

**State of Maryland**

**ANALYSIS OF INVESTMENT PERFORMANCE**

ORP Plan

December 2017

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*Vice President*

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## ORP History

The Optional Retirement Program (ORP) was established by Chapter 556 in 1975. It was created to offer an alternative to the defined benefit retirement plan for the professional staff of the State's public higher education institutions. The ORP is a defined contribution plan, in lieu of the various state-operated defined benefit plans. The Plan does not require member contributions and is solely funded with employer contributions at a rate of 7.25% of a participants salary.

Upon joining the ORP, a member is immediately fully vested in the member's total account benefit. Enrollment into the ORP is an irrevocable decision.

The Board has the authority to hire and terminate vendors for the ORP, as well as approve the investment options offered by the approved vendors.

- TIAA-CREF was the sole vendor for the ORP until 1993.
- Chapter 428 of the Acts of 1993 authorized the expansion of the ORP to include up to four additional vendors to complement TIAA.
- As of July 1, 1995, the Board added VALIC, Aetna and Twentieth Century, as additional vendors.
- Voya (formerly ING & Aetna) and American Century (formerly Twentieth Century) were terminated as vendors on December 31, 2004.
- The Board added Fidelity as a vendor in 2005.
- VALIC was terminated as a vendor on December 31, 2007.

The Board is NOT responsible for:

- Retirement counseling with respect to the program;
- Preparing or disseminating information with respect to any annuity contract offered by a vendor; and
- Enrolling, terminating, or retiring a participating employee.

An employing institution includes:

- The University System of Maryland
- Morgan State University;
- St. Mary's College;
- The Maryland Higher Education Commission; and
- Any community college or regional community college

An employing institution is responsible for administering the enrollment, termination or retirement of its employees participating in the ORP.



**RNCP'QXGTXY**

## Overview

An RFP process for recordkeeping services conducted in 2017. The evaluation committee, assisted by Segal Marco Advisors, reviewed the responses and interviewed candidates. Finalist presentations were made to the Board by Fidelity and TIAA. The process resulted in:

- Retention of both Fidelity and TIAA as service providers to the Optional Retirement Plan
- Reduction of the recordkeeping and administration fees to \$45/participant for both Fidelity and TIAA
- For TIAA, move to the institutionally controlled Retirement Choice contract
- Addition of a self-directed brokerage window for both Fidelity and TIAA
- Return of revenue sharing to the investment option that generated it on a pro-rata basis

Total assets in the Fidelity plan have increased from \$258.8 million to \$398.2 over two years ending December 31, 2017. The increase in plan assets resulted from net contributions totaling \$53.9 million and investment gains of \$85.5 million. Contributions for the period were \$73.9 million, an increase of 10.2%, and disbursements were \$22.1 million, an increase of 17.6%. Transfers from other providers equaled \$2.2 million. As of December 31, 2017, 56.9% of plan assets were invested in the Fidelity Freedom K funds, a 3.7% increase since 2015. In addition, 73.8% of 2017 plan contributions were directed to those funds, up modestly from 69.8% at the end of 2015. The Fidelity Freedom 2040 had the most assets, followed by Fidelity Freedom 2045 and then 2035. As of December 31, 2017, there were approximately 10,548 participants (8,482 active & 2,066 inactive/terminated) in the Plan, an 18.6% increase from 8,894 in 2015.

In 2016, the following changes were made to the Fidelity investment line-up:

- Vanguard Treasury Money Market replaced Fidelity Cash Reserve
- Fidelity Spartan Inflation Protected Bond replaced Blackrock Inflation Protected

The majority of the State of Maryland ORP assets remain in the TIAA plan. As of December 31, 2017, plan assets totaled approximately \$3.2 billion, a two-year increase of \$514.7 million. Plan contributions of approximately \$167.8 million, an increase of 0.8% over the prior two years, were offset by disbursements of \$243.7 million, an increase of 5.0%. Investment gains for the two years totaled \$589.5 million. As of December 31, 2017, 31.6% of plan assets were invested in the TIAA Traditional account. However, only 13.6% of 2017 plan contributions was directed to that investment option, while 39.8% was directed to Target Date Funds. This contribution trend has been consistent since 2013. 56.2% of Plan assets is invested in the TIAA Traditional and CREF Stock funds, a decrease from 62.0% in 2015. There were approximately 33,459 participants in the Plan at the end of 2017, a slight increase from 33,342 at the end of 2015.

In 2016, the following changes were made to the TIAA investment line-up:

- Vanguard Inflation Protected Securities replaced Blackrock Inflation Protected
- Vanguard Treasury Money Market was added

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## Overall Recommendation Summary

### Recommendations - TIAA:

1. Approve the change in share class for the Vanguard Inflation-Protected fund from ticker VAIPX to VIPIX.
  - a. Replacement is recommended due to the lower expense ratio (0.07% vs. 0.10%).
  - b. Assets and future contributions should be mapped to the new share class VIPIX.
2. Remove the CREF Money Market Account.
  - a. Replacement is recommended due to a higher net expense ratio of 0.13%, and lower performance results relative to the Vanguard Treasury Money Market fund.
  - b. Assets in the Retirement Choice contract, and future contributions should be mapped to the Vanguard Treasury Money Market (VUSXX) fund. Any assets in the legacy Retirement Annuity contracts would not be eligible for mapping.
3. Remove the CREF Equity Index Account.
  - a. Replacement is recommended due to the higher net expense ratio of 0.13%, and lagging performance results relative to its benchmark the Russell 3000 Index.
  - b. Assets in the Retirement Choice contract, and future contributions should be mapped to the Vanguard Institutional Index (VINIX) fund.

Though the funds do not manage to the same index, Russell 3000 versus S&P 500, the compositions are similar with the S&P 500 constituting roughly 80% of the Russell 3000.

### Recommendations - Fidelity:

1. Approve the change in share class for the Fidelity Diversified International fund from ticker FDIKX to FKIDX.
  - a. Replacement is recommended due to the lower net expense ratio (0.60% vs. 0.62%).
  - b. Assets and future contributions should be mapped to the new share class FKIDX.
2. Approve the replacement of the Neuberger Berman Socially Responsible fund (NBSRX) with the Vanguard FTSE Social Index fund (VFTSX).
  - a. Replacement is recommended due to Neuberger Berman's lagging performance relative to the benchmark and peers.
  - b. Assets and future contributions should be mapped from the Neuberger Berman Socially Responsible fund (NBSRX) to the Vanguard FTSE Social Index fund (VFTSX).
3. Approve the replacement of the Franklin Mutual Global Discovery fund (FMDRX) with the AQR Global Equity fund (AQGIX).
  - a. Replacement is recommended due to Franklin's lagging performance relative to the benchmark and peers.
  - b. Assets and future contributions should be mapped from the Franklin Mutual Global Discovery fund (FMDRX) to the AQR Global Equity fund (AQGIX).

## TIAA Recommendation Summary

### Recommendations - TIAA:

1. Approve the change in share class for the Vanguard Inflation-Protected fund from ticker VAIPX to VIPIX.
  - a. Replacement is recommended due to the lower expense ratio (0.07% vs. 0.10%).
  - b. Assets and future contributions should be mapped to the new share class VIPIX.
2. Remove the CREF Money Market Account.
  - a. Replacement is recommended due to a higher net expense ratio of 0.13%, and lower performance results relative to the Vanguard Treasury Money Market fund.
  - b. Assets in the Retirement Choice contract, and future contributions should be mapped to the Vanguard Treasury Money Market (VUSXX) fund. Any assets in the legacy Retirement Annuity contracts would not be eligible for mapping.
3. Remove the CREF Equity Index Account.
  - a. Replacement is recommended due to a higher net expense ratio of 0.13%, and lagging performance results relative to its benchmark the Russell 3000 Index.
  - b. Assets in the Retirement Choice contract, and future contributions should be mapped to the Vanguard Institutional Index (VINIX) fund. Any assets in the legacy Retirement Annuity contracts would not be eligible for mapping.
  - c. Though the funds do not manage to the same index, Russell 3000 versus S&P 500, the compositions are similar with the S&P 500 constituting roughly 80% of the Russell 3000.

### 1. Share Class Recommendation:

Segal Marco Advisors and Staff recommend changing share classes for the Vanguard Inflation-Protected fund. The current option (VAIPX) has an expense ratio of 0.10%, while the VIPI share class has an expense ratio of 0.07%. Participants will save 0.03%.

### 2. Remove the CREF Money Market Account:

Segal Marco Advisors and Staff recommend removing the CREF Money Market. Removal is being recommended due to the Money Market Account's higher expense ratio of 0.23% (net expense ratio of 0.13%; 0.10% revenue sharing) and lower performance relative to the Vanguard Treasury Money Market fund (VUSXX). Assets, in the Retirement Choice contract, and future contributions should be mapped to:

- Vanguard Treasury Money Market – Ticker: VUSXX, Expense Ratio: 0.09%

Any assets in the legacy Retirement Annuity contracts would not be eligible for mapping.

**3. Remove the CREF Equity Index Account:**

Segal Marco Advisors and Staff recommend removing the CREF Equity Index Account. Removal is being recommended due to the high expense ratio of 0.23% (net expense ratio of 0.13%; 0.10% revenue sharing), and lagging performance results relative to its benchmark the Russell 3000 Index. Assets in the Retirement Choice contract, and future contributions should be mapped to:

- Vanguard Institutional Index – Ticker: VINIX, Expense Ratio: 0.04%

Though the funds do not manage to the same index, Russell 3000 versus S&P 500, the compositions are similar with the S&P 500 constituting roughly 80% of the Russell 3000.

	<b>1-year</b>	<b>3-year</b>	<b>5-year</b>	<b>7-year</b>	<b>10-year</b>
<b>Russell 3000</b>	13.81%	10.22%	13.03%	12.39%	9.62%
<b>S&amp;P 500</b>	13.99%	10.78%	13.31%	12.71%	9.49%

\* Performance ended March 31, 2018

Any assets in the legacy Retirement Annuity contracts would not be eligible for mapping.

*Aside from the above recommendation, the investment line-up has the lowest share class available to the Plan.*

## **Fidelity Recommendation Summary**

### **Recommendations:**

1. Approve the change in share class for the Fidelity Diversified International fund from ticker FDIKX to FKIDX.
  - a. Replacement is recommended due to the lower net expense ratio (0.60% vs. 0.62%).
  - b. Assets and future contributions should be mapped to the new share class FKIDX.
2. Approve the replacement of the Neuberger Berman Socially Responsible fund (NBSRX) with the Vanguard FTSE Social Index fund (VFTSX).
  - a. Replacement is recommended due to Neuberger Berman's lagging performance relative to the benchmark and peers.
  - b. Assets and future contributions should be mapped from the Neuberger Berman Socially Responsible fund (NBSRX) to the Vanguard FTSE Social Index fund (VFTSX).
3. Approve the replacement of the Franklin Mutual Global Discovery fund (FMDRX) with the AQR Global Equity fund (AQGIX).
  - a. Replacement is recommended due to Franklin's lagging performance relative to the benchmark and peers.
  - b. Assets and future contributions should be mapped from the Franklin Mutual Global Discovery fund (FMDRX) to the AQR Global Equity fund (AQGIX).

### **1. Share Class Recommendation:**

Segal Marco Advisors and Staff recommend changing share classes for the Fidelity Diversified International fund. The current option (FDIKX) has an expense ratio of 0.82% (0.20% revenue sharing). However, the ORP is eligible for a lower share class (FKIDX) with an expense ratio of 0.60%, saving participants 0.02%.

### **2. Socially Responsible Investment Recommendation:**

Segal Marco Advisors and Staff are recommending replacing the Neuberger Berman Socially Responsible fund (NBSRX) with the Vanguard FTSE Social Index fund (VFTSX). The Fund employs an indexing investment approach designed to track the performance of the FTSE4Good US Select Index. The Index is composed of the stocks of companies that have been screened for certain social and environmental criteria by the Index sponsor, which is independent of Vanguard. The Index is market capitalization weighted and includes primarily large- and mid-cap U.S. stocks that have been screened for certain criteria related to the environment, human rights, health and safety, labor standards, and diversity. The Index excludes companies involved with weapons, tobacco, gambling, alcohol, adult entertainment, and nuclear power. Replacement is recommended due to Neuberger's lagging performance relative to the benchmark and peers. Assets and future contributions should be mapped to:

- Vanguard FTSE Social Index – Ticker: VFTSX, Expense Ratio: 0.20%

### **3. Global Equity Investment Recommendation:**

Segal Marco Advisors and Staff are recommending replacing the Franklin Mutual Global Discovery fund (FMDRX) with the AQR Global Equity fund (AQGIX). The AQR Global Equity fund is built on the premise of applying fundamental principles through the use of quantitative models to systematically construct portfolios. AQR believes that integrating value and momentum investing across a wide variety of country markets, minimizing transactions costs, and incorporating disciplined risk control will lead to attractive long-term risk-adjusted results. The fund has displayed a positive information ratio, attractive upside/downside capture, and outperformance relative to the MSCI World index. Replacement is recommended due to Franklin's lagging performance relative to the benchmark and peers. Assets and future contributions should be mapped to:

- AQR Global Equity – Ticker: AQGIX, Expense Ratio: 0.81%

*With the exception of the Fidelity Diversified International fund, the investment line-up offers the lowest net expense structure available to the Plan for every investment option. Net expense is the expense ratio minus revenue sharing, which is returned to investments where it was generated.*



# Vanguard FTSE Social Index Inv

Segal Score

**B**

Ticker: VFTSX

Category: Large Blend

Subcategory: Large Core

Expense Ratio: 0.20

Benchmark: S&P 500

Inception Date: 05/31/2000

## S<sup>3</sup> Scores

Organization: F

Fees: A

Style/Portfolio Characteristics: A

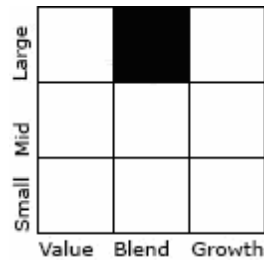
Performance: B

Risk: C

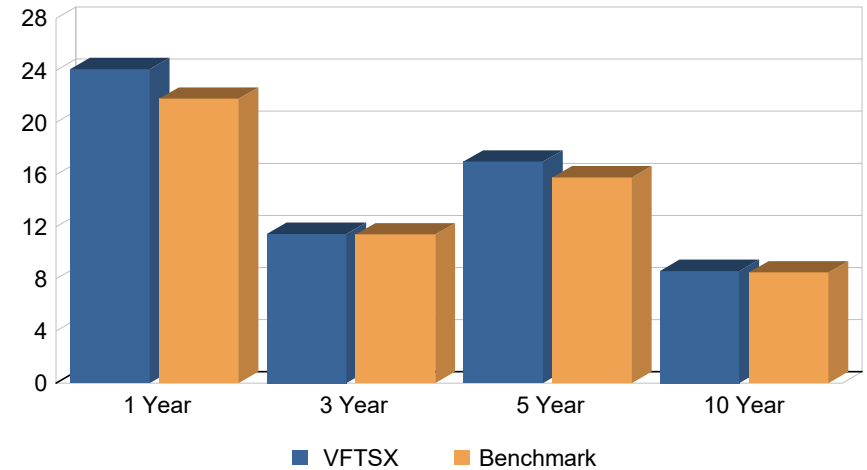
### Portfolio Characteristics

Fund AUM (\$mil):	3,905
No. of Stocks:	457
% Assets in Top 10:	24.19
Avg Market Cap (\$mil):	84,624.81
P/E Ratio (TTM)(Long):	22.69
P/B Ratio (TTM)(Long):	3.18
Turnover Ratio %:	11.00

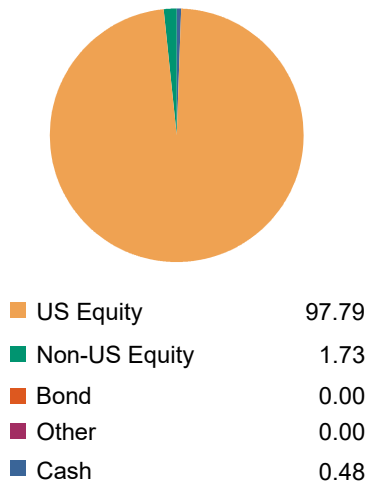
### Style



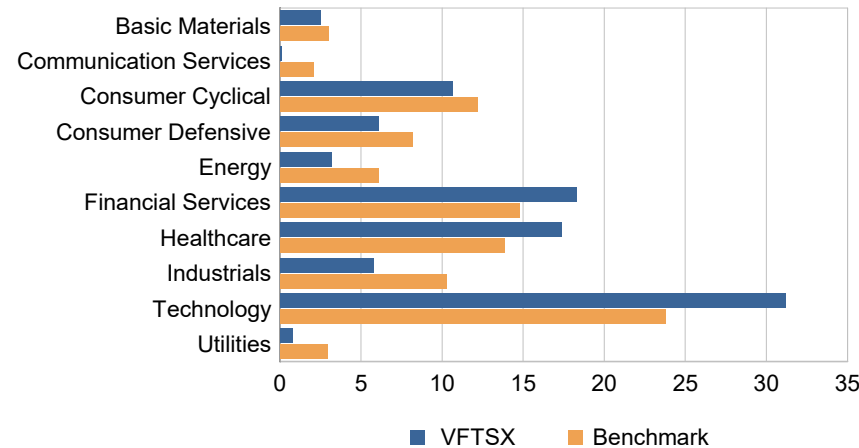
### Returns



### Asset Allocation



### Sector Allocation



### Risk Metrics

#### Standard Deviation

3 Year:	10.71
5 Year:	10.16
10 Year:	17.00

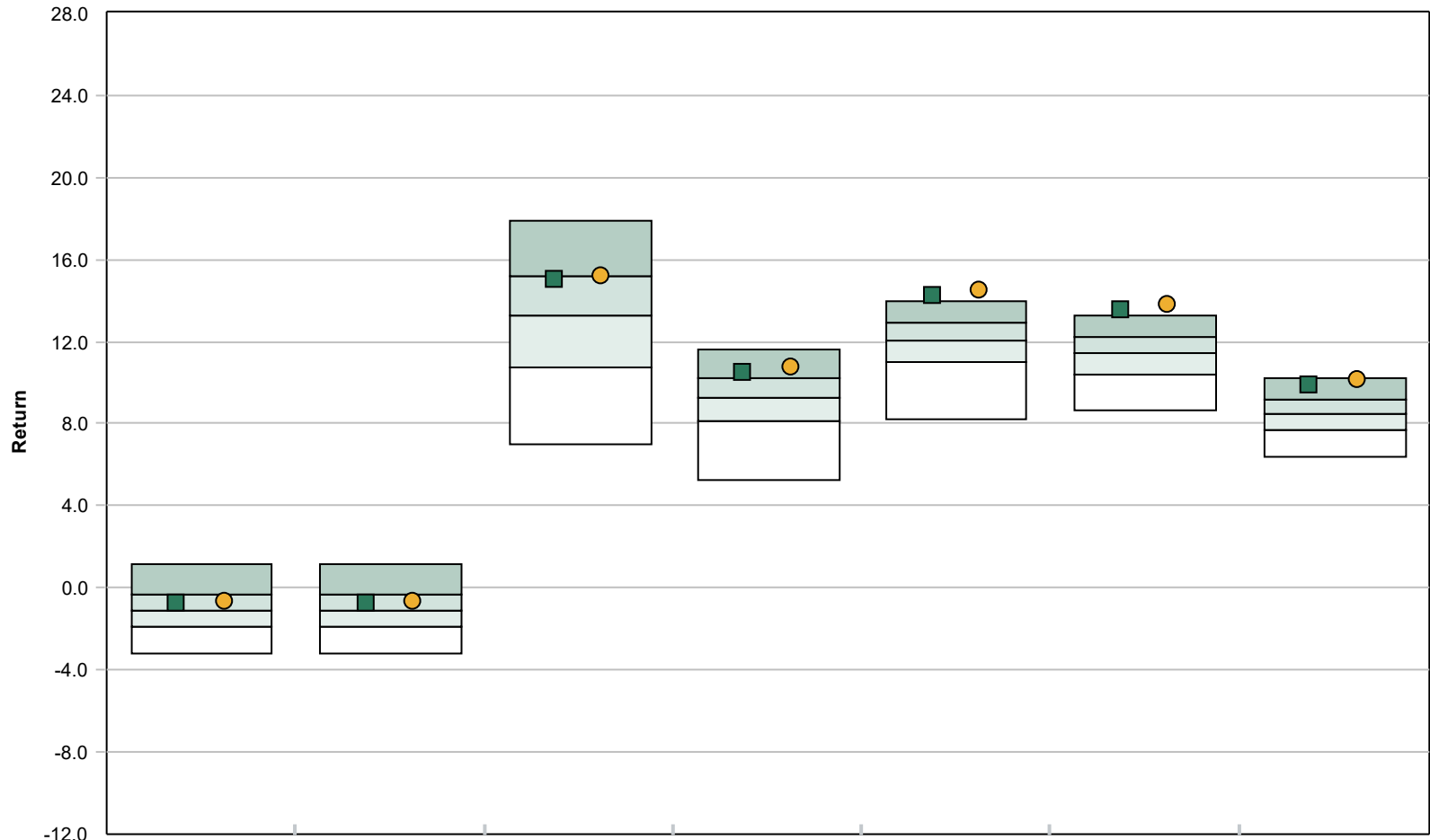
#### Information Ratio

3 Year:	0.02
5 Year:	0.51
10 Year:	0.03

#### Downside Capture

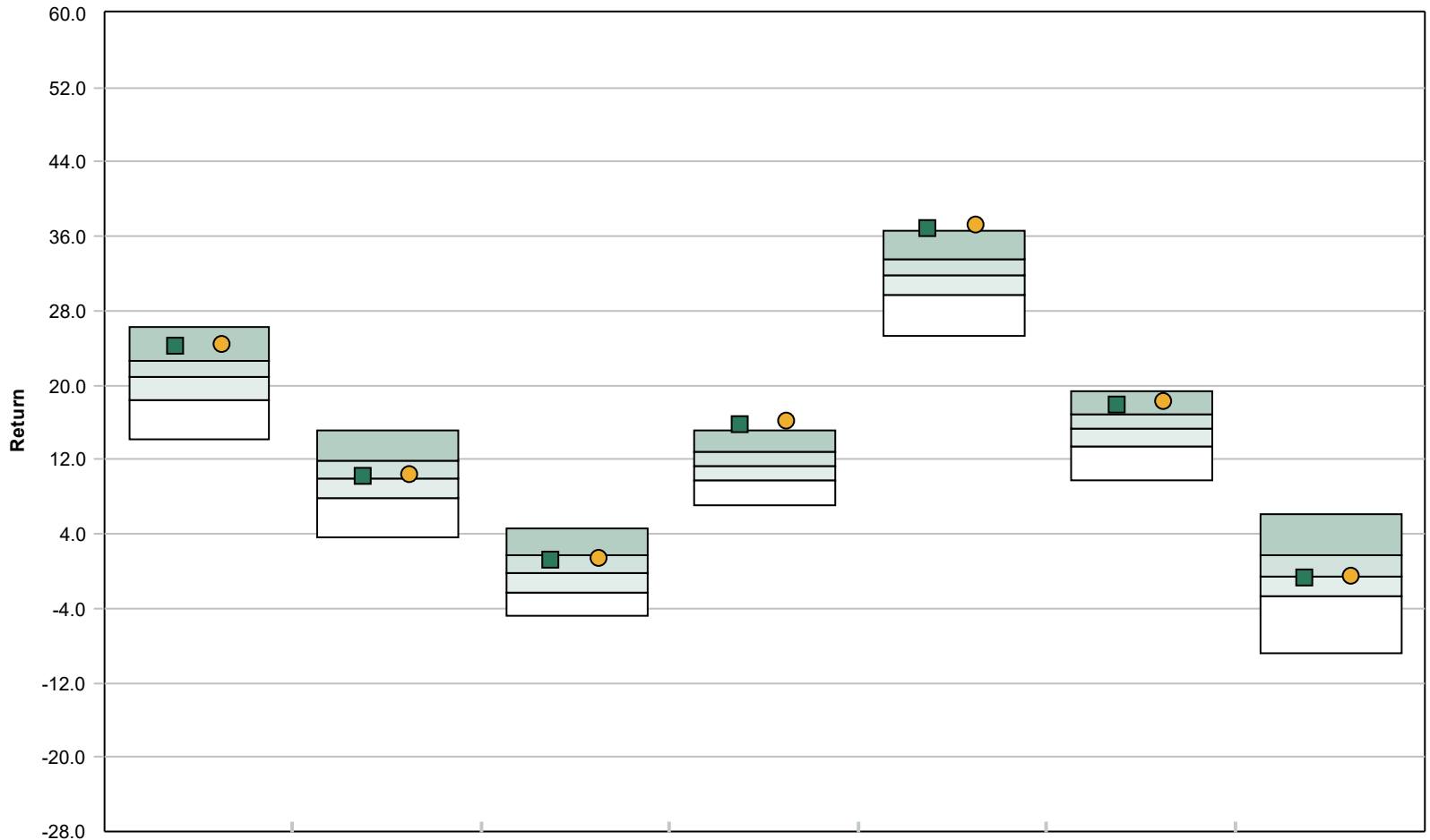
3 Year:	110.12
5 Year:	102.38
10 Year:	111.37

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard FTSE Soc;Inv (VFTSX)	-0.77 (44)	-0.77 (44)	15.01 (28)	10.53 (18)	14.21 (4)	13.55 (4)	9.92 (9)
● Vanguard Spliced Social Index	-0.71 (40)	-0.71 (40)	15.18 (25)	10.74 (15)	14.46 (4)	13.81 (2)	10.15 (6)
5th Percentile	1.17	1.17	17.85	11.65	13.95	13.25	10.22
1st Quartile	-0.34	-0.34	15.16	10.25	12.89	12.22	9.20
Median	-1.11	-1.11	13.31	9.25	12.05	11.44	8.51
3rd Quartile	-1.91	-1.91	10.74	8.13	10.98	10.41	7.66
95th Percentile	-3.24	-3.24	7.03	5.29	8.24	8.61	6.40

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard FTSE Soc;Inv (VFTSX)	24.11 (13)	10.24 (46)	1.17 (31)	15.75 (3)	36.84 (5)	17.84 (15)	-0.78 (53)
● Vanguard Spliced Social Index	24.33 (11)	10.42 (44)	1.38 (29)	16.06 (2)	37.19 (4)	18.13 (12)	-0.53 (50)
5th Percentile	26.25	15.08	4.53	15.19	36.54	19.33	6.22
1st Quartile	22.62	11.92	1.66	12.88	33.47	16.87	1.77
Median	20.84	9.98	-0.22	11.35	31.80	15.41	-0.57
3rd Quartile	18.48	7.93	-2.34	9.75	29.74	13.33	-2.71
95th Percentile	14.23	3.73	-4.79	7.07	25.33	9.68	-8.85

## Vanguard FTSE Soc;Inv (VFTSX)

### Fund Information

Fund Name :	Vanguard World Funds: Vanguard FTSE Social Index Fund; Investor Shares	Portfolio Assets :	\$4,064 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	O'Reilly/Coleman
Ticker :	VFTSX	PM Tenure :	2015--2015
Inception Date :	05/31/2000	Fund Style :	IM U.S. Large Cap Core Equity (MF)
Fund Assets :	\$2,399 Million	Style Benchmark :	Vanguard Spliced Social Index

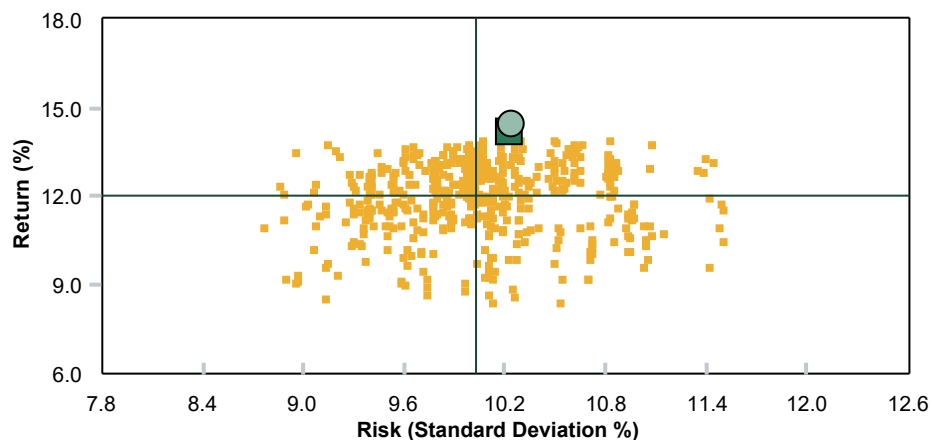
### Fund Investment Policy

The Fund seeks to match the performance of a benchmark index that measures the investment return of large- and mid-capitalization stocks. The benchmark index is composed primarily of stocks that have been screened for certain social and environmental criteria by the Index sponsor, which is independent of Vanguard.

