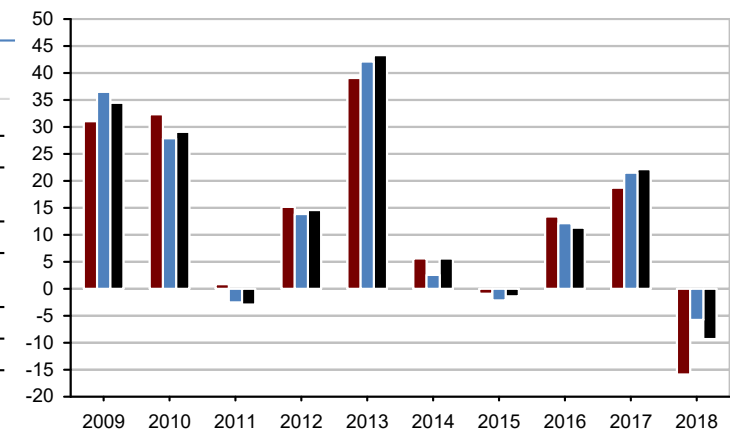
Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	1.37
Domestic Stock	98.22
Foreign Stock	0.41
Domestic Bond	-
Foreign Bond	-
Other	-

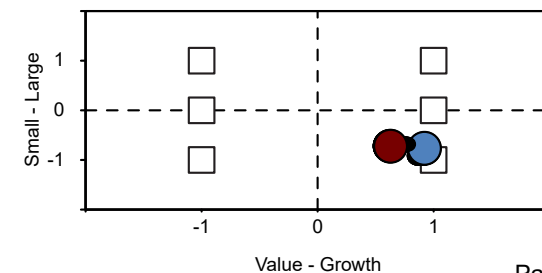
Calendar Year Returns



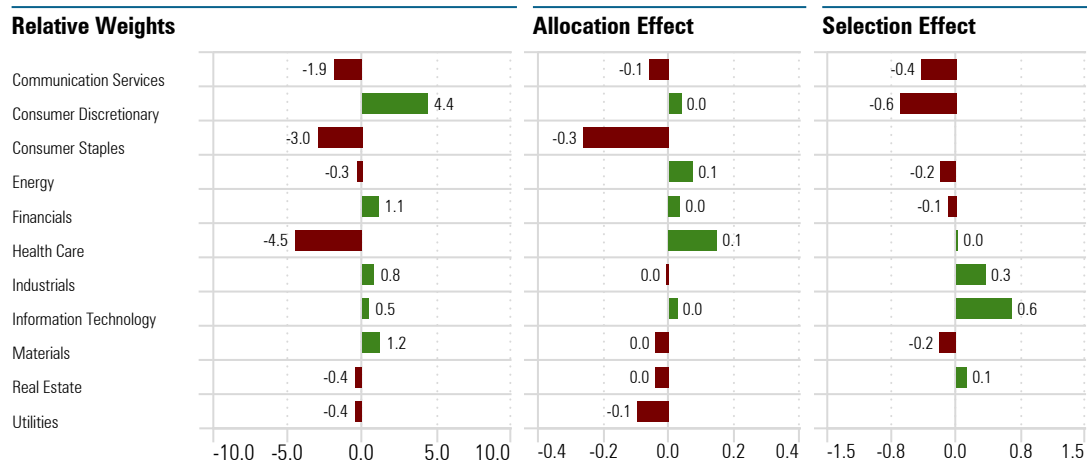
Risk Statistics

	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	16.7	0.3	15.8	-0.0
Beta	1.0	0.1	1.0	0.0
Alpha	-2.7	-4.3	-1.4	-1.8
Sharpe	0.3	-0.2	0.3	-0.1
Sortino	0.3	-0.4	0.2	-0.2
Info Ratio	-1.0	-1.3	-0.5	-0.6
Down Capture	105.2	15.7	97.5	6.9
Up Capture	91.4	-4.8	90.3	-0.8

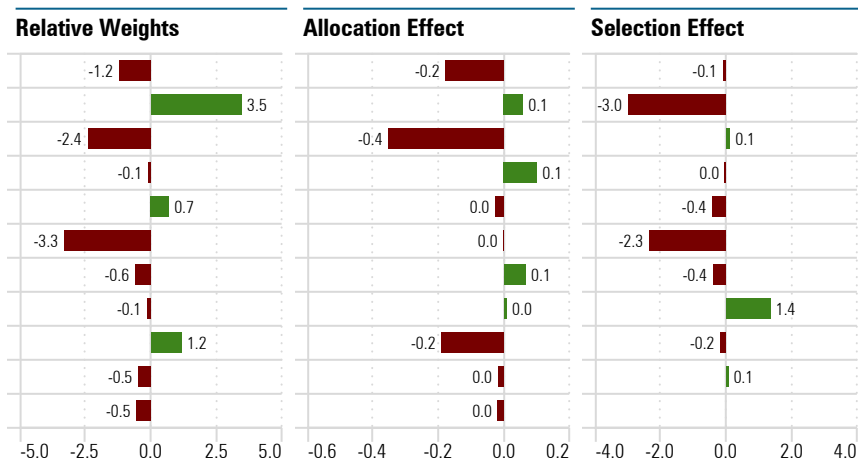
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution



Leading Contributors

Company	Rescaled Weight	Return	Active Return
AMN Healthcare Services Inc	1.12	3.58	0.24
Instructure Inc	1.00	5.96	0.19
Wright Medical Group NV	1.17	-6.20	0.17
Finisar Corp	0.59	13.39	0.17
Healthcare Services Group Inc	1.23	-0.65	0.16
Amedisys Inc	1.07	-6.28	0.15
Hill-Rom Holdings Inc	0.79	-6.00	0.15
Merit Medical Systems Inc	1.13	-9.18	0.14
Lindsay Corp	0.95	-3.68	0.13
Americold Realty Trust	1.17	2.84	0.13

Leading Contributors

Company	Rescaled Weight	Return	Active Return
Amedisys Inc	1.03	122.18	0.71
Merit Medical Systems Inc	1.12	29.19	0.27
Integrated Device Technology Inc	1.11	62.90	0.27
iRobot Corp	0.64	9.18	0.26
Americold Realty Trust	0.66	37.02	0.25
Planet Fitness Inc A	0.91	54.84	0.22
Rapid7 Inc	0.65	66.99	0.22
Omnicell Inc	0.74	26.27	0.22
Lindsay Corp	0.86	10.55	0.21
Coupa Software Inc	0.32	99.36	0.21

Leading Detractors

Company	Rescaled Weight	Return	Active Return
Ebix Inc	0.90	-46.14	-0.23
Circor International Inc	0.50	-55.16	-0.20
Teladoc Health Inc	1.16	-42.59	-0.17
Boyd Gaming Corp	1.02	-38.43	-0.16
Ollie's Bargain Outlet Holdings Inc	1.16	-30.79	-0.15
At Home Group Inc	0.86	-40.82	-0.15
Marriott Vacations Worldwide Corp	1.04	-36.48	-0.13
National Vision Holdings Inc	0.97	-37.59	-0.13
Texas Capital Bancshares Inc	0.58	-38.19	-0.12
Carrizo Oil & Gas Inc	0.80	-55.20	-0.12

Leading Detractors

Company	Rescaled Weight	Return	Active Return
Dana Inc	0.84	-56.58	-0.41
Camping World Holdings Inc A	0.49	-51.44	-0.40
Big Lots Inc	0.78	-46.86	-0.40
Teladoc Health Inc	0.29	-42.59	-0.39
Ebix Inc	0.67	-42.67	-0.32
Clovis Oncology Inc	0.42	-73.59	-0.30
Dermira Inc	0.26	-74.15	-0.30
Boyd Gaming Corp	1.04	-40.24	-0.29
Magellan Health Inc	0.52	-25.38	-0.28
Circor International Inc	0.52	-56.24	-0.25

Voya SmallCap Opportunities Port I

Near-term Performance

◆ Voya SmallCap Opportunities Port I

◻ Russell 2000 Growth TR USD

◇ US Fund Small Growth

Voya SmallCap Opportunities Port I - Snapshot

	Fund	Index	Cat Avg
Ticker	IVSOX		
Morningstar Cat	US Fund Small Growth	Small Growth	Small Growth
Morningstar Inst Cat	Small Core Growth		

Equity Style Box



Prosp Net Expense

0.88% 1.24%

US Equity %

97.6 99.4 94.3

Non-US Equity %

0.3% 0.6% 3.2%

Cash %

2.1% 0.0% 2.1%

Bond %

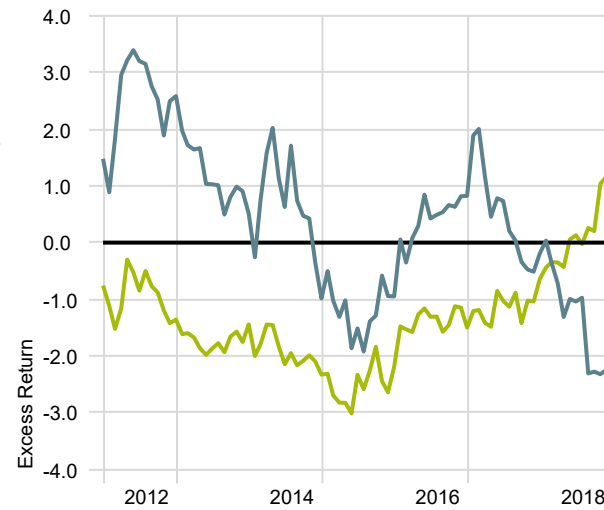
0.0% 0.0% 0.0%

Other %

0.0% 0.0% 0.3%

Rolling 3 Year Returns - Relative to Index

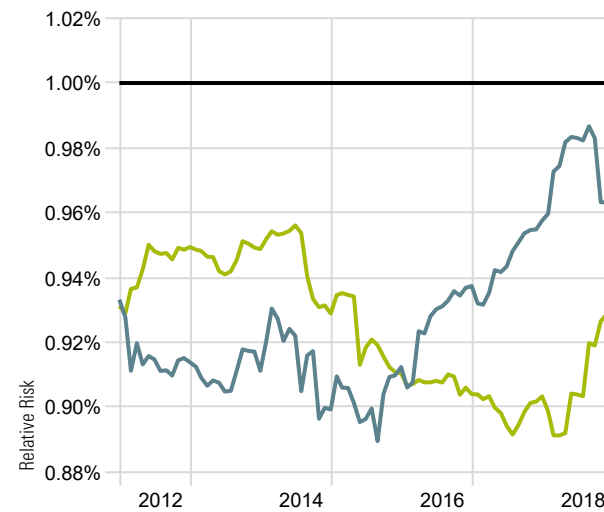
Rolling Window: 3 Years 1 Month shift



— Voya SmallCap Opportunities Port I — Russell 2000 Growth TR USD — US Fund Small Growth

Rolling 3 Year Risk - Relative to Index

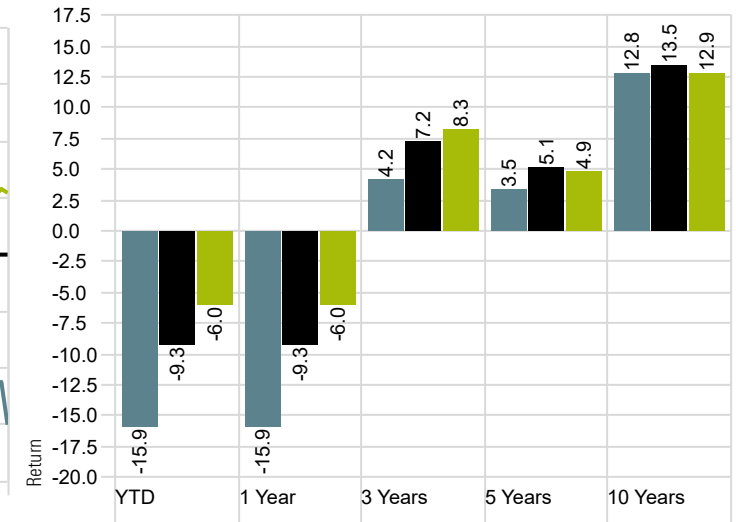
Rolling Window: 3 Years 1 Month shift



— Voya SmallCap Opportunities Port I — Russell 2000 Growth TR USD — US Fund Small Growth

Returns

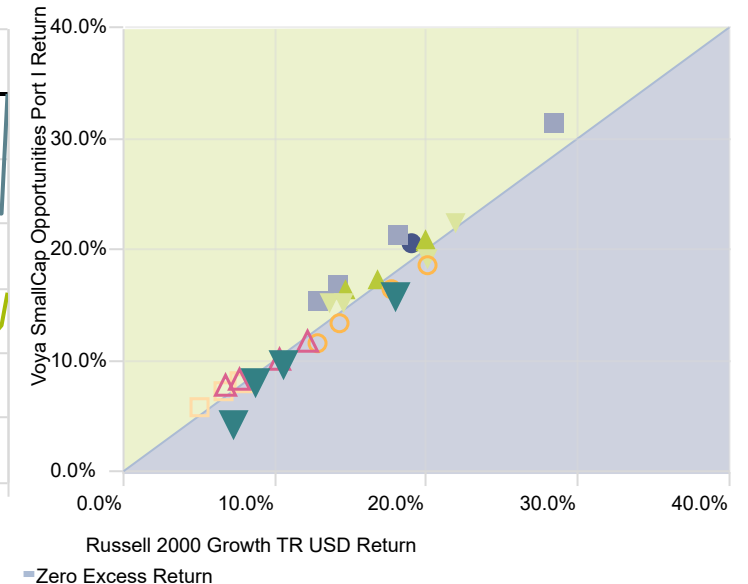
Calculation Benchmark: Russell 2000 Growth TR USD



— Voya SmallCap Opportunities Port I — Russell 2000 Growth TR USD — US Fund Small Growth

Rolling 3 Year Over/Under Benchmark Performance

Rolling Window: 3 Years 3 Months shift



Voya SmallCap Opportunities Port I

Management

Firm Data

Manager Name Multiple

Manager Tenure (Longest) 10

Manager Tenure (Average) 9

Longest Tenured Manager Name James Hasso

Shortest Tenured Manager Name Joseph Basset

Shortest Tenured Manager Start Date 4/30/2012

Manager Biographies

James Hasso since 10/1/2008

James Hasso

Head of U.S. Small Cap and Portfolio Manager

James Hasso serves as the head of the U.S. small cap team and a portfolio manager for the small cap and SMID cap strategies at Voya Investment Management. Previously at the firm, James also covered the financial-related sectors as an analyst. Prior to joining the firm, Jim worked at First Investors Corporation, Valenzuela Capital Partners, Mitchell Hutchins Asset Management and Spears, Benzak, Salomon & Farrell in research analyst/associate portfolio manager capacities. He received a BA in economics from Lehman College and an MBA in finance from Fordham University.

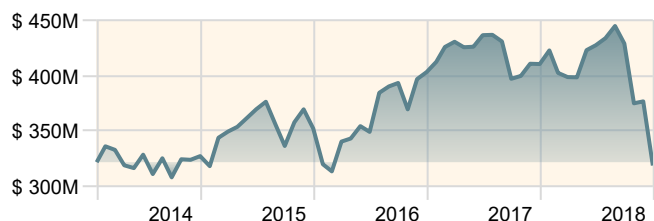
Joseph Basset since 4/30/2012

Joseph Basset, CFA

Equity Analyst and Portfolio Manager

Joseph Basset is an analyst on the U.S. small cap team at Voya Investment Management covering the industrials, energy, materials and utilities sectors. He also is a portfolio manager for the small cap and SMID cap strategies. Prior to joining the firm, Joe taught economics and finance at the university level for eight years. He also covered semiconductor, information technology and communication equipment companies for Banc One and One Group Technology Fund. Joe received a BA in economics from Tulane University and an MBA and ABD in finance from the University of Texas. He holds the Chartered Financial Analyst® designation.

Fund Size - All Share Classes (\$ millions)



Estimated Fund Flows (\$ millions)

3 Mo	\$ -14
6 Mo	\$ -19
1 Yr	\$ -24
3 Yr	\$ -84
Est Fund-Level Net Flow Date (Mo-End)	2/28/2019

Historical Turnover Ratio

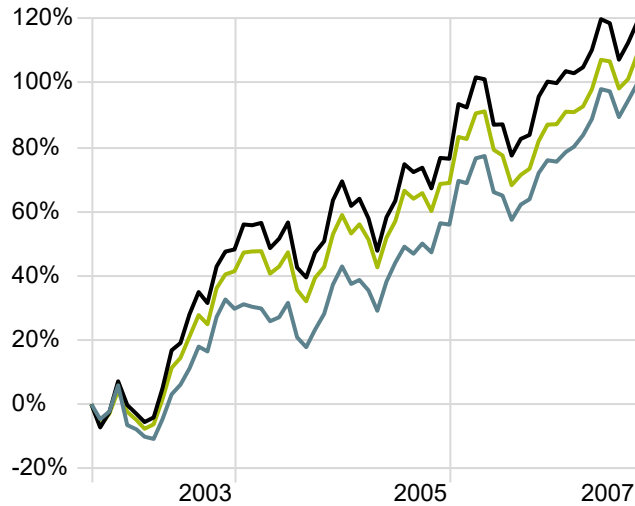
33	55	73	85
2014	2015	2016	2017

Voya SmallCap Opportunities Port I

Long-term Performance

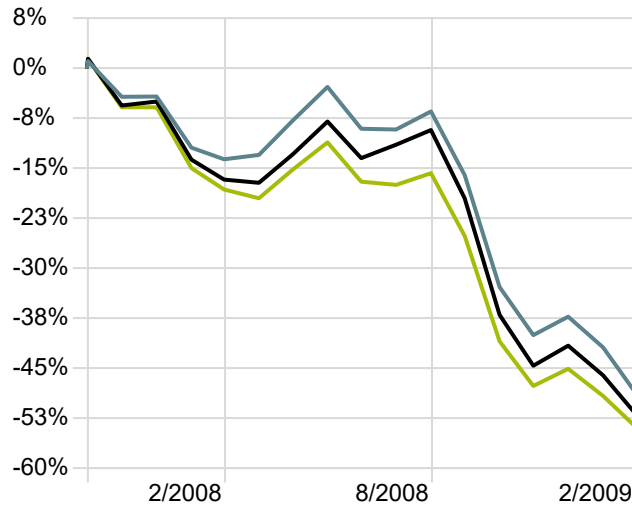
Credit Buildup

Time Period: 9/1/2002 to 9/30/2007



Credit Crunch - Financial Crisis

Time Period: 10/31/2007 to 2/28/2009



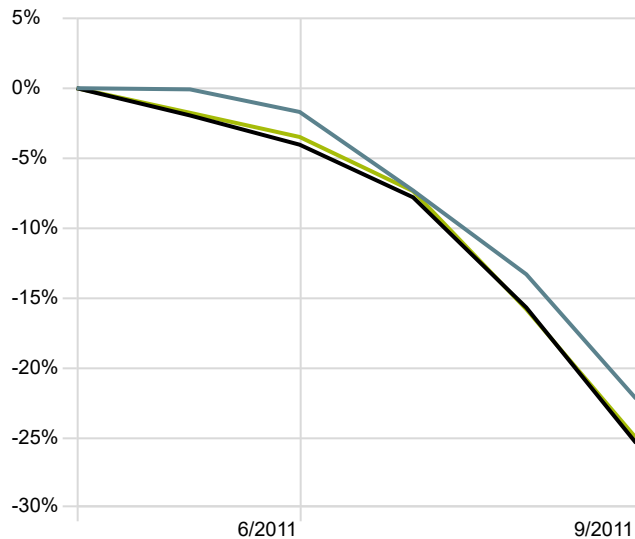
Financial Crisis Recovery - QE1&2

Time Period: 3/1/2009 to 4/30/2011



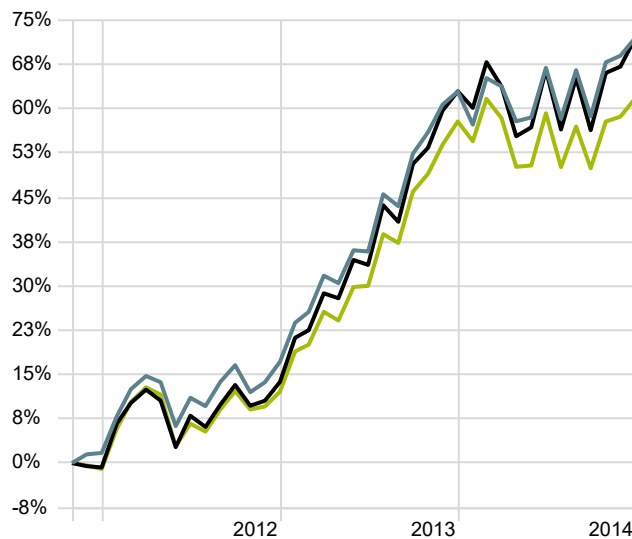
Double Dip

Time Period: 5/1/2011 to 9/30/2011



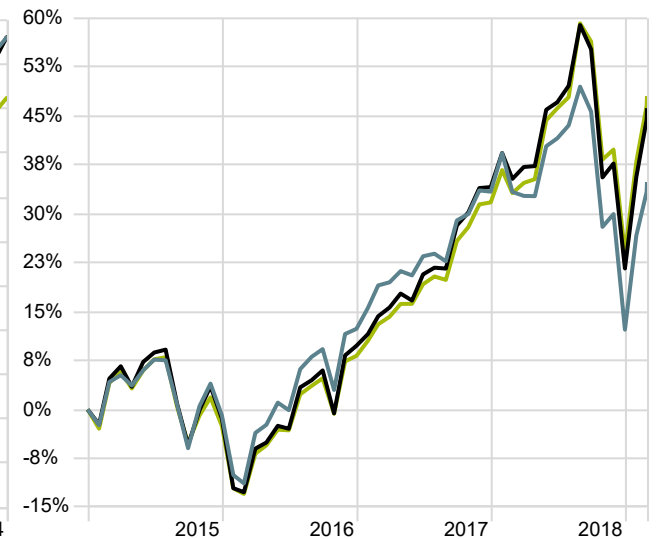
Recovery Continued - QE3

Time Period: 11/1/2011 to 1/1/2015



Middling Markets

Time Period: 1/1/2015 to 3/1/2019

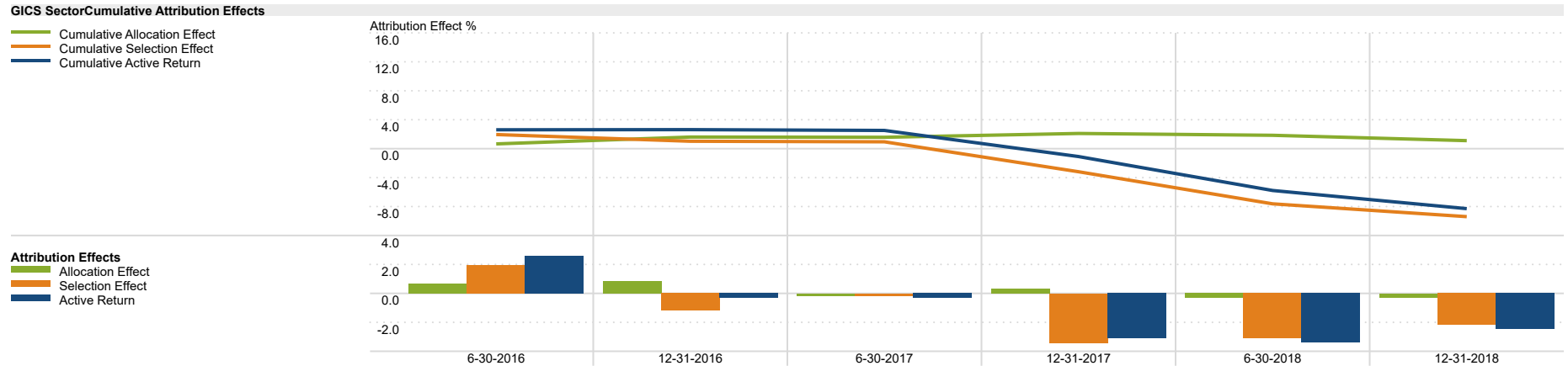


◆ Voya SmallCap Opportunities Port I ◊ Russell 2000 Growth TR USD ◇ US Fund Small Growth

Voya SmallCap Opportunities Port I

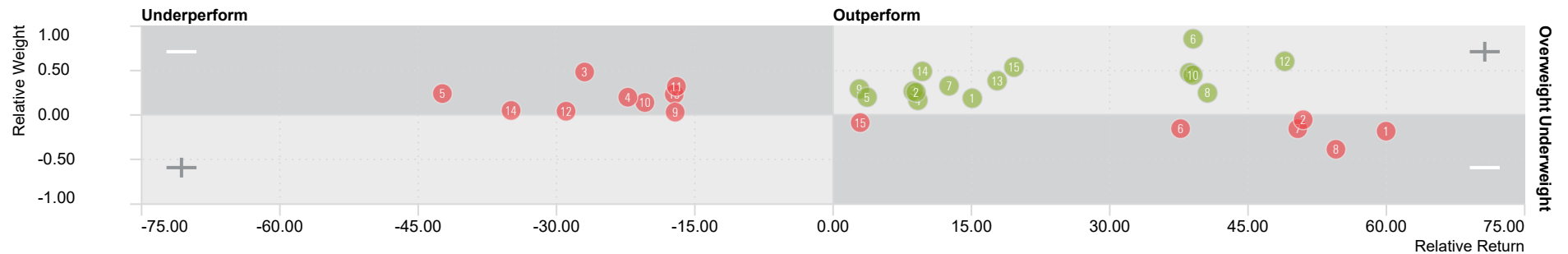
Near-term Performance

3 Year Cumulative Attribution Effects



Selection Effects

Time Period: 1/1/2016 to 12/31/2018



Best Selections	GICS Sector	Weight +/-	Return +/-	Effect	Worst Selections	GICS Sector	Weight +/-	Return +/-	Effect
1 Burlington Stores Inc	Consumer Discretionary	0.19	15.09	0.54	1 The Chemours Co	Materials	-0.18	59.97	-0.69
2 Intersil Corp	Information Technology	0.25	8.98	0.53	2 ARIAD Pharmaceutical...	Health Care	-0.06	50.98	-0.31
3 Cynosure Inc A	Health Care	0.26	8.69	0.40	3 Manhattan Associates Inc	Information Technology	0.48	-26.95	-0.30
4 WellCare Health Plans I...	Health Care	0.16	9.19	0.37	4 AMC Entertainment Hol...	Communication Services	0.20	-22.27	-0.30
5 Americold Realty Trust	Real Estate	0.20	3.69	0.34	5 Infinera Corp	Information Technology	0.24	-42.38	-0.29
6 Merit Medical Systems I...	Health Care	0.85	39.04	0.31	6 Kite Pharma Inc	Health Care	-0.16	37.68	-0.28
7 Clarcor Inc	Industrials	0.32	12.57	0.29	7 Advanced Micro Device...	Information Technology	-0.16	50.39	-0.26
8 Coherent Inc	Information Technology	0.24	40.61	0.27	8 GrubHub Inc	Consumer Discretionary	-0.39	54.53	-0.25
9 Plexus Corp	Information Technology	0.29	2.86	0.26	9 Puma Biotechnology Inc	Health Care	0.03	-17.13	-0.24
10 Masimo Corp	Health Care	0.44	39.01	0.25	10 Sanmina Corp	Information Technology	0.14	-20.42	-0.24
11 Amedisys Inc	Health Care	0.47	38.66	0.25	11 Universal Electronics Inc	Consumer Discretionary	0.32	-17.00	-0.23
12 Planet Fitness Inc A	Consumer Discretionary	0.60	48.98	0.24	12 Impinj Inc	Information Technology	0.04	-28.97	-0.23
13 Toro Co	Industrials	0.38	17.79	0.23	13 Life Storage Inc	Real Estate	0.23	-17.23	-0.23
14 Integrated Device Tech...	Information Technology	0.48	9.68	0.21	14 U S Xpress Enterprises ...	Industrials	0.05	-34.92	-0.22
15 Blue Buffalo Pet Produc...	Consumer Staples	0.53	19.61	0.20	15 West Pharmaceutical S...	Health Care	-0.09	2.94	-0.22

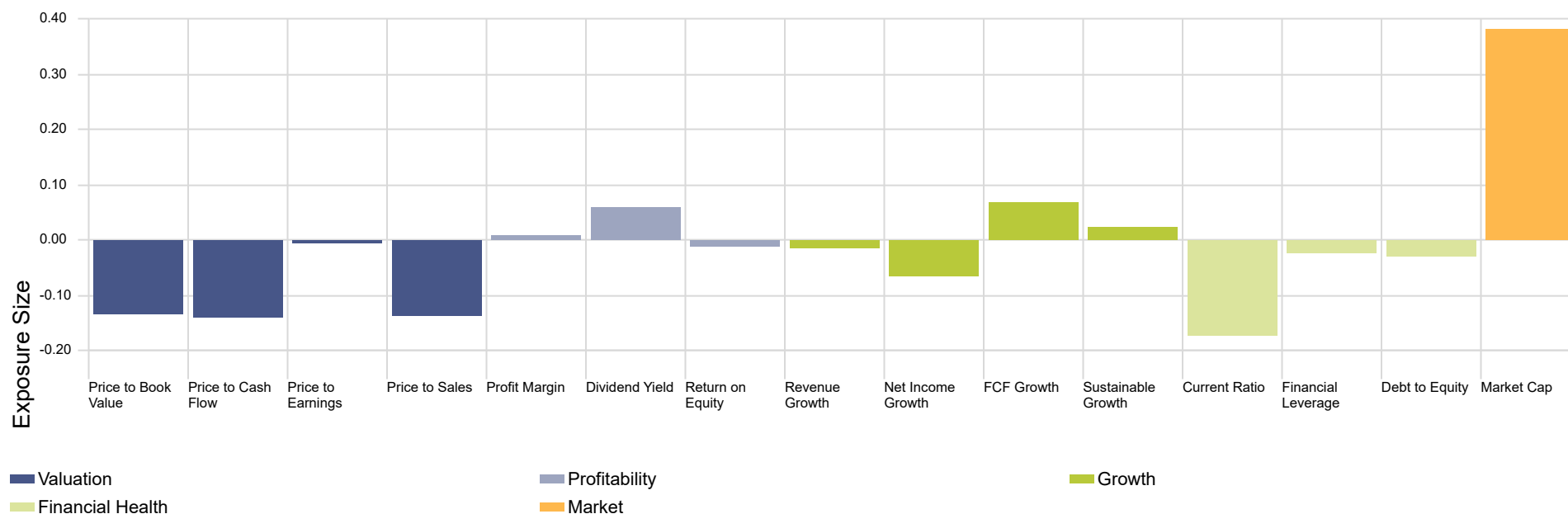
Voya SmallCap Opportunities Port I

Near-term Performance

Sector						Morningstar Style Box						Regional					
Time Period: 1/1/2016 to 12/31/2018						Time Period: 1/1/2016 to 12/31/2018						Time Period: 1/1/2016 to 12/31/2018					
	+/- Weights	+/- Return	Allocation Effect	Selection Effect	Active Return		+/- Weights	+/- Return	Allocation Effect	Selection Effect	Active Return		+/- Weights	+/- Return	Allocation Effect	Selection Effect	Active Return
Communication Services	-0.89	-8.58	-0.02	-0.23	-0.25	Large Growth	-0.15		-0.23	0.00	-0.23	Asia - Developed	-0.12		0.01	0.00	0.01
Consumer Discretionary	1.46	-7.06	0.00	-1.38	-1.38	Mid Blend	3.02	-8.44	0.31	-0.93	-0.62	Asia - Emerging	0.00		0.00	0.00	0.00
Consumer Staples	-1.79	9.72	-0.07	0.05	-0.02	Mid Growth	3.76	-3.43	1.06	-0.76	0.30	Canada	0.24	-5.75	-0.12	-0.01	-0.13
Energy	0.17	-6.86	0.01	-0.13	-0.12	Mid Value	2.23	-15.05	0.39	-0.71	-0.32	Europe - Emerging	-0.02		0.00	0.00	0.00
Financials	0.40	-0.92	0.03	-0.12	-0.09	Small Blend	-5.30	-5.09	0.69	-1.20	-0.52	Europe - ex Euro	-0.02		0.06	0.00	0.06
Health Care	-2.99	-6.22	0.10	-1.62	-1.52	Small Growth	-4.90	-6.52	-0.03	-2.08	-2.11	Eurozone	0.16	-0.89	-0.12	-0.01	-0.13
Industrials	0.33	-0.18	0.13	-0.04	0.09	Small Value	2.09	4.75	-0.69	0.97	0.27	Latin America	-0.12		-0.02	0.00	-0.02
Information Technology	1.40	1.66	0.08	0.32	0.40	Unclassified	-0.76	11.71	0.17	0.18	0.35	Middle East	-0.07		0.01	0.00	0.01
Materials	1.53	3.05	0.00	0.12	0.12	Attribution Total	0.00	-2.46	1.78	-4.54	-2.76	United Kingdom	0.10	1.26	-0.09	0.08	-0.01
Real Estate	-0.86	-1.99	0.08	-0.10	-0.02							United States	-1.99	-2.32	0.00	-2.53	-2.53
Utilities	-0.60		0.03	0.00	0.03							Unclassified	1.83		0.00	0.00	0.00
Unclassified	1.83		0.00	0.00	0.00							Attribution Total	0.00	-2.46	-0.30	-2.46	-2.76
Attribution Total	0.00	-2.46	0.37	-3.13	-2.76												

Factor Exposure

As of Date : 12/31/2018

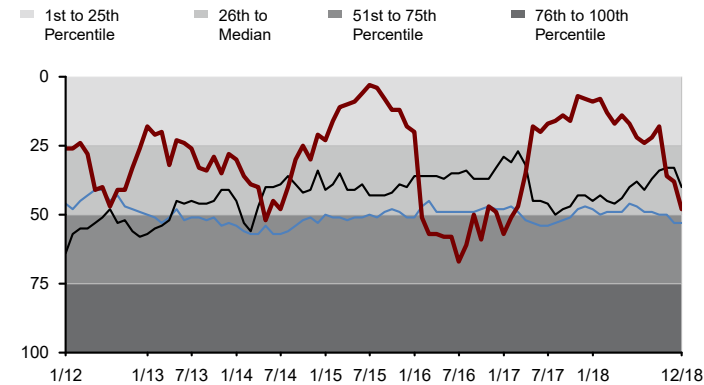


VY® Oppenheimer Global I

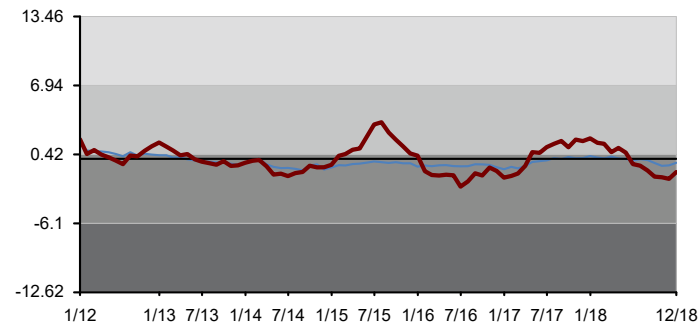
IGMIX

Index: MSCI World NR USD
 Category: World Large Stock
 Return Date: 12/31/2018

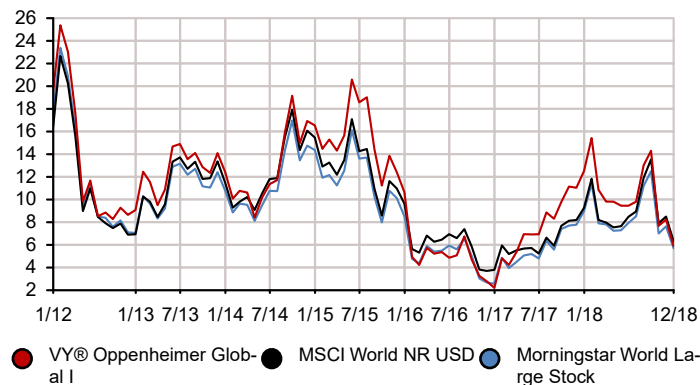
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



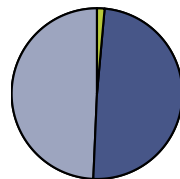
● VY@ Oppenheimer Global I ● MSCI World NR USD ● Morningstar World Large Stock

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	79.0	188.0	1631.0
Holdings - Bonds	-	-	0.0
Holdings - Other	2.0	13.0	-
Turnover Ratio	9.0	45.7	-
Net Expense Ratio	0.8	1.2	-
Gross Expense Ratio	0.8	2.2	-
Avg Mkt Cap (\$MM)	54,146	51,160	58,003
Total Assets (\$MM)	1,334	3,655	-
P/E Ratio	21.4	18.2	15.0
P/B Ratio	2.5	2.7	2.0
P/S Ratio	1.9	2.1	1.5
P/CF Ratio	9.3	9.4	7.1
ROE %	17.0	20.6	-
ROA %	6.5	7.3	-
Dividend Yld	1.6	2.3	2.7

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	1.43
Domestic Stock	49.25
Foreign Stock	49.31
Domestic Bond	-
Foreign Bond	-
Other	-

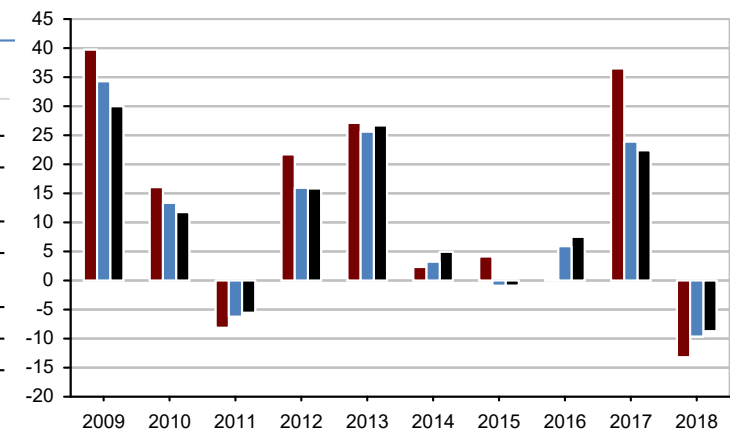
Sector Allocation (%)

	Fund	Avg	Idx
Energy	0.9	5.5	6.0
Materials	1.0	4.2	4.6
Industrials	14.3	11.0	10.9
Cons Discretionary	12.4	7.0	-
Consumer Staples	15.0	13.8	-
Healthcare	14.8	12.8	13.3
Financials	18.5	17.4	17.6
Info Technology	28.9	17.8	16.6
Telecom Services	7.8	7.4	-
Utilities	0.0	2.9	3.4

Regional Allocation (%)

	Fund	Idx
United States	49.98	-
Japan	13.93	-
Germany	9.03	-
France	6.23	-
United Kingdom	4.91	-
Netherlands	3.88	-
India	2.58	-
Switzerland	2.49	-
China	2.05	-
Spain	1.94	-

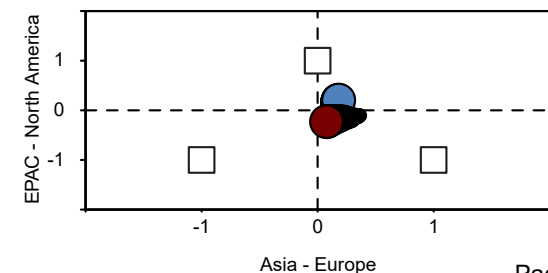
Calendar Year Returns



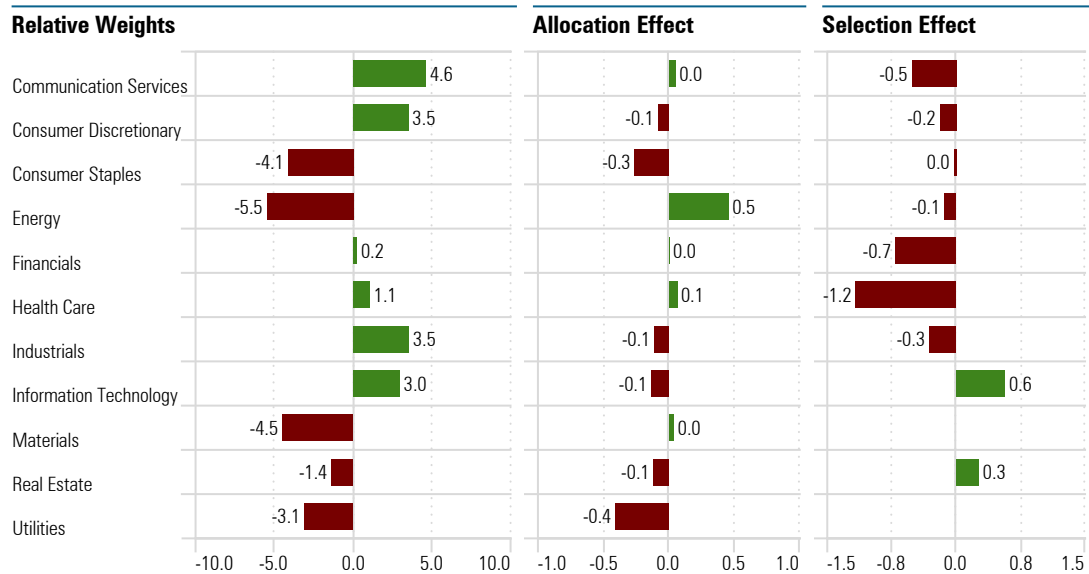
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	13.5	2.5	13.1	1.8
Beta	1.2	0.2	1.1	0.2
Alpha	-1.3	-0.6	-0.1	0.2
Sharpe	0.4	-0.1	0.4	0.0
Sortino	0.5	-0.1	0.5	0.0
Info Ratio	-0.1	0.2	0.1	0.2
Down Capture	133.8	33.5	116.2	18.5
Up Capture	123.0	27.9	115.5	20.8

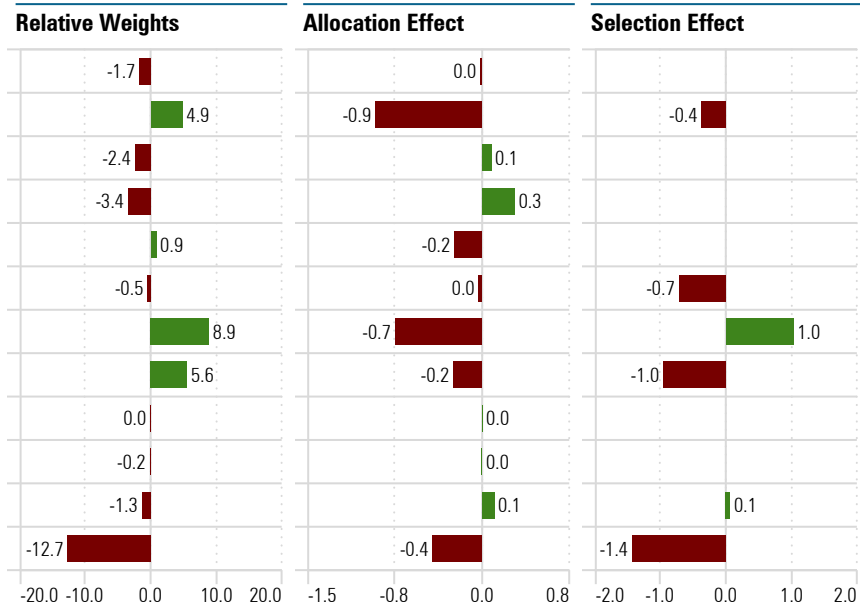
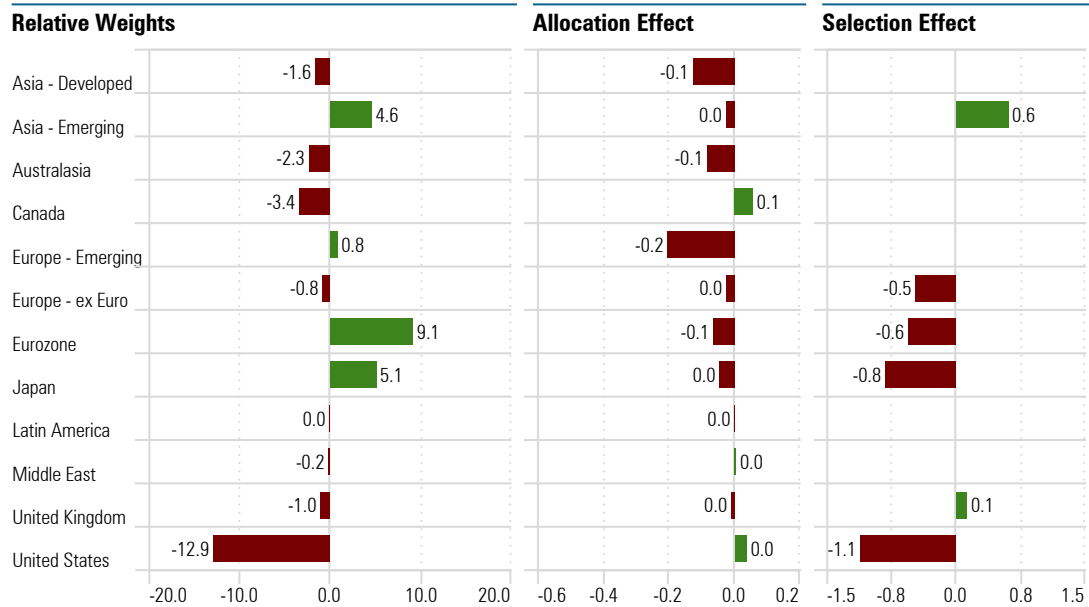
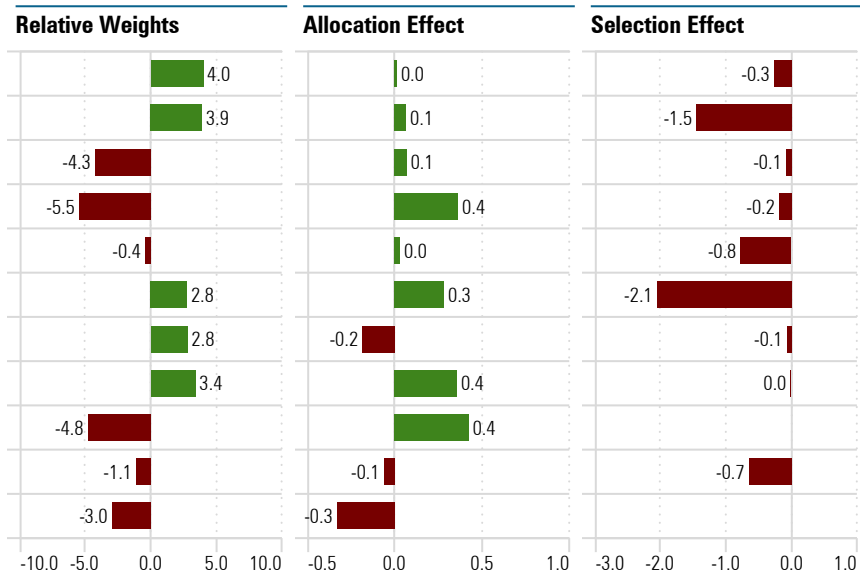
Historical Style Analysis



One Quarter Performance Attribution

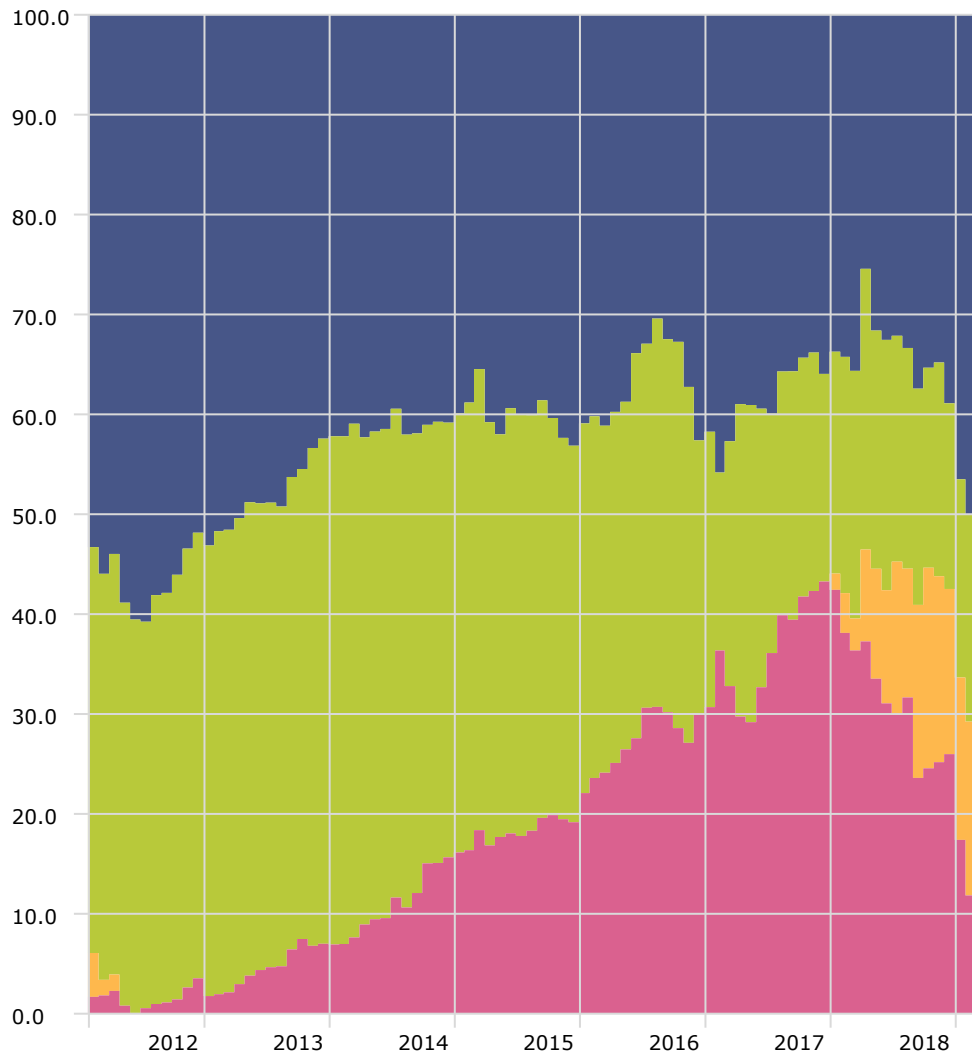


One Year Performance Attribution



VY® Oppenheimer Global I - Historical Style Exposure

Time Period: 3/1/2009 to 2/28/2019



■ MSCI AC Americas PR USD

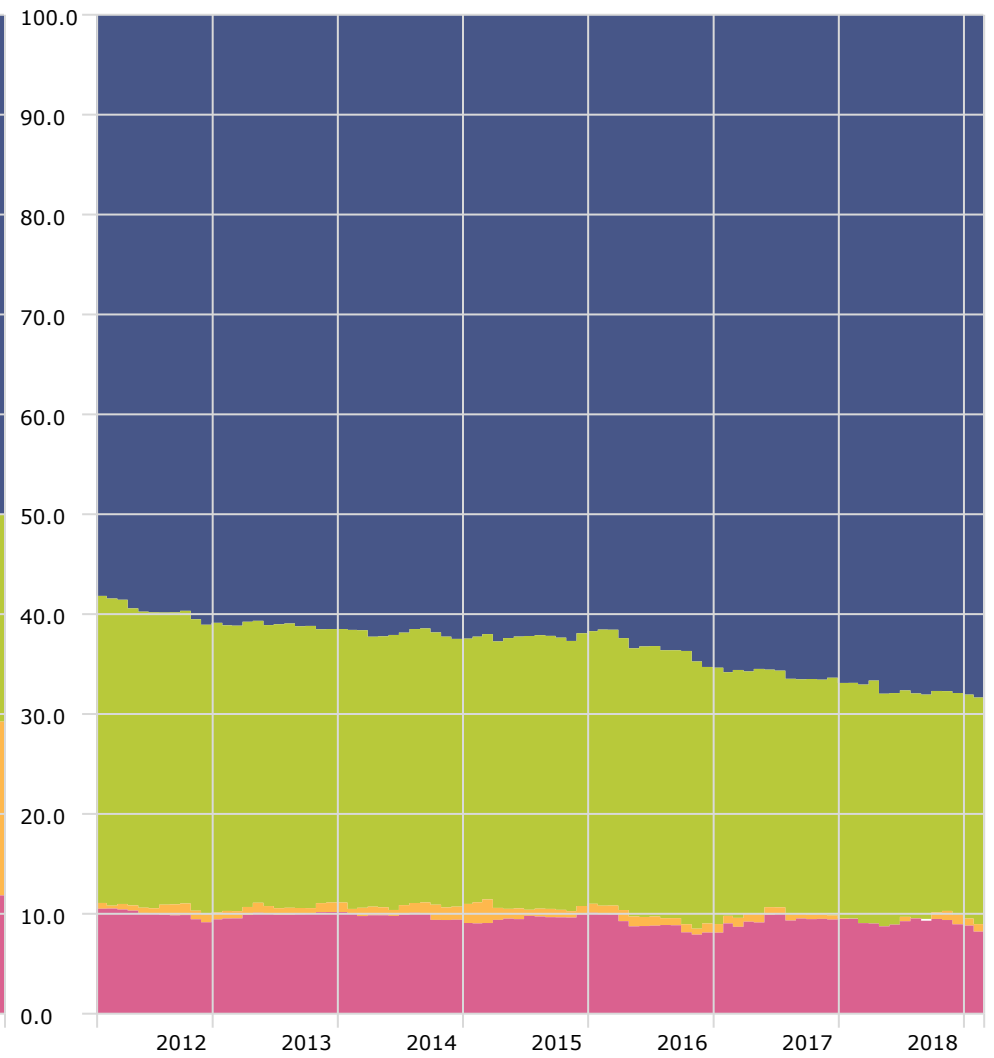
■ MSCI AC Europe PR USD

■ MSCI AC Far East Ex Japan PR USD

■ MSCI Japan PR USD

MSCI World NR USD - Historical Style Exposure

Time Period: 3/1/2009 to 2/28/2019



■ MSCI AC Americas PR USD

■ MSCI AC Europe PR USD

■ MSCI AC Far East Ex Japan PR USD

■ MSCI Japan PR USD

Firm Data

Manager Name Multiple

Manager Tenure (Longest) 15

Manager Tenure (Average) 8

Longest Tenured Manager Name Rajeev Bhaman

Shortest Tenured Manager Name John C. Delano

Shortest Tenured Manager Start Date 3/31/2017

Manager Biographies

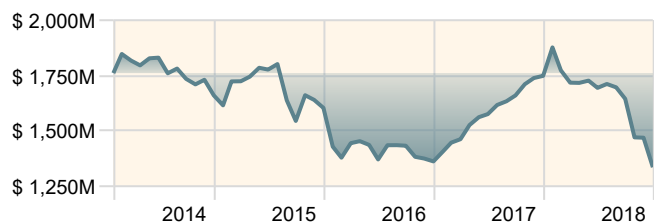
Rajeev Bhaman since 8/31/2004

Rajeev Bhaman, CFA, joined OppenheimerFunds, Inc. in 1996 and has been a Director of Global Equities of Oppenheimer since 2013, a Senior Vice President of Oppenheimer since 2006, and is a portfolio manager of other funds managed by Oppenheimer.

John C. Delano since 3/31/2017

Mr. Delano is Vice President and Director of Equity Research, Global Team of Oppenheimer since 2010. Prior to that, Mr. Delano served as Director of Equity Research, Growth Team. He joined OppenheimerFunds in May 2007 as a Senior Research Analyst with the Oppenheimer Growth team specializing in the consumer discretionary and staples sectors for mid- and large-cap growth. Before joining OppenheimerFunds in May 2007, John worked at Putnam Investments as an analyst covering large-cap growth focusing on hardware, software and telecommunication services. During his nine-year tenure at Putnam Investments, John was also a derivatives analyst as well as an equity analyst focusing on retail. Prior to that, he worked as a trader at NationsBanc-CRT. John holds a B.S. in civil engineering from the University of Virginia and an M.B.A. from Duke University. John is a CFA charter holder.

Fund Size - All Share Classes (\$ millions)



Estimated Fund Flows (\$ millions)

3 Mo	\$ -56
6 Mo	\$ -105
1 Yr	\$ -225
3 Yr	\$ -537
Est Fund-Level Net Flow Date (Mo-End)	2/28/2019

Historical Turnover Ratio

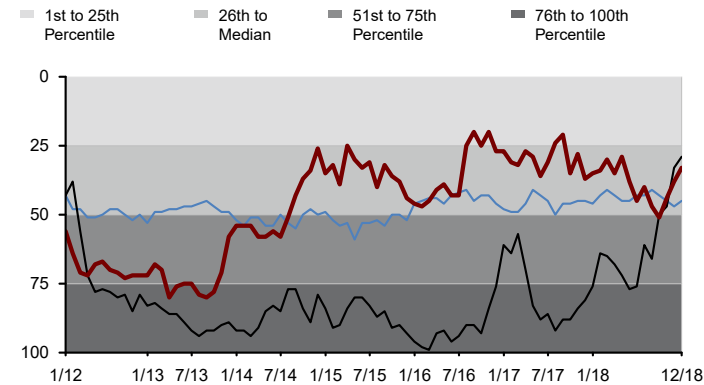
2014	12	2015	12	2016	6	2017	9
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American Funds Europacific Growth R6

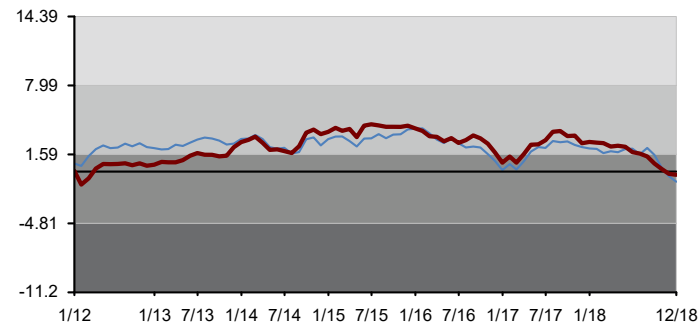
RERGX

Index: MSCI ACWI Ex USA NR USD
 Category: Foreign Large Growth
 Return Date: 12/31/2018

Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



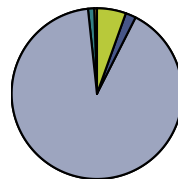
● American Funds Europacific Gr with R6 ● MSCI ACWI Ex USA NR USD ● Morningstar Foreign Large Growth

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	269.0	114.0	2132.0
Holdings - Bonds	11.0	-	0.0
Holdings - Other	112.0	13.0	-
Turnover Ratio	0.5	43.3	-
Net Expense Ratio	0.5	1.1	-
Gross Expense Ratio	0.5	1.5	-
Avg Mkt Cap (\$MM)	44,865	30,107	30,558
Total Assets (\$MM)	138,711	7,012	-
P/E Ratio	14.7	19.3	12.1
P/B Ratio	2.0	2.9	1.4
P/S Ratio	1.6	2.1	1.1
P/CF Ratio	4.9	9.9	4.4
ROE %	18.5	16.8	-
ROA %	7.9	6.6	-
Dividend Yld	2.0	2.1	3.5

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	5.48
Domestic Stock	1.97
Foreign Stock	90.73
Domestic Bond	1.17
Foreign Bond	-
Other	0.52

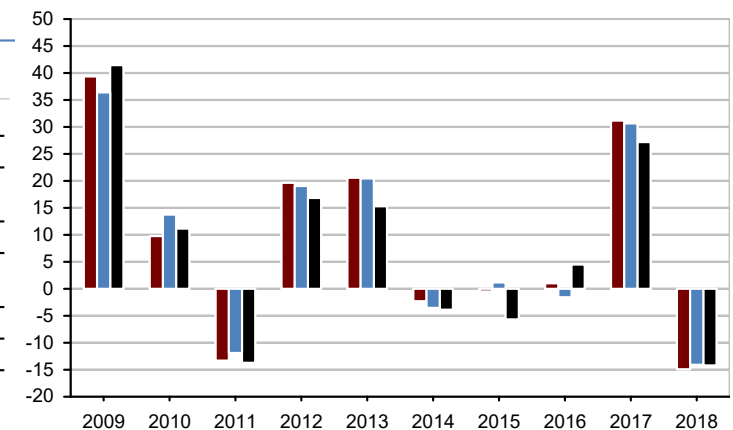
Sector Allocation (%)

	Fund	Avg	Idx
Energy	6.7	3.6	7.3
Materials	8.7	5.7	7.9
Industrials	11.1	13.6	10.7
Cons Discretionary	5.2	7.5	-
Consumer Staples	18.9	15.6	-
Healthcare	8.1	11.2	8.4
Financials	18.3	16.1	22.2
Info Technology	20.1	18.2	11.5
Telecom Services	10.7	6.5	-
Utilities	2.7	0.9	3.4

Regional Allocation (%)

	Fund	Idx
Japan	15.78	-
United Kingdom	11.54	-
India	8.19	-
China	7.95	-
South Korea	7.17	-
France	5.89	-
Hong Kong	4.91	-
Switzerland	4.56	-
Netherlands	4.17	-
Canada	3.99	-

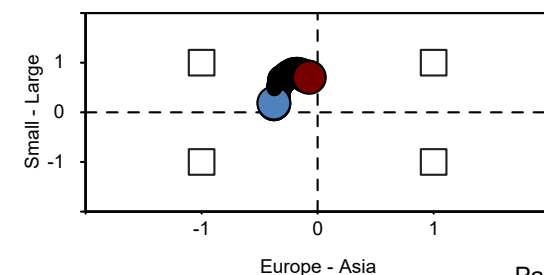
Calendar Year Returns



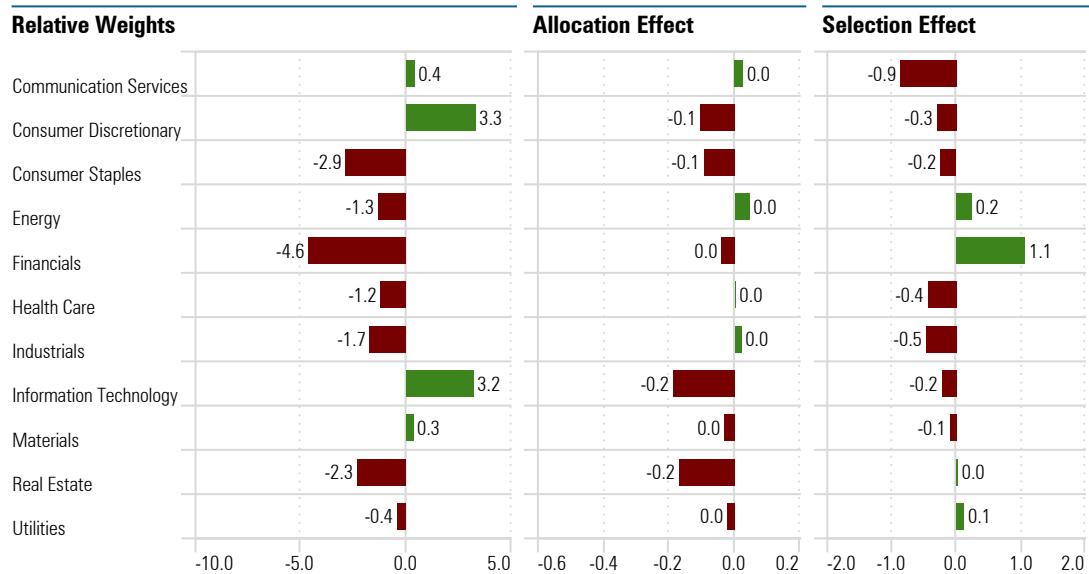
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	11.9	-0.2	11.4	-0.6
Beta	1.0	-0.0	0.9	-0.1
Alpha	-0.3	-0.7	1.2	1.3
Sharpe	0.3	0.1	0.2	0.0
Sortino	0.4	0.1	0.2	0.1
Info Ratio	-0.1	-0.2	0.3	0.4
Down Capture	99.1	5.5	85.2	-8.6
Up Capture	96.9	1.1	91.2	-0.9

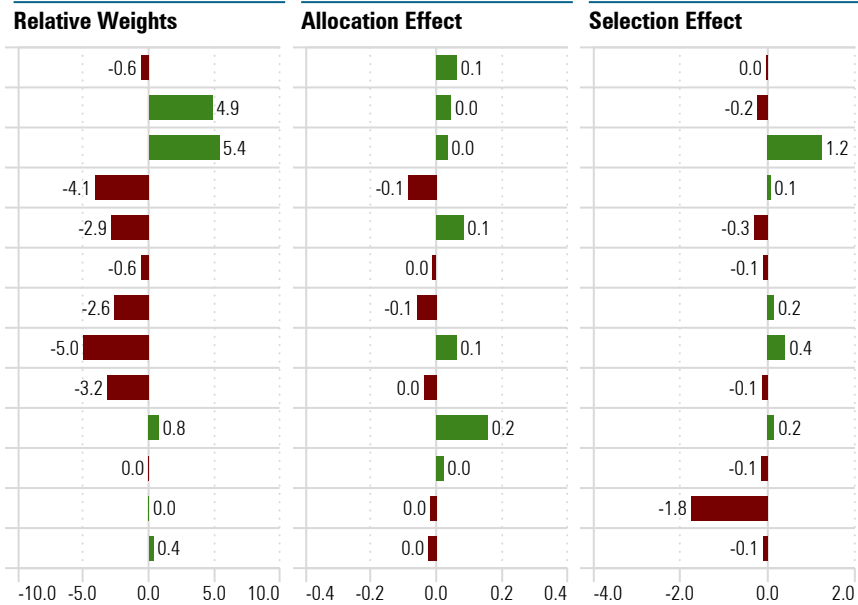
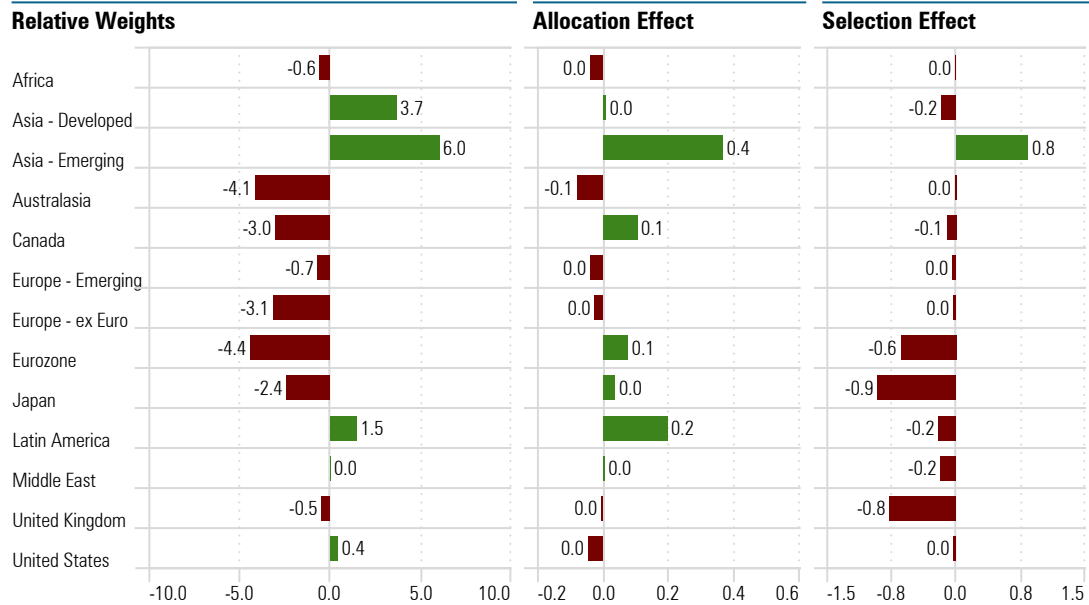
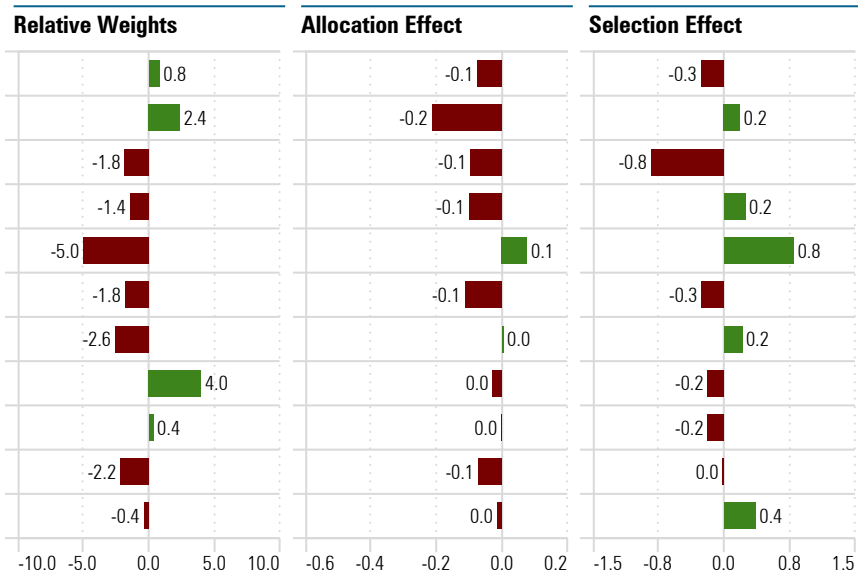
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution

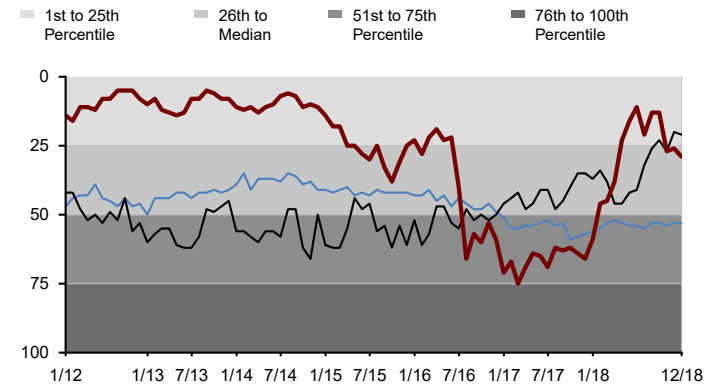


Oppenheimer Developing Markets I

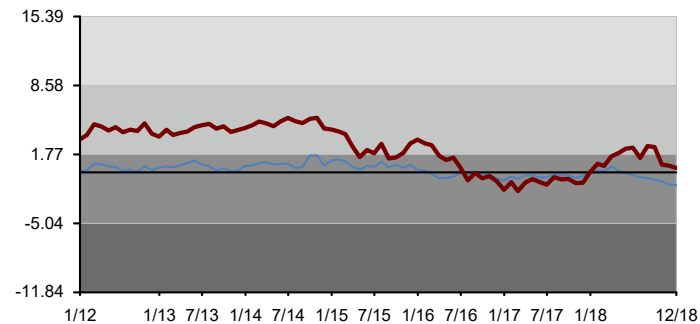
ODVIX

Index: MSCI EM NR USD
 Category: Diversified Emerging Mkt
 Return Date: 12/31/2018

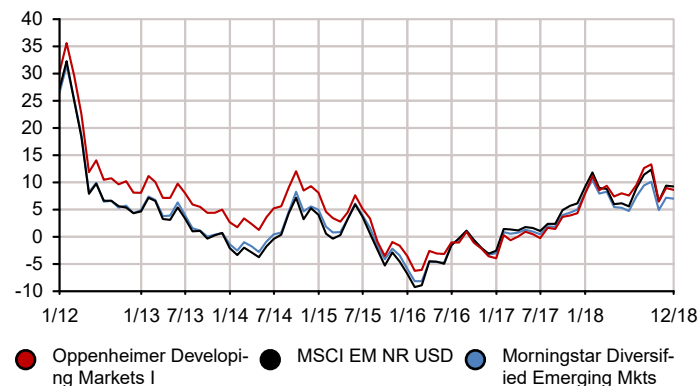
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

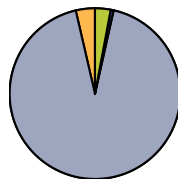


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	87.0	250.0	1123.0
Holdings - Bonds	-	11.0	0.0
Holdings - Other	8.0	18.0	-
Turnover Ratio	36.0	59.9	-
Net Expense Ratio	0.9	1.3	-
Gross Expense Ratio	0.9	2.8	-
Avg Mkt Cap (\$MM)	38,021	22,913	27,749
Total Assets (\$MM)	35,471	2,222	-
P/E Ratio	18.1	13.3	11.2
P/B Ratio	2.6	1.9	1.4
P/S Ratio	1.8	1.5	1.2
P/CF Ratio	12.0	6.9	4.7
ROE %	17.5	17.8	-
ROA %	7.6	8.1	-
Dividend Yld	1.9	3.2	3.3

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	2.91
Domestic Stock	0.54
Foreign Stock	91.44
Domestic Bond	-
Foreign Bond	-
Other	3.57

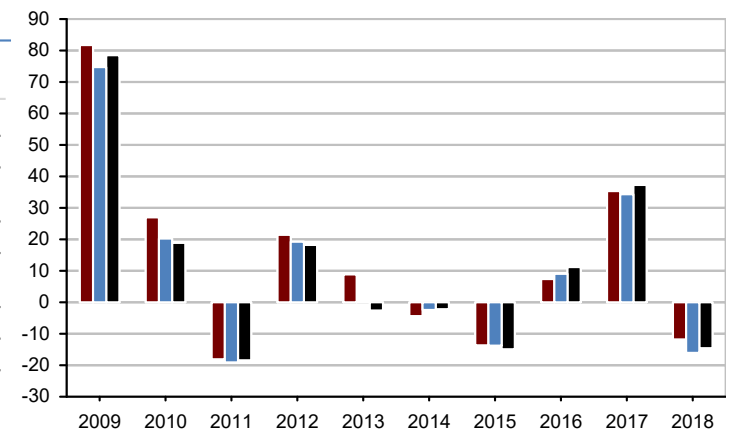
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.7	6.6	7.7
Materials	7.4	7.4	7.9
Industrials	4.3	6.2	5.1
Cons Discretionary	0.0	5.6	-
Consumer Staples	0.0	12.8	-
Healthcare	5.2	3.8	2.7
Financials	24.6	24.1	24.7
Info Technology	17.1	21.0	23.7
Telecom Services	0.0	9.4	-
Utilities	0.0	2.1	2.6

Regional Allocation (%)

	Fund	Idx
China	20.73	-
India	12.31	-
Russia	8.15	-
Brazil	7.44	-
South Korea	6.53	-
France	6.07	-
Taiwan	5.53	-
Mexico	5.41	-
Hong Kong	4.78	-
Philippines	4.12	-

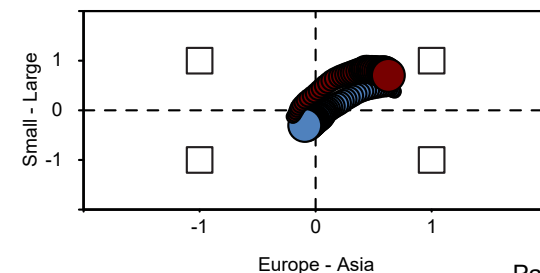
Calendar Year Returns



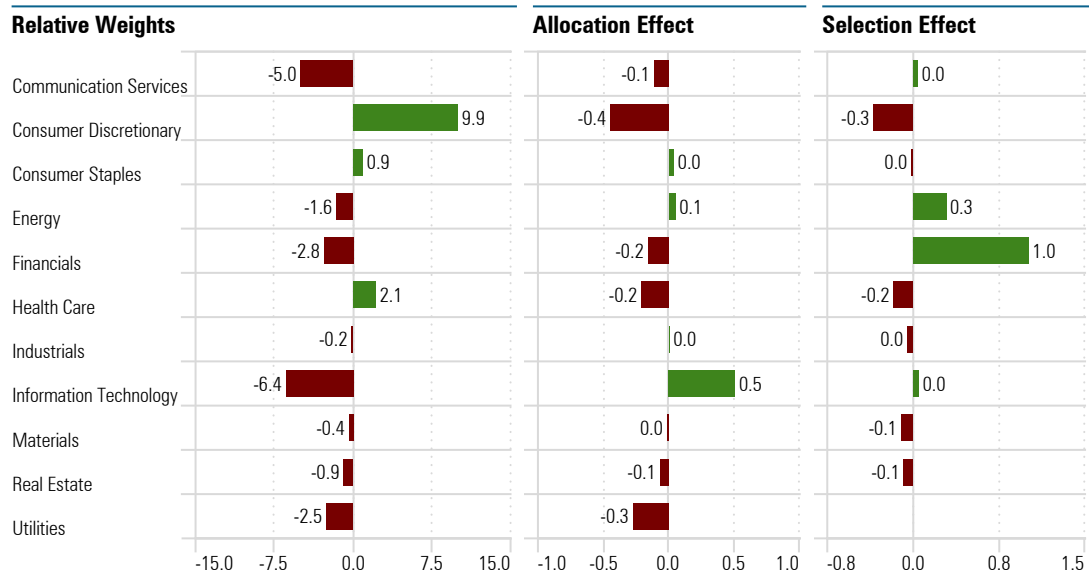
Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	13.4	-0.8	14.5	0.0
Beta	0.9	-0.0	0.9	0.0
Alpha	0.4	1.7	-0.4	0.6
Sharpe	0.6	0.1	0.1	0.0
Sortino	0.9	0.2	0.1	0.1
Info Ratio	-0.1	0.3	-0.1	0.1
Down Capture	85.2	-12.1	91.0	-2.7
Up Capture	86.3	-2.2	87.4	-0.3

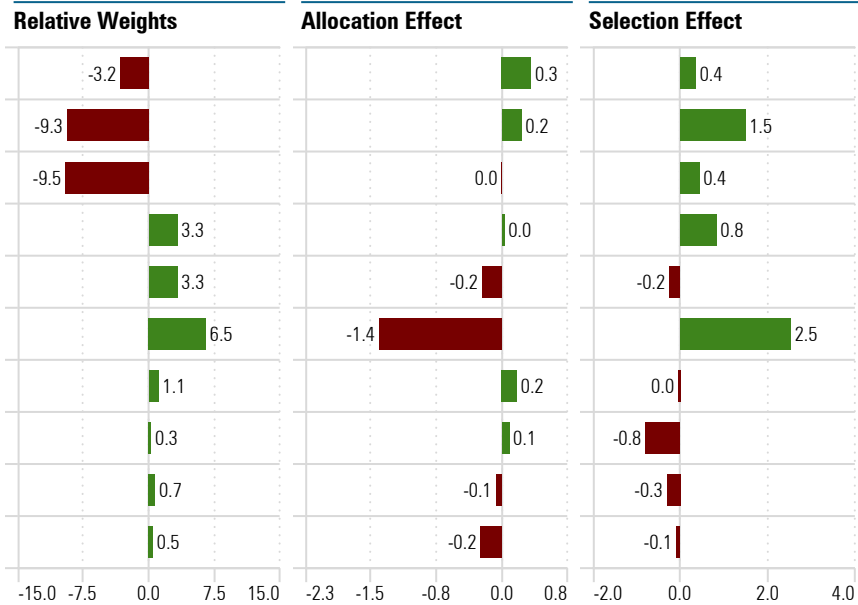
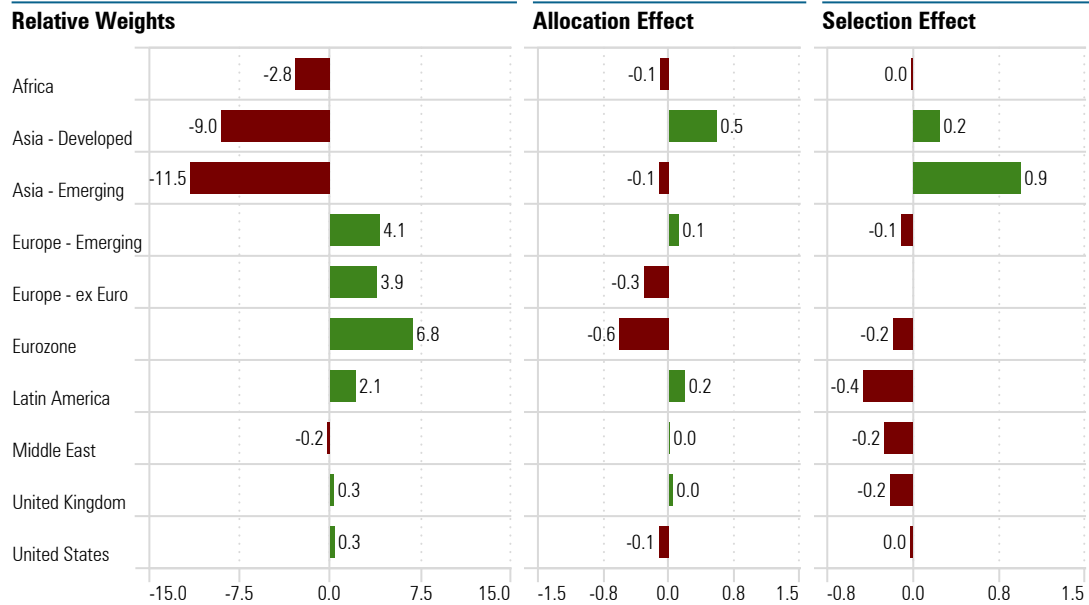
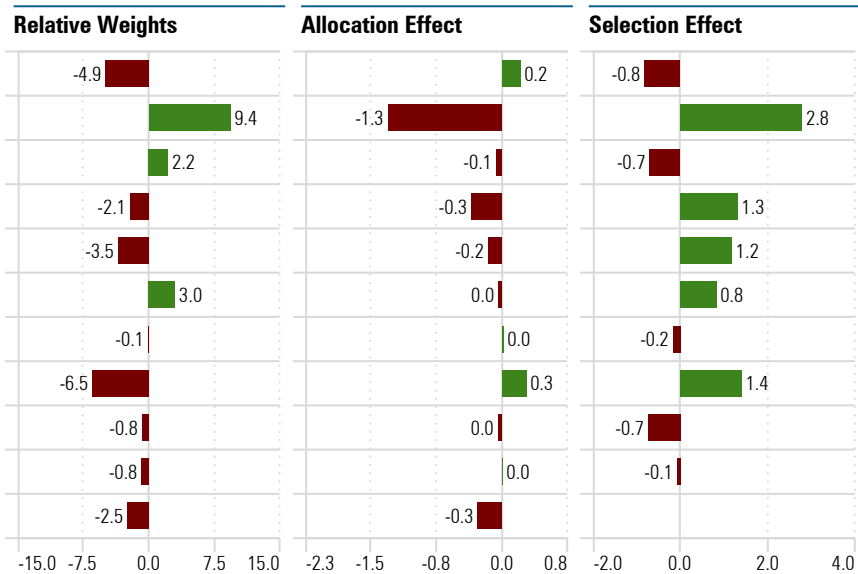
Historical Style Analysis



One Quarter Performance Attribution



One Year Performance Attribution

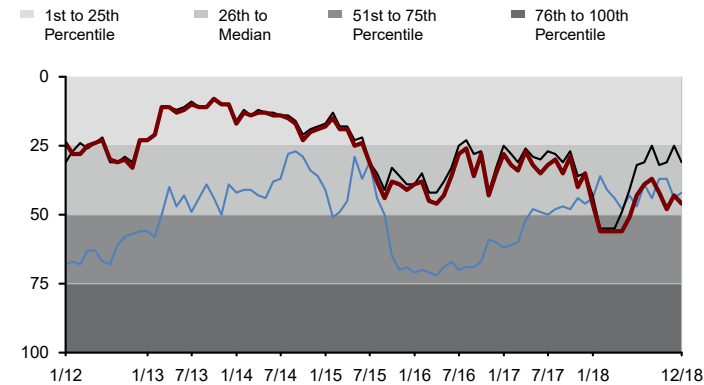


Vanguard Real Estate Index Institutional

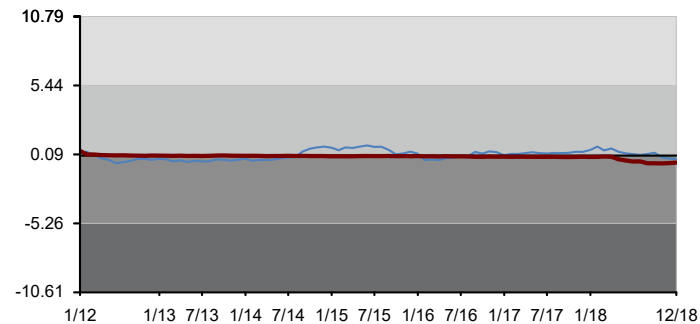
VGSNX

Index: Spliced Index
 Category: Real Estate
 Return Date: 12/31/2018

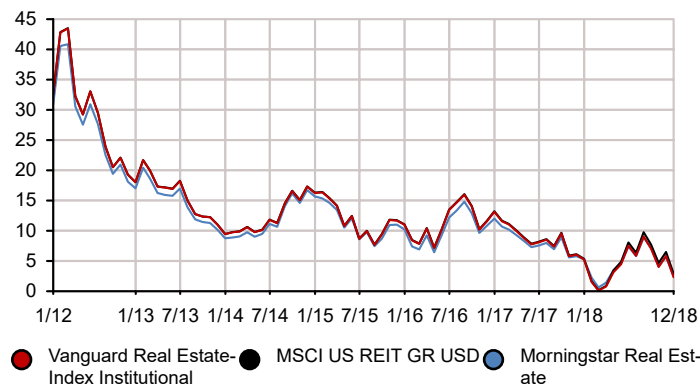
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

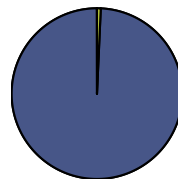


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	190.0	54.0	153.0
Holdings - Bonds	-	17.0	0.0
Holdings - Other	3.0	12.0	-
Turnover Ratio	6.0	71.0	-
Net Expense Ratio	0.1	1.1	-
Gross Expense Ratio	0.1	2.3	-
Avg Mkt Cap (\$MM)	13,092	11,848	10,227
Total Assets (\$MM)	53,271	1,773	-
P/E Ratio	29.3	30.9	26.8
P/B Ratio	2.3	2.2	1.9
P/S Ratio	5.1	6.4	5.8
P/CF Ratio	14.8	15.3	12.9
ROE %	13.0	12.6	-
ROA %	3.9	3.9	-
Dividend Yld	4.0	4.0	4.7

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	0.71
Domestic Stock	99.26
Foreign Stock	0.03
Domestic Bond	-
Foreign Bond	-
Other	-