### Historical Statistics (04/01/13 - 03/31/18) \*

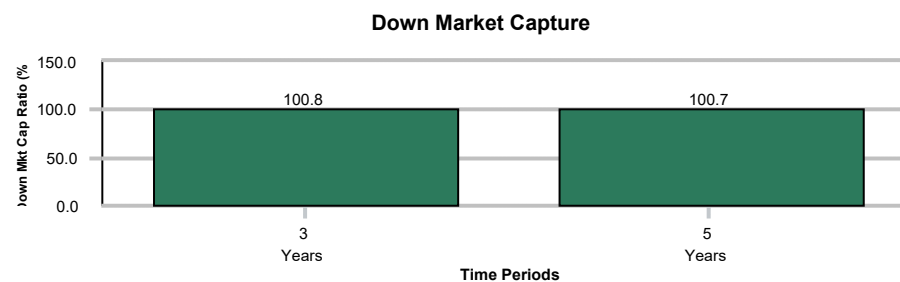
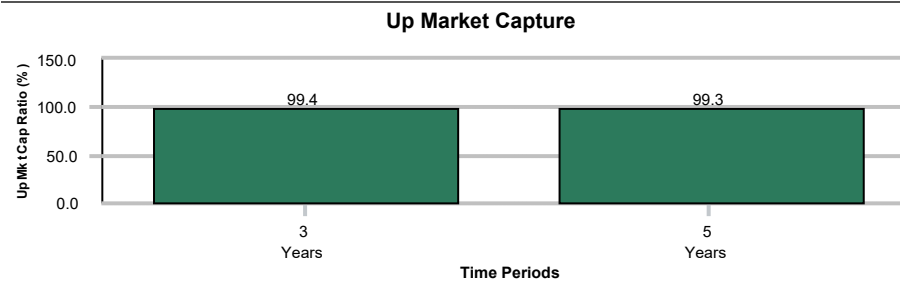
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard FTSE Soc;Inv (VFTSX)	14.21	10.23	1.33	-0.20	1.00	1.00	0.10	-2.17	10.23	06/01/2000
Vanguard Spliced Social Index	14.46	10.24	1.35	0.00	1.00	1.00	0.00	N/A	10.24	06/01/2000
90 Day U.S. Treasury Bill	0.31	0.13	N/A	0.32	0.00	0.00	10.24	-1.35	0.00	06/01/2000

### Peer Group Scattergram (04/01/13 to 03/31/18)



	Return	Standard Deviation
■ Vanguard FTSE Soc;Inv (VFTSX)	14.21	10.23
● Vanguard Spliced Social Index	14.46	10.24
— Median	12.05	10.02

### Up Down Market Capture



\* Monthly periodicity used.

# AQR Global Equity I

Segal Score

A

Ticker: AQGIX

Category: World Large Stock

Subcategory: World Large Value

Expense Ratio: 0.81

Benchmark: MSCI World

Inception Date: 12/31/2009

## S<sup>3</sup> Scores

Organization: B

Fees: B

Style/Portfolio Characteristics: B

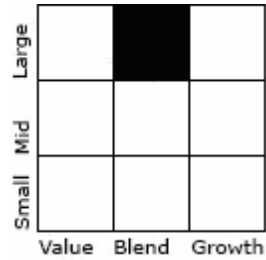
Performance: A

Risk: A

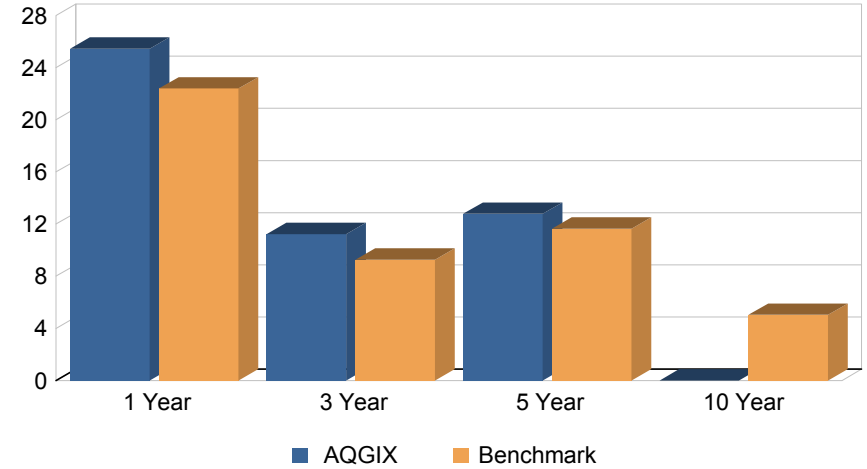
### Portfolio Characteristics

Fund AUM (\$mil):	303
No. of Stocks:	449
% Assets in Top 10:	18.71
Avg Market Cap (\$mil):	45,087.17
P/E Ratio (TTM)(Long):	15.92
P/B Ratio (TTM)(Long):	2.05
Turnover Ratio %:	88.00

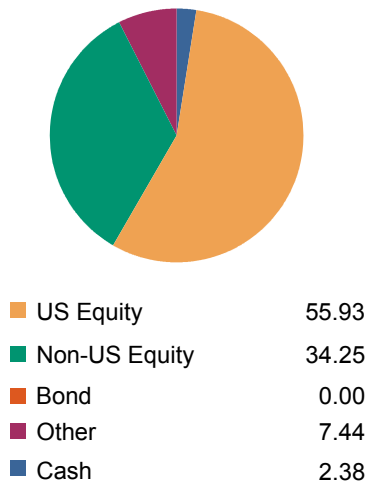
### Style



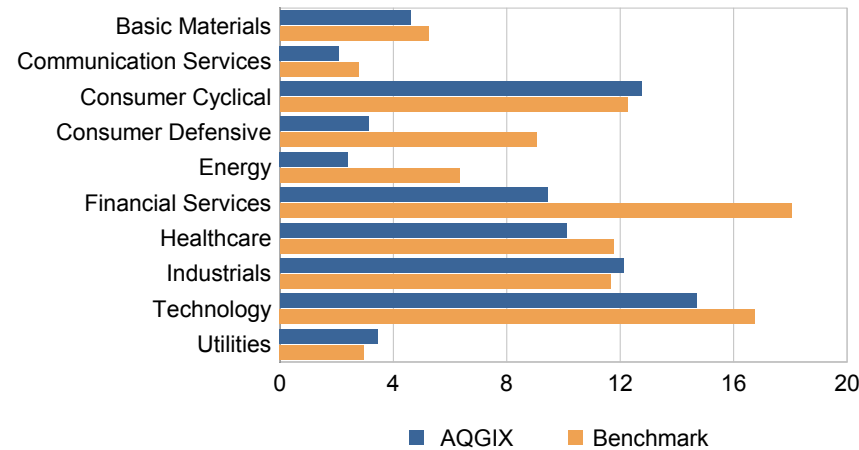
### Returns



### Asset Allocation



### Sector Allocation

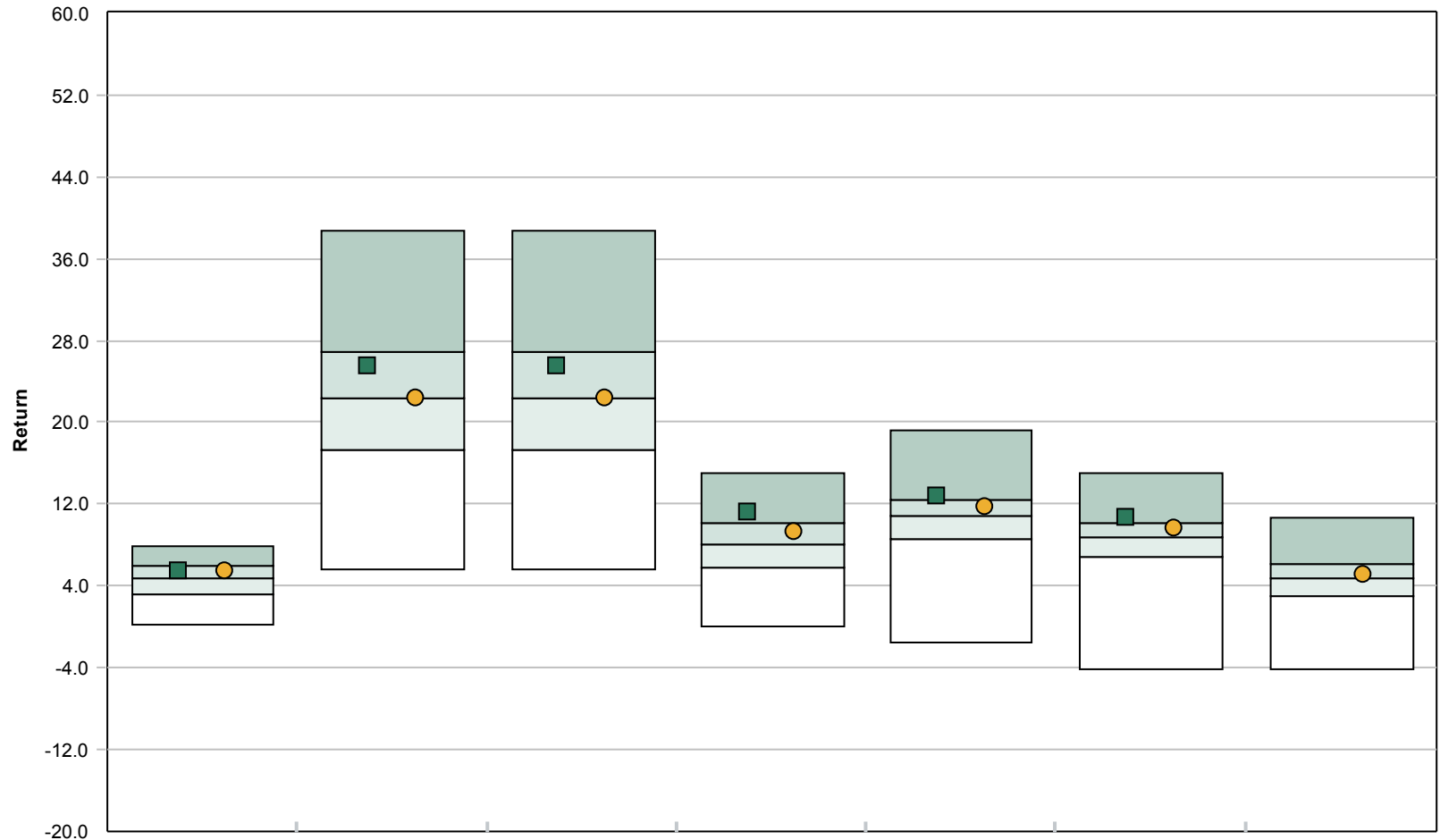


### Risk Metrics

<b>Standard Deviation</b>	
3 Year:	9.29
5 Year:	9.55
10 Year:	
<b>Information Ratio</b>	
3 Year:	0.69
5 Year:	0.45
10 Year:	
<b>Downside Capture</b>	
3 Year:	70.71
5 Year:	85.19
10 Year:	

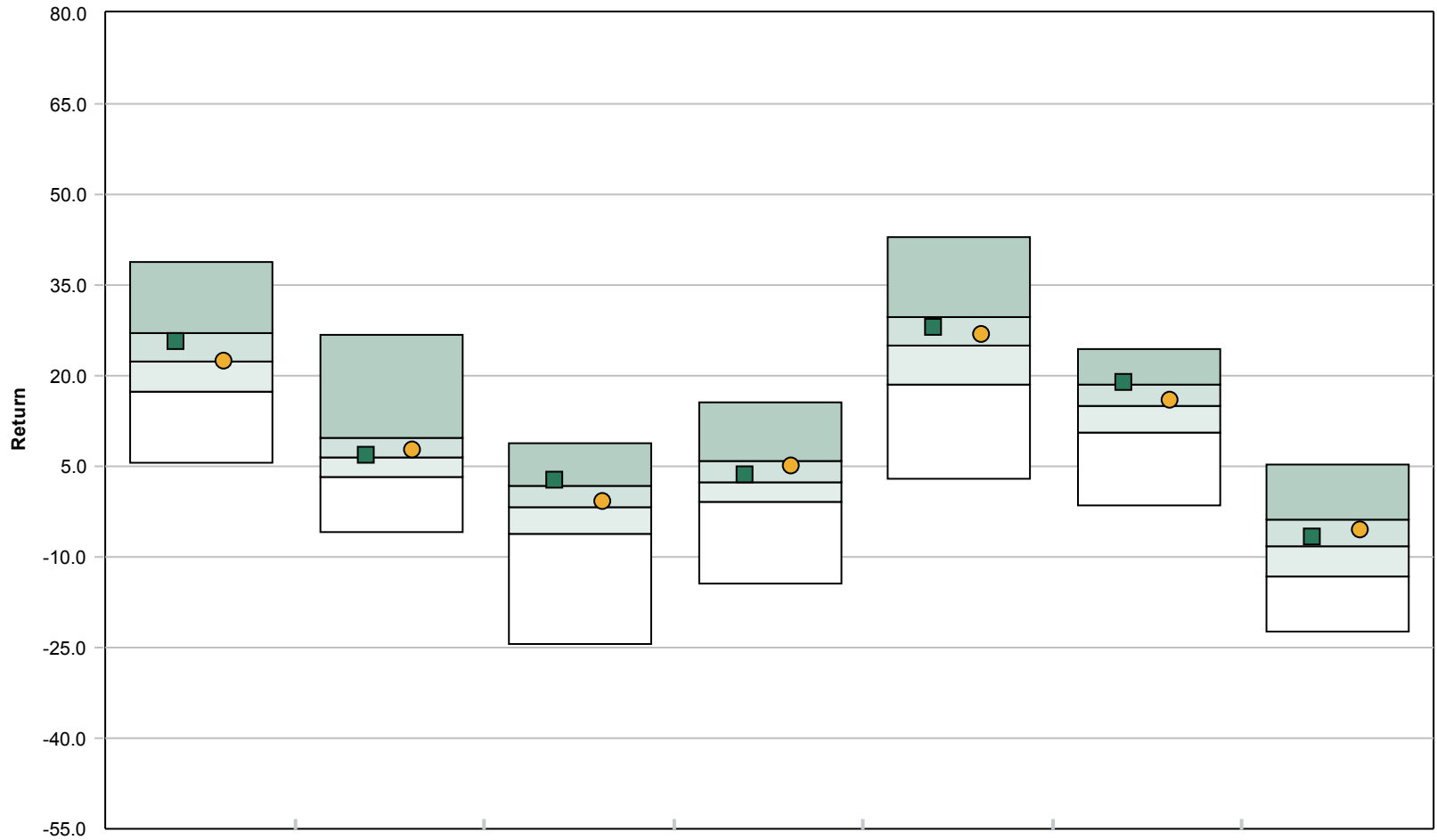
**AQR Global Equity Fund Class I**

Peer Group Analysis - IM Global Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ AQR Global Equity Fund Class I	5.41 (37)	25.44 (31)	25.44 (31)	11.22 (18)	12.79 (21)	10.61 (20)	N/A
● MSCI World (Net)	5.51 (35)	22.40 (49)	22.40 (49)	9.26 (36)	11.64 (36)	9.58 (33)	5.03 (45)
5th Percentile	7.93	38.69	38.69	14.95	19.24	15.12	10.74
1st Quartile	5.95	26.92	26.92	10.08	12.49	10.14	6.07
Median	4.83	22.27	22.27	8.09	10.77	8.70	4.81
3rd Quartile	3.26	17.22	17.22	5.88	8.53	6.83	3.00
95th Percentile	0.21	5.56	5.56	0.09	-1.58	-4.07	-4.12

Peer Group Analysis - IM Global Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ AQR Global Equity Fund Class I	25.44 (31)	6.81 (47)	2.68 (20)	3.59 (42)	28.06 (35)	18.95 (24)	-6.68 (38)
● MSCI World (Net)	22.40 (49)	7.51 (40)	-0.87 (42)	4.94 (31)	26.68 (42)	15.83 (44)	-5.54 (32)
5th Percentile	38.69	26.66	8.75	15.47	43.00	24.31	5.33
1st Quartile	26.92	9.80	1.78	5.78	29.75	18.56	-3.84
Median	22.27	6.38	-1.86	2.49	25.06	15.04	-8.29
3rd Quartile	17.22	3.13	-6.23	-0.91	18.51	10.58	-13.16
95th Percentile	5.56	-6.00	-24.40	-14.30	2.84	-1.51	-22.26

## AQR Global Equity Fund Class I

### Fund Information

Fund Name : AQR Funds: AQR Global Equity Fund; Class I Shares  
 Fund Family : AQR Capital Management LLC  
 Ticker : AQQIX  
 Inception Date : 01/04/2010  
 Fund Assets : \$181 Million  
 Portfolio Turnover : 88%

Portfolio Assets : \$466 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM Global Equity (MF)  
 Style Benchmark : MSCI World (Net)

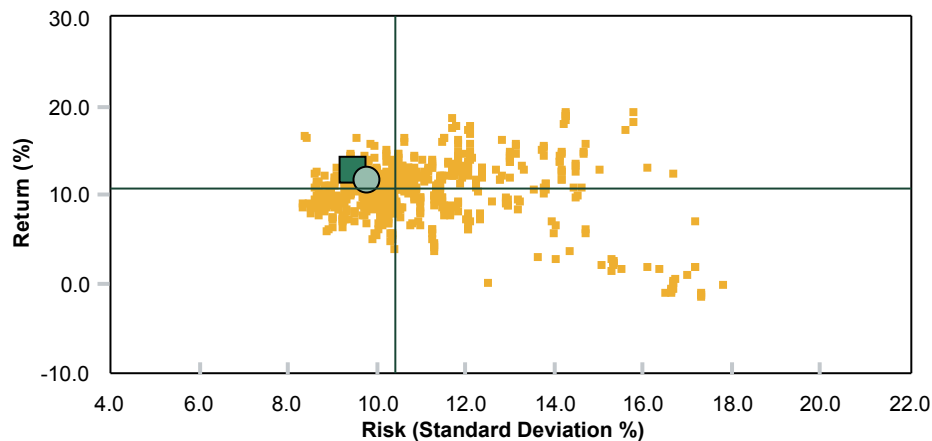
### Fund Investment Policy

The Fund seeks long-term capital appreciation. Generally, the Fund will invest at least at least 80% of its net assets in equity and equity-related instruments. The Adviser uses a set of value, momentum and economic factors to generate an investment portfolio based on the Adviser's global asset allocation models.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
AQR Global Equity Fund Class I	12.79	9.47	1.30	1.76	0.94	0.93	2.54	0.40	9.46	02/01/2010
MSCI World (Net)	11.64	9.77	1.16	0.00	1.00	1.00	0.00	N/A	9.76	02/01/2010
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	9.76	-1.16	0.00	02/01/2010

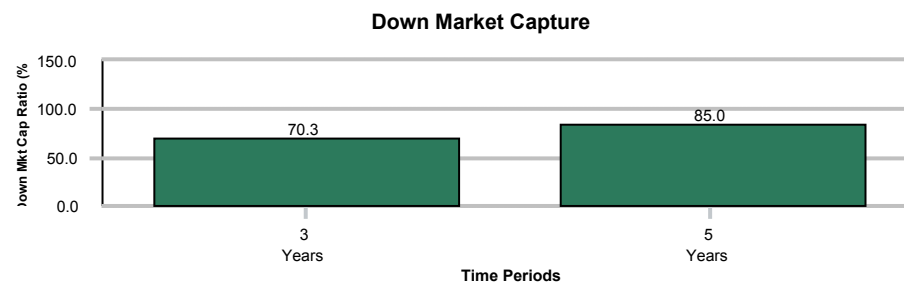
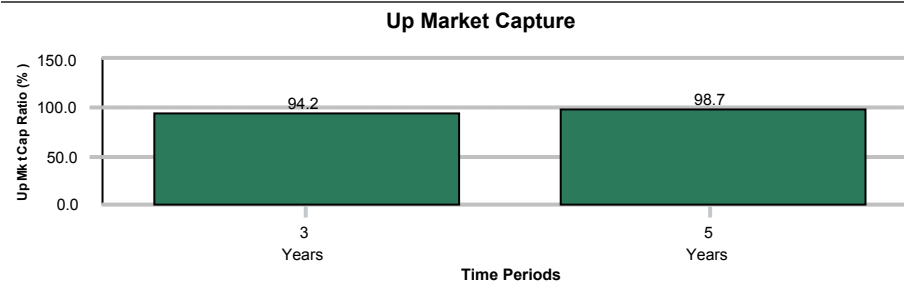
### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ AQR Global Equity Fund Class I	12.79	9.47
● MSCI World (Net)	11.64	9.77
— Median	10.77	10.43

\* Monthly periodicity used.