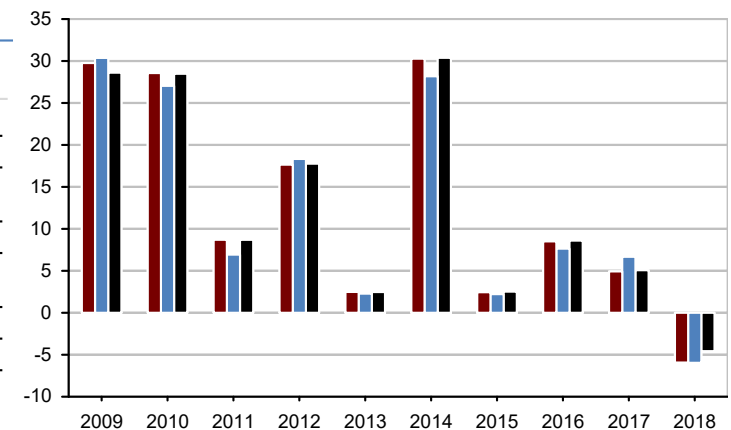
Sector Allocation (%)

	Fund	Avg	Idx
Energy	0.0	0.0	0.0
Materials	2.2	0.6	0.0
Industrials	0.9	0.4	1.1
Cons Discretionary	0.0	2.0	-
Consumer Staples	0.0	0.3	-
Healthcare	0.0	0.3	0.0
Financials	0.0	0.2	0.0
Info Technology	0.0	0.7	0.0
Telecom Services	0.0	0.4	-
Utilities	0.0	0.1	0.0

Top 10 Holdings

	Fund %
Vanguard Real Estate I...	11.0
American Tower Corp	5.9
Simon Property Group Inc	4.7
Crown Castle Internati...	3.9
Prologis Inc	3.5
Public Storage	2.7
Equinix Inc	2.5
Welltower Inc	2.2
AvalonBay Communities Inc	2.2
Equity Residential	2.2

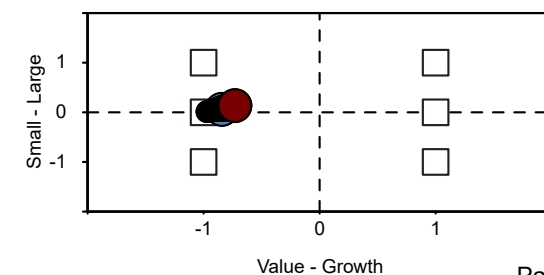
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	13.5	0.7	13.9	0.8
Beta	1.0	0.1	1.0	0.1
Alpha	-0.5	-1.1	-0.3	-0.1
Sharpe	0.2	-0.0	0.5	-0.0
Sortino	0.1	-0.1	0.8	-0.0
Info Ratio	-1.1	-1.0	-0.9	-0.4
Down Capture	99.9	14.2	100.0	11.4
Up Capture	96.8	9.0	98.3	11.2

Historical Style Analysis

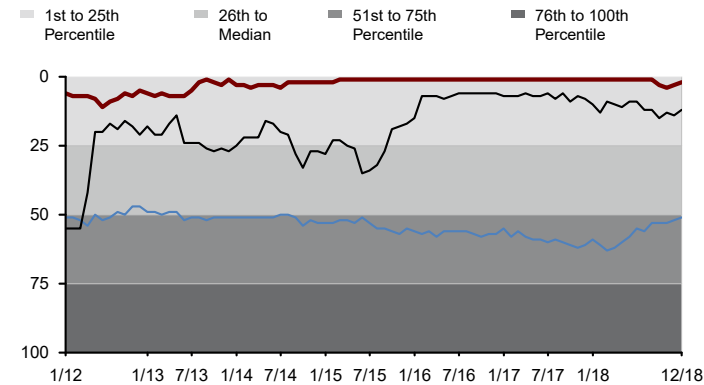


VY® T. Rowe Price Capital Apprec I

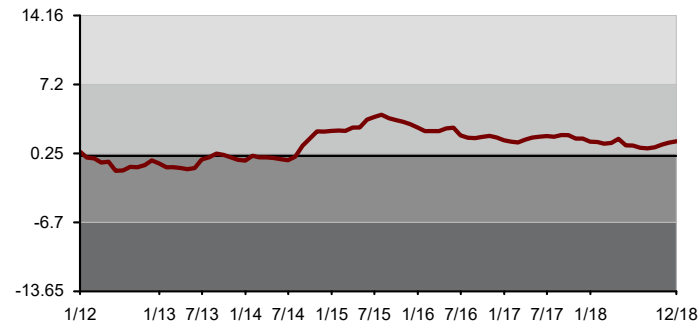
ITRIX

Index: 40% BarCap | 60% S&P
 Category: Allocation--50% to 70% Equity
 Return Date: 12/31/2018

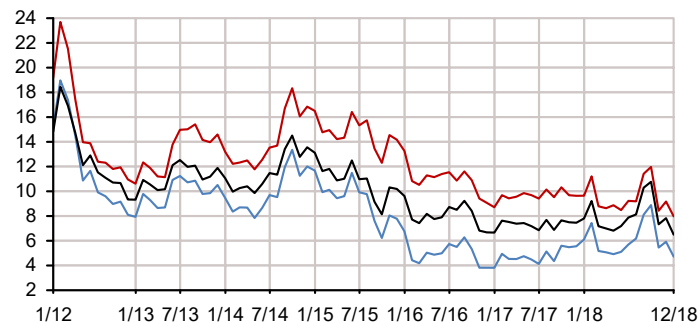
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



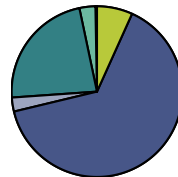
● VY® T. Rowe Price Capital Apprec I ● 40% BarCap | 60% S&P ● Morningstar Allocation--50% to 70% Equity

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	126.0	151.0	-
Holdings - Bonds	158.0	295.0	-
Holdings - Other	25.0	28.0	-
Turnover Ratio	61.0	51.3	-
Net Expense Ratio	0.6	1.1	-
Gross Expense Ratio	0.6	1.7	-
Avg Mkt Cap (\$MM)	62,814	57,441	-
Total Assets (\$MM)	6,051	5,284	-
P/E Ratio	24.4	17.5	-
P/B Ratio	3.6	2.5	-
P/S Ratio	2.9	1.9	-
P/CF Ratio	15.4	9.9	-
ROE %	20.0	-	-
ROA %	8.1	-	-
Dividend Yld	1.5	2.3	-

Asset Allocation

Portfolio Date: 09/30/2018



	%
Cash	6.45
Domestic Stock	61.71
Foreign Stock	2.53
Domestic Bond	21.81
Foreign Bond	2.89
Other	0.28

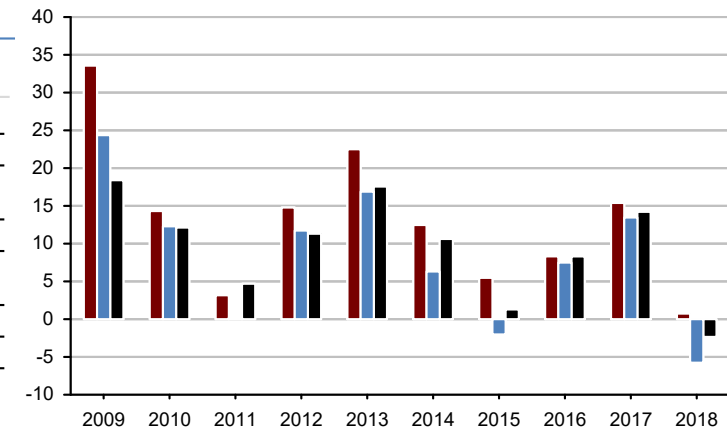
Sector Allocation (%)

	Fund	Avg	Idx
Energy	2.0	7.4	-
Materials	0.4	4.0	-
Industrials	11.8	10.4	-
Cons Discretionary	5.4	8.0	-
Consumer Staples	14.4	10.0	-
Healthcare	20.1	13.4	-
Financials	16.4	17.2	-
Info Technology	20.6	17.7	-
Telecom Services	0.4	6.1	-
Utilities	11.8	3.2	-

Top 10 Holdings

	Fund %
United States Treasury...	4.2
PerkinElmer Inc	3.6
Microsoft Corp	3.3
Marsh & McLennan Compa...	3.2
Visa Inc Class A	2.7
Fiserv Inc	2.5
Amazon.com Inc	2.4
Fidelity National Info...	2.4
PNC Financial Services...	2.3
Kreditanstalt Fur Wied...	2.2

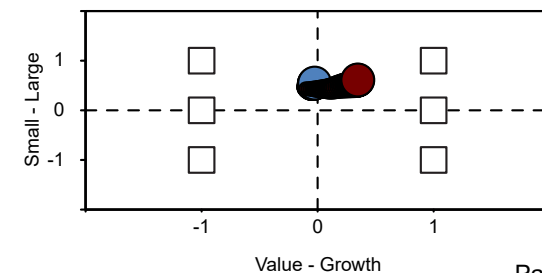
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	6.6	-0.6	6.9	-0.4
Beta	1.0	-0.1	1.0	-0.0
Alpha	1.5	2.8	1.9	2.5
Sharpe	1.0	0.5	1.1	0.6
Sortino	1.6	0.8	1.9	1.3
Info Ratio	0.8	1.4	1.2	1.4
Down Capture	90.9	-22.8	90.6	-17.3
Up Capture	107.5	10.0	112.2	10.7

Historical Style Analysis

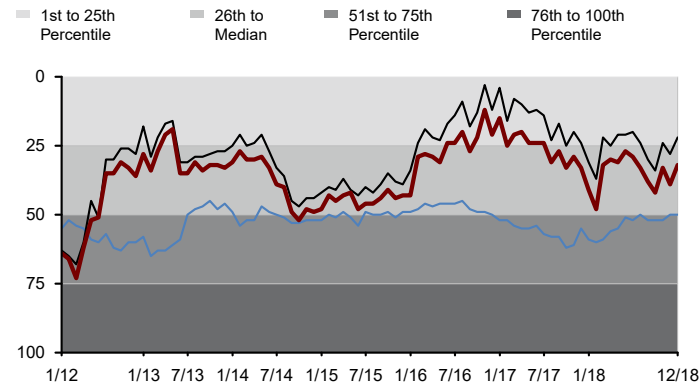


Vanguard Target Retirement Income Inv

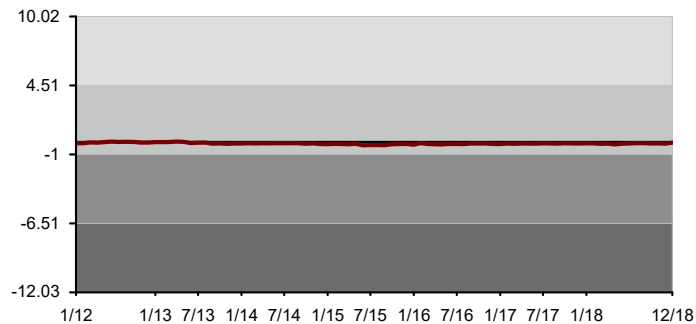
VTINX

Index: Vanguard Target Retirement Income Composite
 Category: Target-Date Retirement
 Return Date: 12/31/2018

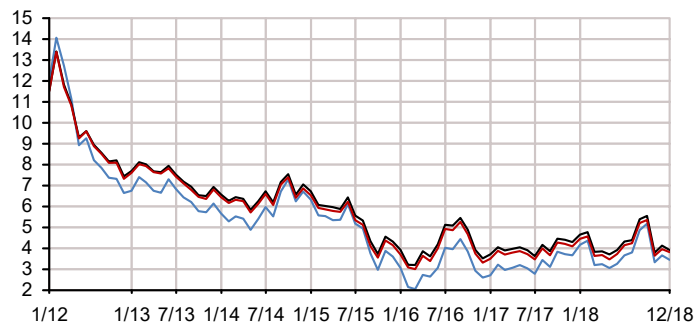
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



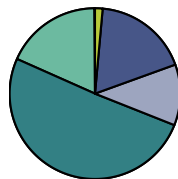
● Vanguard Target Retirement Income Inv
● Vanguard Target Retirement Income Composite
● Morningstar Target-Date Retirement

Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	6.0	20.0	-
Turnover Ratio	6.0	40.8	-
Net Expense Ratio	0.1	0.8	-
Gross Expense Ratio	0.1	3.2	-
Avg Mkt Cap (\$MM)	39,796	37,171	-
Total Assets (\$MM)	15,643	528	-
P/E Ratio	15.7	15.9	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.1	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.6	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.44
Domestic Stock	18.02
Foreign Stock	11.52
Domestic Bond	50.6
Foreign Bond	18.19
Other	0.14

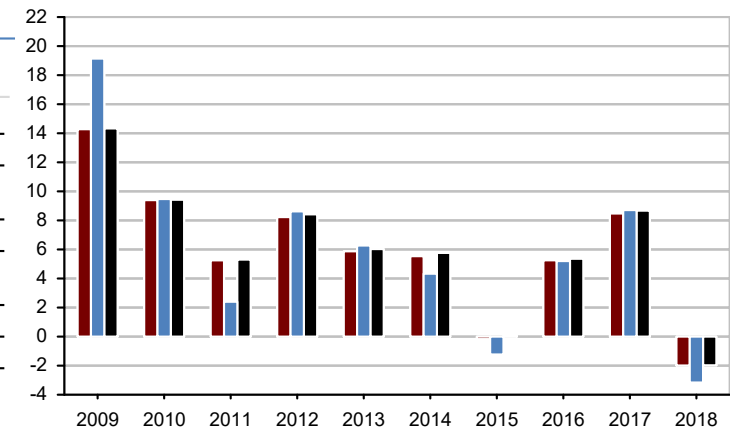
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	6.5	-
Materials	4.8	4.3	-
Industrials	11.3	10.7	-
Cons Discretionary	8.1	7.8	-
Consumer Staples	11.8	10.8	-
Healthcare	12.3	11.5	-
Financials	18.1	16.7	-
Info Technology	17.4	15.9	-
Telecom Services	5.3	6.0	-
Utilities	3.1	3.4	-

Regional Allocation (%)

	Fund	Idx
United States	69.84	-
Japan	5.54	-
United Kingdom	2.99	-
France	2.74	-
Germany	2.52	-
Canada	2.21	-
Italy	1.41	-
Spain	1.14	-
Netherlands	1.07	-
Australia	1.06	-

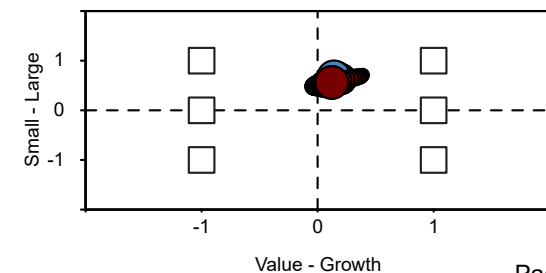
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	3.4	-0.5	3.5	-0.5
Beta	1.0	-0.3	1.0	-0.3
Alpha	-0.1	-0.4	-0.1	-0.1
Sharpe	0.8	0.2	0.8	0.3
Sortino	1.2	0.3	1.2	0.5
Info Ratio	-0.3	-0.7	-0.6	-0.7
Down Capture	97.5	-43.6	100.4	-50.4
Up Capture	97.4	-38.5	97.7	-39.1

Historical Style Analysis

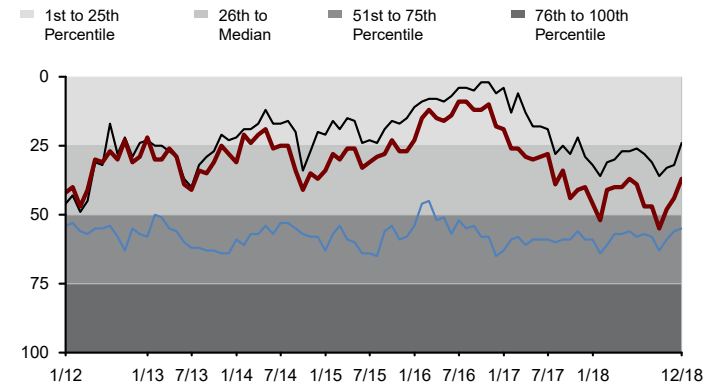


Vanguard Target Retirement 2015 Inv

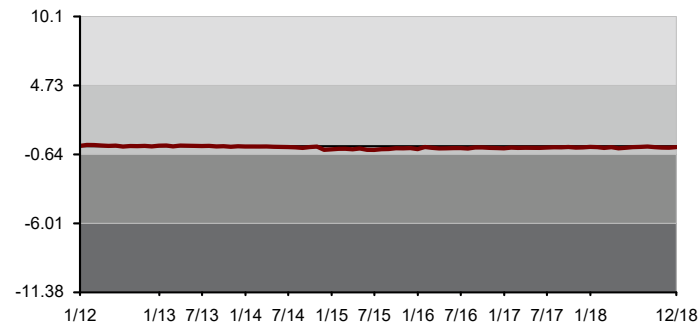
VTXVX

Index: Vanguard Target Retirement 2015 Composite
 Category: Target-Date 2015
 Return Date: 12/31/2018

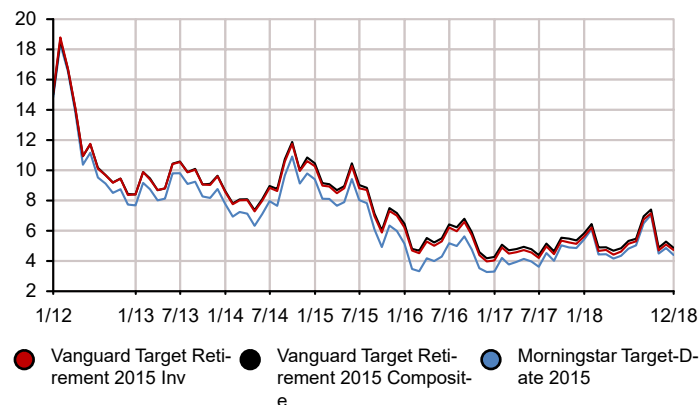
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	6.0	23.0	-
Turnover Ratio	7.0	33.2	-
Net Expense Ratio	0.1	0.7	-
Gross Expense Ratio	0.1	4.6	-
Avg Mkt Cap (\$MM)	39,700	41,272	-
Total Assets (\$MM)	15,154	1,036	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.6	8.4	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.4	-

Sector Allocation (%)

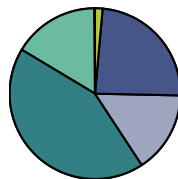
	Fund	Avg	Idx
Energy	5.8	6.3	-
Materials	4.8	4.4	-
Industrials	11.3	10.6	-
Cons Discretionary	8.1	8.1	-
Consumer Staples	11.8	11.2	-
Healthcare	12.3	12.5	-
Financials	18.1	17.2	-
Info Technology	17.3	16.6	-
Telecom Services	5.3	6.5	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	67.84	-
Japan	5.9	-
United Kingdom	3.29	-
France	2.76	-
Germany	2.55	-
Canada	2.33	-
Italy	1.34	-
Australia	1.18	-
Switzerland	1.16	-
China	1.12	-

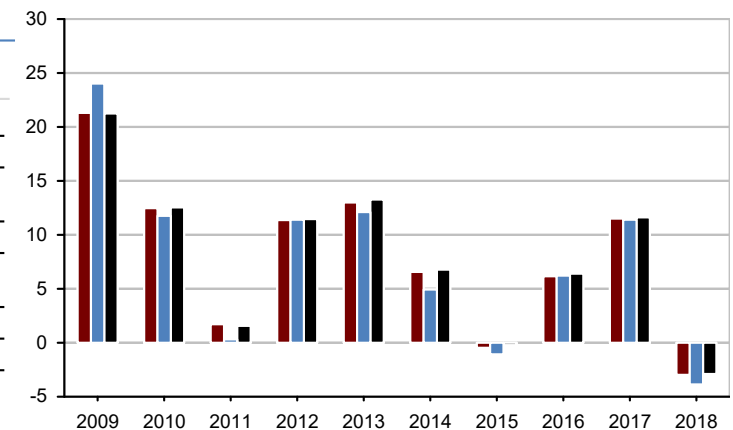
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.43
Domestic Stock	23.88
Foreign Stock	15.41
Domestic Bond	42.79
Foreign Bond	16.24
Other	0.15

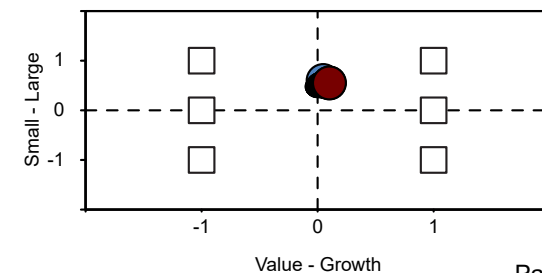
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	4.6	-0.4	5.0	-0.4
Beta	1.0	-0.5	1.0	-0.4
Alpha	-0.1	0.4	-0.1	1.4
Sharpe	0.8	0.1	0.7	0.2
Sortino	1.2	0.2	1.1	0.3
Info Ratio	-0.4	-0.7	-0.5	-0.4
Down Capture	97.4	-64.5	99.6	-56.9
Up Capture	97.1	-43.4	97.8	-24.4

Historical Style Analysis

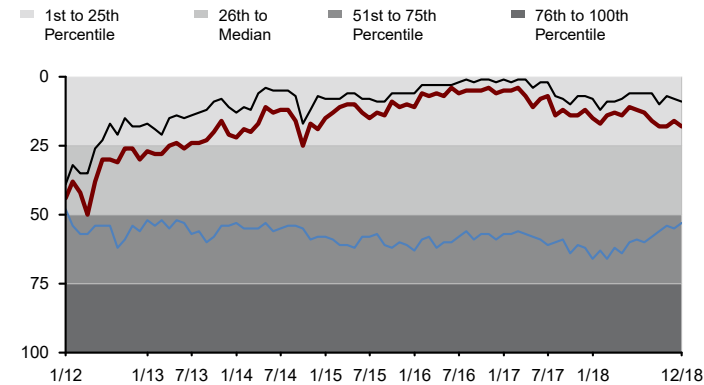


Vanguard Target Retirement 2020 Inv

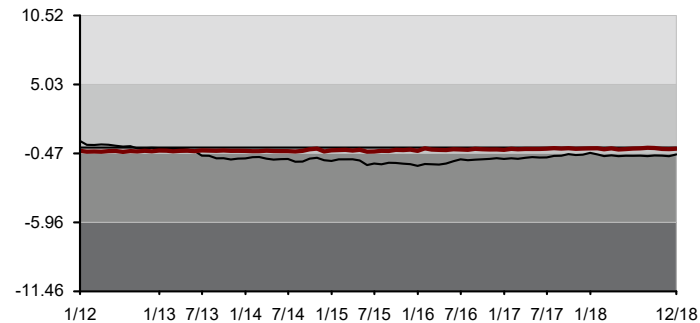
VTWNX

Index: Vanguard Target Retirement 2020 Composite
 Category: Target-Date 2020
 Return Date: 12/31/2018

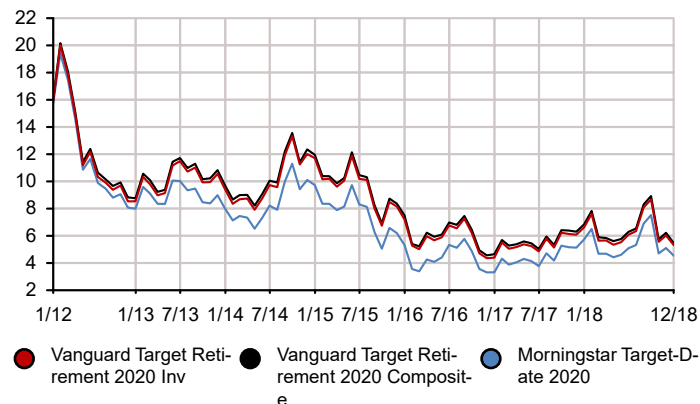
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	-	-
Holdings - Bonds	-	-	-
Holdings - Other	6.0	23.0	-
Turnover Ratio	10.0	36.1	-
Net Expense Ratio	0.1	0.8	-
Gross Expense Ratio	0.1	1.6	-
Avg Mkt Cap (\$MM)	39,762	40,131	-
Total Assets (\$MM)	30,272	2,080	-
P/E Ratio	15.7	16.5	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.3	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.4	-

Sector Allocation (%)

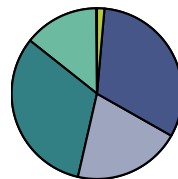
	Fund	Avg	Idx
Energy	5.8	6.1	-
Materials	4.8	4.5	-
Industrials	11.3	11.0	-
Cons Discretionary	8.1	7.9	-
Consumer Staples	11.8	10.6	-
Healthcare	12.3	12.5	-
Financials	18.1	17.2	-
Info Technology	17.3	17.2	-
Telecom Services	5.3	6.5	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	64.95	-
Japan	6.41	-
United Kingdom	3.7	-
France	2.84	-
Germany	2.63	-
Canada	2.52	-
China	1.47	-
Switzerland	1.44	-
Australia	1.32	-
Italy	1.27	-

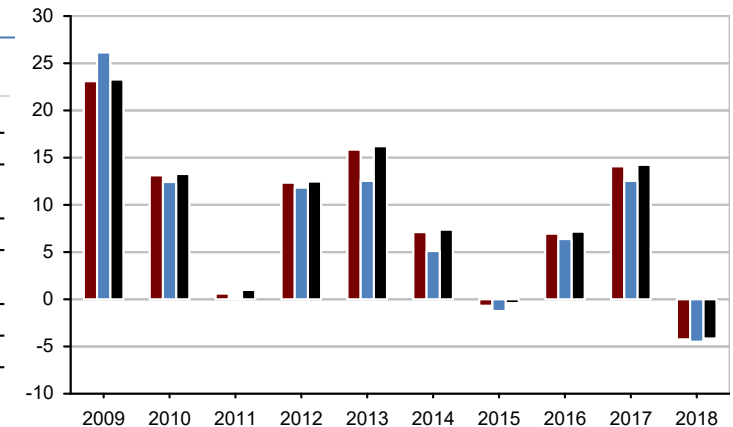
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.4
Domestic Stock	31.77
Foreign Stock	20.37
Domestic Bond	32.06
Foreign Bond	14.14
Other	0.18

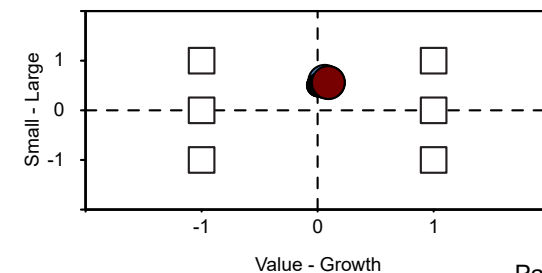
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	5.9	0.3	6.1	0.3
Beta	1.0	-0.4	1.0	-0.3
Alpha	-0.1	0.9	-0.2	1.6
Sharpe	0.7	0.1	0.6	0.1
Sortino	1.1	0.2	0.9	0.2
Info Ratio	-0.4	-0.4	-0.5	-0.2
Down Capture	97.5	-41.1	99.6	-37.2
Up Capture	97.2	-23.2	97.9	-10.5

Historical Style Analysis

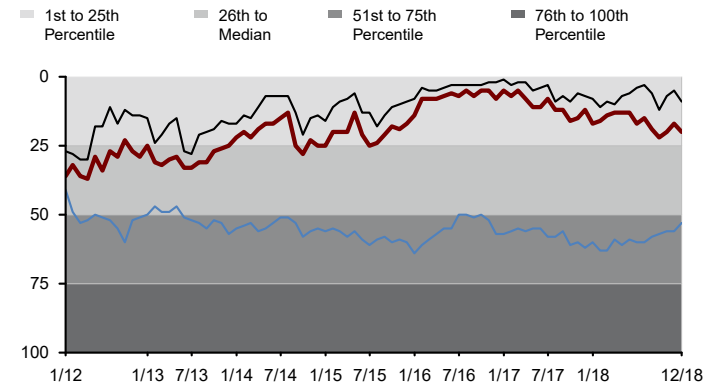


Vanguard Target Retirement 2025 Inv

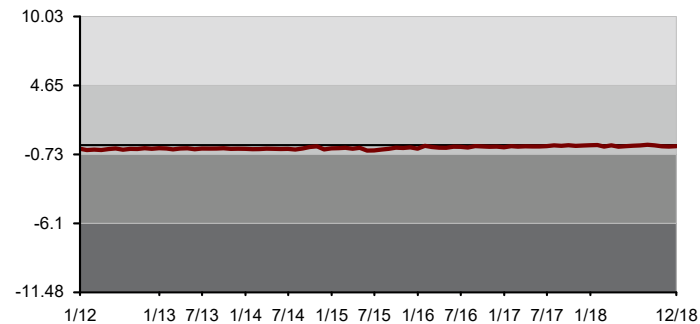
VTTVX

Index: Vanguard Target Retirement 2025 Composite
 Category: Target-Date 2025
 Return Date: 12/31/2018

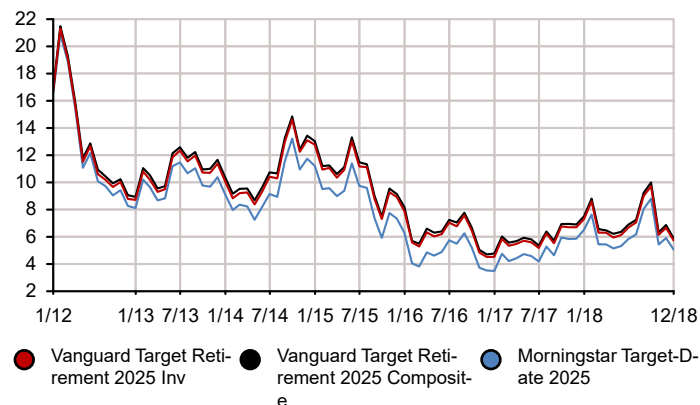
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	23.0	-
Turnover Ratio	8.0	36.4	-
Net Expense Ratio	0.1	0.8	-
Gross Expense Ratio	0.1	1.7	-
Avg Mkt Cap (\$MM)	39,842	40,490	-
Total Assets (\$MM)	38,312	2,525	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.3	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.3	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Sector Allocation (%)

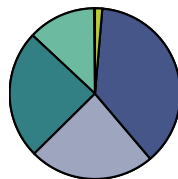
	Fund	Avg	Idx
Energy	5.8	6.0	-
Materials	4.8	4.5	-
Industrials	11.3	11.0	-
Cons Discretionary	8.1	8.0	-
Consumer Staples	11.8	11.1	-
Healthcare	12.3	12.5	-
Financials	18.1	17.1	-
Info Technology	17.4	17.5	-
Telecom Services	5.3	6.2	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	62.8	-
Japan	6.79	-
United Kingdom	4.01	-
France	2.91	-
Germany	2.7	-
Canada	2.65	-
China	1.72	-
Switzerland	1.64	-
Australia	1.43	-
South Korea	1.27	-

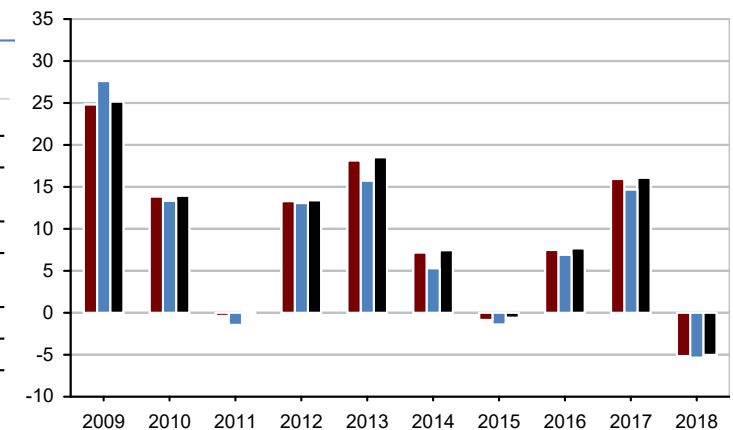
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.37
Domestic Stock	37.39
Foreign Stock	23.78
Domestic Bond	24.34
Foreign Bond	12.84
Other	0.19

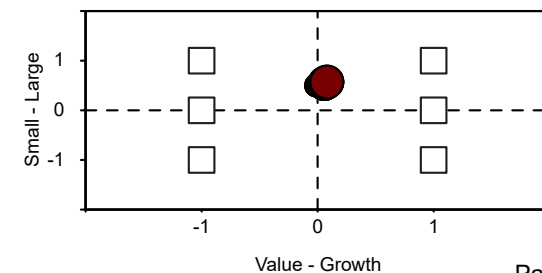
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	6.7	0.1	7.0	0.2
Beta	1.0	-0.2	1.0	-0.2
Alpha	-0.1	0.9	-0.2	1.7
Sharpe	0.7	0.1	0.6	0.1
Sortino	1.0	0.1	0.9	0.2
Info Ratio	-0.3	-0.3	-0.5	-0.0
Down Capture	98.2	-23.8	100.0	-23.2
Up Capture	97.7	-12.3	98.3	-3.3

Historical Style Analysis

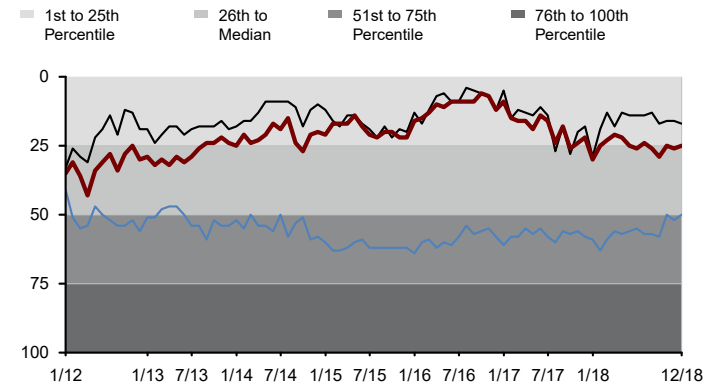


Vanguard Target Retirement 2030 Inv

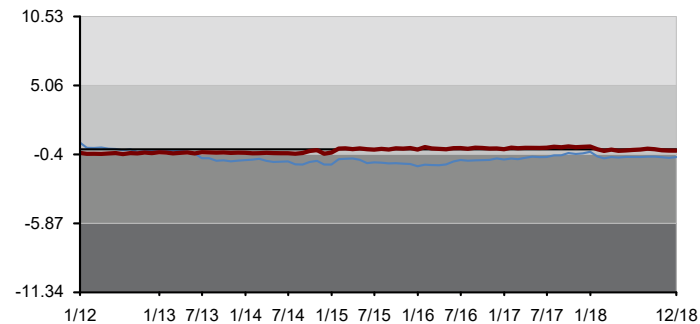
VTNRX

Index: Vanguard Target Retirement 2030 Composite
 Category: Target-Date 2030
 Return Date: 12/31/2018

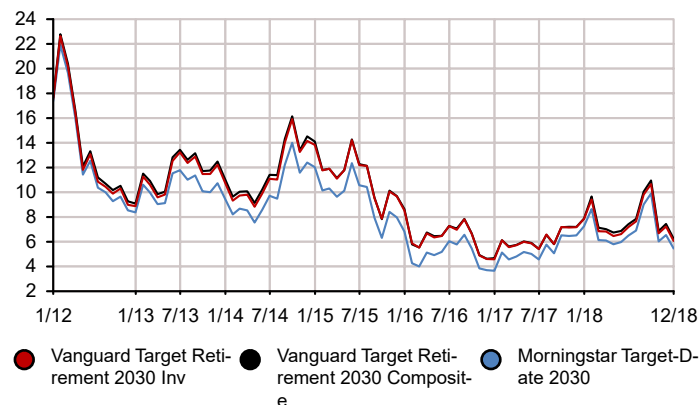
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	22.0	-
Turnover Ratio	9.0	35.1	-
Net Expense Ratio	0.1	0.8	-
Gross Expense Ratio	0.1	1.5	-
Avg Mkt Cap (\$MM)	39,902	39,371	-
Total Assets (\$MM)	32,770	2,723	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.3	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Sector Allocation (%)

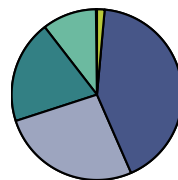
	Fund	Avg	Idx
Energy	5.8	6.0	-
Materials	4.8	4.6	-
Industrials	11.3	11.1	-
Cons Discretionary	8.1	7.7	-
Consumer Staples	11.8	10.4	-
Healthcare	12.3	12.5	-
Financials	18.0	17.1	-
Info Technology	17.4	17.5	-
Telecom Services	5.3	6.6	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	62.61	-
Japan	6.83	-
United Kingdom	4.11	-
France	2.8	-
Canada	2.64	-
Germany	2.61	-
China	1.91	-
Switzerland	1.78	-
Australia	1.46	-
South Korea	1.31	-

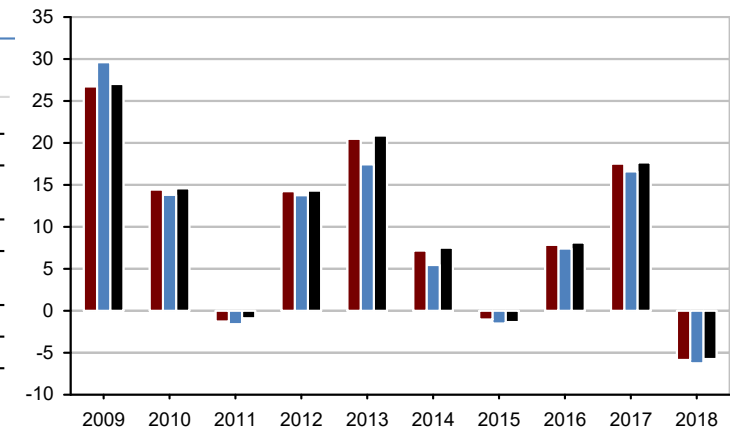
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.44
Domestic Stock	41.98
Foreign Stock	26.54
Domestic Bond	19.5
Foreign Bond	10.27
Other	0.2

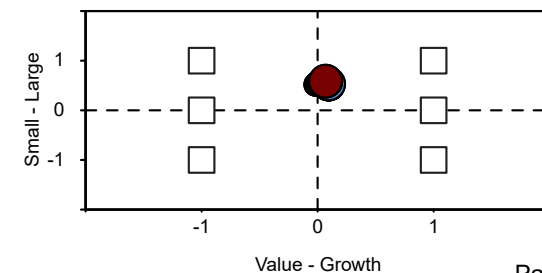
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	7.5	-0.0	7.8	0.0
Beta	1.0	-0.1	1.0	-0.1
Alpha	-0.1	0.6	-0.0	1.6
Sharpe	0.7	0.1	0.6	0.1
Sortino	0.9	0.1	0.8	0.2
Info Ratio	-0.4	-0.2	-0.2	0.3
Down Capture	100.2	-6.9	99.5	-7.3
Up Capture	98.7	-1.2	98.8	6.4

Historical Style Analysis

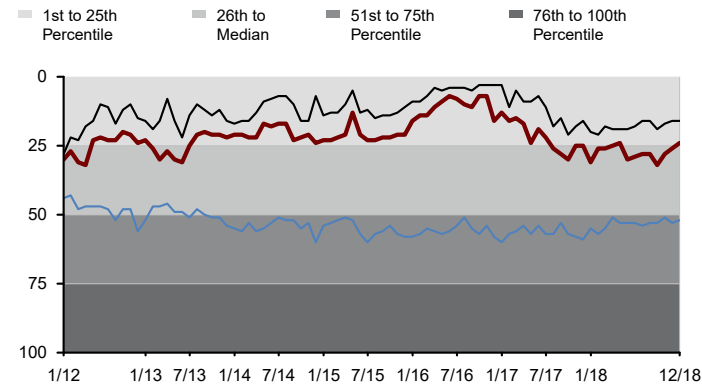


Vanguard Target Retirement 2035 Inv

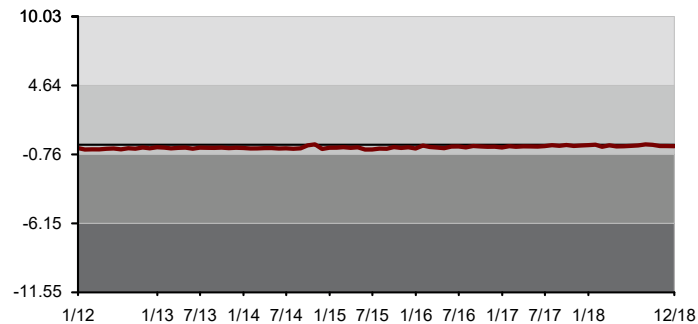
VTTHX

Index: Vanguard Target Retirement 2035 Composite
 Category: Target-Date 2035
 Return Date: 12/31/2018

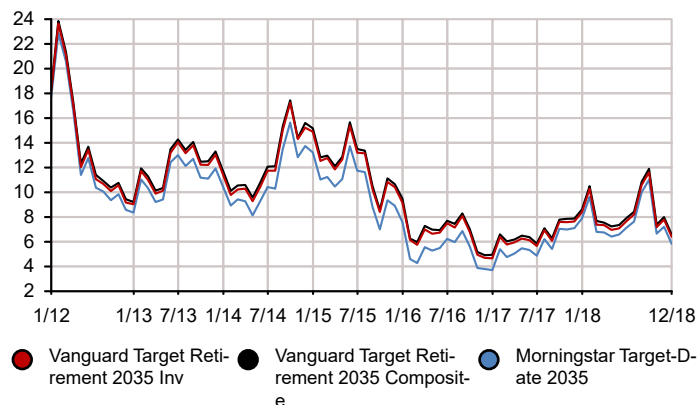
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

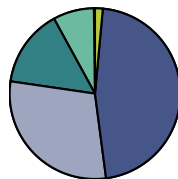


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	22.0	-
Turnover Ratio	8.0	34.3	-
Net Expense Ratio	0.1	0.8	-
Gross Expense Ratio	0.1	2.3	-
Avg Mkt Cap (\$MM)	39,895	39,320	-
Total Assets (\$MM)	31,087	2,135	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.3	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.3	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.47
Domestic Stock	46.42
Foreign Stock	29.37
Domestic Bond	14.72
Foreign Bond	7.75
Other	0.21

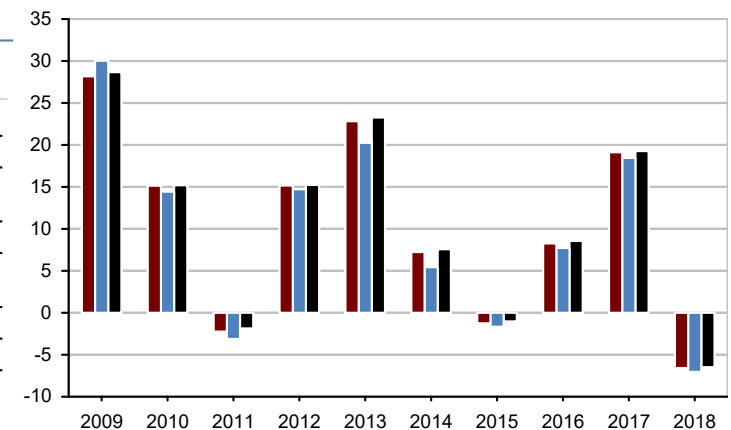
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	5.9	-
Materials	4.8	4.6	-
Industrials	11.3	11.0	-
Cons Discretionary	8.1	7.8	-
Consumer Staples	11.8	11.1	-
Healthcare	12.3	12.5	-
Financials	18.1	17.0	-
Info Technology	17.4	17.6	-
Telecom Services	5.3	6.3	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	62.25	-
Japan	6.87	-
United Kingdom	4.23	-
France	2.7	-
Canada	2.64	-
Germany	2.53	-
China	2.11	-
Switzerland	1.92	-
Australia	1.51	-
South Korea	1.35	-

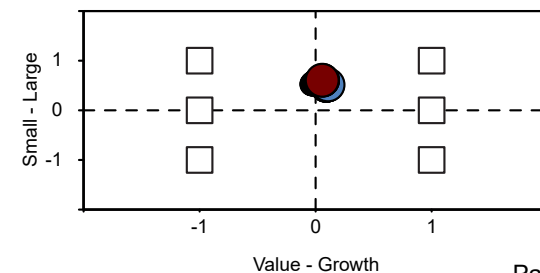
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	8.4	-0.1	8.6	-0.1
Beta	1.0	-0.0	1.0	-0.0
Alpha	-0.1	0.5	-0.2	1.4
Sharpe	0.7	0.1	0.5	0.1
Sortino	0.9	0.1	0.7	0.2
Info Ratio	-0.3	-0.0	-0.5	0.2
Down Capture	100.6	-1.5	101.3	0.0
Up Capture	99.1	3.4	99.3	10.6

Historical Style Analysis

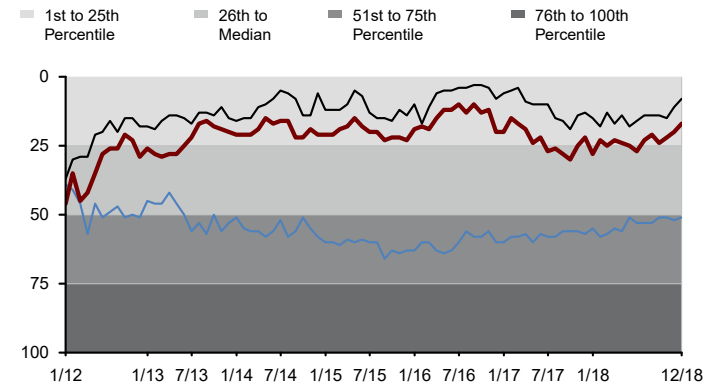


Vanguard Target Retirement 2040 Inv

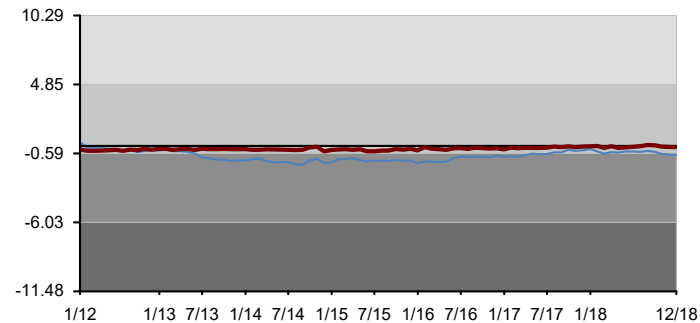
VFORX

Index: Vanguard Target Retirement 2040 Composite
 Category: Target-Date 2040
 Return Date: 12/31/2018

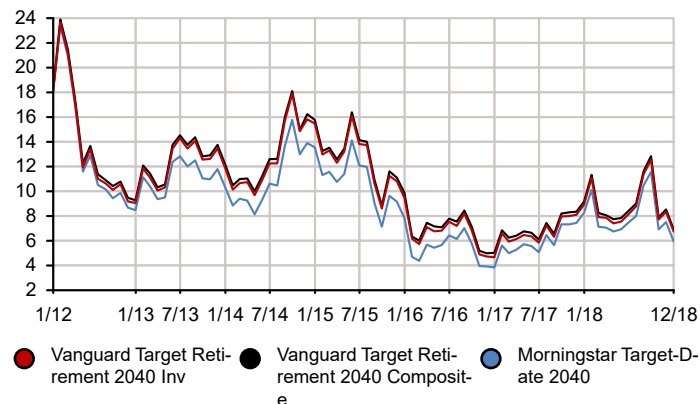
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

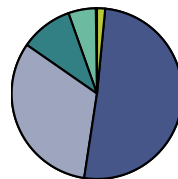


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	21.0	-
Turnover Ratio	8.0	34.8	-
Net Expense Ratio	0.2	0.8	-
Gross Expense Ratio	0.2	1.8	-
Avg Mkt Cap (\$MM)	39,870	38,256	-
Total Assets (\$MM)	23,667	1,957	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.2	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.54
Domestic Stock	50.84
Foreign Stock	32.25
Domestic Bond	9.91
Foreign Bond	5.2
Other	0.22

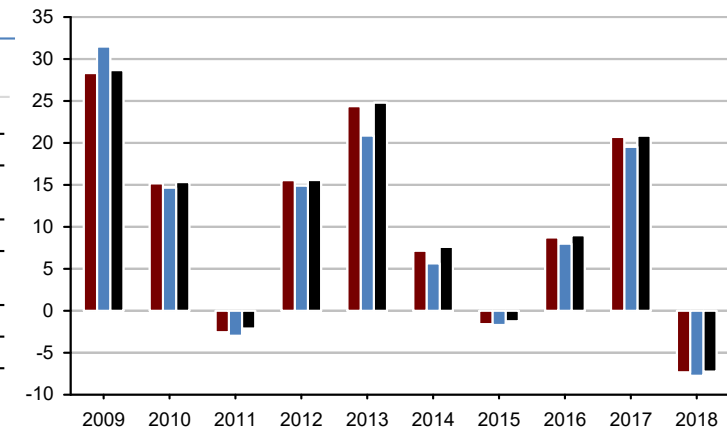
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	5.9	-
Materials	4.8	4.7	-
Industrials	11.3	11.2	-
Cons Discretionary	8.1	7.6	-
Consumer Staples	11.8	10.4	-
Healthcare	12.3	12.4	-
Financials	18.1	17.1	-
Info Technology	17.4	17.6	-
Telecom Services	5.3	6.5	-
Utilities	3.1	3.0	-

Regional Allocation (%)

	Fund	Idx
United States	61.9	-
Japan	6.93	-
United Kingdom	4.37	-
Canada	2.64	-
France	2.6	-
Germany	2.45	-
China	2.31	-
Switzerland	2.07	-
Australia	1.56	-
South Korea	1.4	-

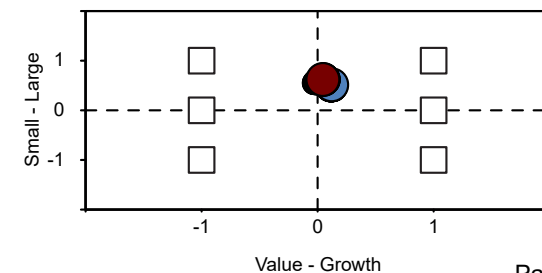
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	9.2	0.1	9.4	0.2
Beta	1.0	0.1	1.0	0.1
Alpha	-0.1	0.4	-0.2	1.2
Sharpe	0.6	0.1	0.5	0.1
Sortino	0.9	0.1	0.7	0.1
Info Ratio	-0.3	0.1	-0.5	0.2
Down Capture	99.6	4.2	100.7	6.8
Up Capture	98.7	9.0	98.8	15.4

Historical Style Analysis

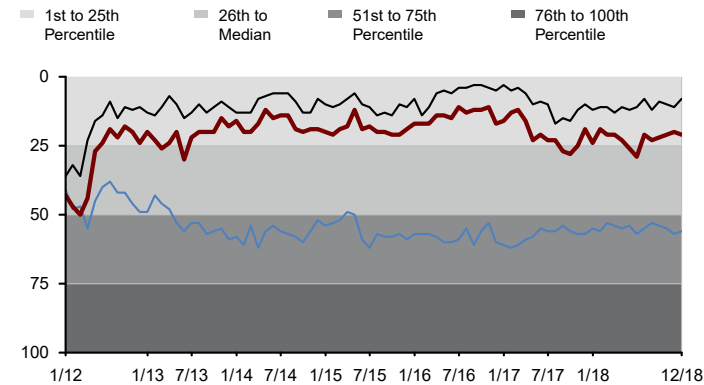


Vanguard Target Retirement 2045 Inv

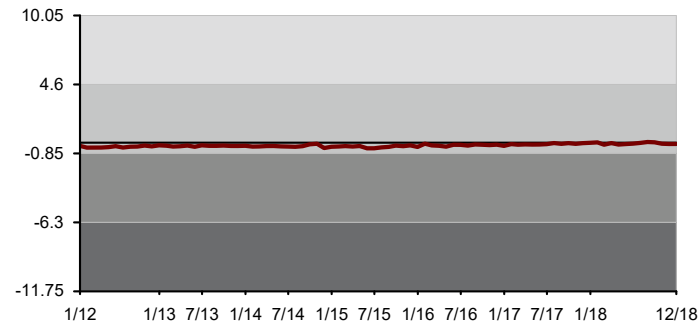
VTIVX

Index: Vanguard Target Retirement 2045 Composite
 Category: Target-Date 2045
 Return Date: 12/31/2018

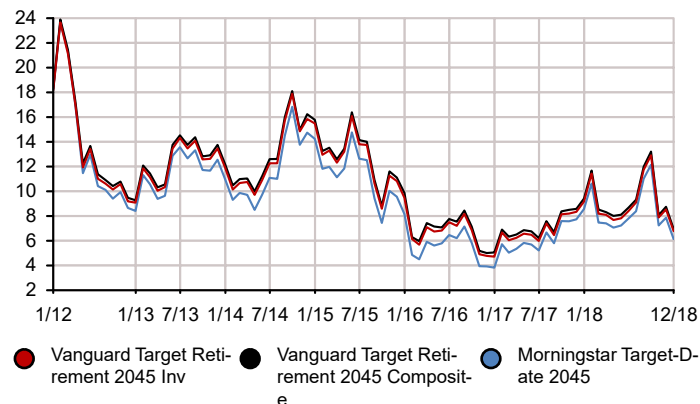
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

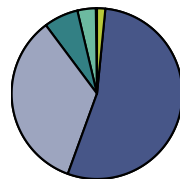


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	21.0	-
Turnover Ratio	7.0	33.0	-
Net Expense Ratio	0.2	0.8	-
Gross Expense Ratio	0.2	2.4	-
Avg Mkt Cap (\$MM)	39,869	38,811	-
Total Assets (\$MM)	21,636	1,382	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.3	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.2	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.57
Domestic Stock	53.95
Foreign Stock	34.22
Domestic Bond	6.51
Foreign Bond	3.48
Other	0.22

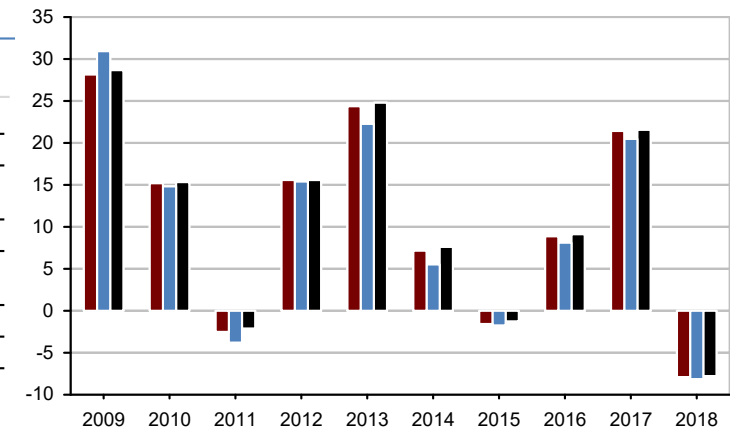
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	5.9	-
Materials	4.8	4.6	-
Industrials	11.3	11.0	-
Cons Discretionary	8.1	7.8	-
Consumer Staples	11.8	11.1	-
Healthcare	12.3	12.4	-
Financials	18.1	17.1	-
Info Technology	17.4	17.6	-
Telecom Services	5.3	6.3	-
Utilities	3.1	2.9	-

Regional Allocation (%)

	Fund	Idx
United States	61.6	-
Japan	6.97	-
United Kingdom	4.45	-
Canada	2.65	-
France	2.54	-
China	2.46	-
Germany	2.38	-
Switzerland	2.17	-
Australia	1.59	-
South Korea	1.43	-

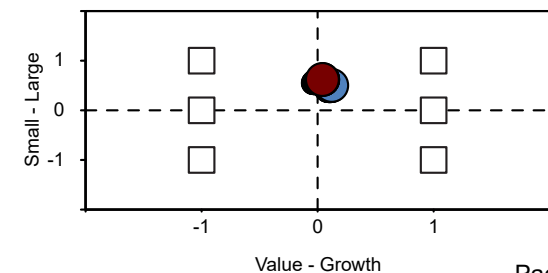
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	9.5	-0.0	9.6	-0.0
Beta	1.0	0.1	1.0	0.1
Alpha	-0.1	0.4	-0.2	1.2
Sharpe	0.6	0.1	0.5	0.1
Sortino	0.8	0.1	0.7	0.1
Info Ratio	-0.3	0.1	-0.5	0.2
Down Capture	99.8	8.9	100.7	8.5
Up Capture	98.8	12.5	98.9	16.8

Historical Style Analysis

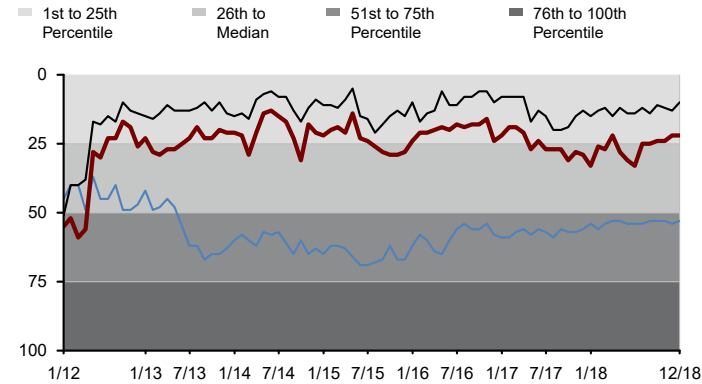


Vanguard Target Retirement 2050 Inv

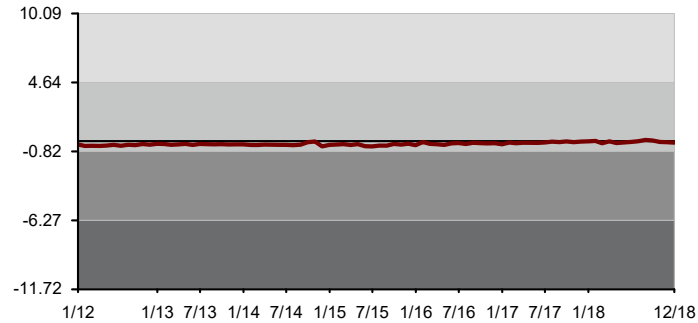
VFIFX

Index: Vanguard Target Retirement 2050 Composite
 Category: Target-Date 2050
 Return Date: 12/31/2018

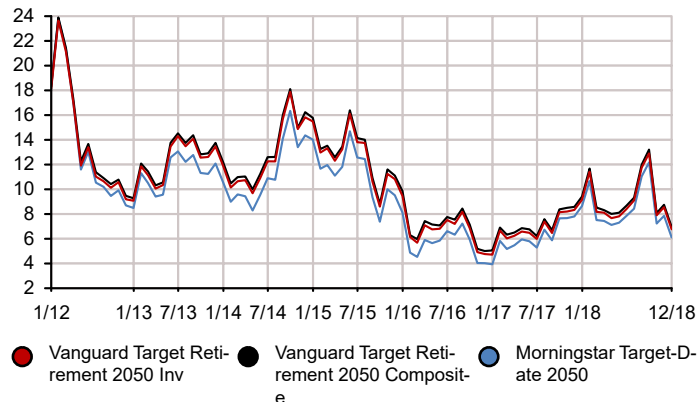
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

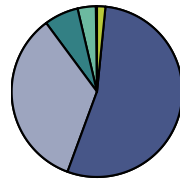


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	20.0	-
Turnover Ratio	7.0	34.9	-
Net Expense Ratio	0.2	0.8	-
Gross Expense Ratio	0.2	1.7	-
Avg Mkt Cap (\$MM)	39,874	38,147	-
Total Assets (\$MM)	15,081	1,083	-
P/E Ratio	15.7	16.5	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.2	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.59
Domestic Stock	54.0
Foreign Stock	34.23
Domestic Bond	6.48
Foreign Bond	3.44
Other	0.22

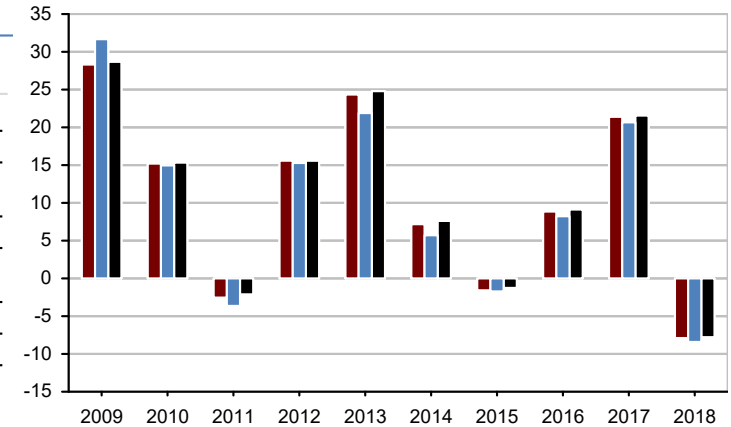
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	5.9	-
Materials	4.8	4.7	-
Industrials	11.3	11.2	-
Cons Discretionary	8.1	7.6	-
Consumer Staples	11.8	10.4	-
Healthcare	12.3	12.4	-
Financials	18.1	17.1	-
Info Technology	17.4	17.6	-
Telecom Services	5.3	6.5	-
Utilities	3.1	2.9	-

Regional Allocation (%)

	Fund	Idx
United States	61.63	-
Japan	6.97	-
United Kingdom	4.45	-
Canada	2.65	-
France	2.53	-
China	2.46	-
Germany	2.39	-
Switzerland	2.17	-
Australia	1.59	-
South Korea	1.43	-

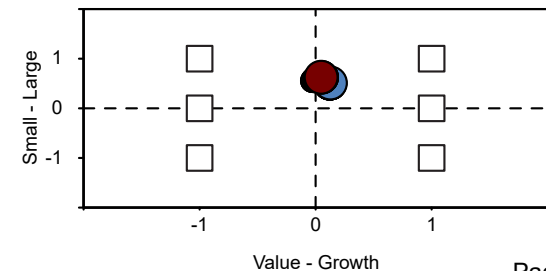
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	9.6	-0.1	9.6	-0.1
Beta	1.0	-0.5	1.0	-0.5
Alpha	-0.1	1.7	-0.2	1.0
Sharpe	0.6	0.1	0.5	0.1
Sortino	0.8	0.1	0.7	0.1
Info Ratio	-0.3	-0.4	-0.5	-0.5
Down Capture	99.8	-57.6	100.7	-47.9
Up Capture	98.7	-36.0	98.8	-38.1

Historical Style Analysis

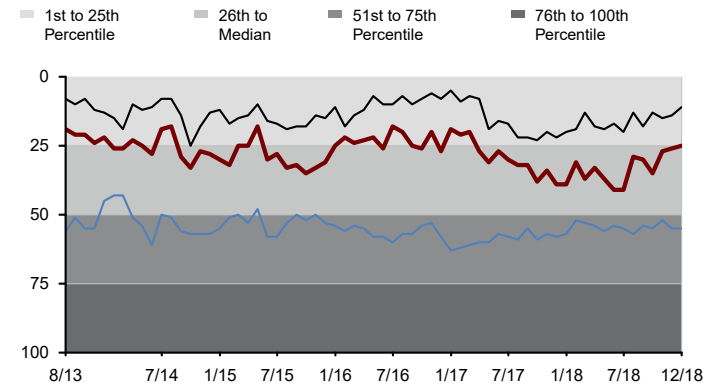


Vanguard Target Retirement 2055 Inv

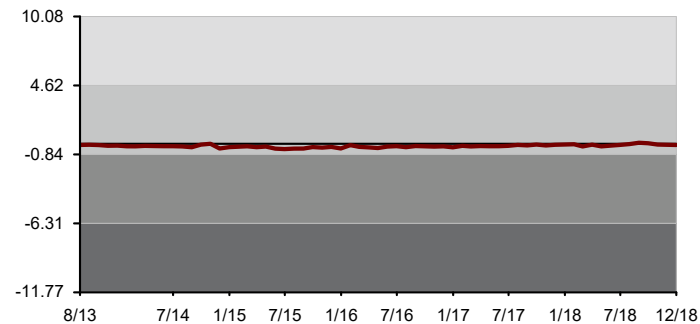
VFFVX

Index: Vanguard Target Retirement 2055 Composite
 Category: Target-Date 2055
 Return Date: 12/31/2018

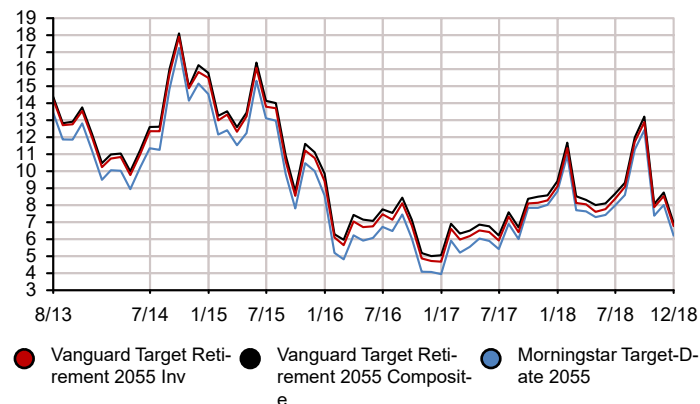
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)

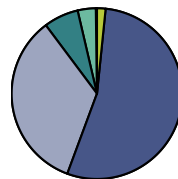


Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	1.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	20.0	-
Turnover Ratio	5.0	31.5	-
Net Expense Ratio	0.2	0.8	-
Gross Expense Ratio	0.2	3.3	-
Avg Mkt Cap (\$MM)	39,909	38,659	-
Total Assets (\$MM)	7,366	530	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.7	-
P/CF Ratio	7.7	8.2	-
ROE %	19.5	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.62
Domestic Stock	54.01
Foreign Stock	34.12
Domestic Bond	6.57
Foreign Bond	3.43
Other	0.22

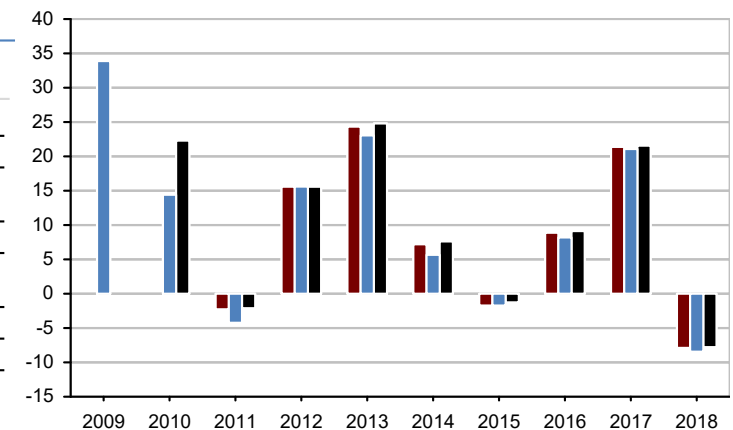
Sector Allocation (%)

	Fund	Avg	Idx
Energy	5.8	5.9	-
Materials	4.8	4.7	-
Industrials	11.3	11.1	-
Cons Discretionary	7.7	8.0	-
Consumer Staples	11.7	11.6	-
Healthcare	12.5	12.4	-
Financials	17.9	17.1	-
Info Technology	17.4	17.7	-
Telecom Services	5.9	6.9	-
Utilities	3.1	2.9	-

Regional Allocation (%)

	Fund	Idx
United States	61.77	-
Japan	6.94	-
United Kingdom	4.44	-
Canada	2.64	-
France	2.52	-
China	2.45	-
Germany	2.38	-
Switzerland	2.16	-
Australia	1.58	-
South Korea	1.42	-

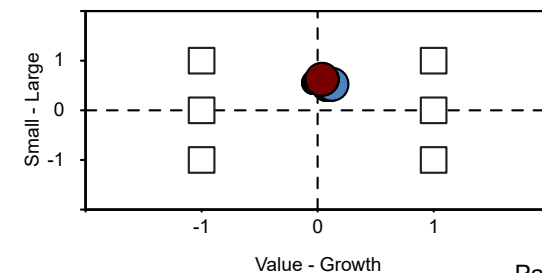
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	9.5	-0.3	9.6	-0.3
Beta	1.0	0.1	1.0	0.1
Alpha	-0.1	0.4	-0.2	1.1
Sharpe	0.6	0.1	0.5	0.1
Sortino	0.8	0.1	0.7	0.1
Info Ratio	-0.3	0.1	-0.5	0.1
Down Capture	99.5	6.3	100.6	6.2
Up Capture	98.5	10.3	98.6	14.3

Historical Style Analysis

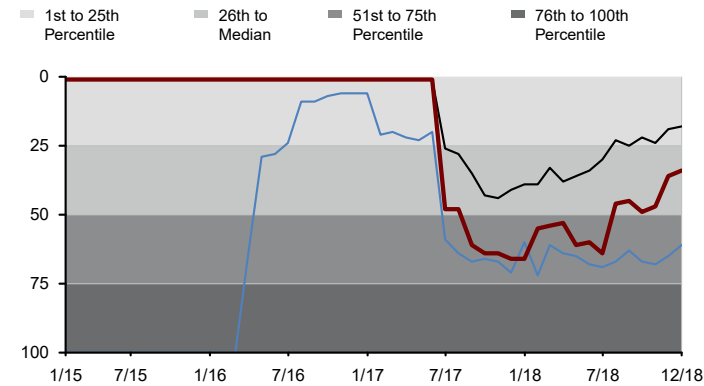


Vanguard Target Retirement 2060 Inv

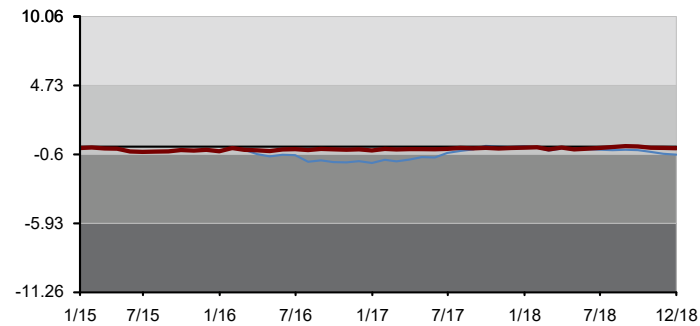
VTTSX

Index: Vanguard Target Retirement 2060 Composite
 Category: Target-Date 2060+
 Return Date: 12/31/2018

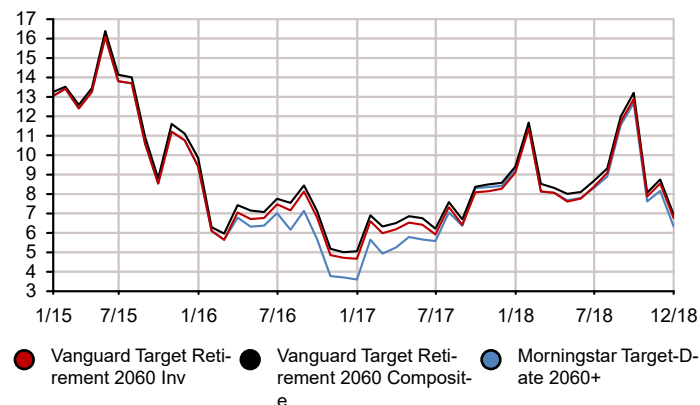
Fund Performance vs. Peer Group (Rolling 36 Months)



Alpha (Rolling 36 Months)



Returns (Rolling 36 Months)



Portfolio Characteristics

	Fund	Avg	Idx
Holdings - Stocks	-	2.0	-
Holdings - Bonds	-	-	-
Holdings - Other	5.0	21.0	-
Turnover Ratio	3.0	37.0	-
Net Expense Ratio	0.2	0.8	-
Gross Expense Ratio	0.2	7.9	-
Avg Mkt Cap (\$MM)	39,960	38,410	-
Total Assets (\$MM)	3,014	142	-
P/E Ratio	15.7	16.6	-
P/B Ratio	2.1	2.2	-
P/S Ratio	1.5	1.6	-
P/CF Ratio	7.7	8.1	-
ROE %	19.6	-	-
ROA %	7.0	-	-
Dividend Yld	2.4	2.3	-

Sector Allocation (%)

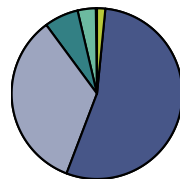
	Fund	Avg	Idx
Energy	5.8	6.0	-
Materials	4.8	4.6	-
Industrials	11.3	11.0	-
Cons Discretionary	0.0	-	-
Consumer Staples	0.0	-	-
Healthcare	12.5	12.4	-
Financials	17.9	17.1	-
Info Technology	17.4	17.4	-
Telecom Services	0.0	-	-
Utilities	3.1	2.9	-

Regional Allocation (%)

	Fund	Idx
United States	61.83	-
Japan	6.93	-
United Kingdom	4.43	-
Canada	2.63	-
France	2.52	-
China	2.44	-
Germany	2.37	-
Switzerland	2.16	-
Australia	1.58	-
South Korea	1.42	-

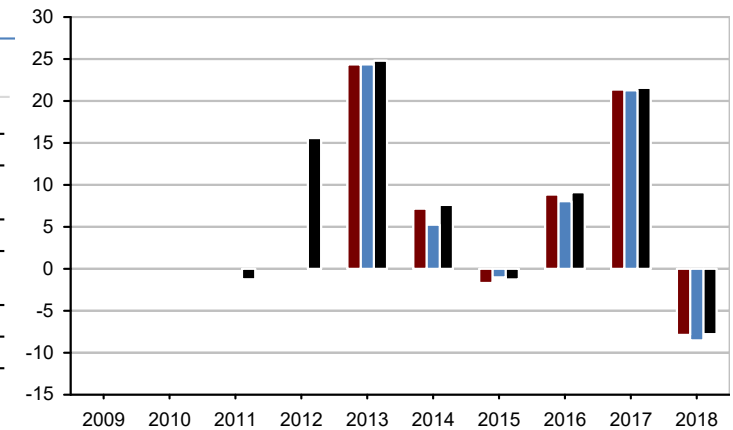
Asset Allocation

Portfolio Date: 11/30/2018



	%
Cash	1.57
Domestic Stock	54.21
Foreign Stock	34.07
Domestic Bond	6.46
Foreign Bond	3.44
Other	0.22

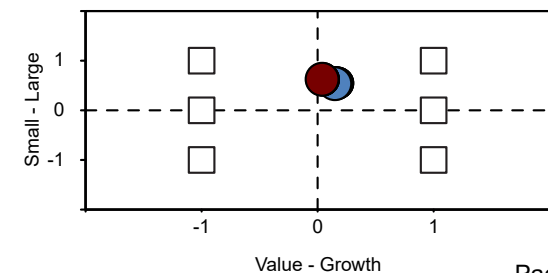
Calendar Year Returns



Risk Statistics

Risk Statistics	3 Year		5 Year	
	Fund	+/-Avg	Fund	+/-Avg
Std Deviation	9.6	-0.2	9.6	-0.0
Beta	1.0	0.0	1.0	0.0
Alpha	-0.1	0.4	-0.2	-0.2
Sharpe	0.6	0.1	0.5	0.1
Sortino	0.8	0.1	0.7	0.2
Info Ratio	-0.3	0.2	-0.5	-0.5
Down Capture	99.8	-0.2	100.7	7.0
Up Capture	98.7	3.1	98.6	4.9

Historical Style Analysis





The Kansas Board of Regents Mandatory Retirement Plan

TIAA Investment Manager Searches

Core Plus Bond Search

As of 2/28/2019



Core Fixed Income Management Overview

Traditional Fixed Income Sectors in the Barclays Aggregate Index:

US Treasuries	Mortgage-Backed Securities	Yankees (\$ Denominated Foreign Corporates)
US Agencies	Asset-Backed Securities	Sovereign/Supranational (\$ Denominated)
US Investment Grade Corporates	Commercial Mortgage-Backed Securities	

Fixed Income Sectors not in the Barclays Aggregate Index:

Municipal Bonds	Non-Dollar Denominated Governments	Bank Loans
Treasury Inflation-Protected Securities (TIPS)	Non-Dollar Denominated Corporates	Convertibles
Non-Investment Grade Bonds (High Yield)	Derivatives	

Sources of Alpha:

Examples:

Duration	Lower duration in rising interest rates; Higher duration in falling interest rate environment
Interest Rate Curve Management	Barbell interest rates
Sector Selection	Investment in High Yield or TIPS; Overweight to MBS/Credit; Investment in Non-dollar securities
Issuer Selection/Credit	Selecting a BBB rather than A; Avoiding downgraded securities

US Insurance Intermediate-Term Bond

CREF Bond Market R3

Investment Strategy

The investment seeks long-term rate of return, primarily through high current income consistent with preserving capital. The fund invests at least 80% of its assets in a broad range of fixed-income securities. The majority of the account's assets are invested in U.S. Treasury and other governmental agency securities, corporate bonds and mortgage-backed or other asset-backed securities. The fund can also invest in below-investment-grade securities.

Manager Biography

Joseph R. Higgins since 8/24/2011

John Michael Cerra since 12/31/2003

PIMCO Total Return Instl

Investment Strategy

The investment seeks maximum total return, consistent with preservation of capital and prudent investment management. The fund invests at least 65% of its total assets in a diversified portfolio of Fixed Income Instruments of varying maturities, which may be represented by forwards or derivatives such as options, futures contracts, or swap agreements. It invests primarily in investment-grade debt securities, but may invest up to 20% of its total assets in high yield securities. It may invest up to 30% of its total assets in securities denominated in foreign currencies, and may invest beyond this limit in U.S. dollar-denominated securities of foreign issuers.

Manager Biography

Mihir P. Worah since 9/26/2014

Mark R. Kiesel since 9/26/2014

Scott A. Mather since 9/26/2014

PGIM Total Return Bond R6

Investment Strategy

The investment seeks total return. The fund will seek to achieve its objective through a mix of current income and capital appreciation as determined by the fund's investment subadviser. It invests, under normal circumstances, at least 80% of the fund's investable assets in bonds. For purposes of this policy, bonds include all fixed-income securities, other than preferred stock, with a maturity at date of issue of greater than one year. The fund may invest up to 30% of its investable assets in high risk, below investment-grade securities having a rating of not lower than CCC. It may invest up to 30% of its investable assets in foreign debt securities.

Manager Biography

Robert Tipp since 10/30/2002

Michael J. Collins since 11/18/2009

Richard Piccirillo since 12/31/2012

Gregory Peters since 3/5/2014

Western Asset Core Plus Bond IS

Investment Strategy

The investment seeks to maximize total return, consistent with prudent investment management and liquidity needs. The fund invests in a portfolio of fixed income securities of various maturities and, under normal market conditions, will invest at least 80% of its net assets in debt and fixed income securities. Although the fund may invest in securities of any maturity, it will normally maintain a dollar-weighted average effective duration within 30% of the average duration of the domestic bond market as a whole as estimated by the fund's subadvisers. The fund may invest up to 20% of its total assets in non-U.S. dollar denominated securities.