### Up Down Market Capture





**CF O K K V T C V K G ( ' K X G U V O G P V ' H G G U**

**Fidelity Investment Line-up  
Annual Projected Expenses and Revenue Sharing**

Fund	Ticker / Symbol	Assets as of 12/31/17	Net Expense Ratio	Estimated Annual Expense	Revenue Sharing	Estimated Annual Revenue Sharing	Total Cost Exp. - Rev.	Estimated Annual Total Cost
Vanguard Treasury MM	VUSXX	\$10,741,585	0.09%	\$9,667	0.00%	\$0	0.09%	\$9,667
Fidelity US Bond Index	FXSTX	\$8,203,307	0.04%	\$3,281	0.00%	\$0	0.04%	\$3,281
Fidelity Inflation Protected Bond	FSIYX	\$2,091,721	0.09%	\$1,883	0.00%	\$0	0.09%	\$1,883
WA Core Bond	WATFX	\$3,315,948	0.45%	\$14,922	0.10%	\$3,316	0.35%	\$11,606
Fidelity Balanced K	FBAKX	\$15,154,143	0.46%	\$69,709	0.20%	\$30,308	0.26%	\$39,401
BlackRock Equity Dividend	MADVX	\$7,994,862	0.73%	\$58,362	0.25%	\$19,987	0.48%	\$38,375
Fidelity 500 Index	FXSIX	\$27,676,300	0.03%	\$8,303	0.00%	\$0	0.03%	\$8,303
NB Socially Responsive	NBSRX	\$3,107,263	0.85%	\$26,412	0.00%	\$0	0.85%	\$26,412
Fidelity Contrafund K	FCNKX	\$25,541,348	0.65%	\$148,140	0.20%	\$51,083	0.45%	\$97,057
Fidelity Blue Chip Growth K	FBGKX	\$19,836,814	0.59%	\$117,037	0.20%	\$39,674	0.39%	\$77,364
Fidelity Mid Cap Stock K	FKMCX	\$15,044,154	0.46%	\$69,203	0.20%	\$30,088	0.26%	\$39,115
DFA US Small Cap	DFSTX	\$9,485,681	0.37%	\$35,097	0.00%	\$0	0.37%	\$35,097
Fidelity Small Cap Index	FSSVX	\$3,574,308	0.05%	\$1,787	0.00%	\$0	0.05%	\$1,787
Fidelity Diversified International K	FDIKX	\$13,952,246	0.82%	\$128,361	0.20%	\$27,904	0.62%	\$100,456
Franklin Mutual Global Disc.	FMDRX	\$4,027,433	0.85%	\$34,233	0.00%	\$0	0.85%	\$34,233
Fidelity Global ex US Index	FSGDX	\$1,959,365	0.10%	\$1,959	0.00%	\$0	0.10%	\$1,959
Fidelity Freedom K Income	FNSHX	\$7,259,316	0.42%	\$30,489	0.20%	\$14,519	0.22%	\$15,970
Fidelity Freedom K 2005	FSNJX	\$824,240	0.44%	\$3,627	0.20%	\$1,648	0.24%	\$1,978
Fidelity Freedom K 2010	FSNKX	\$2,315,703	0.47%	\$10,884	0.20%	\$4,631	0.27%	\$6,252
Fidelity Freedom K 2015	FSNLX	\$7,231,300	0.50%	\$36,157	0.20%	\$14,463	0.30%	\$21,694
Fidelity Freedom K 2020	FSNOX	\$16,047,819	0.54%	\$86,658	0.20%	\$32,096	0.34%	\$54,563
Fidelity Freedom K 2025	FSNPX	\$22,424,260	0.57%	\$127,818	0.20%	\$44,849	0.37%	\$82,970
Fidelity Freedom K 2030	FSNQX	\$26,867,234	0.61%	\$163,890	0.20%	\$53,734	0.41%	\$110,156
Fidelity Freedom K 2035	FSNUX	\$32,065,379	0.64%	\$205,218	0.20%	\$64,131	0.44%	\$141,088
Fidelity Freedom K 2040	FSNVX	\$46,726,915	0.64%	\$299,052	0.20%	\$93,454	0.44%	\$205,598
Fidelity Freedom K 2045	FSNZX	\$32,274,900	0.64%	\$206,559	0.20%	\$64,550	0.44%	\$142,010
Fidelity Freedom K 2050	FNSBX	\$24,761,566	0.64%	\$158,474	0.20%	\$49,523	0.44%	\$108,951
Fidelity Freedom K 2055	FNSDX	\$7,160,923	0.64%	\$45,830	0.20%	\$14,322	0.44%	\$31,508
Fidelity Freedom K 2060	FNSFX	\$518,298	0.64%	\$3,317	0.20%	\$1,037	0.44%	\$2,281
<b>Total</b>	-	<b>\$398,184,331</b>	<b>0.53%</b>	<b>\$2,106,331</b>	<b>0.16%</b>	<b>\$655,316</b>	<b>0.36%</b>	<b>\$1,451,014</b>

**TIAA Investment Line-up  
Annual Projected Expenses and Revenue Sharing**

Fund	Ticker / Symbol	Assets as of 12/31/17	Net Expense Ratio	Estimated Annual Expense	Revenue Sharing	Estimated Annual Revenue Sharing	Total Cost Exp. - Rev.	Estimated Annual Total Cost
CREF Money Market	N/A	\$42,388,621	0.23%	\$97,494	0.10%	\$42,389	0.13%	\$55,105
Vanguard Treasury MM	VUSXX	\$5,512,274	0.09%	\$4,961	0.00%	\$0	0.09%	\$4,961
TIAA Traditional	N/A	\$1,000,327,460	0.47%	\$4,701,539	0.15%	\$1,500,491	0.32%	\$3,201,048
CREF Bond Market	N/A	\$117,819,802	0.29%	\$341,677	0.10%	\$117,820	0.19%	\$223,858
Vanguard Inflation-Protected	VAIPX	\$20,507,846	0.10%	\$20,508	0.00%	\$0	0.10%	\$20,508
Vanguard Total Bond Market	VBPIX	\$15,210,426	0.04%	\$6,084	0.00%	\$0	0.04%	\$6,084
CREF Social Choice	N/A	\$86,588,083	0.27%	\$233,788	0.10%	\$86,588	0.17%	\$147,200
CREF Equity Index	N/A	\$100,837,623	0.23%	\$226,885	0.10%	\$100,838	0.13%	\$126,047
CREF Stock	N/A	\$778,916,370	0.32%	\$2,492,532	0.10%	\$778,916	0.22%	\$1,713,616
Vanguard Instl. Index	VINIX	\$76,765,596	0.04%	\$30,706	0.00%	\$0	0.04%	\$30,706
American Funds Washington Mutual Investors	RWMGX	\$55,919,648	0.30%	\$167,759	0.00%	\$0	0.30%	\$167,759
CREF Growth	N/A	\$159,474,637	0.27%	\$422,608	0.10%	\$159,475	0.17%	\$263,133
Vanguard Mid-Cap Index	VMCPX	\$78,449,470	0.04%	\$31,380	0.00%	\$0	0.04%	\$31,380
TIAA Small Cap Equity	TISEX	\$28,003,113	0.42%	\$117,613	0.00%	\$0	0.42%	\$117,613
TIAA Small Cap Blend	TISBX	\$25,573,873	0.06%	\$15,344	0.00%	\$0	0.06%	\$15,344
American Funds EuroPacific Growth	RERGX	\$67,229,445	0.50%	\$336,147	0.00%	\$0	0.50%	\$336,147
Vanguard Total International Stock	VTSNX	\$38,122,509	0.09%	\$34,310	0.00%	\$0	0.09%	\$34,310
CREF Global Equities	N/A	\$127,223,604	0.33%	\$419,838	0.10%	\$127,224	0.23%	\$292,614
TIAA Lifecycle Retirement Income	TLRIX	\$2,614,897	0.38%	\$9,937	0.00%	\$0	0.38%	\$9,937
TIAA Lifecycle Institutional 2010	TCTIX	\$14,515,429	0.38%	\$55,159	0.00%	\$0	0.38%	\$55,159
TIAA Lifecycle Institutional 2015	TCNIX	\$16,679,755	0.39%	\$65,051	0.00%	\$0	0.39%	\$65,051
TIAA Lifecycle Institutional 2020	TCWIX	\$29,096,376	0.40%	\$116,386	0.00%	\$0	0.40%	\$116,386
TIAA Lifecycle Institutional 2025	TCYIX	\$39,571,527	0.41%	\$162,243	0.00%	\$0	0.41%	\$162,243
TIAA Lifecycle Institutional 2030	TCRIX	\$49,342,121	0.42%	\$207,237	0.00%	\$0	0.42%	\$207,237
TIAA Lifecycle Institutional 2035	TCIIX	\$58,996,486	0.43%	\$253,685	0.00%	\$0	0.43%	\$253,685
TIAA Lifecycle Institutional 2040	TCOIX	\$80,461,406	0.44%	\$354,030	0.00%	\$0	0.44%	\$354,030
TIAA Lifecycle Institutional 2045	TTFIX	\$30,361,914	0.45%	\$136,629	0.00%	\$0	0.45%	\$136,629
TIAA Lifecycle Institutional 2050	TFTIX	\$16,286,718	0.45%	\$73,290	0.00%	\$0	0.45%	\$73,290
TIAA Lifecycle Institutional 2055	TTRIX	\$4,149,780	0.45%	\$18,674	0.00%	\$0	0.45%	\$18,674
TIAA Lifecycle Institutional 2060	TLXNX	\$603,248	0.45%	\$2,715	0.00%	\$0	0.45%	\$2,715
<b>Total</b>		<b>\$3,167,550,057</b>	<b>0.35%</b>	<b>\$11,156,208</b>	<b>0.09%</b>	<b>\$2,913,740</b>	<b>0.26%</b>	<b>\$8,242,468</b>

**Fidelity Investment Line-up  
Fee Analysis**

Fund	Morningstar Category	Expense Ratio %	High Fee (95th percentile)	Median Fee	Low Fee (5th percentile)	Quartile (4th = high; 1st = low)	Lowest Share Class Expense Ratio	Minimum Investment
Vanguard Treasury Money Market	Money Market - Taxable	0.09	0.51	0.21	0.14	1st	Lowest	-
Fidelity® Inflation-Protected Bond Index	Inflation-Protected Bond	0.09	0.62	0.40	0.06	1st	0.05% (FIPBX)	\$100 mm
Fidelity® U.S. Bond Index	Intermediate-Term Bond	0.04	0.81	0.50	0.16	1st	Lowest	-
Western Asset Core Bond	Intermediate-Term Bond	0.45	0.81	0.50	0.16	2nd	0.43% (WACSX)	\$1 mm
Fidelity® 500 Index Fund	Large Blend	0.03	1.24	0.71	0.06	1st	Lowest	-
Fidelity® Blue Chip Growth	Large Growth	0.59	1.19	0.80	0.43	1st	Lowest	-
Fidelity® Contrafund®	Large Growth	0.65	1.19	0.80	0.43	1st	Lowest	-
Neuberger Berman Socially Responsive	Large Growth	0.85	1.19	0.80	0.43	3rd	0.59% (NRSRX)	None
BlackRock Equity Dividend	Large Value	0.73	1.09	0.75	0.25	2nd	0.59% (MKDVX)	\$5 mm
Fidelity® Mid-Cap Stock	Mid Growth	0.46	1.41	0.95	0.62	1st	Lowest	-
DFA U.S. Small Cap Portfolio	Small Blend	0.37	1.47	0.99	0.13	1st	Lowest	-
Fidelity® Small Cap Index	Small Blend	0.05	1.47	0.99	0.13	1st	0.04% (FSSNX)	\$100 mm
Fidelity® Global ex U.S. Index	Foreign Large Blend	0.10	1.24	0.87	0.08	1st	Lowest	-
Fidelity® Diversified International	Foreign Large Growth	0.82	1.21	0.95	0.68	1st	Lowest	-
Franklin Mutual Global Discovery	World Large Stock	0.85	1.31	0.95	0.60	2nd	Lowest	-
Fidelity® Balanced	Allocation-50% to 70% Equity	0.46	1.42	0.83	0.50	1st	Lowest	-
Fidelity Freedom® Income	Target-Date Retirement	0.42	0.69	0.55	0.13	2nd	0.37% (FYTKX)*	None
Fidelity Freedom® 2005	Target-Date 2000-2010	0.44	0.67	0.47	0.10	2nd	0.38% (FITKX)*	None
Fidelity Freedom® 2010	Target-Date 2000-2010	0.47	0.67	0.47	0.10	2nd	0.40% (FOTKX)*	None
Fidelity Freedom® 2015	Target-Date 2015	0.50	0.73	0.50	0.09	2nd	0.42% (FPTKX)*	None
Fidelity Freedom® 2020	Target-Date 2020	0.54	0.72	0.55	0.11	2nd	0.44% (FATKX)*	None
Fidelity Freedom® 2025	Target-Date 2025	0.57	0.78	0.56	0.10	3rd	0.45% (FDTKX)*	None
Fidelity Freedom® 2030	Target-Date 2030	0.61	0.81	0.58	0.11	3rd	0.47% (FGTKX)*	None
Fidelity Freedom® 2035	Target-Date 2035	0.64	0.82	0.58	0.10	3rd	0.49% (FWTKX)*	None
Fidelity Freedom® 2040	Target-Date 2040	0.64	0.83	0.60	0.11	3rd	0.49% (FHTKX)*	None
Fidelity Freedom® 2045	Target-Date 2045	0.64	0.84	0.60	0.10	3rd	0.49% (FJTKX)*	None
Fidelity Freedom® 2050	Target-Date 2050	0.64	0.85	0.60	0.11	3rd	0.49% (FZTKX)*	None
Fidelity Freedom® 2055	Target-Date 2055	0.64	0.86	0.60	0.11	3rd	0.49% (FCTKX)*	None
Fidelity Freedom® 2060	Target-Date 2060	0.64	0.83	0.56	0.09	3rd	0.49% (FVTKX)*	None

\* K6 share class only available to Plans on the Fidelity platform

**TIAA Investment Line-up  
Fee Analysis**

Fund	Morningstar Category	Expense Ratio %	High Fee (95th percentile)	Median Fee	Low Fee (5th percentile)	Quartile (4th = high; 1st = low)	Lowest Share Class Expense Ratio	Minimum Investment
CREF Money Market Account	Money Market-Taxable	0.23	0.51	0.21	0.14	3rd	Lowest	-
Vanguard Treasury Money Market	Money Market - Taxable	0.09	0.51	0.21	0.14	1st	Lowest	-
Vanguard Inflation Protect Bond	Inflation-Protected Bond	0.10	0.62	0.40	0.06	1st	0.07% (VIPIX)	\$5 mm
CREF Bond Market Account	Insurance Intermediate-Term Bond	0.29	0.83	0.56	0.36	1st	Lowest	-
Vanguard Total Bond Market	Intermediate-Term Bond	0.04	0.81	0.50	0.16	1st	Lowest	-
CREF Equity Index	Insurance Large Blend	0.23	1.13	0.64	0.19	1st	Lowest	-
CREF Growth	Insurance Large Growth	0.27	1.05	0.78	0.47	1st	Lowest	-
Vanguard Institutional Index	Large Blend	0.04	1.24	0.71	0.06	1st	Lowest	-
American Funds Washington Mutual	Large Value	0.30	1.09	0.75	0.25	1st	Lowest	-
Vanguard Mid Cap Index	Mid Blend	0.04	1.30	0.87	0.06	1st	Lowest	-
CREF Global Equities	Insurance World Large Stock	0.33	1.20	0.82	0.61	1st	Lowest	-
TIAA Small-Cap Blend Index	Small Blend	0.06	1.47	0.99	0.13	1st	Lowest	-
TIAA Small-Cap Equity	Small Growth	0.42	1.40	1.00	0.68	1st	Lowest	-
Vanguard Total International Stock Index	Foreign Large Blend	0.09	1.24	0.87	0.08	1st	Lowest	-
American Funds Europacific Growth	Foreign Large Growth	0.50	1.21	0.95	0.68	1st	Lowest	-
CREF Social Choice	Insurance Allocation-50% to 70%	0.27	1.05	0.75	0.49	1st	Lowest	-
CREF Stock Account	Insurance Allocation-85%+Equity	0.32	1.42	0.95	0.55	1st	Lowest	-
TIAA Lifecycle Retirement Income	Target-Date Retirement	0.38	0.69	0.55	0.13	2nd	Lowest	-
TIAA Lifecycle 2010	Target-Date 2000-2010	0.38	0.67	0.47	0.10	1st	Lowest	-
TIAA Lifecycle 2015	Target-Date 2015	0.39	0.73	0.50	0.09	1st	Lowest	-
TIAA Lifecycle 2020	Target-Date 2020	0.40	0.72	0.55	0.11	2nd	Lowest	-
TIAA Lifecycle 2025	Target-Date 2025	0.41	0.78	0.56	0.10	2nd	Lowest	-
TIAA Lifecycle 2030	Target-Date 2030	0.42	0.81	0.58	0.11	2nd	Lowest	-
TIAA Lifecycle 2035	Target-Date 2035	0.43	0.82	0.58	0.10	2nd	Lowest	-
TIAA Lifecycle 2040	Target-Date 2040	0.44	0.83	0.60	0.11	2nd	Lowest	-
TIAA Lifecycle 2045	Target-Date 2045	0.45	0.84	0.60	0.10	2nd	Lowest	-
TIAA Lifecycle 2050	Target-Date 2050	0.45	0.85	0.60	0.11	2nd	Lowest	-
TIAA Lifecycle 2055	Target-Date 2055	0.45	0.86	0.60	0.11	2nd	Lowest	-
TIAA Lifecycle 2060	Target-Date 2060	0.45	0.83	0.56	0.09	2nd	Lowest	-

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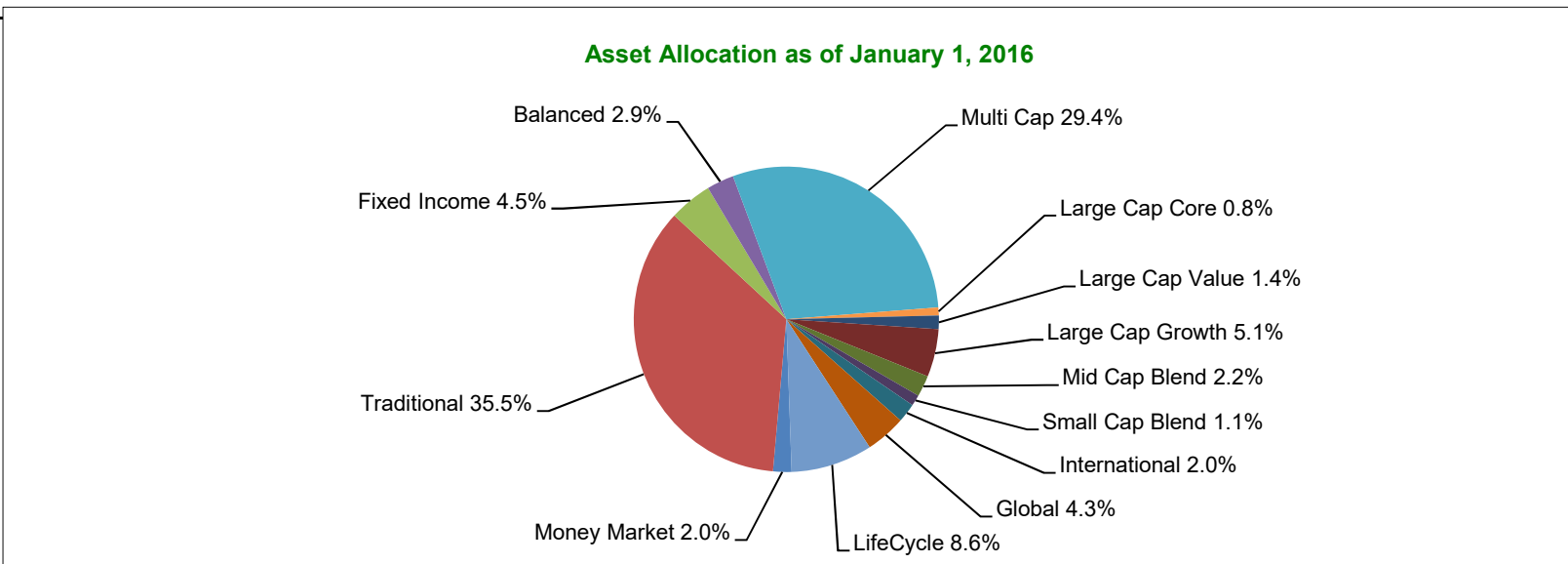
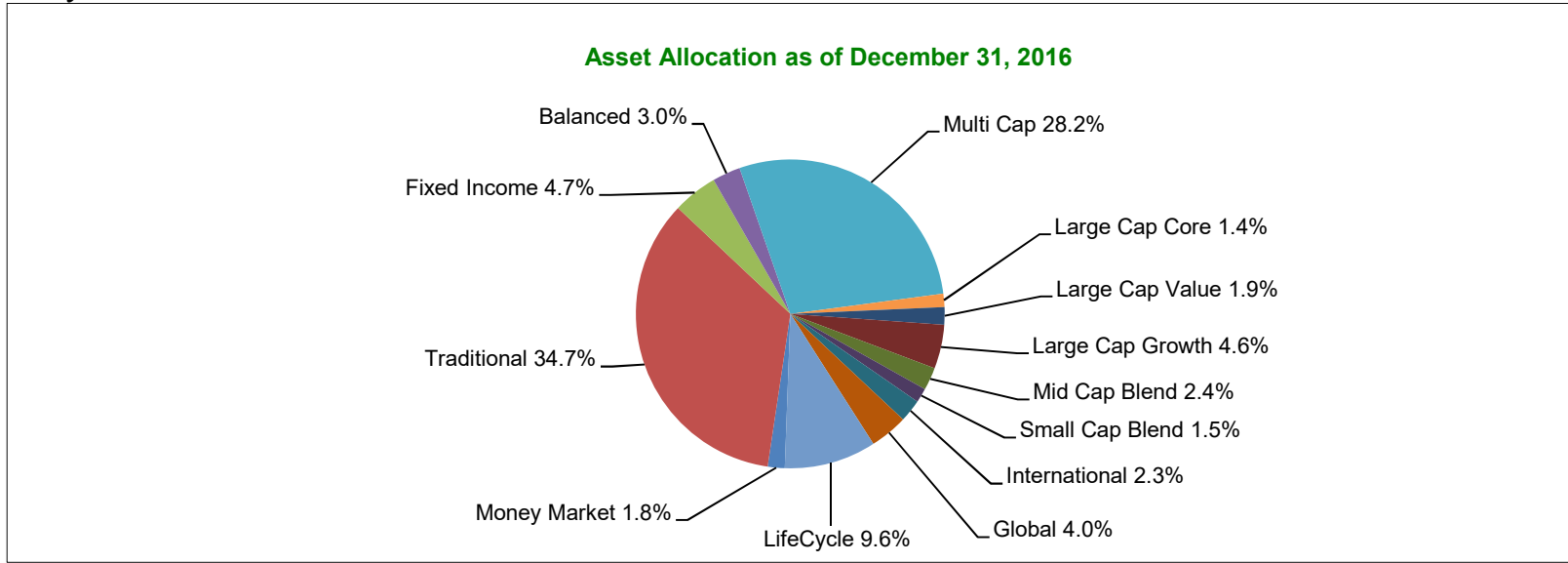
State of Maryland ORP - TIAA