Manager Biography

Carl L. Eichstaedt since 7/8/1998

Mark S. Lindbloom since 12/31/2006

S. Kenneth Leech since 8/19/2013

Julien A. Scholnick since 5/1/2016

John L. Bellows since 5/1/2018

Frederick R. Marki since 5/1/2018

CREF Bond Market R3 - Operations

Inception Date	4/24/2015
Fund Size (\$mm)	13,306
Annual Report Net Expense Ratio	0.28
Prospectus Net Expense Ratio	0.31
Prospectus Gross Expense Ratio	0.31
Ticker	QCBMIX
Manager Tenure (Longest)	15.25
Manager Tenure (Average)	11.42
Morningstar Institutional Category	Intermediate Investment Grade (4-6)

Other Notes:

None

PIMCO Total Return Instl - Operations

Inception Date	5/11/1987
Fund Size (\$mm)	64,008
Annual Report Net Expense Ratio	0.46
Prospectus Net Expense Ratio	0.55
Prospectus Gross Expense Ratio	0.55
Ticker	PTRX
Manager Tenure (Longest)	4.50
Manager Tenure (Average)	4.50
Morningstar Institutional Category	Intermediate Investment Grade (4-6)

Other Notes:

None

PGIM Total Return Bond R6 - Operations

Inception Date	12/27/2010
Fund Size (\$mm)	37,771
Annual Report Net Expense Ratio	0.41
Prospectus Net Expense Ratio	0.41
Prospectus Gross Expense Ratio	0.41
Ticker	PTROX
Manager Tenure (Longest)	16.42
Manager Tenure (Average)	9.25
Morningstar Institutional Category	BBB-Rated

Other Notes:

None

Western Asset Core Plus Bond IS - Opera

Inception Date	8/4/2008
Fund Size (\$mm)	24,350
Annual Report Net Expense Ratio	0.42
Prospectus Net Expense Ratio	0.43
Prospectus Gross Expense Ratio	0.43
Ticker	WAPXS
Manager Tenure (Longest)	20.67
Manager Tenure (Average)	7.17
Morningstar Institutional Category	Intermediate Investment Grade (4-6)

Other Notes:

None

Portfolio Analysis

CREF Bond Market R3

Style Allocation

Portfolio Date: 1/31/2019

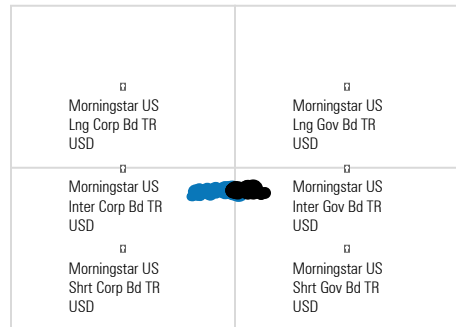
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	-
			Credit Qual AA %	-
			Credit Qual A %	-
			Credit Qual BBB %	-
			Credit Qual BB %	-
			Credit Qual B %	-
			Credit Qual Below B %	-
			Credit Qual Not Rated %	-

Portfolio Data

Average Credit Quality	A
Average Eff Duration	5.8
Modified Duration	
Average Eff Maturity	8.1
Average Coupon	3.4
Average Price	100.2
SEC Yield	3.2

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



PIMCO Total Return Instl

Style Allocation

Portfolio Date: 12/31/2018

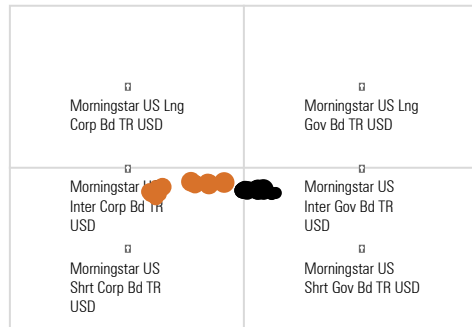
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	64.0
			Credit Qual AA %	9.0
			Credit Qual A %	13.0
			Credit Qual BBB %	8.0
			Credit Qual BB %	3.0
			Credit Qual B %	2.0
			Credit Qual Below B %	1.0
			Credit Qual Not Rated %	0.0

Portfolio Data

Average Credit Quality	A
Average Eff Duration	3.5
Modified Duration	3.5
Average Eff Maturity	4.2
Average Coupon	4.2
Average Price	110.0
SEC Yield	3.2

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



PGIM Total Return Bond R6

Style Allocation

Portfolio Date: 1/31/2019

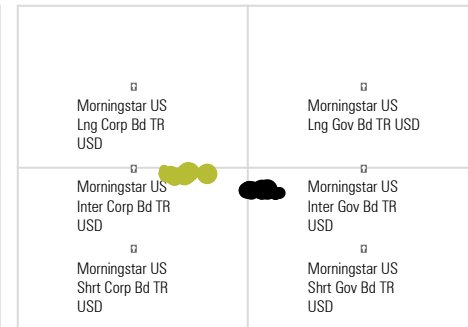
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	-
			Credit Qual AA %	-
			Credit Qual A %	-
			Credit Qual BBB %	-
			Credit Qual BB %	-
			Credit Qual B %	-
			Credit Qual Below B %	-
			Credit Qual Not Rated %	-

Portfolio Data

Average Credit Quality	BBB
Average Eff Duration	6.2
Modified Duration	
Average Eff Maturity	
Average Coupon	
Average Price	
SEC Yield	3.5

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



Western Asset Core Plus Bond IS

Style Allocation

Portfolio Date: 12/31/2018

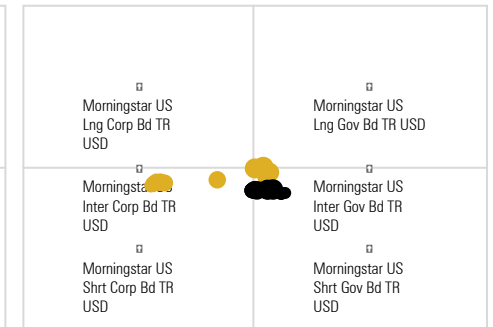
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	59.2
			Credit Qual AA %	3.8
			Credit Qual A %	16.1
			Credit Qual BBB %	13.4
			Credit Qual BB %	5.9
			Credit Qual B %	2.4
			Credit Qual Below B %	2.8
			Credit Qual Not Rated %	-3.5

Portfolio Data

Average Credit Quality	BBB
Average Eff Duration	6.3
Modified Duration	
Average Eff Maturity	10.8
Average Coupon	3.8
Average Price	97.5
SEC Yield	3.8

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



Sector Exposure and Top 15 Holdings

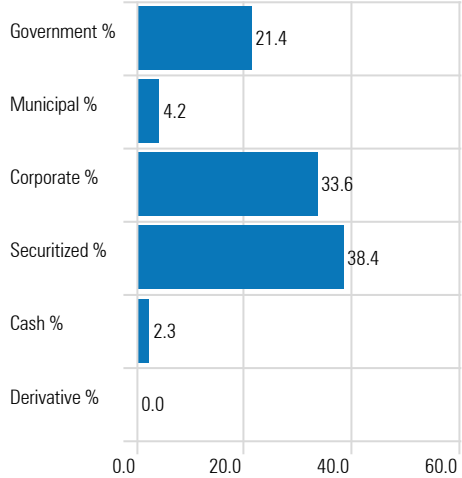
CREF Bond Market R3

PIMCO Total Return Instl

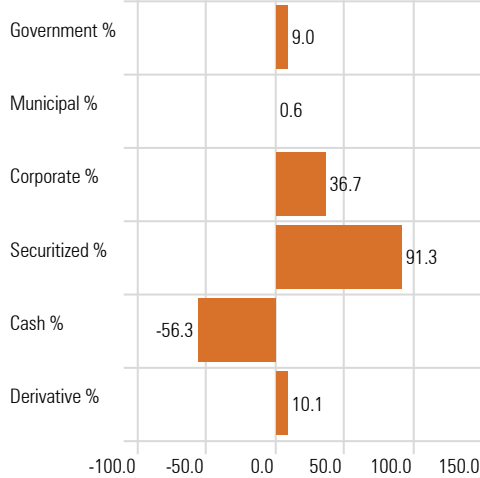
PGIM Total Return Bond R6

Western Asset Core Plus Bond IS

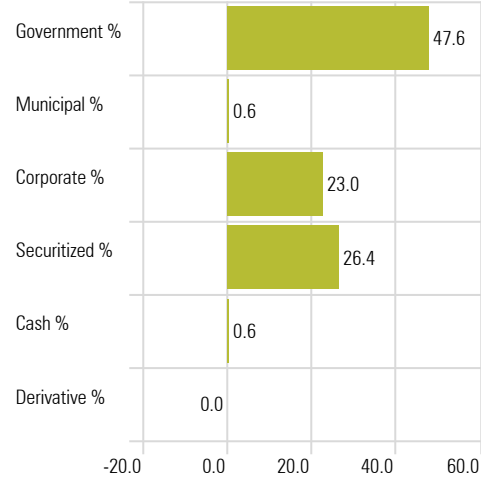
Sector Allocation



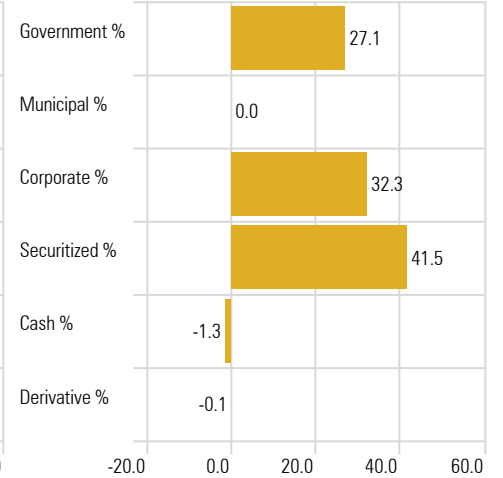
Sector Allocation



Sector Allocation



Sector Allocation



■ CREF Bond Market R3

■ PIMCO Total Return Instl

■ PGIM Total Return Bond R6

■ Western Asset Core Plus Bond IS

CREF Bond Market R3 - Top Holdings

Portfolio Date: 1/31/2019

Security	Portfolio Weighting %
Federal National Mortgage Association 4%	1.4
United States Treasury Bonds 3%	1.4
United States Treasury Notes 2.75%	1.2
United States Treasury Notes 2.75%	1.1
Federal National Mortgage Association 3%	1.0
Government National Mortgage Association 3.5%	0.9
Federal National Mortgage Association 3.5%	0.9
Federal Home Loan Mortgage Corporation 3%	0.7
United States Treasury Bonds 2.5%	0.7
Federal Home Loan Mortgage Corporation 3.5%	0.7
United States Treasury Bonds 4.5%	0.6
United States Treasury Bonds 2.88%	0.6
United States Treasury Notes 2.5%	0.6
Government National Mortgage Association 3.5%	0.5
Federal National Mortgage Association 3%	0.5

PIMCO Total Return Instl - Top Holdings

Portfolio Date: 12/31/2018

Security	Portfolio Weighting %
US 5 Year Note (CBT) Mar19	33.3
3 Month Euribor Future June19	14.7
Euro BUND Future Mar19	9.9
Federal National Mortgage Association 3%	9.0
US Ultra Bond (CBT) Mar19	8.9
Pimco Fds	8.7
Federal National Mortgage Association 3.5%	8.6
Federal National Mortgage Association 4%	7.2
Federal National Mortgage Association 3.5%	6.5
Cdx Ig31 5y Ice	5.9
Irs Eur 1.00000 03/20/19-10y Lch	4.3
Irs Usd 2.80000 08/22/18-5y Cme	4.3
90 Day Eurodollar Future Mar19	2.9
Irs Jpy 0.38000 06/18/18-10y Lch	2.7
Irs Mxn 8.70000 11/05/18-2y Cme	2.6

PGIM Total Return Bond R6 - Top Holdings

Portfolio Date: 1/31/2019

Security	Portfolio Weighting %
US 5 Year Note (CBT) Mar19	26.0
US 10 Year Note (CBT) Mar19	15.1
Recv Fra 4.0275 26feb19	6.9
Recv Fra Usd 2.65 26feb19	6.9
US Ultra Bond (CBT) Mar19	5.8
U.S. Treasury Bond Mar19	2.3
US 10 Year Ultra Future Mar19	2.1
Recv Fra 3.992 14feb2019	1.5
Recv Fra 2.59 14feb2019	1.5
Portugal (Republic Of) 5.12%	0.9
PGIM Core Short-Term Bond	0.8
Republika Slovenija 5.25%	0.5
Hungary (Republic Of) 6.38%	0.4
Greece (Republic Of) 5.2%	0.4
Lstar Secs Fing Veh 2018-1 144A FRN 3.98%	0.4

Western Asset Core Plus Bond IS - Top Holdings

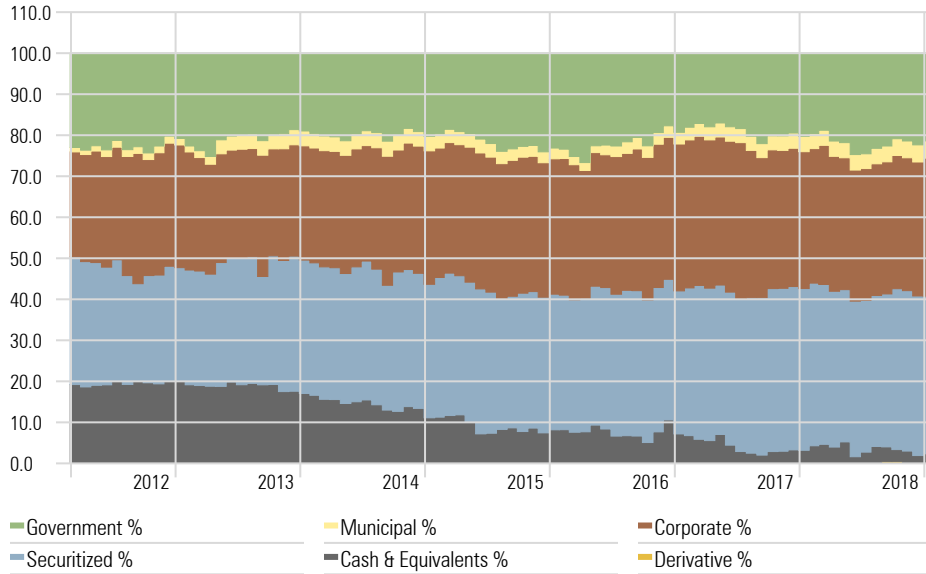
Portfolio Date: 12/31/2018

Security	Portfolio Weighting %
Ir Swap 1d-Fed01 31 Bps	11.0
Federal National Mortgage Association 4.5%	3.0
United States Treasury Bonds 3%	2.6
United States Treasury Bonds 2.88%	2.3
Government National Mortgage Association 4.5%	2.1
United States Treasury Bonds 3.75%	2.0
Government National Mortgage Association 5%	1.6
Fx Fut Mexican Peso Fut Mar19	1.5
United States Treasury Bonds 3%	1.4
United States Treasury Bonds 2.5%	1.4
United States Treasury Notes 0.62%	1.2
Federal National Mortgage Association 3.5%	1.0
Fx Fut Jpn Yen Curr Fut Mar19	1.0
United States Treasury Notes 1.88%	0.9
CSMC Trust 3.5%	0.9

Historical Sector Exposure

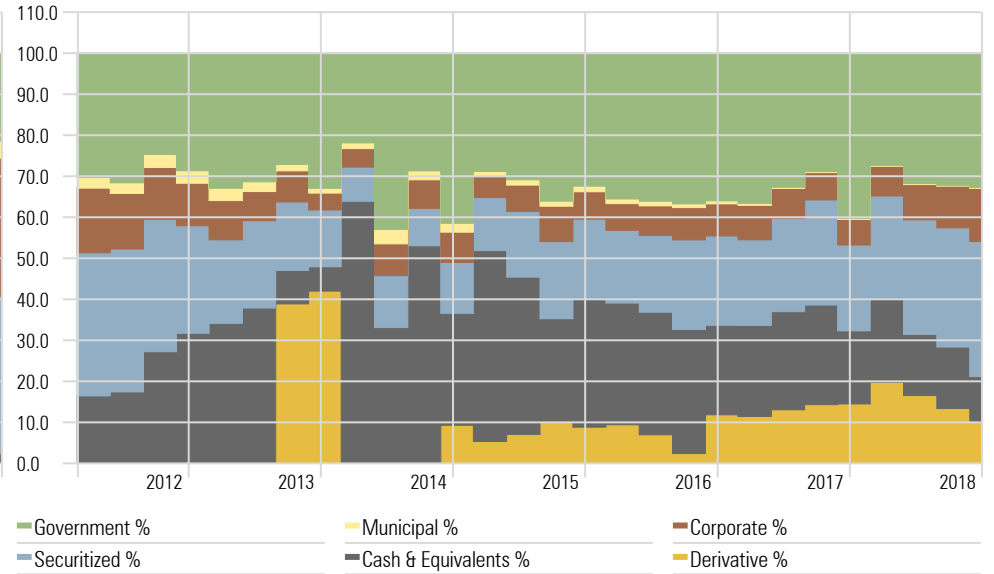
CREF Bond Market R3 - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 1/31/2019



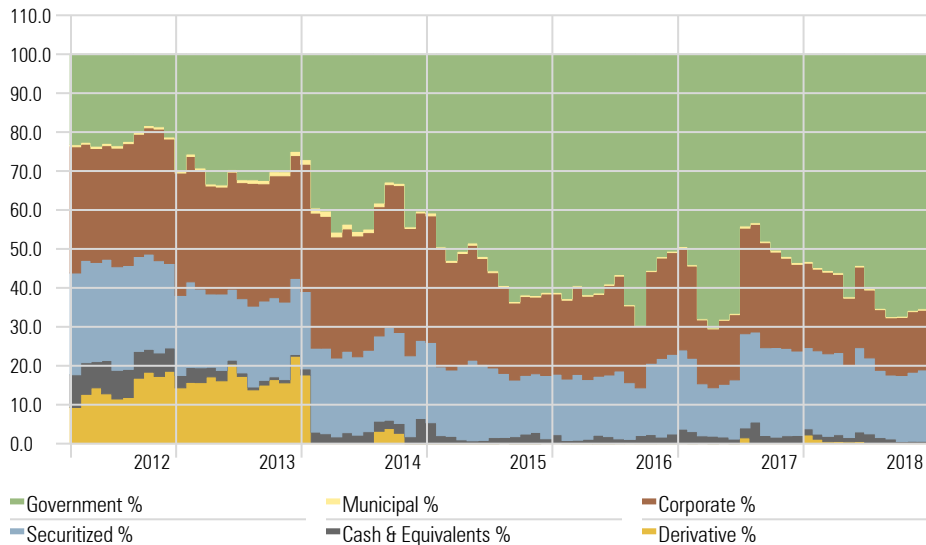
PIMCO Total Return Instl - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 12/31/2018



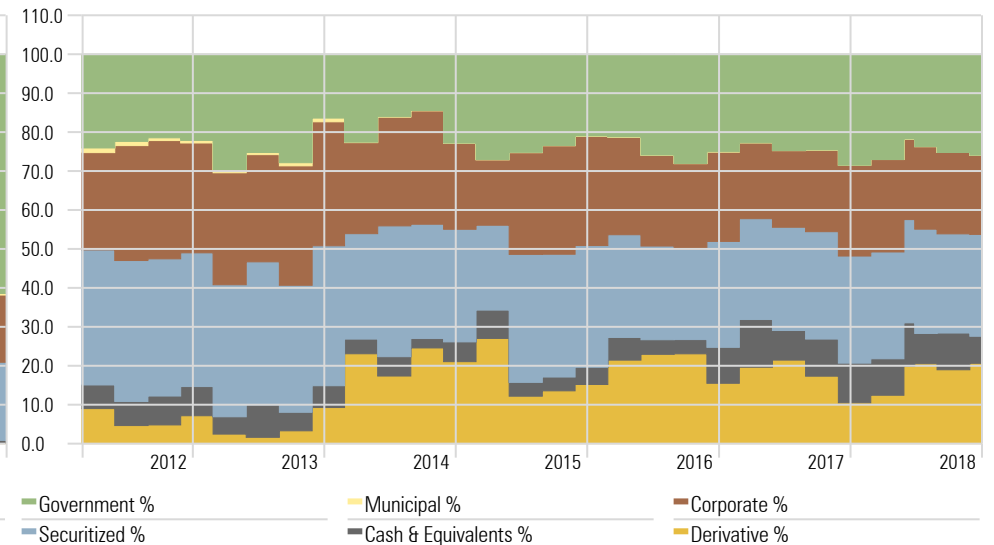
PGIM Total Return Bond R6 - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 1/31/2019



Western Asset Core Plus Bond IS - Fixed-Inc Super Sectors (Morningstar)

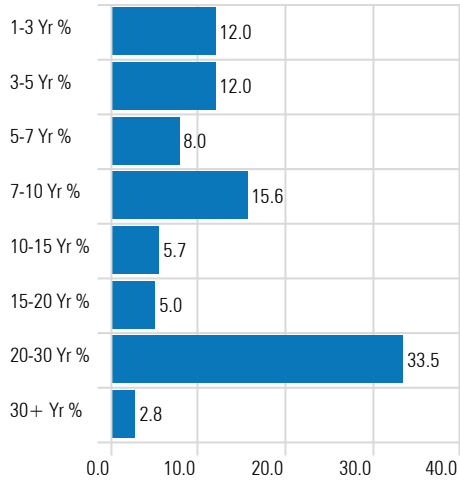
Time Period: 3/1/2012 to 12/31/2018



Maturity and Coupon Breakdown

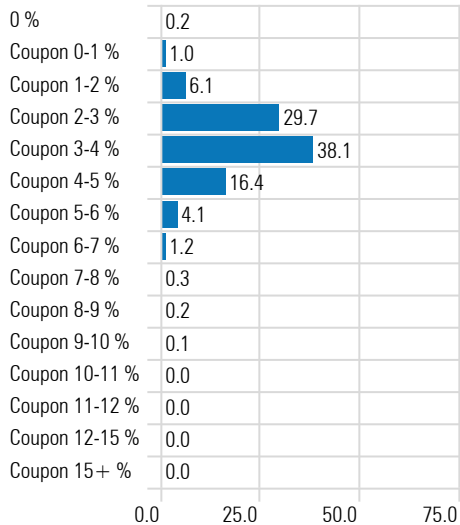
CREF Bond Market R3

Maturity Breakdown



■ CREF Bond Market R3

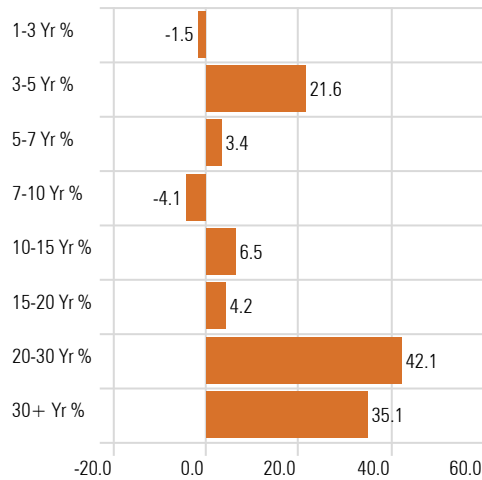
Coupon Breakdown



■ CREF Bond Market R3

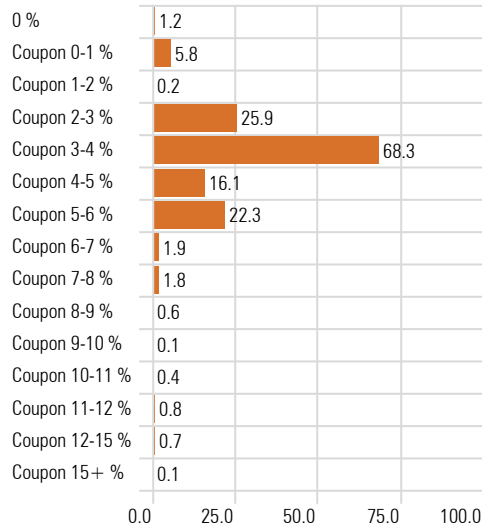
PIMCO Total Return Instl

Maturity Breakdown



■ PIMCO Total Return Instl

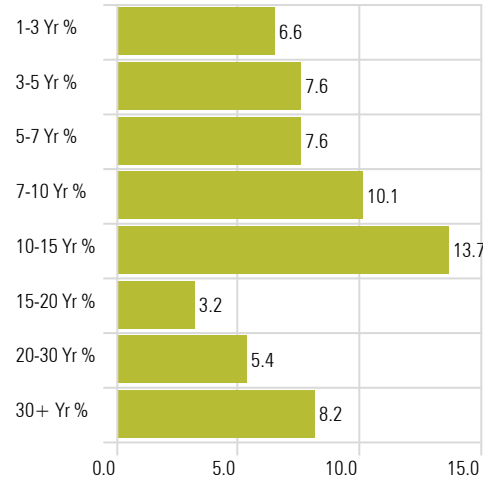
Coupon Breakdown



■ PIMCO Total Return Instl

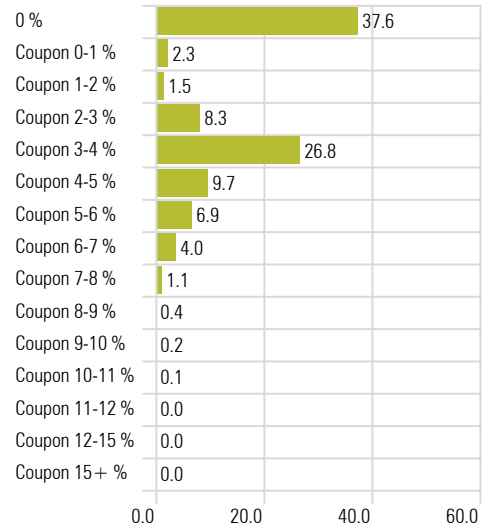
PGIM Total Return Bond R6

Maturity Breakdown



■ PGIM Total Return Bond R6

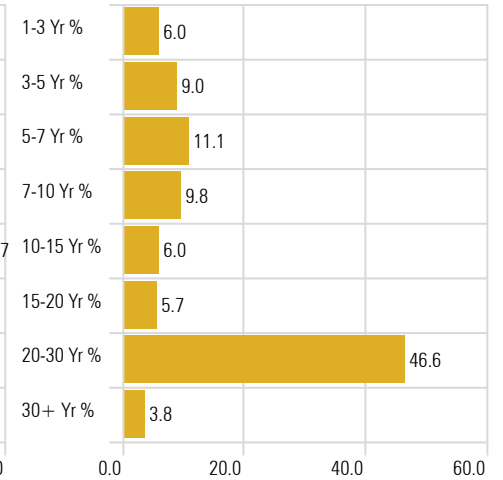
Coupon Breakdown



■ PGIM Total Return Bond R6

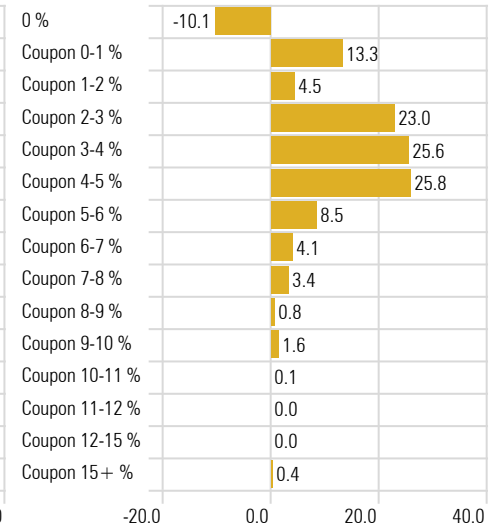
Western Asset Core Plus Bond IS

Maturity Breakdown



■ Western Asset Core Plus Bond IS

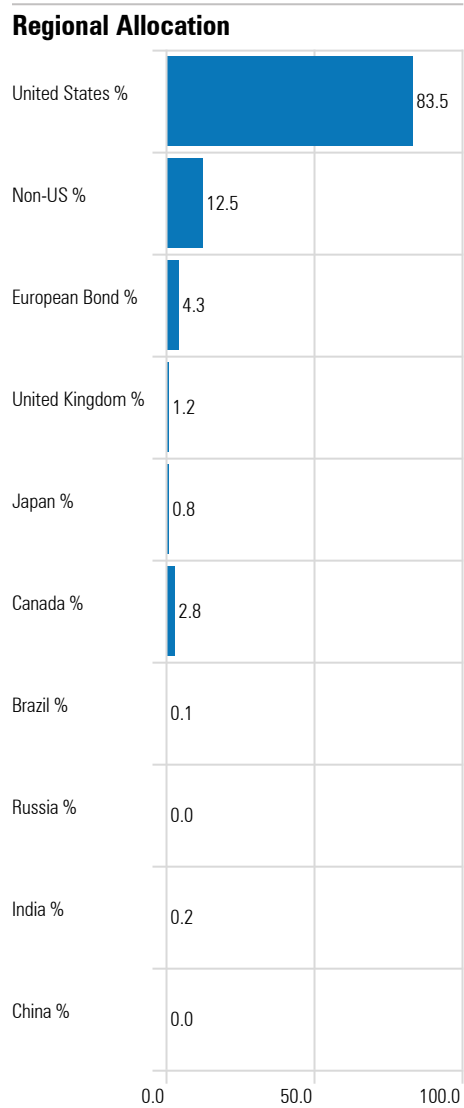
Coupon Breakdown



■ Western Asset Core Plus Bond IS

International Exposure

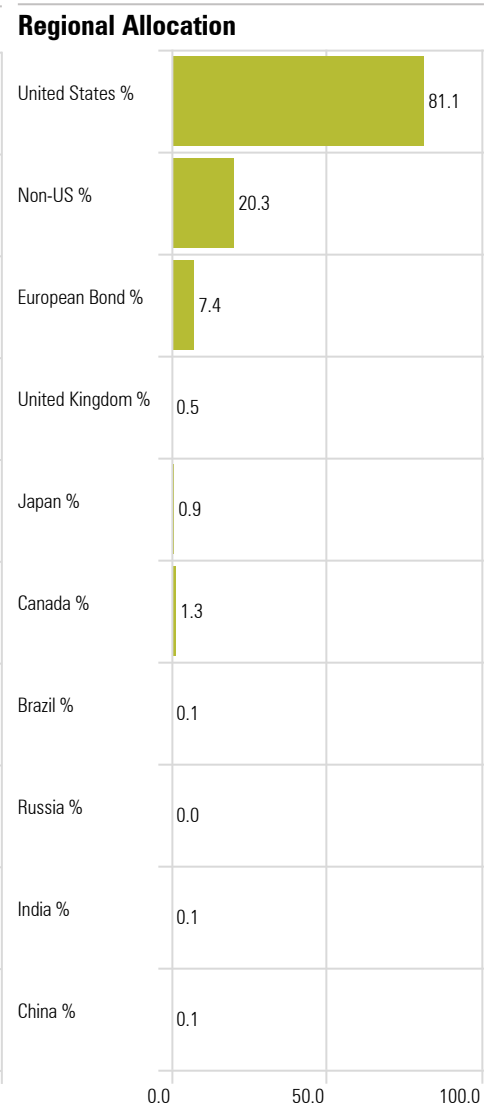
CREF Bond Market R3



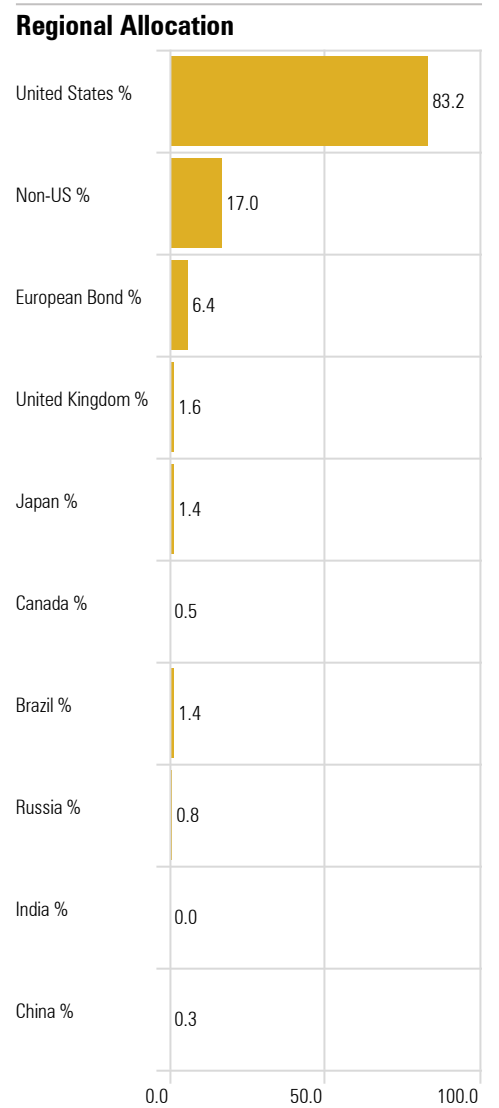
PIMCO Total Return Instl



PGIM Total Return Bond R6



Western Asset Core Plus Bond IS



■ CREF Bond Market R3

■ PIMCO Total Return Instl

■ PGIM Total Return Bond R6

■ Western Asset Core Plus Bond IS

Risk/Return Performance Analysis

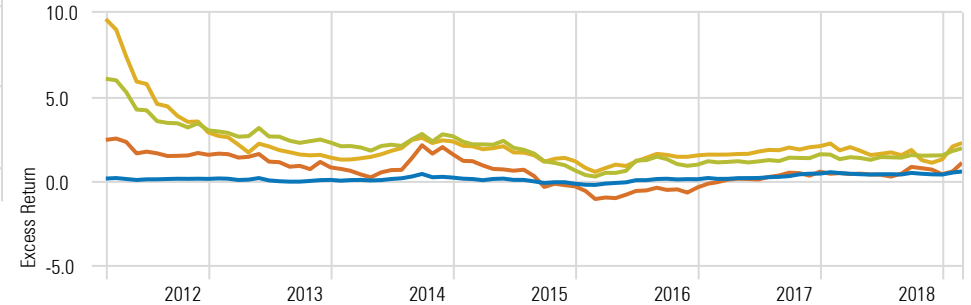
Standard Deviation



3 Year Relative Rolling Returns

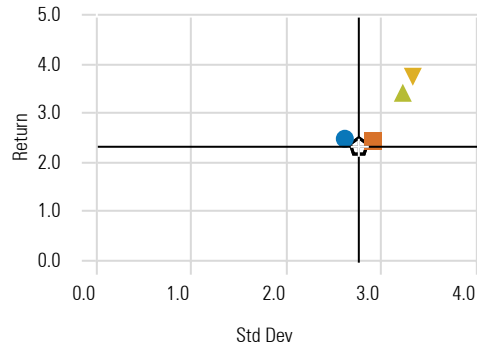
Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



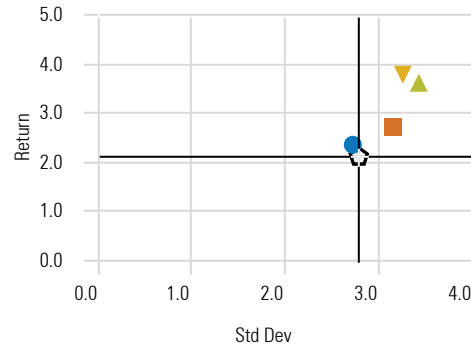
5 Year Risk-Reward

Time Period: 3/1/2014 to 2/28/2019



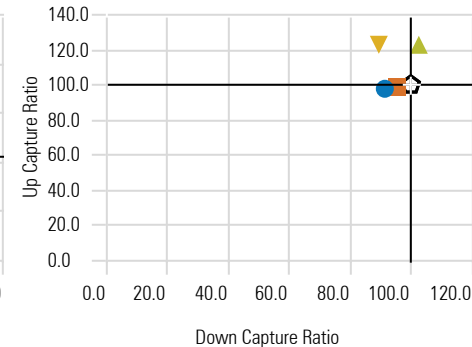
7 Year Risk-Reward

Time Period: 3/1/2012 to 2/28/2019



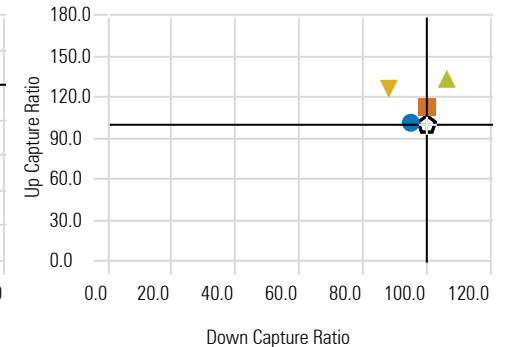
5 Year Market Capture

Time Period: 3/1/2014 to 2/28/2019



7 Year Market Capture

Time Period: 3/1/2012 to 2/28/2019



Annualized Performance & Risk Statistics - Since Common Inception

Time Period: Since Common Inception (5/1/2015) to 2/28/2019

	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
CREF Bond Market R3	2.0	2.6	0.4	0.95	97	3.0	-2.7	0.39	0.4
PIMCO Total Return Instl	2.0	2.7	0.4	0.86	74	2.1	-2.5	0.38	1.4
PGIM Total Return Bond R6	2.8	3.2	1.0	1.11	89	3.3	-3.0	0.56	1.1
Western Asset Core Plus Bond IS	3.1	3.5	1.3	1.11	75	3.0	-2.4	0.60	1.8
BBgBarc US Agg Bond TR USD	1.7	2.7	0.0	1.00	100	3.0	-3.0	0.26	0.0
US Insurance Intermediate-Term Bond	1.7	2.6	0.1	0.92	96	2.7	-2.6	0.28	0.6

Performance Analysis

CREF Bond Market R3

PIMCO Total Return Instl

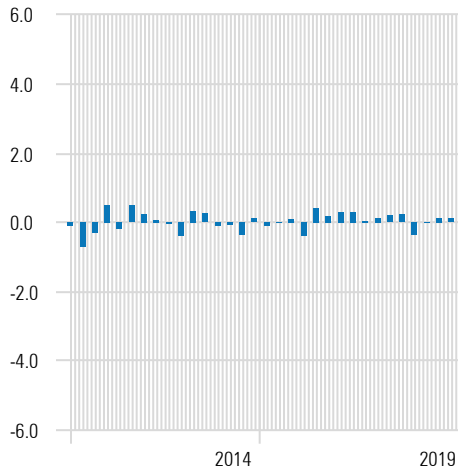
PGIM Total Return Bond R6

Western Asset Core Plus Bond IS

Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

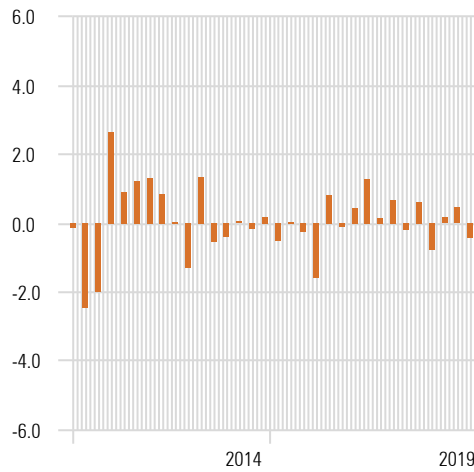
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

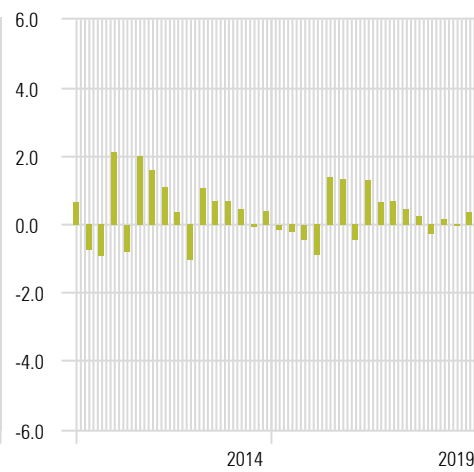
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

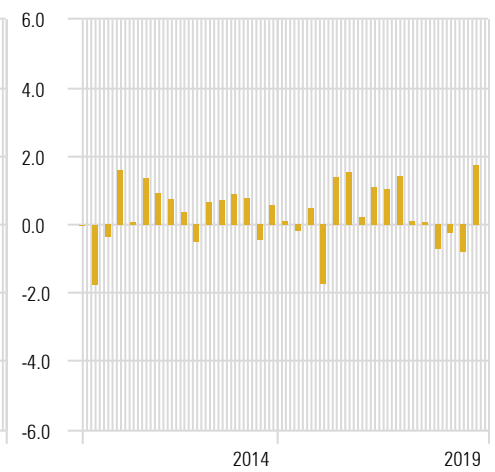
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

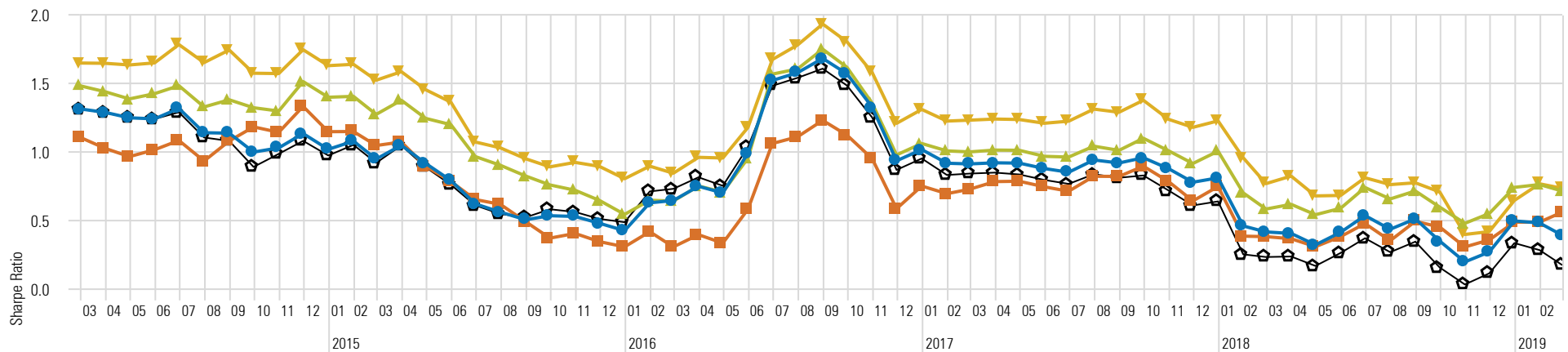
Rolling Window: 3 Months 3 Months shift



Rolling 3 Year Sharpe Ratio

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



— CREF Bond Market R3
— Western Asset Core Plus Bond IS

— PIMCO Total Return Instl
— BBgBarc US Agg Bond TR USD

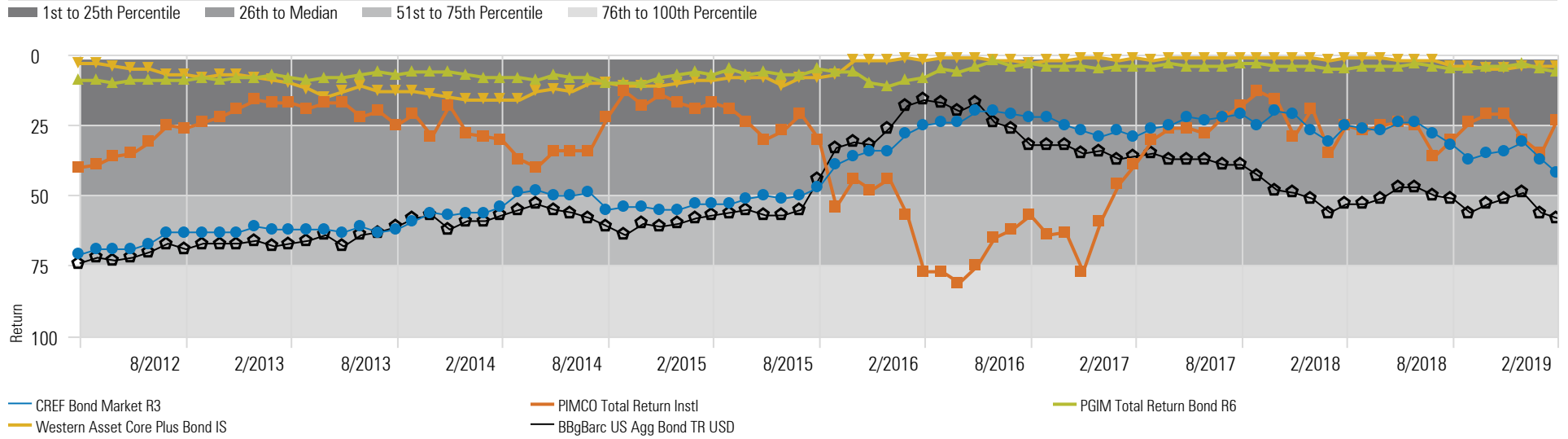
— PGIM Total Return Bond R6

Rolling Peer Group Rankings

Rolling 3 Year Peer Group Rank

Time Period: 3/1/2009 to 2/28/2019

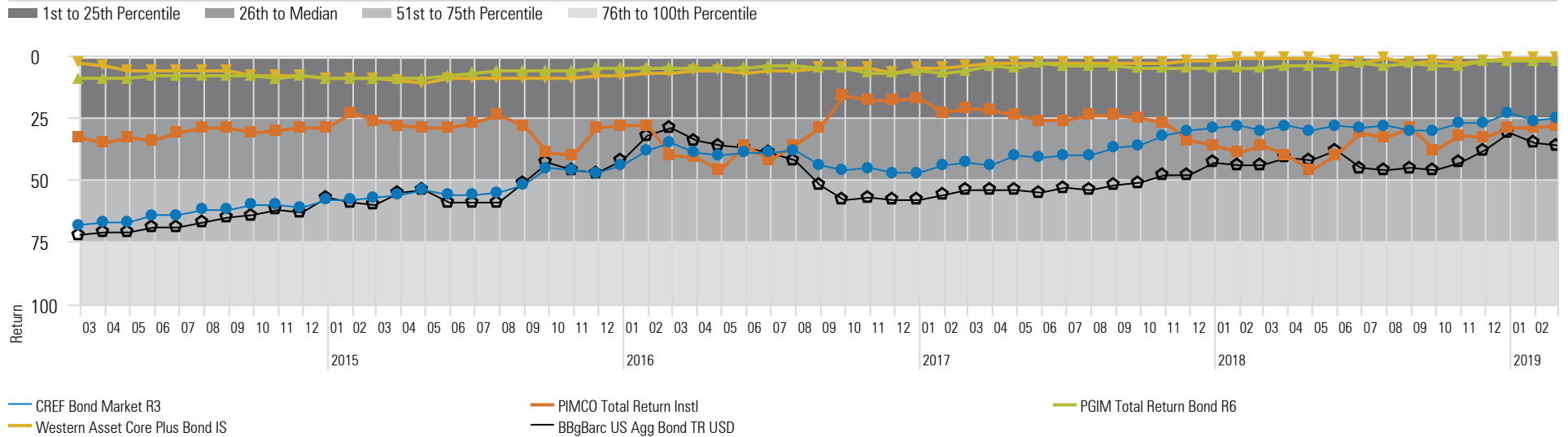
Rolling Window: 3 Years 1 Month shift



Rolling 5 Year Peer Group Rank

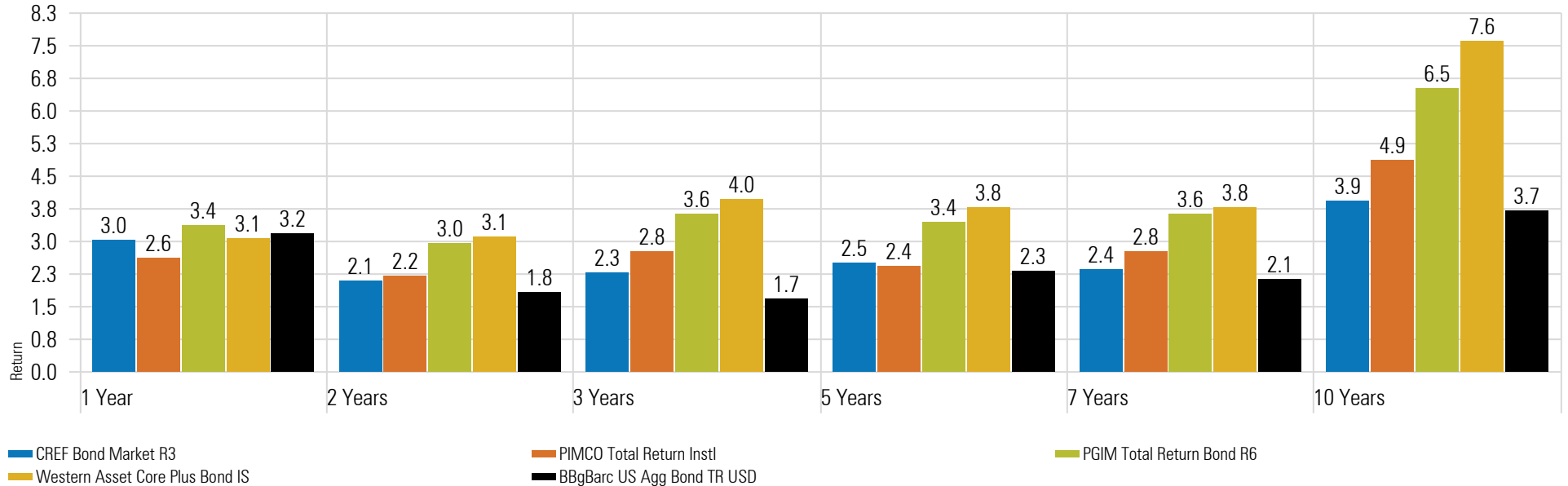
Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 5 Years 1 Month shift

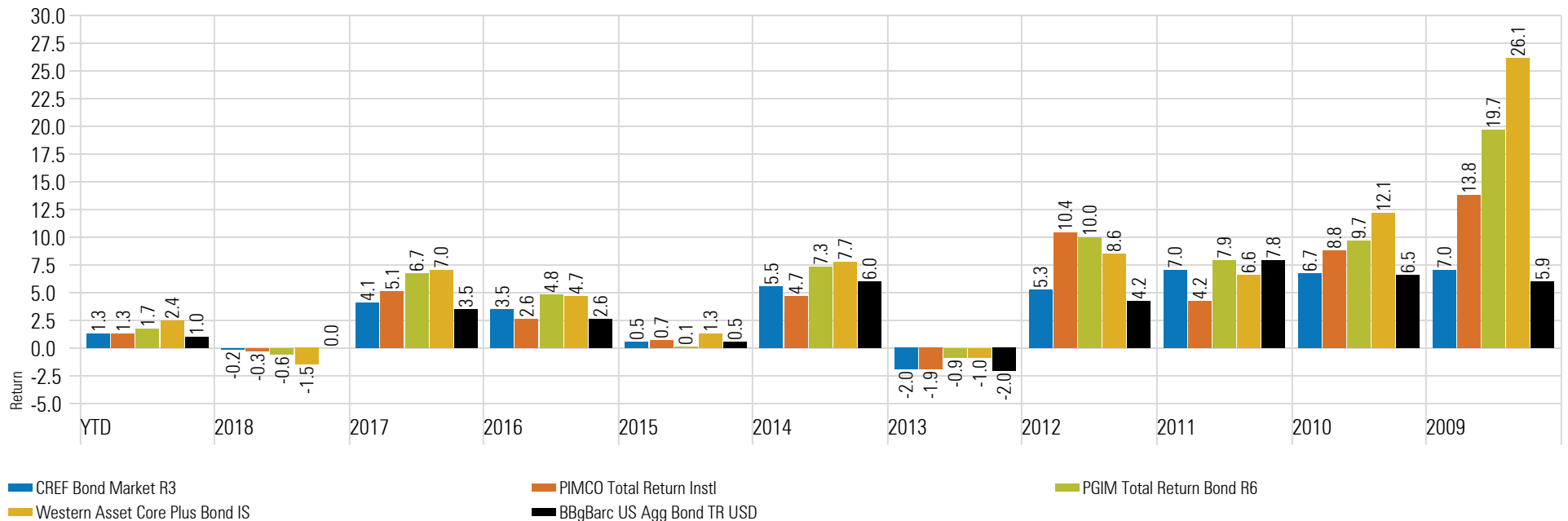


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Intermediate-Term Bond																		
PIMCO Total Return Instl	1.4	28	-0.25	-0.3	34	-0.27	-0.3	34	-0.27	2.5	32	0.41	2.6	32	0.04	4.7	40	1.23
PGIM Total Return Bond R6	1.4	29	-0.27	-0.6	53	-0.65	-0.6	53	-0.65	3.6	5	1.53	3.6	4	1.07	6.3	6	2.82
Western Asset Core Plus Bond IS	0.8	59	-0.86	-1.5	83	-1.48	-1.5	83	-1.48	3.4	7	1.30	3.8	3	1.28	6.9	3	3.45
BBgBarc US Agg Bond TR USD	1.6			0.0			0.0			2.1			2.5			3.5		
Average	0.9			-0.6			-0.6			2.2			2.3			4.5		
Intermediate-Term Bond																		
CREF Bond Market R3	1.4	35	-0.27	-0.2	28	-0.20	-0.2	28	-0.20	2.4	31	0.39	2.7	23	0.14	3.7	63	0.22
BBgBarc US Agg Bond TR USD	1.6			0.0			0.0			2.1			2.5			3.5		
Average	1.0			-0.5			-0.5			2.1			2.3			4.1		

Performance Summary - Calendar Year Periods

	2018			2017			2016			2015			2014			2013			2012		
	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Intermediate-Term Bond																					
PIMCO Total Return Instl	-0.3	34	-0.27	5.1	12	1.59	2.6	65	-0.05	0.7	15	0.18	4.7	74	-1.27	-1.9	64	0.10	10.4	7	6.15
PGIM Total Return Bond R6	-0.6	53	-0.65	6.7	2	3.17	4.8	14	2.18	0.1	47	-0.46	7.3	6	1.29	-0.9	31	1.11	10.0	9	5.74
Western Asset Core Plus Bond IS	-1.5	83	-1.48	7.0	1	3.44	4.7	16	2.07	1.3	5	0.77	7.7	4	1.78	-1.0	33	1.04	8.6	23	4.35
BBgBarc US Agg Bond TR USD	0.0			3.5			2.6			0.5			6.0			-2.0			4.2		
Average	-0.6			3.8			3.3			-0.2			5.4			-1.3			6.9		
Intermediate-Term Bond																					
CREF Bond Market R3	-0.2	28	-0.20	4.1	38	0.58	3.5	34	0.82	0.5	22	-0.04	5.5	47	-0.45	-2.0	53	0.01	5.3	62	1.08
BBgBarc US Agg Bond TR USD	0.0			3.5			2.6			0.5			6.0			-2.0			4.2		
Average	-0.5			3.8			3.1			0.0			5.3			-1.7			6.2		

International Bond Search

As of 2/28/2019



US Fund World Bond

Templeton Global Bond R6

PGIM Global Total Return R6

Vanguard Total Intl Bd Idx Admiral™

Investment Strategy

The investment seeks current income with capital appreciation and growth of income. Under normal market conditions, the fund invests at least 80% of its net assets in "bonds." Bonds include debt obligations of any maturity, such as bonds, notes, bills and debentures. It invests predominantly in bonds issued by governments, government-related entities and government agencies located around the world. The fund may invest up to 25% of its total assets in bonds that are rated below investment grade or, if unrated determined by the investment manager to be of comparable quality. It is non-diversified.

Investment Strategy

The investment seeks total return, made up of current income and capital appreciation. The fund normally invests at least 65% of its total assets in income-producing debt securities of U.S. and foreign corporations and governments, supranational organizations, semi-governmental entities or government agencies, authorities or instrumentalities, investment-grade U.S. or foreign mortgages and mortgage-related securities and U.S. or foreign short-term and long-term bank debt securities or bank deposits. It may invest up to 35% of its total assets in speculative, lower-rated securities, also known as "junk" bonds. The fund is non-diversified.

Investment Strategy

The investment seeks to track the performance of a benchmark index that measures the investment return of non-U.S. dollar-denominated investment-grade bonds. The fund employs an indexing investment approach designed to track the performance of the Bloomberg Barclays Global Aggregate ex-USD Float Adjusted RIC Capped Index (USD Hedged). This index provides a broad-based measure of the global, investment-grade, fixed-rate debt markets. It is non-diversified.

Manager Biography

Michael J. Hasenstab since 12/31/2001

Calvin Ho since 12/31/2018

Manager Biography

Robert Tipp since 9/30/2002

Michael J. Collins since 12/31/2009

Arvind Rajan since 12/30/2015

Matthew Angelucci since 10/31/2018

Manager Biography

Joshua C. Barrickman since 5/31/2013

Templeton Global Bond R6 - Operations

Inception Date	5/1/2013
Fund Size (\$mm)	34,162
Annual Report Net Expense Ratio	0.48
Prospectus Net Expense Ratio	0.56
Prospectus Gross Expense Ratio	0.63
Ticker	FBNRX
Manager Tenure (Longest)	17.25
Manager Tenure (Average)	8.75
Morningstar Institutional Category	World Bond

Other Notes:

None

PGIM Global Total Return R6 - Operations

Inception Date	2/3/2012
Fund Size (\$mm)	1,862
Annual Report Net Expense Ratio	0.58
Prospectus Net Expense Ratio	0.58
Prospectus Gross Expense Ratio	0.58
Ticker	PGTQX
Manager Tenure (Longest)	16.50
Manager Tenure (Average)	7.35
Morningstar Institutional Category	World Bond

Other Notes:

None

Vanguard Total Intl Bd Idx Admiral™ - Operations

Inception Date	5/31/2013
Fund Size (\$mm)	15,985
Annual Report Net Expense Ratio	0.11
Prospectus Net Expense Ratio	0.11
Prospectus Gross Expense Ratio	0.11
Ticker	VTABX
Manager Tenure (Longest)	5.83
Manager Tenure (Average)	5.83
Morningstar Institutional Category	Foreign Bond

Other Notes:

None

Portfolio Analysis

Templeton Global Bond R6

Style Allocation

Portfolio Date: 12/31/2018

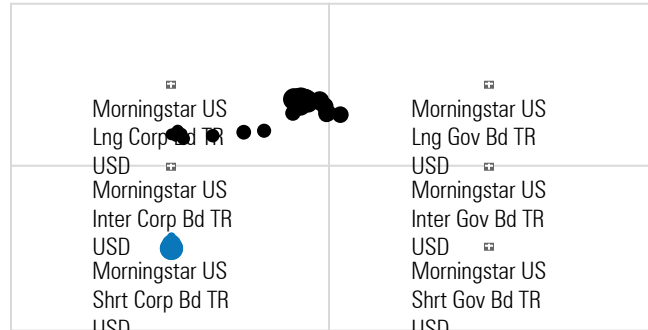
Morningstar Fixed Income Style Box™	Credit Quality	%
Not Available	Credit Qual AAA %	15.9
	Credit Qual AA %	6.3
	Credit Qual A %	16.7
	Credit Qual BBB %	33.8
	Credit Qual BB %	16.9
	Credit Qual B %	9.7
	Credit Qual Below B %	0.0
	Credit Qual Not Rated %	0.7

Portfolio Data

Average Credit Quality	BB
Average Eff Duration	-1.6
Modified Duration	-1.6
Average Eff Maturity	2.7
Average Coupon	8.7
Average Price	
SEC Yield	5.6

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



PGIM Global Total Return R6

Style Allocation

Portfolio Date: 1/31/2019

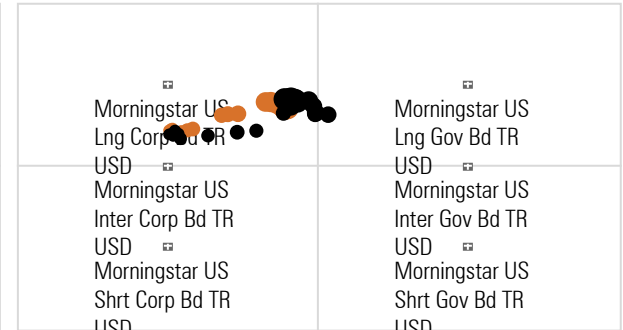
Morningstar Fixed Income Style Box™	Credit Quality	%												
<table border="1"> <thead> <tr> <th>Ltd</th> <th>Mod</th> <th>Ext</th> </tr> </thead> <tbody> <tr> <td>High</td> <td></td> <td></td> </tr> <tr> <td>Med</td> <td></td> <td></td> </tr> <tr> <td>Low</td> <td></td> <td style="background-color: black;"></td> </tr> </tbody> </table>	Ltd	Mod	Ext	High			Med			Low			Credit Qual AAA %	-
	Ltd	Mod	Ext											
	High													
	Med													
	Low													
	Credit Qual AA %	-												
	Credit Qual A %	-												
	Credit Qual BBB %	-												
Credit Qual BB %	-													
Credit Qual B %	-													
Credit Qual Below B %	-													
Credit Qual Not Rated %	-													

Portfolio Data

Average Credit Quality	BB
Average Eff Duration	8.6
Modified Duration	
Average Eff Maturity	
Average Coupon	3.9
Average Price	
SEC Yield	2.8

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



Vanguard Total Intl Bd Idx Admiral™

Style Allocation

Portfolio Date: 1/31/2019

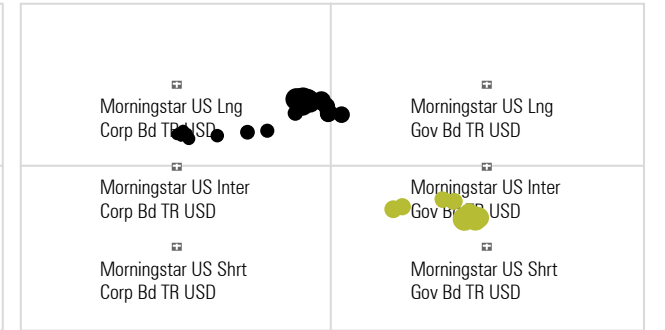
Morningstar Fixed Income Style Box™	Credit Quality	%												
<table border="1"> <thead> <tr> <th>Ltd</th> <th>Mod</th> <th>Ext</th> </tr> </thead> <tbody> <tr> <td>High</td> <td></td> <td></td> </tr> <tr> <td>Med</td> <td></td> <td style="background-color: black;"></td> </tr> <tr> <td>Low</td> <td></td> <td></td> </tr> </tbody> </table>	Ltd	Mod	Ext	High			Med			Low			Credit Qual AAA %	21.8
	Ltd	Mod	Ext											
	High													
	Med													
	Low													
	Credit Qual AA %	27.6												
	Credit Qual A %	33.6												
	Credit Qual BBB %	16.9												
Credit Qual BB %	0.0													
Credit Qual B %	0.0													
Credit Qual Below B %	0.0													
Credit Qual Not Rated %	0.0													

Portfolio Data

Average Credit Quality	A
Average Eff Duration	8.0
Modified Duration	
Average Eff Maturity	9.4
Average Coupon	2.2
Average Price	
SEC Yield	0.8

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



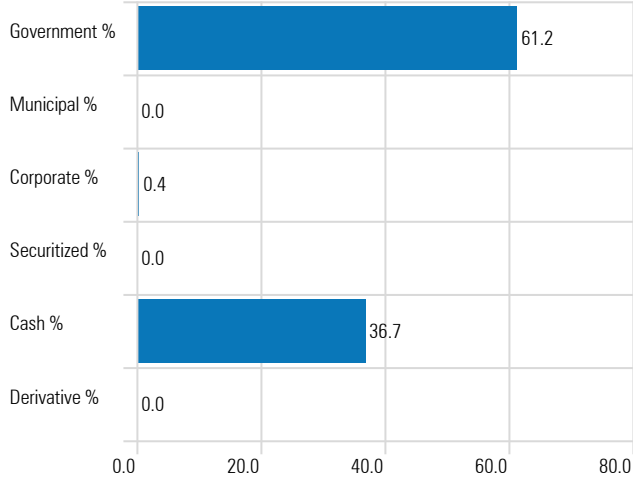
Sector Exposure and Top 15 Holdings

Templeton Global Bond R6

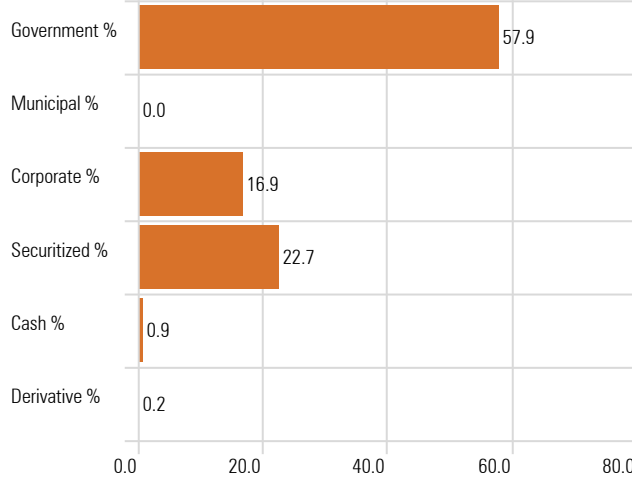
PGIM Global Total Return R6

Vanguard Total Intl Bd Idx Admiral™

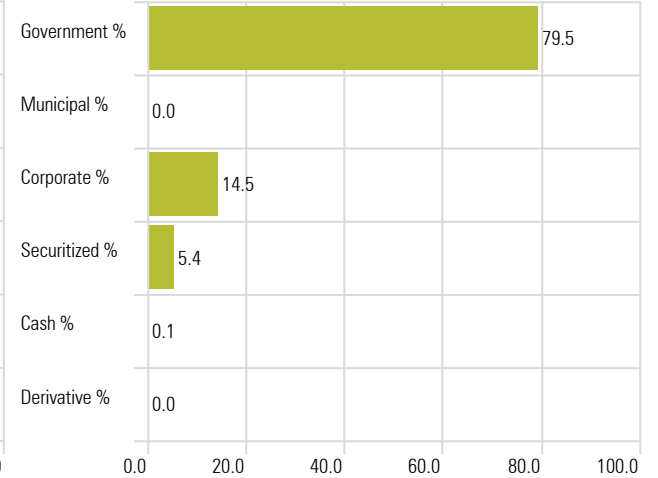
Sector Allocation



Sector Allocation



Sector Allocation



■ Templeton Global Bond R6

■ PGIM Global Total Return R6

■ Vanguard Total Intl Bd Idx Admiral™

Templeton Global Bond R6 - Top Holdings

Portfolio Date: 12/31/2018

Country/Instrument	Portfolio Weighting %
Mexico (United Mexican States) 8%	8.0
Mexico (United Mexican States) 6.5%	4.1
Brazil (Federative Republic) 9.76%	3.7
Brazil (Federative Republic) 9.76%	2.9
Secretaria Tesouro Nacional 0%	2.3
Indonesia (Republic of) 8.38%	2.1
India (Republic of) 8.83%	1.9
Secretaria Tesouro Nacional 0%	1.7
Republic of Colombia 7.75%	1.6
United States Treasury Bills 0%	1.5
Indonesia (Republic of) 9.5%	1.5
India (Republic of) 7.17%	1.4
Indonesia (Republic of) 8.38%	1.4
Bank of Korea 1.85%	1.3
Indonesia (Republic of) 8.25%	1.3

PGIM Global Total Return R6 - Top Holdings

Portfolio Date: 1/31/2019

Country/Instrument	Portfolio Weighting %
US 5 Year Note (CBT) Mar19	36.3
US 10 Year Note (CBT) Mar19	16.6
US Ultra Bond (CBT) Mar19	6.3
Recv Fra 4.0275 26feb19	4.5
Recv Fra Usd 2.65 26feb19	4.5
Euro OAT Mar19	2.3
Portugal (Republic Of) 3.88%	1.3
France (Republic Of) 2.75%	1.1
U.S. Treasury Bond Mar19	1.1
Recv Fra 3.992 14feb2019	1.0
Recv Fra 2.59 14feb2019	1.0
Spain (Kingdom of) 4.65%	1.0
Brazil Minas SPE 5.33%	0.8
Argentina (Republic of) 7.82%	0.8
Recv Irs Thb 1.840000 08a	0.8

Vanguard Total Intl Bd Idx Admiral™ - Top Holdings

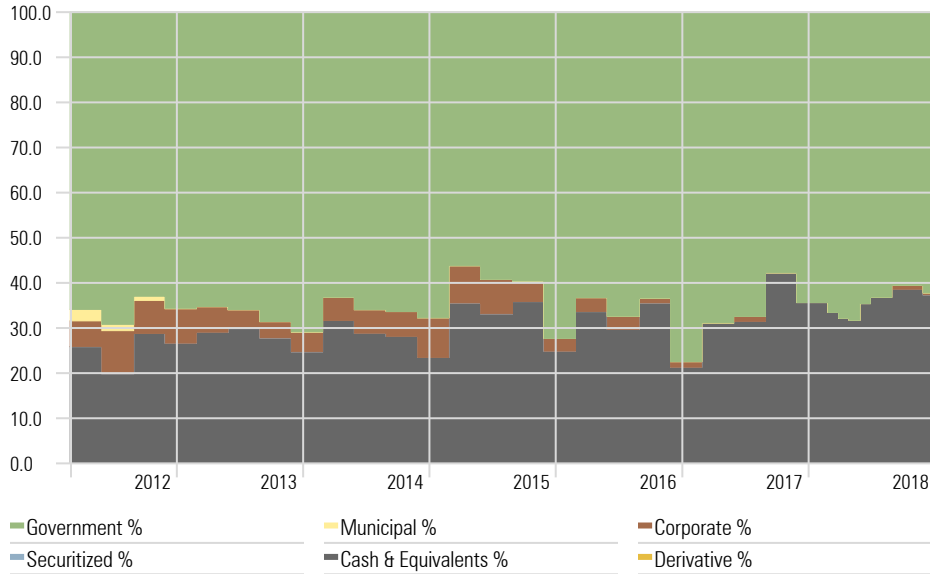
Portfolio Date: 1/31/2019

Country/Instrument	Portfolio Weighting %
France(Govt Of) 1%	0.6
Japan(Govt Of) 0.1%	0.5
France(Govt Of) 0%	0.5
Italy (Republic Of) 2.05%	0.5
Japan(Govt Of) 0.1%	0.4
Germany (Federal Republic Of) 0%	0.4
Germany (Federal Republic Of) 0.25%	0.4
Italy (Republic Of) 2.45%	0.4
Japan(Govt Of) 0.1%	0.4
France(Govt Of) 0.25%	0.4
Japan(Govt Of) 0.1%	0.4
Japan(Govt Of) 0.1%	0.3
Germany (Federal Republic Of) 0.5%	0.3
Spain (Kingdom of) 4%	0.3
Japan(Govt Of) 0.1%	0.3

Historical Sector Exposure

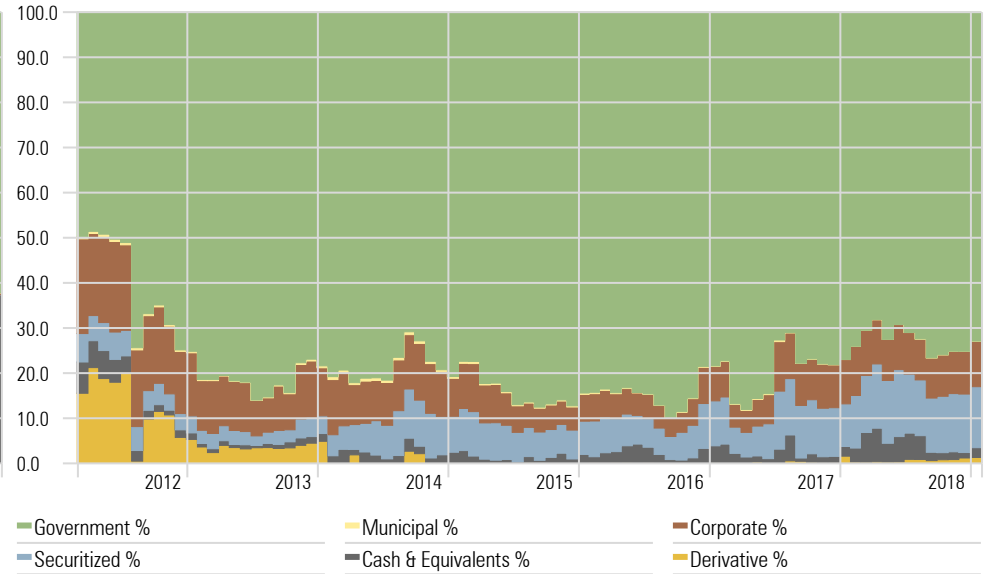
Templeton Global Bond R6 - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 12/31/2018



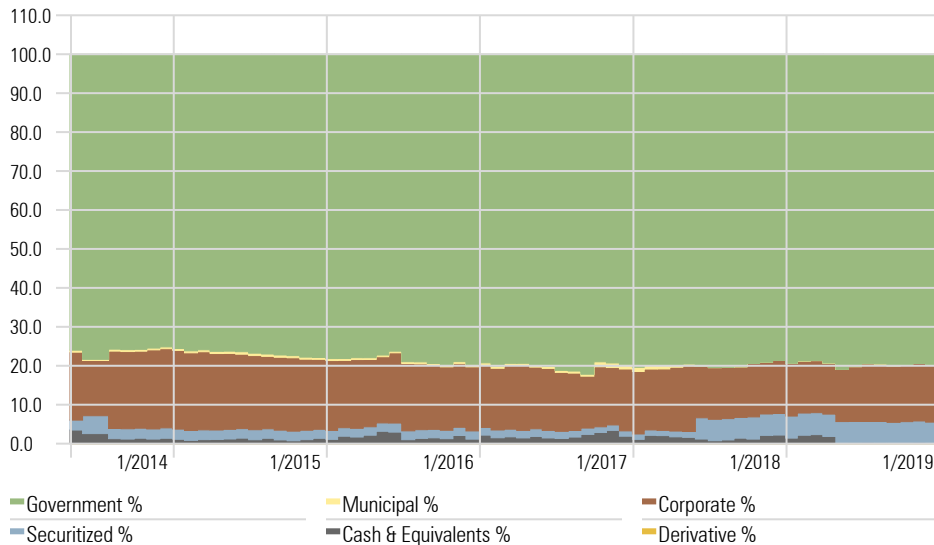
PGIM Global Total Return R6 - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 1/31/2019



Vanguard Total Intl Bd Idx Admiral™ - Fixed-Inc Super Sectors (Morningstar)

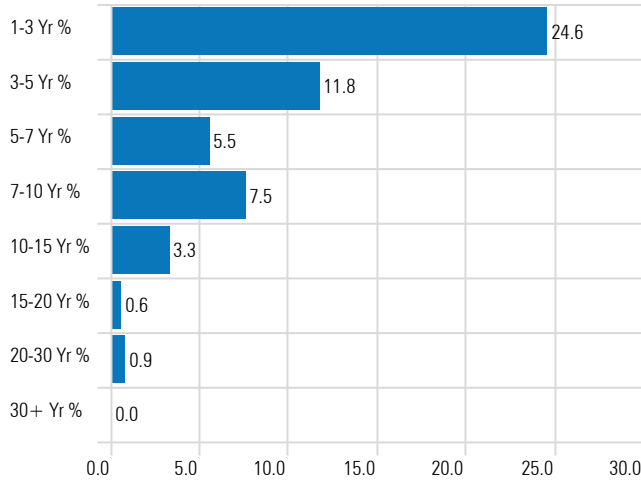
Time Period: 6/1/2013 to 1/31/2019



Maturity and Coupon Breakdown

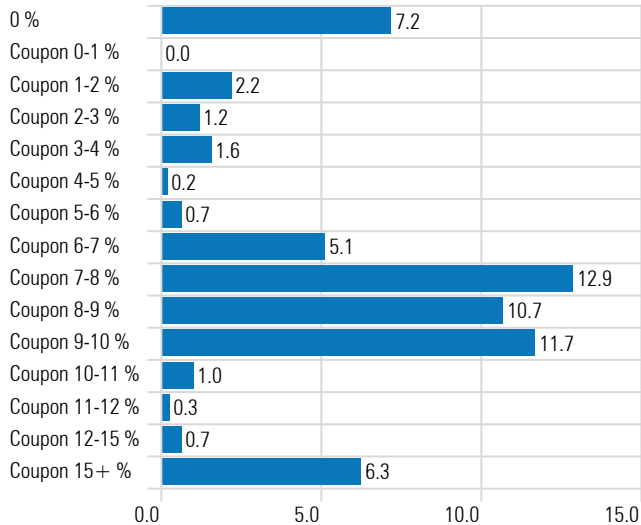
Templeton Global Bond R6

Maturity Breakdown



■ Templeton Global Bond R6

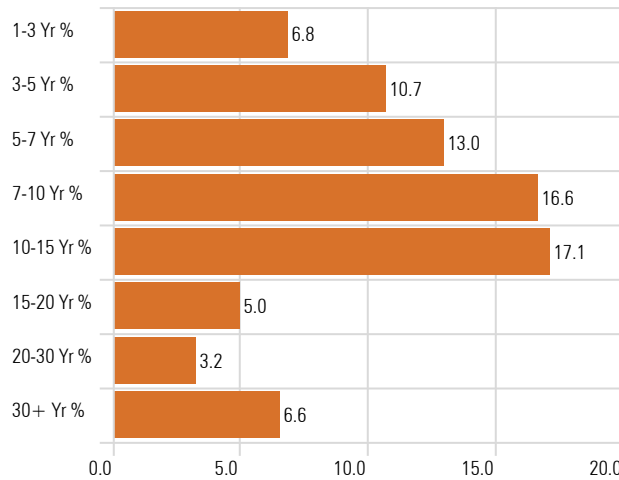
Coupon Breakdown



■ Templeton Global Bond R6

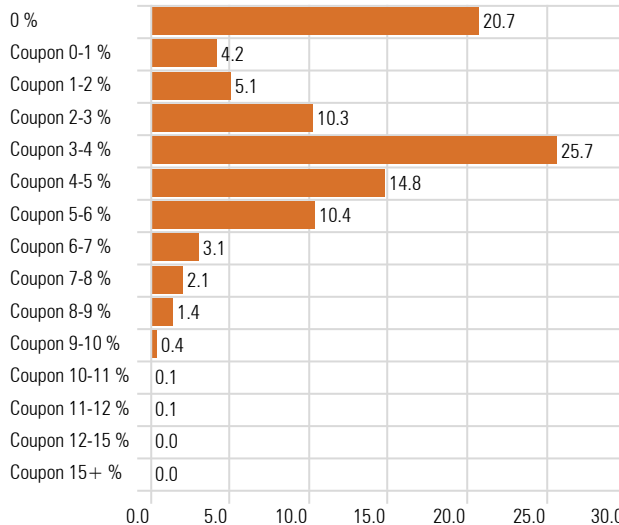
PGIM Global Total Return R6

Maturity Breakdown



■ PGIM Global Total Return R6

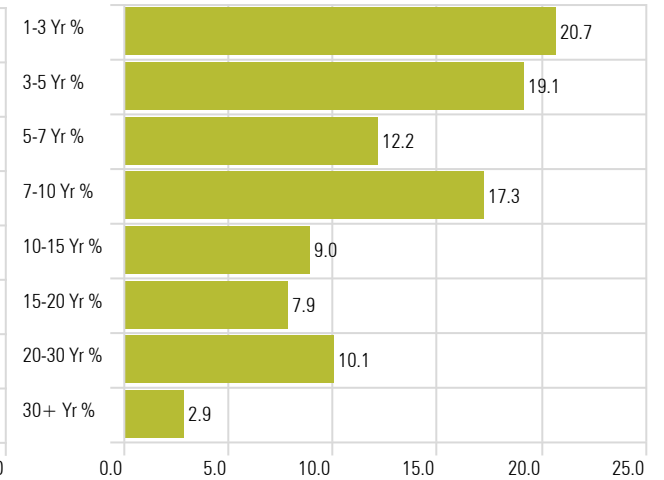
Coupon Breakdown



■ PGIM Global Total Return R6

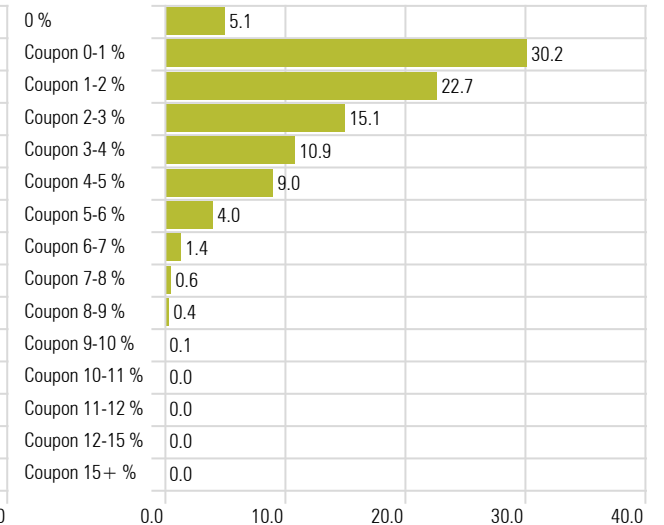
Vanguard Total Intl Bd Idx Admiral™

Maturity Breakdown



■ Vanguard Total Intl Bd Idx Admiral™

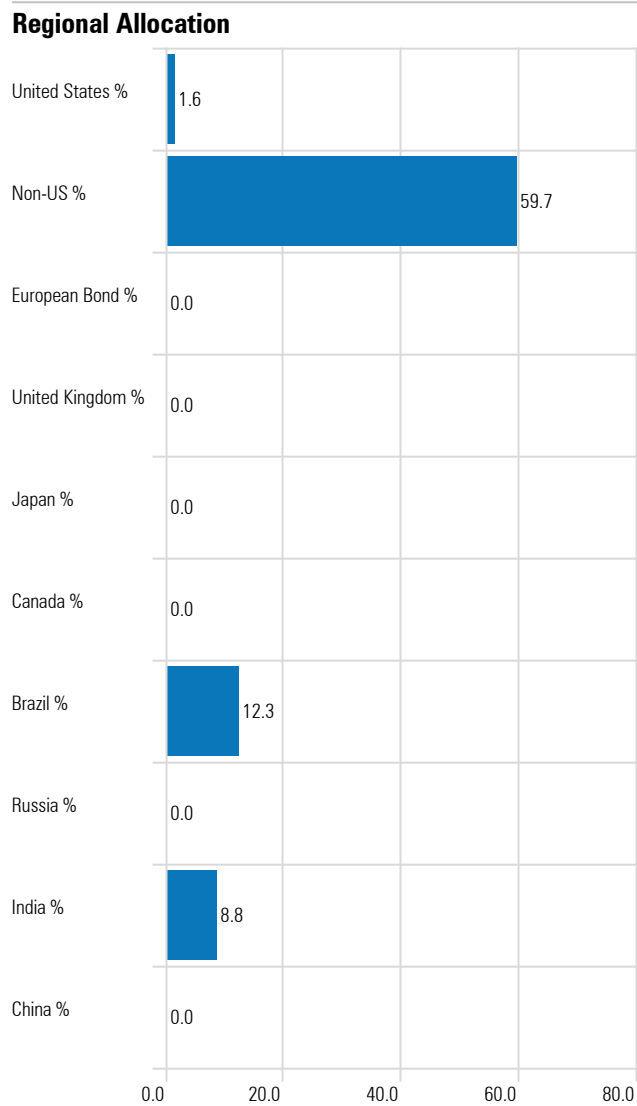
Coupon Breakdown



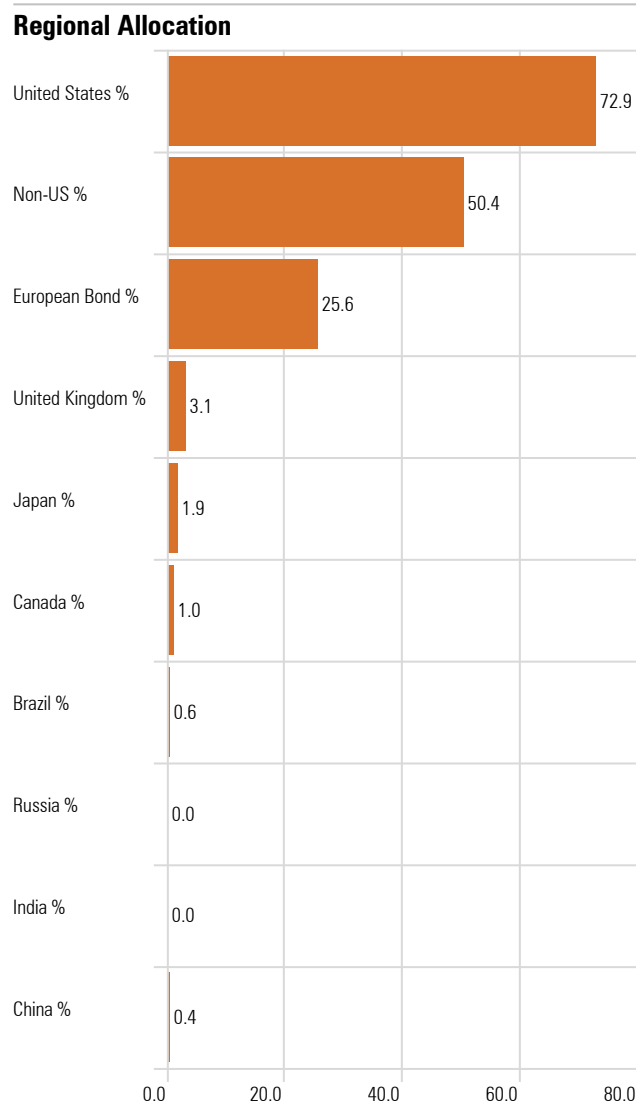
■ Vanguard Total Intl Bd Idx Admiral™

International Exposure

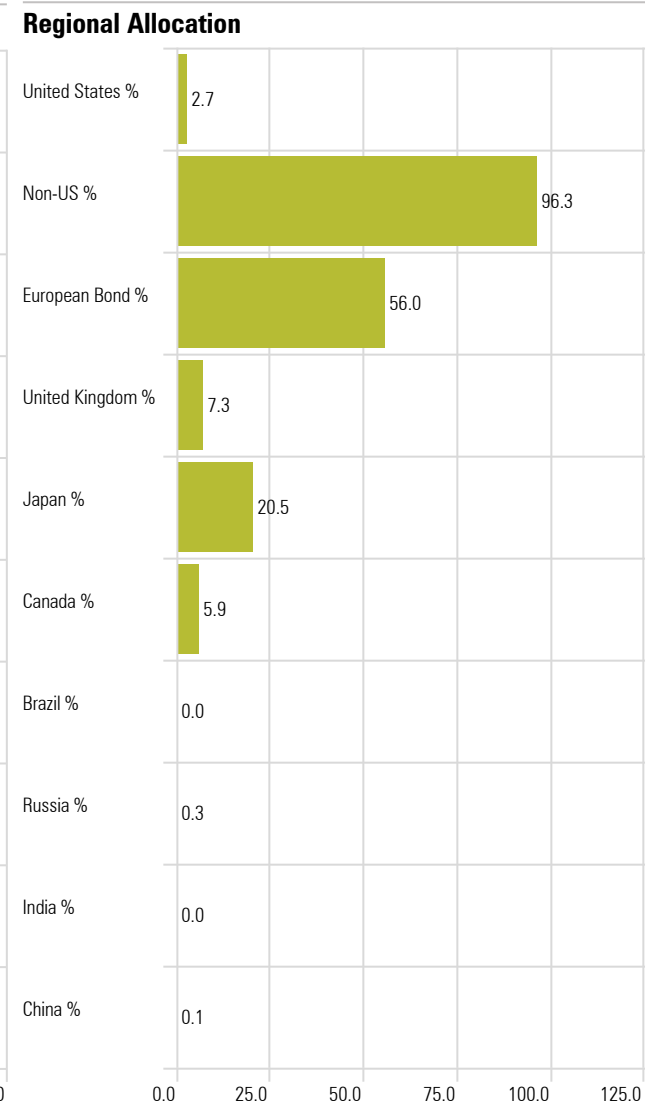
Templeton Global Bond R6



PGIM Global Total Return R6



Vanguard Total Intl Bd Idx Admiral™



■ Templeton Global Bond R6

■ PGIM Global Total Return R6

■ Vanguard Total Intl Bd Idx Admiral™

Risk/Return Performance Analysis

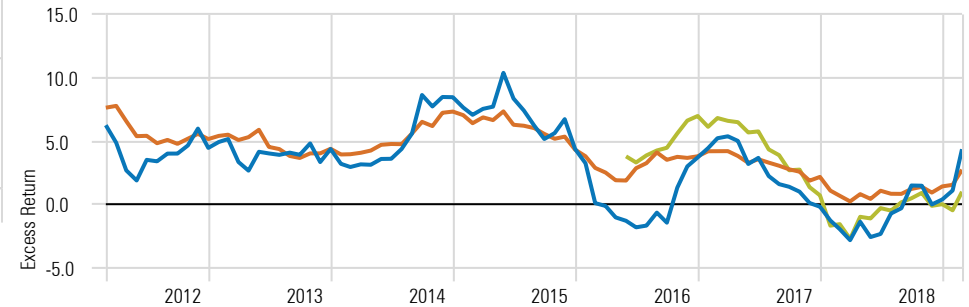
Standard Deviation



3 Year Relative Rolling Returns

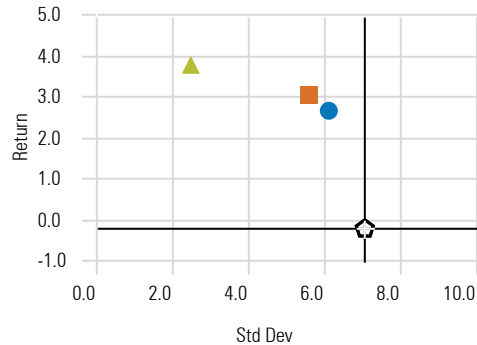
Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



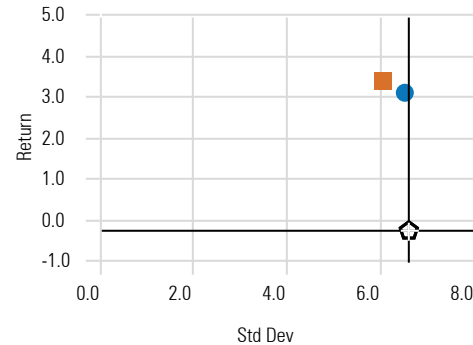
5 Year Risk-Reward

Time Period: 3/1/2014 to 2/28/2019



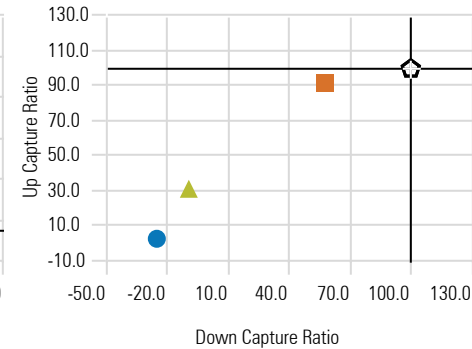
7 Year Risk-Reward

Time Period: 3/1/2012 to 2/28/2019



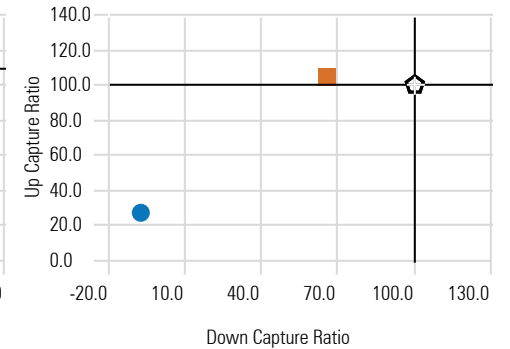
5 Year Market Capture

Time Period: 3/1/2014 to 2/28/2019



7 Year Market Capture

Time Period: 3/1/2012 to 2/28/2019



Annualized Performance & Risk Statistics - Since Common Inception

Time Period: Since Common Inception (6/1/2013) to 2/28/2019

	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
Templeton Global Bond R6	2.4	6.2	1.9	-0.06	0	8.3	-6.1	0.28	9.5
PGIM Global Total Return R6	3.2	6.0	2.4	0.75	73	5.6	-7.8	0.42	3.6
Vanguard Total Intl Bd Idx Admiral™	3.6	2.6	2.9	0.15	15	3.4	-2.9	1.16	6.3
FTSE WGBI NonUSD USD	0.8	6.8	0.0	1.00	100	9.1	-10.8	0.01	0.0
US Fund World Bond	1.4	3.8	0.6	0.46	69	4.2	-4.0	0.18	4.3