Plan Activity  
January 1, 2016 through December 31, 2016

Fund	Beginning Balance Jan. 1, 2016	Contributions	Disbursements	Net Transfers	Other *	Dividends/ Investment Gain/Loss	Ending Balance Dec. 31, 2016
CREF Money Market	\$ 51,844,551	\$ 1,869,388	\$ (5,245,973)	\$ (459,880)	\$ 188,668	\$ 68,139	\$ 48,264,894
Vanguard Treasury Money Market	\$ -	\$ 5,212	\$ -	\$ 1,568,533	\$ 40	\$ 1,168	\$ 1,574,953
TIAA Traditional	\$ 941,831,494	\$ 12,566,774	\$ (42,294,830)	\$ 17,222,239	\$ (64,280)	\$ 42,686,134	\$ 971,947,530
CREF Bond Market	\$ 98,233,987	\$ 3,649,067	\$ (5,531,654)	\$ 2,538,191	\$ 230,812	\$ 3,389,512	\$ 102,509,916
Vanguard Inflation-Protected	\$ -	\$ 198,007,550	\$ (329,084,840)	\$ 15,274,352,590	\$ 5,371,840	\$ (225,768,390)	\$ 14,922,879
Blackrock Inflation Protected K	\$ 10,550,008	\$ 276,334	\$ (587,567)	\$ (10,930,269)	\$ 54,112	\$ 637,381	\$ -
Vanguard Total Bond Market	\$ 11,163,742	\$ 577,562	\$ (1,083,376)	\$ 3,230,528	\$ 1,090	\$ 253,138	\$ 14,142,684
CREF Social Choice	\$ 77,170,767	\$ 2,370,478	\$ (2,960,252)	\$ 485,278	\$ 119,364	\$ 5,789,962	\$ 82,975,598
CREF Equity Index	\$ 84,824,367	\$ 2,432,696	\$ (2,921,381)	\$ (2,413,745)	\$ 62,221	\$ 10,242,964	\$ 92,227,123
CREF Stock	\$ 696,118,359	\$ 12,279,035	\$ (27,847,739)	\$ (41,744,231)	\$ (701,660)	\$ 60,124,877	\$ 698,228,641
Vanguard Instl Index	\$ 21,943,182	\$ 1,660,704	\$ (950,923)	\$ 12,535,048	\$ 110,381	\$ 3,516,098	\$ 38,814,491
American Funds Washington Mutual Investors R6	\$ 38,033,191	\$ 1,496,477	\$ (2,016,995)	\$ 8,502,559	\$ 116,937	\$ 5,903,137	\$ 52,035,307
CREF Growth	\$ 134,618,445	\$ 3,724,188	\$ (2,676,157)	\$ (10,314,189)	\$ (79,103)	\$ 3,528,334	\$ 128,801,517
Vanguard Mid-Cap Index Instl	\$ 59,628,861	\$ 2,336,883	\$ (2,491,544)	\$ 600,283	\$ 63,798	\$ 6,600,198	\$ 66,738,481
TIAA Small-Cap Equity Fund Instl	\$ 16,280,923	\$ 592,021	\$ (498,396)	\$ (1,537,932)	\$ 100,464	\$ 2,964,486	\$ 17,901,567
TIAA Small-Cap Blend Index Instl	\$ 14,023,210	\$ 670,551	\$ (676,240)	\$ 6,220,352	\$ 50,918	\$ 3,898,336	\$ 24,187,128
American Funds EuroPacific Growth R6	\$ 32,716,876	\$ 1,299,260	\$ (946,041)	\$ 2,529,663	\$ 20,462	\$ 276,227	\$ 35,896,448
Vanguard Total International Stock Instl	\$ 20,913,013	\$ 1,206,575	\$ (1,423,708)	\$ 7,781,362	\$ 96,042	\$ 1,219,480	\$ 29,792,763
CREF Global Equities	\$ 113,999,004	\$ 3,137,641	\$ (3,177,449)	\$ (8,014,203)	\$ (8,943)	\$ 5,445,479	\$ 111,381,530
TIAA Lifecycle Retirement Income Inst	\$ 1,690,129	\$ 74,248	\$ (84,184)	\$ 315,766	\$ 53	\$ 110,028	\$ 2,106,041
TIAA Lifecycle Fund 2010 Institutional Class	\$ 10,593,914	\$ 898,302	\$ (785,732)	\$ (238,174)	\$ 1,059,402	\$ 689,076	\$ 12,216,787
TIAA Lifecycle Fund 2015 Institutional Class	\$ 14,308,230	\$ 1,446,562	\$ (1,040,749)	\$ (1,350,411)	\$ 6,305	\$ 871,960	\$ 14,241,897
TIAA Lifecycle Fund 2020 Institutional Class	\$ 22,547,323	\$ 2,411,494	\$ (1,101,643)	\$ (116,908)	\$ 699	\$ 1,597,395	\$ 25,338,360
TIAA Lifecycle Fund 2025 Institutional Class	\$ 27,520,840	\$ 3,677,221	\$ (727,989)	\$ 363,069	\$ 156,968	\$ 2,056,134	\$ 33,046,244
TIAA Lifecycle Fund 2030 Institutional Class	\$ 32,940,827	\$ 3,969,601	\$ (662,449)	\$ (267,267)	\$ (14,941)	\$ 2,619,252	\$ 38,585,023
TIAA Lifecycle Fund 2035 Institutional Class	\$ 39,330,253	\$ 5,521,654	\$ (1,048,404)	\$ (474,823)	\$ (106,649)	\$ 3,220,611	\$ 46,442,642
TIAA Lifecycle Fund 2040 Institutional Class	\$ 54,055,055	\$ 6,614,388	\$ (1,559,350)	\$ (1,150,314)	\$ 1,575	\$ 4,480,709	\$ 62,442,063
TIAA Lifecycle Fund 2045 Institutional Class	\$ 16,553,398	\$ 4,293,349	\$ (694,465)	\$ (217,324)	\$ 39,716	\$ 1,586,193	\$ 21,560,867
TIAA Lifecycle Fund 2050 Institutional Class	\$ 7,995,167	\$ 2,571,902	\$ (307,419)	\$ (166,612)	\$ 273	\$ 787,773	\$ 10,881,084
TIAA Lifecycle Fund 2055 Institutional Class	\$ 1,439,700	\$ 813,044	\$ (55,369)	\$ (30,216)	\$ 59	\$ 167,125	\$ 2,334,343
TIAA Lifecycle Fund 2060 Institutional Class	\$ -	\$ 14,550	\$ -	\$ 259,271	\$ 7	\$ (1,254)	\$ 272,573
<b>Total</b>	<b>\$ 2,652,868,817</b>	<b>\$ 84,655,167</b>	<b>\$ (111,727,061)</b>	<b>\$ (0)</b>	<b>\$ 1,510,163</b>	<b>\$ 174,504,285</b>	<b>\$ 2,801,811,372</b>

\* Includes: Transfer Payout Annuity (TPA) Re-Investments, QDRO Splits, Minimum Distribution Transfers, GRA Withdrawal charges, Transfers from RA/GRA to TPA contracts.

State of Maryland ORP - TIAA-CREF





State of Maryland ORP - TIAA

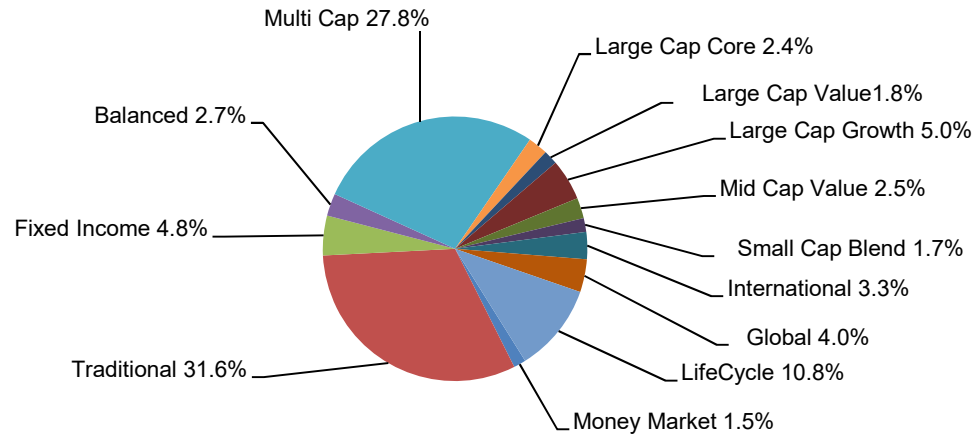
Plan Activity  
January 1, 2017 through December 31, 2017

Fund	Beginning Balance Jan. 1, 2017	Contributions	Disbursements	Net Transfers	Other *	Dividends/ Investment Gain/Loss	Ending Balance Dec. 31, 2017
CREF Money Market	\$ 48,264,894	\$ 1,922,087	\$ (5,653,304)	\$ (2,393,699)	\$ 21,286	\$ 227,358	\$ 42,388,621
Vanguard Treasury Money Market	\$ 1,574,953	\$ 46,671	\$ (306,146)	\$ 4,162,625	\$ 70	\$ 34,100	\$ 5,512,274
TIAA Traditional	\$ 971,947,530	\$ 11,308,555	\$ (43,209,219)	\$ 19,527,623	\$ 347,856	\$ 40,405,115	\$ 1,000,327,460
CREF Bond Market	\$ 102,509,916	\$ 3,567,632	\$ (5,579,011)	\$ 12,878,298	\$ 34,668	\$ 4,408,300	\$ 117,819,802
Vanguard Inflation-Protected	\$ 14,922,879	\$ 486,711	\$ (733,145)	\$ 5,315,344	\$ 2,926	\$ 513,132	\$ 20,507,846
Vanguard Total Bond Market	\$ 14,142,684	\$ 516,164	\$ (880,994)	\$ 918,143	\$ 214	\$ 514,216	\$ 15,210,426
CREF Social Choice	\$ 82,975,598	\$ 2,311,390	\$ (2,992,131)	\$ (7,062,298)	\$ 17,659	\$ 11,337,865	\$ 86,588,083
CREF Equity Index	\$ 92,227,123	\$ 2,211,029	\$ (4,826,583)	\$ (7,059,298)	\$ 85,332	\$ 18,200,020	\$ 100,837,623
CREF Stock	\$ 698,228,641	\$ 10,874,125	\$ (35,311,600)	\$ (50,068,158)	\$ (334,528)	\$ 155,527,890	\$ 778,916,370
Vanguard Instl Index	\$ 38,814,491	\$ 2,285,487	\$ (2,127,305)	\$ 26,459,481	\$ (14,755)	\$ 11,348,197	\$ 76,765,596
American Funds Washington Mutual Investors R6	\$ 52,035,307	\$ 1,604,209	\$ (2,802,028)	\$ (4,952,349)	\$ (3,387)	\$ 10,037,895	\$ 55,919,648
CREF Growth	\$ 128,801,517	\$ 3,353,060	\$ (5,818,882)	\$ (6,300,031)	\$ (316,621)	\$ 39,755,594	\$ 159,474,637
Vanguard Mid-Cap Index Instl	\$ 66,738,481	\$ 2,414,324	\$ (2,851,420)	\$ (703,912)	\$ (93,551)	\$ 12,945,549	\$ 78,449,470
TIAA Small-Cap Equity Fund Instl	\$ 17,901,567	\$ 651,887	\$ (623,865)	\$ 6,887,600	\$ (17,376)	\$ 3,203,299	\$ 28,003,113
TIAA Small-Cap Blend Index Instl	\$ 24,187,128	\$ 786,509	\$ (1,082,595)	\$ (1,872,579)	\$ (20,435)	\$ 3,575,845	\$ 25,573,873
American Funds EuroPacific Growth R6	\$ 35,896,448	\$ 1,623,172	\$ (2,618,036)	\$ 19,067,400	\$ 6,468	\$ 13,253,994	\$ 67,229,445
Vanguard Total International Stock Instl	\$ 29,792,763	\$ 1,230,882	\$ (1,175,408)	\$ (15,000)	\$ (7,946)	\$ 8,297,218	\$ 38,122,509
CREF Global Equities	\$ 111,381,530	\$ 2,832,648	\$ (4,214,056)	\$ (8,858,692)	\$ (220,808)	\$ 26,302,983	\$ 127,223,604
TIAA Lifecycle Retirement Income Inst	\$ 2,106,041	\$ 65,490	\$ (83,274)	\$ 240,205	\$ 36	\$ 286,399	\$ 2,614,897
TIAA Lifecycle Fund 2010 Institutional Class	\$ 12,216,787	\$ 1,685,048	\$ (729,200)	\$ (339,036)	\$ 137,371	\$ 1,544,459	\$ 14,515,429
TIAA Lifecycle Fund 2015 Institutional Class	\$ 14,241,897	\$ 1,277,228	\$ (566,741)	\$ (263,518)	\$ 321	\$ 1,990,568	\$ 16,679,755
TIAA Lifecycle Fund 2020 Institutional Class	\$ 25,338,360	\$ 2,420,225	\$ (1,157,749)	\$ (1,474,969)	\$ 435	\$ 3,970,074	\$ 29,096,376
TIAA Lifecycle Fund 2025 Institutional Class	\$ 33,046,244	\$ 3,515,842	\$ (996,349)	\$ (1,852,731)	\$ 58,166	\$ 5,800,355	\$ 39,571,527
TIAA Lifecycle Fund 2030 Institutional Class	\$ 38,585,023	\$ 3,880,089	\$ (832,586)	\$ 1,862	\$ 2,067	\$ 7,705,667	\$ 49,342,121
TIAA Lifecycle Fund 2035 Institutional Class	\$ 46,442,642	\$ 5,050,263	\$ (870,217)	\$ (1,696,731)	\$ 809	\$ 10,069,719	\$ 58,996,486
TIAA Lifecycle Fund 2040 Institutional Class	\$ 62,442,063	\$ 6,384,869	\$ (2,326,677)	\$ (696,918)	\$ (11,286)	\$ 14,669,355	\$ 80,461,406
TIAA Lifecycle Fund 2045 Institutional Class	\$ 21,560,867	\$ 4,552,986	\$ (969,386)	\$ (193,499)	\$ (13,145)	\$ 5,424,091	\$ 30,361,914
TIAA Lifecycle Fund 2050 Institutional Class	\$ 10,881,084	\$ 3,044,435	\$ (516,866)	\$ 22,281	\$ (18,053)	\$ 2,873,837	\$ 16,286,718
TIAA Lifecycle Fund 2055 Institutional Class	\$ 2,334,343	\$ 1,137,435	\$ (118,877)	\$ 131,893	\$ (11,103)	\$ 676,089	\$ 4,149,780
TIAA Lifecycle Fund 2060 Institutional Class	\$ 272,573	\$ 67,952	\$ (10,940)	\$ 190,662	\$ 7	\$ 82,993	\$ 603,248
<b>Total</b>	<b>\$ 2,801,811,372</b>	<b>\$ 83,108,404</b>	<b>\$ (131,984,591)</b>	<b>\$ (0)</b>	<b>\$ (367,305)</b>	<b>\$ 414,982,175</b>	<b>\$ 3,167,550,056</b>

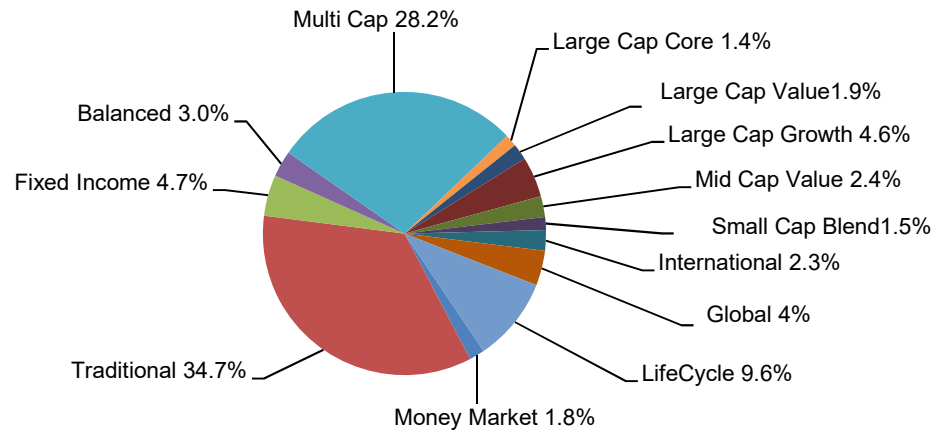
\* Includes: Transfer Payout Annuity (TPA) Re-investments, QDRO Splits, Minimum Distribution Transfers, GRA Withdrawal charges, Transfers from RA/GRA to TPA contracts.

*State of Maryland ORP - TIAA-CREF*

**Asset Allocation - as of December 31, 2017**

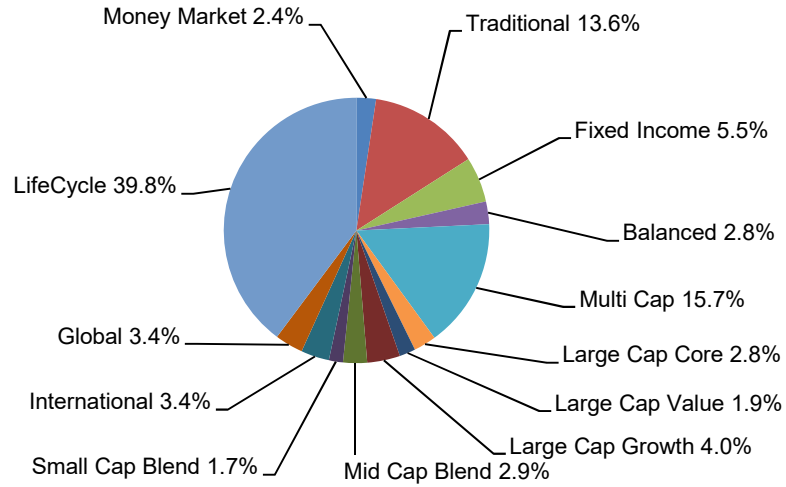


**Asset Allocation - as of January 1, 2017**

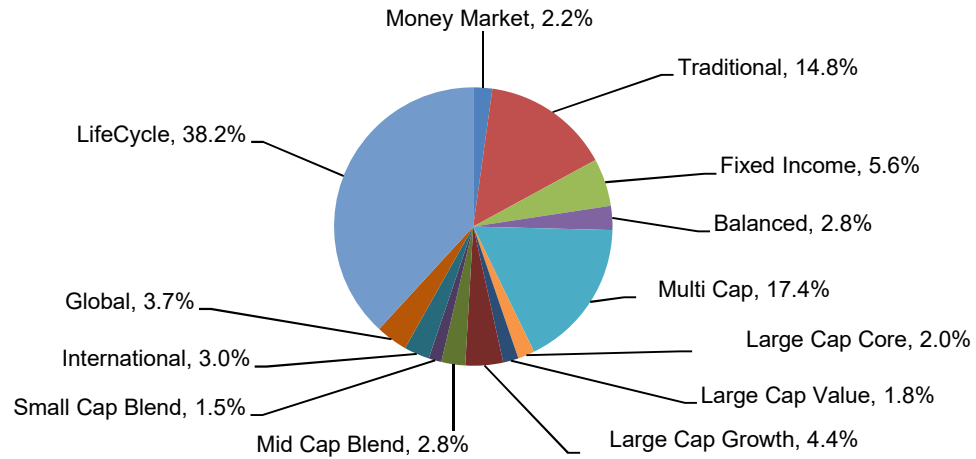


*State of Maryland ORP - TIAA-CREF*

**Plan Contributions - 2017**



**Plan Contributions - 2016**



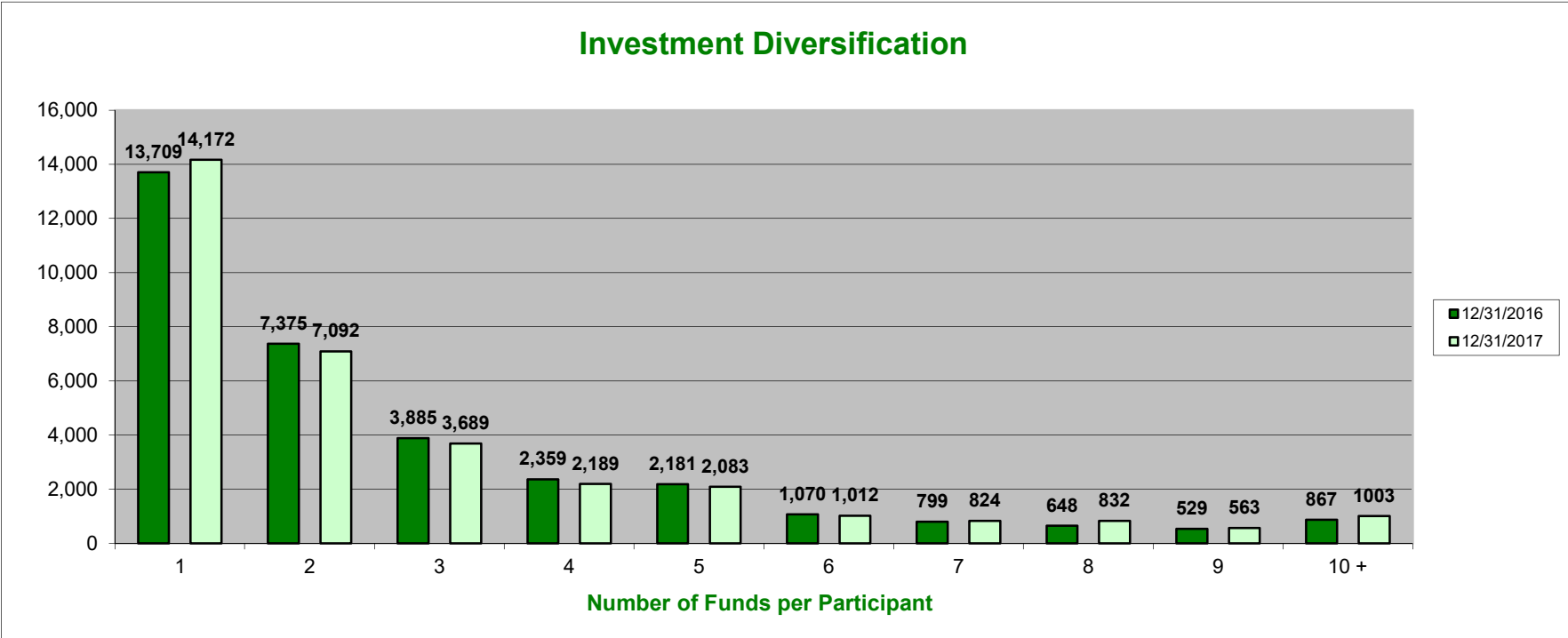
Plan Participant Counts

Fund	2016	
	No. of Participants	No. of One-Funders
American EuroPac Growth R6	2,447	15
American Washington Mut Inv R6	2,376	19
CREF Bond Market R3	6,976	70
CREF Equity Index R3	3,507	118
CREF Global Equities R3	6,425	91
CREF Growth R3	5,702	195
CREF Money Market R3	3,441	327
CREF Social Choice R3	3,994	207
CREF Stock R3	14,061	666
TIAA Traditional	18,842	3,824
TIAA Lfcyle Rtmt Inc-Inst	77	7
TIAA Lifecycle 2010-Inst	1,454	289
TIAA Lifecycle 2015-Inst	642	262
TIAA Lifecycle 2020-Inst	848	427
TIAA Lifecycle 2025-Inst	1,028	609
TIAA Lifecycle 2030-Inst	1,176	725
TIAA Lifecycle 2035-Inst	1,533	1,067
TIAA Lifecycle 2040-Inst	2,590	1,879
TIAA Lifecycle 2045-Inst	1,574	1,319
TIAA Lifecycle 2050-Inst	1,186	1,050
TIAA Lifecycle 2055-Inst	434	374
TIAA Lifecycle 2060-Inst	20	8
TIAA Sm-Cap BI Idx-Inst	1,621	7
TIAA Sm-Cap Eq-Inst	1,420	2
Vanguard Infl Protect Sec Adm	1,310	10
Vanguard Inst Idx Inst	1,823	70
Vanguard MCap Idx Instit Plus	3,285	41
Vanguard Treasury MoneyMkt Inv	41	9
Vanguard Ttl Bd Mkt Idx Inst	780	15

2017	
No. of Participants	No. of One-Funders
2,932	16
2,534	17
6,933	68
3,295	118
6,099	85
5,411	185
3,052	283
3,664	194
13,458	622
18,524	3,911
83	7
1,416	300
666	259
865	420
1,083	639
1,221	759
1,556	1,085
2,596	1,892
1,687	1,404
1,357	1,192
570	494
61	30
1,829	4
1,867	3
1,616	12
2,528	87
3,668	45
103	16
801	17

Average Participant Account Balances

	TIAA-CREF	
	Dec. 31, 2016	Dec. 31, 2017
<b>Total Participant Accounts</b>	33,422	33,459
<b>Total Assets</b>	\$ 2,801,811,372	\$ 3,167,550,056
<b>Average Account Balance</b>	\$ 83,831	\$ 94,670



**TIAA Lifecycle Funds**  
**Asset Allocation**  
**Ended December 31, 2017**

	U.S. Equity	International Equity	Fixed Income	Short-Term Fixed Income	Inflation-Protected	Direct Real Estate	Other	Total Equity	Total Fixed Income	Total Other
TIAA Lifecycle Retirement	26.1%	11.8%	40.5%	9.9%	8.5%	2.9%	0.3%	37.9%	58.9%	3.2%
TIAA Lifecycle Fund 2010	27.8%	12.5%	40.0%	8.9%	7.5%	2.9%	0.4%	40.3%	56.4%	3.3%
TIAA Lifecycle Fund 2015	31.3%	14.0%	39.0%	6.9%	5.5%	2.9%	0.3%	45.4%	51.4%	3.2%
TIAA Lifecycle Fund 2020	36.1%	16.1%	36.2%	5.0%	3.5%	2.9%	0.3%	52.2%	44.6%	3.2%
TIAA Lifecycle Fund 2025	42.1%	18.7%	31.6%	3.0%	1.5%	3.0%	0.3%	60.7%	36.0%	3.3%
TIAA Lifecycle Fund 2030	48.0%	21.2%	25.6%	1.0%	1.0%	2.9%	0.3%	69.2%	27.5%	3.2%
TIAA Lifecycle Fund 2035	54.0%	23.8%	19.0%	0.0%	0.0%	2.9%	0.3%	77.8%	19.0%	3.2%
TIAA Lifecycle Fund 2040	59.9%	26.4%	10.4%	0.0%	0.0%	2.9%	0.3%	86.3%	10.4%	3.2%
TIAA Lifecycle Fund 2045	63.3%	27.7%	5.8%	0.0%	0.0%	2.9%	0.3%	91.0%	5.8%	3.2%
TIAA Lifecycle Fund 2050	64.2%	28.1%	4.6%	0.0%	0.0%	2.9%	0.3%	92.2%	4.6%	3.2%
TIAA Lifecycle Fund 2055	65.0%	28.3%	3.4%	0.0%	0.0%	2.9%	0.4%	93.3%	3.4%	3.3%
TIAA Lifecycle Fund 2060	65.6%	28.4%	2.3%	0.0%	0.0%	2.9%	0.8%	94.0%	2.3%	3.6%

\* Other consists of receivables, payables & the TIAA Global Natural Resources Fund.

State of Maryland

Comparative Performance

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>State of Maryland TIAA</b>	<b>3,167,550</b>	<b>100.00</b>						
Vanguard Treasury Money Mkt Inv	5,512	0.17	0.27	0.79	0.79	0.36	0.22	0.09
90 Day U.S. Treasury Bill			0.28	0.86	0.86	0.38	0.25	
CREF Money Market Account	42,389	1.34	0.17	0.49	0.49	0.21	0.12	0.23
90 Day U.S. Treasury Bill			0.28	0.86	0.86	0.38	0.25	
TIAA Traditional Account	1,000,327	31.58	0.93	3.80	3.80	3.94	3.99	0.47
Hueler Stable Value			0.51	1.95	1.95	1.83	1.80	
CREF Bond Market Account	117,820	3.72	0.49	4.12	4.12	2.68	2.30	0.29
Blmbg. Barc. U.S. Aggregate			0.39	3.54	3.54	2.24	2.10	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.34	3.58	3.58	2.14	1.95	
CREF Bond Market Account Rank			22	26	26	17	25	
Vanguard Total Bond Mkt Inst	15,210	0.48	0.41	3.57	3.57	2.19	2.03	0.04
Blmbg. Barc. U.S. Aggregate			0.39	3.54	3.54	2.24	2.10	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.34	3.58	3.58	2.14	1.95	
Vanguard Total Bond Mkt Inst Rank			35	51	51	45	44	
Vanguard Infl Protect Sec Adm	20,508	0.65	1.19	2.91	2.91	1.91	0.06	0.10
Blmbg. Barc. U.S. TIPS			1.26	3.01	3.01	2.05	0.13	
IM U.S. TIPS (MF) Median			1.11	2.63	2.63	1.60	-0.27	
Vanguard Infl Protect Sec Adm Rank			43	35	35	32	29	
CREF Social Choice Account	86,588	2.73	3.44	14.25	14.25	6.75	8.70	0.27
CREF Social Choice Composite BM			3.56	14.34	14.34	6.96	8.99	
IM All Balanced (MF) Median			3.49	14.15	14.15	6.22	7.78	
CREF Social Choice Account Rank			52	50	50	41	39	
CREF Equity Index Account	100,838	3.18	6.26	20.83	20.83	10.87	15.24	0.23
Russell 3000 Index			6.34	21.13	21.13	11.12	15.58	
IM U.S. All Cap Equity (SA+CF+MF) Median			6.00	20.64	20.64	9.49	14.35	
CREF Equity Index Account Rank			44	49	49	27	34	



**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>CREF Stock Account</b>	778,916	24.59	5.72	23.44	23.44	10.15	12.70	0.32
70% R3000 / 30% MSCI ACWI ex US			5.96	23.12	23.12	10.34	13.09	
IM Global Large Cap Equity (MF) Median			5.11	24.37	24.37	9.20	10.95	
CREF Stock Account Rank			26	63	63	30	12	
<b>Vanguard Institutional Index</b>	76,766	2.42	6.63	21.79	21.79	11.38	15.76	0.04
S&P 500			6.64	21.83	21.83	11.41	15.79	
IM U.S. Large Cap Core Equity (MF) Median			6.39	20.84	20.84	10.11	14.51	
Vanguard Institutional Index Rank			38	36	36	17	14	
<b>American Funds Wash Mutual Inv R6</b>	55,920	1.77	6.52	20.54	20.54	11.13	15.17	0.30
Russell 1000 Value Index			5.33	13.66	13.66	8.65	14.04	
IM U.S. Large Cap Value Equity (MF) Median			5.82	16.41	16.41	8.52	13.34	
American Funds Wash Mutual Inv R6 Rank			35	8	8	3	9	
<b>CREF Growth Account</b>	159,475	5.03	7.87	31.83	31.83	13.04	17.25	0.27
Russell 1000 Growth Index			7.86	30.21	30.21	13.79	17.33	
IM U.S. Large Cap Growth Equity (MF) Median			6.66	29.36	29.36	11.77	15.71	
CREF Growth Account Rank			10	27	27	25	16	
<b>Vanguard MidCap Index Instl</b>	78,449	2.48	5.65	19.28	19.28	9.41	15.04	0.04
Vanguard Spliced Mid Cap Index			5.65	19.30	19.30	9.42	15.06	
IM U.S. Mid Cap Core Equity (MF) Median			5.47	15.60	15.60	8.62	13.43	
Vanguard MidCap Index Instl Rank			45	18	18	33	12	
<b>TIAA-CREF Small Cap Equity Instl Class</b>	28,003	0.88	4.03	15.01	15.01	11.38	15.64	0.42
Russell 2000 Index			3.34	14.65	14.65	9.96	14.12	
IM U.S. Small Cap Core Equity (MF) Median			2.56	12.03	12.03	8.86	13.05	
TIAA-CREF Small Cap Equity Instl Class Rank			17	20	20	19	10	
<b>TIAA-CREF Small Cap Blend Index Instl</b>	25,574	0.81	3.36	14.83	14.83	10.20	14.36	0.06
Russell 2000 Index			3.34	14.65	14.65	9.96	14.12	
IM U.S. Small Cap Core Equity (MF) Median			2.56	12.03	12.03	8.86	13.05	
TIAA-CREF Small Cap Blend Index Instl Rank			39	21	21	33	30	

**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>American Funds EuroPacific Growth R6</b>	67,229	2.12	4.23	31.17	31.17	9.66	9.21	0.50
MSCI AC World ex USA			5.06	27.77	27.77	8.33	7.28	
IM International Large Cap Core Equity (MF) Median			4.18	24.71	24.71	7.07	6.76	
American Funds EuroPacific Growth R6 Rank			47	8	8	1	3	
<b>Vanguard Total Intl Stock Instl</b>	38,123	1.20	4.87	27.55	27.55	8.54	7.14	0.09
Vanguard Spliced Total Int'l Stock Index (Net)			5.36	27.41	27.41	8.49	7.39	
IM International Large Cap Core Equity (MF) Median			4.18	24.71	24.71	7.07	6.76	
Vanguard Total Intl Stock Instl Rank			21	21	21	8	34	
<b>CREF Global Equities Account</b>	127,224	4.02	6.02	24.81	24.81	9.35	11.63	0.33
MSCI World (Net)			5.51	22.40	22.40	9.26	11.64	
IM Global Large Cap Core Equity (MF) Median			4.93	23.57	23.57	8.84	10.64	
CREF Global Equities Account Rank			5	17	17	21	14	
<b>TIAA-CREF Lifecycle Retire Inc Instl</b>	2,615	0.08	2.55	12.10	12.10	6.02	6.47	0.38
TIAA-CREF Lifecycle Income Active Composite Index			2.57	10.55	10.55	5.33	6.16	
IM Mixed-Asset Target Alloc Consv (MF) Median			1.80	8.56	8.56	4.02	4.92	
TIAA-Cref Lifecycle Retire Inc Instl Rank			12	4	4	6	8	
<b>TIAA-CREF Lifecycle 2010 Instl</b>	14,515	0.46	2.69	12.76	12.76	6.33	7.08	0.38
TIAA-CREF Lifecycle 2010 Active Composite Index			2.72	11.19	11.19	5.60	6.82	
IM Mixed-Asset Target 2010 (MF) Median			2.23	10.24	10.24	4.91	5.93	
TIAA-CREF Lifecycle 2010 Instl Rank			10	1	1	1	4	
<b>TIAA-CREF Lifecycle 2015 Instl</b>	16,680	0.53	2.94	13.85	13.85	6.75	7.75	0.39
TIAA-CREF Lifecycle 2015 Active Composite Index			3.01	12.25	12.25	6.05	7.53	
IM Mixed-Asset Target 2015 (MF) Median			2.61	11.40	11.40	5.52	6.76	
TIAA-CREF Lifecycle 2015 Instl Rank			19	2	2	2	7	
<b>TIAA-CREF Lifecycle 2020 Instl</b>	29,096	0.92	3.31	15.58	15.58	7.37	8.62	0.40
TIAA-CREF Lifecycle 2020 Active Composite Index			3.39	13.68	13.68	6.62	8.42	
IM Mixed-Asset Target 2020 (MF) Median			3.00	12.63	12.63	5.77	6.74	
TIAA-CREF Lifecycle 2020 Instl Rank			17	2	2	1	3	

State of Maryland

Comparative Performance

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
TIAA-CREF Lifecycle 2025 Instl	39,572	1.25	3.81	17.40	17.40	8.03	9.55	0.41
TIAA-CREF Lifecycle 2025 Active Composite Index			3.85	15.36	15.36	7.29	9.38	
IM Mixed-Asset Target 2025 (MF) Median			3.47	14.95	14.95	6.54	7.93	
TIAA-CREF Lifecycle 2025 Instl Rank			15	1	1	1	6	
TIAA-CREF Lifecycle 2030 Instl	49,342	1.56	4.28	19.21	19.21	8.70	10.42	0.42
TIAA-CREF Lifecycle 2030 Active Composite Index			4.32	17.07	17.07	7.96	10.33	
IM Mixed-Asset Target 2030 (MF) Median			4.02	16.91	16.91	7.19	8.78	
TIAA-CREF Lifecycle 2030 Instl Rank			22	2	2	2	5	
TIAA-CREF Lifecycle 2035 Instl	58,996	1.86	4.73	21.11	21.11	9.29	11.26	0.43
TIAA-CREF Lifecycle 2035 Active Composite Index			4.77	18.73	18.73	8.59	11.22	
IM Mixed-Asset Target 2035 (MF) Median			4.44	18.72	18.72	7.96	9.66	
TIAA-CREF Lifecycle 2035 Instl Rank			21	2	2	4	6	
TIAA-CREF Lifecycle 2040 Instl	80,461	2.54	5.15	22.91	22.91	9.86	11.88	0.44
TIAA-CREF Lifecycle 2040 Active Composite Index			5.23	20.37	20.37	9.21	11.90	
IM Mixed-Asset Target 2040 (MF) Median			4.74	19.71	19.71	8.11	10.08	
TIAA-CREF Lifecycle 2040 Instl Rank			14	1	1	1	4	
TIAA-CREF Lifecycle 2045 Instl	30,362	0.96	5.36	23.62	23.62	10.18	12.05	0.45
TIAA-CREF Lifecycle 2045 Active Composite Index			5.48	21.18	21.18	9.57	12.12	
IM Mixed-Asset Target 2045 (MF) Median			4.85	20.65	20.65	8.65	10.52	
TIAA-CREF Lifecycle 2045 Instl Rank			6	1	1	1	4	
TIAA-CREF Lifecycle 2050 Instl	16,287	0.51	5.42	24.04	24.04	10.34	12.14	0.45
TIAA-CREF Lifecycle 2050 Active Composite Index			5.55	21.44	21.44	9.71	12.20	
IM Mixed-Asset Target 2050 (MF) Median			4.98	20.67	20.67	8.53	10.61	
TIAA-CREF Lifecycle 2050 Instl Rank			12	1	1	1	4	
TIAA-CREF Lifecycle 2055 Instl	4,150	0.13	5.46	24.23	24.23	10.43	12.20	0.45
TIAA-CREF Lifecycle 2055 Active Composite Index			5.62	21.70	21.70	9.85	12.29	
IM Mixed-Asset Target 2055+ (MF) Median			5.05	21.23	21.23	8.85	10.84	
TIAA-CREF Lifecycle 2055 Instl Rank			13	2	2	1	6	

**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
TIAA-CREF Lifecycle 2060 Instl	603	0.02	5.49	24.40	24.40	10.55		0.45
TIAA-CREF Lifecycle 2060 Active Composite Index			5.69	21.97	21.97	10.00		
IM Mixed-Asset Target 2055+ (MF) Median			5.05	21.23	21.23	8.85	10.84	
TIAA-CREF Lifecycle 2060 Instl Rank			11	1	1	1		

## Scoring System Summary

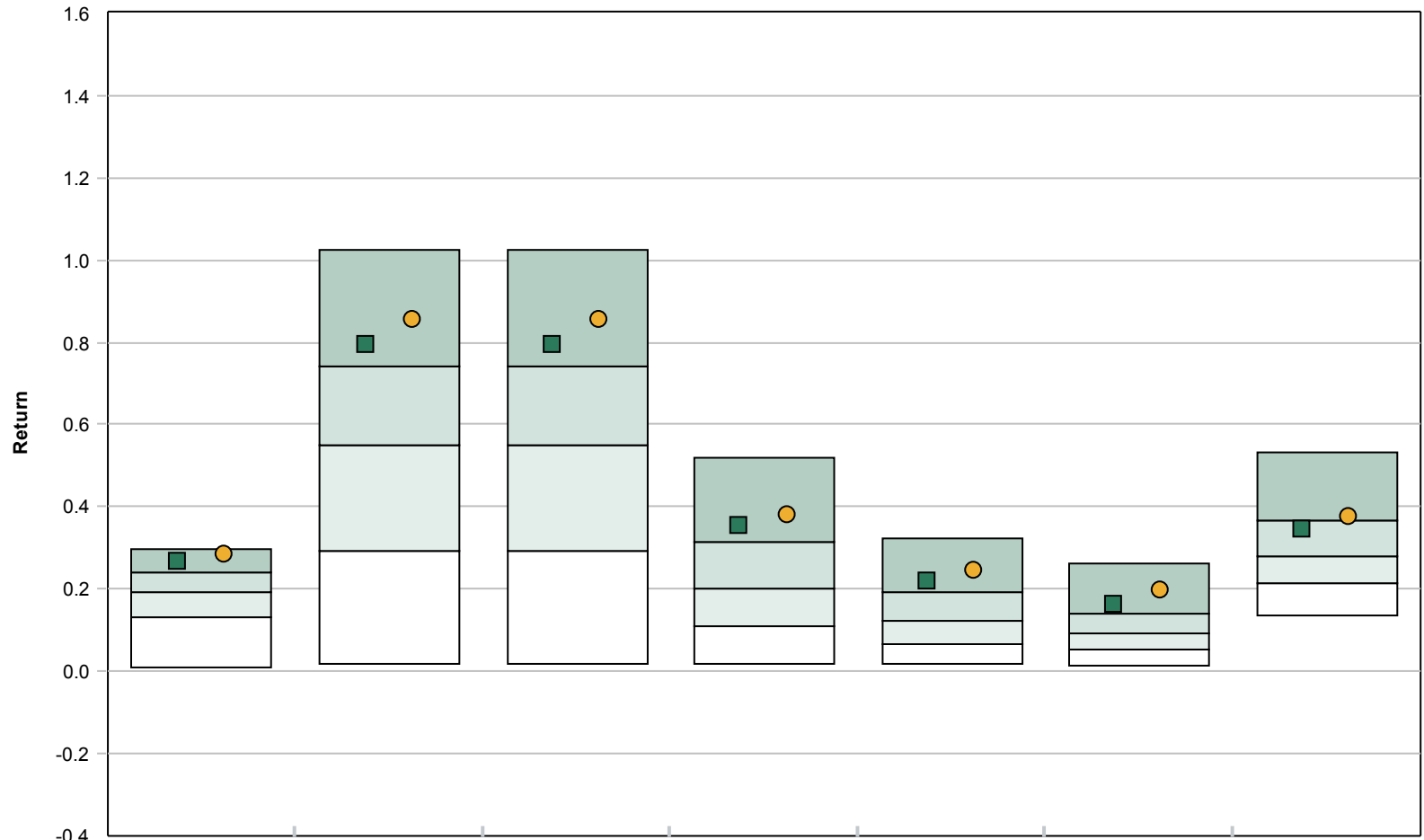
Ticker	Fund Name	Fund Category	Mar-2017	Jun-2017	Sep-2017	Dec-2017
BPRIX	Vanguard Inflation-Protected Secs Adm	Inflation-Protected Bond	B	B	B	B
RERGX	American Funds EuroPacific Gr R6	Foreign Large Blend	A	A	A	A
RWMGX	American Funds Washington Mutual R6	Large Value	B	B	B	B
TISBX	TIAA-CREF Small-Cap Blend Idx Inst	Small Blend	B	B	B	B
TSRPX	TIAA-CREF Small-Cap Equity Premier	Small Blend	B	B	B	A
VINIX	Vanguard Institutional Index I	Large Blend	B	B	B	B
VTSNX	Vanguard Mid Cap Index Inst	Mid-Cap Blend	A	A	A	A
VTSNX	Vanguard Total Bond Market Index I	Intermediate-Term Bond	C	C	C	C
VTSNX	Vanguard Total Intl Stock Index I	Foreign Large Blend	B	B	B	B
<b>TIAA-CREF Annuity Funds</b>						
	TIAA-CREF Bond Market	Intermediate-Term Bond	C	C	C	C
	TIAA-CREF Stock	Large Blend	A	A	A	A
	TIAA-CREF Growth	Large Growth Large	B	B	B	B
	TIAA-CREF Equity Index	Blend	B	B	B	B
	TIAA-CREF Global Equities TIAA-	World Stock	A	A	A	A
	CREF Social Choice	Moderate Allocation	B	B	B	B

For Active Funds:		
Grade		Action
<b>A</b>	Above Average	No Action
<b>B</b>	Above Average	No Action
<b>C</b>	Average	Closely Monitor
<b>D</b>	Watch list	Fund Alert
<b>F</b>	Immediate Action	Terminate
<b>NA</b>	< than 3 years of history	Check share class and inception date

For Index Funds:		
Grade		Action
<b>A</b>	Satisfactory	No Action
<b>B</b>	Satisfactory	No Action
<b>C</b>	Satisfactory	No Action
<b>D</b>	Immediate Action	Terminate
<b>F</b>	Immediate Action	Terminate
<b>NA</b>	< than 3 years of history	Check share class and inception date

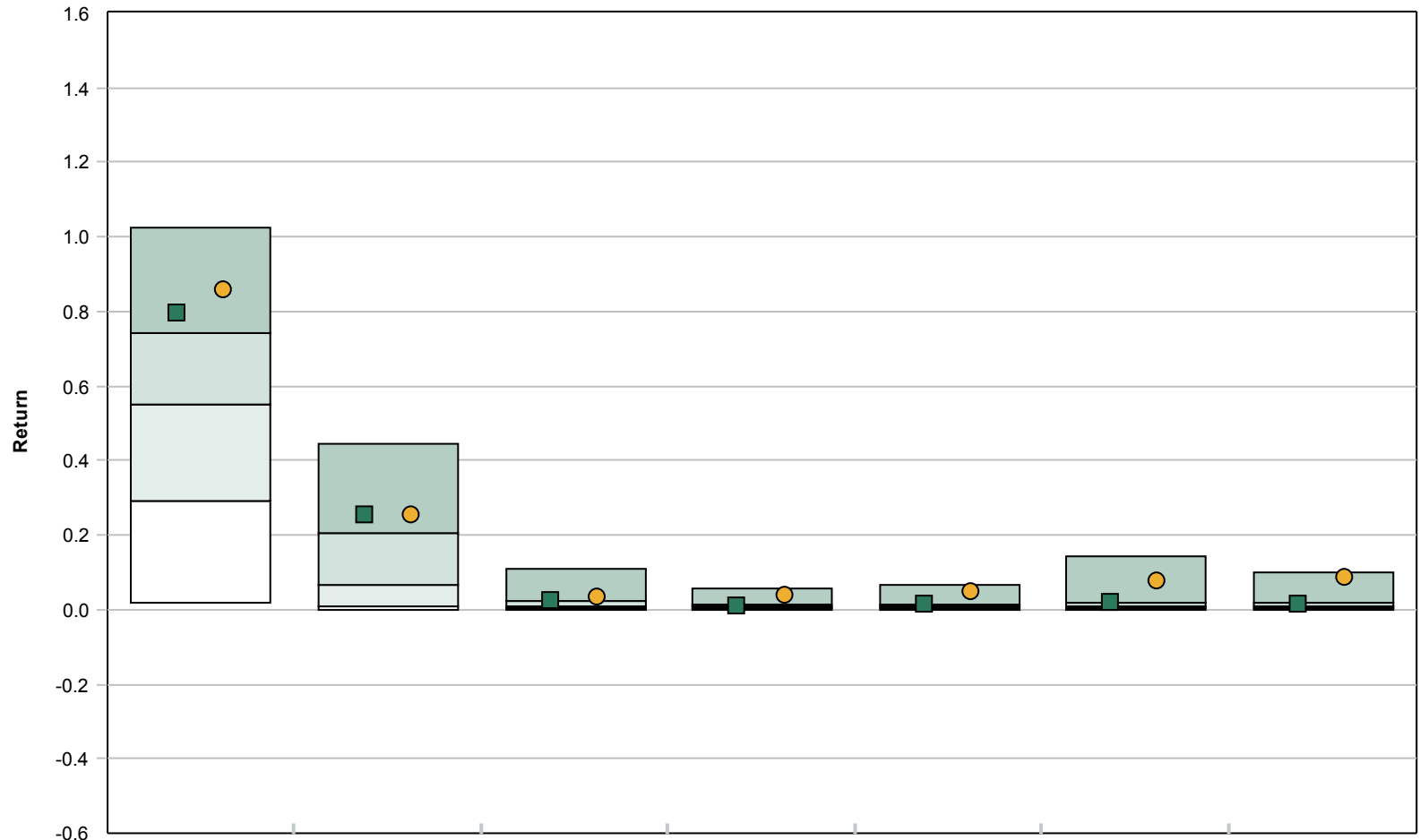
Vanguard Treasury Money Mkt Inv

Peer Group Analysis - IM U.S. Taxable Money Market (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Treasury Money Mkt Inv	0.27 (12)	0.79 (17)	0.79 (17)	0.36 (16)	0.22 (16)	0.16 (16)	0.35 (31)
● 90 Day U.S. Treasury Bill	0.28 (9)	0.86 (12)	0.86 (12)	0.38 (13)	0.25 (12)	0.20 (11)	0.38 (23)
5th Percentile	0.30	1.02	1.02	0.52	0.32	0.26	0.53
1st Quartile	0.24	0.74	0.74	0.32	0.19	0.14	0.37
Median	0.19	0.55	0.55	0.20	0.12	0.09	0.28
3rd Quartile	0.13	0.29	0.29	0.11	0.07	0.05	0.22
95th Percentile	0.01	0.02	0.02	0.02	0.02	0.01	0.14

Peer Group Analysis - IM U.S. Taxable Money Market (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Treasury Money Mkt Inv	0.79 (17)	0.25 (18)	0.02 (27)	0.01 (48)	0.01 (28)	0.02 (29)	0.02 (29)
● 90 Day U.S. Treasury Bill	0.86 (12)	0.25 (18)	0.03 (22)	0.04 (9)	0.05 (9)	0.08 (11)	0.08 (7)
5th Percentile	1.02	0.44	0.11	0.06	0.07	0.14	0.10
1st Quartile	0.74	0.20	0.02	0.01	0.01	0.02	0.02
Median	0.55	0.06	0.01	0.01	0.01	0.01	0.01
3rd Quartile	0.29	0.01	0.01	0.00	0.00	0.00	0.00
95th Percentile	0.02	0.00	0.00	0.00	0.00	0.00	0.00



## Vanguard Treasury Money Mkt Inv

### Fund Information

Fund Name : Vanguard Admiral Funds: Vanguard Treasury Money Market Fund; Investor Shares  
 Fund Family : Vanguard Group Inc  
 Ticker : VUSXX  
 Inception Date : 12/14/1992  
 Fund Assets : \$15,847 Million

Portfolio Assets : \$15,847 Million  
 Portfolio Manager : David R. Glocke  
 PM Tenure : 1997  
 Fund Style : IM U.S. Taxable Money Market (MF)  
 Style Benchmark : 90 Day U.S. Treasury Bill

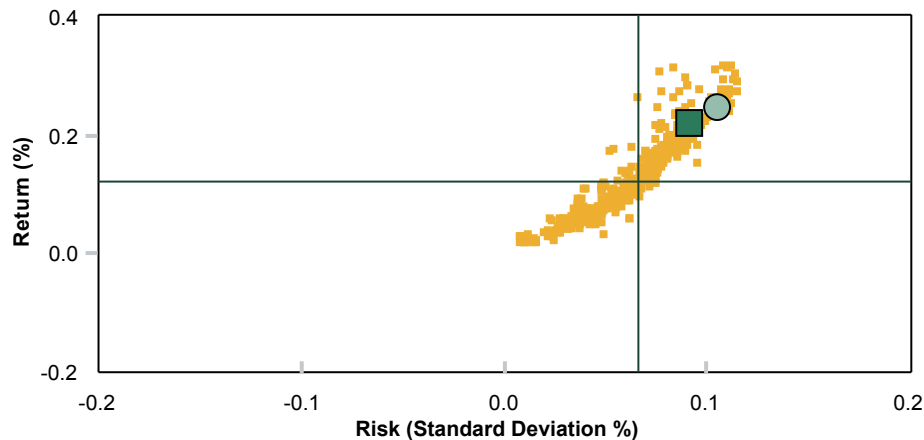
### Fund Investment Policy

The Fund seeks to provide current income while maintaining liquidity and a stable share price of \$1. At least 80% of the Funds assets will be invested in U.S. Treasury securities. The Fund maintains a dollar-weighted average maturity of 60 days or less and a dollar-weighted average life of 120 days or less.