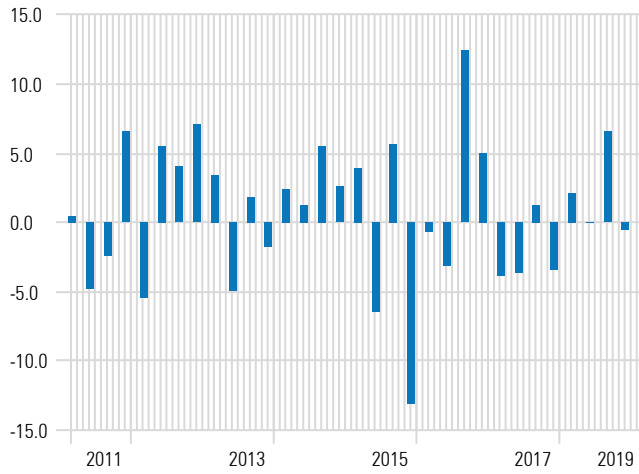
Performance Analysis

Templeton Global Bond R6

Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Months 3 Months shift

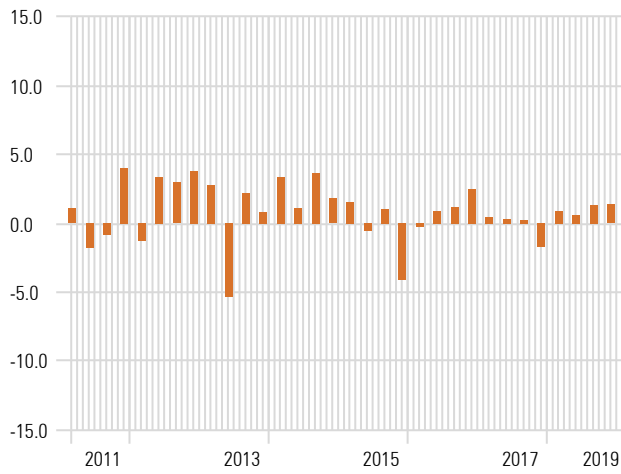


PGIM Global Total Return R6

Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Months 3 Months shift

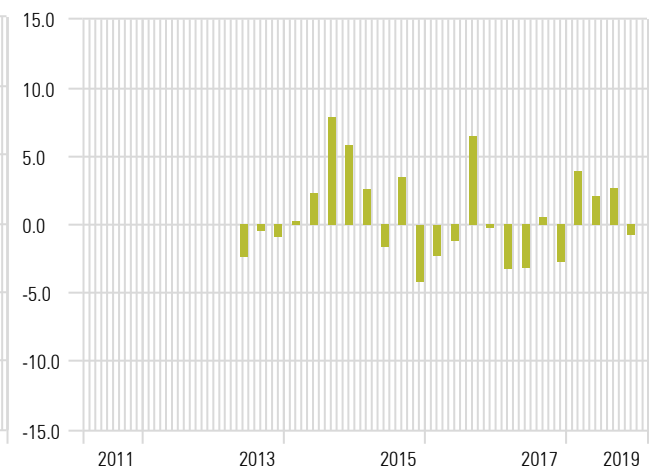


Vanguard Total Intl Bd Idx Admiral™

Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

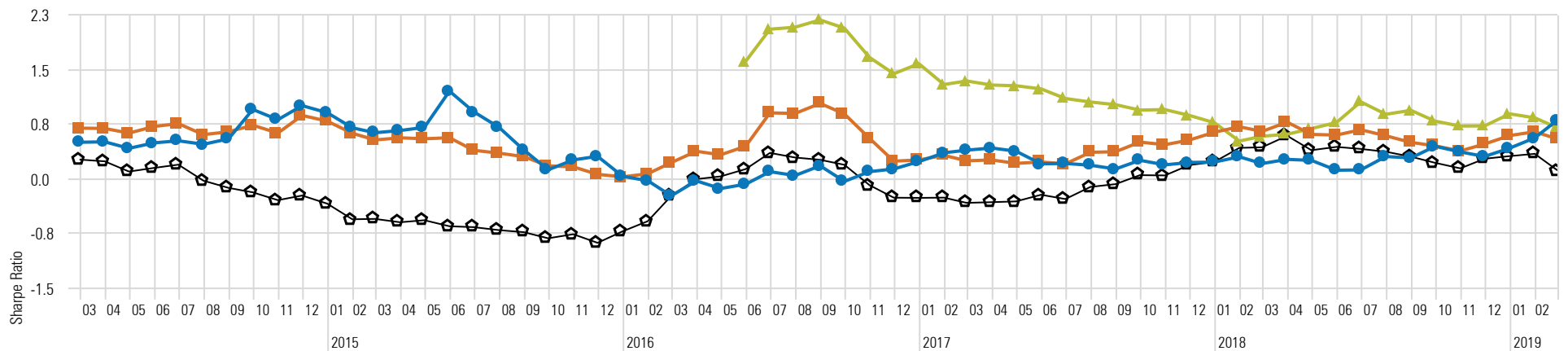
Rolling Window: 3 Months 3 Months shift



Rolling 3 Year Sharpe Ratio

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



— Templeton Global Bond R6
— FTSE WGBI NonUSD USD

— PGIM Global Total Return R6

— Vanguard Total Intl Bd Idx Admiral™

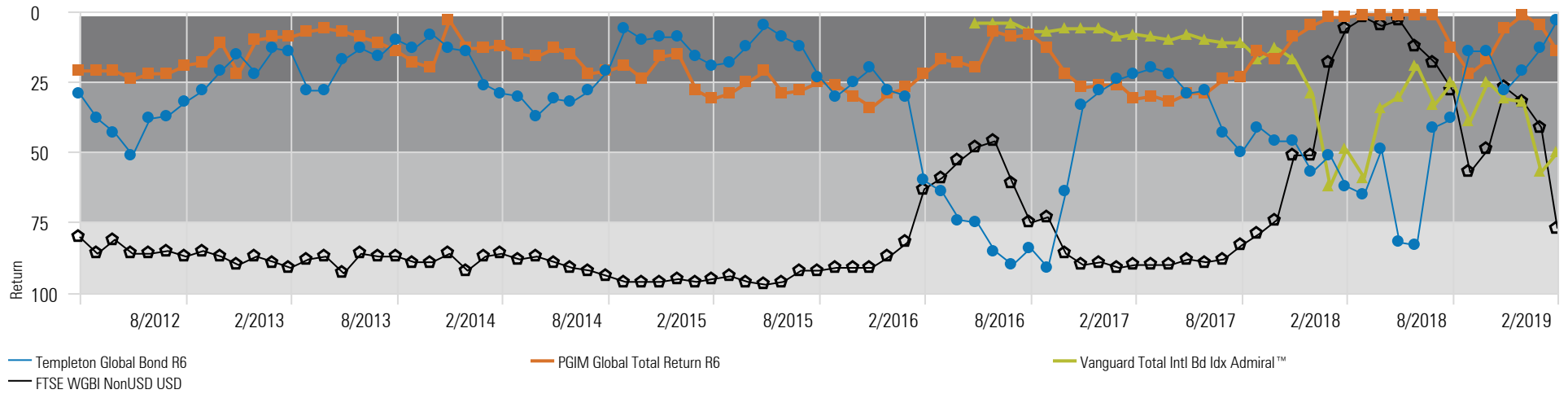
Rolling Peer Group Rankings

Rolling 3 Year Peer Group Rank

Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 3 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

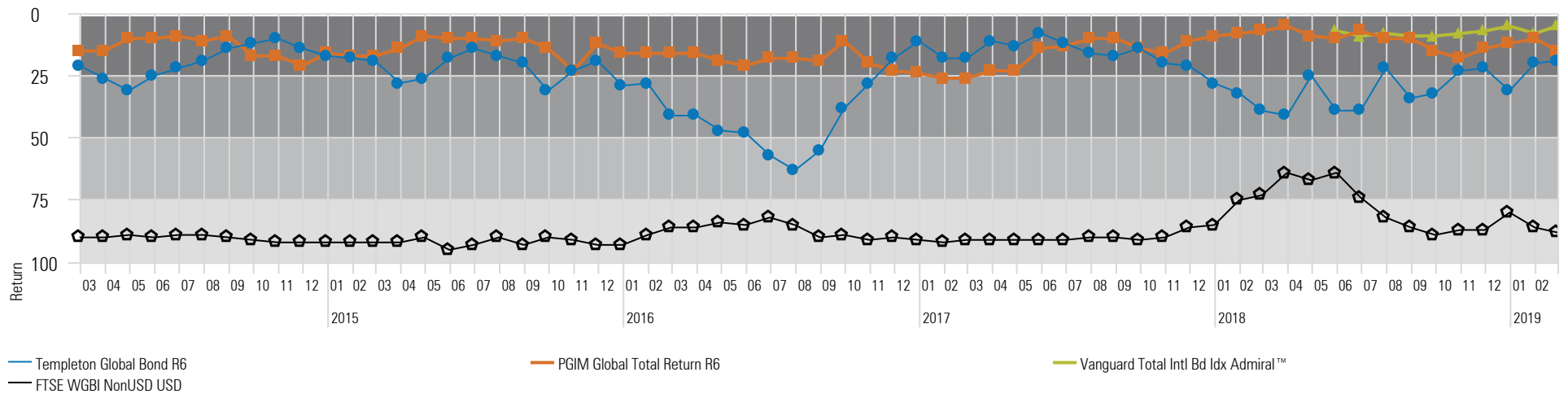


Rolling 5 Year Peer Group Rank

Time Period: 3/1/2009 to 2/28/2019

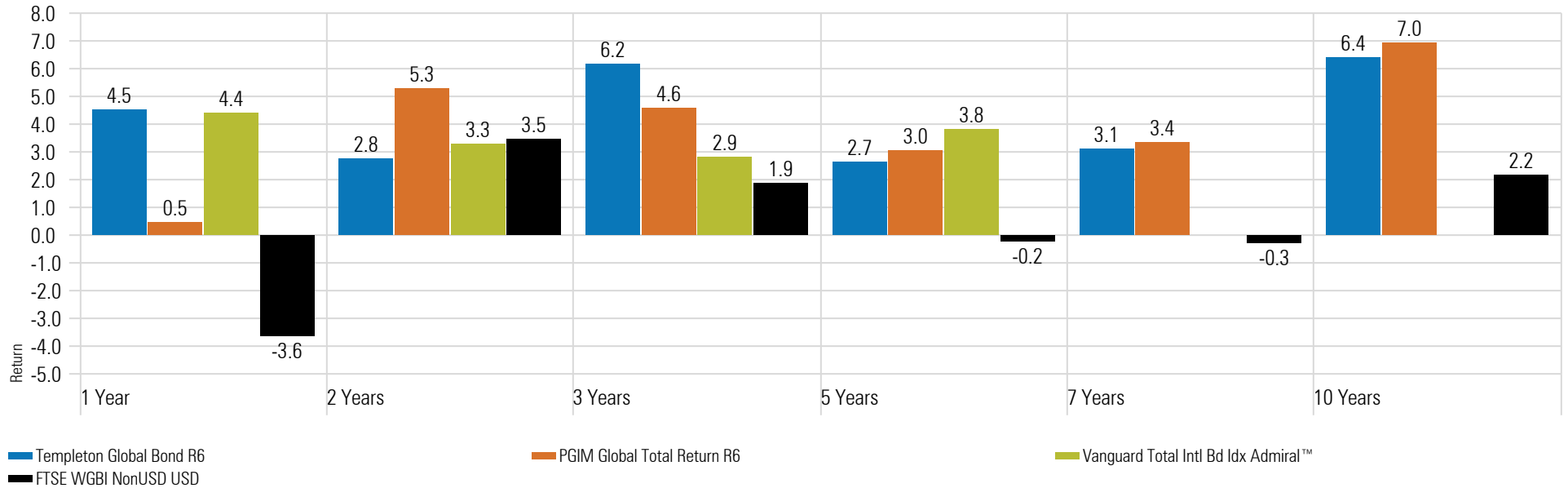
Rolling Window: 5 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

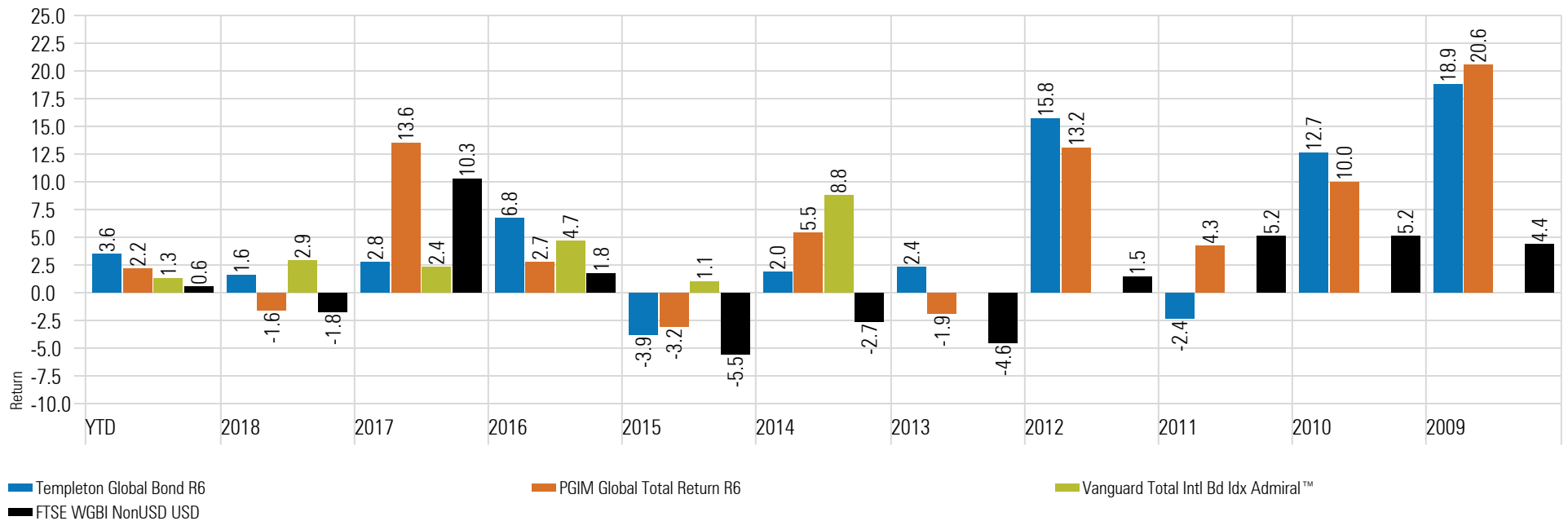


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
World Bond																		
Templeton Global Bond R6	1.7	15	0.47	1.6	12	2.66	1.6	12	2.66	3.7	21	1.07	1.8	31	0.52	5.4	26	2.79
PGIM Global Total Return R6	2.2	3	0.95	-1.6	49	-0.48	-1.6	49	-0.48	4.7	1	2.10	3.2	12	1.98	6.1	13	3.44
Vanguard Total Intl Bd Idx Admiral™	1.8	14	0.55	2.9	4	4.02	2.9	4	4.02	3.3	32	0.70	3.9	5	2.68			
ICE BofAML Gbl Brd Mkt TR USD	1.3			-1.1			-1.1			2.6			1.3			2.6		
Average	0.4			-1.5			-1.5			2.8			1.3			4.0		

Performance Summary - Calendar Year Periods

	2018			2017			2016			2015			2014			2013			2012		
	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
World Bond																					
Templeton Global Bond R6	1.6	12	2.66	2.8	81	-4.15	6.8	8	4.61	-3.9	41	-1.15	2.0	46	0.68	2.4	6	5.01	15.8	4	11.55
PGIM Global Total Return R6	-1.6	49	-0.48	13.6	1	6.62	2.7	55	0.57	-3.2	34	-0.42	5.5	26	4.16	-1.9	40	0.73	13.2	14	8.92
Vanguard Total Intl Bd Idx Admiral™	2.9	4	4.02	2.4	90	-4.56	4.7	34	2.49	1.1	5	3.81	8.8	7	7.54						
ICE BofAML Gbl Brd Mkt TR USD	-1.1			6.9			2.2			-2.8			1.3			-2.6			4.3		
Average	-1.5			6.8			3.6			-3.9			2.3			-2.3			8.7		

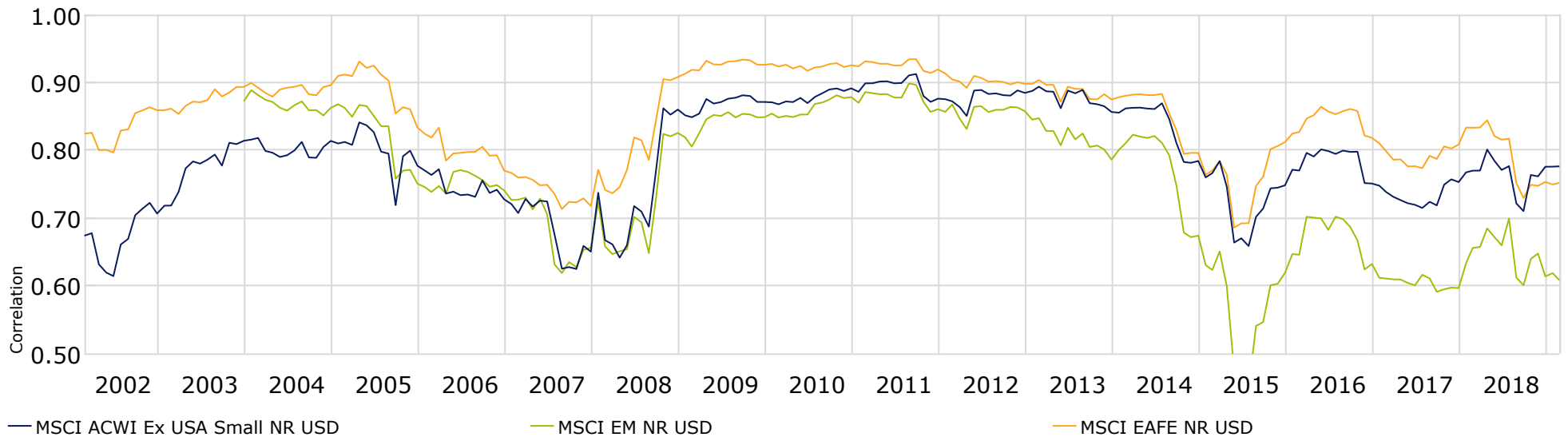


A Case for Foreign Small Cap Equity TIAA Investment Manager Searches

Rolling 3 Year Correlation with U.S. Stocks

Time Period: 3/1/1999 to 2/28/2019

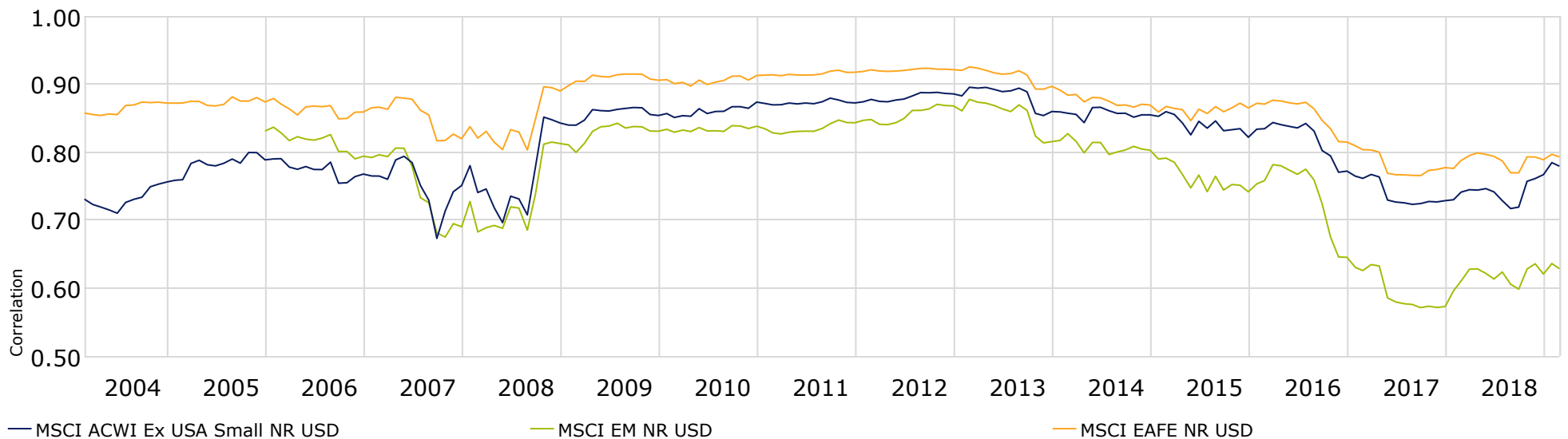
Rolling Window: 3 Years 1 Month shift Calculation Benchmark: Russell 3000 TR USD



Rolling 5 Year Correlation with U.S. Stocks

Time Period: 3/1/1999 to 2/28/2019

Rolling Window: 5 Years 1 Month shift Calculation Benchmark: Russell 3000 TR USD



Source: Morningstar Direct

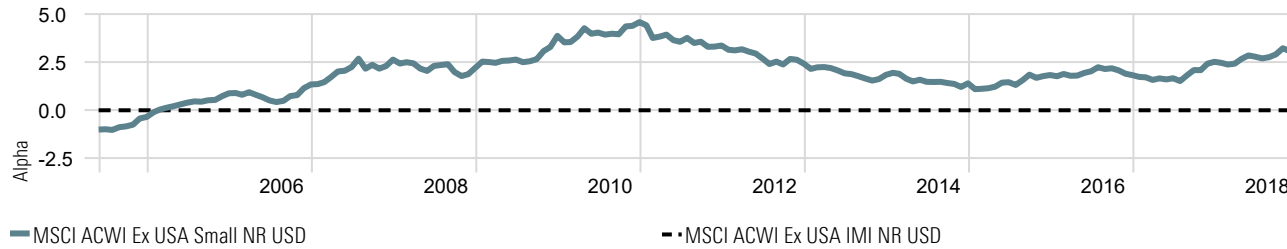
MSCI ACWI Ex USA Small NR USD

Long-term Performance

Rolling 10 Year Alpha (Risk Adjusted Outperformance)

Time Period: Since Inception to 12/31/2018

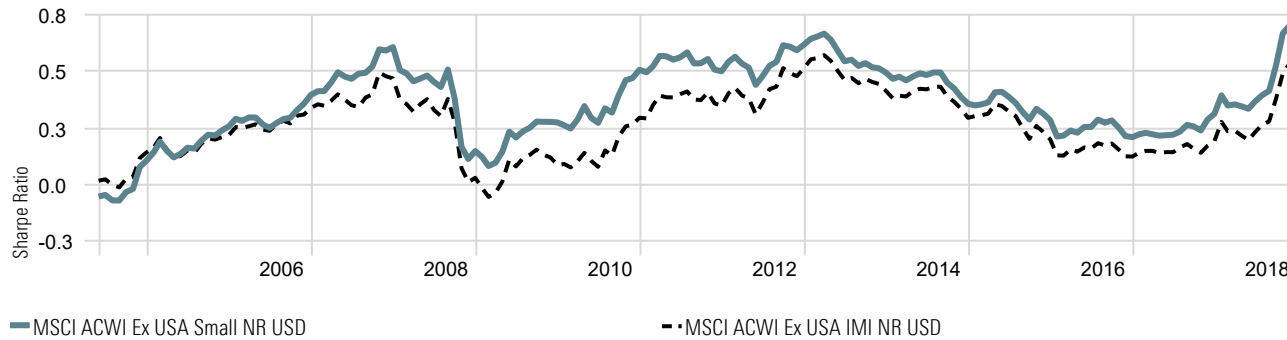
Rolling Window: 10 Years 1 Month shift Calculation Benchmark: MSCI ACWI Ex USA IMI NR USD



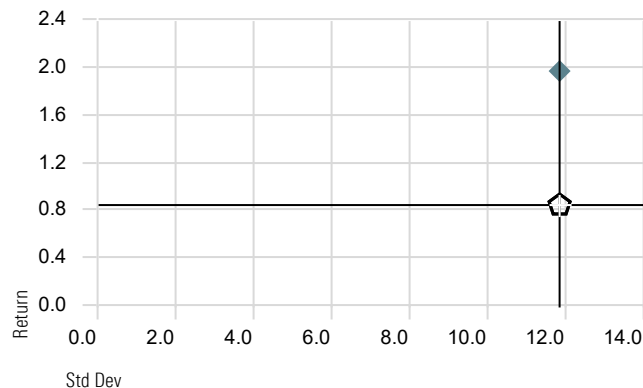
Rolling 10 Year Sharpe (Risk Adjusted Return)

Time Period: Since Inception to 12/31/2018

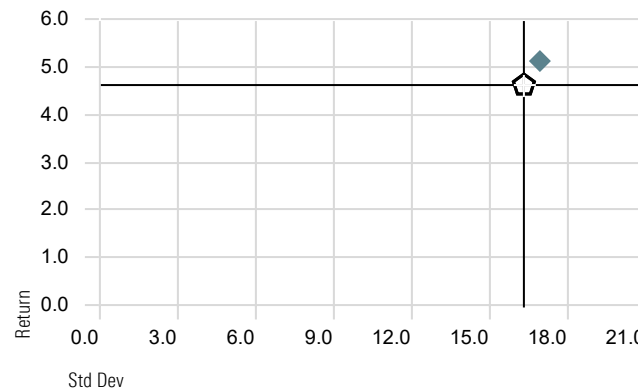
Rolling Window: 10 Years 1 Month shift



10 Year Risk-Reward



Since Inception Year Risk-Reward



10 Year Performance Statistics

	Investment	Benchmark
Annualized Return	10.0	7.0
Cumulative Return	159.9	96.1
Std Dev	17.0	16.4
Sharpe Ratio	0.6	0.5
Up Capture Ratio	102.4	100.0
Down Capture Ratio	87.8	100.0
Best Month	16.9	14.0
Worst Month	-12.5	-11.3
Best Quarter	37.6	28.6
Worst Quarter	-20.0	-19.9
Up Period Percent	57.5	55.8
Down Period Percent	42.5	44.2
Average Gain	3.9	3.8
Average Loss	-3.2	-3.3
Up Capture Ratio	102.4	100.0
Down Capture Ratio	87.8	100.0
Longest Up-Streak # of Periods	14.0	14.0
Longest Up-Streak Return	41.0	38.2
Longest Up-Streak Start Date	12/1/2016	12/1/2016
Longest Down-Streak End Date	1/31/2015	9/30/2015
Longest Down-Streak # of Periods	5.0	5.0
Longest Down-Streak Return	-9.8	-15.4
Longest Down-Streak Start Date	9/1/2014	5/1/2015
Longest Down-Streak End Date	1/31/2015	9/30/2015
Max Drawdown # of Periods	5.0	5.0
Max Drawdown	-24.0	-23.4
Max Drawdown Peak Date	5/1/2011	5/1/2011
Max Drawdown Valley Date	9/30/2011	9/30/2011

• MSCI ACWI Ex USA Small NR USD • MSCI ACWI Ex USA IMI NR USD • MSCI ACWI Ex USA Small NR USD • MSCI ACWI Ex USA IMI NR USD

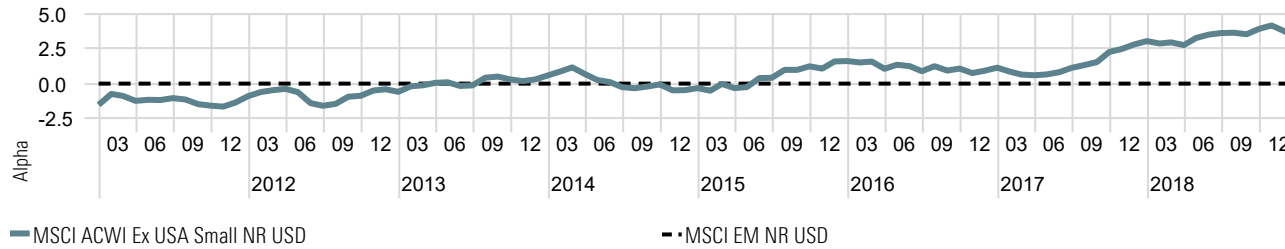
MSCI ACWI Ex USA Small NR USD

Long-term Performance

Rolling 10 Year Alpha (Risk Adjusted Outperformance)

Time Period: Since Inception to 12/31/2018

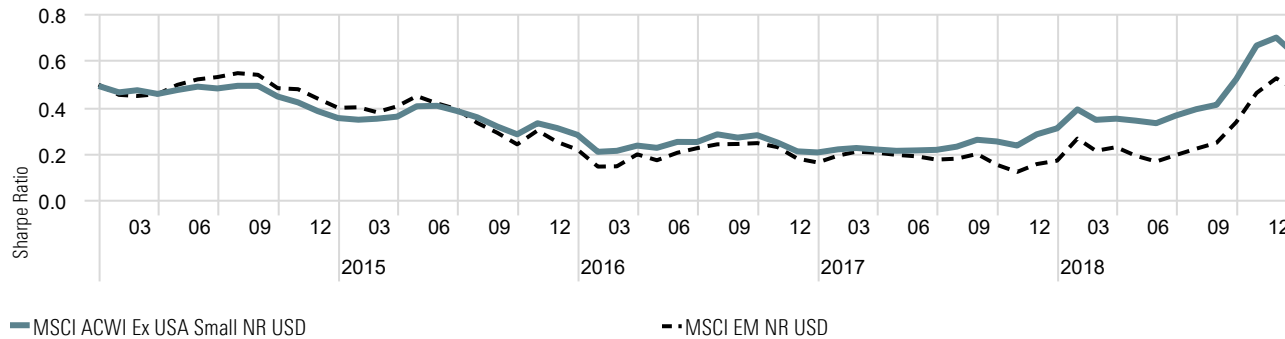
Rolling Window: 10 Years 1 Month shift Calculation Benchmark: MSCI EM NR USD



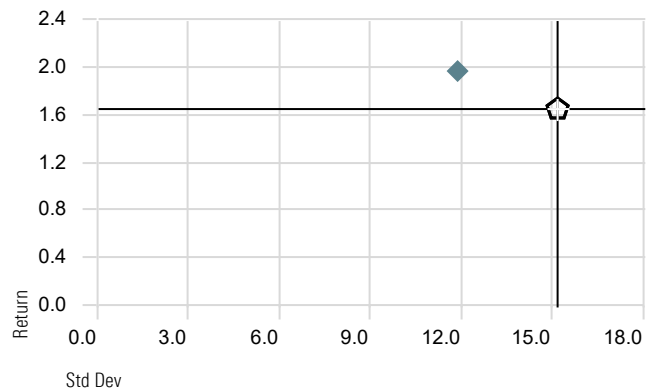
Rolling 10 Year Sharpe (Risk Adjusted Return)

Time Period: 1/1/2004 to 12/31/2018

Rolling Window: 10 Years 1 Month shift

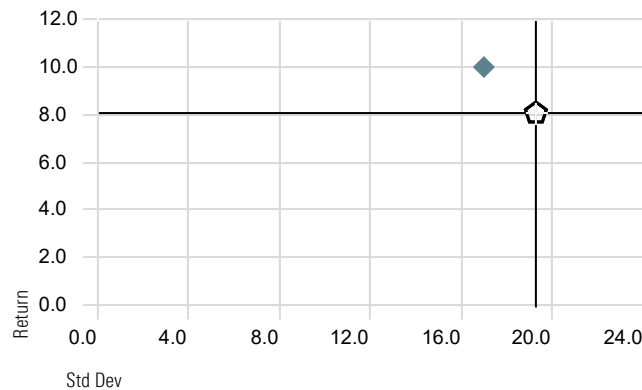


10 Year Risk-Reward



• MSCI ACWI Ex USA Small NR USD • MSCI EM NR USD

Since Inception Year Risk-Reward



• MSCI ACWI Ex USA Small NR USD • MSCI EM NR USD

10 Year Performance Statistics

	Investment	Benchmark
Annualized Return	10.0	8.0
Cumulative Return	159.9	116.3
Std Dev	17.0	19.3
Sharpe Ratio	0.6	0.5
Up Capture Ratio	79.8	100.0
Down Capture Ratio	64.6	100.0
Best Month	16.9	17.1
Worst Month	-12.5	-14.6
Best Quarter	37.6	34.7
Worst Quarter	-20.0	-22.6
Up Period Percent	57.5	53.3
Down Period Percent	42.5	46.7
Average Gain	3.9	4.6
Average Loss	-3.2	-3.7
Up Capture Ratio	79.8	100.0
Down Capture Ratio	64.6	100.0
Longest Up-Streak # of Periods	14.0	9.0
Longest Up-Streak Return	41.0	28.6
Longest Up-Streak Start Date	12/1/2016	12/1/2016
Longest Down-Streak End Date	1/31/2015	6/30/2018
Longest Down-Streak # of Periods	5.0	5.0
Longest Down-Streak Return	-9.8	-13.8
Longest Down-Streak Start Date	9/1/2014	2/1/2018
Longest Down-Streak End Date	1/31/2015	6/30/2018
Max Drawdown # of Periods	5.0	58.0
Max Drawdown	-24.0	-30.6
Max Drawdown Peak Date	5/1/2011	5/1/2011
Max Drawdown Valley Date	9/30/2011	2/29/2016

Foreign Small Cap Search

As of 2/28/2019



US Fund Foreign Small/Mid Blend

Vanguard FTSE All-Wld ex-US SmCp Idx Inv

Investment Strategy

The investment seeks to track the performance of a benchmark index that measures the investment return of stocks of international small-cap companies. The fund employs an indexing investment approach designed to track the performance of the FTSE Global Small Cap ex US Index. The advisor attempts to sample the target index by investing all, or substantially all, of its assets in common stocks in the index and by holding a representative sample of securities that resembles the full index in terms of key risk factors and other characteristics.

Manager Biography

Jeffrey D. Miller since 8/31/2015

Michael Perre since 2/26/2016

Vanguard FTSE All-Wld ex-US SmCp Idx Inv - Operations

Inception Date	4/2/2009
Fund Size (\$mm)	6,494
Annual Report Net Expense Ratio	0.22
Prospectus Net Expense Ratio	0.22
Prospectus Gross Expense Ratio	0.22
Ticker	VFSVX
Manager Tenure (Longest)	3.58
Manager Tenure (Average)	3.33
Morningstar Inst Cat	Foreign Small/Mid Core

Other Notes:

None

DFA International Small Company I

Investment Strategy

The investment seeks long-term capital appreciation. As a non-fundamental policy, under normal circumstances, the International Small Company Portfolio, through its investments in the underlying funds, will invest at least 80% of its net assets in securities of small companies. The International Small Company Portfolio and each underlying fund may invest in affiliated and unaffiliated registered and unregistered money market funds to manage its cash pending investment in other securities or to maintain liquidity for the payment of redemptions or other purposes.

Manager Biography

Jed S. Fogdall since 2/28/2010

Bhanu P. Singh since 7/21/2015

Arun C. Keswani since 7/21/2015

Mary T. Phillips since 2/28/2017

DFA International Small Company I - Operations

Inception Date	9/30/1996
Fund Size (\$mm)	12,472
Annual Report Net Expense Ratio	0.53
Prospectus Net Expense Ratio	0.53
Prospectus Gross Expense Ratio	0.53
Ticker	DFISX
Manager Tenure (Longest)	9.08
Manager Tenure (Average)	4.63
Morningstar Inst Cat	Foreign Small/Mid Value

Other Notes:

None

Pear Tree Polaris Fgn Val Sm Cap R6

Investment Strategy

The investment seeks long-term growth of capital and income. Under normal market conditions, the fund invests at least 80 percent of its net assets (plus borrowings for investment purposes) in equity securities, warrants, and rights derivative of or convertible into common stocks, in each case issued by small-cap foreign markets issuers. It generally will be invested in issuers in fifteen or more foreign countries. The fund is non-diversified.

Manager Biography

Sumanta Biswas since 5/1/2008

Bernard R. Horn since 5/1/2008

Bin Xiao since 8/1/2012

Jason M Crawshaw since 9/19/2017

Pear Tree Polaris Fgn Val Sm Cap R6 - Operations

Inception Date	2/6/2017
Fund Size (\$mm)	1,054
Annual Report Net Expense Ratio	1.02
Prospectus Net Expense Ratio	1.02
Prospectus Gross Expense Ratio	1.12
Ticker	QUSRX
Manager Tenure (Longest)	10.83
Manager Tenure (Average)	7.44
Morningstar Inst Cat	Foreign Small/Mid Value

Other Notes:

None

Portfolio Analysis

Vanguard FTSE All-Wld ex-US SmCp Idx Inv

DFA International Small Company I

Pear Tree Polaris Fgn Val Sm Cap R6

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	0	0	1	Market Cap Giant %	0
	14	13	21	Market Cap Large %	1
	20	17	14	Market Cap Mid %	48
Mid				Market Cap Small %	45
Small				Market Cap Micro %	6

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	0	0	0	Market Cap Giant %	0
	13	13	15	Market Cap Large %	0
	23	20	15	Market Cap Mid %	41
Mid				Market Cap Small %	45
Small				Market Cap Micro %	14

Style Allocation

Portfolio Date: 2/28/2019

	Value	Blend	Growth	Market Cap	%
Large	0	1	0	Market Cap Giant %	0
	29	9	8	Market Cap Large %	1
	38	13	1	Market Cap Mid %	46
Mid				Market Cap Small %	43
Small				Market Cap Micro %	9

Valuation Data

Display Benchmark 1: FTSE Gbl SmallCap Ex US TR USD

	Inv	Bmk1
Average Market Cap (bil)	1.5	1.5
Forward P/E	12.7	13.2
P/E Ratio (TTM)	13.2	13.7
LT Earn Growth	12.1	12.1
P/B Ratio (TTM)	1.3	1.4
Dividend Yield	3.0	3.1
ROE %	12.8	12.6
ROA %	5.8	5.8
Debt to Capital %	30	30

Valuation Data

Display Benchmark 1: MSCI World Ex USA Small Cap NR USD

	Inv	Bmk1
Average Market Cap (bil)	1.4	2.0
Forward P/E	12.2	14.4
P/E Ratio (TTM)	13.6	14.9
LT Earn Growth	11.9	11.0
P/B Ratio (TTM)	1.3	1.5
Dividend Yield	3.0	2.9
ROE %	13.2	12.8
ROA %	6.0	5.9
Debt to Capital %	30	31

Valuation Data

Display Benchmark 1: MSCI ACWI Ex USA Small NR USD

	Inv	Bmk1
Average Market Cap (bil)	1.3	1.7
Forward P/E	8.1	13.4
P/E Ratio (TTM)	10.3	14.1
LT Earn Growth	10.2	13.0
P/B Ratio (TTM)	1.2	1.4
Dividend Yield	5.1	2.9
ROE %	14.9	12.7
ROA %	6.3	5.8
Debt to Capital %	32	30

Portfolio Data

	Inv	Bmk1
Turnover Ratio	15	
# of Stock Holdings	3,554	3,401
% in Top 10	2.7	3.0
Cash %	6.3	0.0
Developed %	78.8	84.9
US Equity %	0.7	0.7
Non-US Equity %	92	99
Emerging Mkt %	13.7	14.5

Portfolio Data

	Inv	Bmk1
Turnover Ratio	22	
# of Stock Holdings	4,439	3,401
% in Top 10	3.1	3.0
Cash %	1.6	0.0
Developed %	95.7	84.9
US Equity %	0.6	0.7
Non-US Equity %	98	99
Emerging Mkt %	1.2	14.5

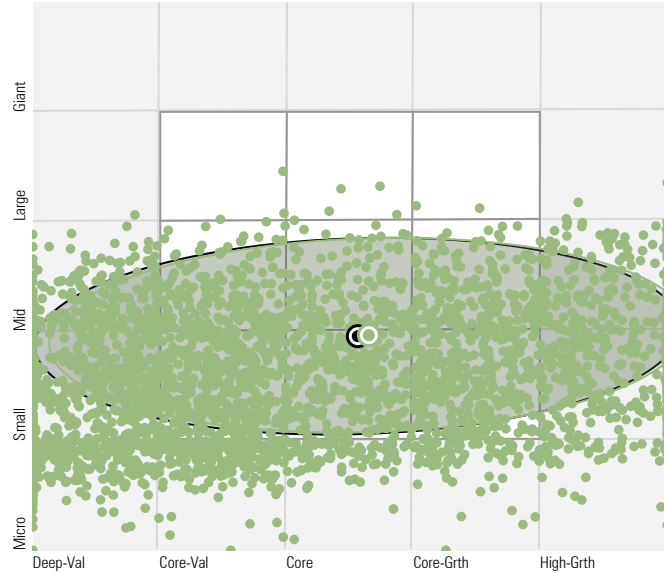
Portfolio Data

	Inv	Bmk1
Turnover Ratio	26	
# of Stock Holdings	72	3,401
% in Top 10	19.8	3.0
Cash %	9.2	0.0
Developed %	76.0	84.9
US Equity %	0.5	0.7
Non-US Equity %	90	99
Emerging Mkt %	14.8	14.5

Holdings-Based Style Analysis

Vanguard FTSE All-Wld ex-US SmCp Idx Inv

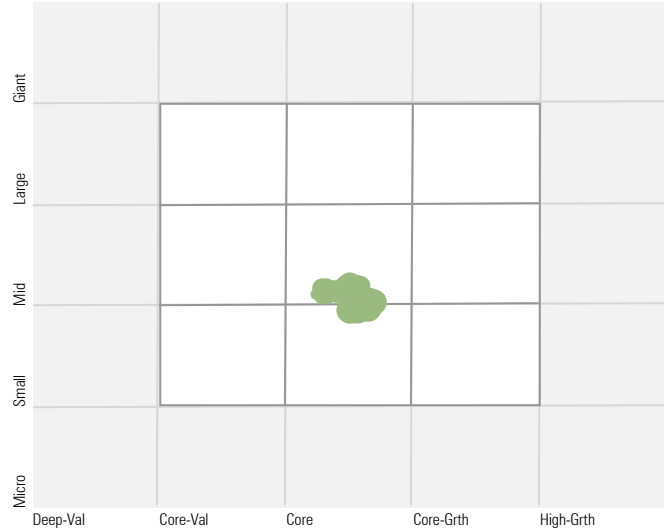
Holdings-Based Style Map



● Vanguard FTSE All-Wld ex-US SmCp Idx Inv 1/31/2019 ● FTSE Gbl SmallCap Ex US TR USD 2/28/2019

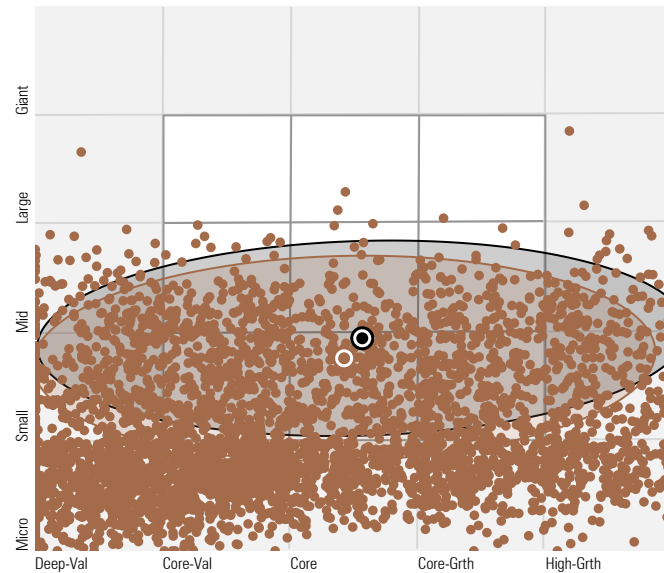
Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



DFA International Small Company I

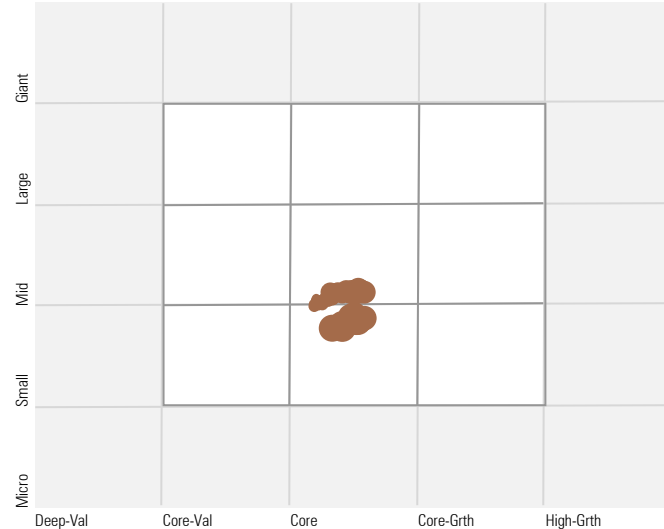
Holdings-Based Style Map



● DFA International Small Company I 1/31/2019 ● FTSE Gbl SmallCap Ex US TR USD 2/28/2019

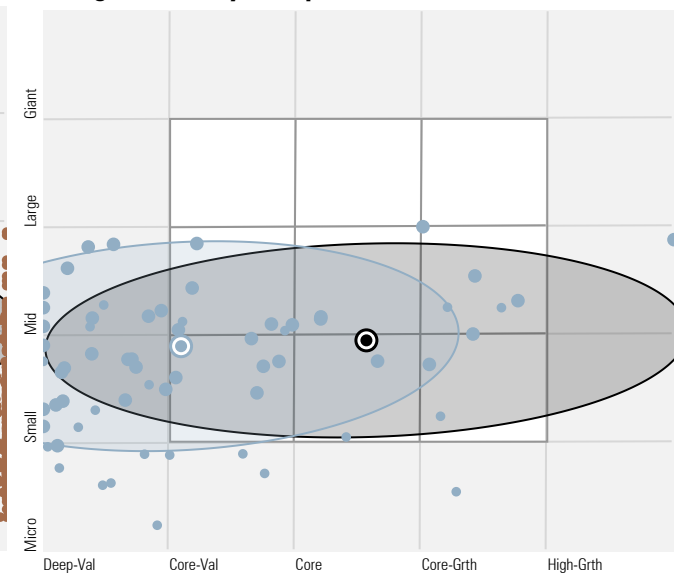
Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



Pear Tree Polaris Fgn Val Sm Cap R6

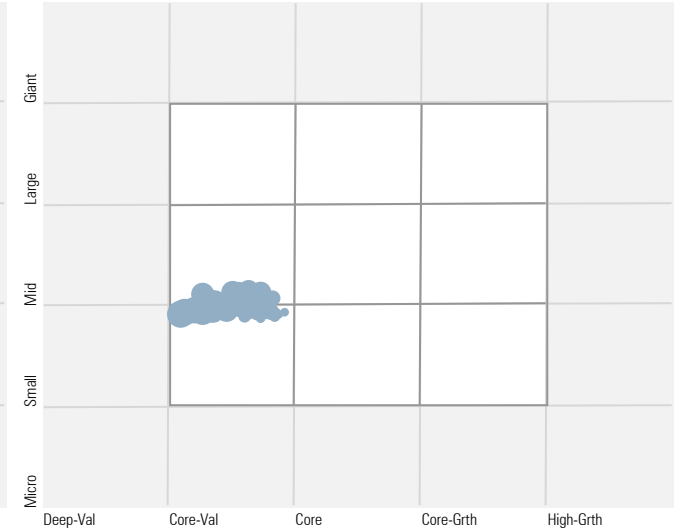
Holdings-Based Style Map



● Pear Tree Polaris Fgn Val Sm Cap R6 2/28/2019 ● FTSE Gbl SmallCap Ex US TR USD 2/28/2019

Holdings-Based Style Trail

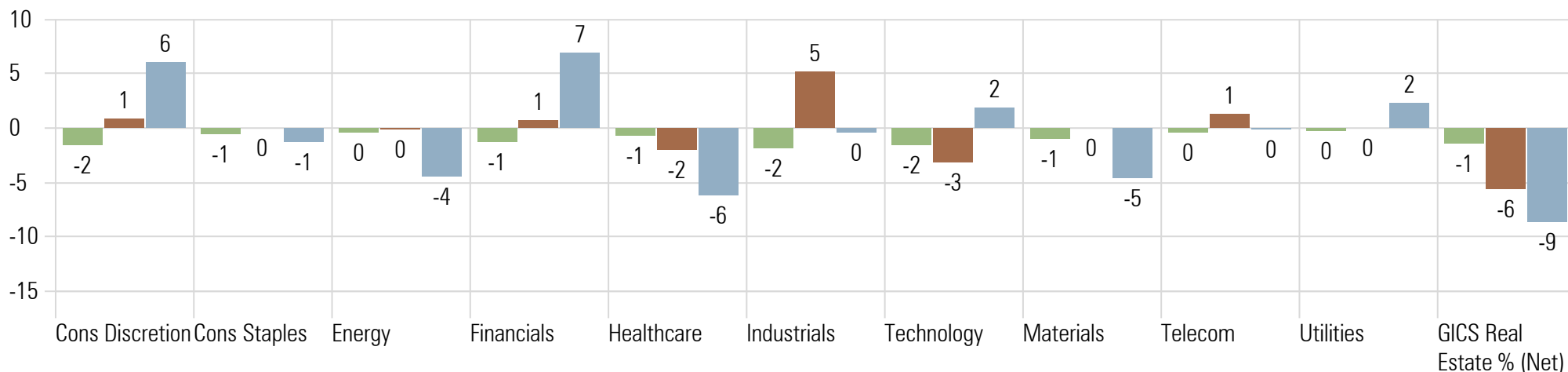
Time Period: 3/31/2014 to 2/28/2019



Sector Exposure and Top 15 Holdings

Relative Sector Allocation

Calculation Benchmark: FTSE Gbl SmallCap Ex US TR USD



Vanguard FTSE All-World ex-US SmCap Idx Inv

DFA International Small Company I

Pear Tree Polaris Fgn Val Sm Cap R6

FTSE Gbl SmallCap Ex US TR USD

Vanguard FTSE All-World ex-US SmCap Idx Inv - Top Holdings

Portfolio Date: 1/31/2019

Company	Equity Style Box	Portfolio Weighting %
Open Text Corp	■	0.4
Canopy Growth Corp	■	0.4
First Quantum Minerals Ltd	■	0.3
Gildan Activewear Inc	■	0.3
CCL Industries Inc B- Non-Voting	■	0.3
Kirkland Lake Gold Ltd	■	0.2
CAE Inc	■	0.2
Aurora Cannabis Inc	■	0.2
WSP Global Inc	■	0.2
Algonquin Power & Utilities Corp	■	0.2
Amer Sports Oyj	■	0.2
Castellum AB	■	0.2
Canadian Apartment Properties Real Estate Investment Trust	■	0.2
Galapagos NV	■	0.2
H&R Real Estate Investment Trust	■	0.2

DFA International Small Company I - Top Holdings

Portfolio Date: 1/31/2019

Company	Equity Style Box	Portfolio Weighting %
S+p500 Emini Fut Mar19 Xcme 20190315	■	0.8
GN Store Nord A/S	■	0.3
Auto Trader Group PLC	■	0.3
Amer Sports Oyj	■	0.3
Meggitt PLC	■	0.3
Rheinmetall AG	■	0.2
Tate & Lyle PLC	■	0.2
Bellway PLC	■	0.2
Rubis SCA	■	0.2
Hugo Boss AG	■	0.2
PSP Swiss Property AG	■	0.2
Howden Joinery Group PLC	■	0.2
Galapagos NV	■	0.2
Pennon Group PLC	■	0.2
Gemalto	■	0.2

Pear Tree Polaris Fgn Val Sm Cap R6 - Top Holdings

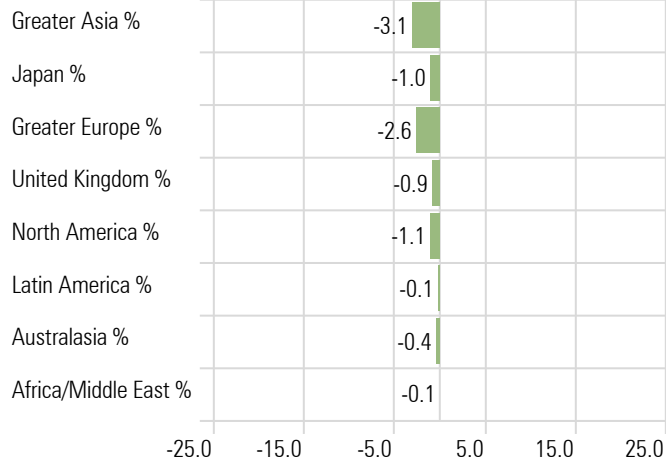
Portfolio Date: 2/28/2019

Company	Equity Style Box	Portfolio Weighting %
Wetherspoon (J D) PLC	■	2.2
Crest Nicholson Holdings PLC	■	2.1
Lancashire Holdings Ltd	■	2.0
Loomis AB B	■	2.0
Onesavings Bank PLC	■	2.0
IBJ Leasing Co Ltd	■	1.9
Tsubakimoto Chain Co	■	1.9
Greencore Group PLC	■	1.9
Ipsos SA	■	1.9
Inchcape PLC	■	1.9
Cineworld Group PLC	■	1.9
DOWA Holdings Co Ltd	■	1.9
Elite Material Co Ltd	■	1.9
Unipres Corp	■	1.8
DFDS A/S	■	1.8

International Exposure

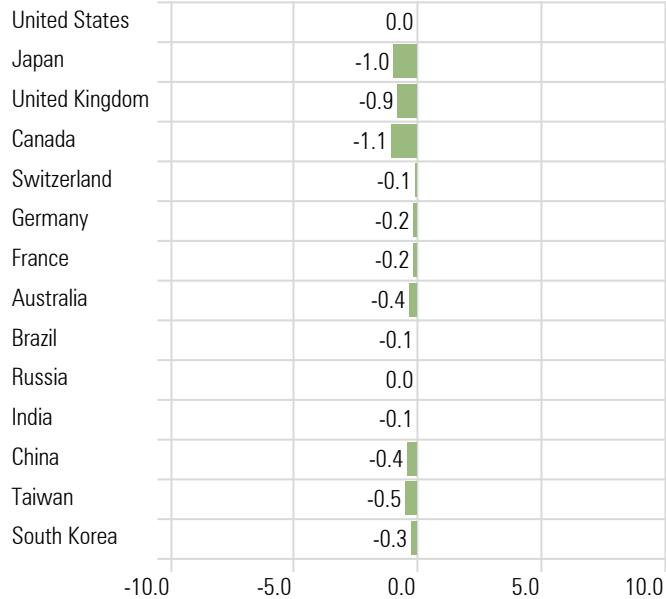
Vanguard FTSE All-World ex-US SmCp Idx Inv

Regional Allocation +/- Index



Vanguard FTSE All-World ex-US SmCp Idx Inv FTSE Gbl SmallCap Ex US TR USD

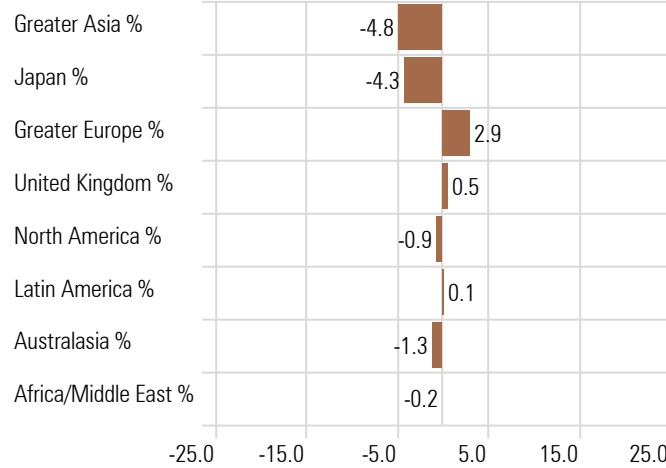
Country Allocation +/- Index



Vanguard FTSE All-World ex-US SmCp Idx Inv FTSE Gbl SmallCap Ex US TR USD

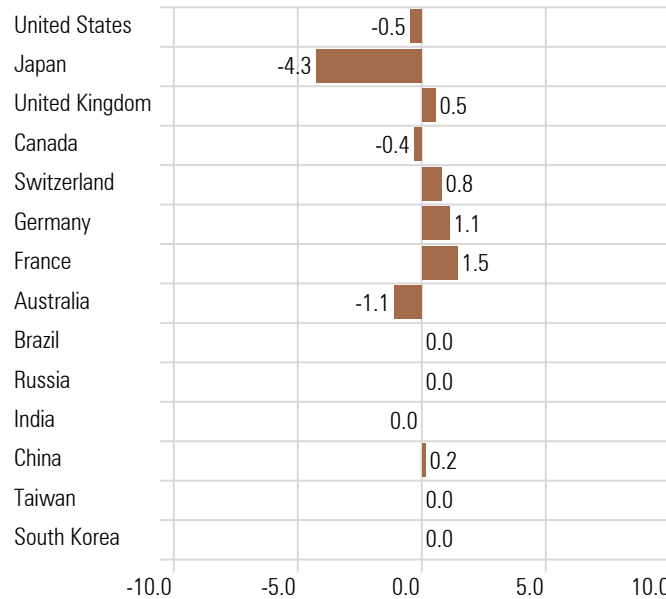
DFA International Small Company I

Regional Allocation +/- Index



DFA International Small Company I MSCI World Ex USA Small Cap NR USD

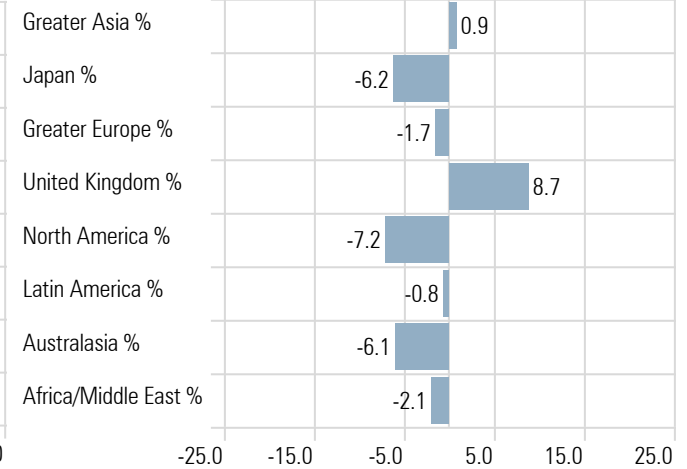
Country Allocation +/- Index



DFA International Small Company I MSCI World Ex USA Small Cap NR USD

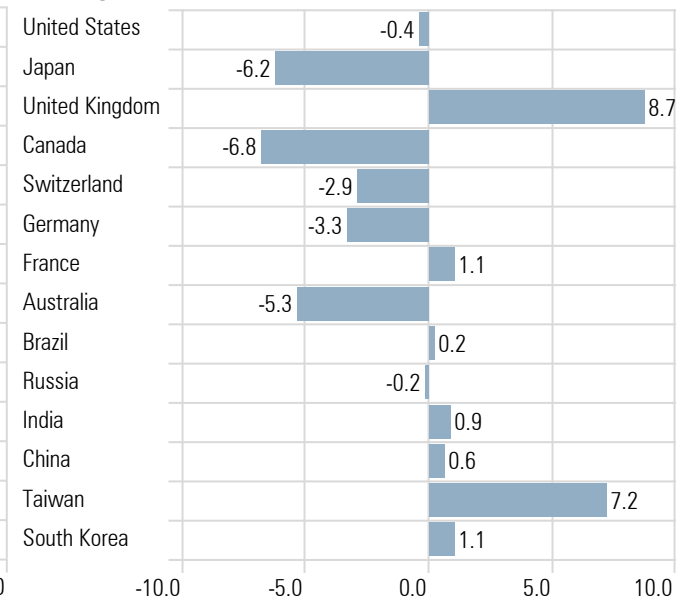
Pear Tree Polaris Fgn Val Sm Cap R6

Regional Allocation +/- Index



Pear Tree Polaris Fgn Val Sm Cap R6 MSCI ACWI Ex USA Small NR USD

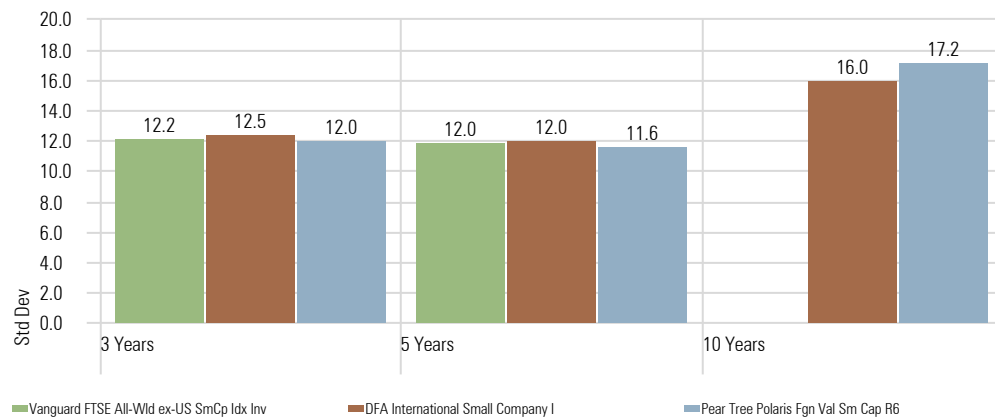
Country Allocation +/- Index



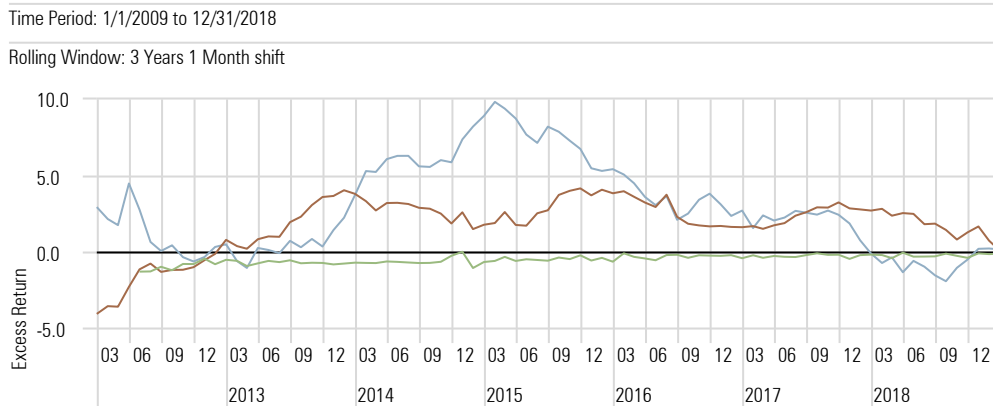
Pear Tree Polaris Fgn Val Sm Cap R6 MSCI ACWI Ex USA Small NR USD

Risk/Return Performance Analysis

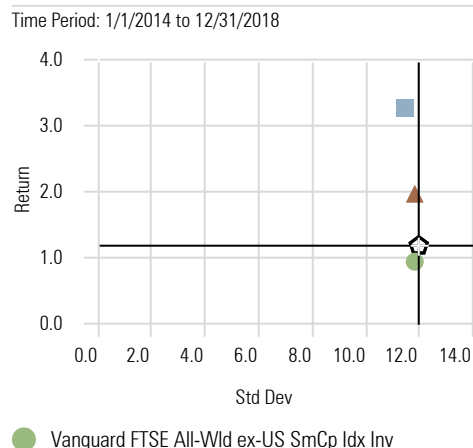
Standard Deviation



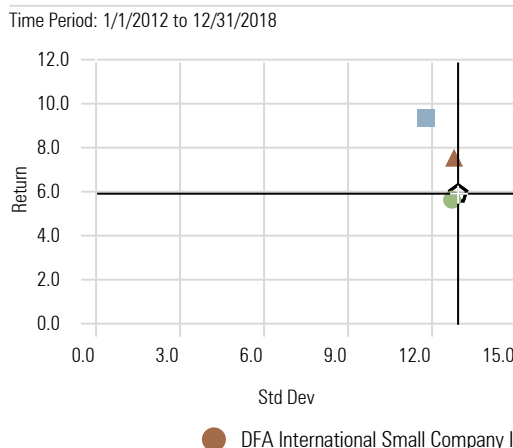
3 Year Relative Rolling Returns



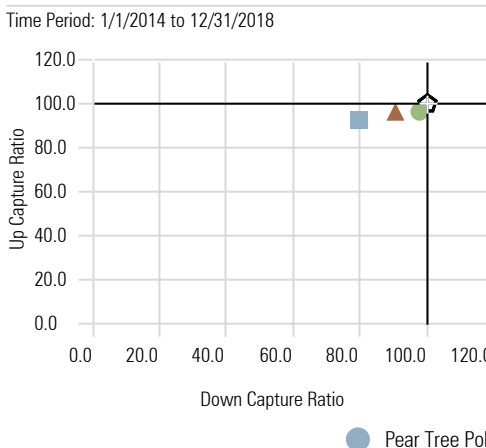
5 Year Risk-Reward



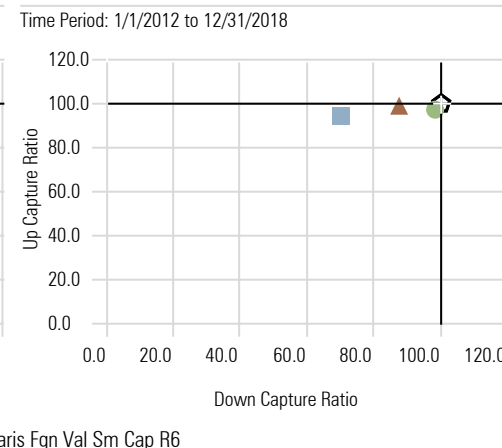
7 Year Risk-Reward



5 Year Market Capture



7 Year Market Capture



Annualized Performance & Risk Statistics - Since Common Inception

Time Period: Since Common Inception (5/1/2009) to 12/31/2018

	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
Vanguard FTSE All-Wld ex-US SmCp Idx Inv	8.3	16.3	-0.5	1.00	99	21.9	-22.3	0.49	1.6
DFA International Small Company I	9.8	15.5	1.3	0.94	96	20.4	-19.5	0.60	3.2
Pear Tree Polaris Fgn Val Sm Cap R6	11.9	15.9	3.4	0.93	89	25.3	-19.1	0.72	5.5
FTSE Gbl SmallCap Ex US TR USD	8.9	16.2	0.0	1.00	100	23.1	-21.1	0.52	0.0

Time Period Performance Analysis

Credit Buildup - Housing and Oil Boom

Time Period: 4/30/2003 to 9/30/2007



✘ Vanguard FTSE All-World ex-US SmCp Idx Inv
✘ DFA International Small Company I
✘ Pear Tree Polaris Fgn Val Sm Cap R6
✘ FTSE Gbl SmallCap Ex US TR USD

Credit Crunch - Financial Crisis

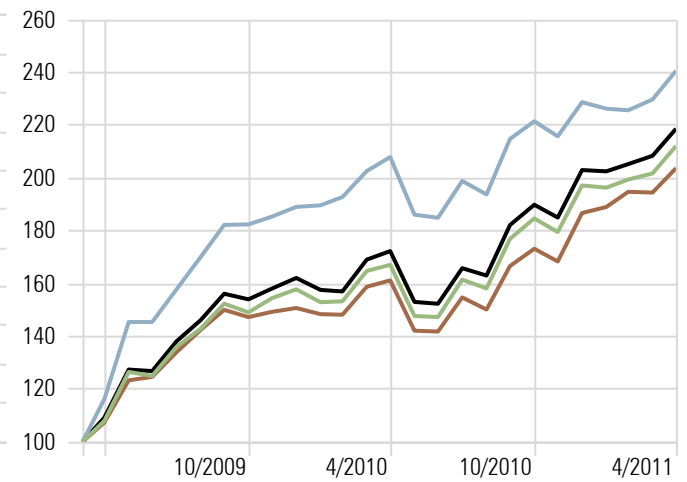
Time Period: 10/31/2007 to 2/28/2009



✘ Vanguard FTSE All-World ex-US SmCp Idx Inv
✘ DFA International Small Company I
✘ Pear Tree Polaris Fgn Val Sm Cap R6
✘ FTSE Gbl SmallCap Ex US TR USD

Financial Crisis Recovery - QE1&2

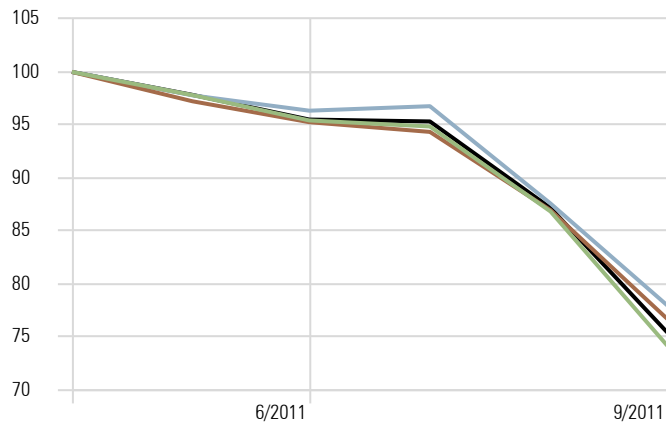
Time Period: 4/3/2009 to 4/30/2011



● Vanguard FTSE All-World ex-US SmCp Idx Inv 212.3
● DFA International Small Company I 203.9
● Pear Tree Polaris Fgn Val Sm Cap R6 240.8
● FTSE Gbl SmallCap Ex US TR USD 218.8

Double Dip

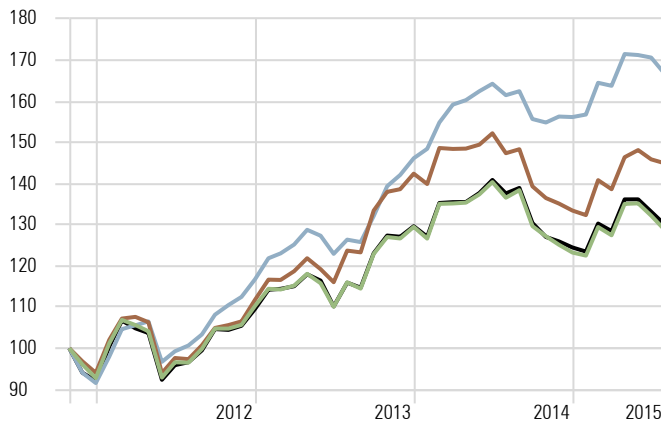
Time Period: 5/1/2011 to 9/30/2011



● Vanguard FTSE All-World ex-US SmCp Idx Inv 74.1
● DFA International Small Company I 75.4
● Pear Tree Polaris Fgn Val Sm Cap R6 76.7
● FTSE Gbl SmallCap Ex US TR USD 75.4

US Recovery Continues - Global Markets Lag

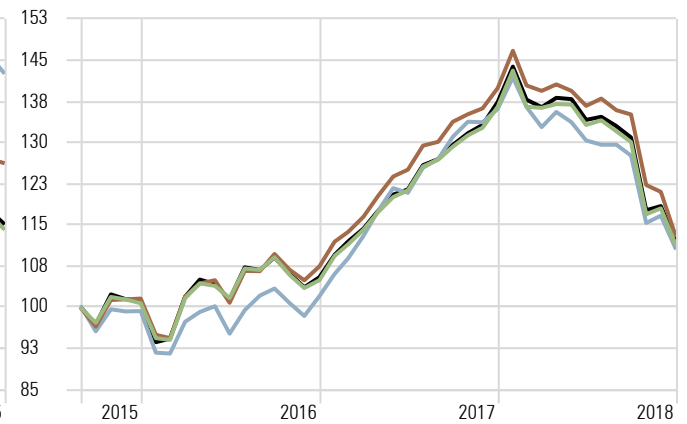
Time Period: 11/1/2011 to 7/31/2015



● Vanguard FTSE All-World ex-US SmCp Idx Inv 145.0
● DFA International Small Company I 130.1
● Pear Tree Polaris Fgn Val Sm Cap R6 170.0
● FTSE Gbl SmallCap Ex US TR USD 130.1

Global Economic Strength

Time Period: 8/31/2015 to 12/31/2018



● Vanguard FTSE All-World ex-US SmCp Idx Inv 111.2
● DFA International Small Company I 111.9
● Pear Tree Polaris Fgn Val Sm Cap R6 112.8
● FTSE Gbl SmallCap Ex US TR USD 110.5

● Vanguard FTSE All-World ex-US SmCp Idx Inv
● DFA International Small Company I
● Pear Tree Polaris Fgn Val Sm Cap R6
● FTSE Gbl SmallCap Ex US TR USD

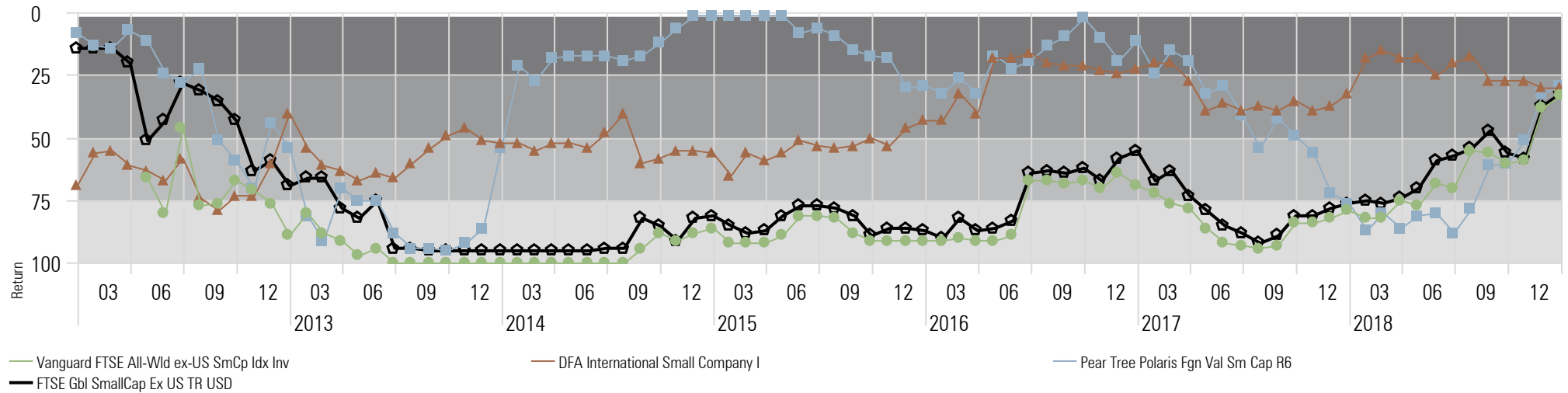
Rolling Peer Group Rankings

Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

Rolling Window: 3 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

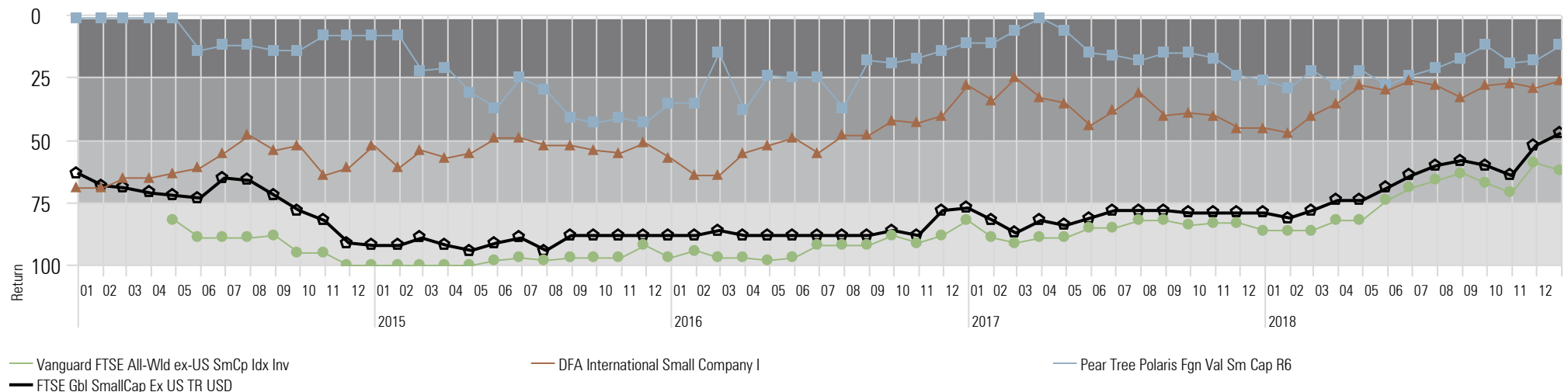


Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

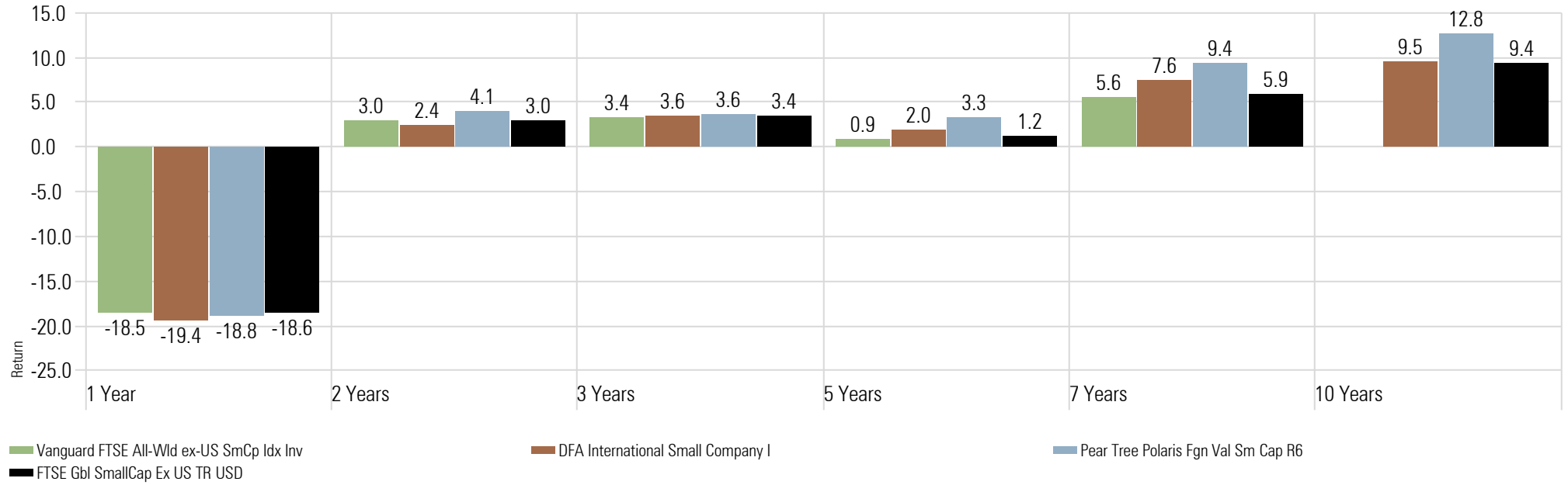
Rolling Window: 5 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

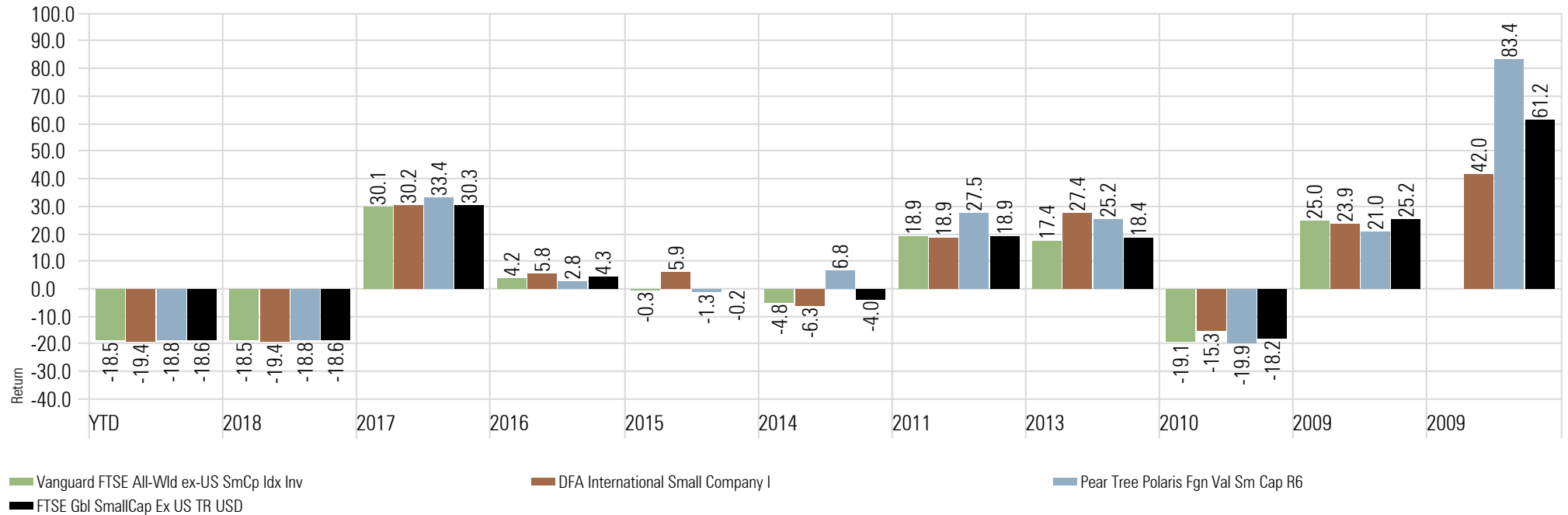


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Foreign Small/Mid Blend																		
Vanguard FTSE All-Wld ex-US SmCp Idx Inv	-14.5	22	0.10	-18.5	28	0.10	-18.5	28	0.10	3.4	33	0.00	0.9	62	-0.30			
DFA International Small Company I	-16.5	46	-1.90	-19.4	33	-0.80	-19.4	33	-0.80	3.6	30	0.20	2.0	26	0.80	9.5	52	0.10
FTSE Glb SmallCap Ex US TR USD	-14.6			-18.6			-18.6			3.4			1.2			9.4		
Average	-16.4			-20.0			-20.0			3.0			1.5			9.5		
Foreign Small/Mid Value																		
Pear Tree Polaris Fgn Val Sm Cap R6	-13.4	17	1.20	-18.8	41	-0.20	-18.8	41	-0.20	3.6	16	0.20	3.3	3	2.10	12.8	5	3.40
FTSE Glb SmallCap Ex USTR USD	-14.6			-18.6			-18.6			3.4			1.2			9.4		
Average	-14.6			-19.7			-19.7			2.3			0.6			8.8		

Performance Summary - Calendar Year Periods

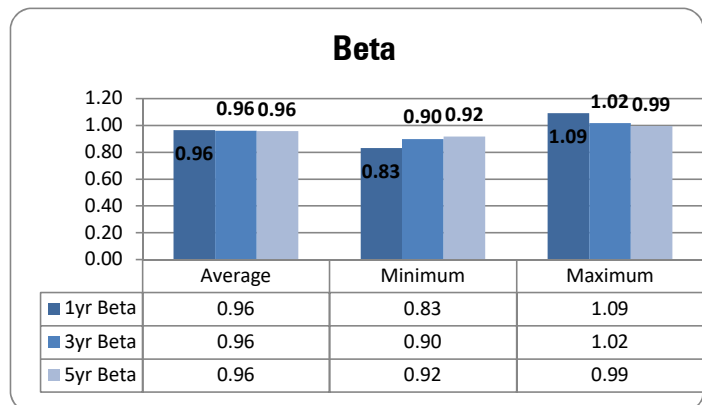
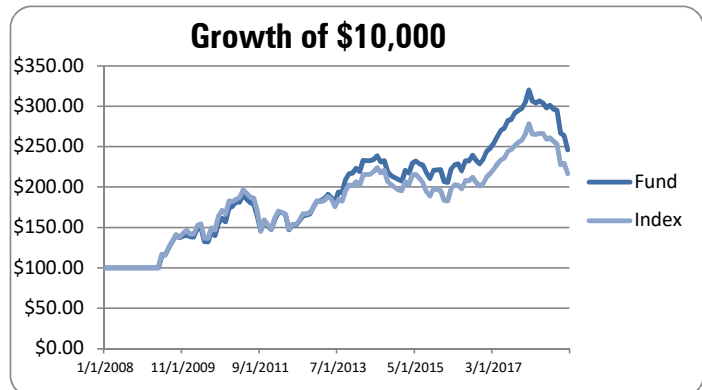
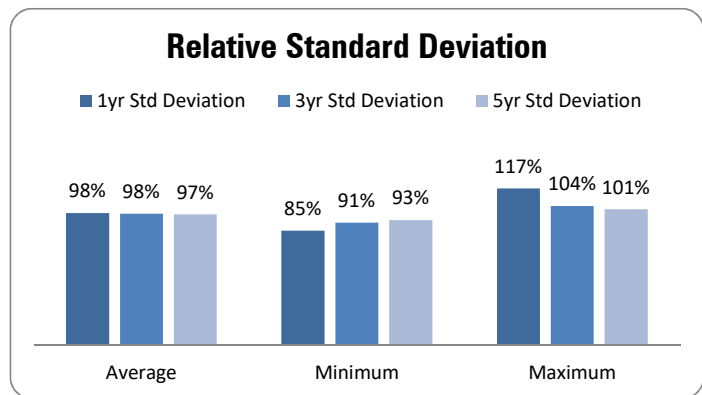
	Return			Return			Return			Return			Return			Return					
	2018	Rank	+/- Idx	2017	Rank	+/- Idx	2016	Rank	+/- Idx	2015	Rank	+/- Idx	2014	Rank	+/- Idx	2013	Rank	+/- Idx	2012	Rank	+/- Idx
Foreign Small/Mid Blend																					
Vanguard FTSE All-Wld ex-US SmCp Idx Inv	-18.5	28	0.10	30.1	74	-0.20	4.2	40	-0.20	-0.3	86	-0.10	-4.8	32	-0.80	17.4	89	-1.00	18.9	60	0.00
DFA International Small Company I	-19.4	33	-0.80	30.2	72	-0.10	5.8	26	1.40	5.9	43	6.10	-6.3	67	-2.30	27.4	64	9.00	18.9	65	0.00
FTSE Glb SmallCap Ex USTR USD	-18.6			30.3			4.4			-0.2			-4.0			18.4			18.9		
Average	-20.0			32.6			2.6			3.9			-5.5			27.0			20.2		
Foreign Small/Mid Value																					
Pear Tree Polaris Fgn Val Sm Cap R6	-18.8	41	-0.20	33.4	35	3.10	2.8	40	-1.60	-1.3	78	-1.10	6.8	1	10.80	25.2	51	6.80	27.5	13	8.60
FTSE Glb SmallCap Ex USTR USD	-18.6			30.3			4.4			-0.2			-4.0			18.4			18.9		
Average	-19.7			29.1			4.0			2.8			-6.4			27.3			22.0		

Fund Name	Comparative Index/Fund
DFA International Small Company I	100% Vanguard FTSE All-Wld ex-US SmCp Idx Inv