### Historical Statistics (01/01/13 - 12/31/17) \*

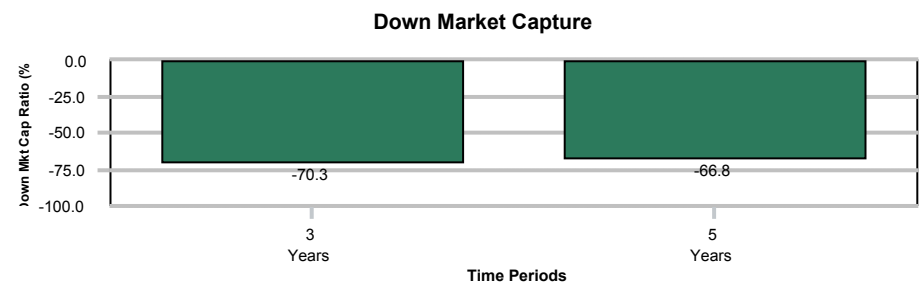
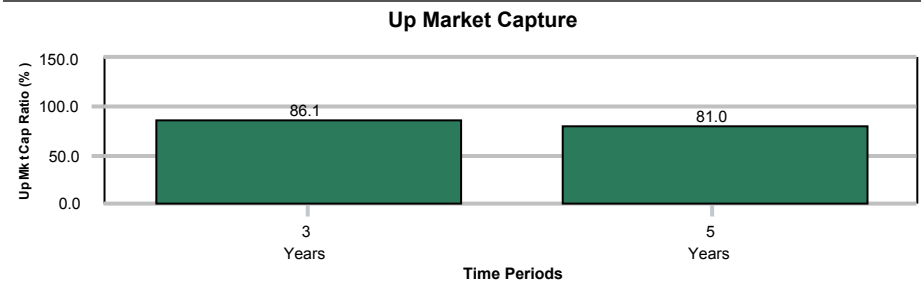
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Treasury Money Mkt Inv	0.22	0.09	-0.74	0.02	0.82	0.88	0.04	-0.74	0.04	01/01/1993
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.00	1.00	1.00	0.00	N/A	0.00	01/01/1993

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard Treasury Money Mkt Inv	0.22	0.09
● 90 Day U.S. Treasury Bill	0.25	0.11
— Median	0.12	0.07

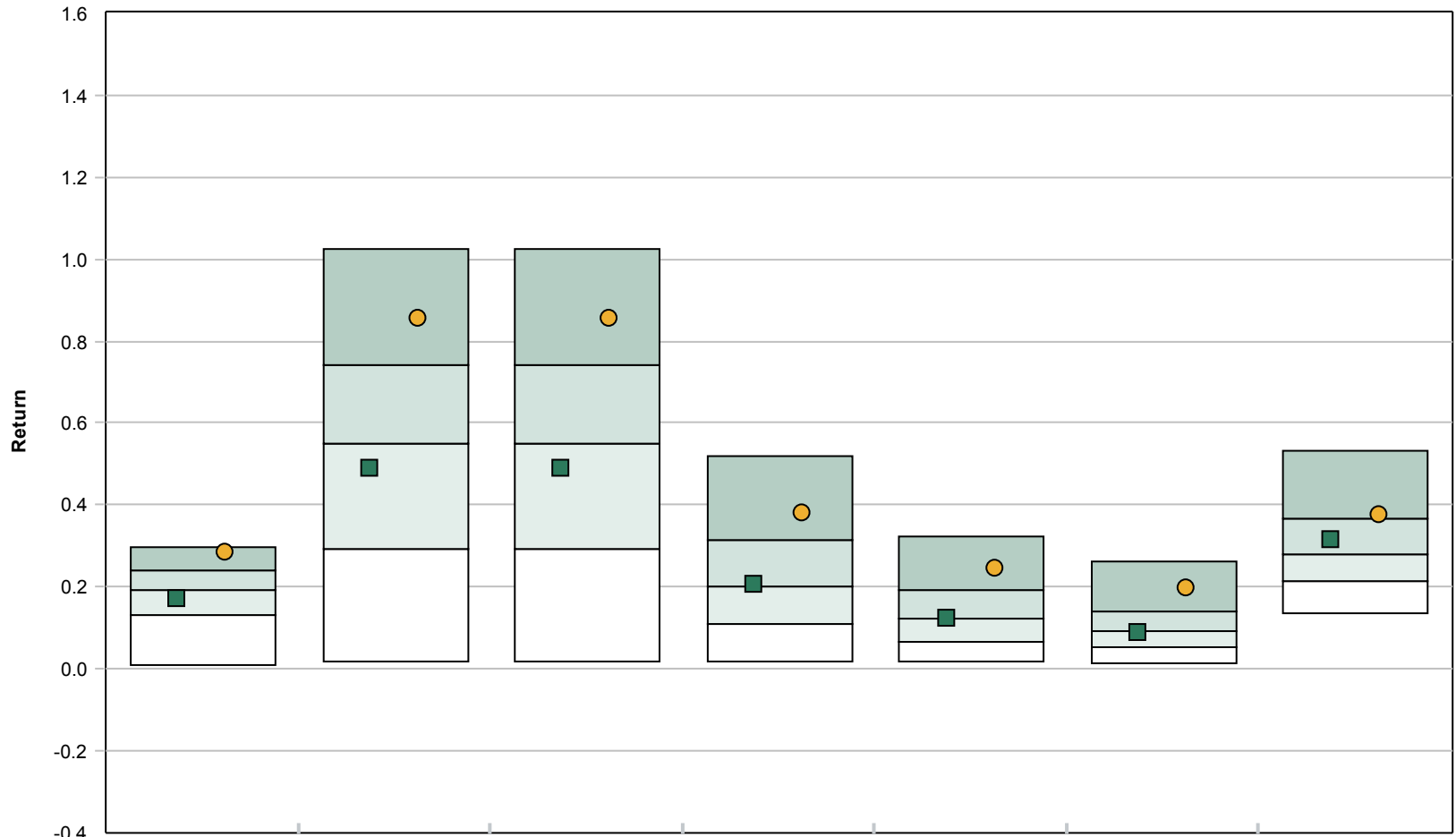
### Up Down Market Capture



\* Monthly periodicity used.

CREF Money Market Account

Peer Group Analysis - IM U.S. Taxable Money Market (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ CREF Money Market Account	0.17 (61)	0.49 (55)	0.49 (55)	0.21 (49)	0.12 (50)	0.09 (52)	0.31 (42)
● 90 Day U.S. Treasury Bill	0.28 (9)	0.86 (12)	0.86 (12)	0.38 (13)	0.25 (12)	0.20 (11)	0.38 (23)
5th Percentile	0.30	1.02	1.02	0.52	0.32	0.26	0.53
1st Quartile	0.24	0.74	0.74	0.32	0.19	0.14	0.37
Median	0.19	0.55	0.55	0.20	0.12	0.09	0.28
3rd Quartile	0.13	0.29	0.29	0.11	0.07	0.05	0.22
95th Percentile	0.01	0.02	0.02	0.02	0.02	0.01	0.14

Peer Group Analysis - IM U.S. Taxable Money Market (MF)

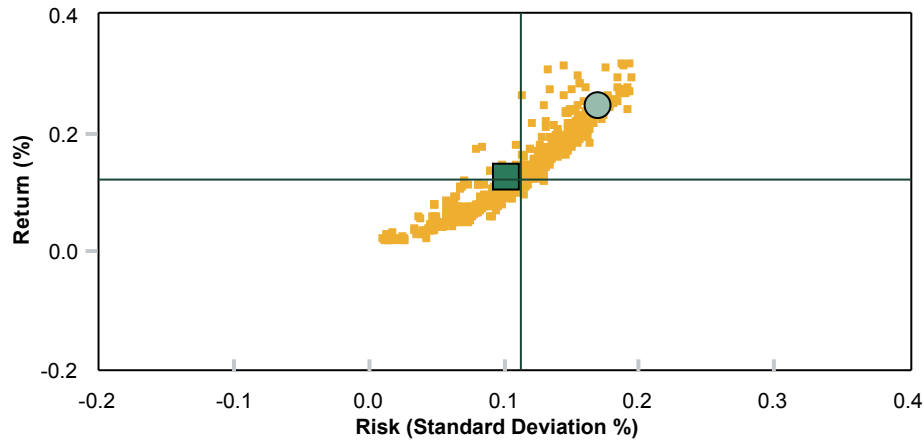


	2017	2016	2015	2014	2013	2012	2011
■ CREF Money Market Account	0.49 (55)	0.13 (38)	0.00 (90)	0.00 (92)	0.00 (90)	0.00 (90)	0.00 (90)
● 90 Day U.S. Treasury Bill	0.86 (12)	0.25 (18)	0.03 (22)	0.04 (9)	0.05 (9)	0.08 (11)	0.08 (7)
5th Percentile	1.02	0.44	0.11	0.06	0.07	0.14	0.10
1st Quartile	0.74	0.20	0.02	0.01	0.01	0.02	0.02
Median	0.55	0.06	0.01	0.01	0.01	0.01	0.01
3rd Quartile	0.29	0.01	0.01	0.00	0.00	0.00	0.00
95th Percentile	0.02	0.00	0.00	0.00	0.00	0.00	0.00

Historical Statistics (01/01/13 - 12/31/17) \*

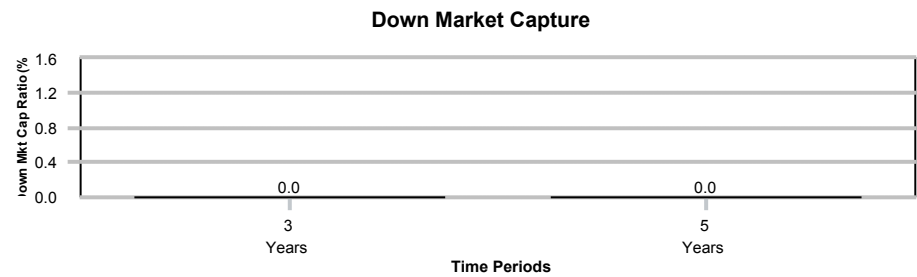
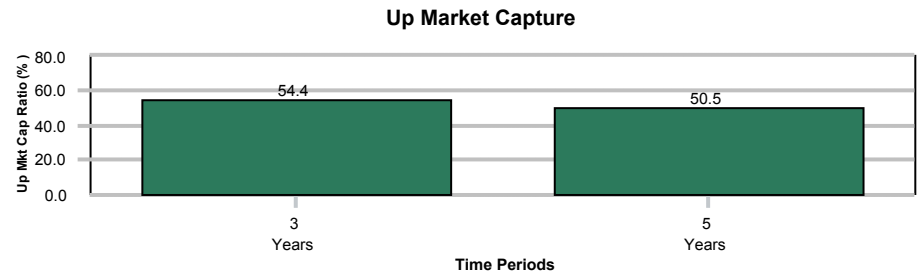
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Money Market Account	0.12	0.10	-1.76	-0.02	0.60	0.99	0.07	-1.76	0.07	01/01/2005
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.00	1.00	1.00	0.00	N/A	0.00	01/01/2005

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Money Market Account	0.12	0.10
● 90 Day U.S. Treasury Bill	0.25	0.17
— Median	0.12	0.11

Up Down Market Capture



\* Quarterly periodicity used.

# TIAA RSRA2-CREF Bond Market R2

Segal Score

**B**

Ticker:  
Expense Ratio:

Category: Intermediate-Term Bond  
Benchmark: BBGBarc US Agg Bond

Subcategory: Intermediate Investment Grade (4-6)  
Inception Date: 03/01/1990

## S<sup>3</sup> Scores

Organization: B

Fees: A

Style/Portfolio Characteristics: D

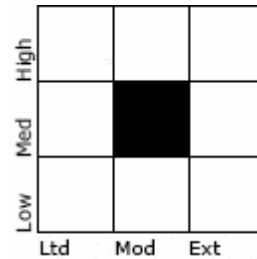
Performance: C

Risk: B

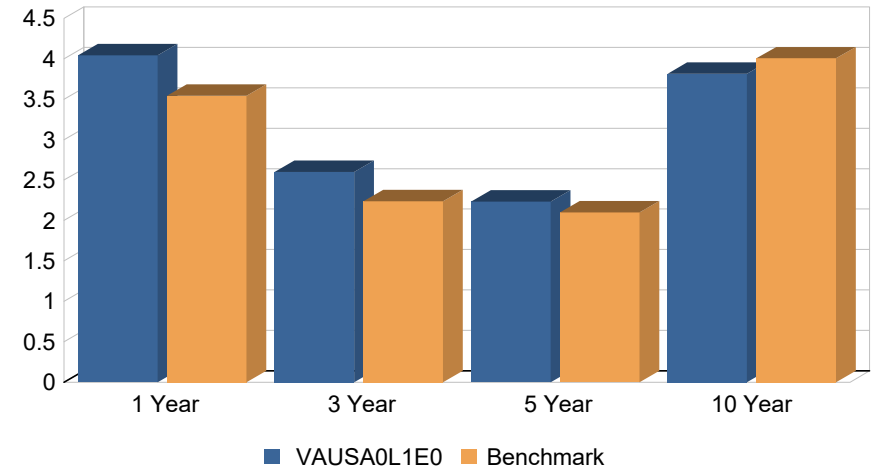
### Portfolio Characteristics

Fund AUM (\$mil):	13,841
No. of Bonds:	1,753.00
% Assets in Top 10:	8.49
Avg Eff Duration:	5.73
Avg Eff Maturity:	8.03
Yield to Maturity:	2.88
Turnover Ratio %:	240.00

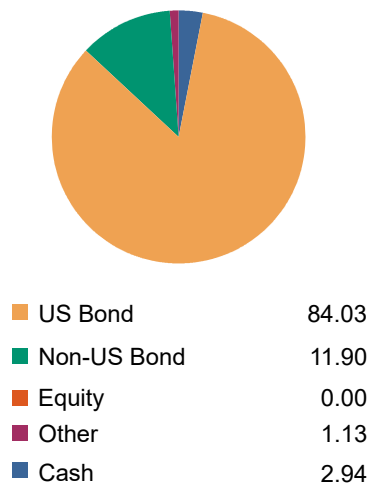
### Style



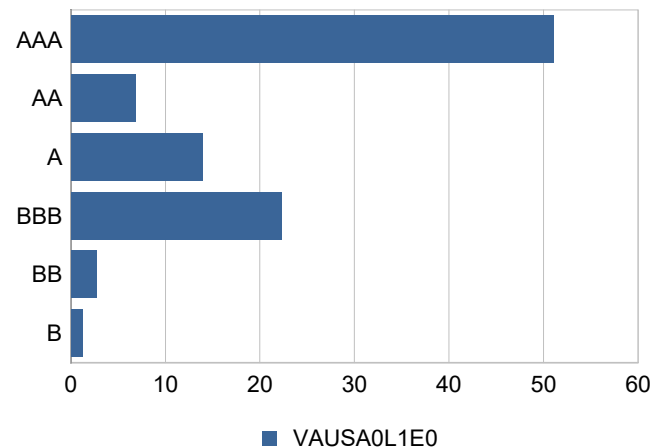
### Returns



### Asset Allocation



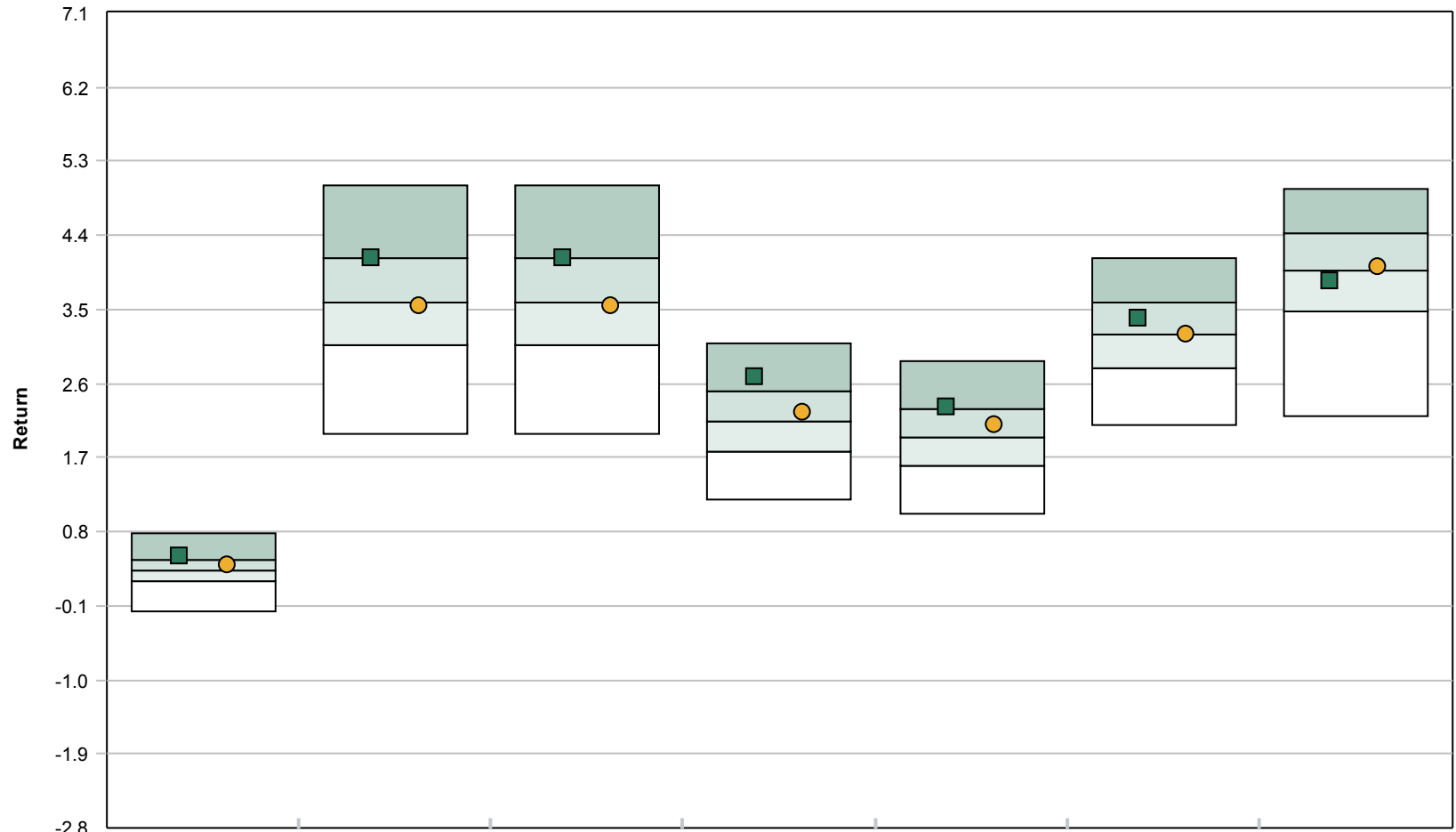
### Sector Allocation



### Risk Metrics

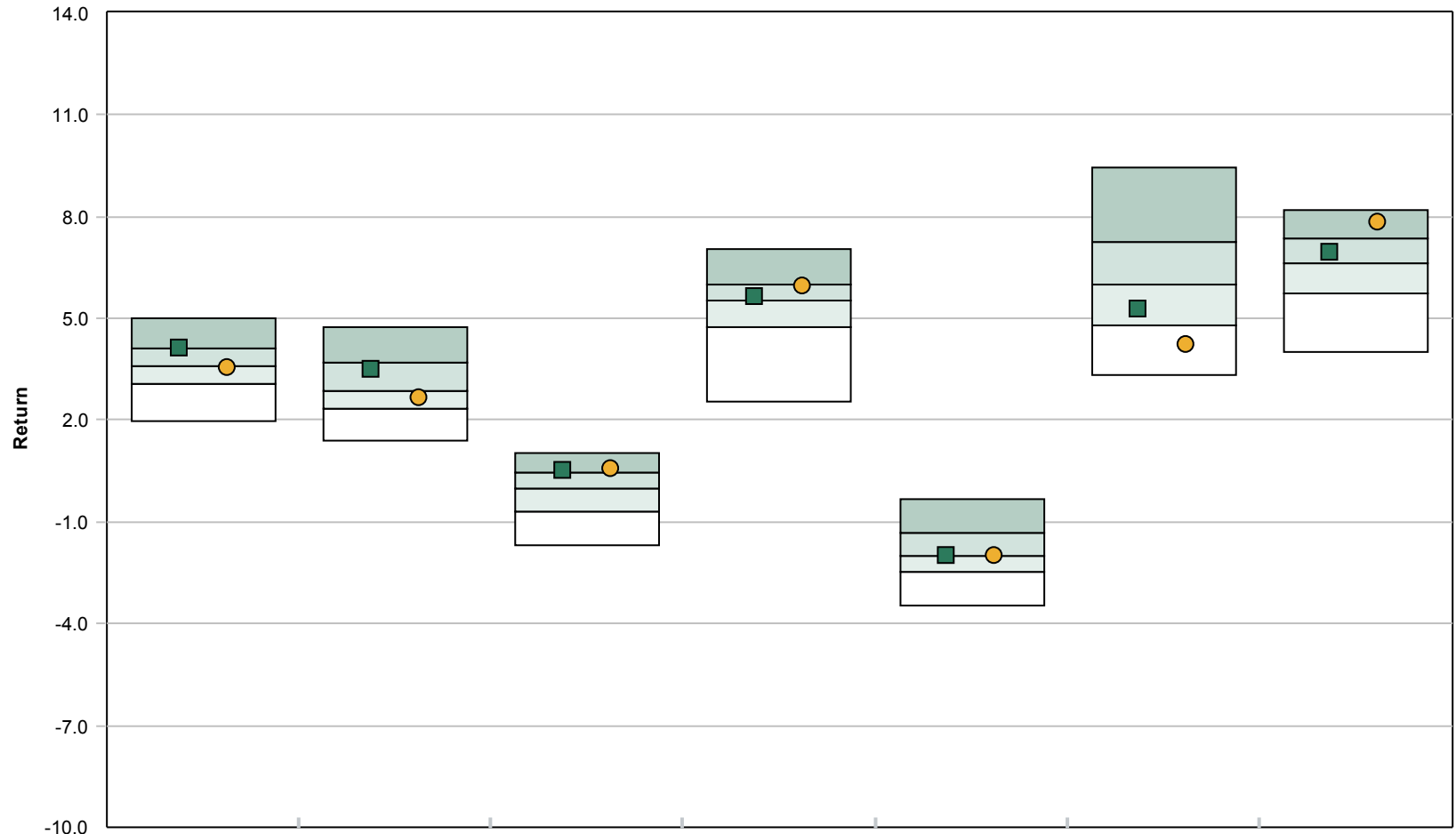
<b>Standard Deviation</b>	
3 Year:	2.76
5 Year:	2.87
10 Year:	3.12
<b>Information Ratio</b>	
3 Year:	1.38
5 Year:	0.34
10 Year:	-0.19
<b>Downside Capture</b>	
3 Year:	95.20
5 Year:	100.34
10 Year:	101.70

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ CREF Bond Market Account	0.49 (22)	4.12 (26)	4.12 (26)	2.68 (17)	2.30 (25)	3.38 (38)	3.85 (57)
● Blmbg. Barc. U.S. Aggregate	0.39 (38)	3.54 (52)	3.54 (52)	2.24 (42)	2.10 (39)	3.20 (49)	4.01 (49)
5th Percentile	0.79	5.00	5.00	3.09	2.86	4.12	4.97
1st Quartile	0.47	4.13	4.13	2.50	2.30	3.59	4.42
Median	0.34	3.58	3.58	2.14	1.95	3.19	3.98
3rd Quartile	0.19	3.06	3.06	1.78	1.60	2.79	3.47
95th Percentile	-0.18	1.98	1.98	1.19	1.02	2.09	2.20

**Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)**

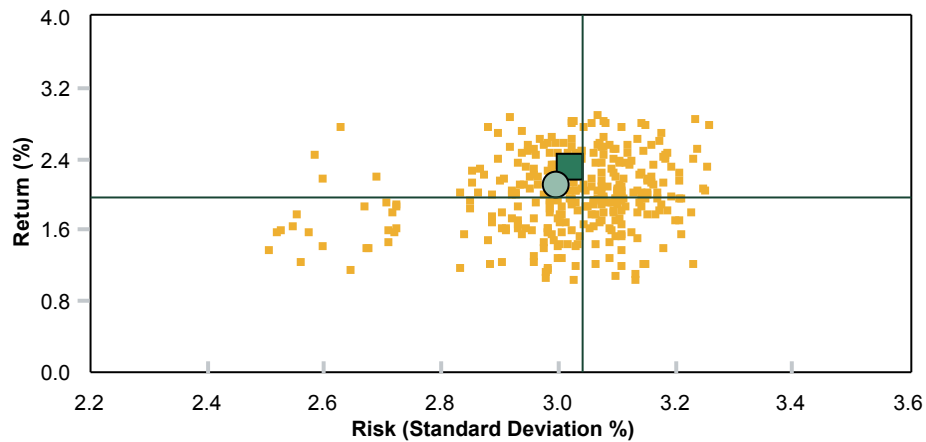


	2017	2016	2015	2014	2013	2012	2011
■ CREF Bond Market Account	4.12 (26)	3.46 (31)	0.51 (21)	5.62 (48)	-2.01 (52)	5.29 (66)	6.95 (38)
● Blmbg. Barc. U.S. Aggregate	3.54 (52)	2.65 (61)	0.55 (18)	5.97 (26)	-2.02 (53)	4.21 (81)	7.84 (11)
5th Percentile	5.00	4.77	1.03	7.06	-0.35	9.43	8.20
1st Quartile	4.13	3.68	0.44	5.98	-1.34	7.24	7.37
Median	3.58	2.85	0.00	5.55	-1.98	5.99	6.65
3rd Quartile	3.06	2.35	-0.67	4.76	-2.48	4.82	5.72
95th Percentile	1.98	1.42	-1.71	2.53	-3.44	3.35	4.00

Historical Statistics (01/01/13 - 12/31/17) \*

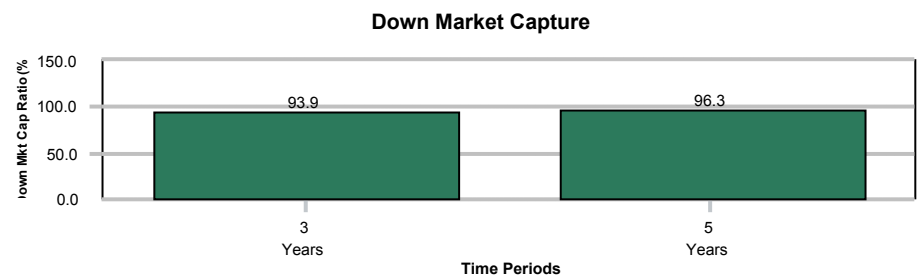
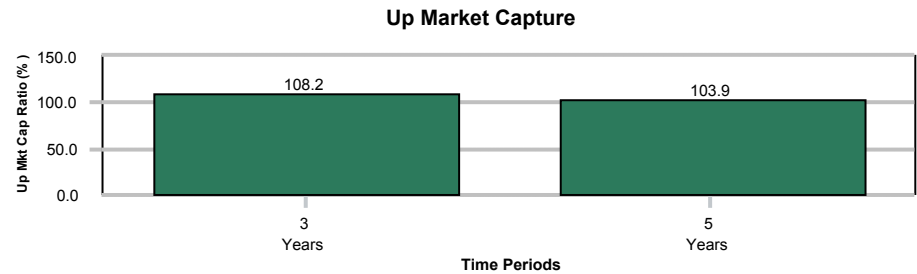
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Bond Market Account	2.30	3.02	0.69	0.20	1.00	0.98	0.37	0.54	3.00	10/01/2001
Blmbg. Barc. U.S. Aggregate	2.10	3.00	0.63	0.00	1.00	1.00	0.00	N/A	2.99	10/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.23	0.01	0.01	2.99	-0.63	0.00	10/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Bond Market Account	2.30	3.02
● Blmbg. Barc. U.S. Aggregate	2.10	3.00
— Median	1.96	3.04

Up Down Market Capture



\* Quarterly periodicity used.



# Vanguard Inflation-Protected Secs Adm

Segal Score

**B**

Ticker: VAIPX

Category: Inflation-Protected Bond

Subcategory: Inflation-Protected Bond

Expense Ratio: 0.10

Benchmark: BBgBarc US Treasury US TIPS

Inception Date: 06/29/2000

## S<sup>3</sup> Scores

Organization: C

Fees: A

Style/Portfolio Characteristics: A

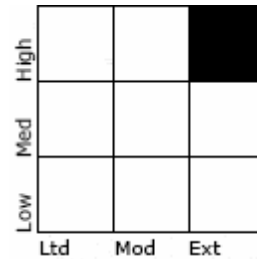
Performance: A

Risk: C

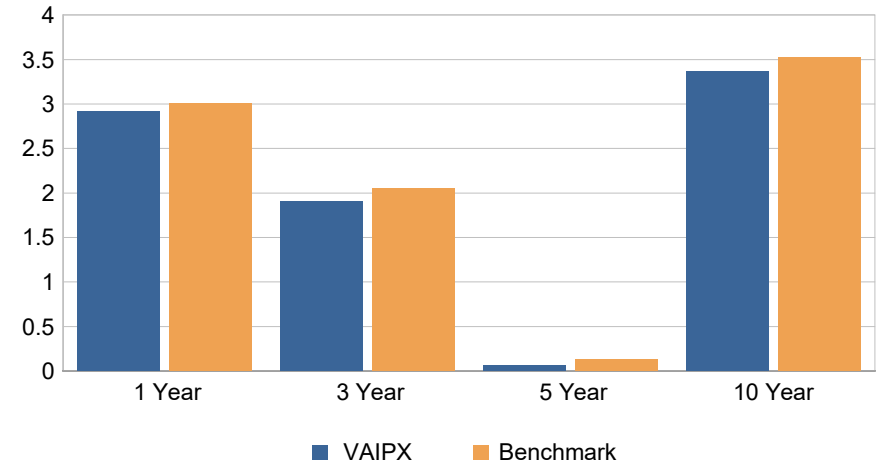
### Portfolio Characteristics

<b>Fund AUM (\$mil):</b>	27,563
<b>No. of Bonds:</b>	39.00
<b>% Assets in Top 10:</b>	
<b>Avg Eff Duration:</b>	7.97
<b>Avg Eff Maturity:</b>	8.50
<b>Yield to Maturity:</b>	0.00
<b>Turnover Ratio %:</b>	44.00

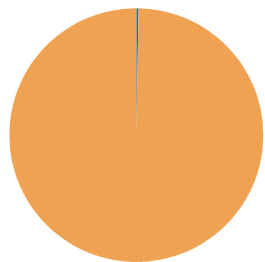
### Style



### Returns

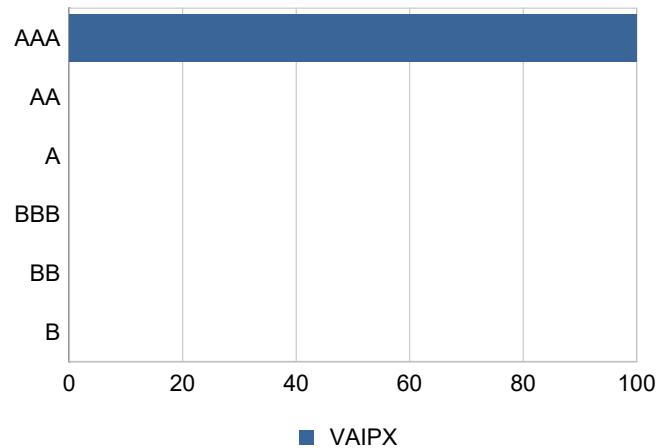


### Asset Allocation



US Bond	99.83
Non-US Bond	0.00
Equity	0.00
Other	0.00
Cash	0.17

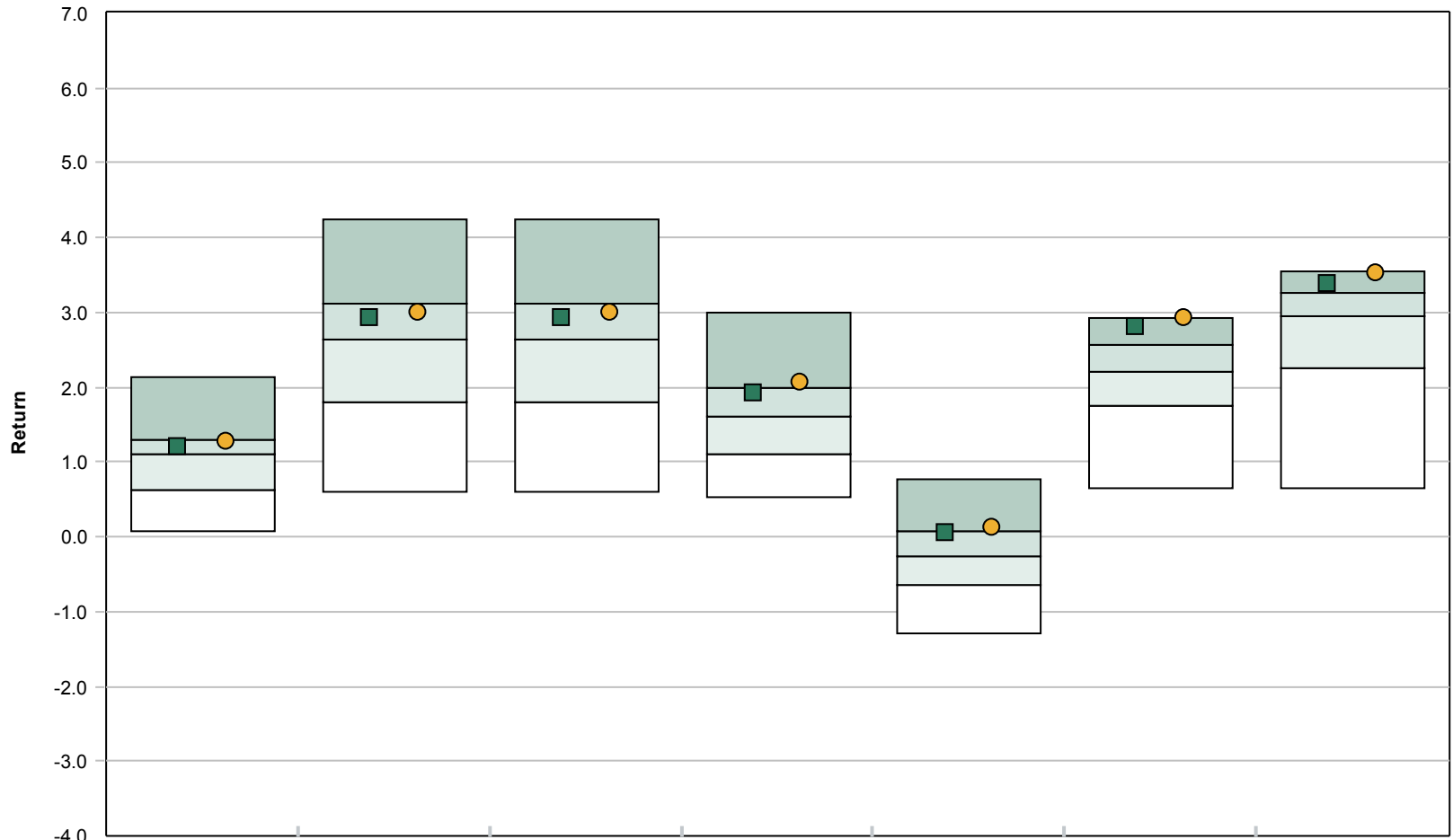
### Sector Allocation



### Risk Metrics

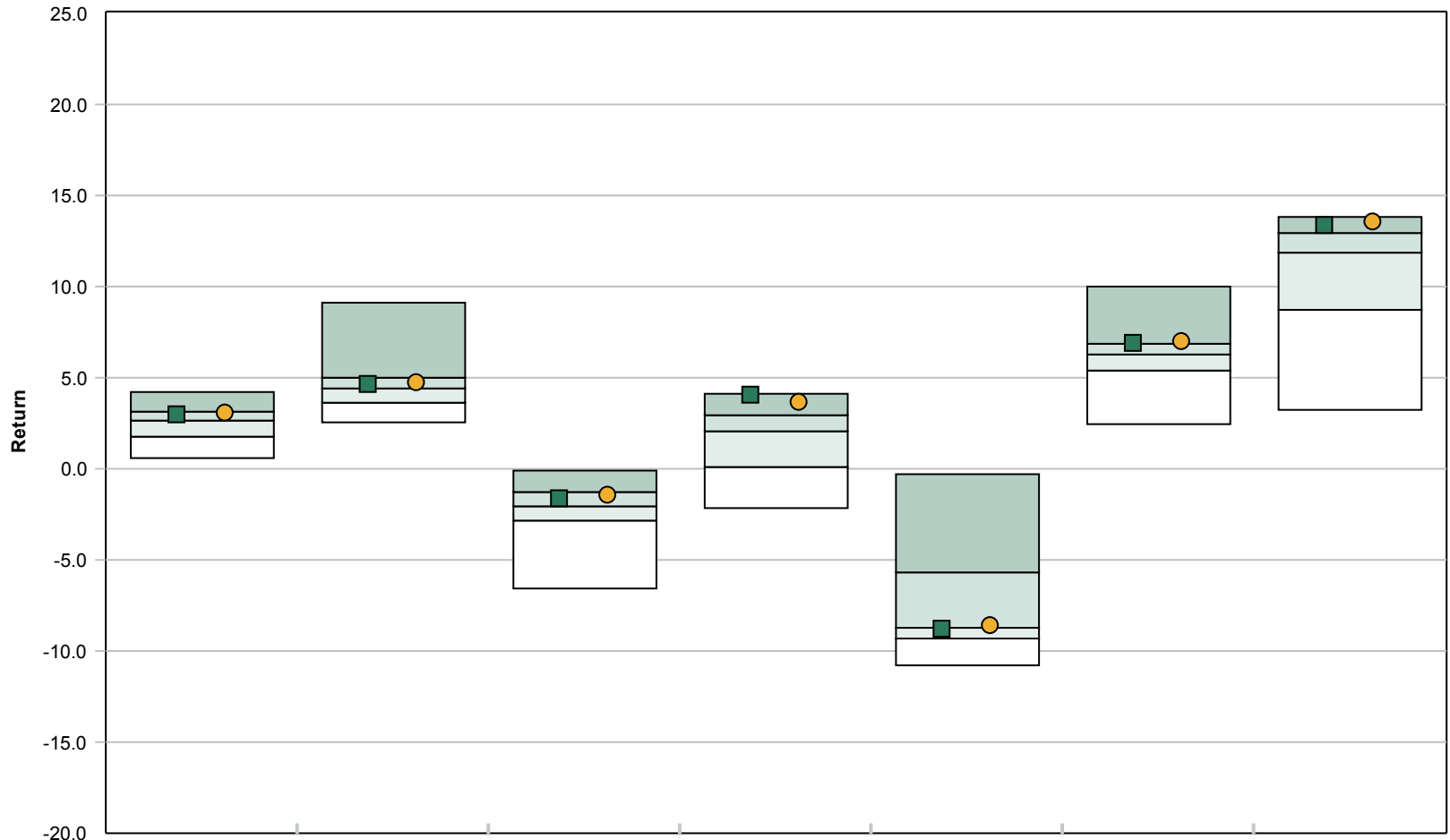
	<u>Actual</u>	<u>Median</u>
<b>Standard Deviation</b>		
3 Year:	3.63	3.51
5 Year:	4.60	4.31
10 Year:	6.18	6.10
<b>Information Ratio</b>		
3 Year:	-0.45	-0.48
5 Year:	-0.23	-0.49
10 Year:	-0.42	-0.49
<b>Downside Capture</b>		
3 Year:	105.63	100.62
5 Year:	103.70	99.75
10 Year:	100.27	100.52

Peer Group Analysis - IM U.S. TIPS (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Infl Protect Sec Adm	1.19 (43)	2.91 (35)	2.91 (35)	1.91 (32)	0.06 (29)	2.82 (11)	3.37 (22)
● Blmbg. Barc. U.S. TIPS	1.26 (31)	3.01 (30)	3.01 (30)	2.05 (24)	0.13 (20)	2.92 (6)	3.53 (9)
5th Percentile	2.14	4.23	4.23	3.01	0.77	2.92	3.56
1st Quartile	1.30	3.11	3.11	1.99	0.08	2.57	3.27
Median	1.11	2.63	2.63	1.60	-0.27	2.21	2.95
3rd Quartile	0.62	1.80	1.80	1.10	-0.64	1.74	2.26
95th Percentile	0.07	0.59	0.59	0.53	-1.30	0.64	0.64

Peer Group Analysis - IM U.S. TIPS (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Infl Protect Sec Adm	2.91 (35)	4.62 (40)	-1.69 (37)	3.97 (6)	-8.86 (57)	6.90 (24)	13.29 (12)
● Blmbg. Barc. U.S. TIPS	3.01 (30)	4.68 (36)	-1.44 (29)	3.64 (8)	-8.61 (45)	6.98 (22)	13.56 (7)
5th Percentile	4.23	9.10	-0.12	4.10	-0.27	9.98	13.80
1st Quartile	3.11	4.96	-1.28	2.98	-5.68	6.86	12.90
Median	2.63	4.39	-2.07	2.10	-8.70	6.31	11.88
3rd Quartile	1.80	3.59	-2.89	0.15	-9.27	5.38	8.77
95th Percentile	0.59	2.59	-6.60	-2.18	-10.75	2.48	3.21

# Vanguard Infl Protect Sec Adm

## Fund Information

Fund Name :	Vanguard Bond Index Funds: Vanguard Inflation-Protected Securities Fund; Admiral Shares	Portfolio Assets :	\$27,362 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Gemma Wright-Casparius
Ticker :	VAIPX	PM Tenure :	2011
Inception Date :	06/10/2005	Fund Style :	IM U.S. TIPS (MF)
Fund Assets :	\$13,816 Million	Style Benchmark :	Blmbg. Barc. U.S. TIPS

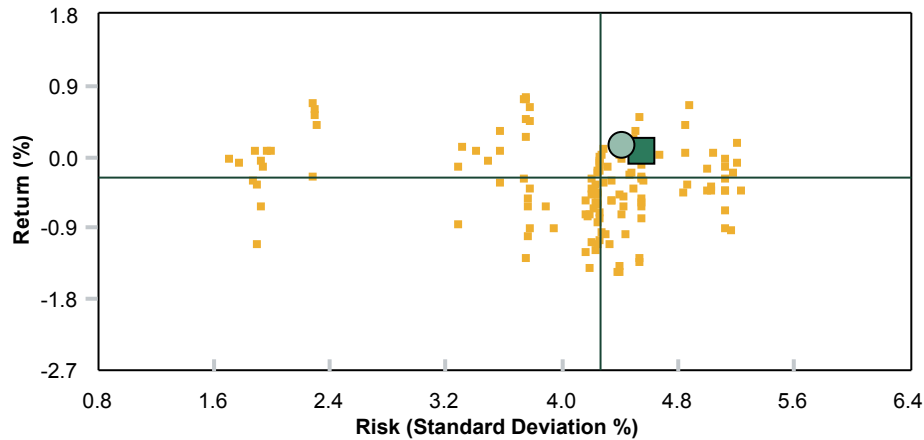
## Fund Investment Policy

The Fund seeks to provide investors inflation protection and income, consistent with investment in inflation-indexed securities. The Fund invests at least 80% of its assets in inflation-indexed bonds issued by the U.S. government, its agencies and instrumentalities, and corporations.

## Historical Statistics (01/01/13 - 12/31/17) \*

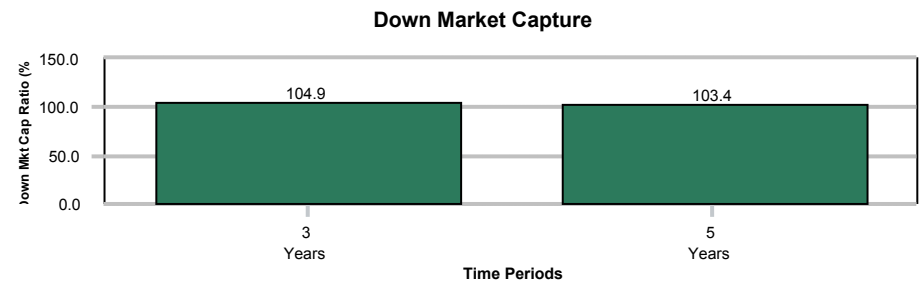
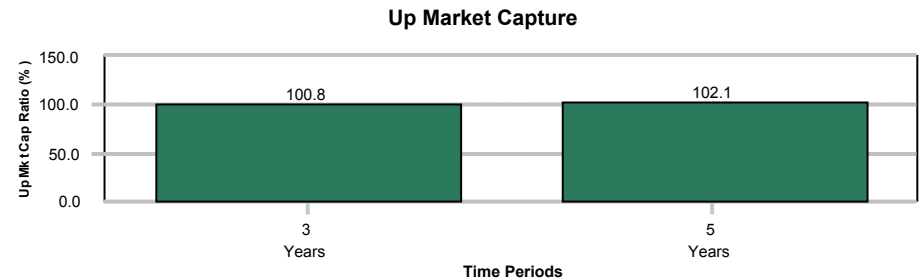
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Infl Protect Sec Adm	0.06	4.56	-0.02	-0.07	1.03	0.99	0.46	-0.15	4.55	07/01/2005
Blmbg. Barc. U.S. TIPS	0.13	4.42	0.00	0.00	1.00	1.00	0.00	N/A	4.40	07/01/2005
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.03	4.40	0.00	0.00	07/01/2005

## Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
Vanguard Infl Protect Sec Adm	0.06	4.56
Blmbg. Barc. U.S. TIPS	0.13	4.42
— Median	-0.27	4.26

## Up Down Market Capture



\* Monthly periodicity used.

# Vanguard Total Bond Market Index I

Segal Score

C

Ticker: VBTIX

Category: Intermediate-Term Bond

Subcategory: Intermediate Investment Grade (4-6)

Expense Ratio: 0.04

Benchmark: BBgBarc US Agg Bond

Inception Date: 12/11/1986

## S<sup>3</sup> Scores

Organization: D

Fees: A

Style/Portfolio Characteristics: B

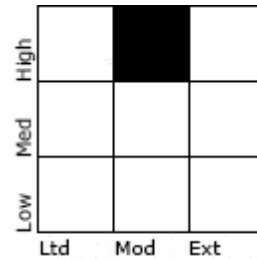
Performance: D

Risk: F

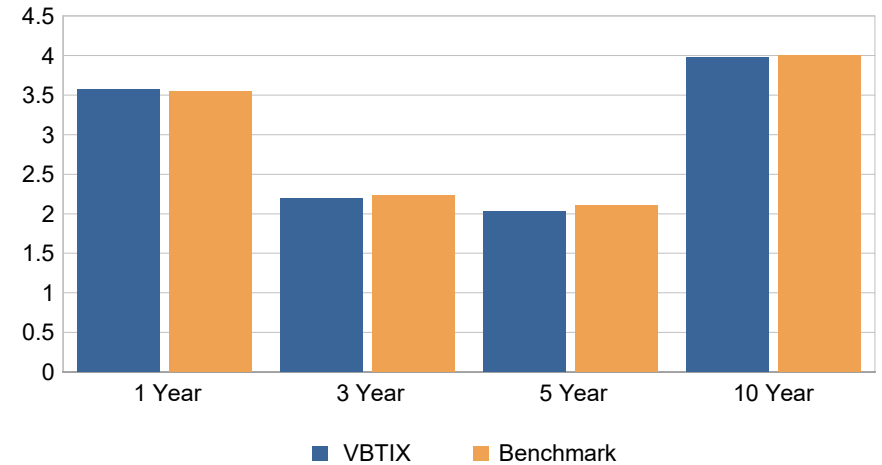
### Portfolio Characteristics

Fund AUM (\$mil):	195,872
No. of Bonds:	17,302.00
% Assets in Top 10:	
Avg Eff Duration:	6.12
Avg Eff Maturity:	8.40
Yield to Maturity:	2.79
Turnover Ratio %:	73.00