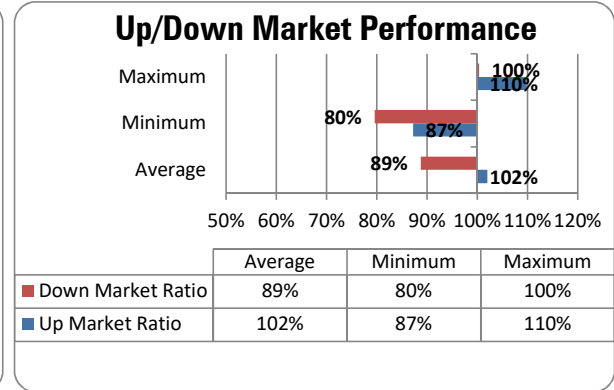
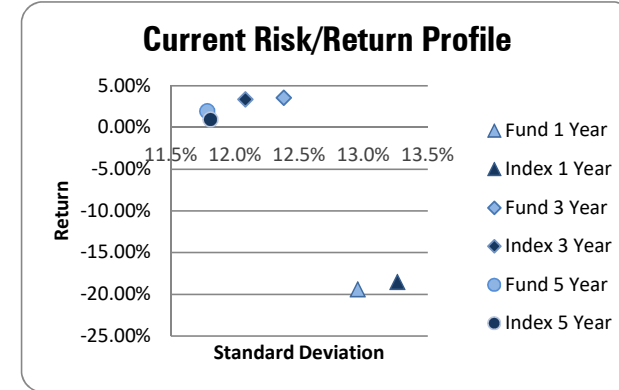
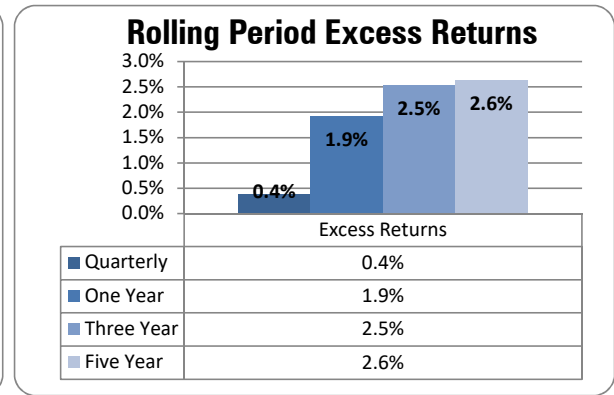
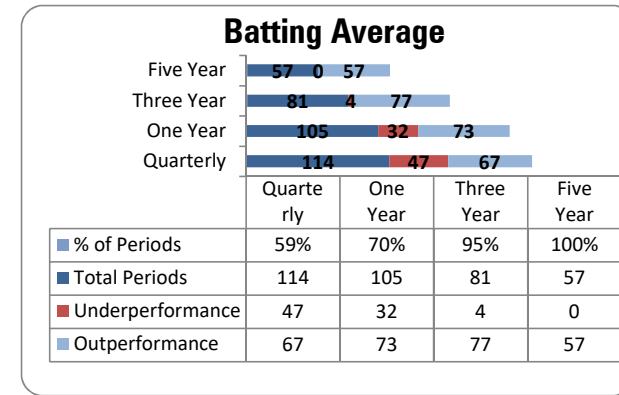
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
DFA International Small Company I	-19.42%	-1.77%	12.95%	8.55%	-16.54%
100% Vanguard FTSE All-Wld ex-US	-18.52%		13.26%	8.99%	-14.49%
Latest Three Years					
DFA International Small Company I	3.55%	0.17%	12.38%	11.18%	-16.54%
100% Vanguard FTSE All-Wld ex-US	3.37%		12.08%	10.59%	-14.49%
Latest Five Years					
DFA International Small Company I	1.96%	1.04%	11.78%	11.18%	-16.54%
100% Vanguard FTSE All-Wld ex-US	0.94%		11.81%	10.59%	-14.49%
Latest Ten Years					
DFA International Small Company I				24.81%	-19.51%
100% Vanguard FTSE All-Wld ex-US				25.93%	-22.30%

Fund Name	Comparative Index/Fund
Pear Tree Polaris Fgn Val Sm Cap Instl	100% Vanguard FTSE All-Wld ex-US SmCp Idx Inv

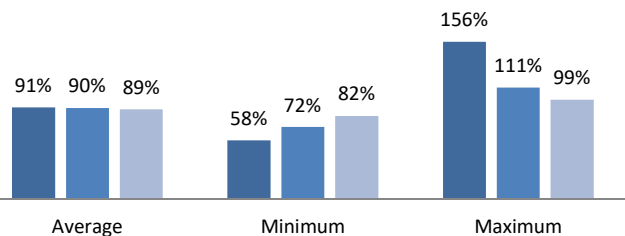
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Risk Analysis

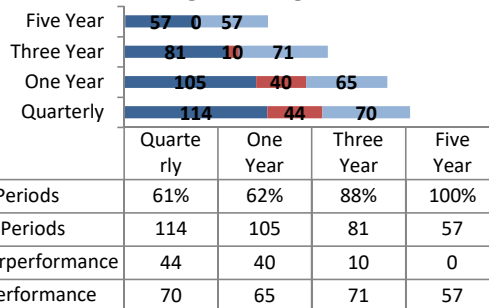
Relative Standard Deviation

■ 1yr Std Deviation ■ 3yr Std Deviation ■ 5yr Std Deviation

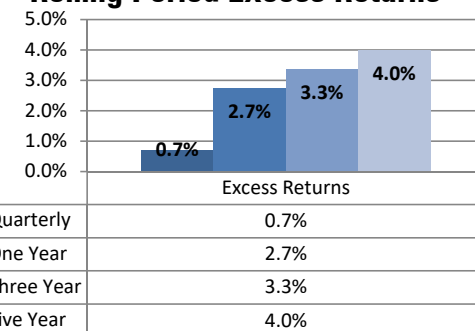


Absolute Performance Summary

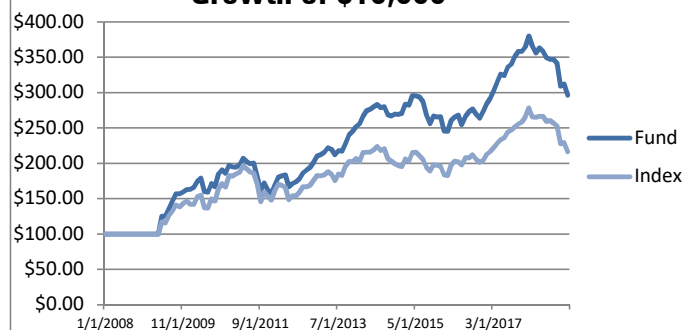
Batting Average



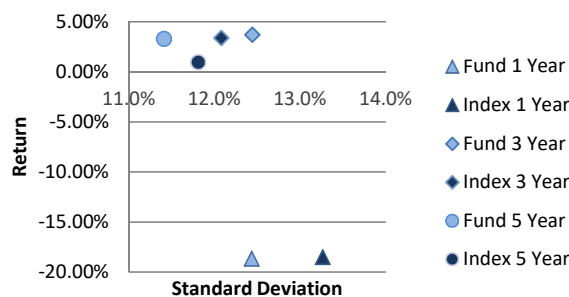
Rolling Period Excess Returns



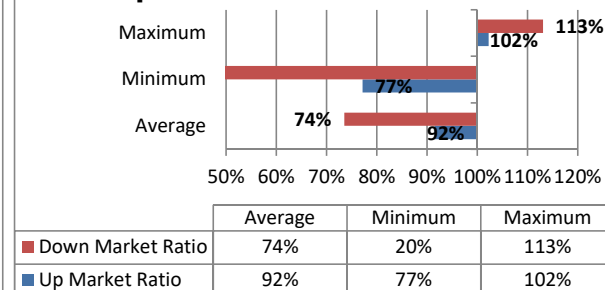
Growth of \$10,000



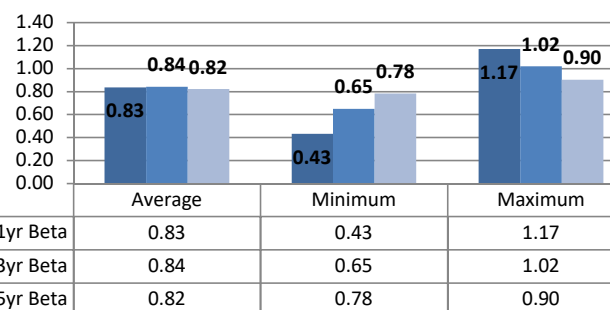
Current Risk/Return Profile



Up/Down Market Performance



Beta



Annualized Performance and Risk Statistics

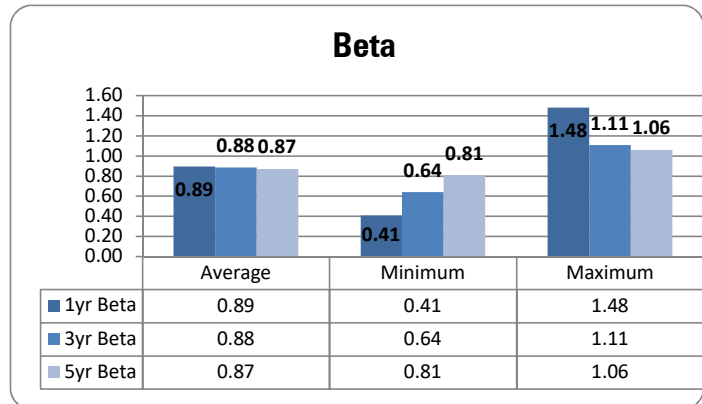
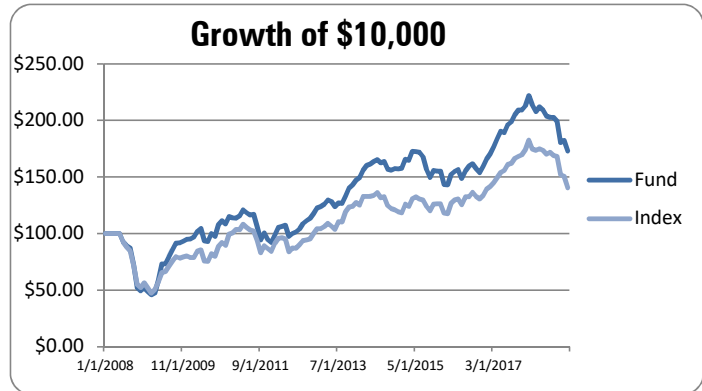
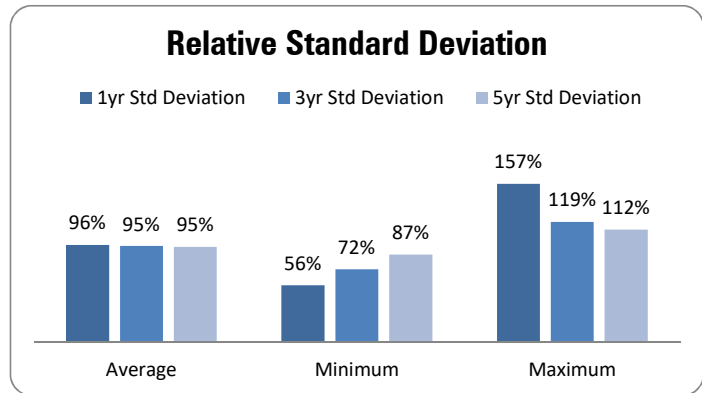
	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Pear Tree Polaris Fgn Val Sm Cap Instl	-18.68%	-2.19%	12.43%	6.12%	-13.21%
100% Vanguard FTSE All-Wld ex-US	-18.52%		13.26%	8.99%	-14.49%
Latest Three Years					
Pear Tree Polaris Fgn Val Sm Cap Instl	3.69%	0.46%	12.44%	11.79%	-13.21%
100% Vanguard FTSE All-Wld ex-US	3.37%		12.08%	10.59%	-14.49%
Latest Five Years					
Pear Tree Polaris Fgn Val Sm Cap Instl	3.30%	2.47%	11.41%	11.79%	-13.21%
100% Vanguard FTSE All-Wld ex-US	0.94%		11.81%	10.59%	-14.49%
Latest Ten Years					
Pear Tree Polaris Fgn Val Sm Cap Instl				35.75%	-19.10%
100% Vanguard FTSE All-Wld ex-US				25.93%	-22.30%

Fund Name	Comparative Index/Fund
Pear Tree Polaris Fgn Val Sm Cap Instl	100% DFA International Small Company I

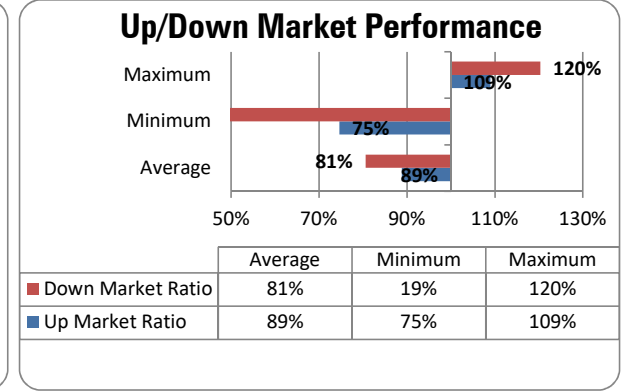
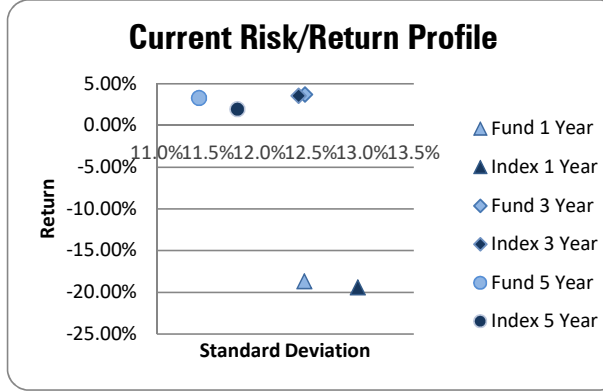
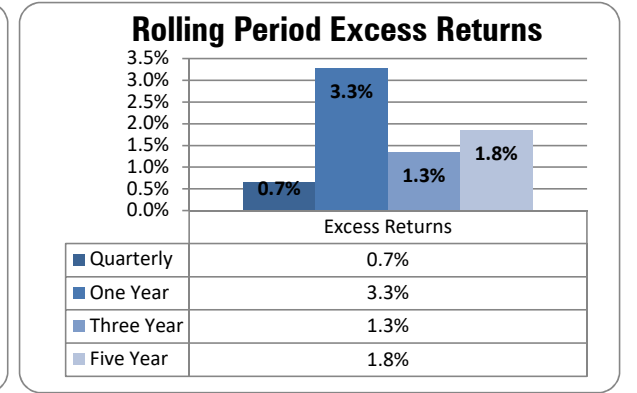
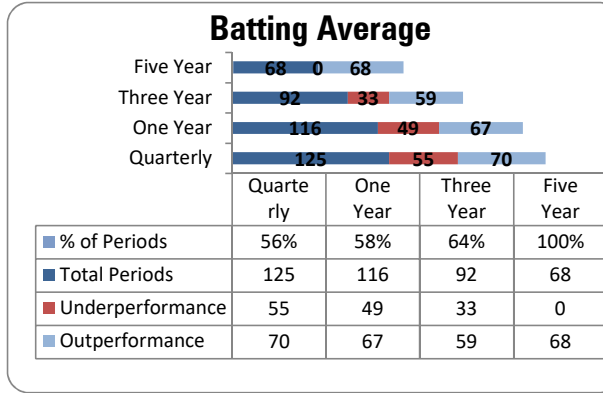
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Pear Tree Polaris Fgn Val Sm Cap Ins	-18.68%	-1.27%	12.43%	6.12%	-13.21%
100% DFA International Small Comp:	-19.42%		12.95%	8.55%	-16.54%
Latest Three Years					
Pear Tree Polaris Fgn Val Sm Cap Ins	3.69%	0.32%	12.44%	11.79%	-13.21%
100% DFA International Small Comp:	3.55%		12.38%	11.18%	-16.54%
Latest Five Years					
Pear Tree Polaris Fgn Val Sm Cap Ins	3.30%	1.55%	11.41%	11.79%	-13.21%
100% DFA International Small Comp:	1.96%		11.78%	11.18%	-16.54%
Latest Ten Years					
Pear Tree Polaris Fgn Val Sm Cap Ins	12.82%	3.53%	17.40%	59.23%	-19.10%
100% DFA International Small Comp:	9.53%		16.40%	38.73%	-19.51%

Mid Cap Index Search

As of 2/28/2019



US Fund Mid-Cap Blend

iShares Russell Mid-Cap Index K

Investment Strategy

The investment seeks to track the investment results of the Russell Midcap® Index (the "underlying index"), which measures the performance of the mid-capitalization sector of the U.S. equity market. The fund generally invests at least 90% of its assets, plus the amount of any borrowing for investment purposes, in securities of the underlying index. The underlying index is a float-adjusted, capitalization-weighted index of the 800 smallest issuers in the Russell 1000® Index.

Manager Biography

Greg Savage since 5/13/2015

Alan Mason since 5/13/2015

Jennifer Hsui since 4/8/2016

Creighton Jue since 4/8/2016

Rachel M. Aguirre since 4/8/2016

iShares Russell Mid-Cap Index K - Operation

Inception Date	5/13/2015
Fund Size (\$mm)	983
Annual Report Net Expense Ratio	0.07
Prospectus Net Expense Ratio	0.07
Prospectus Gross Expense Ratio	0.09
Ticker	BRMKX
Manager Tenure (Longest)	3.83
Manager Tenure (Average)	3.28
Morningstar Inst Cat	Mid Core

Other Notes:

None

Principal MidCap S&P 400 Index R-6

Investment Strategy

The investment seeks long-term growth of capital. Under normal circumstances, the fund invests at least 80% of its net assets, plus any borrowings for investment purposes, in equity securities of companies that compose the Standard & Poor's ("S&P") MidCap 400 Index at the time of purchase. The index is designed to represent U.S. equities with risk/return characteristics of the mid cap universe, which include growth and value stocks. As of December 31, 2017, the market capitalization range of the companies comprising the index was between approximately \$626.1 million and \$13.1 billion.

Manager Biography

Jeffrey A. Schwarte since 7/29/2016

Aaron J. Siebel since 10/15/2018

Principal MidCap S&P 400 Index R-6 - Oper

Inception Date	11/22/2016
Fund Size (\$mm)	1,325
Annual Report Net Expense Ratio	0.16
Prospectus Net Expense Ratio	0.16
Prospectus Gross Expense Ratio	0.16
Ticker	PMAPX
Manager Tenure (Longest)	2.67
Manager Tenure (Average)	1.54
Morningstar Inst Cat	Mid Core

Other Notes:

None

Vanguard Mid Cap Index Admiral

Investment Strategy

The investment seeks to track the performance of a benchmark index that measures the investment return of mid-capitalization stocks. The fund employs an indexing investment approach designed to track the performance of the CRSP US Mid Cap Index, a broadly diversified index of stocks of mid-size U.S. companies. The advisor attempts to replicate the target index by investing all, or substantially all, of its assets in the stocks that make up the index, holding each stock in approximately the same proportion as its weighting in the index.

Manager Biography

Donald M. Butler since 5/21/1998

Michael A. Johnson since 4/27/2016

Vanguard Mid Cap Index Admiral - Operatio

Inception Date	11/12/2001
Fund Size (\$mm)	99,975
Annual Report Net Expense Ratio	0.05
Prospectus Net Expense Ratio	0.05
Prospectus Gross Expense Ratio	0.05
Ticker	VIMAX
Manager Tenure (Longest)	20.83
Manager Tenure (Average)	11.88
Morningstar Inst Cat	Mid Core

Other Notes:

None

Vanguard Extended Market Index Admiral

Investment Strategy

The investment seeks to track a benchmark index that measures the investment return of small- and mid-capitalization stocks. The fund employs an indexing investment approach designed to track the performance of S&P Completion Index, a broadly diversified index of stocks of small and mid-size U.S. companies. It invests by sampling the index, meaning that it holds a broadly diversified collection of securities that, in the aggregate, approximates the full index in terms of key characteristics. These characteristics include industry weightings and market capitalization, as well as certain financial measures, such as price/earnings ratio and dividend yield.

Manager Biography

Donald M. Butler since 12/30/1997

William A. Coleman since 11/30/2017

Vanguard Extended Market Index Admiral -

Inception Date	11/13/2000
Fund Size (\$mm)	68,922
Annual Report Net Expense Ratio	0.07
Prospectus Net Expense Ratio	0.08
Prospectus Gross Expense Ratio	0.08
Ticker	VEXAX
Manager Tenure (Longest)	21.25
Manager Tenure (Average)	11.29
Morningstar Inst Cat	SMID Core

Other Notes:

None

Portfolio Analysis

iShares Russell Mid-Cap Index K

Principal MidCap S&P 400 Index R-6

Vanguard Mid Cap Index Admiral

Vanguard Extended Market Index Admiral

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	10	13	16	Market Cap Giant %	0
Mid	20	20	19	Market Cap Large %	39
Small	1	1	0	Market Cap Mid %	59
				Market Cap Small %	2
				Market Cap Micro %	0

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	0	0	0	Market Cap Giant %	0
Mid	25	25	30	Market Cap Large %	0
Small	10	6	3	Market Cap Mid %	80
				Market Cap Small %	20
				Market Cap Micro %	0

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	6	11	21	Market Cap Giant %	0
Mid	22	24	17	Market Cap Large %	37
Small	0	0	0	Market Cap Mid %	63
				Market Cap Small %	0
				Market Cap Micro %	0

Style Allocation

Portfolio Date: 1/31/2019

	Value	Blend	Growth	Market Cap	%
Large	0	3	6	Market Cap Giant %	0
Mid	15	15	24	Market Cap Large %	9
Small	12	13	12	Market Cap Mid %	53
				Market Cap Small %	33
				Market Cap Micro %	5

Valuation Data

Display Benchmark 1: Russell Mid Cap TR USD

	Inv	Bmk1
Average Market Cap (bil)	12.5	13.1
Forward P/E	16.5	17.3
P/E Ratio (TTM)	16.9	19.3
LT Earn Growth	10.4	10.4
P/B Ratio (TTM)	2.5	2.6
Dividend Yield	1.8	1.8
ROE %	17.3	17.5
ROA %	5.8	6.0
Debt to Capital %	44	44

Valuation Data

Display Benchmark 1: S&P MidCap 400 TR

	Inv	Bmk1
Average Market Cap (bil)	4.8	5.0
Forward P/E	15.6	16.4
P/E Ratio (TTM)	16.3	18.2
LT Earn Growth	12.2	11.8
P/B Ratio (TTM)	2.0	2.2
Dividend Yield	1.7	1.7
ROE %	16.7	16.8
ROA %	6.7	6.9
Debt to Capital %	40	40

Valuation Data

Display Benchmark 1: CRSP US Mid Cap TR USD

	Inv	Bmk1
Average Market Cap (bil)	14.4	15.0
Forward P/E	16.9	17.8
P/E Ratio (TTM)	18.1	20.3
LT Earn Growth	10.7	10.9
P/B Ratio (TTM)	2.6	2.6
Dividend Yield	1.6	1.7
ROE %	16.8	17.7
ROA %	6.0	6.3
Debt to Capital %	43	44

Valuation Data

Display Benchmark 1: S&P Completion TR USD

	Inv	Bmk1
Average Market Cap (bil)	4.1	4.3
Forward P/E	16.5	17.5
P/E Ratio (TTM)	15.3	18.4
LT Earn Growth	11.9	11.6
P/B Ratio (TTM)	2.2	2.3
Dividend Yield	1.5	1.5
ROE %	10.2	9.9
ROA %	2.6	2.4
Debt to Capital %	41	41

Portfolio Data

	Inv	Bmk1
Turnover Ratio	75	
# of Stock Holdings	787	783
% in Top 10	4.8	4.9
Cash %	0.4	0.0
Developed %	99.2	99.5
US Equity %	98.9	99.0
Non-US Equity %	1	1
Emerging Mkt %	0.5	0.5

Portfolio Data

	Inv	Bmk1
Turnover Ratio	14	
# of Stock Holdings	400	400
% in Top 10	7.2	6.0
Cash %	1.6	0.0
Developed %	100.0	100.0
US Equity %	99.9	99.8
Non-US Equity %	0	0
Emerging Mkt %	0.0	0.0

Portfolio Data

	Inv	Bmk1
Turnover Ratio	16	
# of Stock Holdings	362	361
% in Top 10	7.3	7.5
Cash %	0.8	0.0
Developed %	98.9	99.7
US Equity %	97.9	98.5
Non-US Equity %	1	2
Emerging Mkt %	0.3	0.3

Portfolio Data

	Inv	Bmk1
Turnover Ratio	10	
# of Stock Holdings	3,270	3,258
% in Top 10	5.3	5.6
Cash %	3.2	0.0
Developed %	96.3	99.4
US Equity %	95.3	98.3
Non-US Equity %	2	2
Emerging Mkt %	0.5	0.6

Holdings-Based Style Analysis

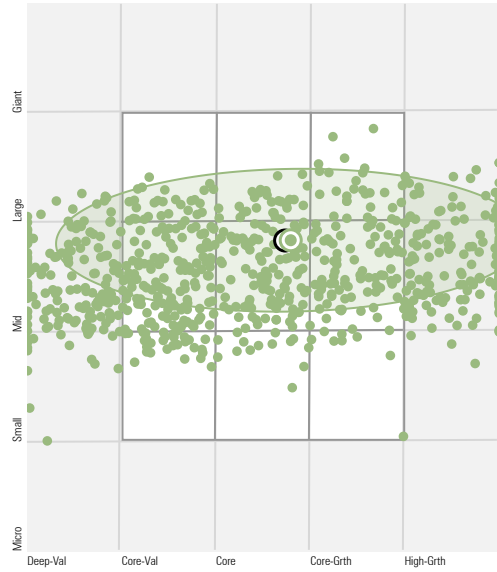
iShares Russell Mid-Cap Index K

Principal MidCap S&P 400 Index R-6

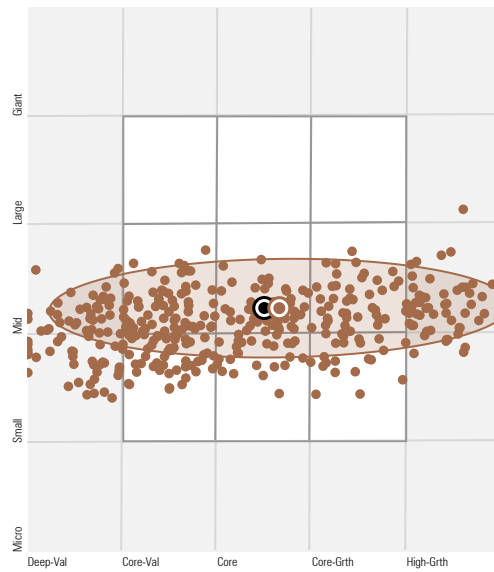
Vanguard Mid Cap Index Admiral

Vanguard Extended Market Index Admiral

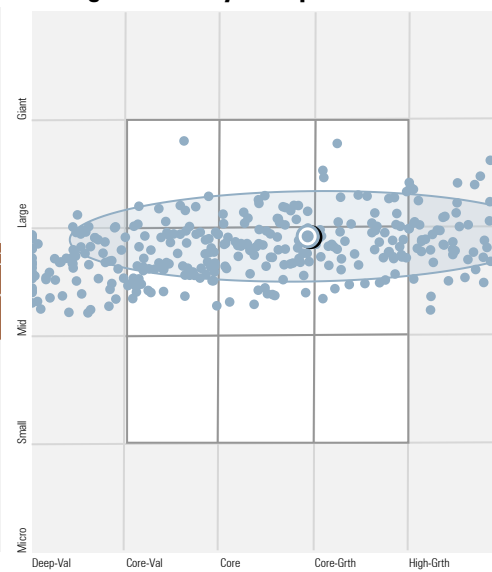
Holdings-Based Style Map



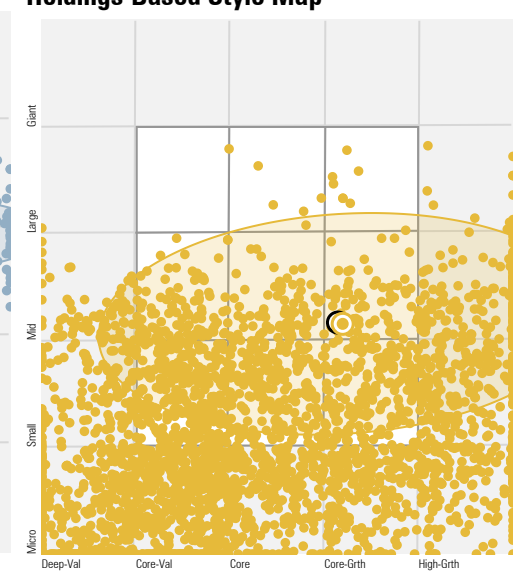
Holdings-Based Style Map



Holdings-Based Style Map



Holdings-Based Style Map



● iShares Russell Mid-Cap Index K 1/31/2019 ● Russell Mid Cap TR USD 2/28/2019

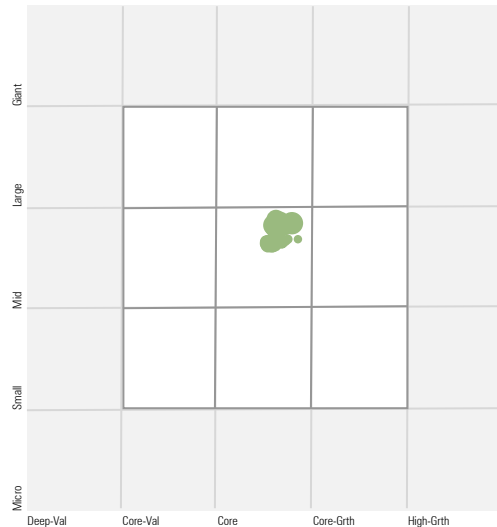
● Principal MidCap S&P 400 Index R-6 1/31/2019 ● S&P MidCap 400 TR 2/28/2019

● Vanguard Mid Cap Index Admiral 1/31/2019 ● CRSP US Mid Cap TR USD 2/28/2019

● Vanguard Extended Market Index Admiral 1/31/2019 ● S&P Completion TR USD 2/28/2019

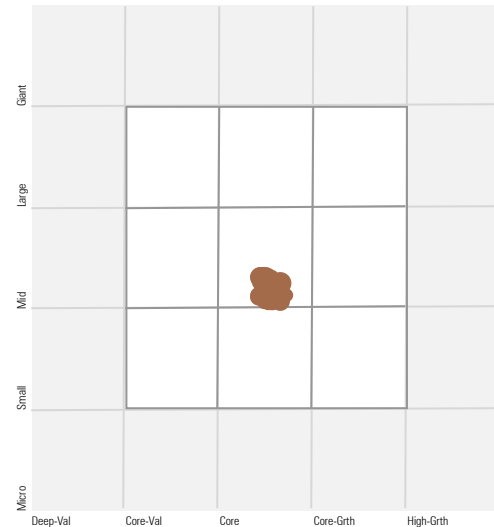
Holdings-Based Style Trail

Time Period: 4/30/2016 to 1/31/2019



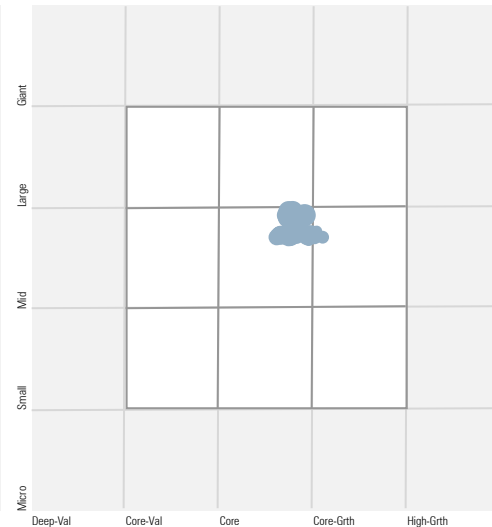
Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



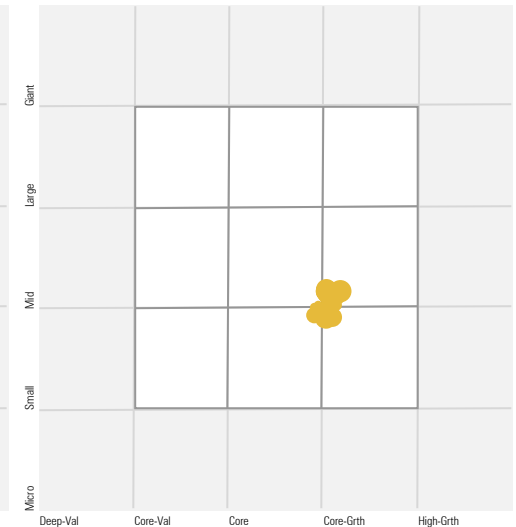
Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



International Exposure

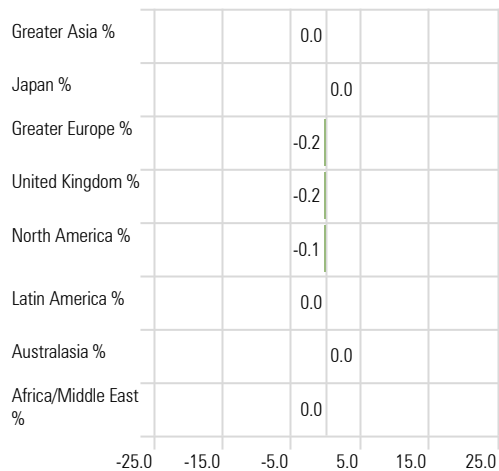
iShares Russell Mid-Cap Index K

Principal MidCap S&P 400 Index R-6

Vanguard Mid Cap Index Admiral

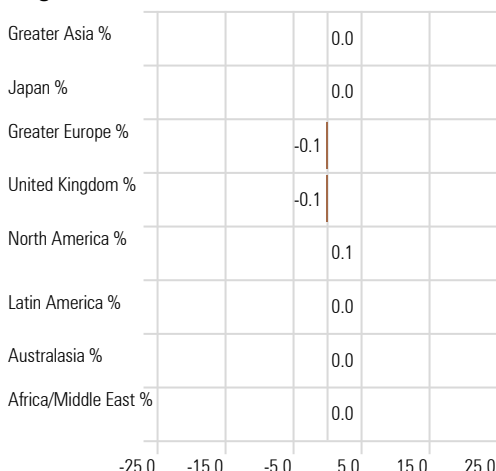
Vanguard Extended Market Index Admiral

Regional Allocation +/- Index



iShares Russell Mid-Cap Index K Russell Mid Cap TR USD

Regional Allocation +/- Index



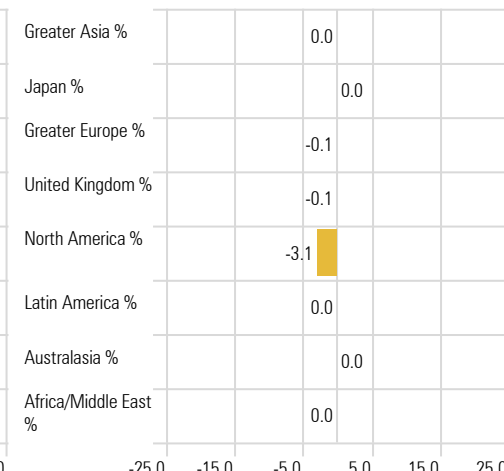
Principal MidCap S&P 400 Index R-6 S&P MidCap 400 TR

Regional Allocation +/- Index



Vanguard Mid Cap Index Admiral CRSP US Mid Cap TR USD

Regional Allocation +/- Index



Vanguard Extended Market Index Admiral S&P Completion TR USD

Country Allocation +/- Index



iShares Russell Mid-Cap Index K Russell Mid Cap TR USD

Country Allocation +/- Index



Principal MidCap S&P 400 Index R-6 S&P MidCap 400 TR

Country Allocation +/- Index



Vanguard Mid Cap Index Admiral CRSP US Mid Cap TR USD

Country Allocation +/- Index



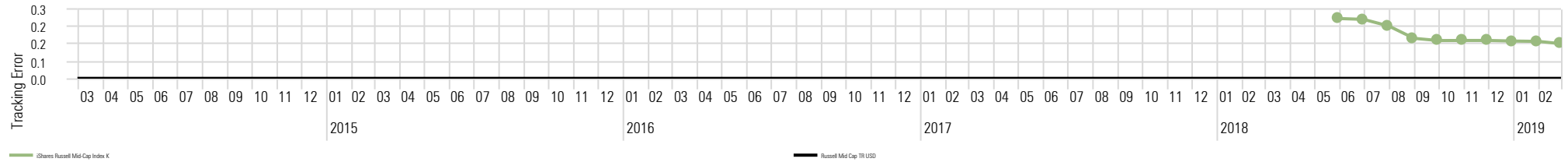
Vanguard Extended Market Index Admiral S&P Completion TR USD

Time Period Performance Analysis

Tracking Error - 3 Year Rolling

Time Period: 3/1/2011 to 2/28/2019

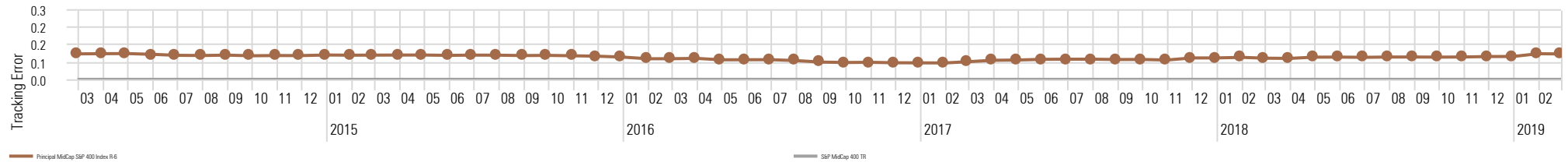
Rolling Window: 3 Years 1 Month shift Calculation Benchmark: Russell Mid Cap TR USD



Tracking Error - 3 Year Rolling

Time Period: 3/1/2011 to 2/28/2019

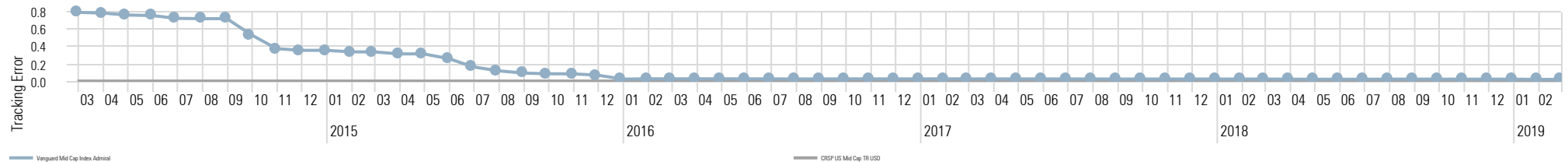
Rolling Window: 3 Years 1 Month shift Calculation Benchmark: S&P MidCap 400 TR



Rolling Returns - 3 Year Rolling

Time Period: 3/1/2011 to 2/28/2019

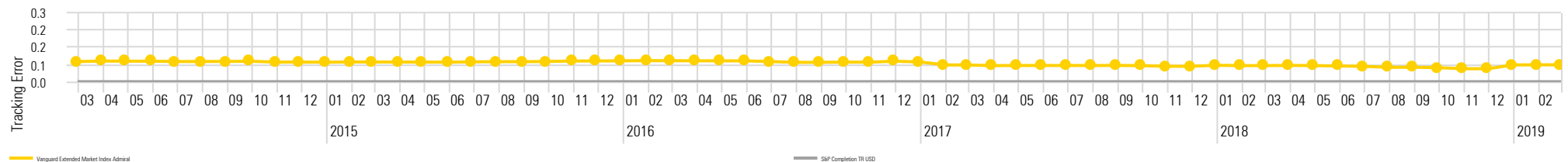
Rolling Window: 3 Years 1 Month shift Calculation Benchmark: CRSP US Mid Cap TR USD



Rolling Returns - 3 Year Rolling

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Years 1 Month shift Calculation Benchmark: S&P Completion TR USD



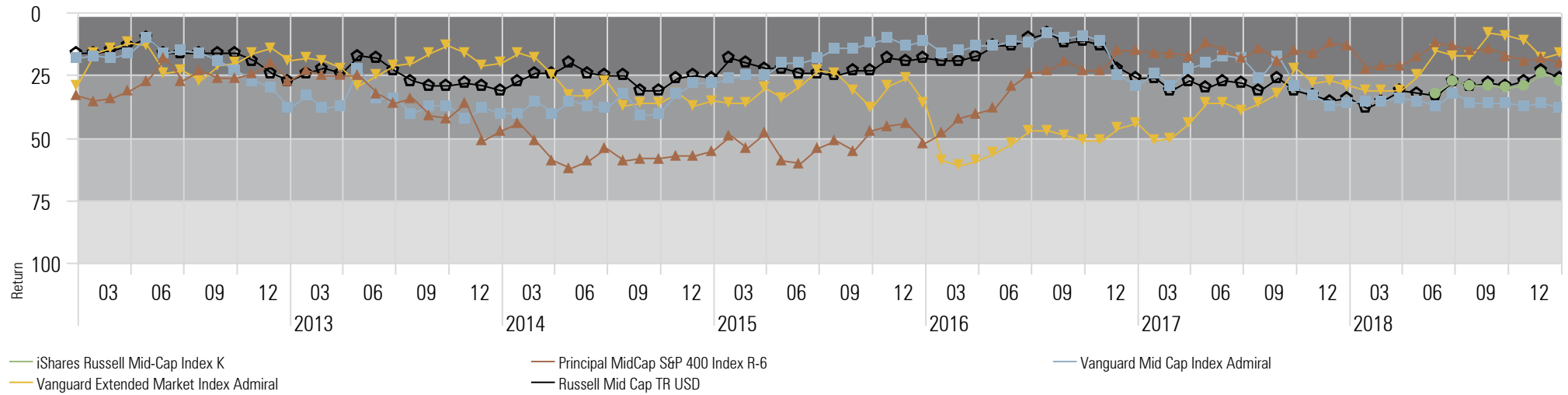
Rolling Peer Group Rankings

Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

Rolling Window: 3 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

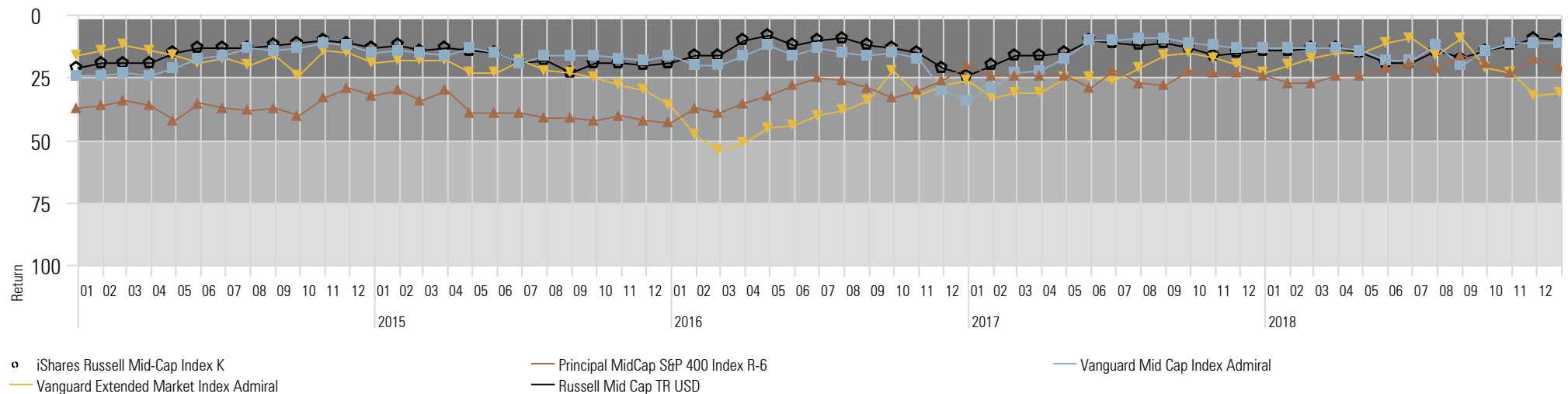


Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

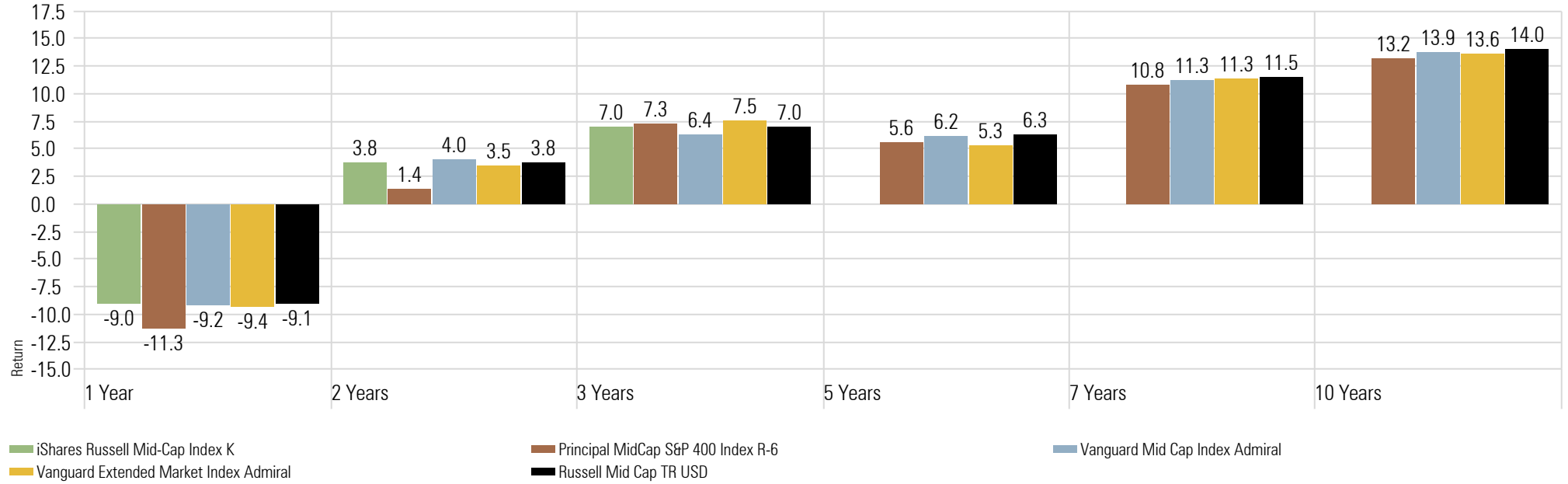
Rolling Window: 5 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

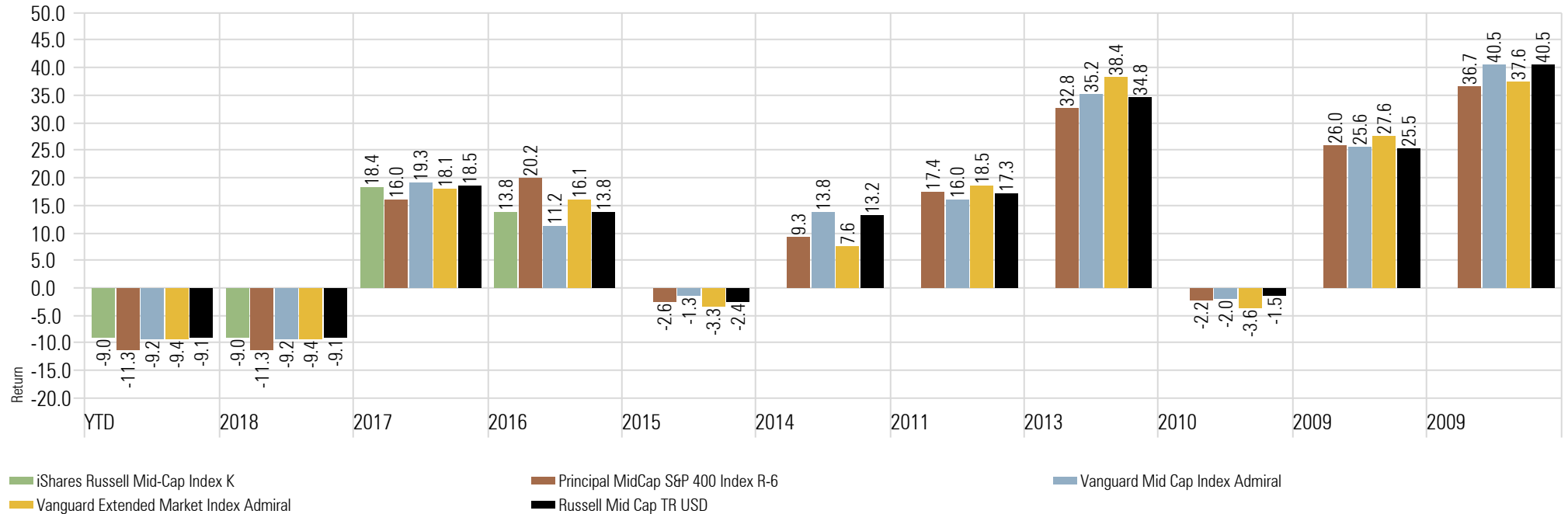


Trailing Performance

Cumulative Returns



Annual Returns



Large Growth Evaluation

As of 2/28/2019



US Fund Large Growth

Wells Fargo Growth Inst

Investment Strategy

The investment seeks long-term capital appreciation. The fund invests at least 80% of its total assets in equity securities and up to 25% of the fund's total assets in equity securities of foreign issuers through ADRs and similar investments. It invests principally in equity securities of companies that the advisor believes have prospects for robust and sustainable growth of revenues and earnings. The fund may invest in the equity securities of companies of any market capitalization.

Manager Biography

Thomas C. Ognar since 5/1/2002

Joseph M. Eberhardy since 4/25/2008

Wells Fargo Growth Inst - Operations

Inception Date	2/24/2000
Fund Size (\$mm)	4,426
Annual Report Net Expense Ratio	0.75
Prospectus Net Expense Ratio	0.75
Prospectus Gross Expense Ratio	0.85
Ticker	SGRNX
Manager Tenure (Longest)	16.83
Manager Tenure (Average)	13.88
Morningstar Inst Cat	Large High Growth

Other Notes:

None

CREF Growth R3

Investment Strategy

The investment seeks a favorable long-term rate of return, mainly through capital appreciation. The fund invests at least 80% of its assets in common stocks and other equity securities. It invests primarily in large, well-known, established companies. The fund may also invest in smaller, less seasoned companies with growth potential as well as companies in new and emerging areas of the economy. It may also invest in companies in order to benefit from prospective acquisitions, reorganizations, corporate restructurings or other special situations.

Manager Biography

Susan Hirsch since 12/31/2005

Andrea Mitroff since 8/7/2007

Terrence Kontos since 5/1/2014

Thomas M. Franks since 5/1/2017

CREF Growth R3 - Operations

Inception Date	4/24/2015
Fund Size (\$mm)	26,119
Annual Report Net Expense Ratio	0.26
Prospectus Net Expense Ratio	0.26
Prospectus Gross Expense Ratio	0.26
Ticker	QCGRIX
Manager Tenure (Longest)	13.25
Manager Tenure (Average)	7.88
Morningstar Inst Cat	Large Core Growth

Other Notes:

None

Portfolio Analysis

Wells Fargo Growth Inst

CREF Growth R3

Style Allocation

Portfolio Date: 12/31/2018

	Value	Blend	Growth
Large	2	13	53
Mid	0	3	20
Small	3	1	5

Market Cap	%
Market Cap Giant %	42
Market Cap Large %	23
Market Cap Mid %	26
Market Cap Small %	10
Market Cap Micro %	0

Style Allocation

Portfolio Date: 12/31/2018

	Value	Blend	Growth
Large	6	19	59
Mid	2	5	8
Small	0	0	0

Market Cap	%
Market Cap Giant %	52
Market Cap Large %	31
Market Cap Mid %	16
Market Cap Small %	0
Market Cap Micro %	0

Valuation Data

Display Benchmark 1: Russell 1000 Growth TR USD

	Inv	Bmk1
Average Market Cap (bil)	44.6	101.3
Forward P/E	21.3	20.5
P/E Ratio (TTM)	24.3	22.5
LT Earn Growth	16.0	12.2
P/B Ratio (TTM)	5.5	6.7
Dividend Yield	0.8	1.4
ROE %	21.2	35.6
ROA %	8.3	11.8
Debt to Capital %	39	47

Valuation Data

Display Benchmark 1: Russell 1000 Growth TR USD

	Inv	Bmk1
Average Market Cap (bil)	83.2	101.3
Forward P/E	18.0	20.5
P/E Ratio (TTM)	23.9	22.5
LT Earn Growth	14.0	12.2
P/B Ratio (TTM)	5.3	6.7
Dividend Yield	1.1	1.4
ROE %	27.4	35.6
ROA %	10.1	11.8
Debt to Capital %	40	47

Portfolio Data

	Inv	Bmk1
Turnover Ratio	37	
# of Stock Holdings	95	544
% in Top 10	36.1	33.0
Cash %	1.3	0.0
Developed %	92.8	99.9
US Equity %	89.1	99.5
Non-US Equity %	4	1
Emerging Mkt %	0.0	0.1

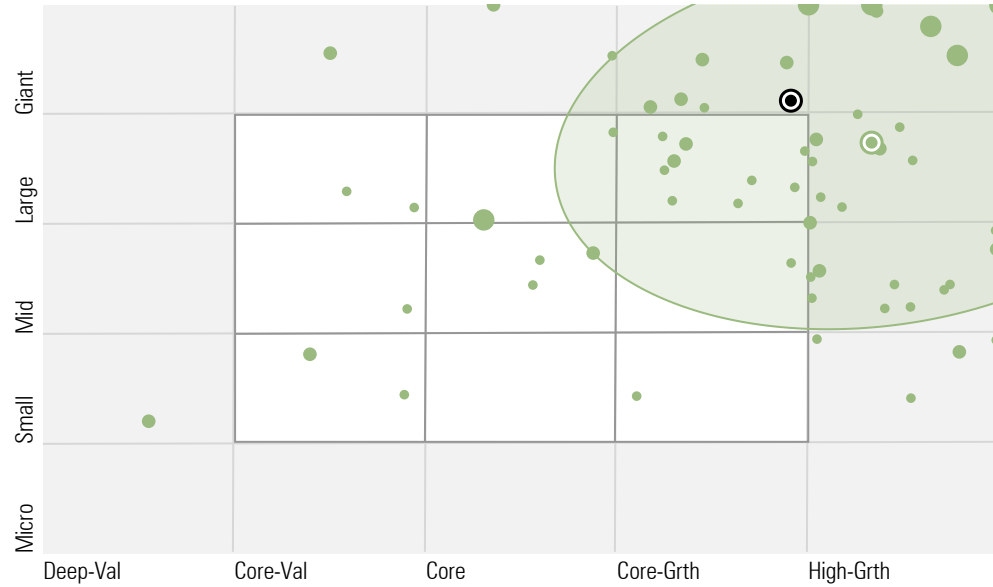
Portfolio Data

	Inv	Bmk1
Turnover Ratio	48	
# of Stock Holdings	595	544
% in Top 10	34.6	33.0
Cash %	0.3	0.0
Developed %	98.6	99.9
US Equity %	95.2	99.5
Non-US Equity %	4	1
Emerging Mkt %	1.0	0.1

Holdings-Based Style Analysis

Wells Fargo Growth Inst

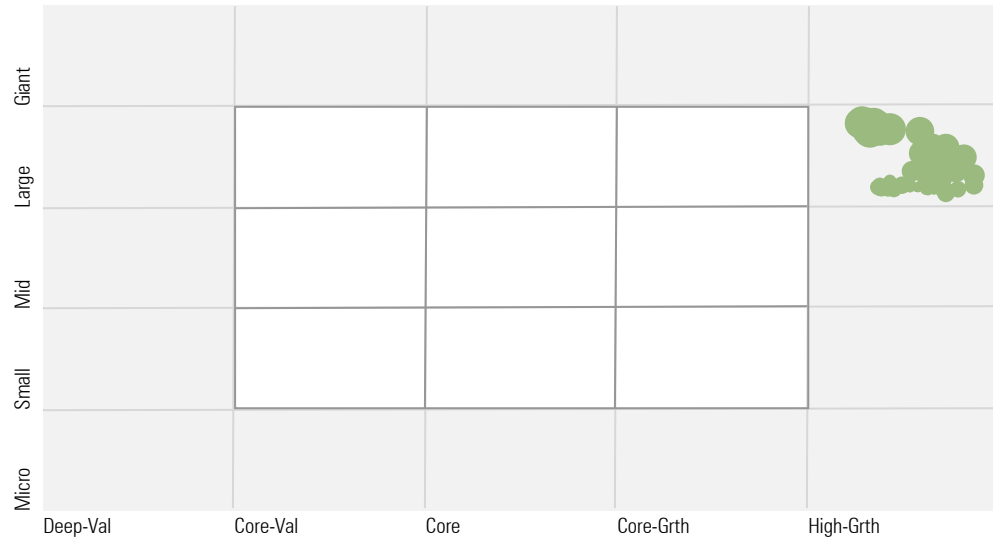
Holdings-Based Style Map



● Wells Fargo Growth Inst 12/31/2018 ● Russell 1000 Growth TR USD 2/28/2019

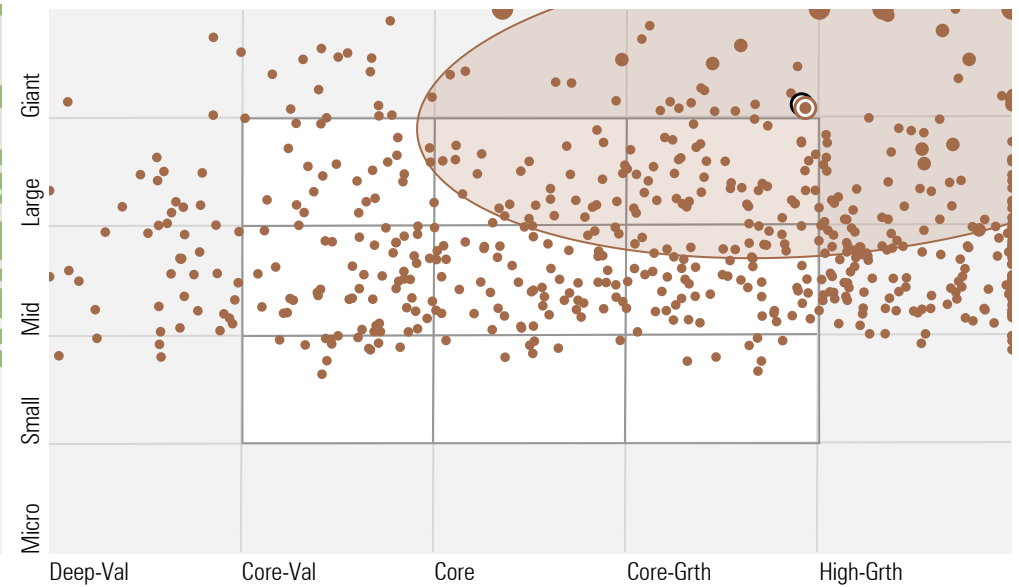
Holdings-Based Style Trail

Time Period: 3/31/2014 to 12/31/2018



CREF Growth R3

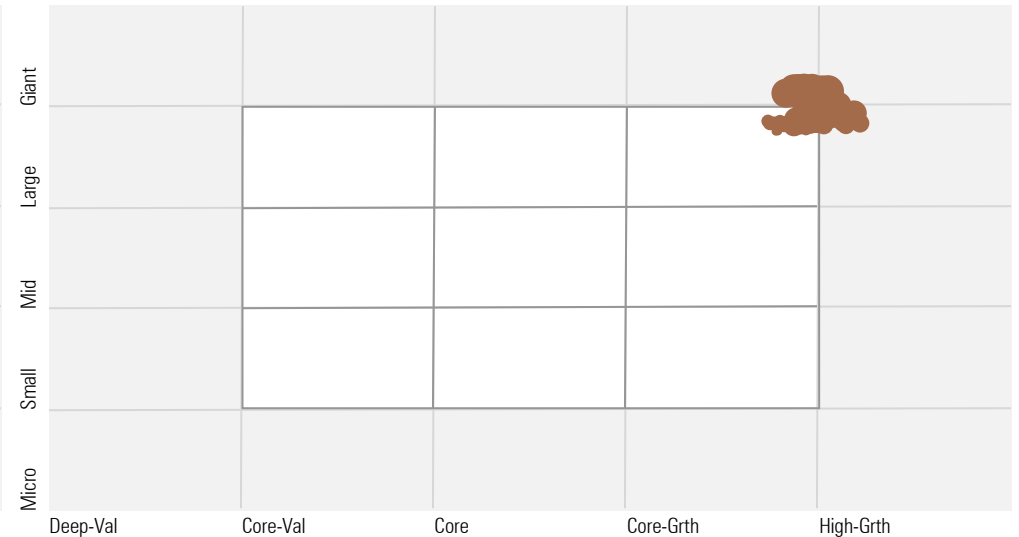
Holdings-Based Style Map



● CREF Growth R3 12/31/2018 ● Russell 1000 Growth TR USD 2/28/2019

Holdings-Based Style Trail

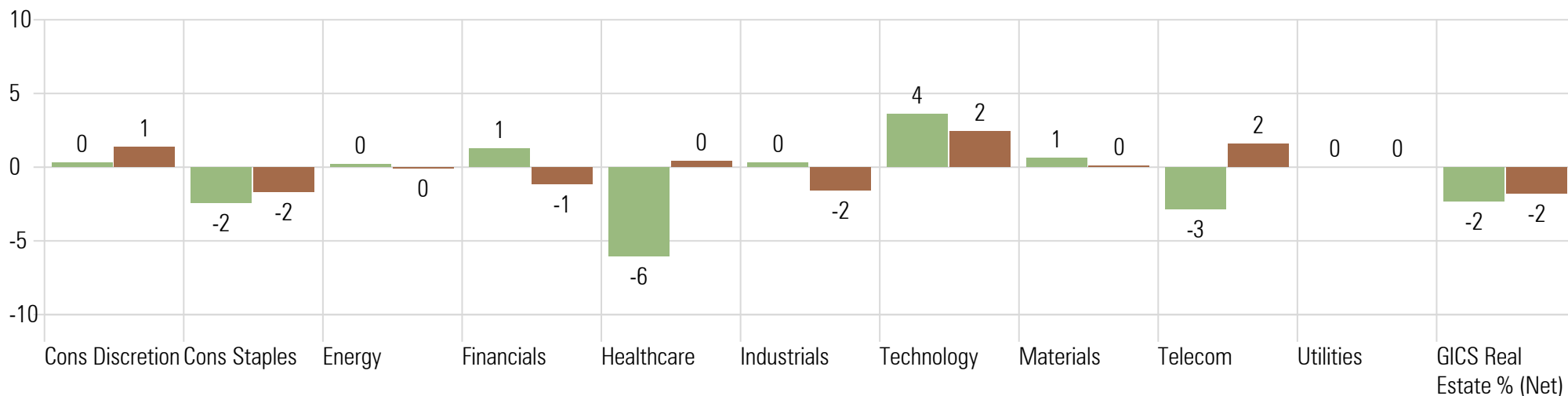
Time Period: 3/31/2014 to 12/31/2018



Sector Exposure and Top 15 Holdings

Relative Sector Allocation

Calculation Benchmark: Russell 1000 Growth TR USD



Wells Fargo Growth Inst

CREF Growth R3

Russell 1000 Growth TR USD

Wells Fargo Growth Inst - Top Holdings

Portfolio Date: 12/31/2018

Equity Style Box	Portfolio Weighting %
Amazon.com Inc	7.2
Alphabet Inc A	6.2
Microsoft Corp	4.0
Microchip Technology Inc	3.3
Visa Inc Class A	3.2
Mastercard Inc A	3.1
Burlington Stores Inc	2.6
MarketAxess Holdings Inc	2.4
Apple Inc	2.1
Monolithic Power Systems Inc	2.0
Texas Instruments Inc	2.0
PayPal Holdings Inc	1.9
Envestnet Inc	1.8
Waste Connections Inc	1.7
CSX Corp	1.7

Source: Morningstar Direct

CREF Growth R3 - Top Holdings

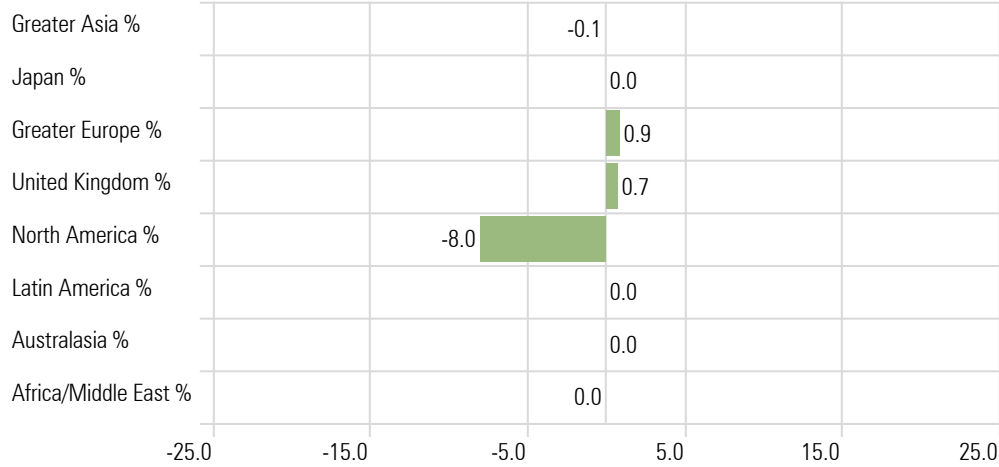
Portfolio Date: 12/31/2018

Equity Style Box	Portfolio Weighting %
Microsoft Corp	6.7
Amazon.com Inc	5.5
Alphabet Inc Class C	4.0
Apple Inc	3.7
Visa Inc Class A	2.9
Facebook Inc A	2.8
Salesforce.com Inc	2.5
Alphabet Inc A	2.2
Intuit Inc	2.2
Mastercard Inc A	2.1
PayPal Holdings Inc	1.9
Adobe Inc	1.6
Boeing Co	1.5
The Home Depot Inc	1.3
Intuitive Surgical Inc	1.2

International Exposure

Wells Fargo Growth Inst

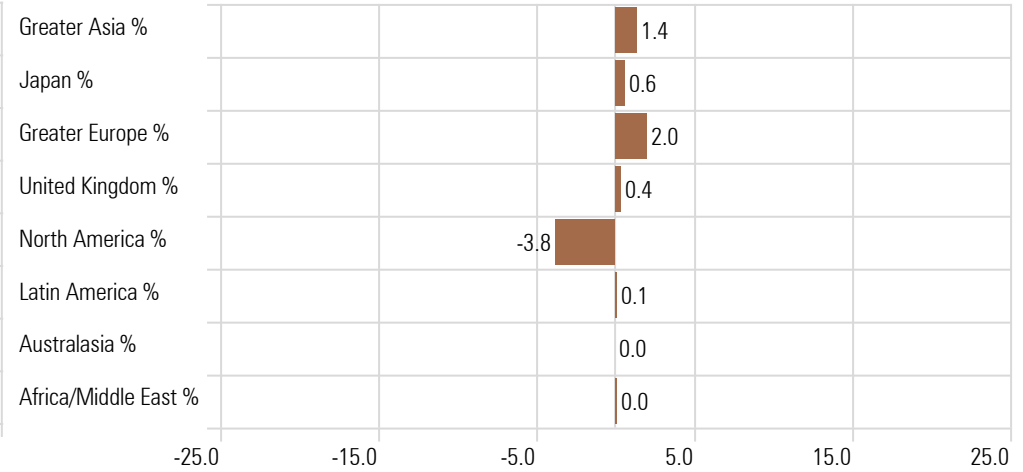
Regional Allocation +/- Index



Wells Fargo Growth Inst Russell 1000 Growth TR USD

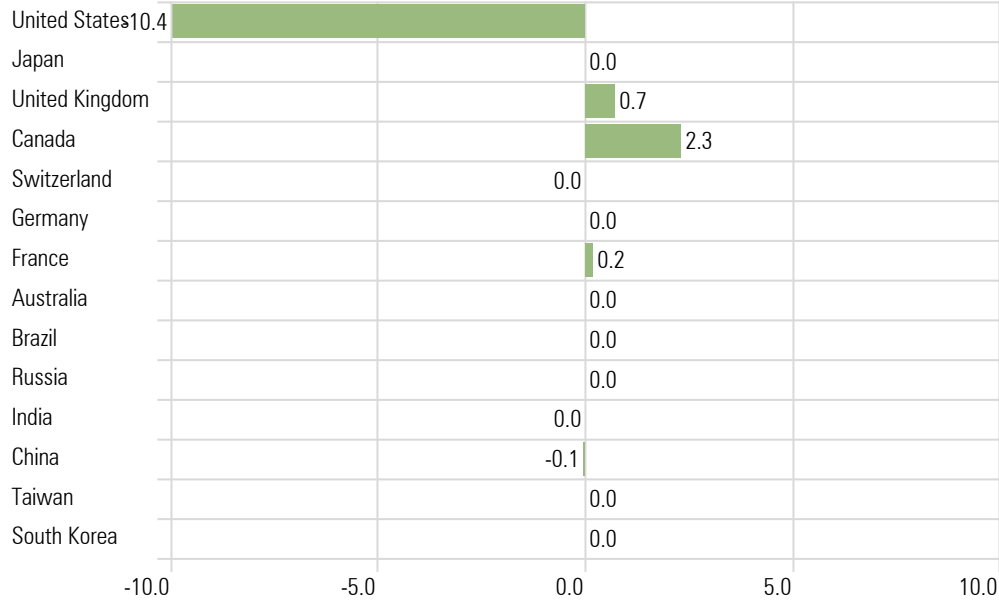
CREF Growth R3

Regional Allocation +/- Index



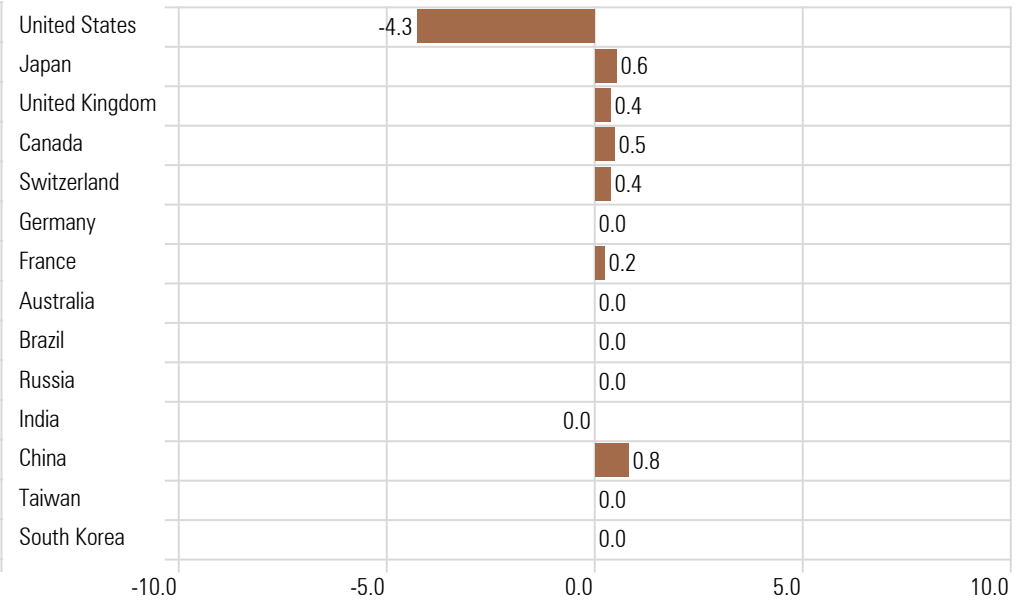
CREF Growth R3 Russell 1000 Growth TR USD

Country Allocation +/- Index



Wells Fargo Growth Inst Russell 1000 Growth TR USD

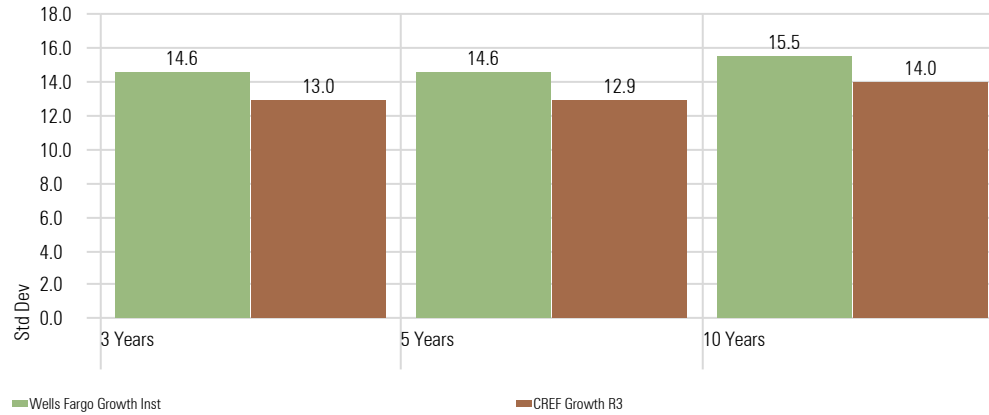
Country Allocation +/- Index



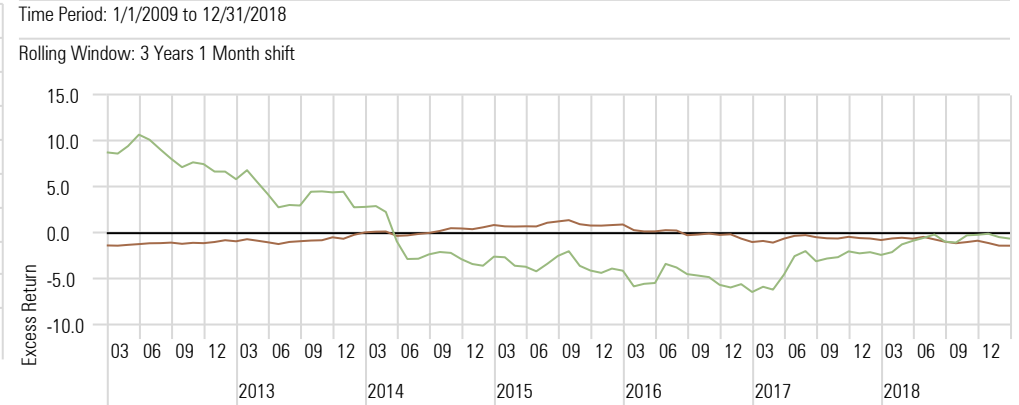
CREF Growth R3 Russell 1000 Growth TR USD

Risk/Return Performance Analysis

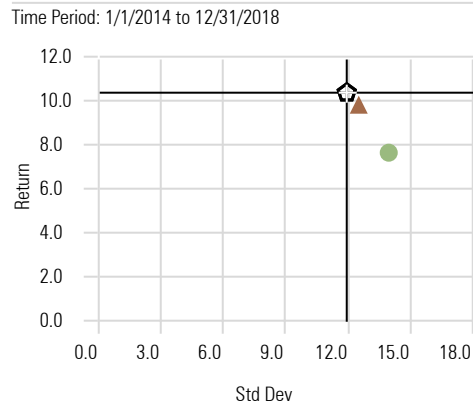
Standard Deviation



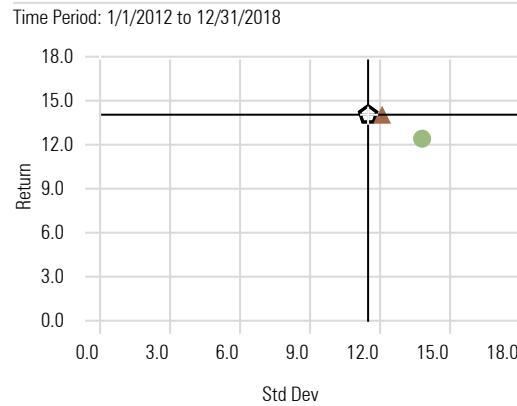
3 Year Relative Rolling Returns



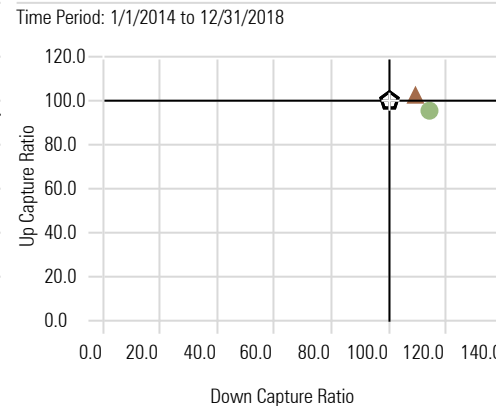
5 Year Risk-Reward



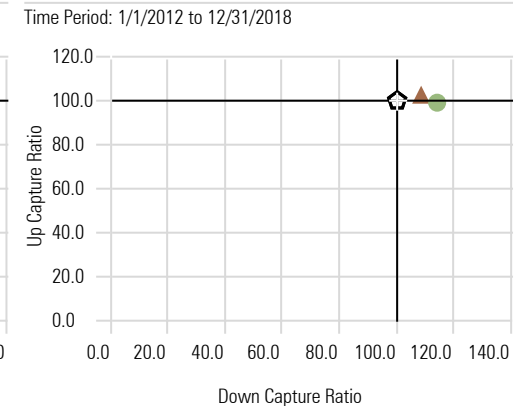
7 Year Risk-Reward



5 Year Market Capture



7 Year Market Capture



● Wells Fargo Growth Inst

● CREF Growth R3

◻ Russell 1000 Growth TR USD

Annualized Performance & Risk Statistics - Since Common Inception

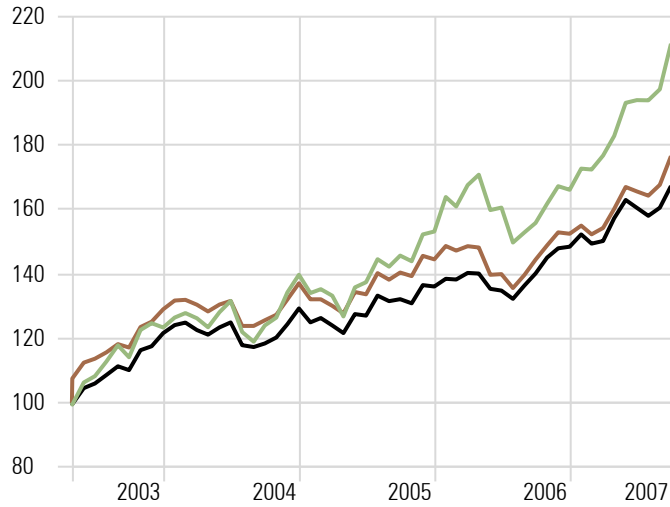
Time Period: Since Common Inception (3/1/2000) to 12/31/2018

	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
Wells Fargo Growth Inst	4.4	17.9	0.9	0.98	81	19.5	-27.3	0.15	7.9
CREF Growth R3	3.1	17.2	-0.7	1.03	99	15.7	-22.9	0.08	1.7
Russell 1000 Growth TR USD	3.8	16.6	0.0	1.00	100	16.3	-22.8	0.13	0.0

Time Period Performance Analysis

Credit Buildup - Housing and Oil Boom

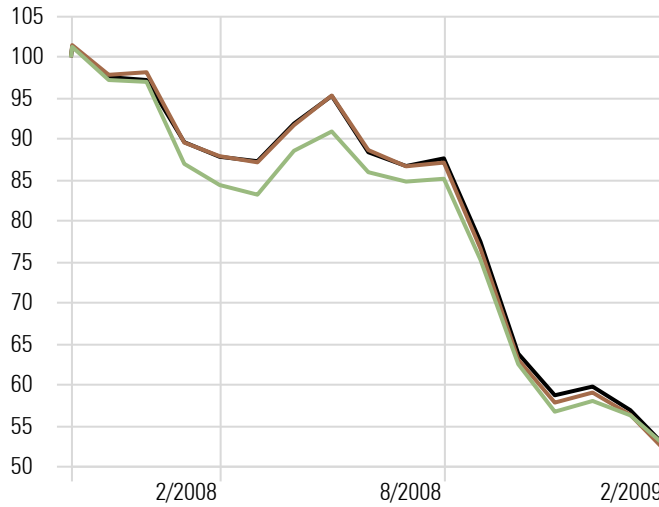
Time Period: 4/30/2003 to 9/30/2007



Wells Fargo Growth Inst 211 CREF Growth R3 177 Russell 1000 Growth TR USD 167

Credit Crunch - Financial Crisis

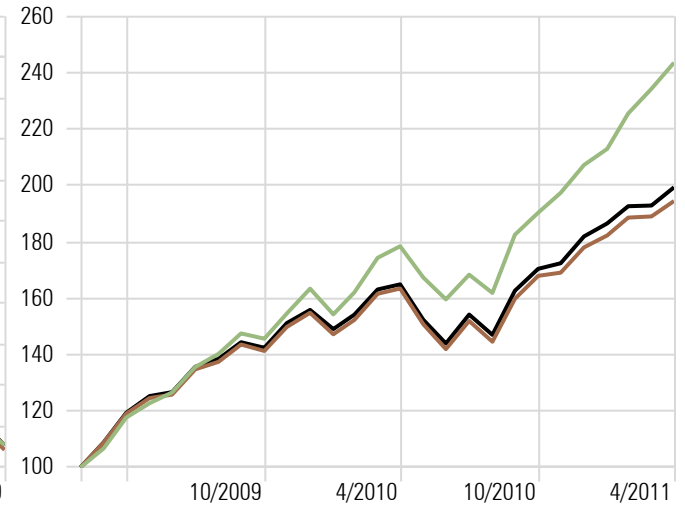
Time Period: 10/31/2007 to 2/28/2009



Wells Fargo Growth Inst 53 CREF Growth R3 52 Russell 1000 Growth TR USD 53

Financial Crisis Recovery - QE1&2

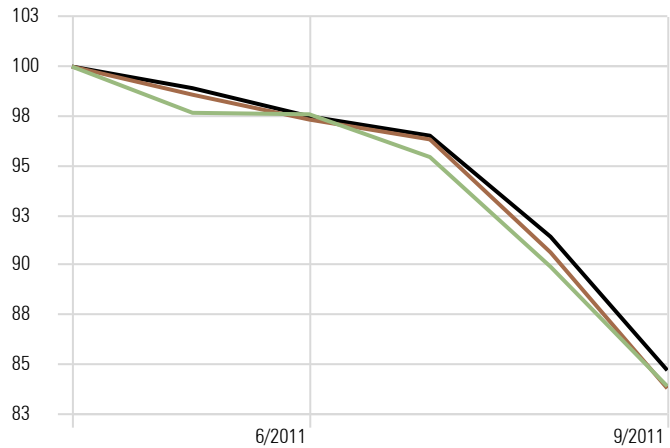
Time Period: 3/1/2009 to 4/30/2011



Wells Fargo Growth Inst 243.5 CREF Growth R3 194.5 Russell 1000 Growth TR USD 199.3

Double Dip

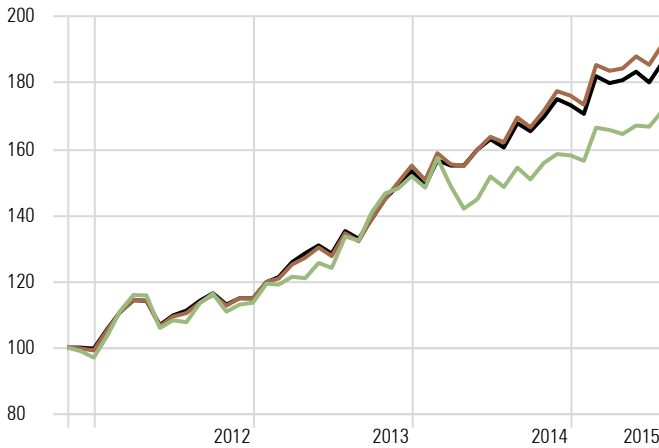
Time Period: 5/1/2011 to 9/30/2011



Wells Fargo Growth Inst 83.9 CREF Growth R3 83.8 Russell 1000 Growth TR USD 84.7

US Recovery Continues - Global Markets Lag

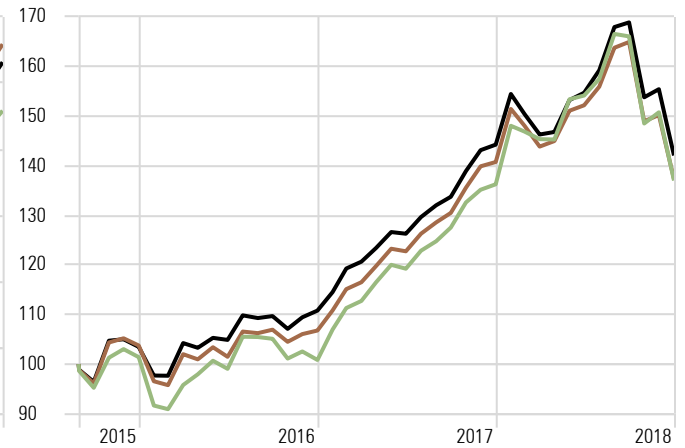
Time Period: 11/1/2011 to 7/31/2015



Wells Fargo Growth Inst 171.7 CREF Growth R3 191.8 Russell 1000 Growth TR USD 186.3

Global Economic Strength

Time Period: 8/31/2015 to 12/31/2018



Wells Fargo Growth Inst 137.0 CREF Growth R3 137.3 Russell 1000 Growth TR USD 142.1

Wells Fargo Growth Inst

CREF Growth R3

Russell 1000 Growth TR USD

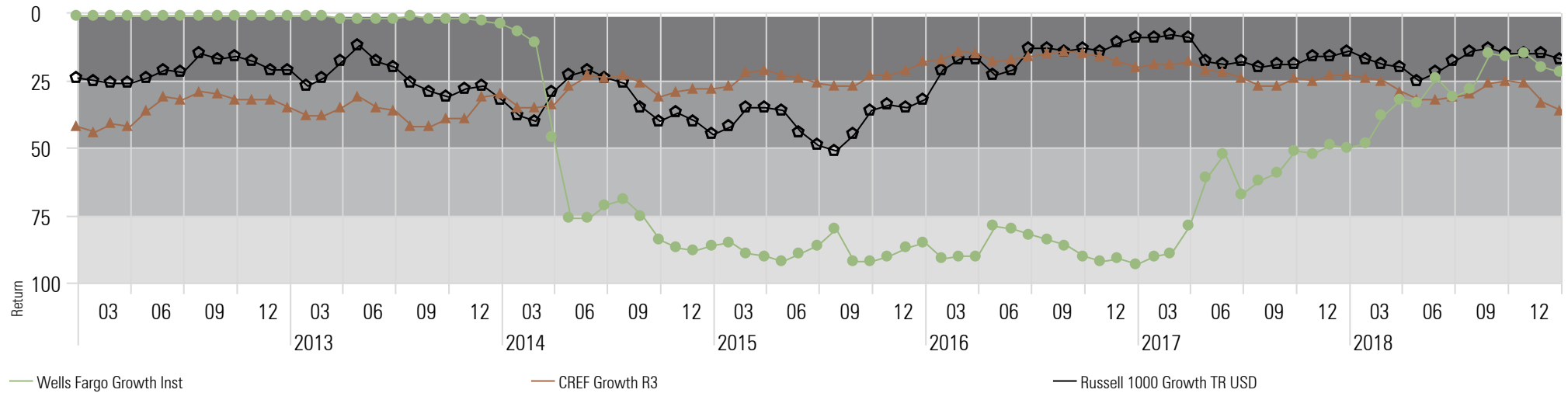
Rolling Peer Group Rankings

Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

Rolling Window: 3 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

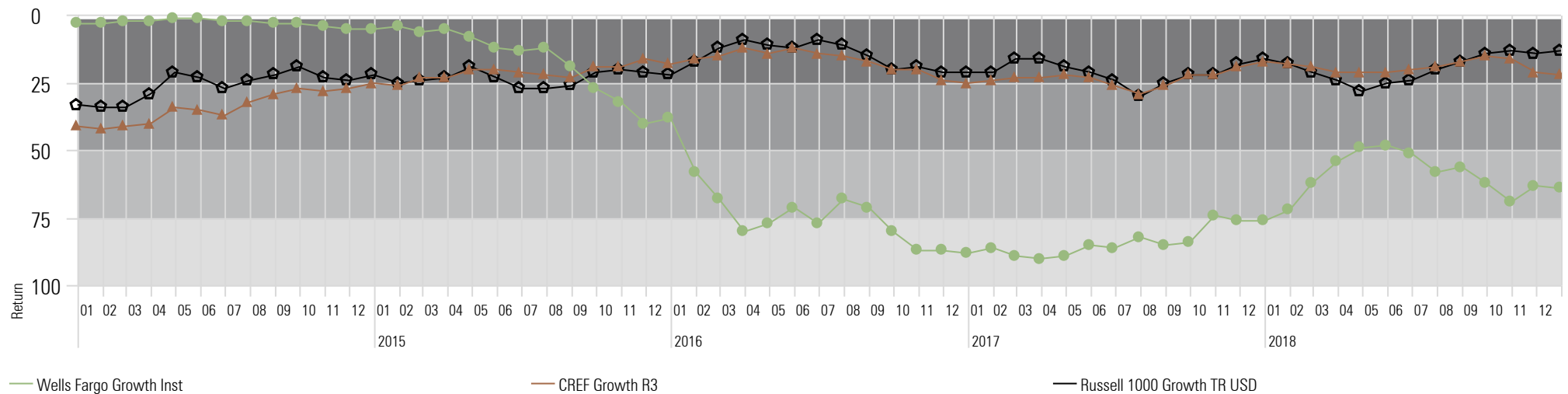


Rolling Returns (Descending Rank)

Time Period: 1/1/2009 to 12/31/2018

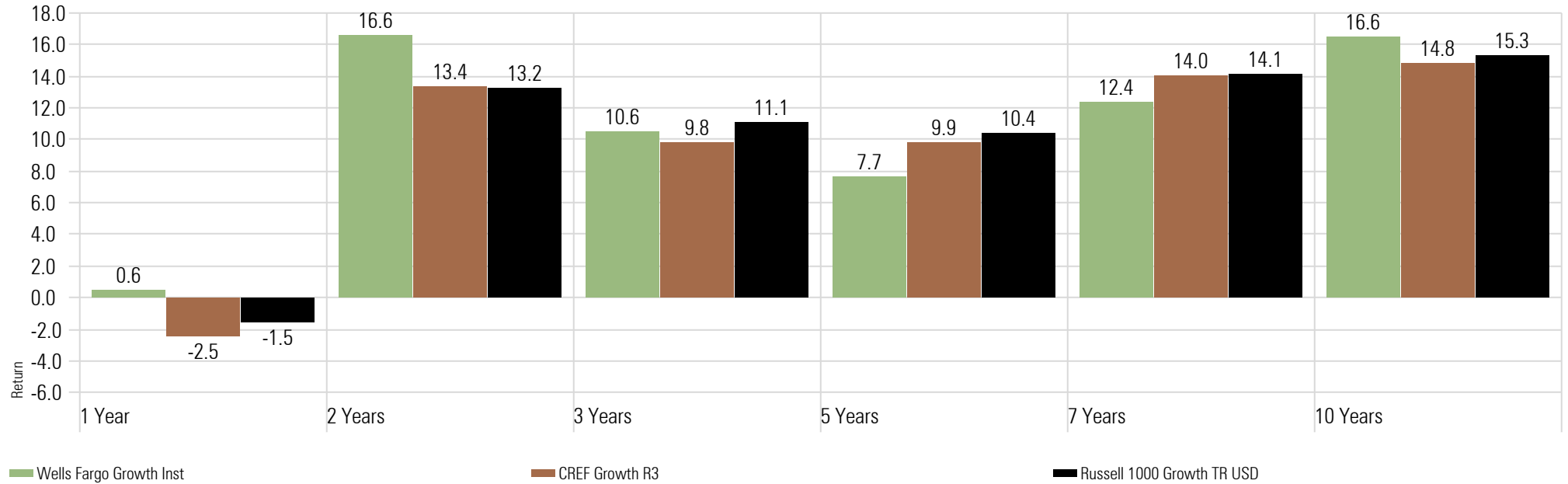
Rolling Window: 5 Years 1 Month shift

1st to 25th Percentile 26th to Median 51st to 75th Percentile 76th to 100th Percentile

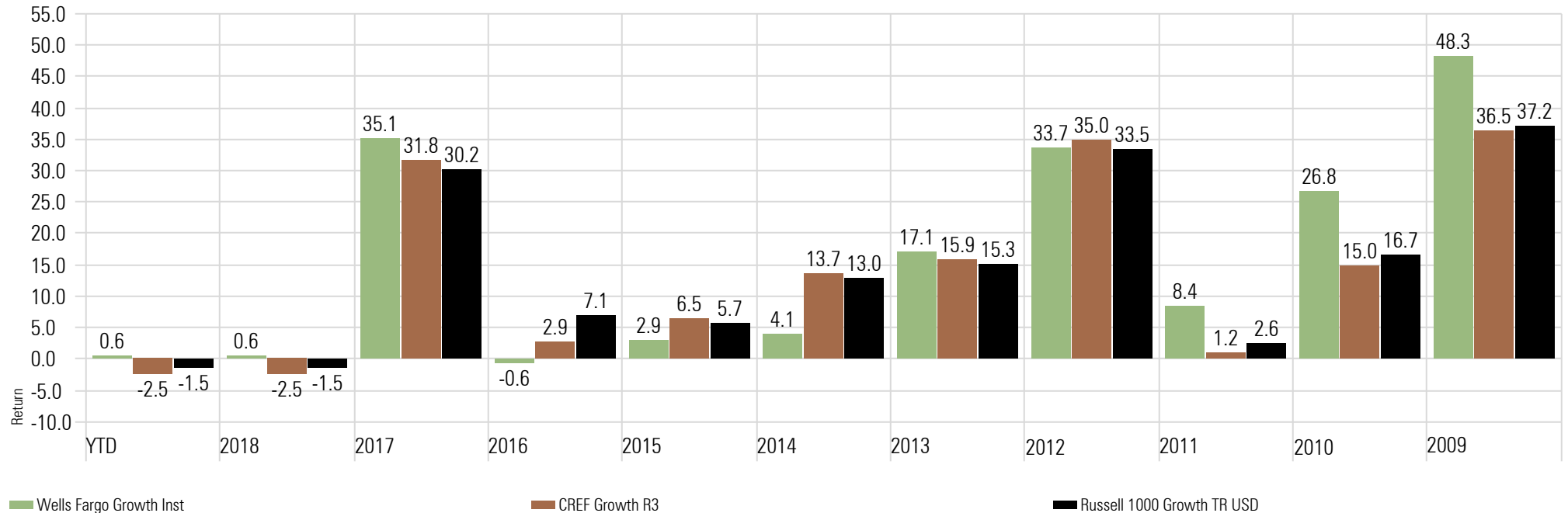


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Large Growth																		
Wells Fargo Growth Inst	-17.5	84	-1.61	0.6	25	2.07	0.6	25	2.07	10.6	22	-0.59	7.7	64	-2.72	16.6	8	1.26
Russell 1000 Growth TR USD	-15.9			-1.5			-1.5			11.1			10.4			15.3		
Average	-15.5			-2.0			-2.0			9.0			8.2			13.8		
Large Growth																		
CREF Growth R3	-16.8	84	-0.89	-2.5	70	-0.95	-2.5	70	-0.95	9.8	56	-1.36	9.9	38	-0.53	14.8	38	-0.48
Russell 1000 Growth TR USD	-15.9			-1.5			-1.5			11.1			10.4			15.3		
Average	-15.3			-1.3			-1.3			9.8			9.2			14.5		

Performance Summary - Calendar Year Periods

	Return			Return			Return			Return			Return			Return					
	2018	Rank	+/- Idx	2017	Rank	+/- Idx	2016	Rank	+/- Idx	2015	Rank	+/- Idx	2014	Rank	+/- Idx	2013	Rank	+/- Idx	2012	Rank	+/- Idx
Large Growth																					
Wells Fargo Growth Inst	0.6	25	2.07	35.1	9	4.93	-0.6	81	-7.63	2.9	61	-2.73	4.1	94	-8.93	33.7	59	0.23	17.1	34	1.88
Russell 1000 Growth TR USD	-1.5			30.2			7.1			5.7			13.0			33.5			15.3		
Average	-2.0			28.3			3.2			4.1			10.3			34.7			15.8		
Large Growth																					
CREF Growth R3	-2.5	70	-0.95	31.8	36	1.62	2.9	44	-4.16	6.5	43	0.80	13.7	17	0.61	35.0	52	1.52	15.9	58	0.61
Russell 1000 Growth TR USD	-1.5			30.2			7.1			5.7			13.0			33.5			15.3		
Average	-1.3			30.1			3.2			5.8			11.0			35.5			16.6		



The Kansas Board of Regents Mandatory Retirement Plan

Voya Investment Manager Searches

Core Bond Index Comparison

As of 2/28/2019



US Fund Intermediate-Term Bond

Fidelity® US Bond Index

Investment Strategy

The investment seeks to provide investment results that correspond to the aggregate price and interest performance of the debt securities in the Bloomberg Barclays U.S. Aggregate Bond Index. The fund normally invests at least 80% of the fund's assets in bonds included in the Bloomberg Barclays U.S. Aggregate Bond Index. Its manager uses statistical sampling techniques based on duration, maturity, interest rate sensitivity, security structure, and credit quality to attempt to replicate the returns of the Bloomberg Barclays U.S. Aggregate Bond Index using a smaller number of securities. The fund invests in Fidelity's central funds.

Manager Biography

Brandon Bettencourt since 5/19/2014

Jay Small since 4/30/2015

Fidelity® US Bond Index - Operations

Inception Date	5/4/2011
Fund Size (\$mm)	43,171
Annual Report Net Expense Ratio	0.03
Prospectus Net Expense Ratio	0.03
Prospectus Gross Expense Ratio	0.03
Ticker	FXNAX
Manager Tenure (Longest)	4.83
Manager Tenure (Average)	4.38
Morningstar Inst Cat	Intermediate Investment Grade (4-6)

Other Notes:

None

Vanguard Total Bond Market Index Adm

Investment Strategy

The investment seeks the performance of Bloomberg Barclays U.S. Aggregate Float Adjusted Index. Bloomberg Barclays U.S. Aggregate Float Adjusted Index represents a wide spectrum of public, investment-grade, taxable, fixed income securities in the United States-including government, corporate, and international dollar-denominated bonds, as well as mortgage-backed and asset-backed securities-all with maturities of more than 1 year. All of its investments will be selected through the sampling process, and at least 80% of its assets will be invested in bonds held in the index.

Manager Biography

Joshua C. Barrickman since 2/22/2013

Vanguard Total Bond Market Index Adm - Operations

Inception Date	11/12/2001
Fund Size (\$mm)	209,519
Annual Report Net Expense Ratio	0.05
Prospectus Net Expense Ratio	0.05
Prospectus Gross Expense Ratio	0.05
Ticker	VBTLX
Manager Tenure (Longest)	6.08
Manager Tenure (Average)	6.08
Morningstar Inst Cat	Intermediate Investment Grade (4-6)

Other Notes:

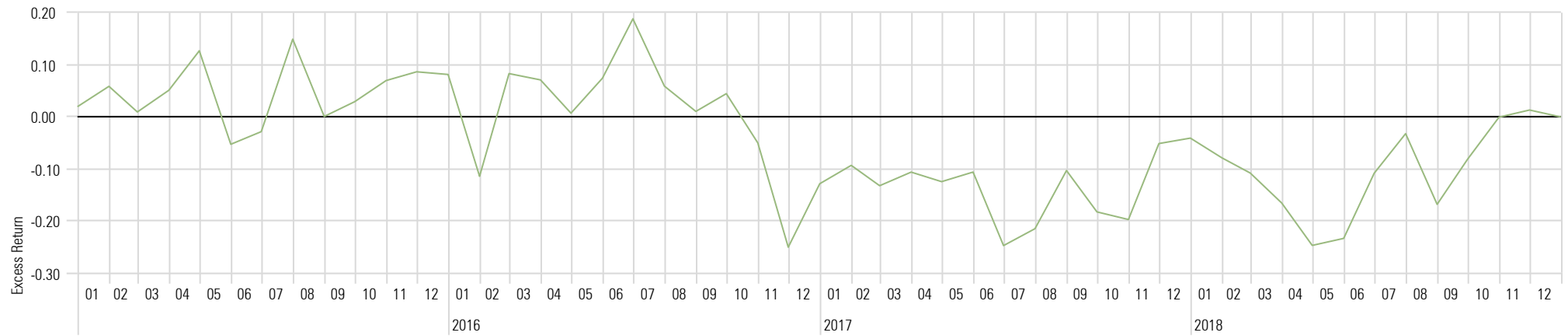
None

Risk/Return Performance Analysis

1 Year Relative Rolling Returns - Rel to BBgBarc US Agg Bond TR USD

Time Period: 1/1/2014 to 12/31/2018

Rolling Window: 1 Year 1 Month shift



● Fidelity® US Bond Index

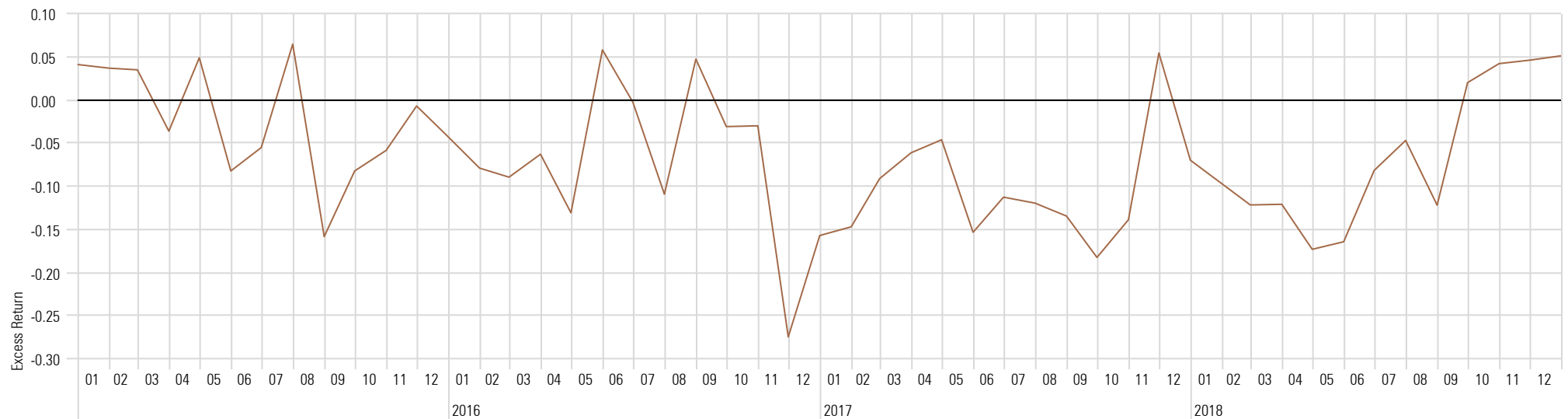
● Vanguard Total Bond Market Index Adm

⬠ BBgBarc US Agg Bond TR USD

1 - Year Relative Rolling Returns - Rel to BBgBarc US Agg Float Adj TR USD

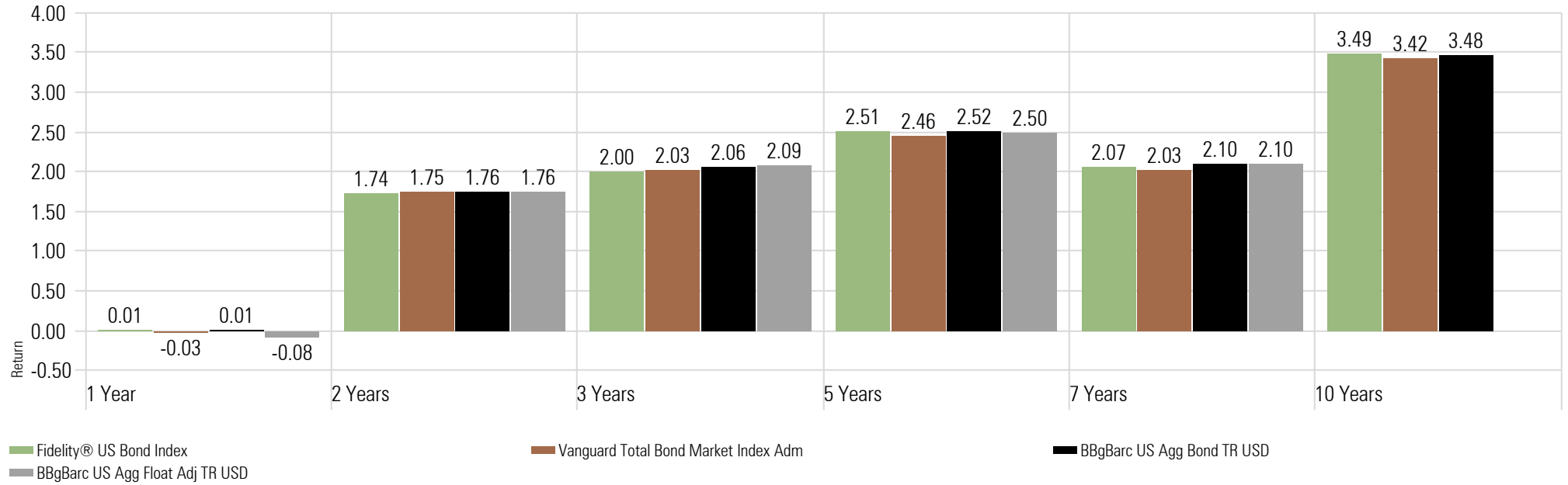
Time Period: 1/1/2014 to 12/31/2018

Rolling Window: 1 Year 1 Month shift

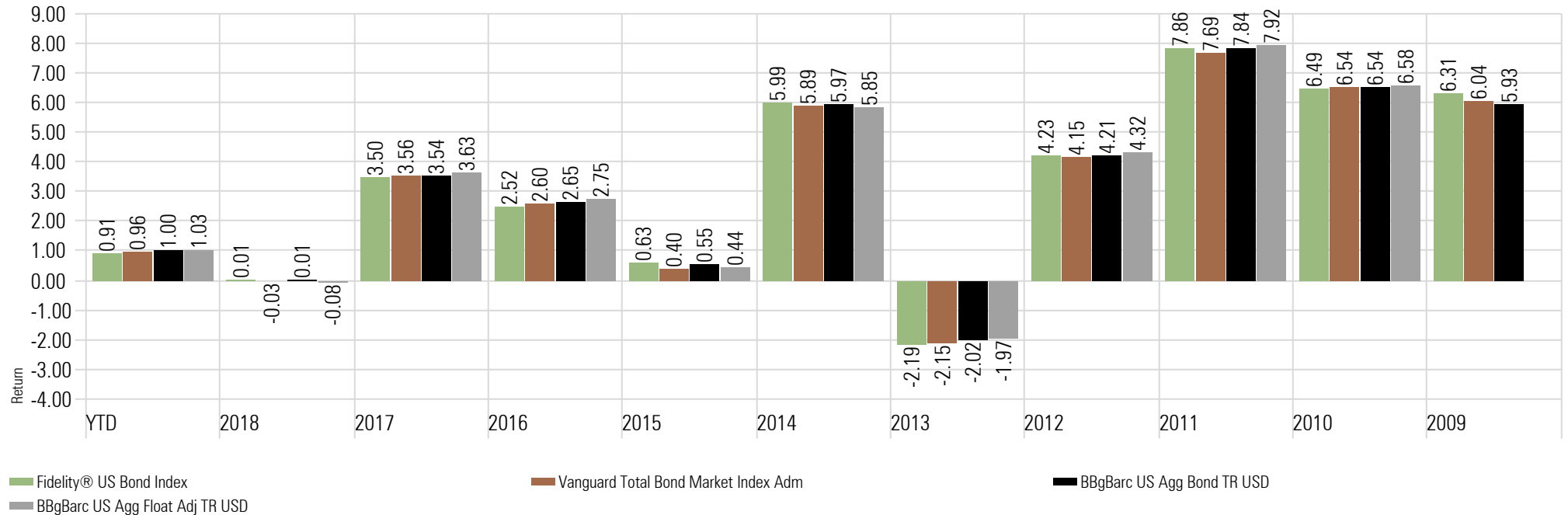


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Intermediate-Term Bond																		
Fidelity® US Bond Index	1.70	11	0.06	0.01	24	0.00	0.01	24	0.00	2.00	56	-0.06	2.51	36	-0.01	3.49	81	0.01
Vanguard Total Bond Market Index Adm	1.61	16	-0.03	-0.03	26	-0.04	-0.03	26	-0.04	2.03	55	-0.03	2.46	40	-0.06	3.42	83	-0.05
BBgBarc US Agg Bond TR USD	1.64			0.01			0.01			2.06			2.52			3.48		
Average	0.86			-0.57			-0.57			2.16			2.30			4.45		

Performance Summary - Calendar Year Periods

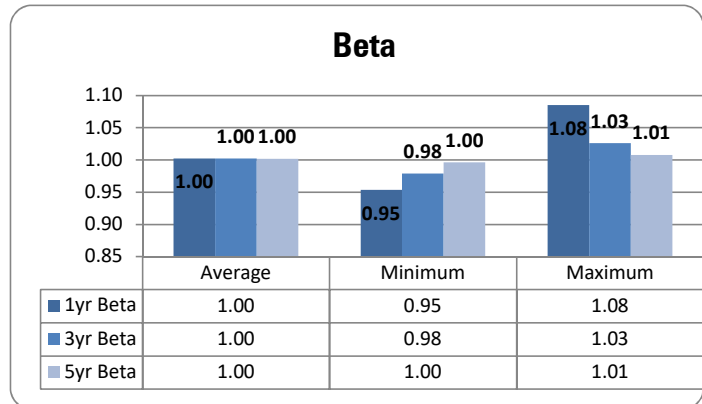
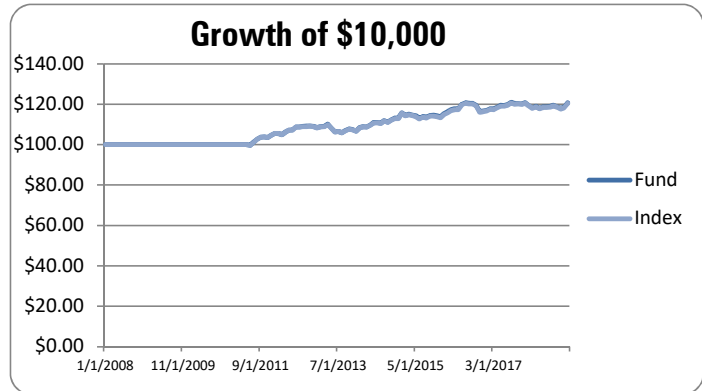
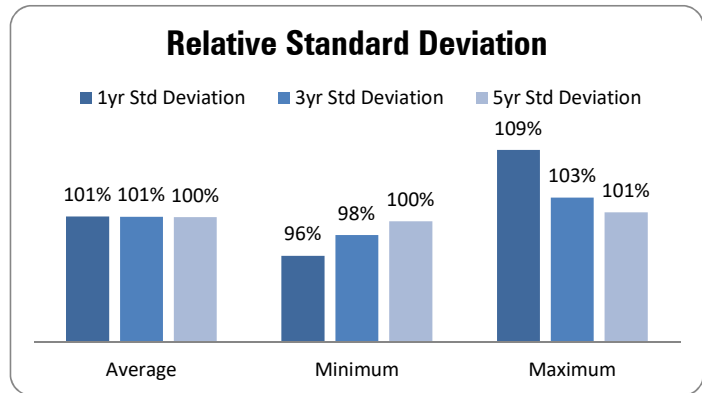
	Return			Return			Return			Return			Return			Return					
	2018	Rank	+/- Idx	2017	Rank	+/- Idx	2016	Rank	+/- Idx	2015	Rank	+/- Idx	2014	Rank	+/- Idx	2013	Rank	+/- Idx	2012	Rank	+/- Idx
Intermediate-Term Bond																					
Fidelity® US Bond Index	0.01	24	0.00	3.50	59	-0.04	2.52	69	-0.13	0.63	18	0.08	5.99	31	0.02	-2.19	72	-0.17	4.23	86	0.02
Vanguard Total Bond Market Index Adm	-0.03	26	-0.04	3.56	57	0.02	2.60	65	-0.05	0.40	30	-0.15	5.89	34	-0.07	-2.15	71	-0.12	4.15	86	-0.06
BBgBarc US Agg Bond TR USD	0.01			3.54			2.65			0.55			5.97			-2.02			4.21		
Average	-0.57			3.83			3.33			-0.23			5.37			-1.30			6.94		

Fund Name	Comparative Index/Fund
Fidelity® US Bond Index	100% Vanguard Total Bond Market Index Adm

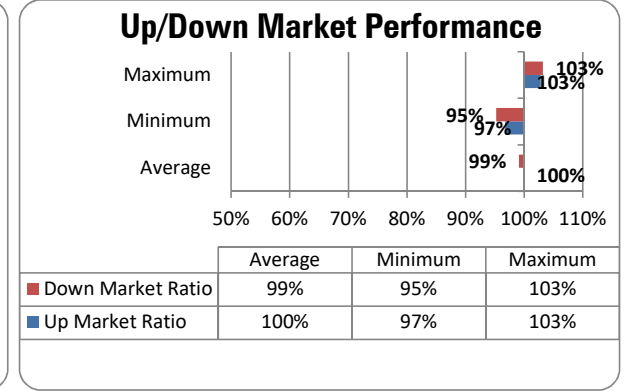
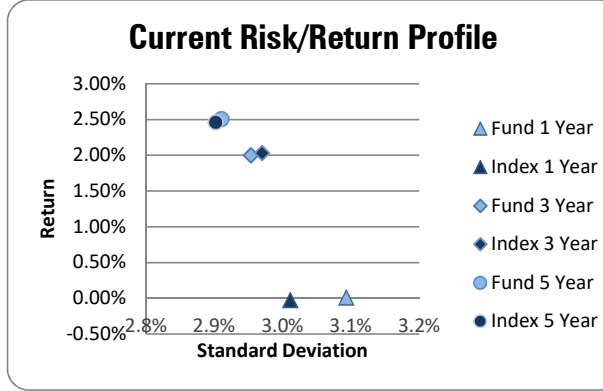
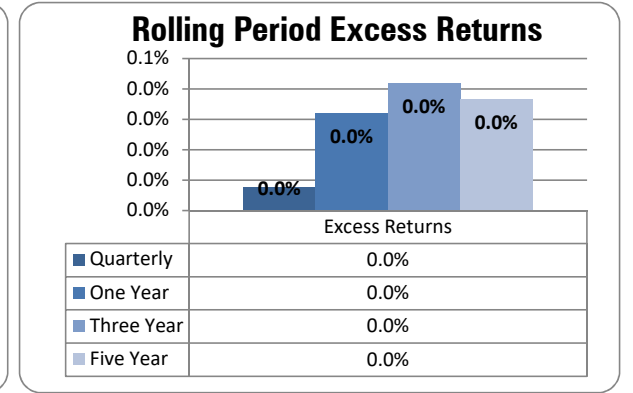
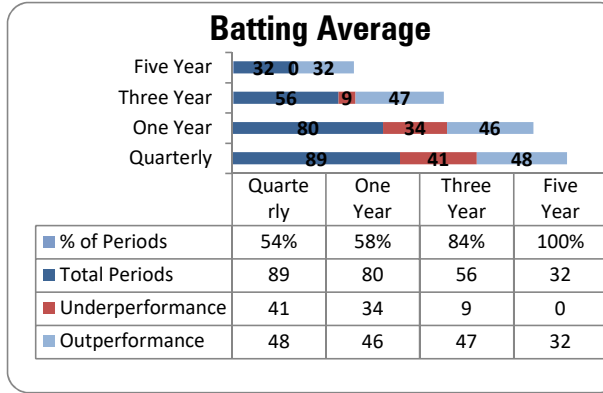
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Fidelity® US Bond Index	0.01%	0.04%	3.09%	1.70%	-1.60%
100% Vanguard Total Bond Market I	-0.03%		3.01%	1.61%	-1.66%
Latest Three Years					
Fidelity® US Bond Index	2.00%	-0.01%	2.95%	3.09%	-3.28%
100% Vanguard Total Bond Market I	2.03%		2.97%	3.09%	-3.49%
Latest Five Years					
Fidelity® US Bond Index	2.51%	0.05%	2.91%	3.09%	-3.28%
100% Vanguard Total Bond Market I	2.46%		2.90%	3.10%	-3.49%
Latest Ten Years					
Fidelity® US Bond Index				3.95%	-3.28%
100% Vanguard Total Bond Market I				4.01%	-3.49%

Treasury Inflation-Protected Securities Investment Search

As of 2/28/2019



US Fund Inflation-Protected Bond

PIMCO Real Return Instl

Investment Strategy

The investment seeks maximum real return, consistent with preservation of capital and prudent investment management. The fund normally invests at least 80% of its net assets in inflation-indexed bonds of varying maturities issued by the U.S. and non-U.S. governments, their agencies or instrumentalities, and corporations, which may be represented by forwards or derivatives such as options, futures contracts or swap agreements.

Manager Biography

Mihir P. Worah since 12/31/2007

Stephen A. Rodosky since 1/9/2019

American Funds Inflation Linked Bd R6

Investment Strategy

The investment seeks to provide inflation protection and income consistent with investment in inflation-linked securities. The fund seeks to provide inflation protection and income by investing primarily in inflation linked securities. Normally, at least 80% of the fund's assets will be invested in inflation linked bonds issued by U.S. and non-U.S. governments, their agencies or instrumentalities, and corporations. Inflation linked bonds are structured to protect against inflation by linking the bond's principal and interest payments to an inflation index so that principal and interest adjust to reflect changes in the index.

Manager Biography

David A. Hoag since 12/14/2012

Ritchie Tuazon since 11/1/2013

DFA Inflation-Protected Securities I

Investment Strategy

The investment seeks to provide inflation protection and earn current income consistent with inflation-protected securities. As a non-fundamental policy, under normal circumstances, the Portfolio will invest at least 80% of its net assets in inflation-protected securities. Inflation-protected securities (also known as inflation-indexed securities) are securities whose principal and/or interest payments are adjusted for inflation, unlike conventional debt securities that make fixed principal and interest payments.

Manager Biography

David A. Plecha since 9/18/2006

Joseph F. Kolerich since 2/28/2012

Alan R. Hutchison since 2/28/2016

Fidelity® Inflation-Prot Bd Index

Investment Strategy

The investment seeks to provide investment results that correspond to the total return of the inflation-protected sector of the United States Treasury market. The fund normally invests at least 80% of assets in inflation-protected debt securities included in the Bloomberg Barclays U.S. Treasury Inflation-Protected Securities (TIPS) Index (Series-L). It engages in transactions that have a leveraging effect on the fund, including investments in derivatives - such as swaps (interest rate, total return, and credit default) and futures contracts - and forward-settling securities, to adjust the fund's risk exposure.

Manager Biography

Brandon Bettencourt since 5/19/2014

Jay Small since 4/30/2015

PIMCO Real Return Instl - Operations

Inception Date	1/29/1997
Fund Size (\$mm)	9,630
Annual Report Net Expense Ratio	0.88
Prospectus Net Expense Ratio	0.88
Prospectus Gross Expense Ratio	0.88
Ticker	PRRIX
Manager Tenure (Longest)	11.25
Manager Tenure (Average)	5.71
Morningstar Institutional Category	Inflation-Protected Bond

Other Notes:

None

American Funds Inflation Linked Bd R6 - O

Inception Date	11/1/2013
Fund Size (\$mm)	5,109
Annual Report Net Expense Ratio	0.36
Prospectus Net Expense Ratio	0.36
Prospectus Gross Expense Ratio	0.36
Ticker	RILFX
Manager Tenure (Longest)	6.25
Manager Tenure (Average)	5.79
Morningstar Institutional Category	Inflation-Protected Bond

Other Notes:

None

DFA Inflation-Protected Securities I - Ope

Inception Date	9/18/2006
Fund Size (\$mm)	4,564
Annual Report Net Expense Ratio	0.12
Prospectus Net Expense Ratio	0.12
Prospectus Gross Expense Ratio	0.12
Ticker	DIPSX
Manager Tenure (Longest)	12.50
Manager Tenure (Average)	7.56
Morningstar Institutional Category	Inflation-Protected Bond

Other Notes:

None

Fidelity® Inflation-Prot Bd Index - Operati

Inception Date	5/16/2012
Fund Size (\$mm)	4,722
Annual Report Net Expense Ratio	0.05
Prospectus Net Expense Ratio	0.05
Prospectus Gross Expense Ratio	0.05
Ticker	FIPDX
Manager Tenure (Longest)	4.83
Manager Tenure (Average)	4.38
Morningstar Institutional Category	Inflation-Protected Bond

Other Notes:

None

Portfolio Analysis

PIMCO Real Return Instl

Style Allocation

Portfolio Date: 12/31/2018

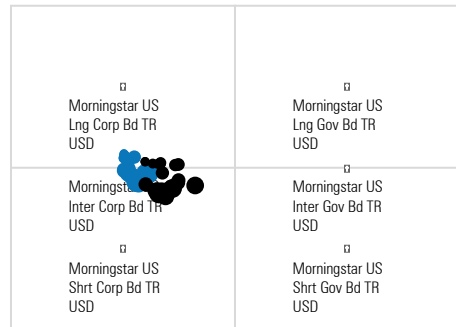
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	90.0
			Credit Qual AA %	3.0
			Credit Qual A %	4.0
			Credit Qual BBB %	0.0
			Credit Qual BB %	1.0
			Credit Qual B %	1.0
			Credit Qual Below B %	1.0
			Credit Qual Not Rated %	0.0

Portfolio Data

Average Credit Quality	
Average Eff Duration	6.7
Modified Duration	6.7
Average Eff Maturity	6.3
Average Coupon	2.3
Average Price	105.6
SEC Yield	-2.4

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



American Funds Inflation Linked Bd R6

Style Allocation

Portfolio Date: 12/31/2018

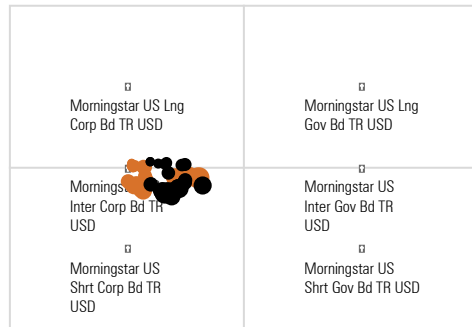
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	93.8
			Credit Qual AA %	1.1
			Credit Qual A %	2.8
			Credit Qual BBB %	2.4
			Credit Qual BB %	0.0
			Credit Qual B %	0.0
			Credit Qual Below B %	0.0
			Credit Qual Not Rated %	0.0

Portfolio Data

Average Credit Quality	AA
Average Eff Duration	5.9
Modified Duration	
Average Eff Maturity	
Average Coupon	0.9
Average Price	98.0
SEC Yield	-2.8

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



DFA Inflation-Protected Securities I

Style Allocation

Portfolio Date: 1/31/2019

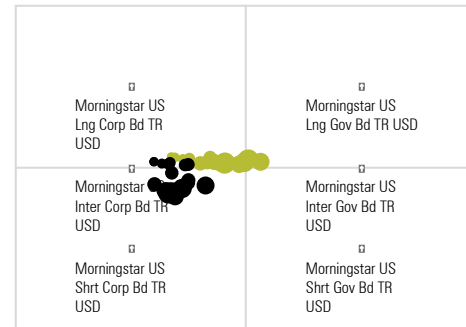
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	100.0
			Credit Qual AA %	0.0
			Credit Qual A %	0.0
			Credit Qual BBB %	0.0
			Credit Qual BB %	0.0
			Credit Qual B %	0.0
			Credit Qual Below B %	0.0
			Credit Qual Not Rated %	0.0

Portfolio Data

Average Credit Quality	AAA
Average Eff Duration	7.4
Modified Duration	
Average Eff Maturity	7.9
Average Coupon	1.4
Average Price	105.7
SEC Yield	0.7

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



Fidelity® Inflation-Prot Bd Index

Style Allocation

Portfolio Date: 1/31/2019

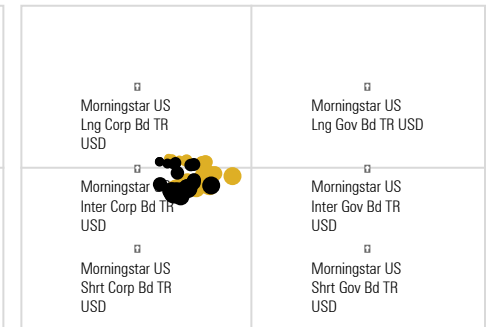
Morningstar Fixed Income Style Box™			Credit Quality	%
Ltd	Mod	Ext		
			Credit Qual AAA %	100.0
			Credit Qual AA %	0.0
			Credit Qual A %	0.0
			Credit Qual BBB %	0.0
			Credit Qual BB %	0.0
			Credit Qual B %	0.0
			Credit Qual Below B %	0.0
			Credit Qual Not Rated %	0.0

Portfolio Data

Average Credit Quality	AAA
Average Eff Duration	5.1
Modified Duration	
Average Eff Maturity	
Average Coupon	0.8
Average Price	101.1
SEC Yield	-3.3

Returns-Based Style Map

Time Period: 3/1/2014 to 2/28/2019



Sector Exposure and Top 15 Holdings

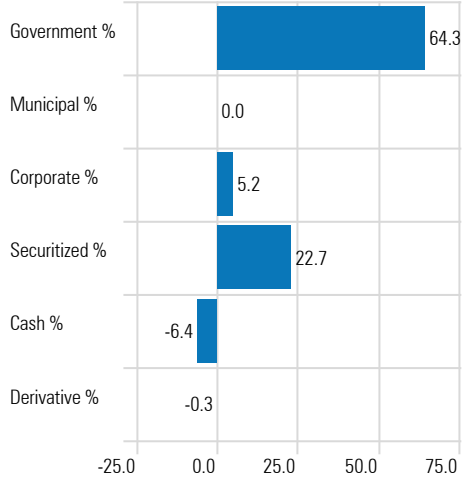
PIMCO Real Return Instl

American Funds Inflation Linked Bd R6

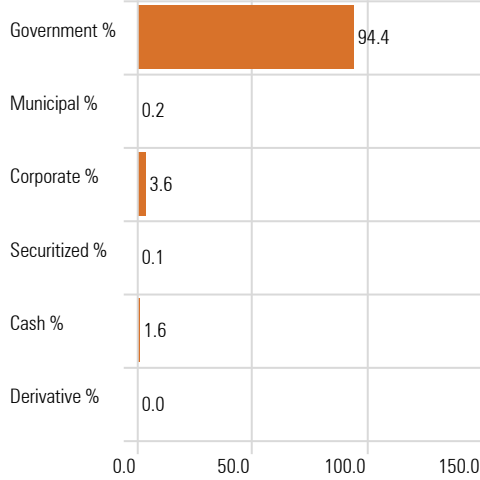
DFA Inflation-Protected Securities I

Fidelity® Inflation-Prot Bd Index

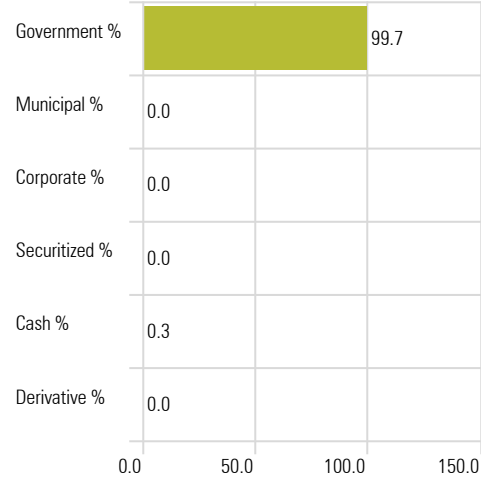
Sector Allocation



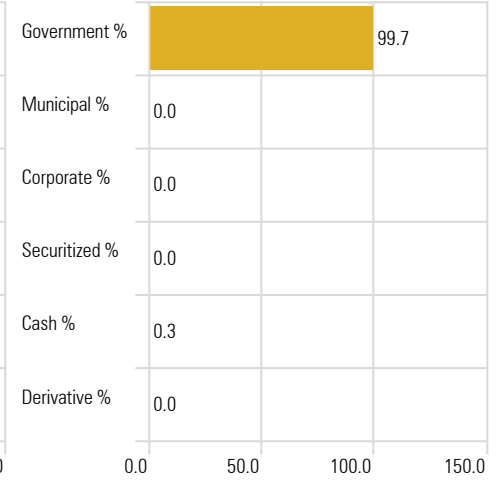
Sector Allocation



Sector Allocation



Sector Allocation



■ PIMCO Real Return Instl

■ American Funds Inflation Linked Bd R6

■ DFA Inflation-Protected Securities I

■ Fidelity® Inflation-Prot Bd Index

PIMCO Real Return Instl - Top Holdings

Portfolio Date: 12/31/2018

Security	Portfolio Weighting %
90 Day Eurodollar Future June19	14.7
Federal National Mortgage Association 4%	8.9
United States Treasury Bonds 3.62%	8.7
United States Treasury Notes 0.62%	8.3
United States Treasury Bonds 3.88%	6.9
Federal National Mortgage Association 3.5%	6.6
United States Treasury Bonds 2.38%	6.4
United States Treasury Notes 0.12%	5.2
United States Treasury Bonds 2.5%	4.8
United States Treasury Notes 0.25%	4.8
Irs Usd 2.25000 12/20/17-5y Cme	4.6
United States Treasury Bonds 1.38%	4.5
United States Treasury Notes 0.12%	4.1
United States Treasury Notes 0.12%	3.0
United States Treasury Notes 0.62%	2.9

American Funds Inflation Linked Bd R6 - Top Holdings

Portfolio Date: 12/31/2018

Security	Portfolio Weighting %
United States Treasury Notes 0.38%	9.5
United States Treasury Notes 0.75%	7.6
United States Treasury Notes 0.12%	6.1
United States Treasury Bonds 1%	5.4
United States Treasury Notes 0.12%	5.4
United States Treasury Notes 0.25%	5.3
United States Treasury Notes 0.5%	5.2
United States Treasury Bonds 2.38%	4.4
United States Treasury Notes 0.38%	4.0
United States Treasury Notes 0.62%	3.6
United States Treasury Bonds 0.88%	3.1
United States Treasury Bonds 2%	2.9
United States Treasury Notes 0.12%	2.6
United States Treasury Bonds 0.75%	2.2
United States Treasury Notes 0.62%	2.2

DFA Inflation-Protected Securities I - Top Holdings

Portfolio Date: 1/31/2019

Security	Portfolio Weighting %
United States Treasury Notes 0.38%	11.4
United States Treasury Notes 0.38%	11.0
United States Treasury Notes 0.62%	10.1
United States Treasury Notes 0.12%	8.8
United States Treasury Notes 0.62%	8.2
United States Treasury Notes 0.38%	6.9
United States Treasury Notes 0.12%	6.4
United States Treasury Notes 0.12%	6.1
United States Treasury Notes 0.38%	6.1
United States Treasury Bonds 1.75%	6.0
United States Treasury Bonds 3.62%	5.9
United States Treasury Bonds 2.38%	5.2
United States Treasury Bonds 2.5%	5.0
United States Treasury Bonds 3.38%	2.2
United States Treasury Notes 0.5%	2.2

Fidelity® Inflation-Prot Bd Index - Top Holdings

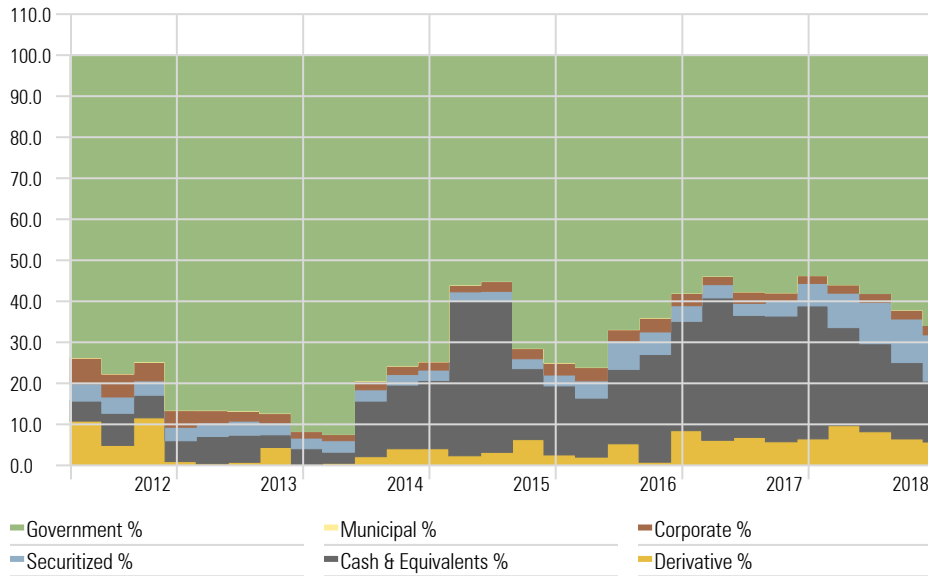
Portfolio Date: 1/31/2019

Security	Portfolio Weighting %
United States Treasury Notes 0.12%	4.4
United States Treasury Notes 0.12%	3.8
United States Treasury Notes 0.62%	3.7
United States Treasury Notes 0.12%	3.7
United States Treasury Notes 0.62%	3.7
United States Treasury Notes 0.38%	3.7
United States Treasury Notes 0.12%	3.7
United States Treasury Notes 0.12%	3.7
United States Treasury Notes 0.38%	3.6
United States Treasury Notes 0.25%	3.6
United States Treasury Notes 0.12%	3.5
United States Treasury Notes 0.12%	3.5
United States Treasury Notes 0.62%	3.3
United States Treasury Notes 0.62%	3.3
United States Treasury Notes 1.12%	3.1

Historical Sector Exposure

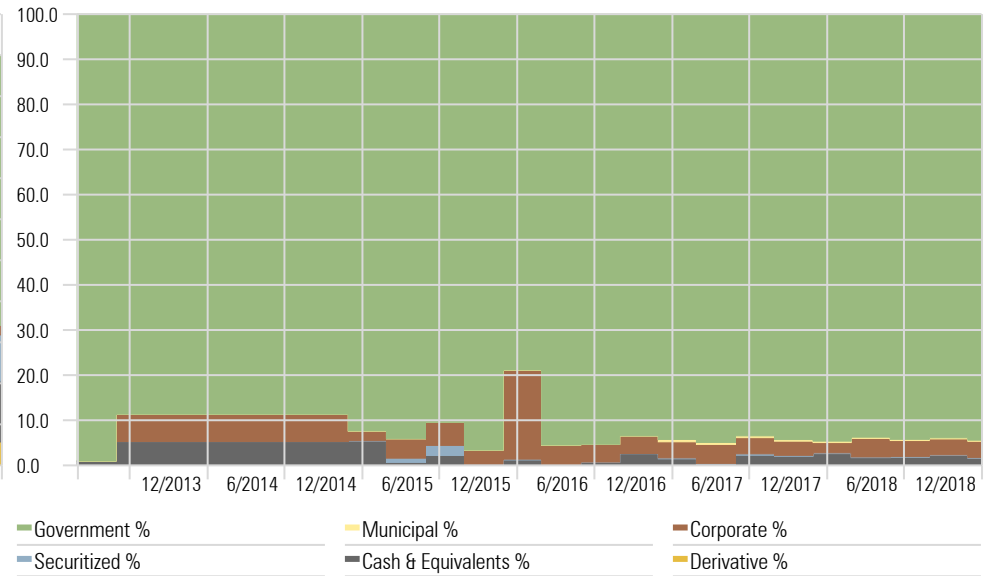
PIMCO Real Return Instl - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 12/31/2018



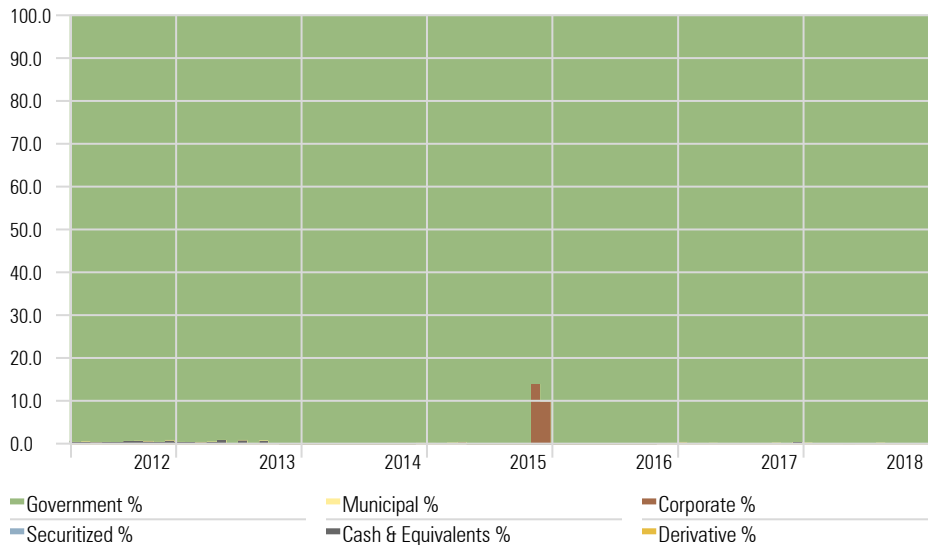
American Funds Inflation Linked Bd R6 - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2013 to 12/31/2018



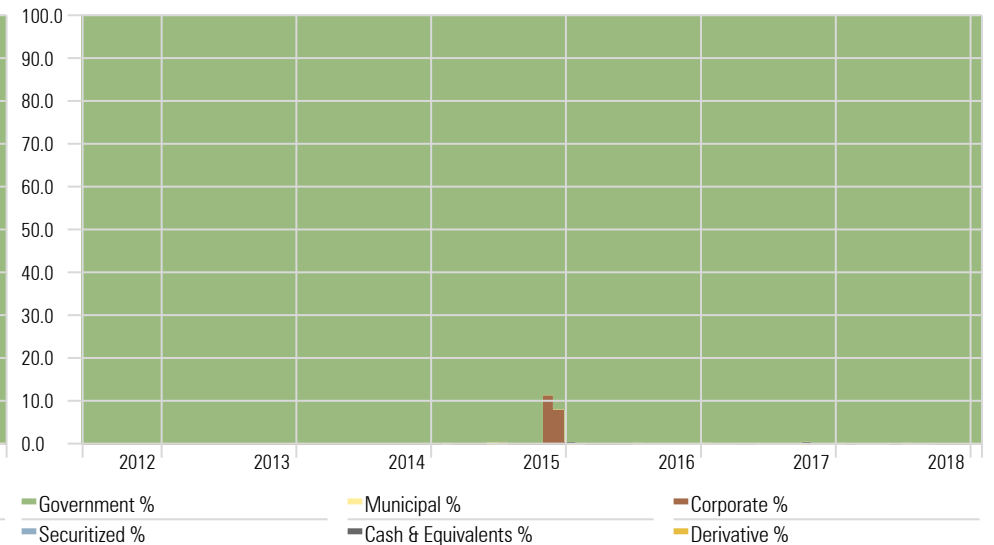
DFA Inflation-Protected Securities I - Fixed-Inc Super Sectors (Morningstar)

Time Period: 3/1/2012 to 1/31/2019



Fidelity® Inflation-Prot Bd Index - Fixed-Inc Super Sectors (Morningstar)

Time Period: 6/1/2012 to 1/31/2019



Maturity and Coupon Breakdown

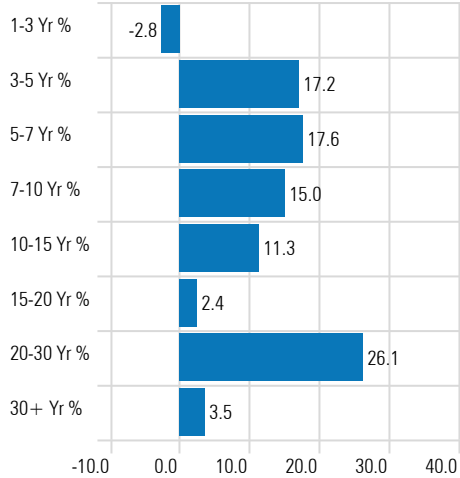
PIMCO Real Return Instl

American Funds Inflation Linked Bd R6

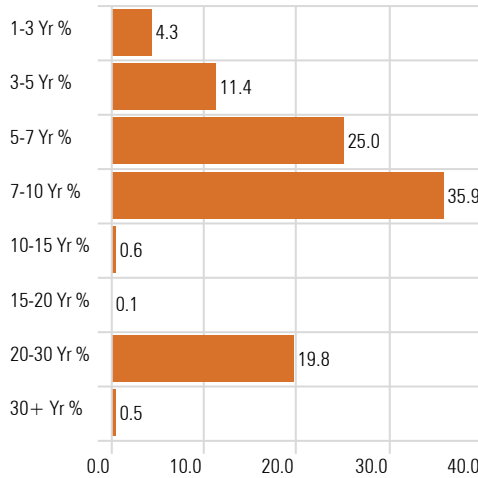
DFA Inflation-Protected Securities I

Fidelity® Inflation-Prot Bd Index

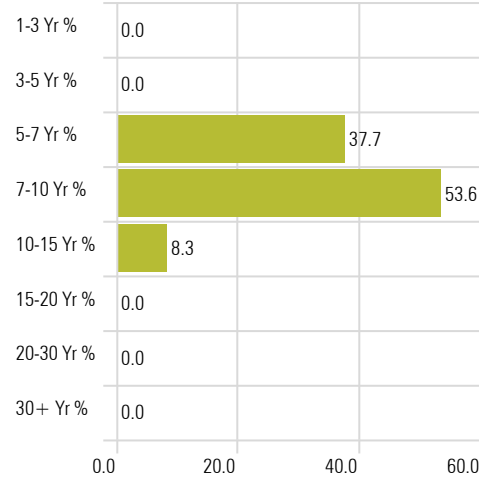
Maturity Breakdown



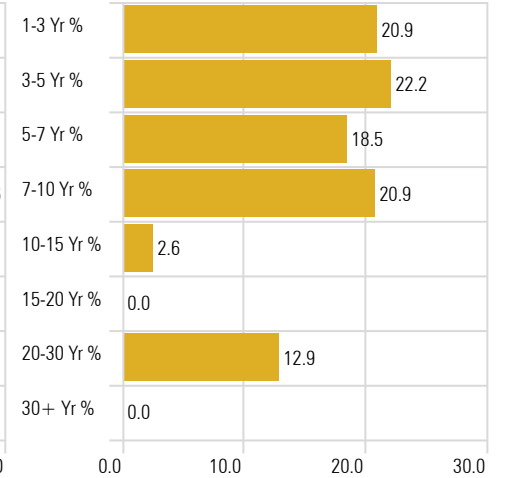
Maturity Breakdown



Maturity Breakdown



Maturity Breakdown



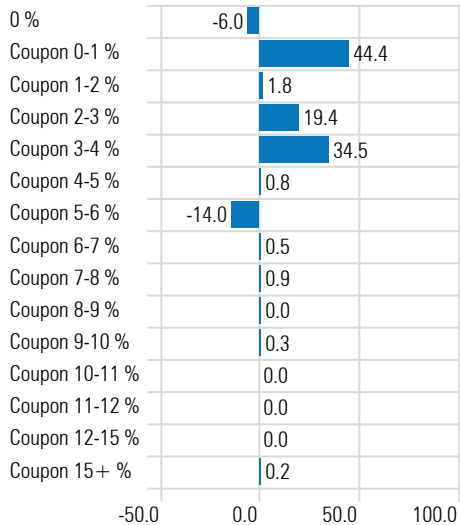
■ PIMCO Real Return Instl

■ American Funds Inflation Linked Bd R6

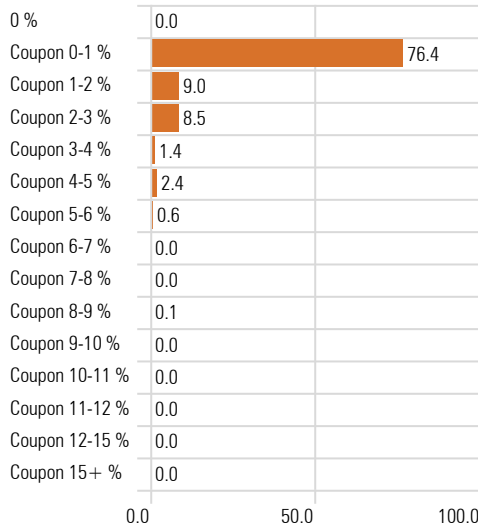
■ DFA Inflation-Protected Securities I

■ Fidelity® Inflation-Prot Bd Index

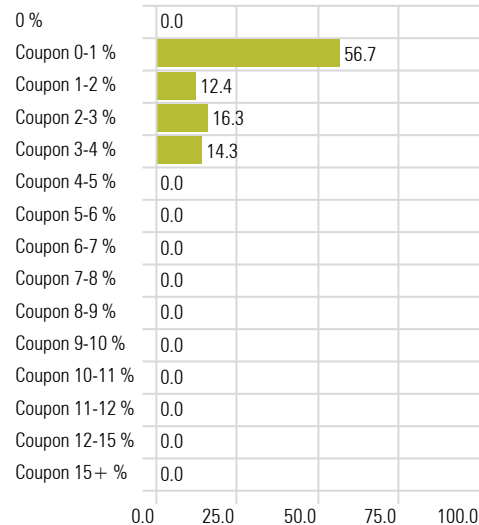
Coupon Breakdown



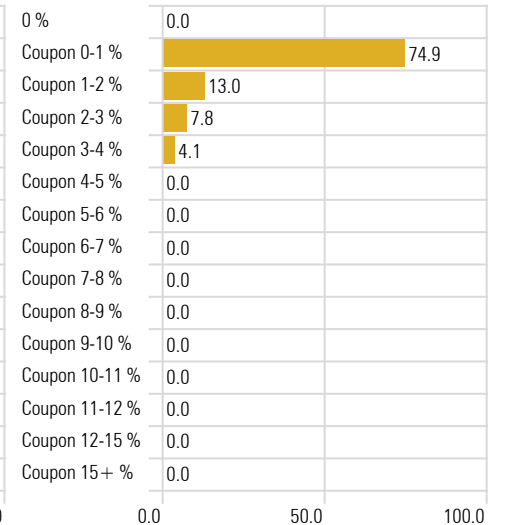
Coupon Breakdown



Coupon Breakdown



Coupon Breakdown



■ PIMCO Real Return Instl

■ American Funds Inflation Linked Bd R6

■ DFA Inflation-Protected Securities I

■ Fidelity® Inflation-Prot Bd Index

International Exposure

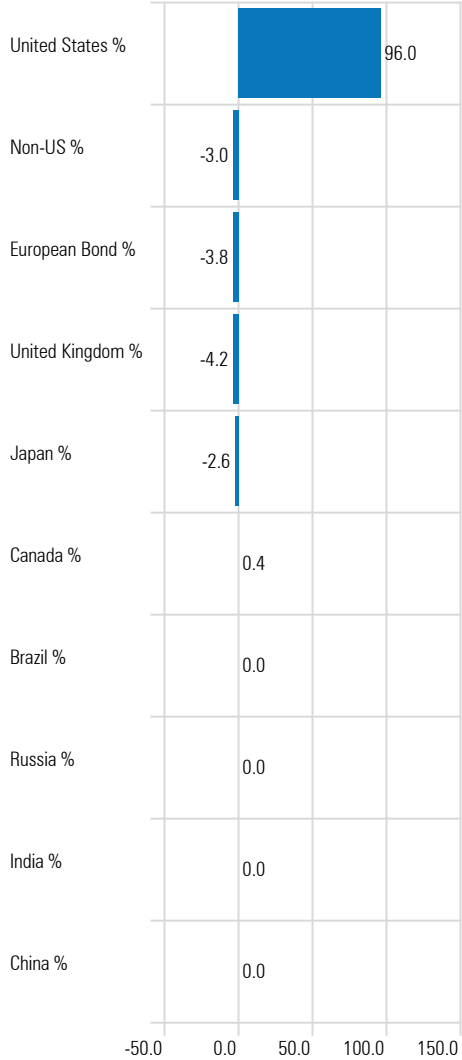
PIMCO Real Return Instl

American Funds Inflation Linked Bd R6

DFA Inflation-Protected Securities I

Fidelity® Inflation-Prot Bd Index

Regional Allocation



Regional Allocation



Regional Allocation



Regional Allocation



■ PIMCO Real Return Instl

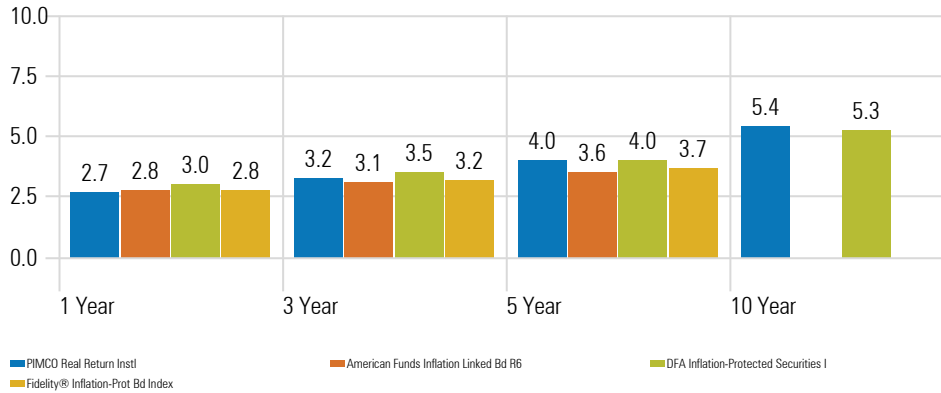
■ American Funds Inflation Linked Bd R6

■ DFA Inflation-Protected Securities I

■ Fidelity® Inflation-Prot Bd Index

Risk/Return Performance Analysis

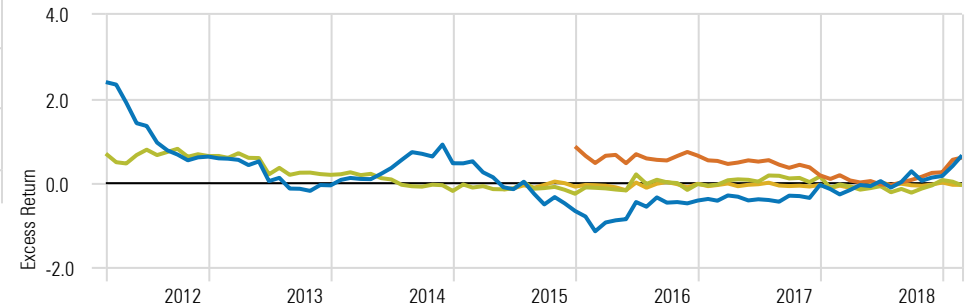
Standard Deviation



3 Year Relative Rolling Returns

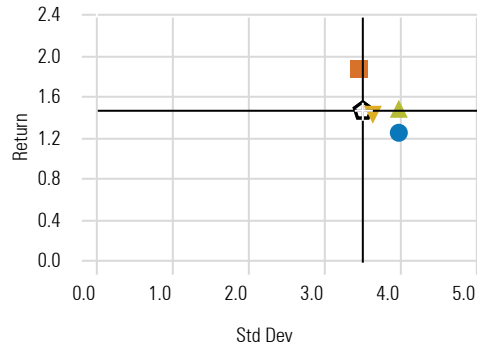
Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



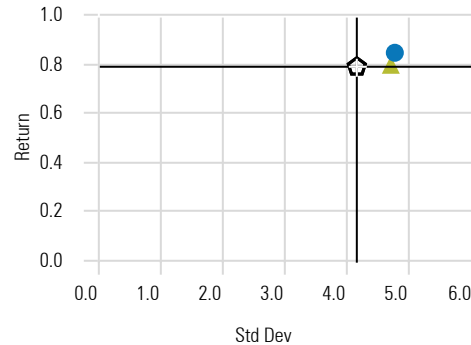
5 Year Risk-Reward

Time Period: 3/1/2014 to 2/28/2019



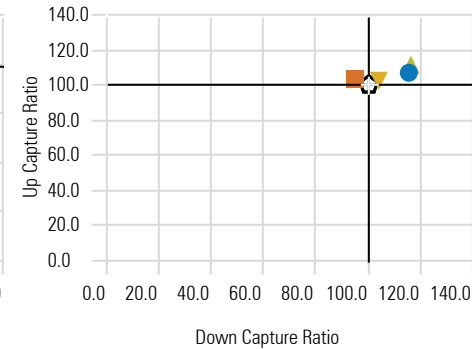
7 Year Risk-Reward

Time Period: 3/1/2012 to 2/28/2019



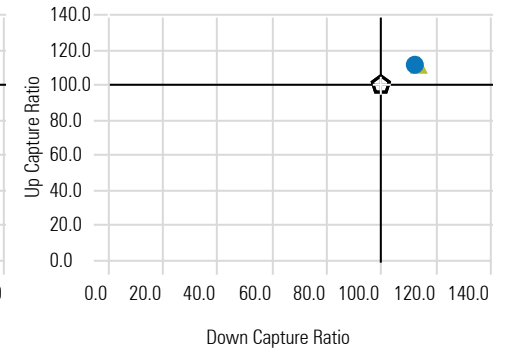
5 Year Market Capture

Time Period: 3/1/2014 to 2/28/2019



7 Year Market Capture

Time Period: 3/1/2012 to 2/28/2019



Annualized Performance & Risk Statistics - Since Common Inception

Time Period: Since Common Inception (12/1/2013) to 2/28/2019

	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
PIMCO Real Return Instl	1.4	4.1	-0.2	1.10	94	4.2	-2.3	0.17	1.1
American Funds Inflation Linked Bd R6	2.1	3.6	0.5	0.98	96	4.0	-2.0	0.38	0.8
DFA Inflation-Protected Securities I	1.6	4.1	-0.1	1.13	98	5.0	-3.0	0.20	0.7
Fidelity® Inflation-Prot Bd Index	1.5	3.7	-0.1	1.04	99	4.6	-2.6	0.21	0.4
BBgBarc US Treasury US TIPS TR USD	1.6	3.6	0.0	1.00	100	4.5	-2.4	0.24	0.0
US Fund Inflation-Protected Bond	1.0	3.2	-0.5	0.87	96	3.6	-2.2	0.09	0.8

Performance Analysis

PIMCO Real Return Instl

American Funds Inflation Linked Bd R6

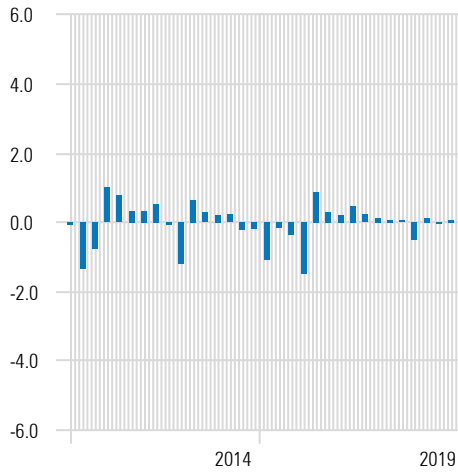
DFA Inflation-Protected Securities I

Fidelity® Inflation-Prot Bd Index

Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

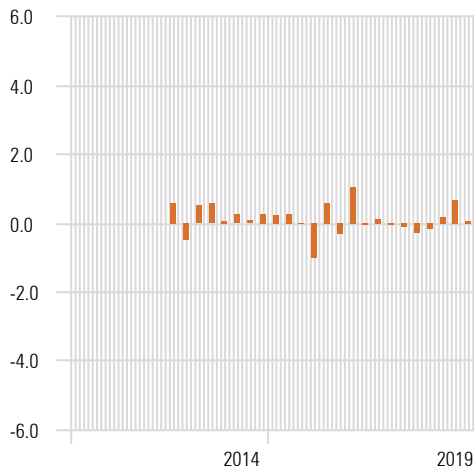
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

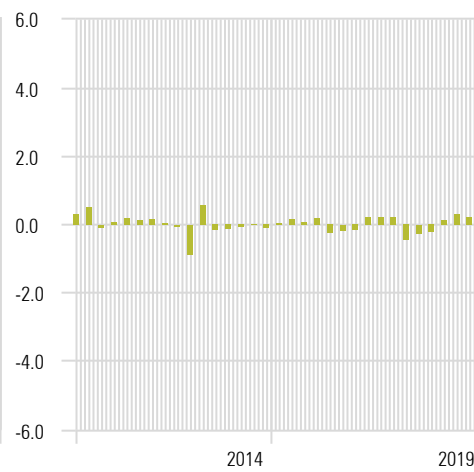
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

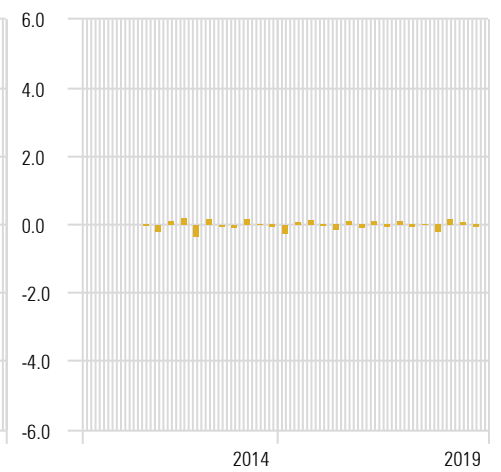
Rolling Window: 3 Months 3 Months shift



Quarterly Return +/- Index

Time Period: 3/1/2011 to 2/28/2019

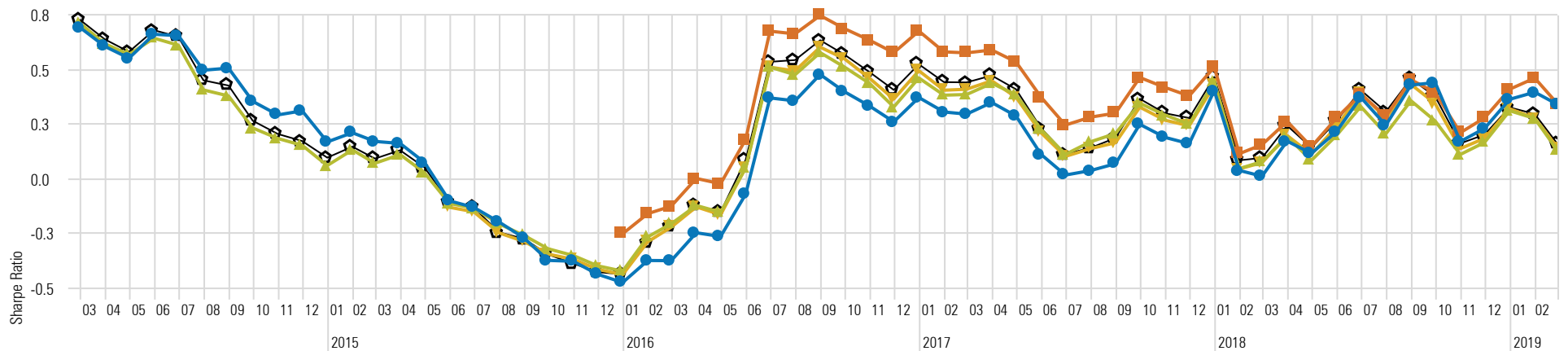
Rolling Window: 3 Months 3 Months shift



Rolling 3 Year Sharpe Ratio

Time Period: 3/1/2011 to 2/28/2019

Rolling Window: 3 Years 1 Month shift



— PIMCO Real Return Instl
— Fidelity® Inflation-Prot Bd Index

— American Funds Inflation Linked Bd R6
— BBgBarc US Treasury US TIPS TR USD

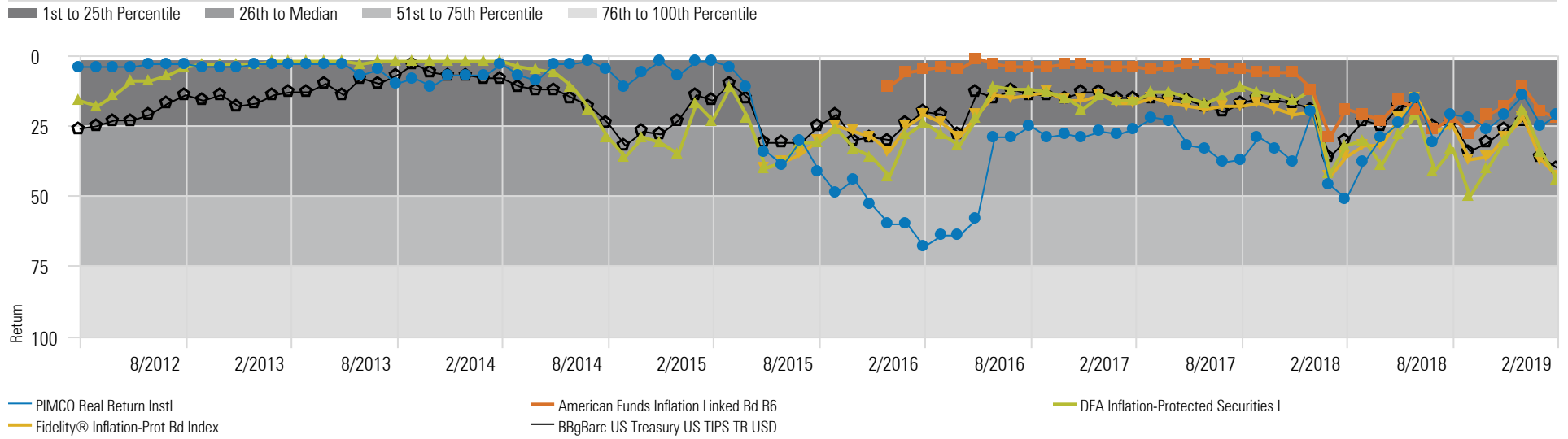
— DFA Inflation-Protected Securities I

Rolling Peer Group Rankings

Rolling 3 Year Peer Group Rank

Time Period: 3/1/2009 to 2/28/2019

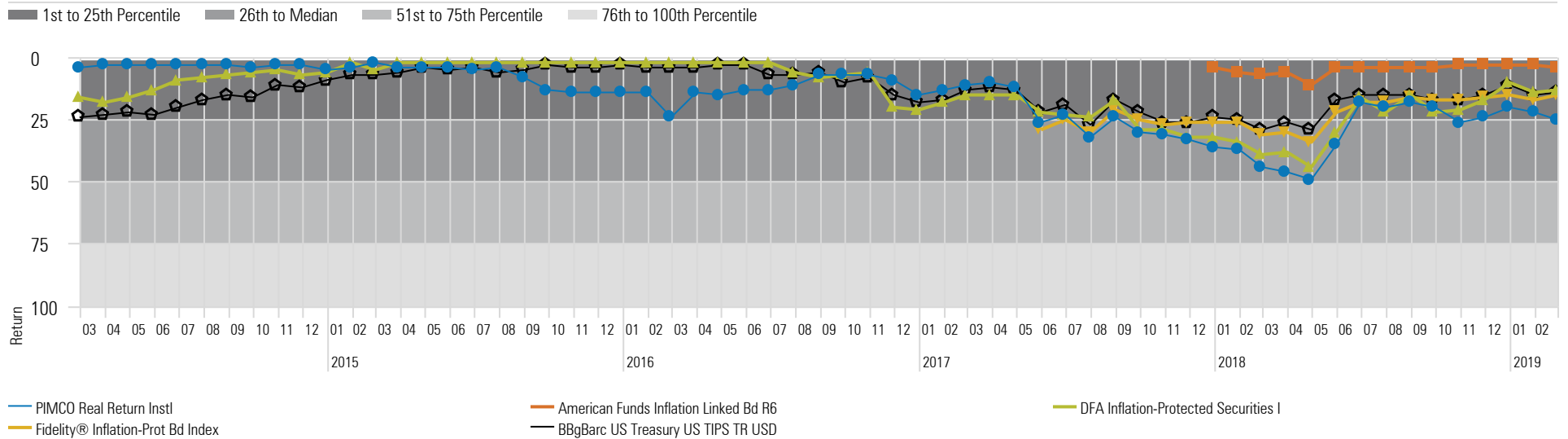
Rolling Window: 3 Years 1 Month shift



Rolling 5 Year Peer Group Rank

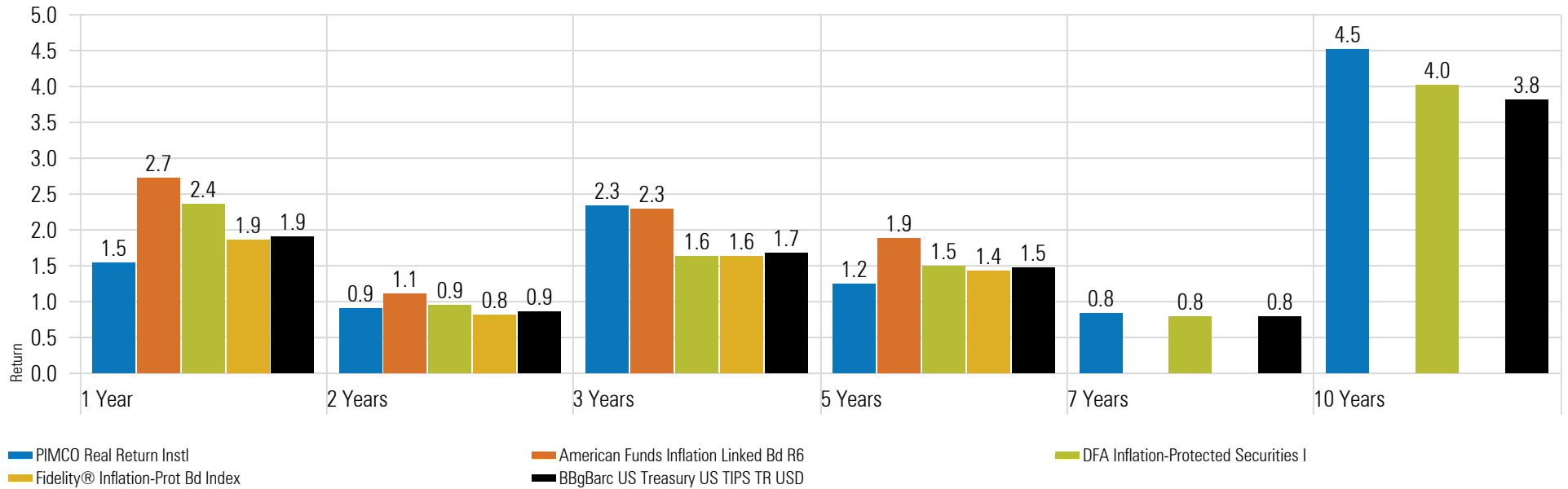
Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 5 Years 1 Month shift

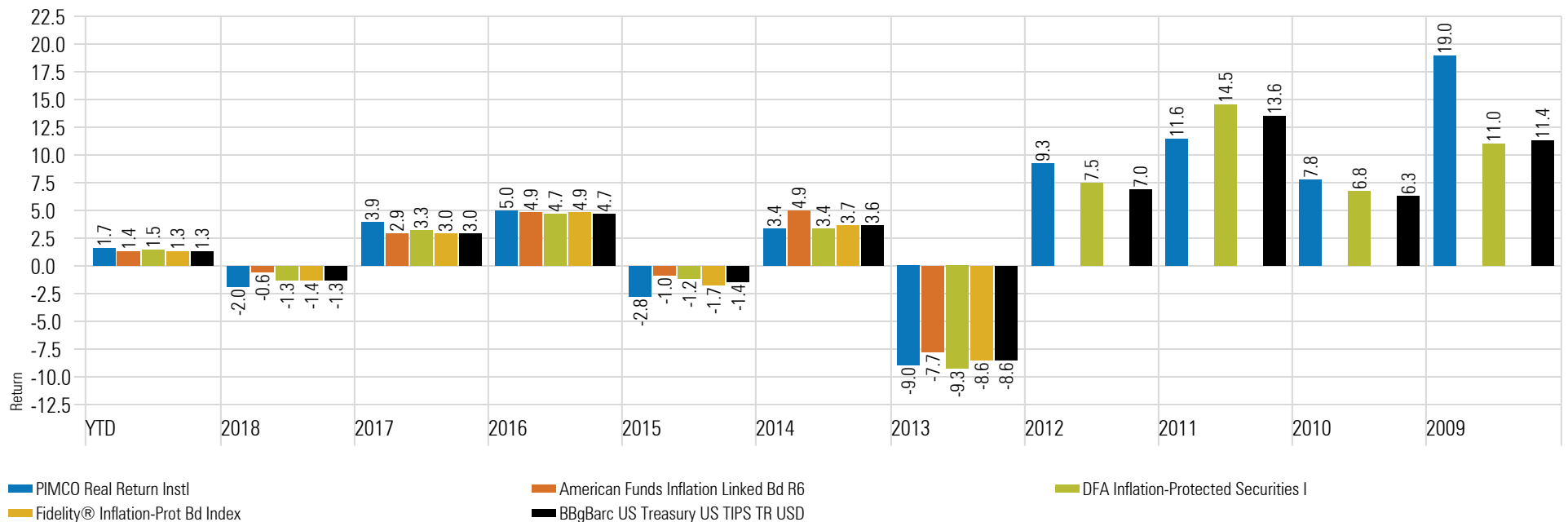


Trailing Performance

Cumulative Returns



Annual Returns



Performance Summary - Cumulative Periods

	Quarter			YTD			1 Year			3 Years			5 Years			10 Years		
	Return	Rank	+/- Idx	Rtn	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx	Return	Rank	+/- Idx
Inflation-Protected Bond																		
PIMCO Real Return Instl	-0.9	56	-0.50	-2.0	63	-0.71	-2.0	63	-0.71	2.3	14	0.17	1.5	20	-0.21	4.3	3	0.70
American Funds Inflation Linked Bd R6	0.4	1	0.78	-0.6	15	0.69	-0.6	15	0.69	2.4	11	0.26	2.2	3	0.51			
DFA Inflation-Protected Securities I	0.0	8	0.39	-1.3	35	-0.03	-1.3	35	-0.03	2.2	19	0.07	1.7	10	0.03	3.7	11	0.09
Fidelity® Inflation-Prot Bd Index	-0.5	27	-0.06	-1.4	41	-0.11	-1.4	41	-0.11	2.1	22	0.02	1.7	15	-0.04			
BBgBarc US Treasury US TIPS TR USD	-0.4			-1.3			-1.3			2.1			1.7					3.6
Average	-1.0			-1.6			-1.6			1.7			1.0					2.9

Performance Summary - Calendar Year Periods

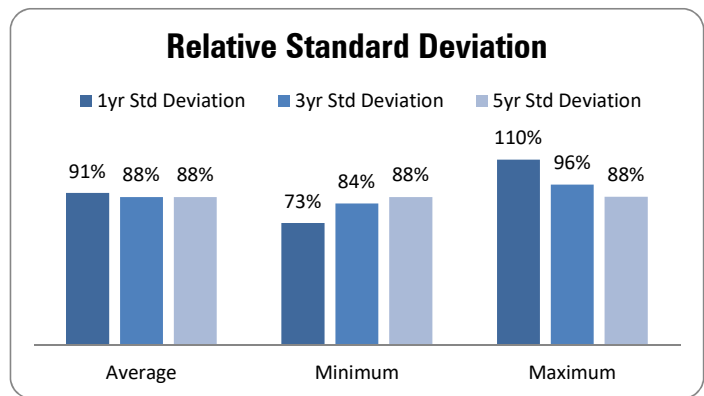
	Return			Return			Return			Return			Return			Return					
	2018	Rank	+/- Idx	2017	Rank	+/- Idx	2016	Rank	+/- Idx	2015	Rank	+/- Idx	2014	Rank	+/- Idx	2013	Rank	+/- Idx	2012	Rank	+/- Idx
Inflation-Protected Bond																					
PIMCO Real Return Instl	-2.0	63	-0.71	3.9	8	0.91	5.0	22	0.36	-2.8	77	-1.31	3.4	20	-0.22	-9.0	73	-0.44	9.3	7	2.27
American Funds Inflation Linked Bd R6	-0.6	15	0.69	2.9	37	-0.13	4.9	27	0.19	-1.0	15	0.48	4.9	7	1.30	-7.7	31	0.86			
DFA Inflation-Protected Securities I	-1.3	35	-0.03	3.3	20	0.27	4.7	39	-0.02	-1.2	24	0.22	3.4	21	-0.27	-9.3	85	-0.66	7.5	20	0.47
Fidelity® Inflation-Prot Bd Index	-1.4	41	-0.11	3.0	31	-0.03	4.9	26	0.19	-1.7	40	-0.28	3.7	13	0.06	-8.6	53	-0.02			
BBgBarc US Treasury US TIPS TR USD	-1.3			3.0			4.7			-1.4			3.6			-8.6			7.0		
Average	-1.6			2.5			4.5			-2.2			1.9			-7.2			6.4		

Fund Name	Comparative Index/Fund
American Funds Inflation Linked Bd R6	100% PIMCO Real Return Instl

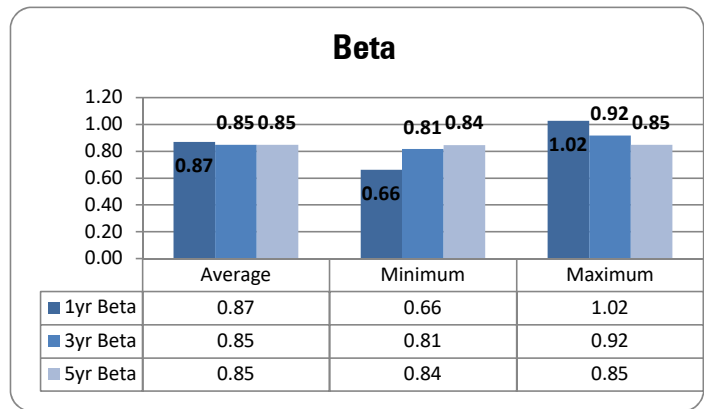
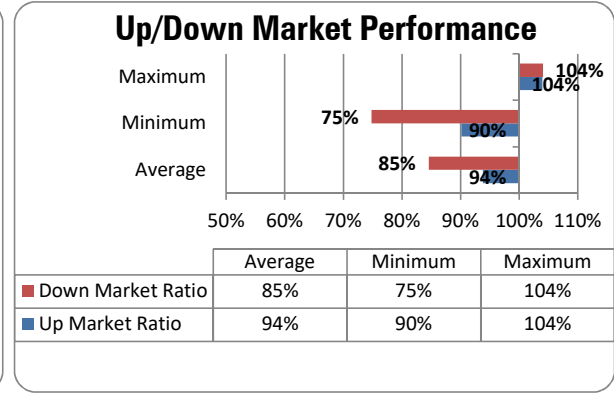
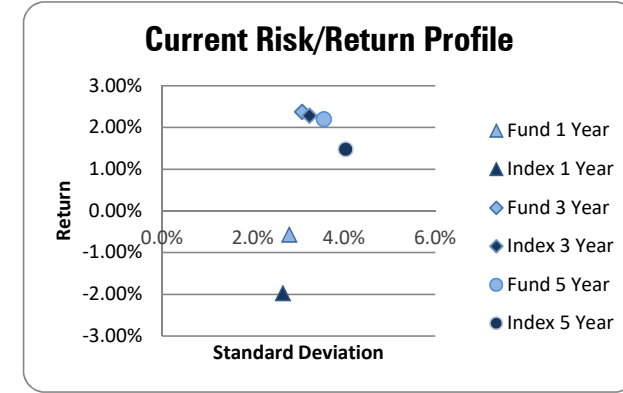
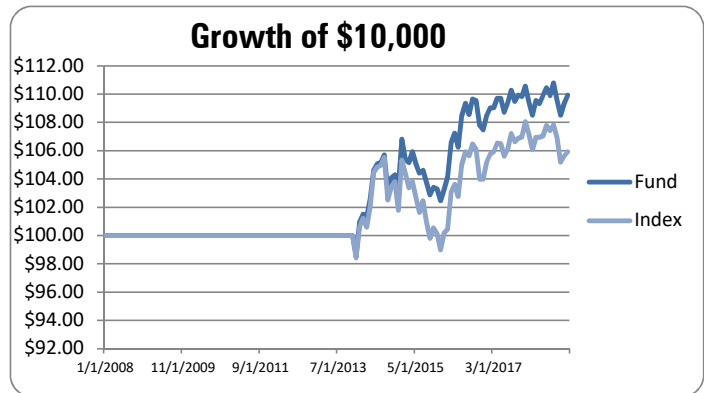
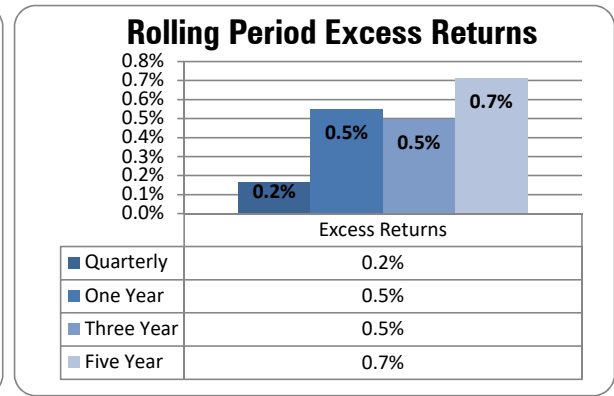
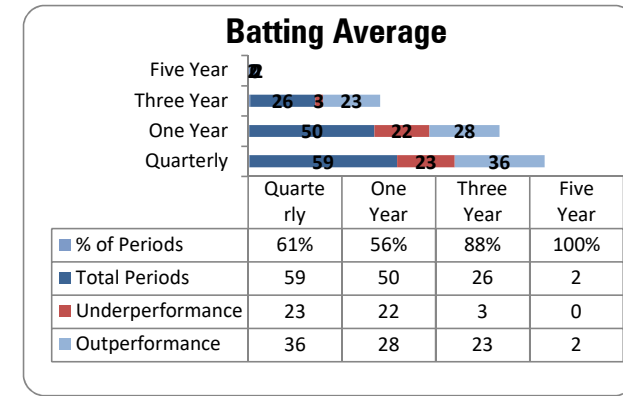
Home

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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
American Funds Inflation Linked Bd F	-0.57%	1.34%	2.80%	1.26%	-1.34%
100% PIMCO Real Return Instl	-1.97%		2.65%	0.92%	-2.08%
Latest Three Years					
American Funds Inflation Linked Bd F	2.37%	0.30%	3.08%	4.00%	-2.00%
100% PIMCO Real Return Instl	2.28%		3.24%	4.12%	-2.35%
Latest Five Years					
American Funds Inflation Linked Bd F	2.20%	0.95%	3.56%	4.00%	-2.00%
100% PIMCO Real Return Instl	1.48%		4.03%	4.22%	-2.35%
Latest Ten Years					
American Funds Inflation Linked Bd F				4.00%	-2.00%
100% PIMCO Real Return Instl				4.22%	-2.35%

Fund Name	Comparative Index/Fund
DFA Inflation-Protected Securities I	100% PIMCO Real Return Instl

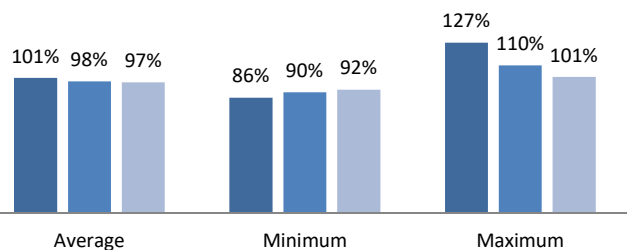
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Risk Analysis

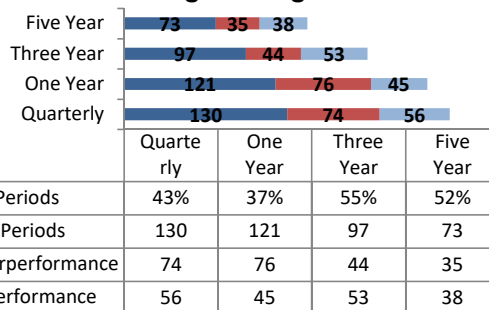
Relative Standard Deviation

■ 1yr Std Deviation ■ 3yr Std Deviation ■ 5yr Std Deviation

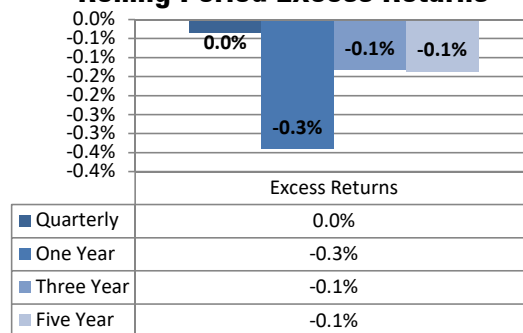


Absolute Performance Summary

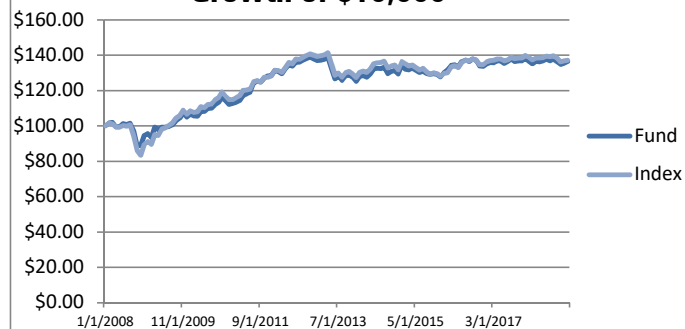
Batting Average



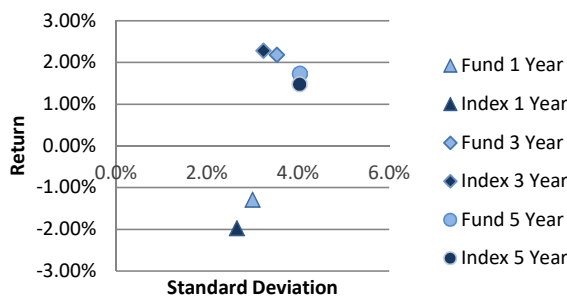
Rolling Period Excess Returns



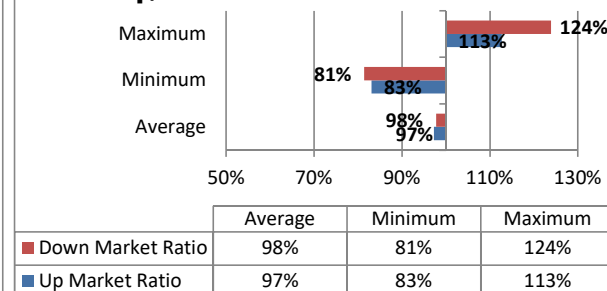
Growth of \$10,000



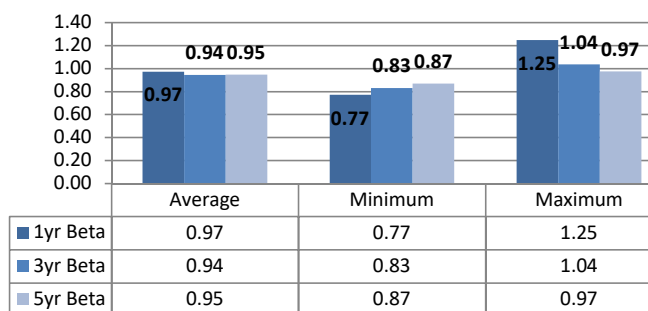
Current Risk/Return Profile



Up/Down Market Performance



Beta



Annualized Performance and Risk Statistics

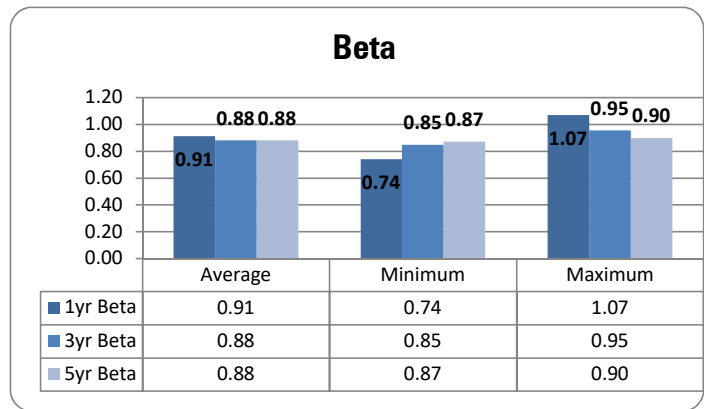
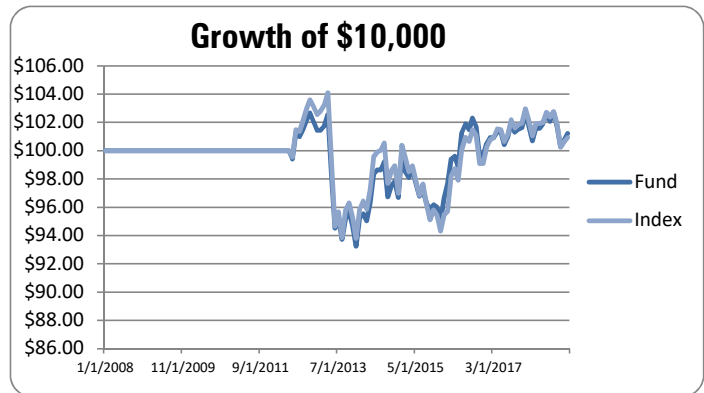
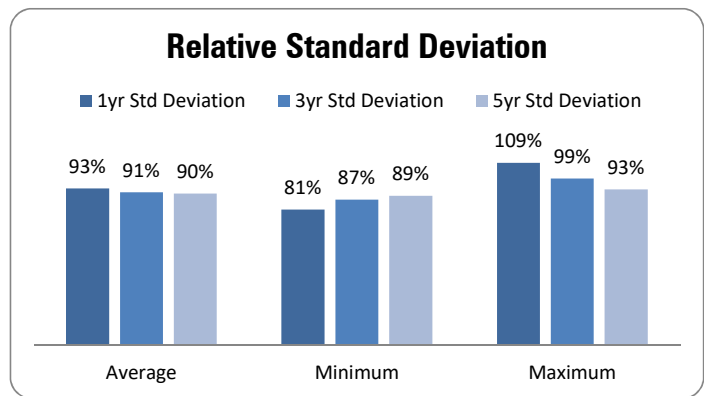
	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
DFA Inflation-Protected Securities I	-1.29%	0.81%	3.00%	1.22%	-1.69%
100% PIMCO Real Return Instl	-1.97%		2.65%	0.92%	-2.08%
Latest Three Years					
DFA Inflation-Protected Securities I	2.19%	-0.17%	3.53%	5.01%	-2.98%
100% PIMCO Real Return Instl	2.28%		3.24%	4.12%	-2.35%
Latest Five Years					
DFA Inflation-Protected Securities I	1.73%	0.31%	4.04%	5.01%	-2.98%
100% PIMCO Real Return Instl	1.48%		4.03%	4.22%	-2.35%
Latest Ten Years					
DFA Inflation-Protected Securities I	3.73%	-0.37%	5.29%	7.92%	-7.95%
100% PIMCO Real Return Instl	4.35%		5.40%	9.61%	-8.30%

Fund Name	Comparative Index/Fund
Fidelity® Inflation-Prot Bd Index	100% PIMCO Real Return Instl

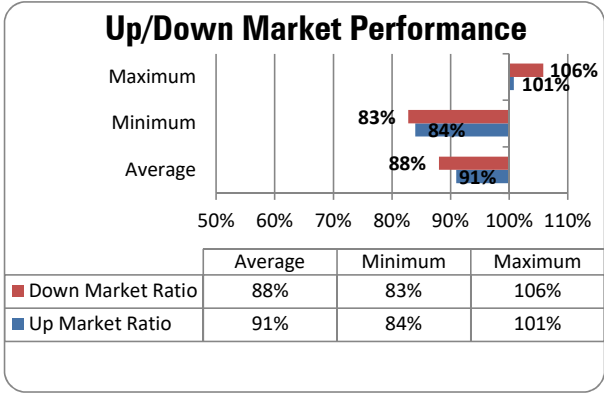
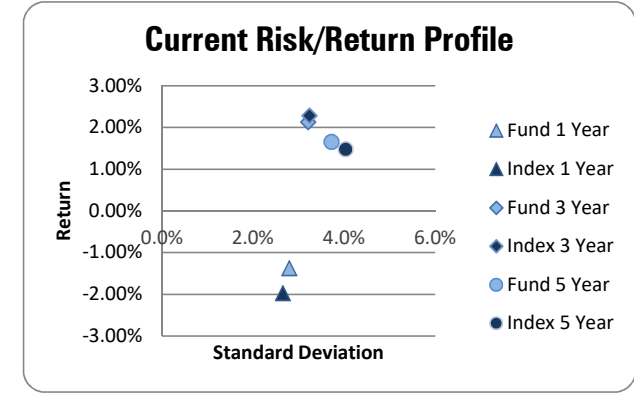
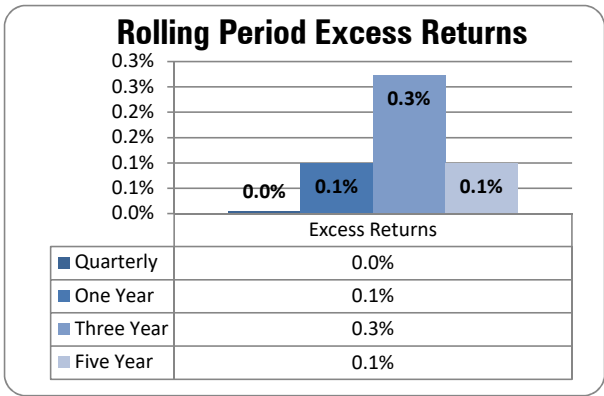
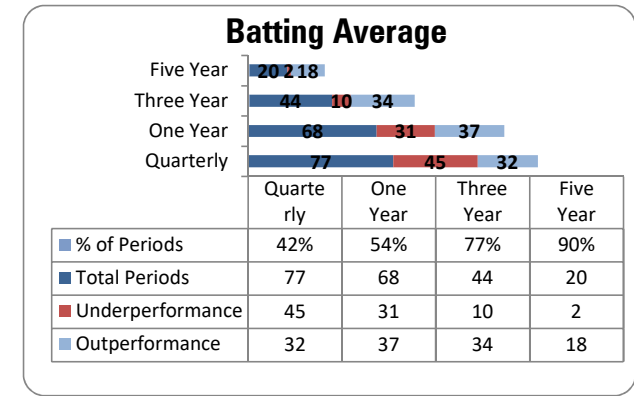
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

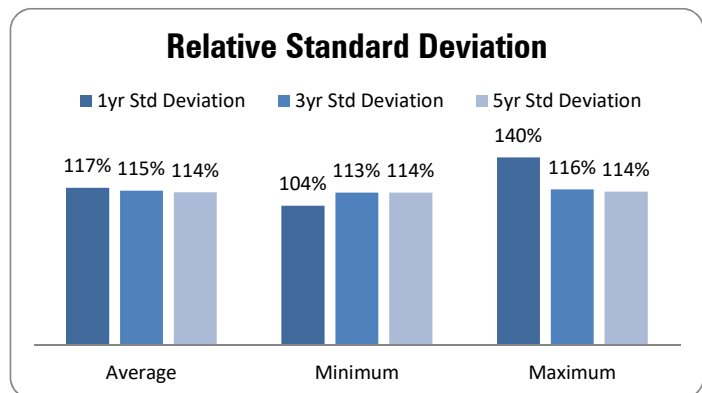
	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Fidelity® Inflation-Prot Bd Index	-1.37%	0.66%	2.79%	1.21%	-1.94%
100% PIMCO Real Return Instl	-1.97%		2.65%	0.92%	-2.08%
Latest Three Years					
Fidelity® Inflation-Prot Bd Index	2.13%	-0.05%	3.21%	4.60%	-2.59%
100% PIMCO Real Return Instl	2.28%		3.24%	4.12%	-2.35%
Latest Five Years					
Fidelity® Inflation-Prot Bd Index	1.66%	0.34%	3.72%	4.60%	-2.59%
100% PIMCO Real Return Instl	1.48%		4.03%	4.22%	-2.35%
Latest Ten Years					
Fidelity® Inflation-Prot Bd Index				4.60%	-7.12%
100% PIMCO Real Return Instl				4.22%	-8.30%

Fund Name	Comparative Index/Fund
DFA Inflation-Protected Securities I	100% American Funds Inflation Linked Bd R6

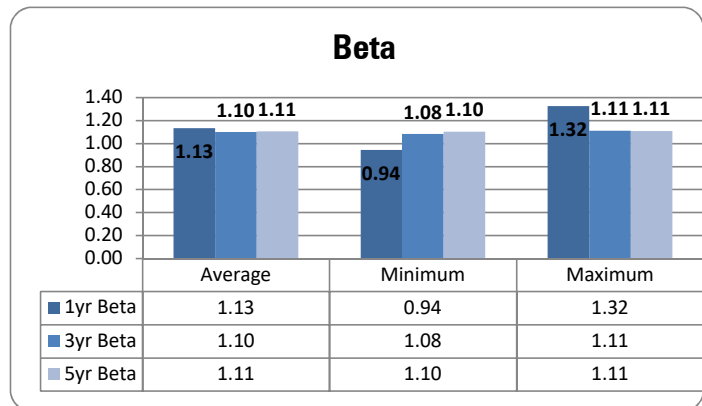
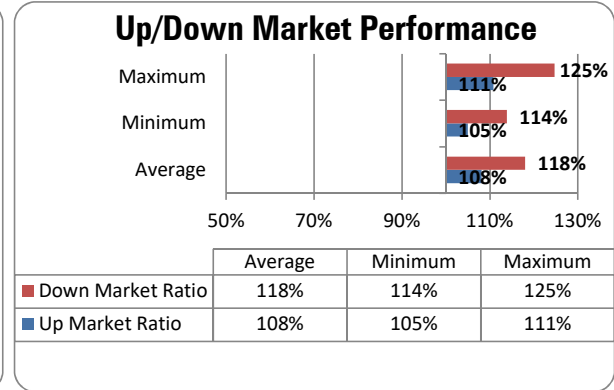
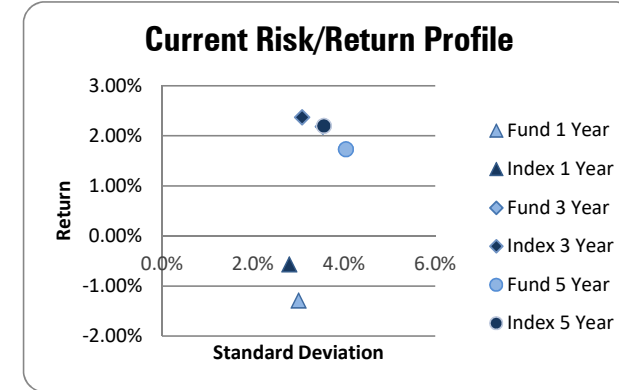
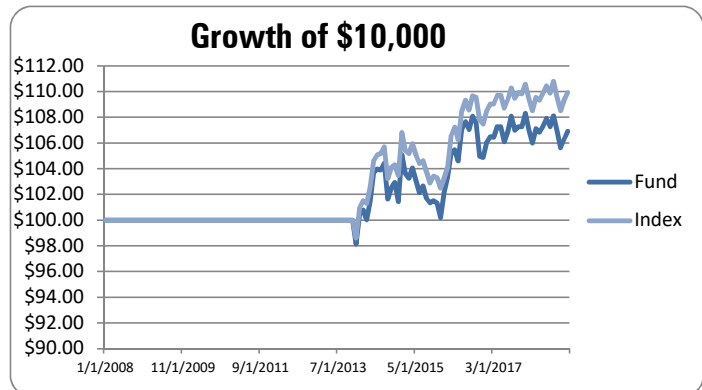
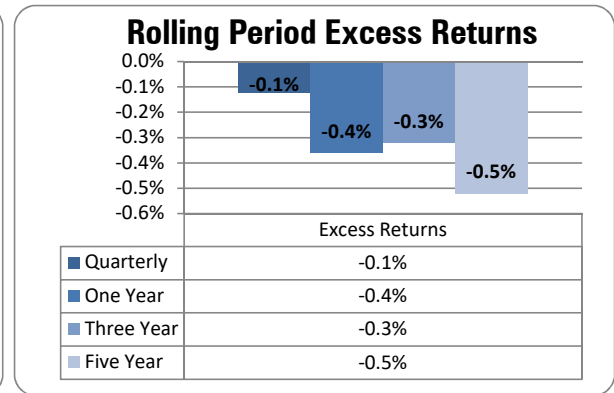
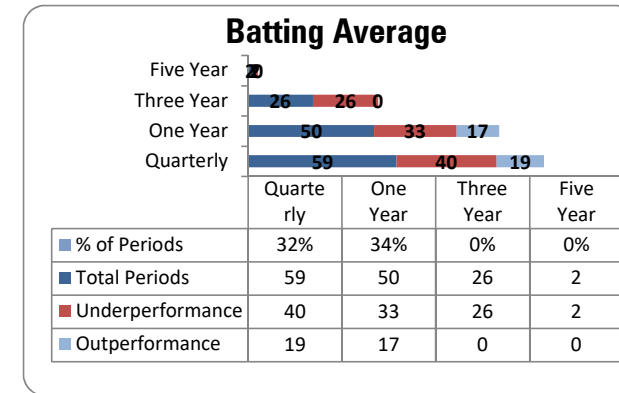
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

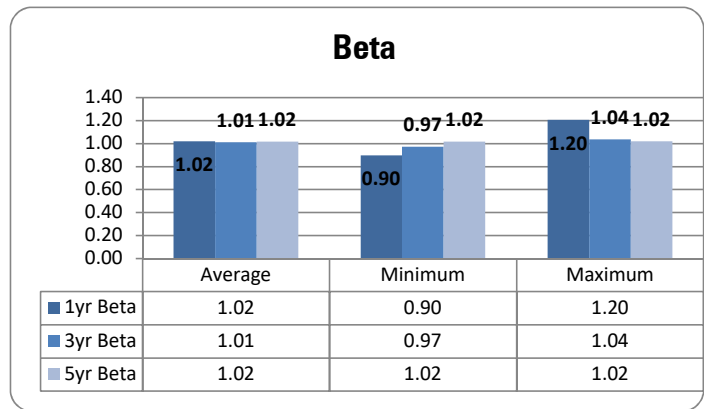
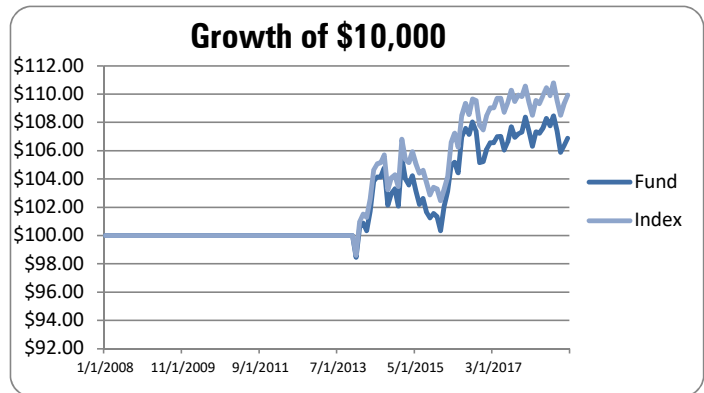
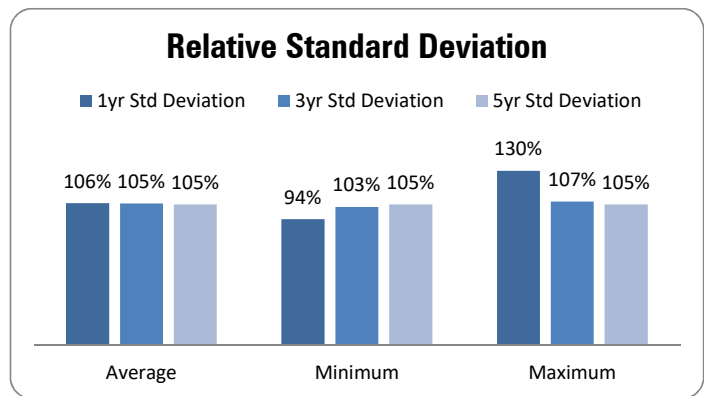
	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
DFA Inflation-Protected Securities I	-1.29%	-0.69%	3.00%	1.22%	-1.69%
100% American Funds Inflation Linke	-0.57%		2.80%	1.26%	-1.34%
Latest Three Years					
DFA Inflation-Protected Securities I	2.19%	-0.41%	3.53%	5.01%	-2.98%
100% American Funds Inflation Linke	2.37%		3.08%	4.00%	-2.00%
Latest Five Years					
DFA Inflation-Protected Securities I	1.73%	-0.70%	4.04%	5.01%	-2.98%
100% American Funds Inflation Linke	2.20%		3.56%	4.00%	-2.00%
Latest Ten Years					
DFA Inflation-Protected Securities I				5.01%	-2.98%
100% American Funds Inflation Linke				4.00%	-2.00%

Fund Name	Comparative Index/Fund
Fidelity® Inflation-Prot Bd Index	100% American Funds Inflation Linked Bd R6

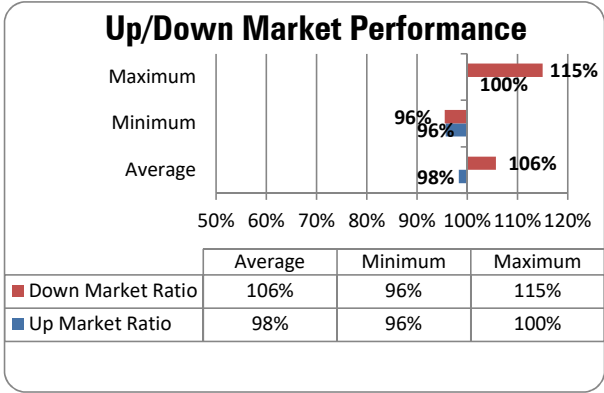
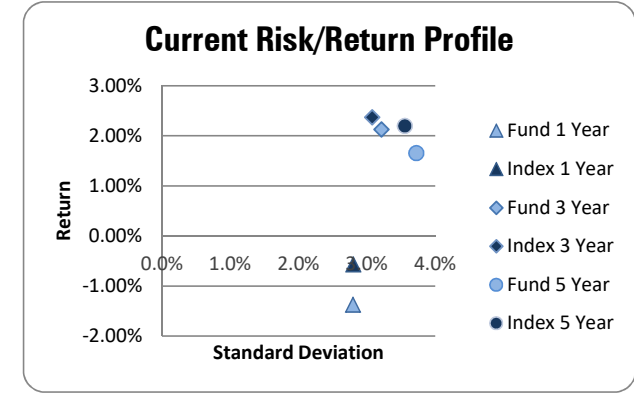
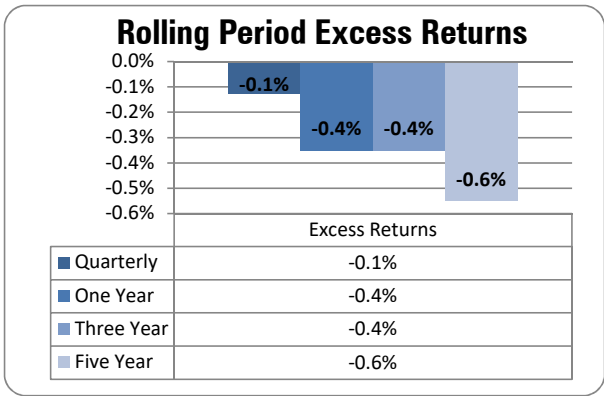
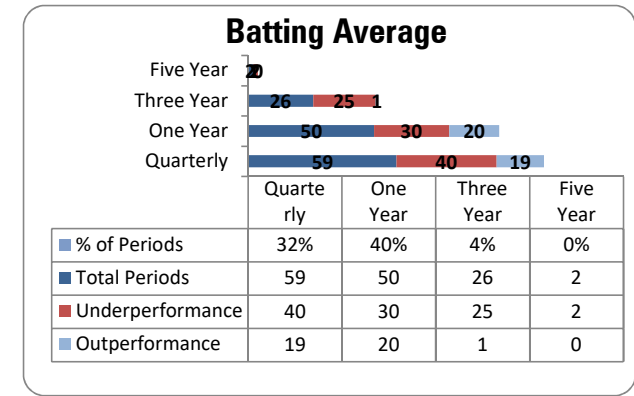
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

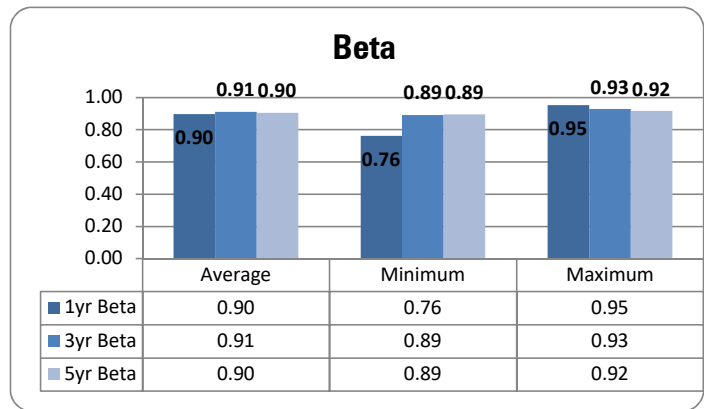
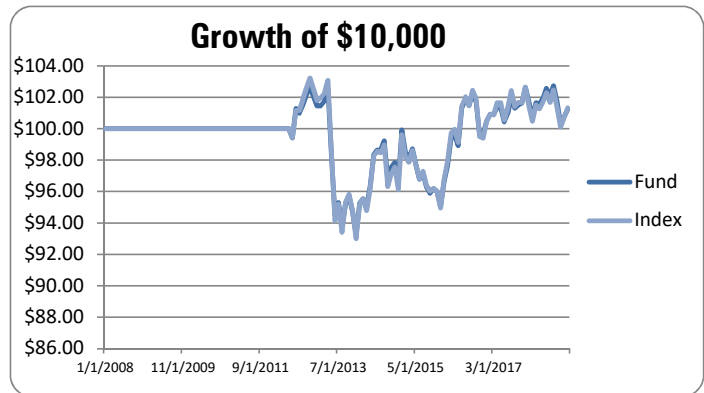
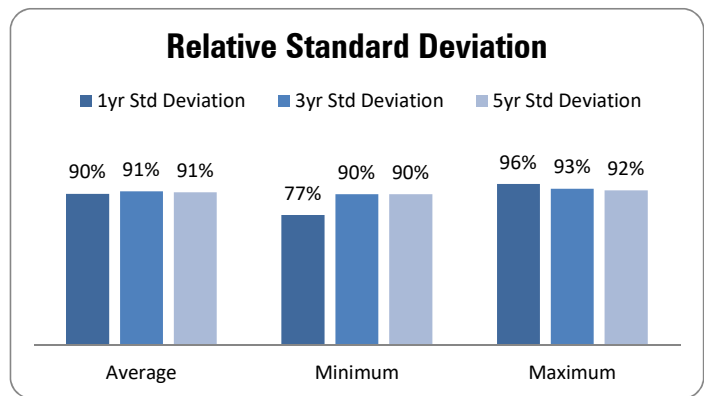
	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Fidelity® Inflation-Prot Bd Index	-1.37%	-0.82%	2.79%	1.21%	-1.94%
100% American Funds Inflation Linke	-0.57%		2.80%	1.26%	-1.34%
Latest Three Years					
Fidelity® Inflation-Prot Bd Index	2.13%	-0.22%	3.21%	4.60%	-2.59%
100% American Funds Inflation Linke	2.37%		3.08%	4.00%	-2.00%
Latest Five Years					
Fidelity® Inflation-Prot Bd Index	1.66%	-0.58%	3.72%	4.60%	-2.59%
100% American Funds Inflation Linke	2.20%		3.56%	4.00%	-2.00%
Latest Ten Years					
Fidelity® Inflation-Prot Bd Index				4.60%	-2.59%
100% American Funds Inflation Linke				4.00%	-2.00%

Fund Name	Comparative Index/Fund
Fidelity® Inflation-Prot Bd Index	100% DFA Inflation-Protected Securities I

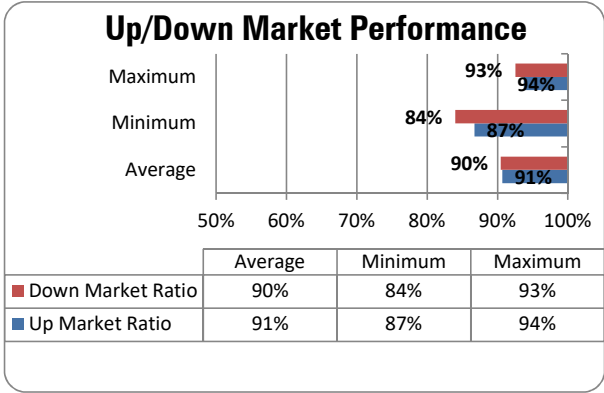
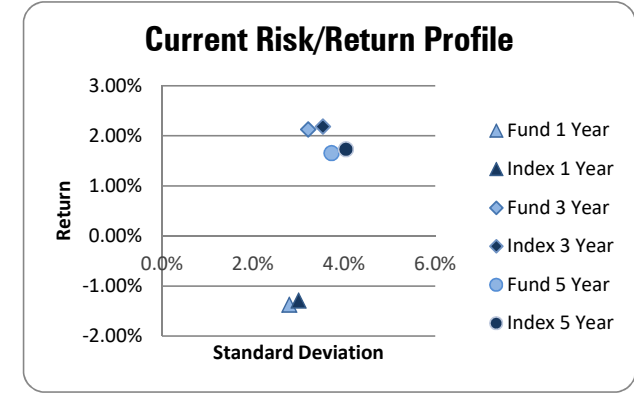
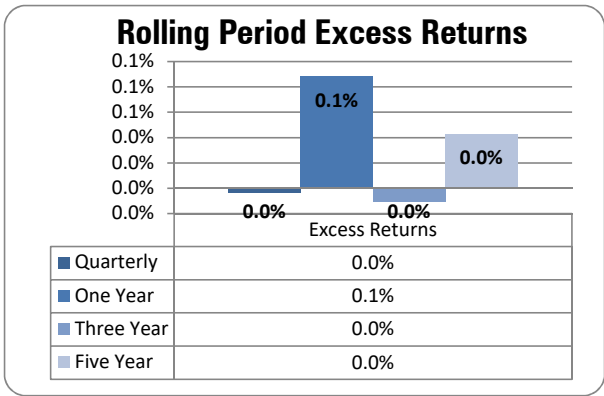
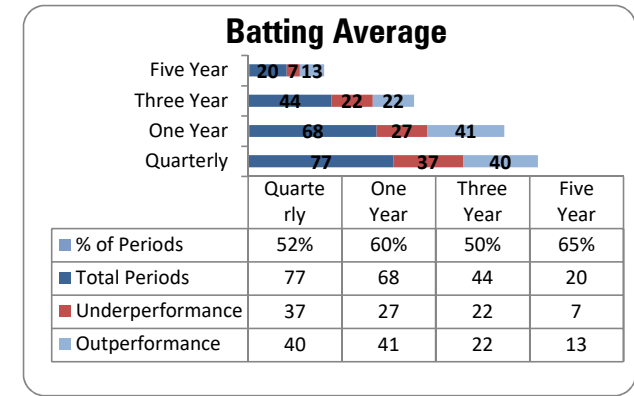
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Risk Analysis



Absolute Performance Summary



Annualized Performance and Risk Statistics

	Return	Alpha	Standard Deviation	Best Qtr	Worst Qtr
Latest One Year					
Fidelity® Inflation-Prot Bd Index	-1.37%	-0.19%	2.79%	1.21%	-1.94%
100% DFA Inflation-Protected Securi	-1.29%		3.00%	1.22%	-1.69%
Latest Three Years					
Fidelity® Inflation-Prot Bd Index	2.13%	0.16%	3.21%	4.60%	-2.59%
100% DFA Inflation-Protected Securi	2.19%		3.53%	5.01%	-2.98%
Latest Five Years					
Fidelity® Inflation-Prot Bd Index	1.66%	0.07%	3.72%	4.60%	-2.59%
100% DFA Inflation-Protected Securi	1.73%		4.04%	5.01%	-2.98%
Latest Ten Years					
Fidelity® Inflation-Prot Bd Index				4.60%	-7.12%
100% DFA Inflation-Protected Securi				5.01%	-7.95%

Foreign Equity Index Comparison

As of 2/28/2019



US Fund Foreign Large Blend

Fidelity® International Index

Investment Strategy

The investment seeks to provide investment results that correspond to the total return of foreign stock markets. The fund normally invests at least 80% of assets in common stocks included in the MSCI EAFE Index, which represents the performance of foreign stock markets. It uses statistical sampling techniques based on such factors as capitalization, industry exposures, dividend yield, price/earnings (P/E) ratio, price/book (P/B) ratio, earnings growth, and country weightings to attempt to replicate the returns of the MSCI EAFE Index.

Manager Biography

Patrick Waddell since 2/29/2004

Louis Bottari since 1/15/2009

Peter Matthew since 8/31/2012

Deane Gyllenhaal since 9/30/2014

Robert Regan since 12/31/2016

Fidelity® International Index - Operations

Inception Date	9/8/2011
Fund Size (\$mm)	25,171
Annual Report Net Expense Ratio	0.05
Prospectus Net Expense Ratio	0.05
Prospectus Gross Expense Ratio	0.05
Ticker	FSPSX
Manager Tenure (Longest)	15.08
Manager Tenure (Average)	7.72
Morningstar Inst Cat	Foreign Large Core

Other Notes:

None

Vanguard Total Intl Stock Index Admiral

Investment Strategy

The investment seeks to track the performance of a benchmark index that measures the investment return of stocks issued by companies located in developed and emerging markets, excluding the United States. The fund employs an indexing investment approach designed to track the performance of the FTSE Global All Cap ex US Index, a float-adjusted market-capitalization-weighted index designed to measure equity market performance of companies located in developed and emerging markets, excluding the United States. It invests all, or substantially all, of its assets in the common stocks included in its target index.

Manager Biography

Michael Perre since 8/5/2008

Christine D. Franquin since 11/30/2017

Vanguard Total Intl Stock Index Admiral - Operations

Inception Date	11/29/2010
Fund Size (\$mm)	363,044
Annual Report Net Expense Ratio	0.11
Prospectus Net Expense Ratio	0.11
Prospectus Gross Expense Ratio	0.11
Ticker	VTIAX
Manager Tenure (Longest)	10.58
Manager Tenure (Average)	5.96
Morningstar Inst Cat	Foreign Large Core

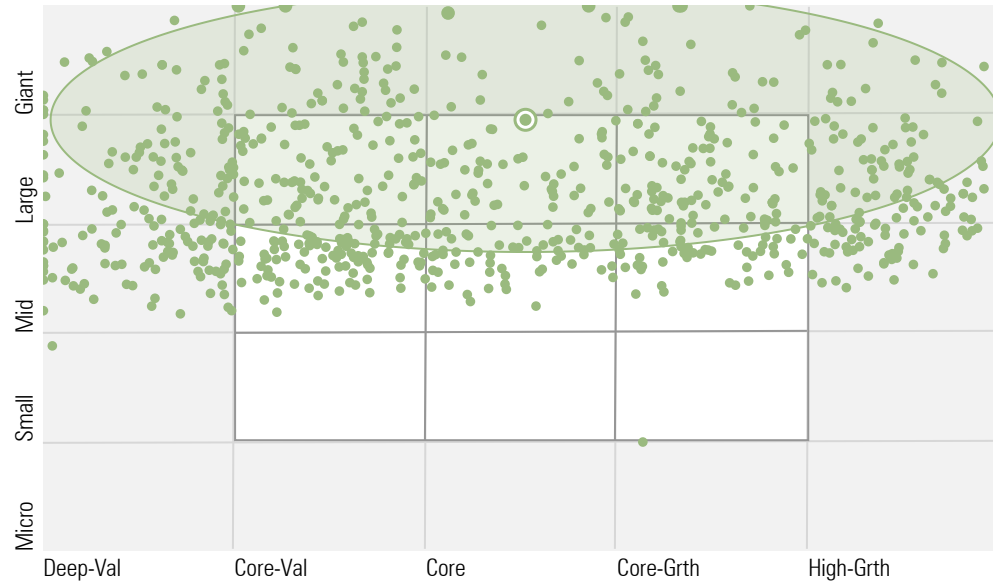
Other Notes:

None

Holdings-Based Style Analysis

Fidelity® International Index

Holdings-Based Style Map

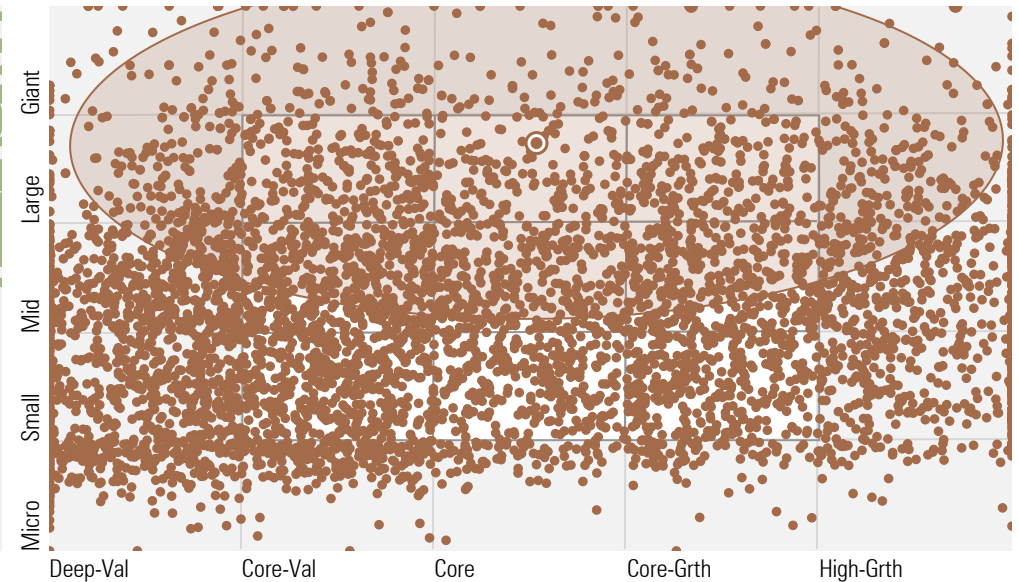


● Fidelity® International Index

1/31/2019

Vanguard Total Intl Stock Index Admiral

Holdings-Based Style Map

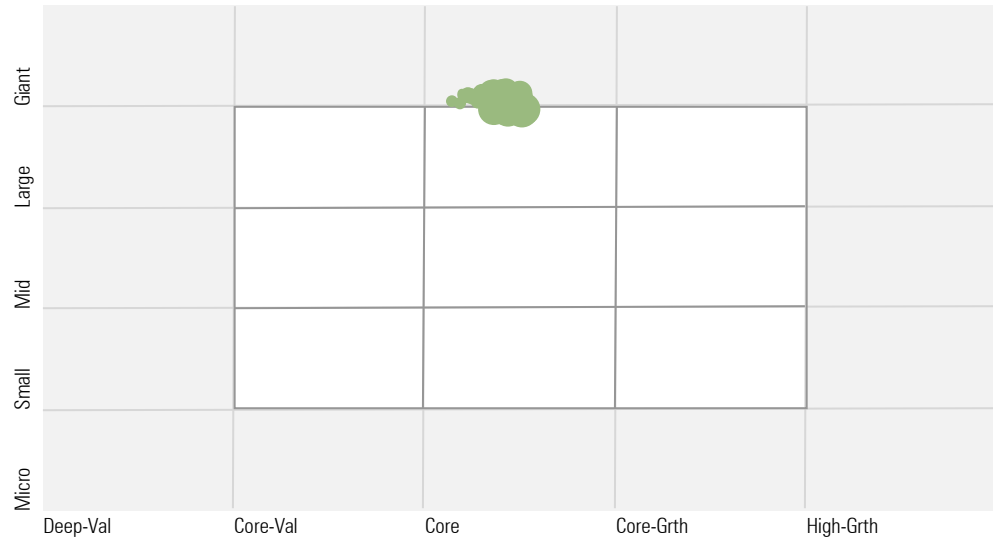


● Vanguard Total Intl Stock Index Admiral

1/31/2019

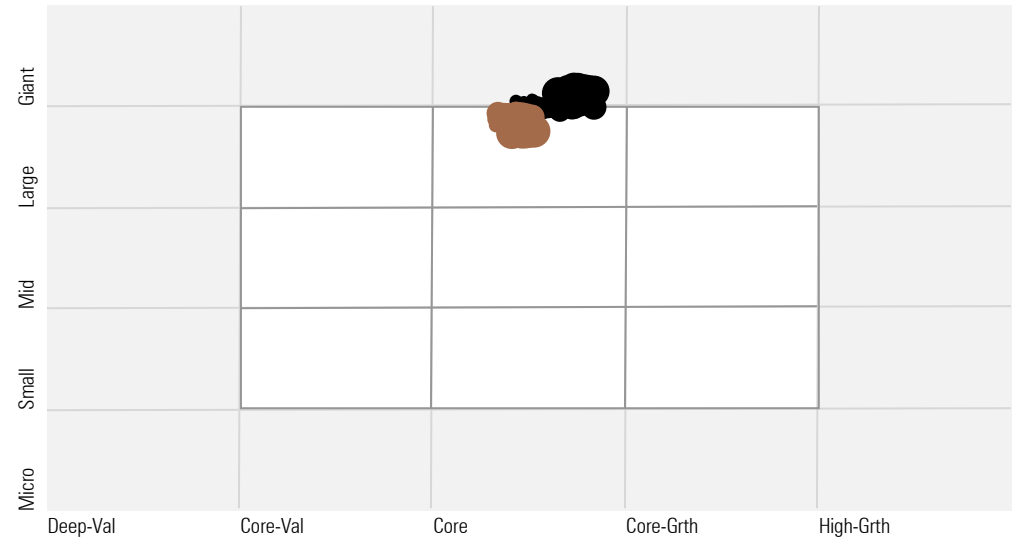
Holdings-Based Style Trail

Time Period: 3/31/2014 to 1/31/2019



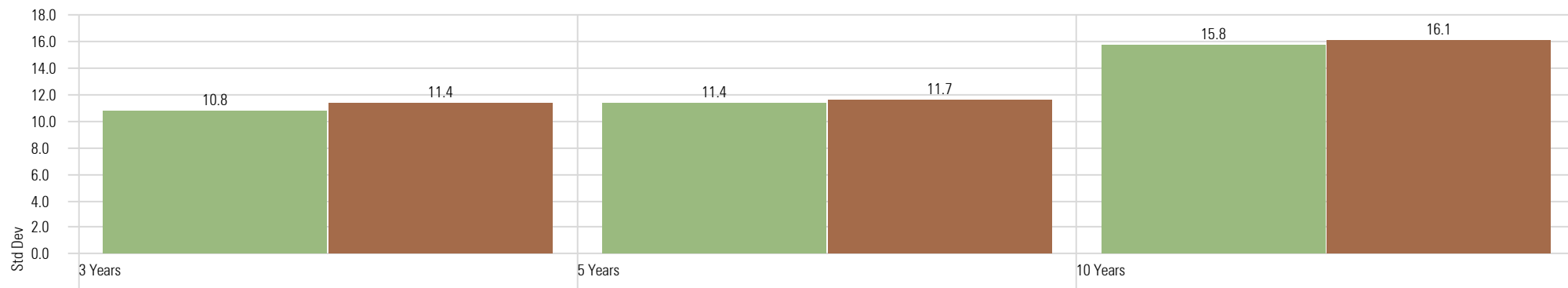
Holdings-Based Style Trail

Time Period: 3/31/2014 to 2/28/2019



Risk/Return Performance Analysis

Standard Deviation

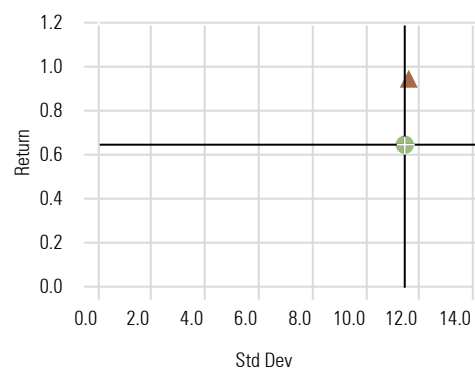


■ Fidelity® International Index

■ Vanguard Total Intl Stock Index Admiral

5 Year Risk-Reward

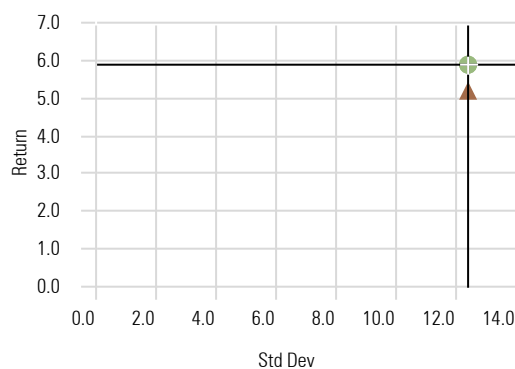
Time Period: 1/1/2014 to 12/31/2018



● Fidelity® International Index

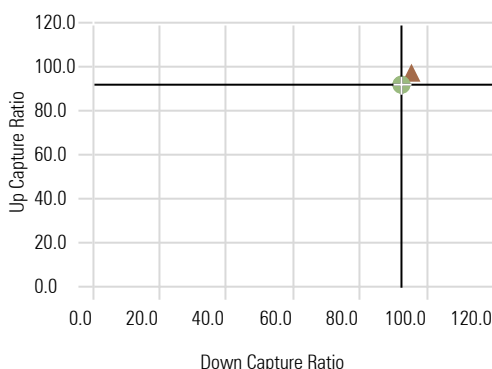
7 Year Risk-Reward

Time Period: 1/1/2012 to 12/31/2018



5 Year Market Capture

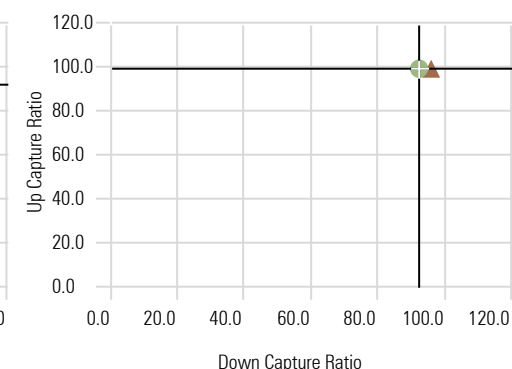
Time Period: 1/1/2014 to 12/31/2018



● Vanguard Total Intl Stock Index Admiral

7 Year Market Capture

Time Period: 1/1/2012 to 12/31/2018



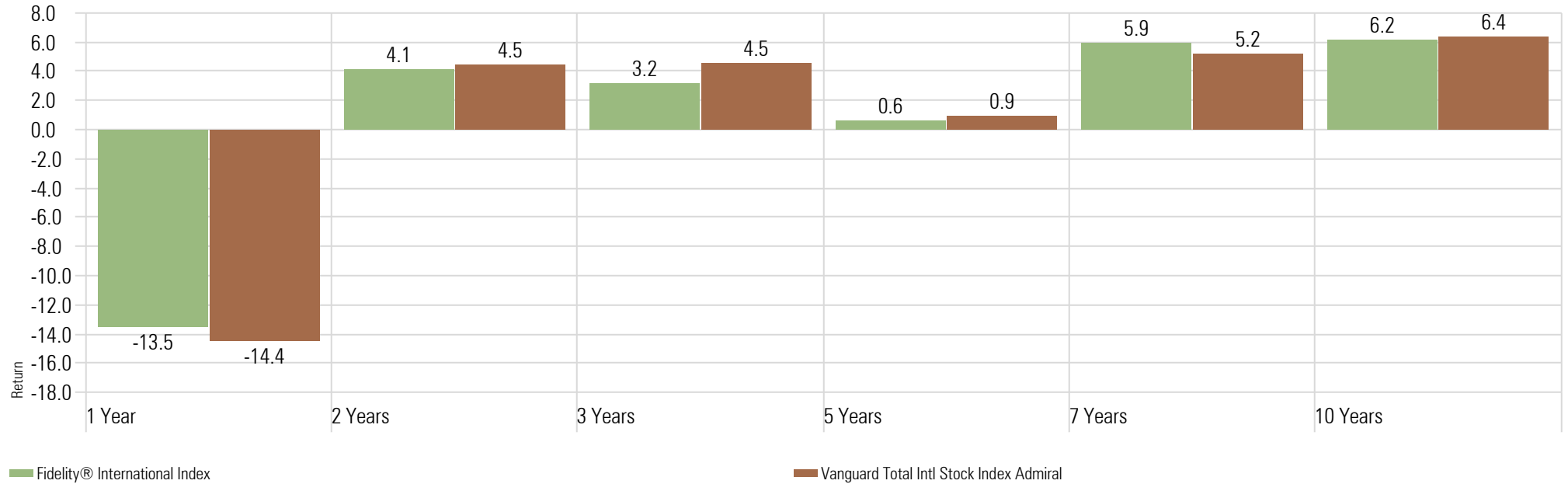
Annualized Performance & Risk Statistics - Since Common Inception

Time Period: 1/1/2009 to 12/31/2018

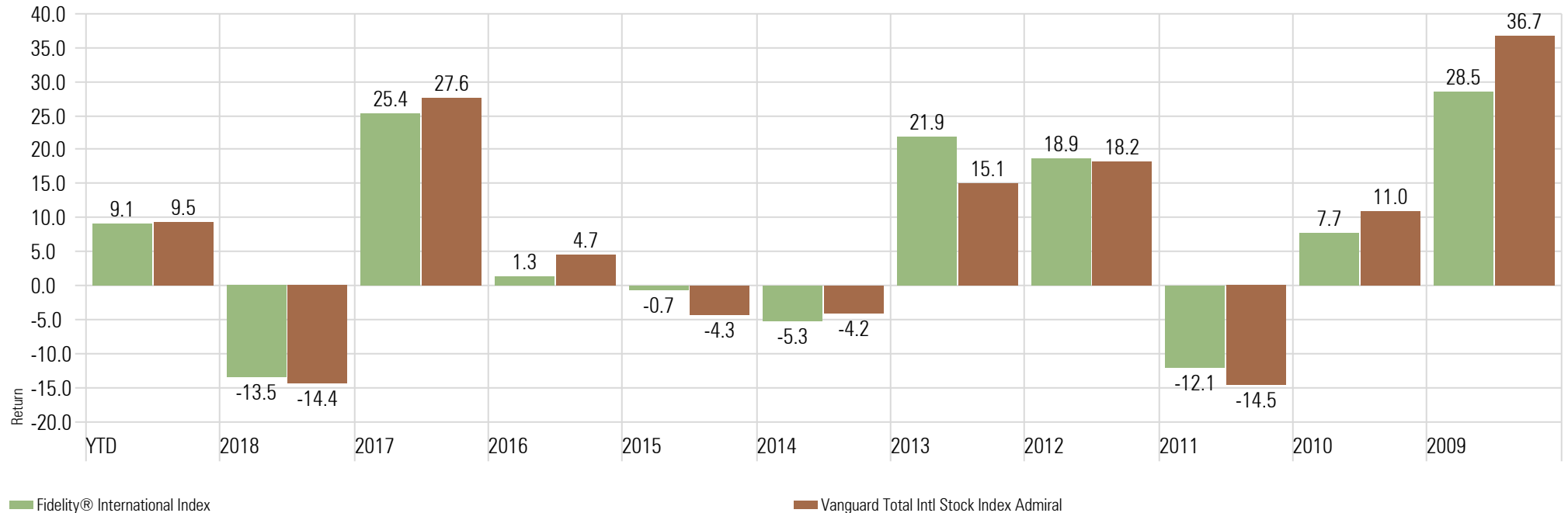
	Return	Std Dev	Alpha	Beta	R2	Best Quarter	Worst Quarter	Sharpe Ratio	Tracking Error
Fidelity® International Index	6.2	16.6	-0.3	1.00	96	25.4	-19.8	0.35	3.2
Vanguard Total Intl Stock Index Admiral	6.4	16.8	-0.3	1.02	98	27.3	-20.9	0.35	2.2

Trailing Performance

Cumulative Returns



Annual Returns

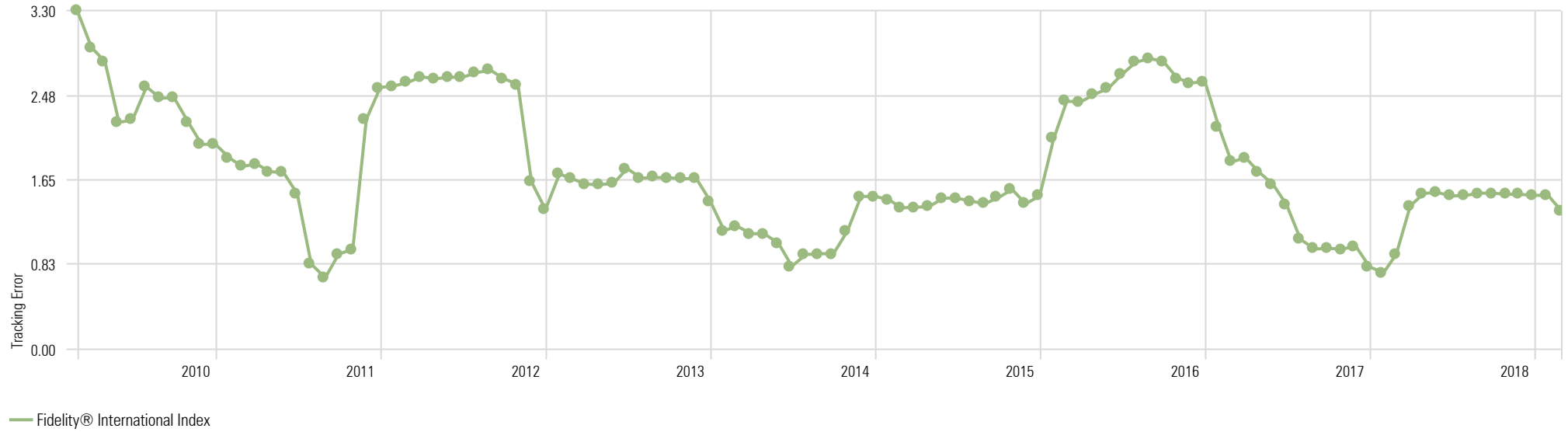


Tracking Error Comparison

1 Year Rolling Tracking Error

Time Period: 3/1/2009 to 2/28/2019

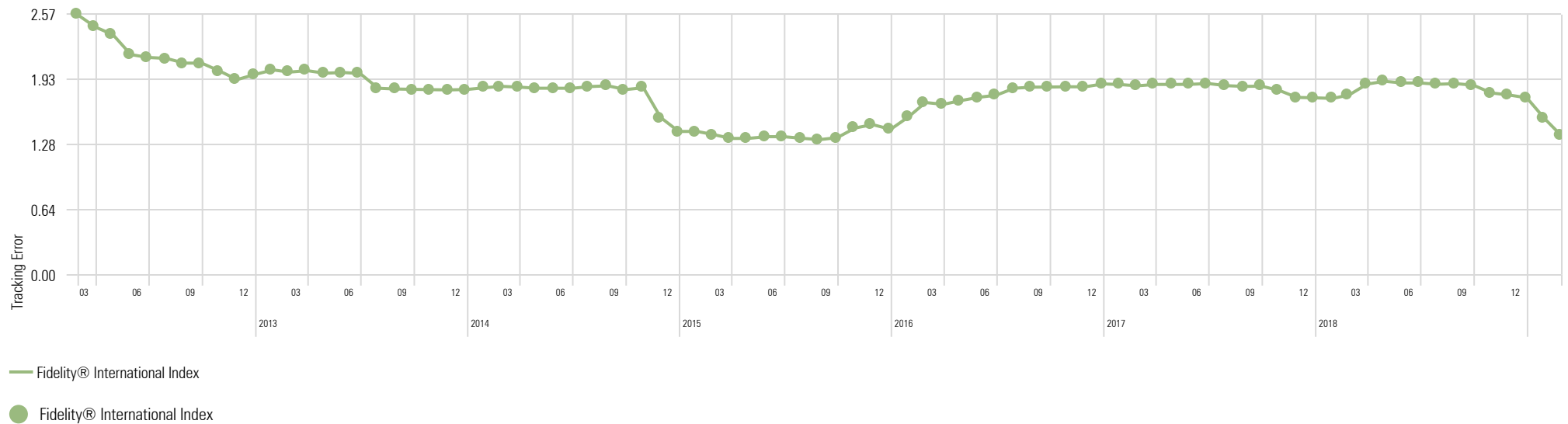
Rolling Window: 1 Year 1 Month shift Calculation Benchmark: MSCI EAFE NR USD



3 Year Rolling Tracking Error

Time Period: 3/1/2009 to 2/28/2019

Rolling Window: 3 Years 1 Month shift Calculation Benchmark: MSCI EAFE NR USD

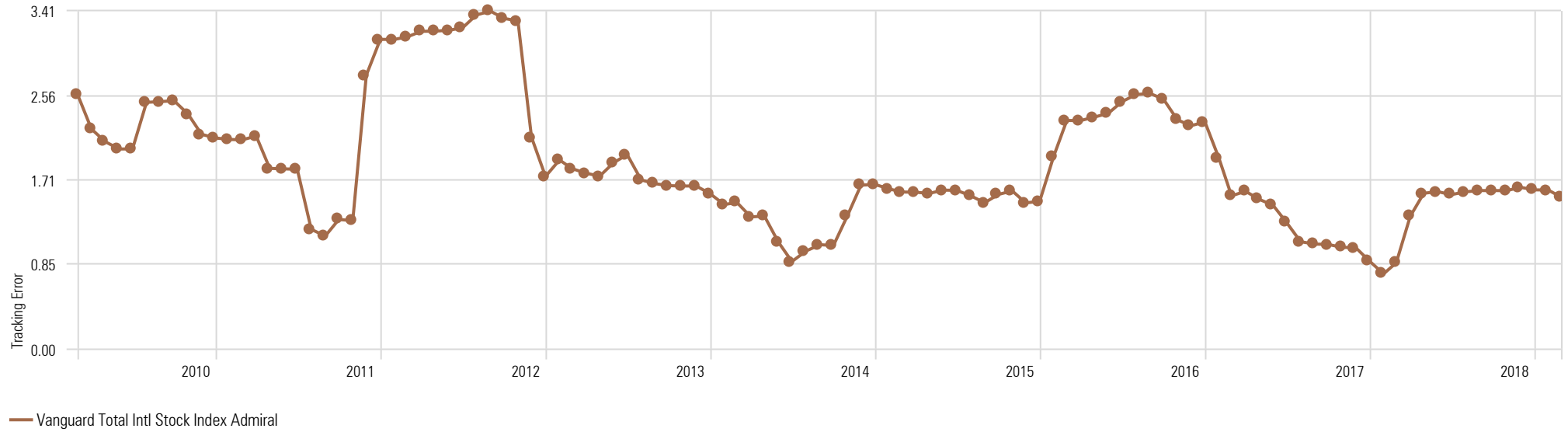


Tracking Error Comparison

1 Year Rolling Tracking Error

Time Period: 3/1/2009 to 2/28/2019

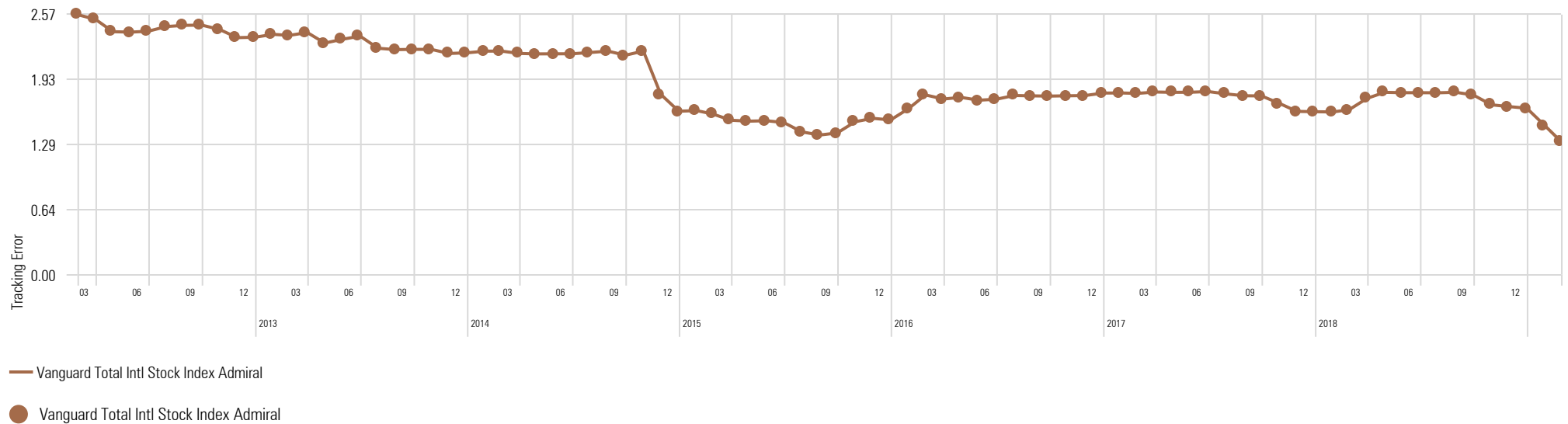
Rolling Window: 1 Year 1 Month shift Calculation Benchmark: FTSE Global All Cap ex US (USA) NR USD



3Year Rolling Tracking Error

Time Period: 3/1/2009 to 2/28/2019

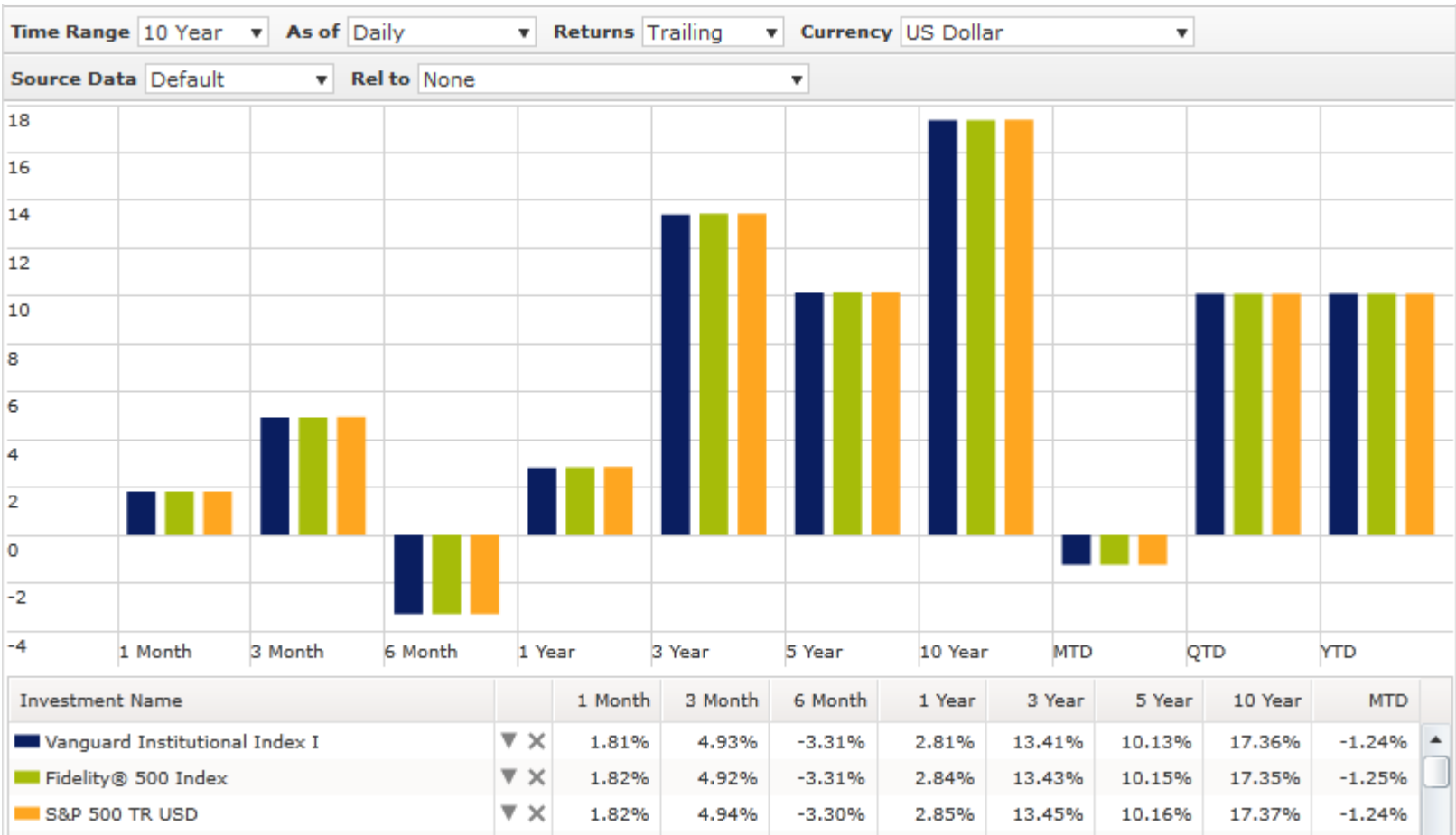
Rolling Window: 3 Years 1 Month shift Calculation Benchmark: FTSE Global All Cap ex US (USA) NR USD



Vanguard Vs. Fidelity Tracking Charts (Large Cap, Mid Cap, Small Cap)

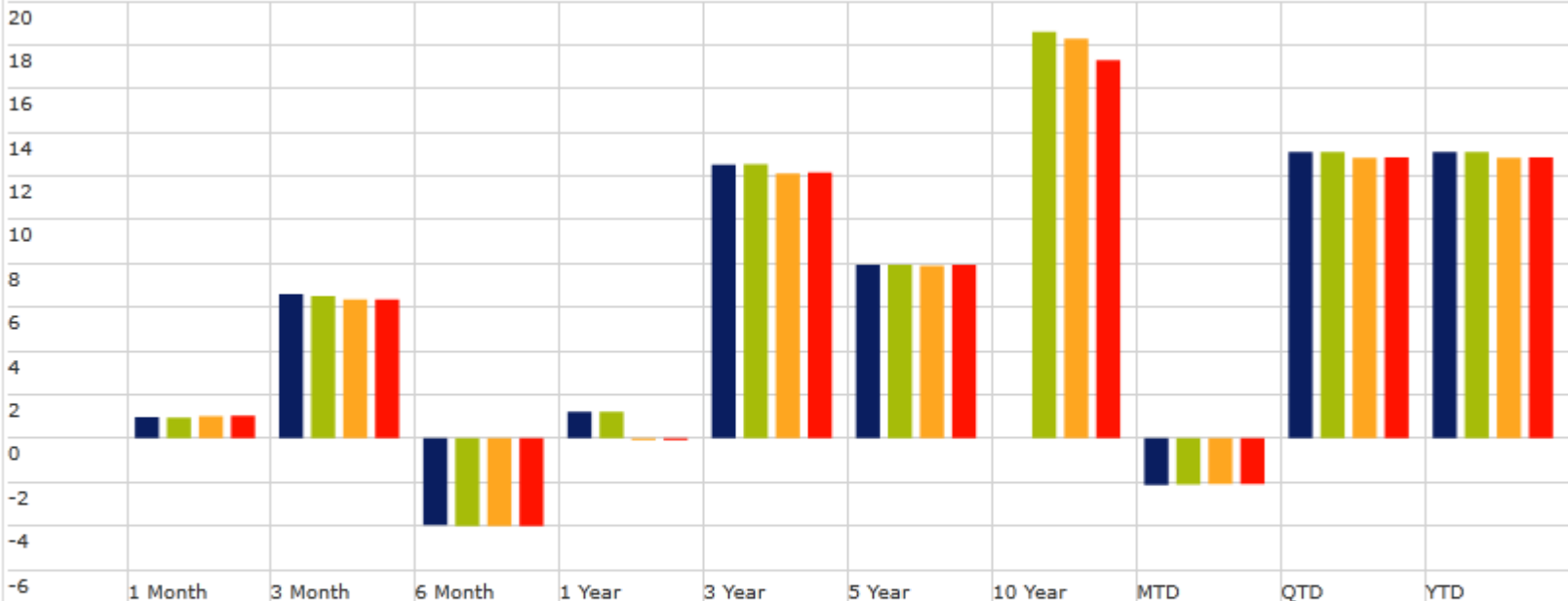
As of 2/28/2019





Time Range 10 Year As of Daily Returns Trailing Currency US Dollar

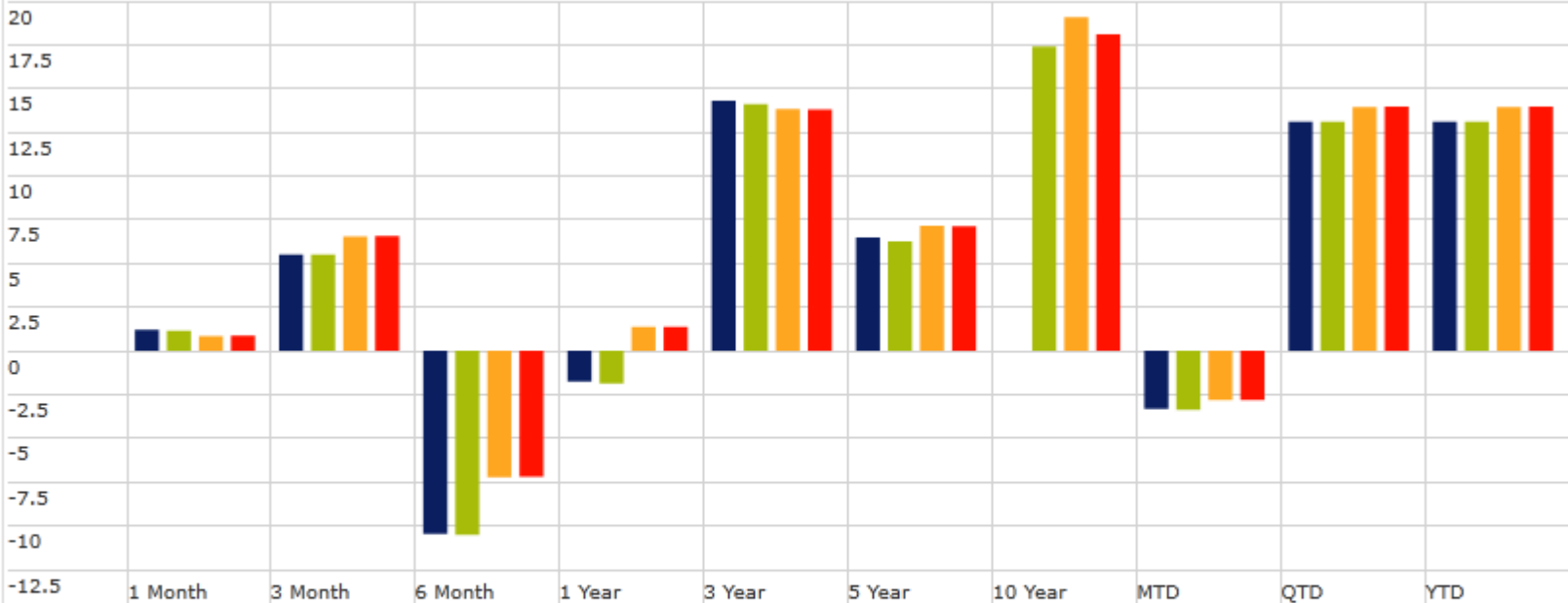
Source Data Default Rel to None



Investment Name		1 Month	3 Month	6 Month	1 Year	3 Year	5 Year	10 Year	MTD
Fidelity@ Mid Cap Index	▼ X	0.96%	6.59%	-3.97%	1.22%	12.52%	7.93%	--	-2.14%
Russell Mid Cap TR USD	▼ X	0.95%	6.51%	-4.01%	1.20%	12.53%	7.93%	18.58%	-2.12%
Vanguard Mid Cap Index Institutional	▼ X	1.02%	6.35%	-4.02%	-0.09%	12.12%	7.90%	18.27%	-2.09%
CRSP US Mid Cap TR USD	▼ X	1.04%	6.36%	-4.01%	-0.09%	12.15%	7.93%	17.30%	-2.09%

Time Range 10 Year ▾ As of Daily ▾ Returns Trailing ▾ Currency US Dollar ▾

Source Data Default ▾ Rel to None ▾



Investment Name		1 Month	3 Month	6 Month	1 Year	3 Year	5 Year	10 Year	MTD
Fidelity® Small Cap Index	▼ X	1.19%	5.49%	-10.46%	-1.76%	14.31%	6.48%	--	-3.32%
Russell 2000 TR USD	▼ X	1.16%	5.50%	-10.52%	-1.87%	14.11%	6.26%	17.40%	-3.36%
Vanguard Small Cap Index I	▼ X	0.85%	6.54%	-7.23%	1.38%	13.82%	7.14%	19.07%	-2.82%
CRSP US Small Cap TR USD	▼ X	0.86%	6.56%	-7.20%	1.38%	13.80%	7.12%	18.10%	-2.81%



The Kansas Board of Regents Mandatory Retirement Plan

DFA Target Date Fund Analysis



Dimensional Fund Target Date Analysis

Dimensional Fund Advisors (DFA) – Target Date Evaluation

Dimensional Target Date Funds – Overview

- Suite is comprised of 13 Target Date Funds
 - ◆ *Most Conservative = Retirement Income Fund*
 - ◆ *Most Aggressive = 2060 Fund*
- Recent entrant into the growing TDF marketplace – Inception 11/2/2015
 - ◆ *\$763M in assets as of 12.31.2018*
 - ◇ *Vanguard \$396B*
 - ◇ *TIAA \$29.3B*
- Mutual Fund Only
 - ◆ *Single Share Class*
 - ◆ *No CTF's Currently Available*

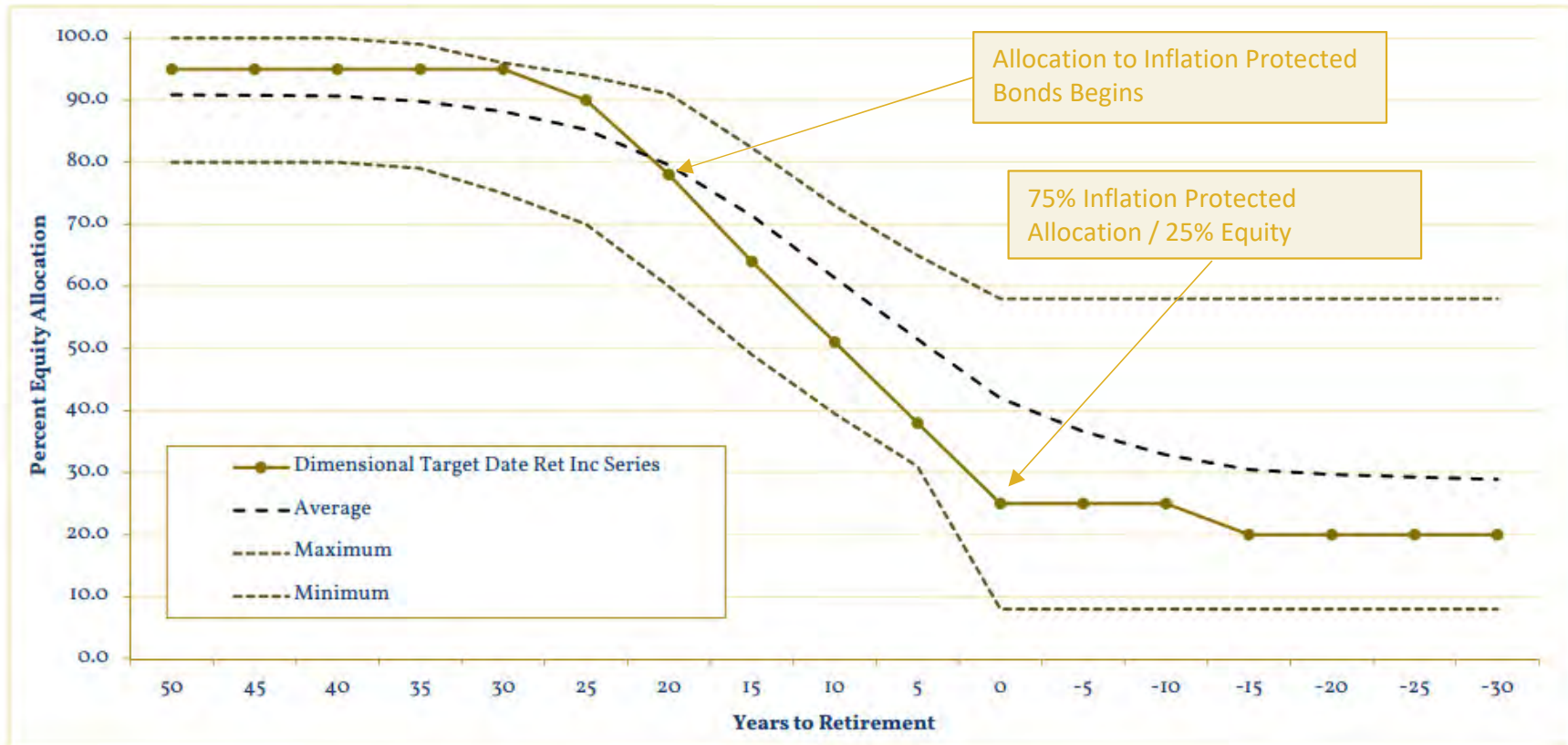
Dimensional Fund Advisors (DFA) – Target Date Evaluation

Overview

Glide Path

- ◆ *Initial Equity Exposure – approximately 95%*
- ◆ *% Equity at Retirement – 25%*
- ◆ *Glidepath end (Age) – 80*
- ◆ *% Equity at Landing Point – 20%*
- ◆ *Steeper glide path slope compared to industry averages*
- ◆ *Lower equity exposure beginning mid career continuing into retirement*
 - ◇ *Due to focus on interest rate and inflation protection*

Dimensional Fund Advisors (DFA) – Target Date Evaluation



	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30
Dimensional Target Date Ret Inc Series	95.0	95.0	95.0	95.0	95.0	90.0	78.0	64.0	51.0	38.0	25.0	25.0	25.0	20.0	20.0	20.0	20.0
Average	90.9	90.8	90.7	89.8	88.2	85.3	79.5	71.4	61.4	51.5	42.0	36.6	32.9	30.5	29.7	29.3	28.9
Maximum	100.0	100.0	100.0	99.0	96.0	94.0	91.0	82.4	73.0	65.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Minimum	80.0	80.0	80.0	79.0	75.0	70.0	60.0	49.0	39.5	31.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0

Dimensional Fund Advisors (DFA) – Target Date Evaluation

Overview

Comprised of a combination of the following asset classes and funds depending on the strategy:

- ◆ *US Equity – DFA US Large Company, DFA US Core Equity*
- ◆ *International Equity – DFA Int'l Core Equity, DFA Large Cap Int'l*
- ◆ *Emerging Market Equity – DFA Emerging Market Core Equity*
- ◆ *U.S. Fixed Income – DFA One-Year Fixed Income, DFA Short-Term Extended Quality*
- ◆ *U.S. TIPS – DFA Inflation-Protected Securities, DFA Long-Term Inflation Protected*
- ◆ *International Fixed Income – DFA Two-Year Global Fixed Income*
- ◆ *Cash – SSgA U.S. Government Money Market*
- Minimal Exposure to U.S. mid caps, small cap, high yield fixed income, emerging market debt, REITs, Commodities

Dimensional Fund Advisors (DFA) – Target Date Evaluation

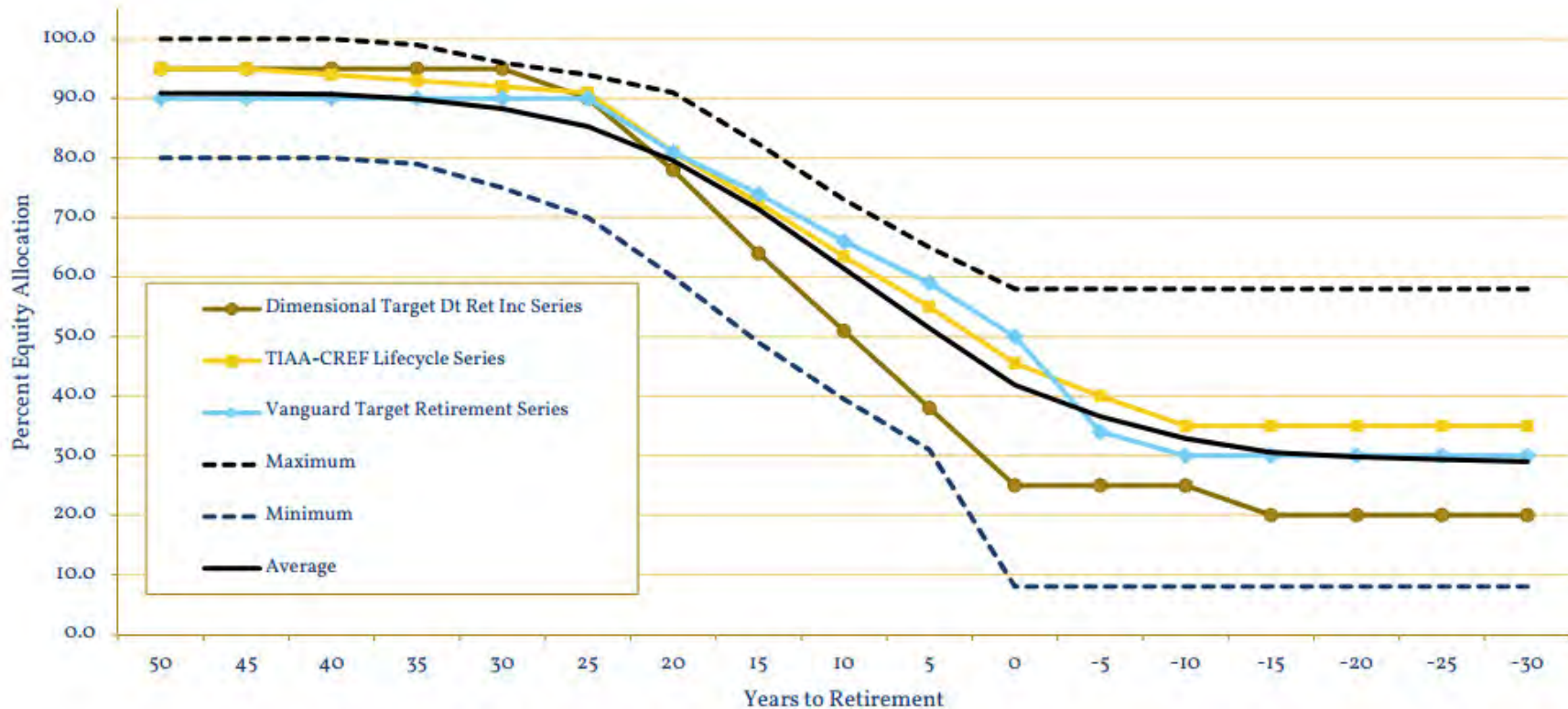
Overview

Primary Difference Relative to Other Competitors

- ◆ *Shifts to liability-driven investing strategy as a participant gets closer to retirement*
 - ◇ *Approximately 20 years from retirement the TIPS bonds are introduced – meant to be a duration-matched strategy*
 - ◇ *At retirement approximately 75% of the assets are invested in TIPS bonds – Compared to TIAA (7.7%), Vanguard (12%)*
 - ◇ *Goal is to provide a smoother and more certain level of consumption*

- ◆ *Majority of target date fund managers are focused on accumulation risk = Not having a big enough nest egg to retire, DFA is more focused on drawdown risk (minimize impact of inflation and interest rates)*

Dimensional Fund Advisors (DFA) – Target Date Evaluation



	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30
Dimensional Target Dt Ret Inc Series	95.0	95.0	95.0	95.0	95.0	90.0	78.0	64.0	51.0	38.0	25.0	25.0	25.0	20.0	20.0	20.0	20.0
TIAA-CREF Lifecycle Series	95.0	95.0	94.0	93.0	92.0	91.0	81.0	72.5	63.5	55.0	45.5	40.0	35.0	35.0	35.0	35.0	35.0
Vanguard Target Retirement Series	90.0	90.0	90.0	90.0	90.0	90.0	81.0	74.0	66.0	59.0	50.0	34.0	30.0	30.0	30.0	30.0	30.0
Maximum	100.0	100.0	100.0	99.0	96.0	94.0	91.0	82.4	73.0	65.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Minimum	80.0	80.0	80.0	79.0	75.0	70.0	60.0	49.0	39.5	31.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Average	90.9	90.9	90.7	89.9	88.3	85.3	79.6	71.4	61.4	51.4	41.8	36.6	32.9	30.6	29.8	29.4	29.0

Dimensional Fund Advisors (DFA) – Target Date Evaluation

2020 Target Date Fund vs. Peer Group - Sorted by Equity Allocation

	SERIES INFORMATION			CUMULATIVE RETURNS					ANNUAL RETURNS							ASSET ALLOCATION (%)					
	To or Through	Landing Point	Qtr	1 Yr	3 Yr	5 Yr	10 Yr	YTD	2017	2016	2015	2014	2013	2012	2011	2010	2009	Equity	Bonds	Cash	Other
Wells Fargo Dynamic Target Ser	Through Retirement	-10 YTT	-6.7	-3.0	6.1			-3.0	5.4	6.8								57	39	4	0
MainStay Retirement Series	Through Retirement	-10 YTT	-8.2	-6.6	4.1	3.5	8.2	-6.6	4.2	5.7	-0.8	6.1	6.8	3.2	-0.3	2.4	25.2	57	40	0	2
Nationwide Destination Series	Through Retirement	-20 YTT	-7.8	-5.2	4.9	3.6	7.5	-5.2	3.0	7.6	-1.0	4.4	4.0	2.5	-1.5	2.9	21.8	57	44	-1	0
T. Rowe Price Retirement Income	Through Retirement	-30 YTT	-7.4	-5.0				-5.0										56	41	3	0
T. Rowe Price Retirement Series	Through Retirement	-30 YTT	-7.3	-4.8	5.9	4.5	9.9	-4.8	5.9	7.6	-0.3	5.6	6.1	5.0	-1.2	4.7	34.2	56	41	3	0
Great-West SecureFoundation® Lifetime Se	To Retirement	0 YTT	-7.4	-5.2	4.7	3.8		-5.2	2.7	7.4	-0.6	5.7	4.4	11.3				55	36	9	0
BM O Target Date Retirement Funds	Through Retirement	-5 YTT	-7.6	-5.2	5.4	4.0		-5.2	5.0	7.3	-1.7	6.0						54	38	8	0
IG20 Retirement Series	Through Retirement	-10 YTT	-5.4	-3.3				-3.3										54	44	2	0
Fidelity Freedom Index Series	Through Retirement	-5 YTT	-6.6	-3.9	5.5	4.2		-3.9	4.0	7.1	-0.8	5.8	1.1	0.0	0.3	2.2		53	41	6	0
TIAA-CREF Lifecycle Index Series	Through Retirement	-10 YTT	-6.4	-3.8	5.3	4.4		-3.8	3.7	6.6	-0.1	6.5	5.6	2.3	1.5	2.0		52	47	1	0
Vanguard Target Retirement Series	Through Retirement	-10 YTT	-6.5	-4.2	5.4	4.4	8.5	-4.2	14.1	7.0	-0.7	7.1	15.8	12.3	0.6	13.1	23.1	52	46	1	0
ClearTrack Series	Through Retirement	-10 YTT	-7.1	-5.5	3.5			-5.5	2.5	4.4								52	45	3	0
BlackRock LifePath® Smart Beta Series	To Retirement	0 YTT	-6.3	-4.8	5.0	3.6	8.2	-4.8	3.7	7.0	-1.5	4.6	3.3	3.4	0.0	3.7	26.4	51	49	-1	0
Fidelity Advisor Freedom Series	Through Retirement	-5 YTT	-7.0	-4.7	5.6	4.2	8.5	-4.7	5.4	7.2	-0.6	5.1	2.9	1.5	-1.1	4.0	29.8	51	37	11	0
Principal LifeTime Series	Through Retirement	-5 YTT	-8.0	-5.7	4.7	3.7	8.7	-5.7	5.0	5.8	-1.2	5.6	5.9	4.7	-1.1	4.9	27.5	51	50	-1	1
Fidelity Freedom Series	Through Retirement	-5 YTT	-7.1	-5.0	5.6	4.4	8.4	-5.0	5.7	7.3	-0.2	5.3	3.2	1.8	-1.4	2.9	28.9	51	37	12	0
Fidelity Flex Freedom Series	Through Retirement	-5 YTT	-7.0	-4.6				-4.6										51	38	12	0
Principal LifeTime Hybrid Series	Through Retirement	-5 YTT	-7.6	-5.4	4.8			-5.4	3.5	7.0	-0.2							50	52	-1	0
John Hancock Multimanager Lifetime S	Through Retirement	-20 YTT	-7.3	-5.4	5.2	3.9	9.3	-5.4	4.1	8.0	-1.0	5.1	6.5	4.3	-2.3	4.0	35.4	49	45	5	2
TIAA-CREF Lifecycle Series	Through Retirement	-10 YTT	-7.5	-5.2	5.5	4.2	8.7	-5.2	15.6	6.7	0.4	4.9	16.5	14.6	-0.3	13.5	23.4	48	44	3	5
AllianceBernstein Multi-Manager Select S	Through Retirement	-5 YTT	-6.7	-5.5	5.1			-5.5	4.1	7.6	-1.4							47	52	7	-7
State Street Target Retirement Series	Through Retirement	-5 YTT	-6.2	-4.2	5.3			-4.2	3.4	7.4	-1.6							47	50	2	0
American Funds Trgt Date RtmI Series	Through Retirement	-30 YTT	-4.9	-2.7	5.5	4.7	9.2	-2.7	2.9	7.1	0.2	6.7	3.7	3.0	1.1	11.3	27.2	47	46	6	1
Schwab Target Index Series	Through Retirement	-20 YTT	-5.6	-3.1				-3.1	2.1									46	46	8	0
John Hancock Multi-Index Lifetime Series	Through Retirement	-20 YTT	-7.0	-4.8	5.4	4.1		-4.8	2.9	9.1	-1.7	6.2						46	44	10	0
Fidelity Simplicity RM D Series	Through Retirement	-5 YTT	-6.4	-4.7	5.2	4.2	9.0	-4.7	3.9	7.1	0.1	5.8	3.3	3.4	-1.9	3.7	28.4	46	41	13	0
Schwab Target Series	Through Retirement	-20 YTT	-6.3	-4.5	4.2	3.7	8.1	-4.5	3.0	4.6	0.2	5.8	3.2	2.8	1.0	2.5	22.6	46	46	7	0
MassMutual RetireSMART by JPM Series	To Retirement	0 YTT	-6.2	-3.8	5.3	3.5	8.9	-3.8	3.8	6.6	-2.1	4.0	7.5	4.1	-1.8	4.2	30.8	45	49	5	1
BlackRock LifePath Index Series	To Retirement	0 YTT	-5.5	-4.0	4.7	3.9		-4.0	2.3	6.3	-0.4	6.1	11.4	11.4				45	52	3	0
JPMorgan SmartRetirement Series	To Retirement	0 YTT	-6.2	-5.3	4.6	4.0	8.9	-5.3	4.1	5.9	-0.6	6.9	3.8	4.6	-0.8	5.0	29.4	45	51	3	1
JPMorgan SmartRetirement Blend Series	To Retirement	0 YTT	-5.8	-4.5	4.9	4.1		-4.5	3.4	6.8	-0.7	6.3	3.0					44	51	4	1
Wells Fargo Target Series	Through Retirement	-10 YTT	-4.8	-3.4	3.7	2.8	6.3	-3.4	1.1	4.9	-1.4	4.5	8.4	8.9	1.6	11.8	19.6	44	53	3	0
Great-West Lifetime Series	Through Retirement	-20 YTT	-6.9	-4.6				-4.6	2.8									44	31	10	5
Voya Target Retirement Series	To Retirement	0 YTT	-5.4	-4.0	4.6	3.9		-4.0	2.5	5.9	-0.1	5.9	4.0					44	52	3	1
Voya Index Solution Series	To Retirement	0 YTT	-5.5	-3.7	4.9	4.1		-3.7	2.6	6.5	0.2	5.9	4.0	11.7				44	52	3	1
USAA TARGET RETIREMENT FUNDS Series	To Retirement	0 YTT	-5.9	-4.9	4.9	3.1	7.5	-4.9	2.7	7.6	-2.4	3.5	9.2	11.3	0.5	3.3	28.1	44	52	4	1
KP RETIREMENT PATH Series	Through Retirement	-5 YTT	-5.5	-3.3	4.7			-3.3	2.0	5.9	-0.1							44	53	3	0
Voya Solution Series	To Retirement	0 YTT	-5.5	-4.0	4.7	4.3		-4.0	3.0	5.7	1.4	6.4	3.8	2.2				44	51	4	1
American Century One Choice Series	To Retirement	0 YTT	-6.7	-4.0	4.3	3.7	7.6	-4.0	1.1	6.4	-1.3	7.1	2.8	11.6	2.7	2.0	20.2	43	45	12	1
T. Rowe Price Target Retire Series	Through Retirement	-30 YTT	-5.7	-3.8	5.0	3.8		-3.8	2.8	6.6	-0.3	4.7						43	54	3	0
Fidelity Managed Retirement Series	Through Retirement	-5 YTT	-6.0	-4.5	5.0	4.2	8.8	-4.5	3.3	7.1	0.0	5.8	7.6	2.9	-1.7	3.2	27.9	43	44	13	0
Franklin LifeSmart Series	To Retirement	0 YTT	-6.1	-3.6	3.7	2.9		-3.6	11.9	3.3	-1.8	5.1						42	49	8	1
BlackRock LifePath Dynamic	To Retirement	0 YTT	-6.5	-3.7	5.2	3.9	7.5	-3.7	3.6	6.5	-1.5	5.4	10.1	11.4	1.8	11.3	23.1	42	50	8	0
PIMCO RealPath Blend Series	To Retirement	0 YTT	-5.2	-4.5	5.9			-4.5	3.8	9.2	-3.3							41	71	-6	4
Prudential Day One Target Date Series	Through Retirement	-10 YTT	-5.9	-4.0				-4.0	1.7									40	45	14	1
Manning & Napier Target Series	Through Retirement	-5 YTT	-5.2	-3.2	4.0	2.4	7.3	-3.2	2.3	3.6	-4.3	4.2	4.8	2.6	-0.7	2.7	24.5	39	60	1	0
AllianzGI Retirement Series	Through Retirement	-5 YTT	-6.3	-6.2	4.6	2.8	6.5	-6.2	3.7	7.3	-1.7	2.2	4.3	11.0	1.4	11.7	24.0	38	49	6	6
Invesco Peak Retirement	Through Retirement	-5 YTT	-4.3	-3.2				-3.2										36	64	-2	2
Columbia Adaptive Retirement Series	0	0	-3.3	-2.4				-2.4										35	64	-4	5
Harbor Target Retirement Series	Through Retirement	-5 YTT	-5.6	-4.2	4.3	2.9		-4.2	11.7	6.1	-1.0	3.0	8.3	3.1	0.5	11.9		32	64	4	1
MFS Lifetime Series	To Retirement	0 YTT	-4.4	-2.7	4.5	3.4	8.2	-2.7	10.0	6.5	-0.4	4.3	11.7	2.6	1.0	4.7	27.4	31	66	3	0
Invesco Balanced-Risk Retirement Series	To Retirement	0 YTT	-3.3	-3.9	4.0	2.7	7.0	-3.9	7.5	8.9	-3.4	5.1	2.2	10.0	1.1	3.5	22.7	31	72	-9	16
Great-West Lifetime Conservative Series	Through Retirement	-5 YTT	-4.7	-3.1				-3.1	9.9									30	41	13	16
Dimensional Target Date Retirement Income	Through Retirement	-15 YTT	-4.7	-5.2	4.6			-5.2	11.1	8.5								28	72	1	0
Putnam RetirementReady Series	To Retirement	0 YTT	-4.7	-4.1	2.6	2.8	7.1	-4.1	8.7	3.7	-0.3	6.3	10.8	10.3	-0.4	9.7	30.4	26	46	32	-3
Goldman Sachs Target Date Portfolio Ieri	To Retirement	0 YTT	-3.7	-3.1	3.6	3.5	7.6	-3.1	8.4	5.8	-0.4	7.1	10.9	10.0	2.1	9.0	28.9	25	71	4	0
PIMCO RealPathTM Series	To Retirement	0 YTT	-5.6	-5.2	5.0	2.9	6.2	-5.2	3.1	8.1	-4.5	4.5	2.1	9.7	2.0	10.4	24.8	25	98	-48	25
Natixis Sustainable Future Series	Through Retirement	-10 YTT	-6.7	-3.1				-3.1										20	68	13	0
John Hancock Multi-Index Preservation S	To Retirement	0 YTT	-1.4	-1.4	3.4	2.9		-1.4	6.6	5.2	-0.6	4.8	7.2	9.3	3.6			5	79	6	0

Dimensional Fund Advisors (DFA) – Target Date Evaluation

2045 Target Date Fund vs. Peer Group - Sorted by Equity Allocation

SERIES INFORMATION		CUMULATIVE RETURNS							ANNUAL PERFORMANCE									ASSET ALLOCATION (%)			
To or Through	Landing Point	Qtr	1Yr	3Yr	5Yr	10 Yr	YTD	2017	2016	2015	2014	2013	2012	2011	2010	2009	Equity	Bonds	Cash	Other	
BlackRock LifePath Dynamic	To Retirement	0 YTT	-24	-8.0	6.9	4.8	-8.0	22.6	8.4	-2.0	5.8	11.1	5.7	-2.1			102	4	-6	0	
BlackRock LifePath® Smart Beta Series	To Retirement	0 YTT	-114	-9.1	5.9	3.8	9.3	-9.1	20.5	8.5	-2.5	3.8	22.4	5.1	-2.4	13.9	28.7	98	3	-2	0
BlackRock LifePath Index Series	To Retirement	0 YTT	-113	-7.5	6.6	5.2		-7.5	21.1	8.3	-0.6	7.1	20.3	5.6				95	4	1	0
Dimensional Target Date Ret Income	Through Retirement	-15 YTT	-13.1	-9.2	6.9			-9.2	22.7	9.8								94	5	1	0
Voya Target Retirement Series	To Retirement	0 YTT	-118	-9.1	5.7	4.4		-9.1	20.9	7.5	-10	6.2	23.5					90	8	1	0
Voya Index Solution Series	To Retirement	0 YTT	-119	-8.0	6.4	4.7	9.7	-8.0	20.8	8.5	-16	6.3	24.3	6.2	-3.9	14.3	26.5	90	8	2	0
TIAA-CREF Lifecycle Series	Through Retirement	-10 YTT	-14.1	-9.6	6.5	4.8	10.4	-9.6	23.6	8.1	0.1	4.6	26.3	17.6	-3.6	15.4	28.6	90	4	1	5
Nationwide Destination Series	Through Retirement	-20 YTT	-2.5	-8.5	6.2	4.4	10.0	-8.5	18.4	10.7	-14	4.8	25.7	5.9	-4.0	16.2	29.5	89	11	0	0
TIAA-CREF Lifecycle Index Series	Through Retirement	-10 YTT	-119	-6.9	7.2	5.5		-6.9	21.2	9.3	-0.7	6.8	25.2	5.7	-14	13.8		89	9	1	0
Fidelity Freedom Index Series	Through Retirement	-5 YTT	-119	-7.2	7.0	5.2		-7.2	20.6	9.5	-16	6.6	11.1	13.2	-2.8	14.7		89	10	1	0
ClearTrack Series	Through Retirement	-10 YTT	-2.0	-8.6	6.0			-8.6	20.0	8.6								89	8	2	0
Voya Solution Series	To Retirement	0 YTT	-2.3	-0.1	5.2	4.3	9.7	-0.1	21.5	6.6	-0.6	6.3	23.7	5.8	-5.0	5.5	30.2	89	8	2	1
MFS Lifetime Series	To Retirement	0 YTT	-2.7	-7.8	6.9	4.9		-2.7	21.3	9.2	0.0	4.1	24.6					89	9	2	0
Schwab Target Index Series	Through Retirement	-20 YTT	-114	-7.3				-7.3	20.1									88	11	1	0
AXA Target Allocation Series	Through Retirement	-10 YTT	-2.3	-7.7	6.5	4.4	9.5	-2.3	20.0	8.9	-19	5.0	25.5	5.8	-5.5	13.3	27.8	88	11	1	0
Vanguard Target Retirement Series	Through Retirement	-10 YTT	-11.8	-7.9	6.8	5.1	10.3	-7.9	21.5	8.9	-1.6	7.2	24.4	15.6	-2.5	15.2	28.2	88	10	2	0
John Hancock Multi-Index Lifetime Series	Through Retirement	-20 YTT	-2.1	-8.3	6.8	5.0		-8.3	20.4	10.4	-2.0	6.9						88	8	4	0
Wells Fargo Dynamic Target Ser	Through Retirement	-10 YTT	-10.6	-4.9	7.6			-4.9	21.3	7.9								87	7	5	0
Guidestone Funds MyDestination Series	Through Retirement	-5 YTT	-114	-7.5	6.7	3.5	9.7	-7.5	21.2	8.4	-4.5	2.2	23.4	6.6	-3.6	16.8	30.7	87	13	-1	1
Fidelity Freedom Blend Series	Through Retirement	-5 YTT	-119															87	7	5	1
Principal Lifetime Hybrid Series	Through Retirement	-5 YTT	-2.9	-9.0	6.0			-9.0	19.9	9.1	-0.3							87	13	0	0
Great-West SecureFoundation® Lifetime Se	To Retirement	0 YTT	-2.3	-8.7	6.4	4.4		-2.3	19.6	10.4	-19	4.7	23.8	5.6	-4.0	11.4		87	10	2	1
John Hancock Multi-Manager Lifetime S	Through Retirement	-20 YTT	-2.6	-8.9	6.4	4.7	10.5	-2.6	21.5	8.8	-12	5.6	23.8	5.9	-5.2	16.0	36.5	87	8	5	1
BMO Target Date Retirement Funds	Through Retirement	-5 YTT	-116	-7.5	6.4	5.0		-7.5	21.4	7.4	-19	7.8						86	8	5	0
Schwab Target Series	Through Retirement	-20 YTT	-2.9	-9.8	5.4	4.5		-2.9	21.4	6.9	-0.2	6.5						86	9	5	0
Fidelity Advisor Freedom Series	Through Retirement	-5 YTT	-2.3	-8.0	6.7	4.9	10.1	-2.3	21.9	8.4	-0.8	5.6	21.2	14.7	-4.8	16.4	33.6	86	7	6	1
MassMutual RetireSMART by JPM Series	To Retirement	0 YTT	-113	-7.3	6.0	3.8		-7.3	19.7	7.4	-2.3	3.7	25.3	16.3	-4.5			86	10	3	1
290 Retirement Series	Through Retirement	-10 YTT	-9.1	-5.0				-9.1										86	13	1	0
T. Rowe Price Retirement Series	Through Retirement	-30 YTT	-112	-7.5	6.9	5.3	11.6	-7.5	22.6	7.7	0.2	6.1	25.9	17.6	-3.5	16.4	39.1	86	11	3	0
Fidelity Flex Freedom Series	Through Retirement	-5 YTT	-2.5	-8.3				-2.5										86	7	7	1
Fidelity Freedom Series	Through Retirement	-5 YTT	-2.6	-8.7	6.7	5.1	9.9	-2.6	22.5	8.6	-0.2	5.8	21.6	14.8	-5.0	14.7	32.0	85	7	7	1
State Street Target Retirement Series	Through Retirement	-5 YTT	-116	-7.9	6.9			-7.9	21.5	9.4	-2.4							85	11	3	0
AllianzGI Retirement Series	Through Retirement	-5 YTT	-13.2	-10.9	5.9	3.5		-10.9	22.1	9.2	-1.6	1.6	14.0	13.3				85	7	6	2
Principal LifeTime Series	Through Retirement	-5 YTT	-2.7	-8.3	5.5	4.4	9.9	-2.7	21.4	5.6	-0.8	6.4	23.0	17.1	-3.7	15.9	29.0	85	13	1	0
MassMutual Select TRP Retirement Series	Through Retirement	-30 YTT	-114															85	11	3	1
AllianceBernstein Multi-Manager Select S	Through Retirement	-5 YTT	-113	-8.3	6.7			-8.3	21.7	8.8	-0.6							83	11	4	2
Wells Fargo Target Series	Through Retirement	-10 YTT	-10.1	-6.8	6.8	4.6	10.3	-6.8	19.2	9.7	-2.5	5.6	23.1	5.0	-4.1	17.1	33.2	83	12	5	0
Invesco Peak Retirement	Through Retirement	-5 YTT	-10.7	-7.6				-7.6										83	18	-2	0
American Funds Trgt Date Trmt Series	Through Retirement	-30 YTT	-10.7	-5.6	7.8	6.2	11.3	-5.6	22.4	8.3	0.6	7.1	26.5	16.8	-2.3	13.0	32.0	83	10	6	1
Prudential Day One Target Date Series	Through Retirement	-10 YTT	-2.0	-8.1				-2.0	20.3									83	12	5	1
Great-West Lifetime Series	Through Retirement	-20 YTT	-2.5	-9.0	6.5	4.6		-2.5	20.8	9.9	-16	5.6	23.6	16.8	-4.4	15.2		82	6	2	11
KP RETIREMENT PATH Series	Through Retirement	-5 YTT	-114	-7.3	6.7			-7.3	21.0	8.1	-0.7							81	16	3	0
JPMorgan SmartRetirement Blend Series	To Retirement	0 YTT	-111	-8.3	6.3	4.9		-8.3	20.5	8.8	-10	7.0	21.0					81	14	4	0
JPMorgan SmartRetirement Series	To Retirement	0 YTT	-118	-9.7	5.7	4.6	10.5	-9.7	22.2	6.9	-16	7.9	23.0	18.4	-4.7	16.6	34.3	81	14	5	0
PIMCO RealPath Blend Series	To Retirement	0 YTT	-10.5	-7.5	6.9			-7.5	19.6	10.4	-4.3							79	19	-1	3
Manning & Napier Target Series	Through Retirement	-5 YTT	-12.0	-6.2	6.6	4.1		-6.2	23.5	4.6	-4.9	6.0	25.1					79	19	2	0
Franklin LifeSmart Series	To Retirement	0 YTT	-11.2	-7.2	4.6	3.4	9.7	-7.2	19.1	3.5	-18	5.2	23.6	10.9	-2.5	16.3	37.3	78	16	5	0
T. Rowe Price Target Retire Series	Through Retirement	-30 YTT	-9.8	-6.7	6.6	5.2		-6.7	20.6	7.6	0.2	6.0						76	21	3	0
American Century One Choice Series	To Retirement	0 YTT	-10.8	-6.9	5.7	4.9	10.0	-6.9	17.8	7.6	-1.1	8.9	21.2	15.3	-0.6	15.6	26.6	74	22	4	0
Harbor Target Retirement Series	Through Retirement	-5 YTT	-119	-8.6	5.6	3.7		-8.6	21.0	6.7	-0.9	2.6	23.1	17.3	-6.0	15.0		74	24	2	0
John Hancock Multi-Index Preservation S	To Retirement	0 YTT	-10.8	-7.2	6.6	4.7		-7.2	19.9	9.8	-2.1	6.3	19.3	14.4	-0.6			72	18	10	0
Great-West Lifetime Conservative Series	Through Retirement	-5 YTT	-10.5	-7.6	6.3	4.5		-7.6	18.5	9.6	-15	5.7	20.1	15.7	-3.2	14.4		69	15	3	13
Goldman Sachs Target Date Portfolio Seri	To Retirement	0 YTT	-10.2	-6.9				-6.9	16.3									66	29	5	0
Putnam RetirementReady Series	To Retirement	0 YTT	-2.5	-9.0	5.3	4.9	10.3	-2.5	19.7	7.2	-0.3	9.1	25.4	16.2	-3.7	13.9	31.5	64	14	23	-1
PIMCO RealPathTM Series	To Retirement	0 YTT	-113	-8.5	5.9	3.0		-8.5	19.6	9.6	-6.6	4.3	8.6					47	70	-62	45
Natixis Sustainable Future Series	Through Retirement	-10 YTT	-115	-6.0				-6.0										36	13	50	0

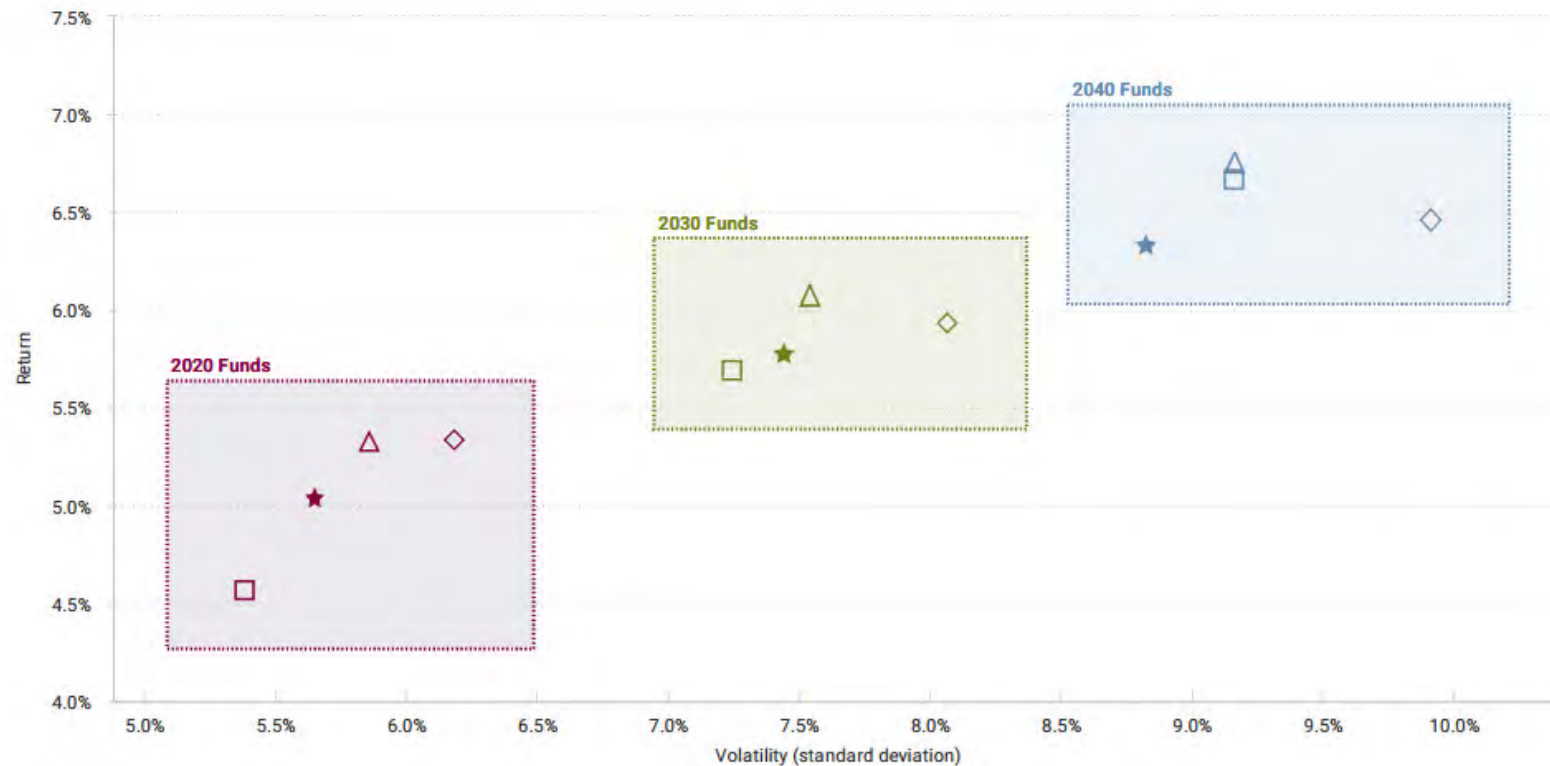
Dimensional Fund Advisors (DFA) – Target Date Evaluation

3-Year Risk/Return Comparison

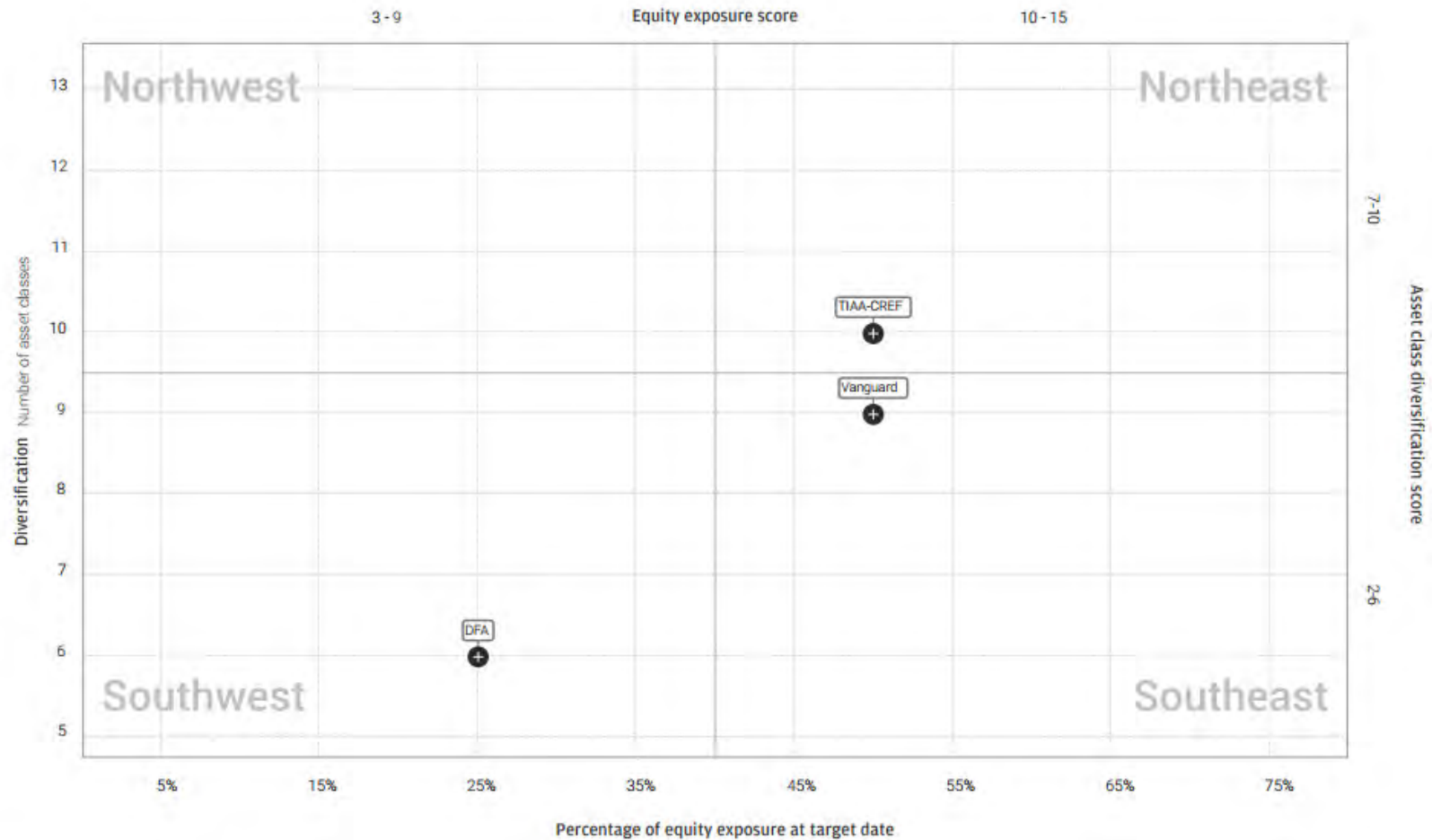
Monthly return data

□ Dimensional Target Date Retirement Incom
◇ TIAA-CREF Lifecycle

△ Vanguard Target Retirement
★ S&P Target Date



Target Date Compass^{by} JP Morgan Research



As of 09/30/2018. © 2018 Morningstar, Inc. All Rights Reserved. Percentage of equity exposure at target date: Strategic allocation to non-fixed income asset classes at target date, typically age 65. Asset class diversification: Calculated using the target date funds' asset allocation breakdown to 12 J.P. Morgan-defined separate asset classes. The 12 asset classes include: U.S. large cap equity, U.S. mid cap equity, U.S. small cap equity, International equity, Emerging markets equity, REITs, Commodities, U.S. fixed income, High yield, U.S. TIPs, International fixed income and Emerging markets debt. If a selected mutual fund has less than 5 asset classes, the fund will not be depicted in the above chart. Please see Target Date Compass Methodology for additional information. Commingled fund information not shown due to lack of data availability. See Disclosure page for commingled fund details.

Dimensional Fund Advisors (DFA) – Target Date Evaluation

	Dimensional Target Dt Ret Inc	TIAA-CREF Lifecycle	Vanguard Target Retirement
Glidepath - Earlier	More Equity	More Equity	Average Equity
Glidepath - Mid Career	Less Equity	Average Equity	Average Equity
Glidepath - Retirement	Less Equity	Average Equity	More Equity
Glidepath - Post Retirement	15 Year Rolldown	10 Year Rolldown	10 Year Rolldown
Proprietary Funds	100%	100%	100%
% Active Management	82%	100%	0%
% Passive Management	18%	0%	100%
Expense Ratio	0.19% - 0.27%	0.37% - 0.45%	0.13% - 0.15%

Dimensional Fund Advisors (DFA) – Target Date Evaluation

Fund Series	Mgmt Style	Net Expense	Prospectus Net Expense	Fund Series	Mgmt Style	Net Expense	Prospectus Net Expense
Fidelity Freedom® Index	Passive	0.08%		AllianzGI Retirement	Active	0.55%	
Schwab Target Index	Passive	0.08%		ClearTrack	Passive	0.55%	
Vanguard Instl Trgt Retire	Passive	0.09%		Great-West Lifetime Cnsrv	Hybrid	0.56%	
State Street Target Retirement	Passive	0.09%		Invesco Peak Retirement	Hybrid	0.56%	
TIAA-CREF Lifecycle Index	Passive	0.10%		MassMutual RetireSMART	Active	0.56%	
BlackRock LifePath® Index	Passive	0.11%		MassMutual Select TRP Retirement	Active	0.56%	
Vanguard Target Retirement Inv	Passive	0.15%		AB Multi-Manager Select	Active	0.58%	
Voya Index Solution Port	Passive	0.18%		Great-West Lifetime	Hybrid	0.58%	
Wells Fargo Target	Active	0.19%		T. Rowe Price Retirement	Active	0.58%	
Wells Fargo Dynamic Target	Hybrid	0.22%		JHancock Multimanager Lifetime	Active	0.59%	
BlackRock LifePath® Smart Beta	Passive	0.25%		T. Rowe Price Target	Active	0.60%	
Goldman Sachs Target Date	Passive	0.26%		Manning & Napier Target	Active	0.61%	
PIMCO RealPath Blend	Hybrid	0.27%		Virtus DFA Trgt Date Retire Inc	Active	0.61%	
Dimensional Target Dt Rtr Inc	Active	0.27%		Franklin LifeSmart™ Retire Trgt	Hybrid	0.62%	
JPMorgan SmartRetirement® Blend	Hybrid	0.29%		1290 Retirement	Passive	0.65%	
JHancock Multi-Index Lifetime	Hybrid	0.36%		Great-West SecureFoundation® LT	Passive	0.65%	
JHancock Multi-Index Presv	Hybrid	0.36%		Natixis Sustainable Future	Active	0.65%	
Nationwide Destination	Passive	0.39%		BMO Target Retirement	Active	0.68%	
Prudential Day One	Hybrid	0.40%		Schwab Target	Hybrid	0.68%	
American Funds Trgt Date Retire	Active	0.41%		Principal LifeTime	Active	0.69%	
Principal LifeTime Hybrid	Hybrid	0.43%		Putnam RetirementReady	Active	0.70%	
KP Retirement Path	Active	0.44%		State Farm LifePath	Passive	0.70%	
TIAA-CREF Lifecycle	Active	0.44%		Harbor Target Retirement	Active	0.73%	
Voya Target Retirement	Hybrid	0.46%		T. Rowe Price Retirement	Active	0.74%	
BlackRock LifePath® Dyn	Active	0.49%		PIMCO RealPath™	Active	0.77%	
MFS® Lifetime	Active	0.49%		USAA Target Retirement	Active	0.80%	
Columbia Adaptive Retirement	Active	0.50%		MainStay Retirement	Hybrid	0.81%	
Fidelity Advisor Freedom®	Active	0.50%		Voya Solution Port	Active	0.83%	
Fidelity Freedom®	Active	0.50%		Invesco Balanced-Risk Retire	Active	0.90%	
JPMorgan SmartRetirement®	Active	0.50%		Fidelity® Multi-Manager	Active	1.08%	
American Century One Choice	Active	0.51%					

Target Date Compass^{by} JP Morgan Research

Asset Class Summary

Asset class	Dimensional Target Date Retirement Income	TIAA-CREF Lifecycle	Vanguard Target Retirement
U.S. large cap	✓	✓	✓
U.S. mid cap		✓	✓
U.S. small cap		✓	✓
International equity	✓	✓	✓
Emerging markets equity	✓	✓	✓
U.S. fixed income	✓	✓	✓
U.S. TIPS	✓	✓	✓
High yield fixed income		✓	
International fixed income	✓	✓	✓
Emerging markets debt		✓	✓
REITs			
Commodities			
Total # of asset classes	6	10	9

Target Date Compass^{by} JP Morgan Research

Target Date Series Snapshot

	Dimensional Target Date Retirement Incom	TIAA-CREF Lifecycle	Vanguard Target Retirement
MUTUAL FUND ASSETS			
(\$mm) as of 12/31/2018	\$763	\$29,351	\$396,175
Earliest inception date	11/02/2015	10/15/2004	10/27/2003
GLIDE PATH			
% of equity at age 65	25.0%	50.0%	50.0%
% of equity at landing point	20.0%	40.0%	30.0%
Glide path end (age)	80	75	75
# of asset classes	6	10	9
Tactical	N/A	Yes	No
FUND STRUCTURE			
Fund of funds	Yes	Yes	Yes
Open architecture (%)	—	0%	0%
Active exposure (%)	81.71%	100%	0%
UNDERLYING FUND INFORMATION			
# of underlying funds	11	19	5
Average manager tenure (years)	6.57	8.25	9.16
Longest manager tenure (years)	22.64	19.25	23.75

Target Date Compass^{by} JP Morgan Research

Trailing Performance & Rankings

Target date fund name	3 month		1 year		3 year		5 year		10 year		15 year		Since inc return	Inception date
	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat		
US FUND TARGET-DATE RETIREMENT														
Dimensional Retirement Income Instl	(2.68)	21	(1.98)	16	2.96	80	—	—	—	—	—	—	2.37	11/02/2015
TIAA-CREF Lifecycle Retire Income Instl	(5.45)	92	(3.84)	71	4.56	6	3.67	1	6.86	10	—	—	4.37	11/30/2007
Vanguard Target Retirement Income Inv	(3.20)	28	(1.99)	21	3.82	32	3.35	18	5.92	49	4.77	1	4.88	10/27/2003
<i>TOTAL FUNDS IN CATEGORY</i>	—	200	—	187	—	164	—	129	—	93	—	17	—	—
<i>S&P Target Date Retirement Income TR USD</i>	(3.92)	—	(2.54)	—	3.57	—	3.06	—	5.31	—	4.25	—	4.17	12/29/2000
US FUND TARGET-DATE 2000-2010														
Dimensional 2005 Target Dt Rtr Inc Instl	(2.80)	8	(2.25)	12	3.42	91	—	—	—	—	—	—	2.69	11/02/2015
Dimensional 2010 Target Dt Rtr Inc Instl	(3.58)	26	(3.44)	60	3.71	79	—	—	—	—	—	—	2.90	11/02/2015
TIAA-CREF Lifecycle 2010 Institutional	(5.62)	96	(3.92)	82	4.79	12	3.85	7	7.56	29	—	—	5.34	10/15/2004
<i>TOTAL FUNDS IN CATEGORY</i>	—	163	—	137	—	118	—	93	—	76	—	22	—	—
<i>S&P Target Date 2010 TR USD</i>	(4.80)	—	(3.10)	—	4.08	—	3.40	—	6.24	—	4.78	—	4.25	12/29/2000
US FUND TARGET-DATE 2015														
Dimensional 2015 Target Dt Rtr Inc Instl	(3.94)	6	(4.20)	67	3.89	80	—	—	—	—	—	—	3.04	11/02/2015
TIAA-CREF Lifecycle 2015 Institutional	(6.47)	91	(4.41)	74	5.01	15	4.03	12	8.08	22	—	—	5.51	10/15/2004
Vanguard Target Retirement 2015 Inv	(4.65)	25	(2.97)	20	4.72	38	4.03	17	7.84	39	5.45	1	5.71	10/27/2003
<i>TOTAL FUNDS IN CATEGORY</i>	—	156	—	142	—	118	—	82	—	49	—	6	—	—
<i>S&P Target Date 2015 TR USD</i>	(5.72)	—	(3.67)	—	4.57	—	3.79	—	7.11	—	5.20	—	4.47	12/29/2000

Target Date Compass^{by} JP Morgan Research

Trailing Performance & Rankings

Target date fund name	3 month		1 year		3 year		5 year		10 year		15 year		Since Inc return	Inception date
	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat		
US FUND TARGET-DATE 2020														
Dimensional 2020 Target Dt Rtr Inc Instl	(4.72)	12	(5.17)	75	4.57	57	—	—	—	—	—	—	3.60	11/02/2015
TIAA-CREF Lifecycle 2020 Institutional	(7.50)	90	(5.18)	76	5.34	16	4.24	11	8.66	17	—	—	5.66	10/15/2004
Vanguard Target Retirement 2020 Inv	(6.50)	59	(4.24)	42	5.32	18	4.44	4	8.53	23	—	—	5.63	06/07/2006
<i>TOTAL FUNDS IN CATEGORY</i>	—	266	—	250	—	206	—	165	—	107	—	19	—	—
<i>S&P Target Date 2020 TR USD</i>	(6.49)	—	(4.16)	—	5.05	—	4.10	—	7.86	—	5.54	—	4.63	12/29/2000
US FUND TARGET-DATE 2025														
Dimensional 2025 Target Dt Rtr Inc Instl	(6.86)	25	(6.67)	93	5.25	44	—	—	—	—	—	—	4.14	11/02/2015
TIAA-CREF Lifecycle 2025 Institutional	(8.89)	90	(6.05)	77	5.68	25	4.43	15	9.23	15	—	—	5.81	10/15/2004
Vanguard Target Retirement 2025 Inv	(7.74)	61	(5.15)	42	5.73	18	4.66	5	9.06	24	5.88	1	6.19	10/27/2003
<i>TOTAL FUNDS IN CATEGORY</i>	—	244	—	226	—	189	—	146	—	73	—	6	—	—
<i>S&P Target Date 2025 TR USD</i>	(7.81)	—	(5.02)	—	5.46	—	4.31	—	8.46	—	5.81	—	4.78	12/29/2000
US FUND TARGET-DATE 2030														
Dimensional 2030 Target Dt Rtr Inc Instl	(8.47)	31	(7.36)	87	5.69	41	—	—	—	—	—	—	4.47	11/02/2015
TIAA-CREF Lifecycle 2030 Institutional	(10.28)	92	(7.09)	77	5.94	30	4.56	20	9.73	14	—	—	5.89	10/15/2004
Vanguard Target Retirement 2030 Inv	(8.86)	48	(5.86)	37	6.07	25	4.82	11	9.57	22	—	—	5.86	06/07/2006
<i>TOTAL FUNDS IN CATEGORY</i>	—	255	—	239	—	196	—	155	—	97	—	19	—	—
<i>S&P Target Date 2030 TR USD</i>	(9.26)	—	(5.99)	—	5.77	—	4.50	—	8.96	—	5.98	—	4.85	12/29/2000

Target Date Compass^{by} JP Morgan Research

Trailing Performance & Rankings

Target date fund name	3 month		1 year		3 year		5 year		10 year		15 year		Since inc return	Inception date
	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat		
US FUND TARGET-DATE 2035														
Dimensional 2035 Target Dt Rtr Inc Instl	(9.89)	38	(7.36)	60	5.89	51	–	–	–	–	–	–	4.63	11/02/2015
TIAA-CREF Lifecycle 2035 Institutional	(11.70)	95	(8.04)	84	6.19	34	4.67	24	10.17	14	–	–	6.13	10/15/2004
Vanguard Target Retirement 2035 Inv	(9.93)	41	(6.58)	32	6.41	24	4.99	12	10.04	21	6.32	1	6.72	10/27/2003
<i>TOTAL FUNDS IN CATEGORY</i>	–	239	–	221	–	184	–	141	–	68	–	6	–	–
<i>S&P Target Date 2035 TR USD</i>	(10.55)	–	(6.88)	–	6.08	–	4.69	–	9.38	–	6.12	–	4.93	12/29/2000
US FUND TARGET-DATE 2040														
Dimensional 2040 Target Dt Rtr Inc Instl	(11.28)	62	(7.66)	48	6.67	22	–	–	–	–	–	–	5.27	11/02/2015
TIAA-CREF Lifecycle 2040 Institutional	(13.04)	99	(8.92)	86	6.46	31	4.79	25	10.39	13	–	–	6.41	10/15/2004
Vanguard Target Retirement 2040 Inv	(11.03)	51	(7.32)	37	6.75	18	5.10	11	10.26	17	–	–	6.14	06/07/2006
<i>TOTAL FUNDS IN CATEGORY</i>	–	255	–	239	–	196	–	155	–	97	–	19	–	–
<i>S&P Target Date 2040 TR USD</i>	(11.33)	–	(7.41)	–	6.33	–	4.82	–	9.68	–	6.24	–	5.00	12/29/2000
US FUND TARGET-DATE 2045														
Dimensional 2045 Target Dt Rtr Inc Instl	(13.09)	97	(9.18)	84	6.93	10	–	–	–	–	–	–	5.44	11/02/2015
TIAA-CREF Lifecycle 2045 Institutional	(14.08)	99	(9.59)	91	6.49	36	4.81	28	10.38	13	–	–	4.57	11/30/2007
Vanguard Target Retirement 2045 Inv	(11.78)	50	(7.90)	43	6.78	21	5.13	12	10.26	23	6.62	1	7.07	10/27/2003
<i>TOTAL FUNDS IN CATEGORY</i>	–	239	–	221	–	184	–	141	–	67	–	7	–	–
<i>S&P Target Date 2045 TR USD</i>	(11.75)	–	(7.74)	–	6.51	–	4.91	–	9.88	–	–	–	6.05	05/31/2005

Target Date Compass^{by} JP Morgan Research

Trailing Performance & Rankings

Target date fund name	3 month		1 year		3 year		5 year		10 year		15 year		Since inc return	Inception date
	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat	Total return	% rank in cat		
US FUND TARGET-DATE 2050														
Dimensional 2050 Target Dt Rtr Inc Instl	(13.07)	88	(9.14)	73	6.97	9	—	—	—	—	—	—	5.49	11/02/2015
TIAA-CREF Lifecycle 2050 Institutional	(14.27)	99	(9.82)	89	6.54	34	4.85	29	10.37	11	—	—	4.57	11/30/2007
Vanguard Target Retirement 2050 Inv	(11.79)	47	(7.90)	37	6.77	22	5.12	14	10.27	19	—	—	6.19	06/07/2006
TOTAL FUNDS IN CATEGORY	—	255	—	239	—	196	—	155	—	79	—	6	—	—
S&P Target Date 2050 TR USD	(12.05)	—	(7.94)	—	6.68	—	5.01	—	10.02	—	—	—	5.76	05/31/2006
US FUND TARGET-DATE 2055														
Dimensional 2055 Target Dt Rtr Inc Instl	(13.09)	85	(9.16)	72	6.93	12	—	—	—	—	—	—	5.45	11/02/2015
TIAA-CREF Lifecycle 2055 Institutional	(14.43)	99	(9.86)	89	6.63	34	4.89	29	—	—	—	—	6.91	04/29/2011
Vanguard Target Retirement 2055 Inv	(11.76)	41	(7.89)	37	6.77	24	5.10	17	—	—	—	—	9.09	08/18/2010
TOTAL FUNDS IN CATEGORY	—	239	—	221	—	182	—	115	—	9	—	—	—	—
S&P Target Date 2055 TR USD	(12.10)	—	(7.97)	—	6.82	—	5.07	—	10.16	—	—	—	4.54	05/31/2007
US FUND TARGET-DATE 2060+														
Dimensional 2060 Target Dt Rtr Inc Instl	(12.99)	79	(9.07)	67	6.96	15	—	—	—	—	—	—	5.47	11/02/2015
TIAA-CREF Lifecycle 2060 Institutional	(14.69)	98	(10.06)	88	6.64	42	—	—	—	—	—	—	5.01	09/26/2014
Vanguard Target Retirement 2060 Inv	(11.77)	34	(7.87)	34	6.76	32	5.10	1	—	—	—	—	8.52	01/19/2012
Vanguard Target Retirement 2065 Inv	(11.77)	36	(7.95)	39	—	—	—	—	—	—	—	—	0.45	07/12/2017
TOTAL FUNDS IN CATEGORY	—	224	—	201	—	99	—	9	—	—	—	—	—	—
S&P Target Date 2060+ TR USD	(12.22)	—	(7.95)	—	6.95	—	5.12	—	—	—	—	—	9.16	05/28/2010

Target Date Compass^{by} JP Morgan Research

Calendar Year Performance

Target date fund name	Total return														
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
US FUND TARGET-DATE RETIREMENT															
Dimensional Retirement Income Instl	(1.98)	6.40	4.65	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle Retire Income Instl	(3.84)	12.10	6.04	0.25	4.53	9.85	11.51	2.78	10.69	16.33	(17.26)	–	–	–	–
Vanguard Target Retirement Income Inv	(1.99)	8.47	5.25	(0.17)	5.54	5.87	8.23	5.25	9.39	14.28	(10.93)	8.17	6.38	3.33	6.82
S&P Target Date Retirement Income TR USD	(2.54)	8.54	5.01	(0.18)	4.86	6.28	7.51	3.98	9.09	11.37	(13.09)	6.19	8.77	3.53	7.05
US FUND TARGET-DATE 2000-2010															
Dimensional 2005 Target Dt Rtr Inc Instl	(2.25)	7.25	5.50	–	–	–	–	–	–	–	–	–	–	–	–
Dimensional 2010 Target Dt Rtr Inc Instl	(3.44)	8.36	6.60	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2010 Institutional	(3.92)	12.76	6.20	0.38	4.59	12.00	12.67	1.69	11.84	19.52	(23.33)	9.53	8.39	4.23	–
S&P Target Date 2010 TR USD	(3.10)	9.95	5.82	(0.21)	5.07	9.42	8.94	2.61	10.56	14.61	(17.42)	6.40	10.48	3.97	8.88
US FUND TARGET-DATE 2015															
Dimensional 2015 Target Dt Rtr Inc Instl	(4.20)	9.07	7.32	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2015 Institutional	(4.41)	13.85	6.40	0.42	4.78	13.96	13.47	0.74	12.69	21.55	(26.78)	9.71	9.40	4.23	–
Vanguard Target Retirement 2015 Inv	(2.97)	11.50	6.16	(0.46)	6.56	13.00	11.37	1.71	12.47	21.30	(24.06)	7.55	11.42	4.94	9.04
S&P Target Date 2015 TR USD	(3.67)	11.39	6.56	(0.16)	5.49	12.16	10.32	1.53	11.85	17.48	(21.32)	6.50	11.92	4.37	9.98
US FUND TARGET-DATE 2020															
Dimensional 2020 Target Dt Rtr Inc Instl	(5.17)	11.15	8.48	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2020 Institutional	(5.18)	15.58	6.66	0.42	4.86	16.50	14.62	(0.29)	13.45	23.37	(30.10)	9.39	10.26	4.77	–
Vanguard Target Retirement 2020 Inv	(4.24)	14.08	6.95	(0.68)	7.11	15.85	12.35	0.60	13.12	23.10	(27.04)	7.52	–	–	–
S&P Target Date 2020 TR USD	(4.16)	12.80	7.22	(0.19)	5.67	14.76	11.48	0.58	12.93	19.95	(24.78)	6.59	13.13	4.71	10.89

Target Date Compass^{by} JP Morgan Research

Calendar Year Performance

Target date fund name	Total return														
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
US FUND TARGET-DATE 2025															
Dimensional 2025 Target Dt Rtr Inc Instl	(6.67)	14.41	9.21	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2025 Institutional	(6.05)	17.40	7.00	0.36	4.87	19.33	15.60	(1.29)	13.99	25.40	(33.29)	9.46	10.78	5.07	–
Vanguard Target Retirement 2025 Inv	(5.15)	15.94	7.48	(0.85)	7.17	18.14	13.29	(0.37)	13.84	24.81	(30.05)	7.59	13.24	5.45	10.11
S&P Target Date 2025 TR USD	(5.02)	14.55	7.82	(0.25)	5.56	17.03	12.51	(0.28)	13.82	22.03	(27.75)	6.64	14.21	5.28	11.77
US FUND TARGET-DATE 2030															
Dimensional 2030 Target Dt Rtr Inc Instl	(7.36)	16.81	9.10	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2030 Institutional	(7.09)	19.21	7.33	0.38	4.71	22.07	16.53	(2.32)	14.74	27.01	(36.39)	9.63	11.71	4.90	–
Vanguard Target Retirement 2030 Inv	(5.86)	17.52	7.85	(1.03)	7.17	20.49	14.24	(1.27)	14.43	26.72	(32.91)	7.49	–	–	–
S&P Target Date 2030 TR USD	(5.99)	16.19	8.35	(0.30)	5.64	19.14	13.43	(1.17)	14.52	23.70	(30.48)	6.67	15.28	5.58	12.29
US FUND TARGET-DATE 2035															
Dimensional 2035 Target Dt Rtr Inc Instl	(7.36)	18.24	8.38	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2035 Institutional	(8.04)	21.11	7.52	0.24	4.67	24.76	17.32	(3.37)	15.26	28.65	(38.04)	10.06	12.47	5.16	–
Vanguard Target Retirement 2035 Inv	(6.58)	19.12	8.26	(1.26)	7.24	22.82	15.16	(2.24)	15.14	28.17	(34.66)	7.49	15.24	6.30	11.95
S&P Target Date 2035 TR USD	(6.88)	17.78	8.85	(0.35)	5.69	20.84	14.12	(1.71)	15.02	24.99	(32.60)	6.75	15.92	5.81	12.66
US FUND TARGET-DATE 2040															
Dimensional 2040 Target Dt Rtr Inc Instl	(7.66)	20.49	9.08	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2040 Institutional	(8.92)	22.91	7.78	0.09	4.63	26.33	17.52	(3.58)	15.45	28.64	(37.93)	10.48	13.12	5.30	–
Vanguard Target Retirement 2040 Inv	(7.32)	20.71	8.73	(1.59)	7.15	24.37	15.56	(2.55)	15.17	28.32	(34.53)	7.48	–	–	–
S&P Target Date 2040 TR USD	(7.41)	18.87	9.23	(0.40)	5.69	22.10	14.69	(2.17)	15.38	25.97	(34.00)	6.98	16.40	6.00	12.97

Target Date Compass^{by} JP Morgan Research

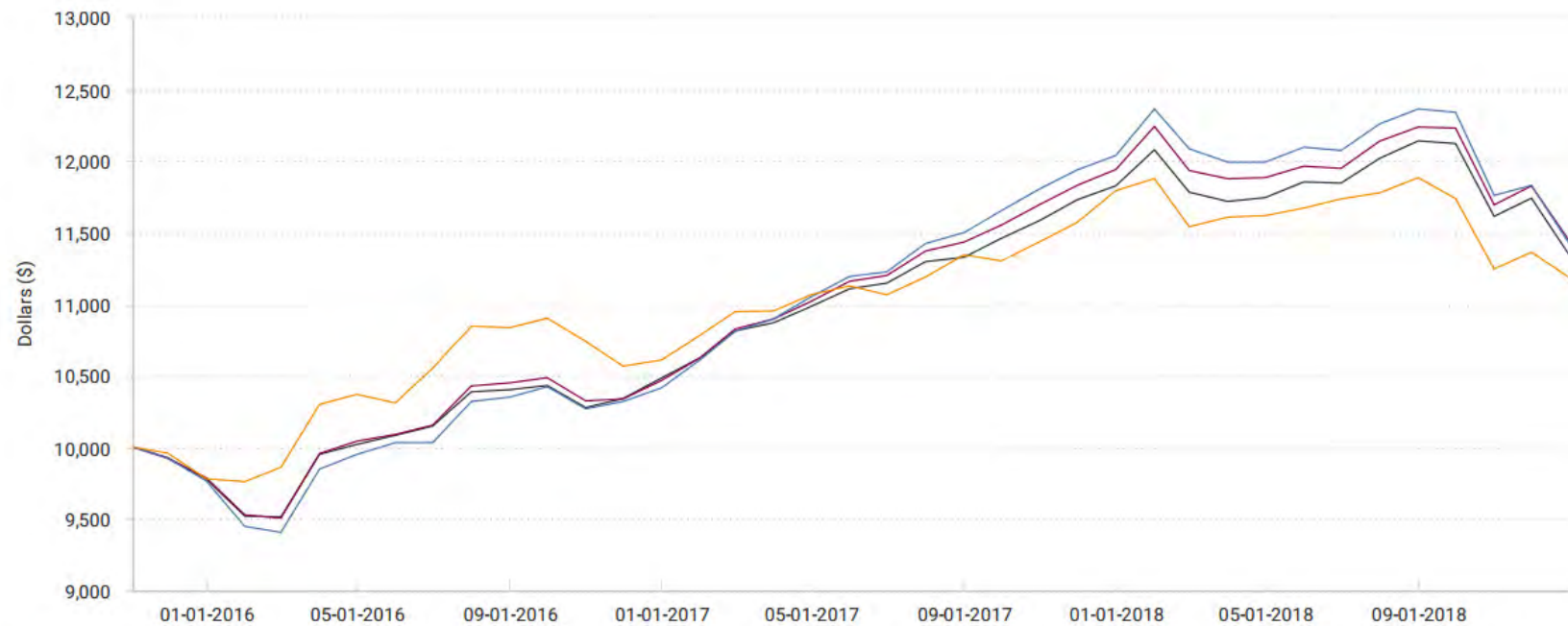
Calendar Year Performance

Target date fund name	Total return														
	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
US FUND TARGET-DATE 2045															
Dimensional 2045 Target Dt Rtr Inc Instl	(9.18)	22.65	9.76	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2045 Institutional	(9.59)	23.62	8.06	0.13	4.61	26.25	17.56	(3.63)	15.40	28.57	(38.75)	–	–	–	–
Vanguard Target Retirement 2045 Inv	(7.90)	21.42	8.87	(1.57)	7.16	24.37	15.58	(2.51)	15.19	28.15	(34.56)	7.47	15.98	6.95	12.89
S&P Target Date 2045 TR USD	(7.74)	19.56	9.54	(0.46)	5.67	23.14	15.15	(2.56)	15.62	26.40	(35.24)	6.97	16.82	–	–
US FUND TARGET-DATE 2050															
Dimensional 2050 Target Dt Rtr Inc Instl	(9.14)	22.77	9.73	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2050 Institutional	(9.82)	24.04	8.10	0.18	4.59	26.25	17.53	(3.56)	15.32	28.35	(38.76)	–	–	–	–
Vanguard Target Retirement 2050 Inv	(7.90)	21.39	8.85	(1.58)	7.18	24.34	15.58	(2.54)	15.20	28.31	(34.62)	7.49	–	–	–
S&P Target Date 2050 TR USD	(7.94)	20.18	9.74	(0.47)	5.69	24.13	15.49	(2.87)	15.62	26.40	(35.24)	6.97	–	–	–
US FUND TARGET-DATE 2055															
Dimensional 2055 Target Dt Rtr Inc Instl	(9.16)	22.62	9.77	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2055 Institutional	(9.86)	24.23	8.27	0.13	4.58	26.24	17.65	–	–	–	–	–	–	–	–
Vanguard Target Retirement 2055 Inv	(7.89)	21.38	8.88	(1.72)	7.19	24.33	15.58	(2.27)	–	–	–	–	–	–	–
S&P Target Date 2055 TR USD	(7.97)	20.48	9.94	(0.54)	5.64	24.96	15.81	(2.87)	15.62	26.40	(35.24)	–	–	–	–
US FUND TARGET-DATE 2060+															
Dimensional 2060 Target Dt Rtr Inc Instl	(9.07)	22.68	9.68	–	–	–	–	–	–	–	–	–	–	–	–
TIAA-CREF Lifecycle 2060 Institutional	(10.06)	24.40	8.39	0.19	–	–	–	–	–	–	–	–	–	–	–
Vanguard Target Retirement 2060 Inv	(7.87)	21.36	8.84	(1.68)	7.16	24.35	–	–	–	–	–	–	–	–	–
Vanguard Target Retirement 2065 Inv	(7.95)	–	–	–	–	–	–	–	–	–	–	–	–	–	–
S&P Target Date 2060+ TR USD	(7.95)	20.75	10.08	(0.66)	5.64	24.96	15.81	(2.87)	–	–	–	–	–	–	–

Target Date Compass^{by} JP Morgan Research

Growth of 10K | 2020 Funds

11/03/2015 - 12/31/2018



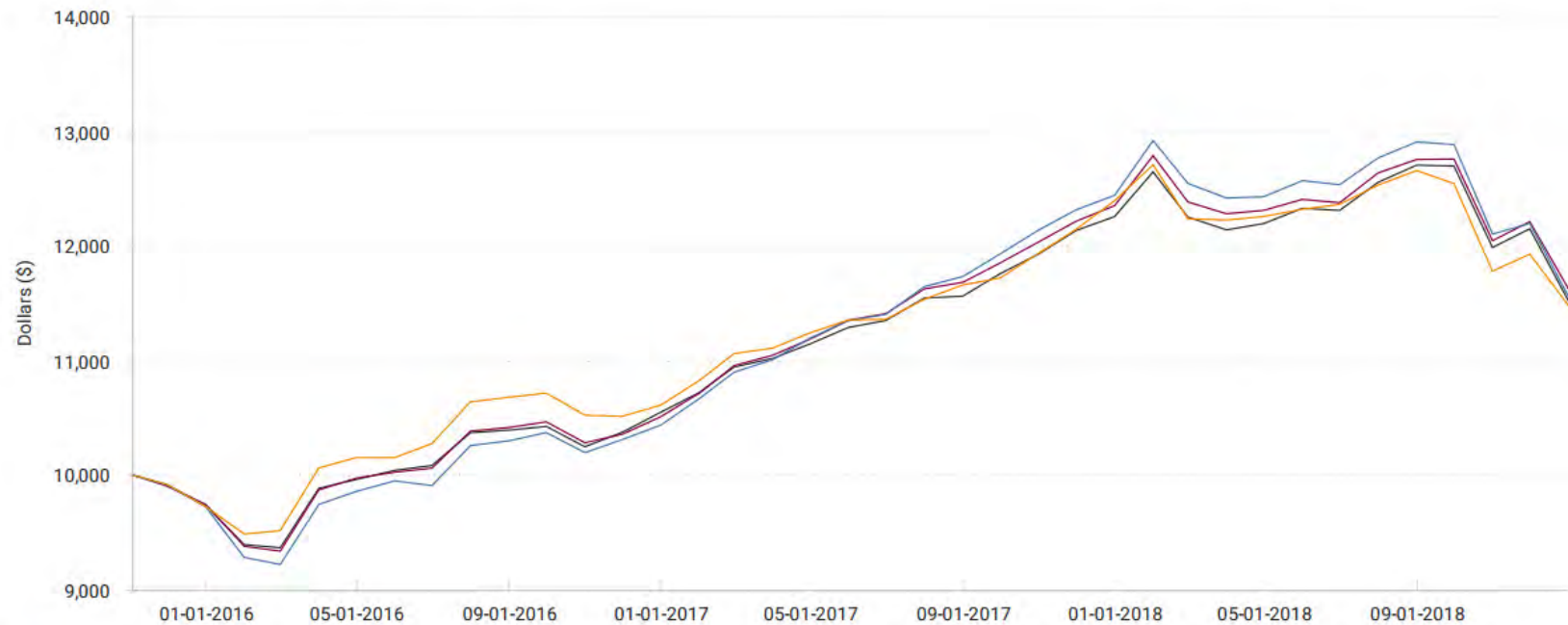
Target date fund name	Cumulative return	Annualized return	Ending value
Dimensional Target Date Retirement Incom	11.83%	3.60%	\$11,183.11
TIAA-CREF Lifecycle	14.15%	4.27%	\$11,414.70
Vanguard Target Retirement	14.35%	4.33%	\$11,435.15
S&P Target Date 2020	13.35%	4.04%	\$11,335.45

shape object

Target Date Compass^{by} JP Morgan Research

Growth of 10K | 2030 Funds

11/03/2015 - 12/31/2018

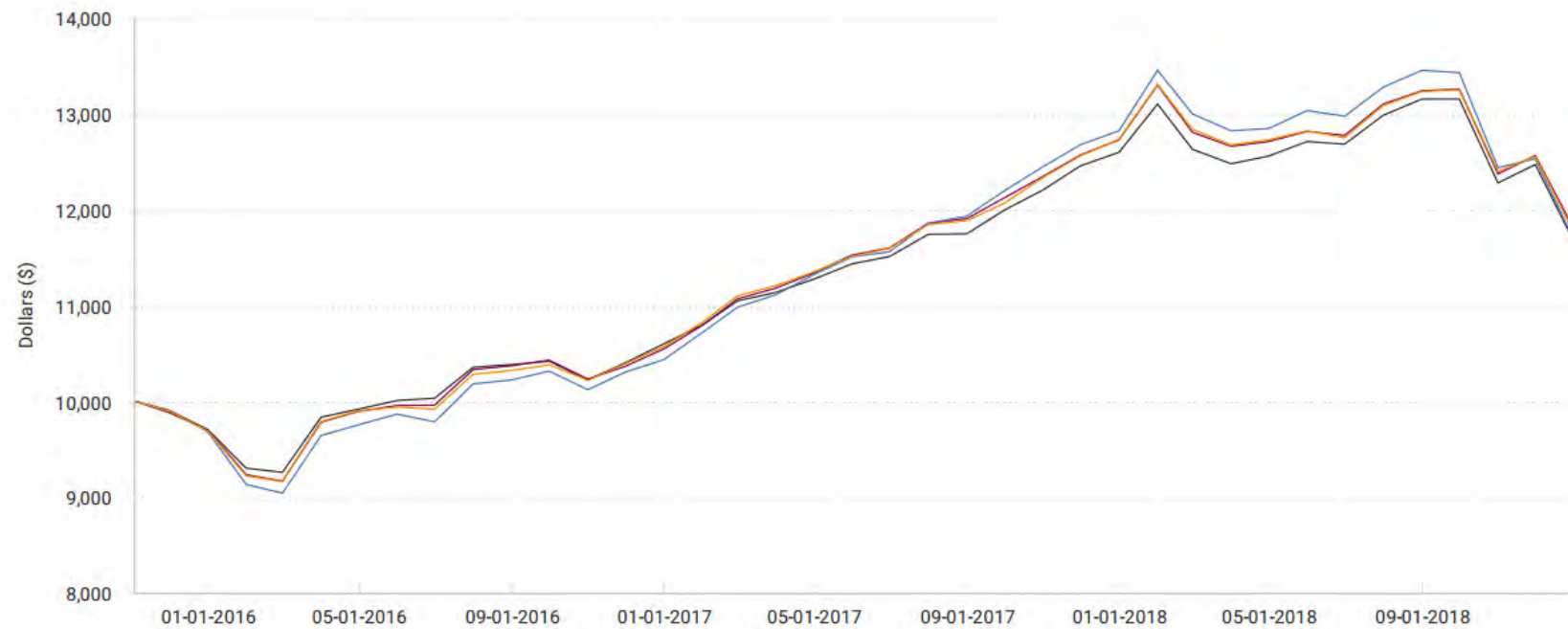


Target date fund name	Cumulative return	Annualized return	Ending value
● Dimensional Target Date Retirement Incom	14.84%	4.47%	\$11,484.05
● TIAA-CREF Lifecycle	15.62%	4.70%	\$11,561.84
● Vanguard Target Retirement	16.30%	4.89%	\$11,629.59
● S&P Target Date 2030	15.24%	4.59%	\$11,523.74

Target Date Compass^{by} JP Morgan Research

Growth of 10K | 2040 Funds

11/03/2015 - 12/31/2018

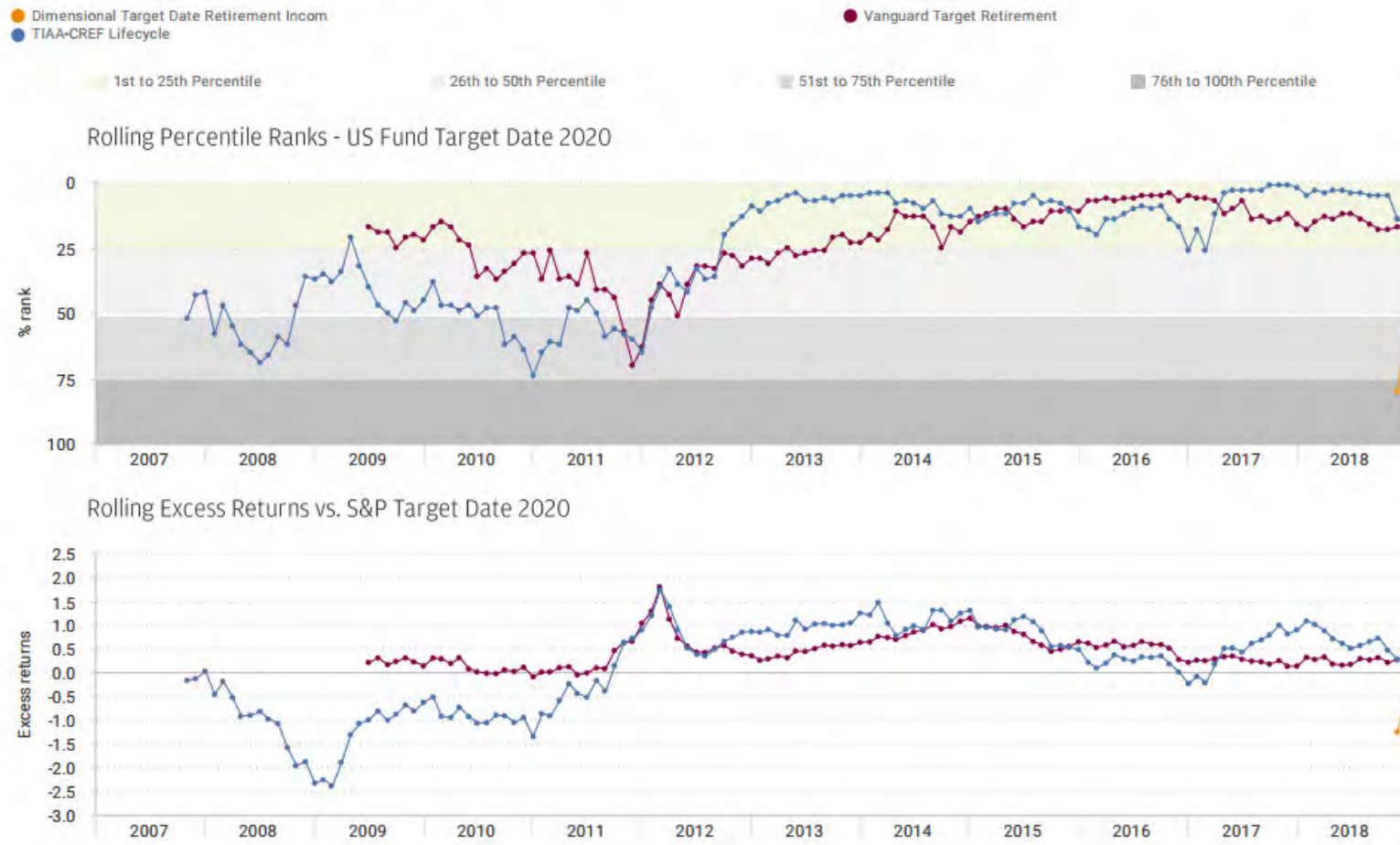


Target date fund name	Cumulative return	Annualized return	Ending value
● Dimensional Target Date Retirement Incom	17.62%	5.27%	\$11,762.11
● TIAA-CREF Lifecycle	16.84%	5.04%	\$11,683.72
● Vanguard Target Retirement	18.00%	5.37%	\$11,800.50
● S&P Target Date 2040	16.69%	5.00%	\$11,668.97

Target Date Compass^{by} JP Morgan Research

3-Year Rolling Returns | 2020 Funds

Time period: 01/01/2004 - 12/31/2018 | Rolling window: 3 years 1 month shift



Target Date Compass^{by} JP Morgan Research

3-Year Rolling Returns | 2030 Funds

Time period: 01/01/2004 - 12/31/2018 | Rolling window: 3 years 1 month shift

- Dimensional Target Date Retirement Incom
- TIAA-CREF Lifecycle

- Vanguard Target Retirement

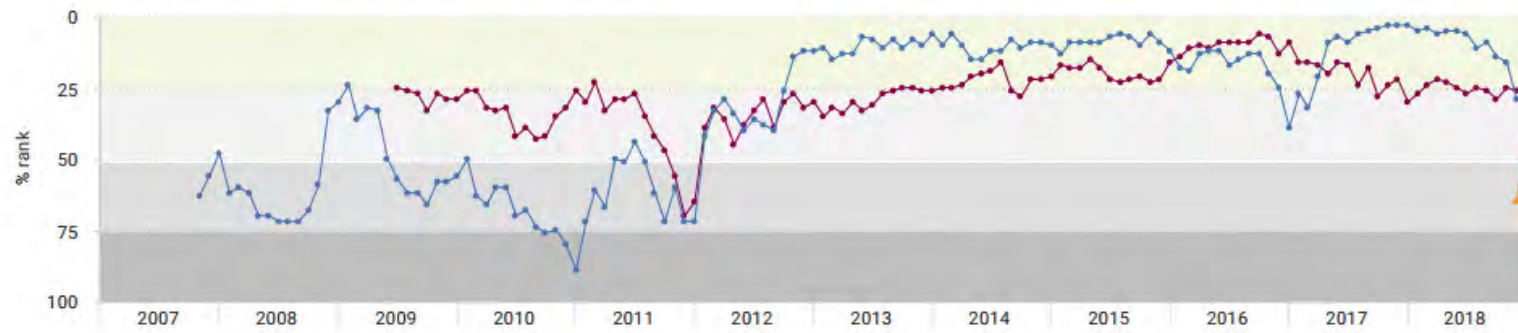
1st to 25th Percentile

26th to 50th Percentile

51st to 75th Percentile

76th to 100th Percentile

Rolling Percentile Ranks - US Fund Target Date 2030



Rolling Excess Returns vs. S&P Target Date 2030



Target Date Compass^{by} JP Morgan Research

3-Year Rolling Returns | 2040 Funds

Time period: 01/01/2004 - 12/31/2018 | Rolling window: 3 years 1 month shift

- Dimensional Target Date Retirement Income
- TIAA-CREF Lifecycle

- Vanguard Target Retirement

1st to 25th Percentile

26th to 50th Percentile

51st to 75th Percentile

76th to 100th Percentile

Rolling Percentile Ranks - US Fund Target Date 2040



Rolling Excess Returns vs. S&P Target Date 2040



Peer Group Analysis

Data as of December 31, 2018

	Number of Funds in Peer Group - Trailing Periods						Number of Funds in Peer Group - Calendar Year									
	3 Month	YTD	1 Year	3 Year	5 Year	10 Year	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Stable Value	310	308	308	301	293	255	308	310	311	308	305	291	286	288	274	269
Money Market-Taxable	570	555	555	482	446	383	555	533	486	459	450	445	438	434	412	390
Short-Term Bond	531	519	519	497	462	391	519	503	497	479	462	441	405	397	394	391
Intermediate-Term Bond	1,047	1,018	1,018	947	901	796	1,018	996	948	916	902	889	870	850	824	796
Inflation-Protected Bond	226	220	220	214	201	145	220	219	214	213	201	198	174	164	147	145
World Bond	316	305	305	275	270	201	305	286	275	271	271	263	243	229	211	201
Large Blend	1,339	1,324	1,324	1,241	1,175	1,038	1,324	1,275	1,242	1,210	1,179	1,148	1,119	1,092	1,064	1,042
Large Growth	1,404	1,396	1,396	1,345	1,300	1,116	1,396	1,366	1,345	1,314	1,301	1,289	1,234	1,180	1,152	1,116
Large Value	1,189	1,186	1,186	1,142	1,061	938	1,186	1,166	1,142	1,089	1,061	1,037	997	967	945	938
Mid-Cap Value	398	397	397	374	344	296	397	379	374	370	344	337	333	305	301	296
Mid-Cap Blend	438	436	436	394	370	318	436	426	394	379	373	365	347	330	328	320
Mid-Cap Growth	596	590	590	570	547	491	590	581	570	558	547	533	521	514	500	491
Small Value	408	402	402	386	359	314	402	391	387	375	360	354	354	331	320	314
Small Blend	748	745	745	715	650	544	745	739	716	668	654	611	589	571	554	546
Small Growth	685	680	680	655	622	559	680	668	655	642	622	609	589	581	568	559
Global Real Estate	218	210	210	202	177	137	210	210	203	190	178	170	170	158	155	138
World Large Stock	912	893	893	777	719	518	893	827	777	750	720	668	599	563	534	519
Foreign Large Value	296	291	291	285	257	214	291	290	285	273	257	241	239	234	223	214
Foreign Large Blend	535	535	535	529	514	362	535	529	529	529	514	514	448	448	448	362
Foreign Large Growth	446	444	444	405	381	321	444	431	405	387	381	371	350	347	335	322
Foreign Small/Mid Value	59	57	57	51	47	24	57	57	51	51	47	43	33	31	24	24
Foreign Small/Mid Blend	106	104	104	90	72	62	104	103	91	77	73	70	66	65	66	64
Foreign Small/Mid Growth	139	139	139	122	111	94	139	130	122	112	111	108	103	99	95	94
Diversified Emerging Mkts	812	790	790	736	605	339	790	772	736	675	605	544	495	392	351	340
Tactical Allocation	278	278	278	260	206	84	278	268	260	230	206	189	142	125	100	84
Target-Date Retirement	201	192	192	179	156	127	192	185	179	171	156	153	143	139	134	127
Target-Date 2000-2010	165	139	139	129	118	101	139	136	129	125	118	109	109	109	109	101
Target-Date 2015	157	144	144	129	107	70	144	136	129	120	107	98	94	94	87	70
Target-Date 2020	267	254	254	227	202	149	254	241	227	218	202	188	178	161	156	149
Target-Date 2025	245	230	230	207	182	105	230	221	207	198	183	174	150	139	122	105
Target-Date 2030	256	243	243	218	193	140	243	232	218	209	193	179	169	152	147	140
Target-Date 2035	240	225	225	203	178	100	225	216	203	194	178	169	146	134	117	100
Target-Date 2040	256	243	243	218	193	140	243	232	218	209	193	179	169	152	147	140
Target-Date 2045	240	225	225	202	177	97	225	215	202	193	177	167	141	133	115	97
Target-Date 2050	256	243	243	218	193	115	243	232	218	209	193	178	168	131	122	115
Target-Date 2055	240	225	225	201	150	9	225	214	201	187	150	132	101	60	19	9
Target-Date 2060+	225	206	206	109	9		206	167	109	45	9	1				
Allocation--15% to 30% Equity	201	201	201	193	181	123	201	198	193	190	181	179	165	135	128	123
Allocation--30% to 50% Equity	545	541	541	506	415	342	541	530	506	458	415	403	383	353	346	343
Allocation--50% to 70% Equity	781	776	776	752	699	566	776	756	752	711	699	693	634	605	582	566
Allocation--70% to 85% Equity	365	362	362	349	330	246	362	352	349	339	330	322	292	260	255	246
Allocation--85%+ Equity	194	190	190	188	177	139	190	188	188	184	177	162	157	142	142	139

Broad Benchmark Descriptions

Listed below are descriptions of a selection of commonly used broad market indices. Each broad market index has a variety of sub-indices which represent segments within a given broad market universe (e.g., Russell 1000 Value, Russell 1000 Growth).

Domestic Equities

S&P 500 Index (Standard & Poor's 500): Includes 500 U.S. companies chosen on the basis of market capitalization, liquidity, industry, among other factors.

Russell 3000 Index: Contains 3000 U.S. companies representing nearly the entire investable U.S. equity market. The index consists of large, mid and small cap companies with the vast majority of exposure weighted to large cap companies.

Russell 1000 Index: Contains the largest 1000 companies in the Russell 3000 by market capitalization, generally representing more than 90% of the investable U.S. equity market.

Russell 2000 Index: Contains the smallest 2000 companies in the Russell 3000 by market capitalization representing substantially less than 10% of the investable U.S. equity market.

International Equities

MSCI ACWI ex U.S. Index (All Country World ex U.S. Index): Consists of 46 country indexes, including 22 developed (excluding the U.S.) and 23 emerging markets around the world. Developed countries are defined by MSCI as nations that meet economic development sustainability, size and liquidity, and market accessibility criteria. Developing or emerging markets are markets that meet slightly lower size and liquidity, and market accessibility criteria.

MSCI EAFE Index (Europe, Australasia and Far East): Represents the performance of large and mid-cap companies in 21 developed markets around the world, excluding U.S. and Canada.

MSCI EM Index (Emerging Market): Consists of 23 emerging market economies around the world, representing 10% of the world market capitalization.

Fixed Income

Barclays Aggregate Index: Represents investment grade bonds (rating of Baa3 or higher from Moody's, rating of BBB- or higher from S&P) traded in the U.S. The index includes government, agency, and corporate credits.

BofAML US HY Master II Index (High Yield): Represents the performance of below investment grade bonds (rating of Ba1 or lower from Moody's, rating of BB+ or lower from S&P) publicly issued in the US domestic market.

Client Information Privacy Notice

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Our Pledge to Our Clients

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We Place Strict Limits and Controls on the Use and Sharing of Your Information

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