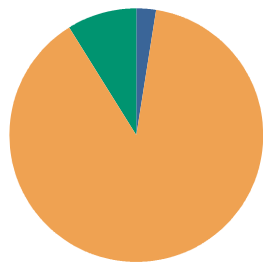
### Style



### Returns

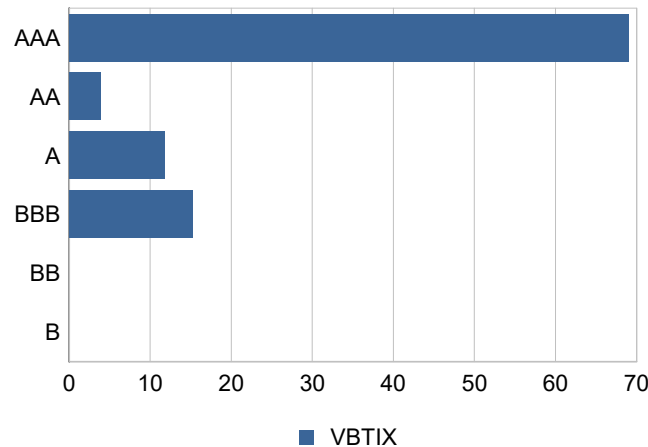


### Asset Allocation



US Bond	88.68
Non-US Bond	8.78
Equity	0.00
Other	0.04
Cash	2.50

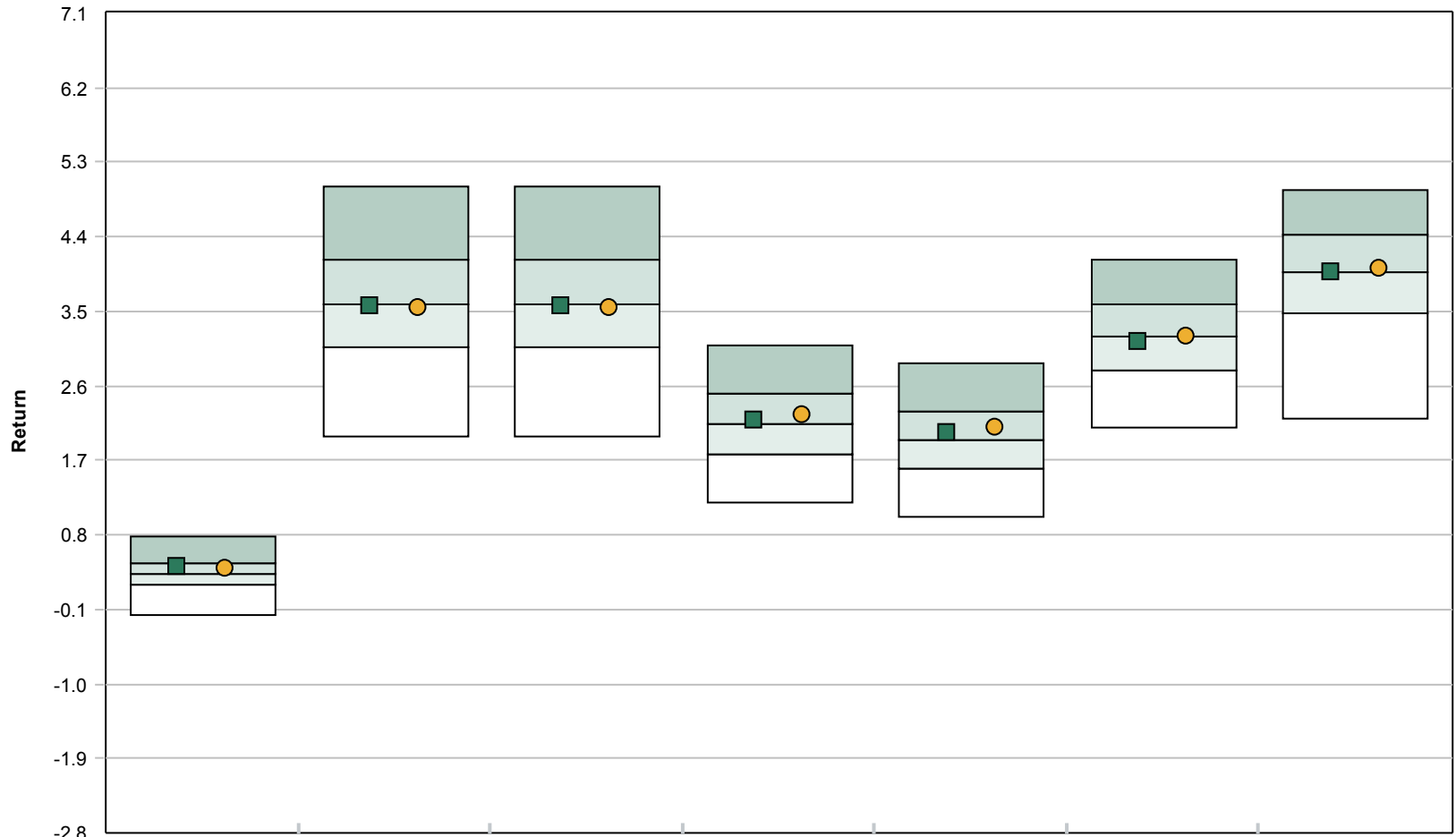
### Sector Allocation



### Risk Metrics

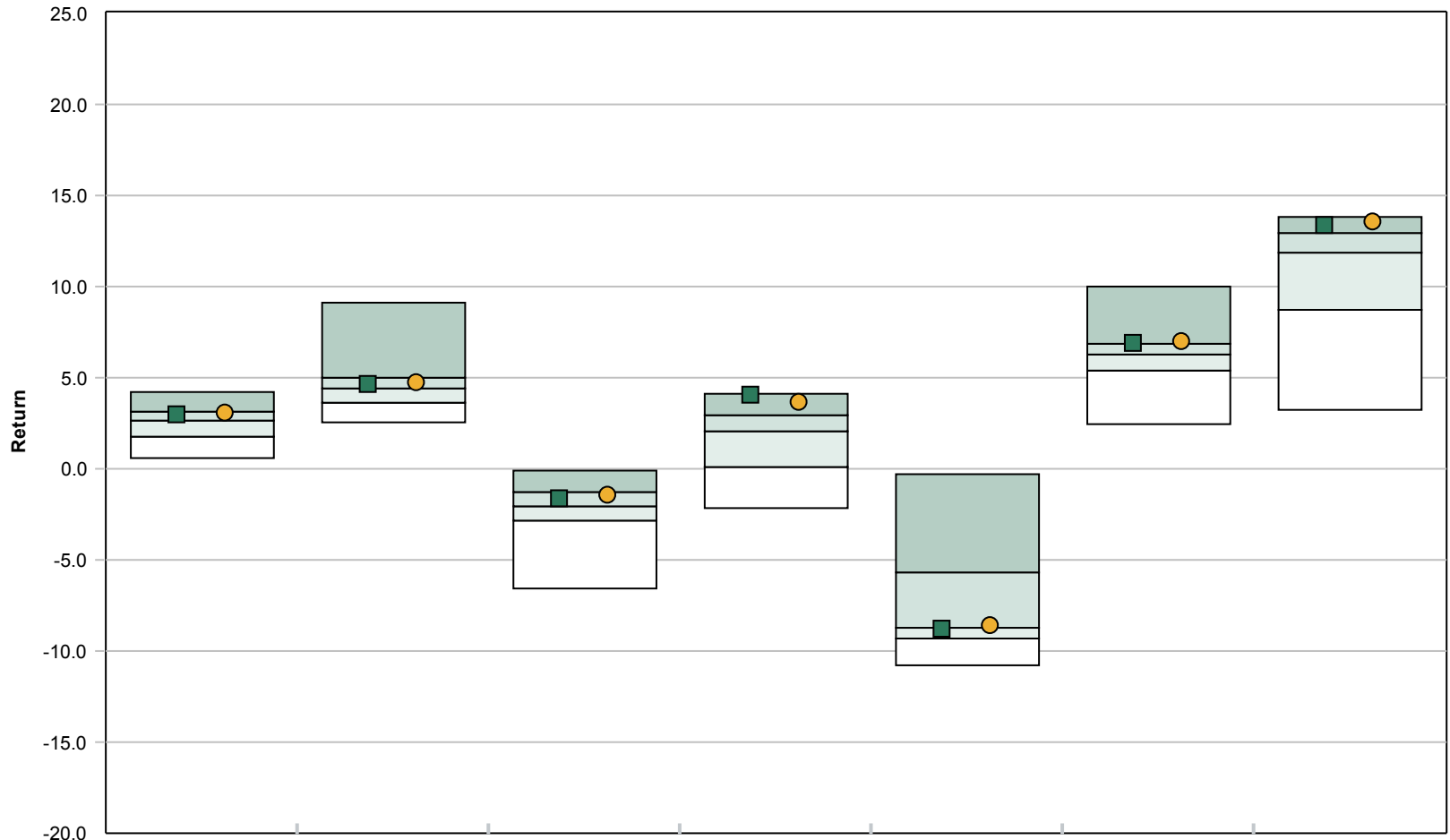
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	3.03	2.76
5 Year:	2.98	2.88
10 Year:	3.33	3.64
<b>Information Ratio</b>		
3 Year:	-0.26	-0.06
5 Year:	-0.38	-0.05
10 Year:	-0.17	0.06
<b>Downside Capture</b>		
3 Year:	111.08	92.71
5 Year:	107.02	95.88
10 Year:	104.64	102.18

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Total Bond Mkt Inst	0.41 (35)	3.57 (51)	3.57 (51)	2.19 (45)	2.03 (44)	3.13 (54)	3.97 (51)
● Blmbg. Barc. U.S. Aggregate	0.39 (38)	3.54 (52)	3.54 (52)	2.24 (42)	2.10 (39)	3.20 (49)	4.01 (49)
5th Percentile	0.79	5.00	5.00	3.09	2.86	4.12	4.97
1st Quartile	0.47	4.13	4.13	2.50	2.30	3.59	4.42
Median	0.34	3.58	3.58	2.14	1.95	3.19	3.98
3rd Quartile	0.19	3.06	3.06	1.78	1.60	2.79	3.47
95th Percentile	-0.18	1.98	1.98	1.19	1.02	2.09	2.20

Peer Group Analysis - IM U.S. TIPS (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Infl Protect Sec Adm	2.91 (35)	4.62 (40)	-1.69 (37)	3.97 (6)	-8.86 (57)	6.90 (24)	13.29 (12)
● Blmbg. Barc. U.S. TIPS	3.01 (30)	4.68 (36)	-1.44 (29)	3.64 (8)	-8.61 (45)	6.98 (22)	13.56 (7)
5th Percentile	4.23	9.10	-0.12	4.10	-0.27	9.98	13.80
1st Quartile	3.11	4.96	-1.28	2.98	-5.68	6.86	12.90
Median	2.63	4.39	-2.07	2.10	-8.70	6.31	11.88
3rd Quartile	1.80	3.59	-2.89	0.15	-9.27	5.38	8.77
95th Percentile	0.59	2.59	-6.60	-2.18	-10.75	2.48	3.21

## Vanguard Total Bond Mkt Inst

### Fund Information

Fund Name : Vanguard Bond Index Funds: Vanguard Total Bond Market Index Fund; Institutional Shares  
 Fund Family : Vanguard Group Inc  
 Ticker : VBTIX  
 Inception Date : 09/18/1995  
 Fund Assets : \$38,482 Million

Portfolio Assets : \$197,896 Million  
 Portfolio Manager : Joshua C. Barrickman  
 PM Tenure : 2013  
 Fund Style : IM U.S. Broad Market Core Fixed Income (MF)  
 Style Benchmark : Blmbg. Barc. U.S. Aggregate

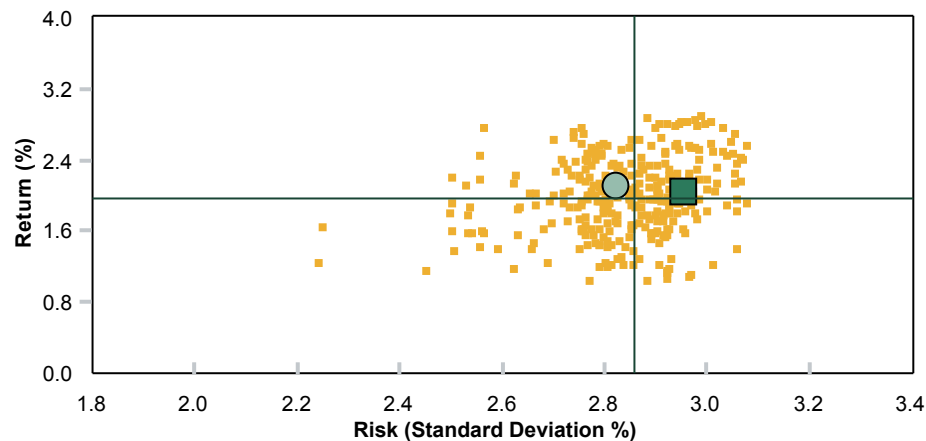
### Fund Investment Policy

The Fund seeks to generate returns that track the performance of the Barclays U.S. Aggregate Float Adjusted Index, and will maintain a dollar-weighted average maturity consistent with that of the index. The Index measures investment-grade, taxable fixed income securities in the U.S.

### Historical Statistics (01/01/13 - 12/31/17) \*

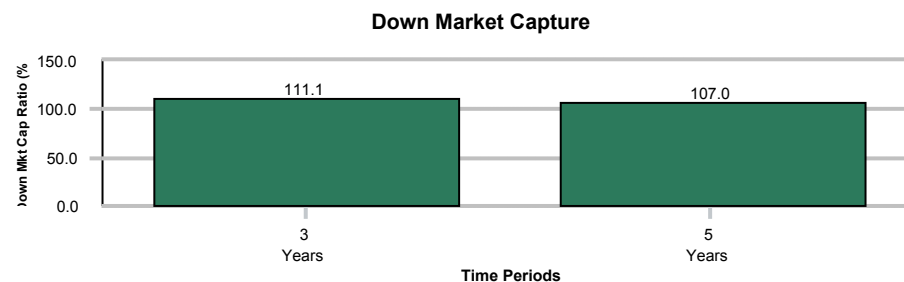
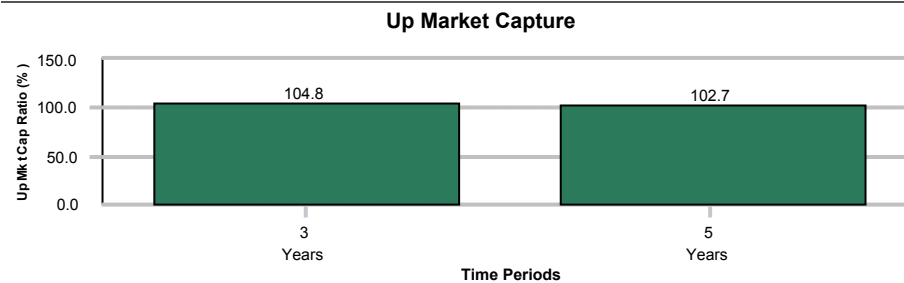
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Total Bond Mkt Inst	2.03	2.96	0.62	-0.15	1.04	0.99	0.29	-0.21	2.95	10/01/1995
Blmbg. Barc. U.S. Aggregate	2.10	2.82	0.67	0.00	1.00	1.00	0.00	N/A	2.81	10/01/1995
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.01	2.81	-0.67	0.00	10/01/1995

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard Total Bond Mkt Inst	2.03	2.96
● Blmbg. Barc. U.S. Aggregate	2.10	2.82
— Median	1.96	2.86

### Up Down Market Capture

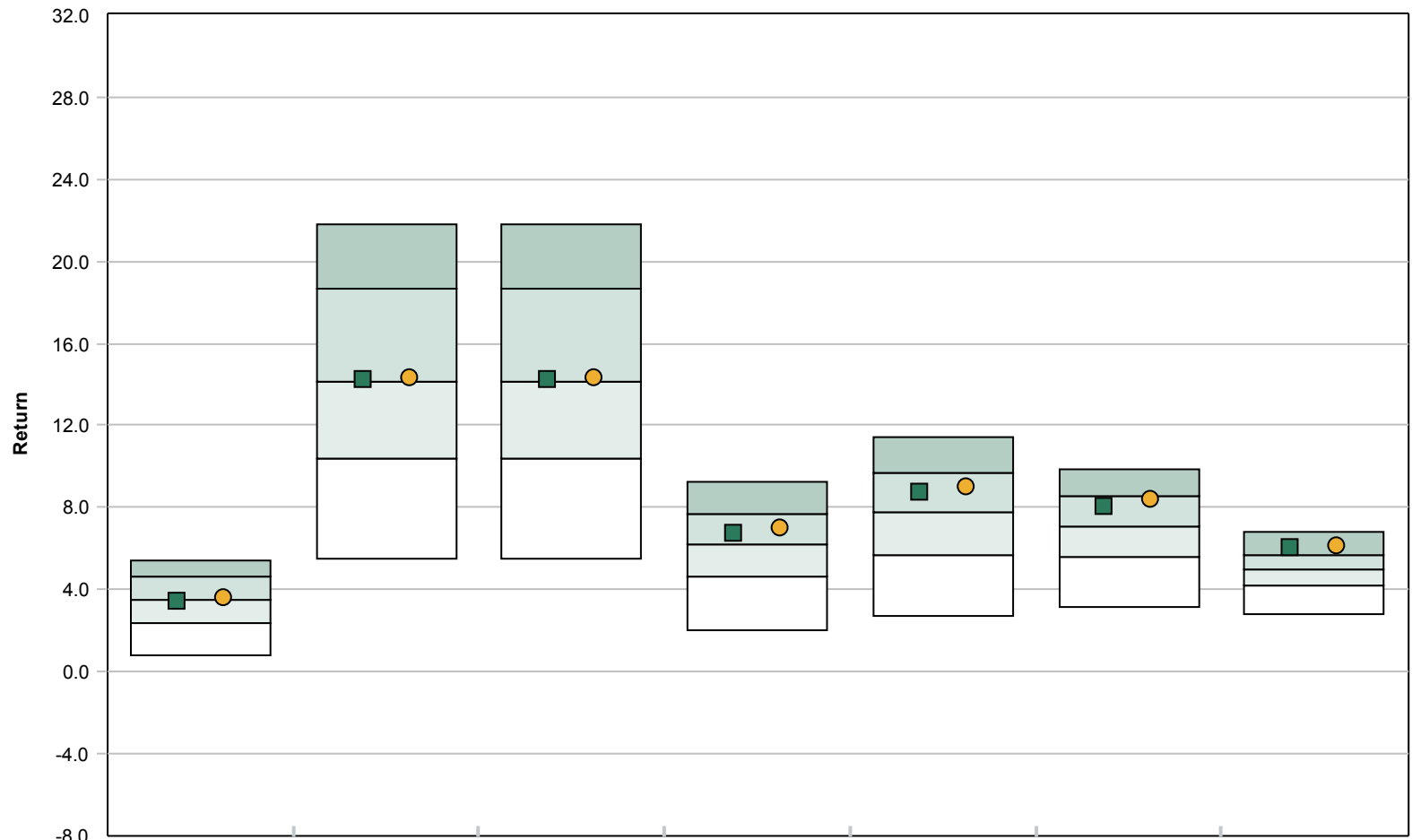


\* Monthly periodicity used.



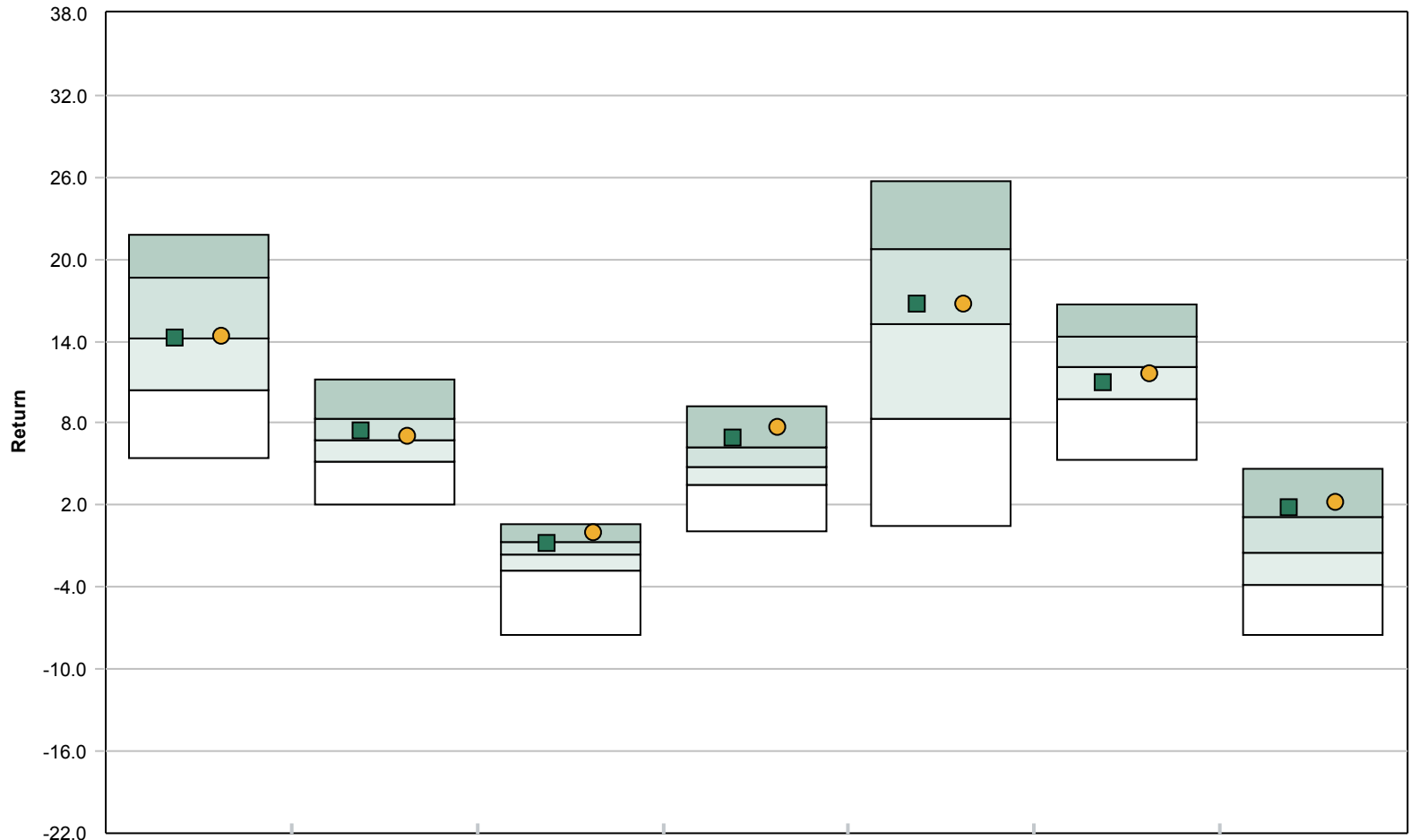


**Peer Group Analysis - IM All Balanced (MF)**



	<b>1 Qtr</b>	<b>YTD</b>	<b>1 Yr</b>	<b>3 Yrs</b>	<b>5 Yrs</b>	<b>7 Yrs</b>	<b>10 Yrs</b>
■ CREF Social Choice Account	3.44 (52)	14.25 (50)	14.25 (50)	6.75 (41)	8.70 (39)	8.01 (34)	6.05 (17)
● CREF Social Choice Composite BM	3.56 (49)	14.34 (49)	14.34 (49)	6.96 (37)	8.99 (36)	8.37 (29)	6.15 (15)
5th Percentile	5.39	21.83	21.83	9.24	11.41	9.89	6.82
1st Quartile	4.62	18.68	18.68	7.69	9.73	8.53	5.71
Median	3.49	14.15	14.15	6.22	7.78	7.11	5.00
3rd Quartile	2.37	10.41	10.41	4.66	5.67	5.62	4.18
95th Percentile	0.78	5.51	5.51	2.03	2.72	3.19	2.81

**Peer Group Analysis - IM All Balanced (MF)**

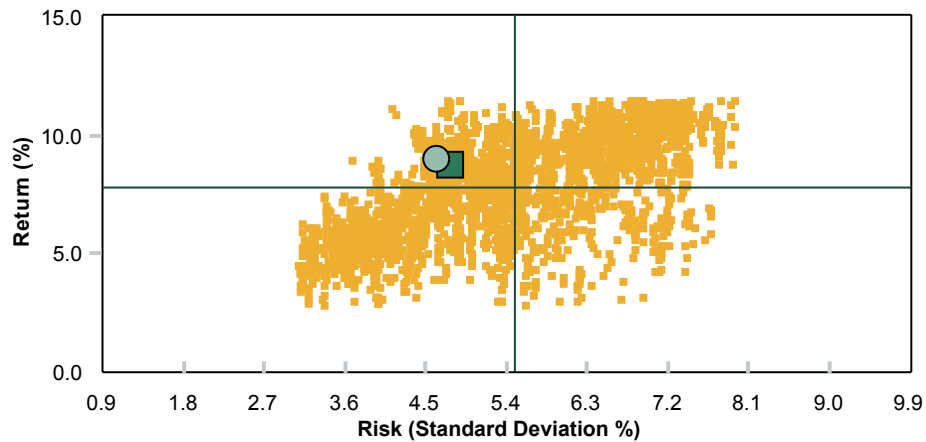


	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
■ CREF Social Choice Account	14.25 (50)	7.41 (38)	-0.86 (29)	6.95 (17)	16.67 (44)	10.98 (64)	1.82 (19)
● CREF Social Choice Composite BM	14.34 (49)	7.02 (45)	0.00 (12)	7.69 (12)	16.70 (44)	11.62 (56)	2.23 (17)
5th Percentile	21.83	11.18	0.68	9.22	25.74	16.64	4.63
1st Quartile	18.68	8.27	-0.72	6.20	20.68	14.34	1.14
Median	14.15	6.73	-1.66	4.74	15.20	12.13	-1.48
3rd Quartile	10.41	5.21	-2.77	3.45	8.34	9.81	-3.77
95th Percentile	5.51	2.01	-7.44	0.08	0.55	5.30	-7.43

Historical Statistics (01/01/13 - 12/31/17) \*

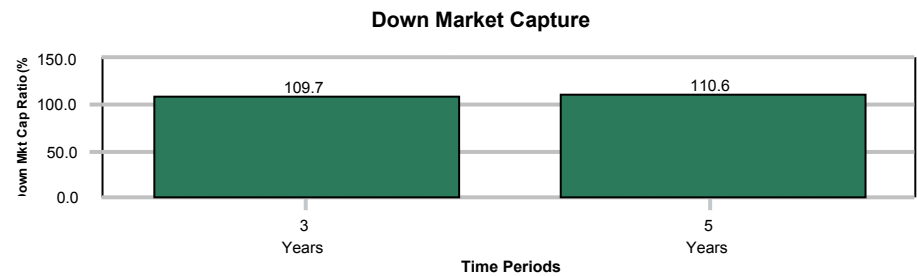
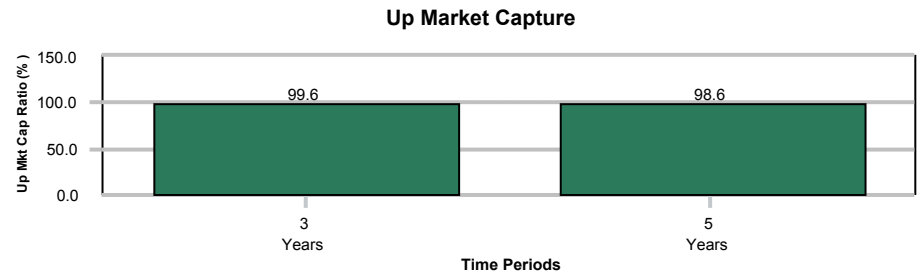
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Social Choice Account	8.70	4.78	1.75	-0.45	1.02	0.98	0.65	-0.40	4.75	10/01/2001
CREF Social Choice Composite BM	8.99	4.64	1.86	0.00	1.00	1.00	0.00	N/A	4.61	10/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.18	0.01	0.04	4.61	-1.86	0.00	10/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Social Choice Account	8.70	4.78
● CREF Social Choice Composite BM	8.99	4.64
— Median	7.77	5.51

Up Down Market Capture



\* Quarterly periodicity used.

# TIAA RSRA2-CREF Equity Index R2

Segal Score  
**B**

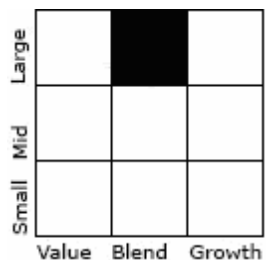
Ticker: **Category:** Large Blend **Subcategory:** Large Core  
Expense Ratio: **Benchmark:** S&P 500 **Inception Date:** 04/29/1994

**S<sup>3</sup> Scores** Organization: B Fees: A Style/Portfolio Characteristics: A Performance: B Risk: C

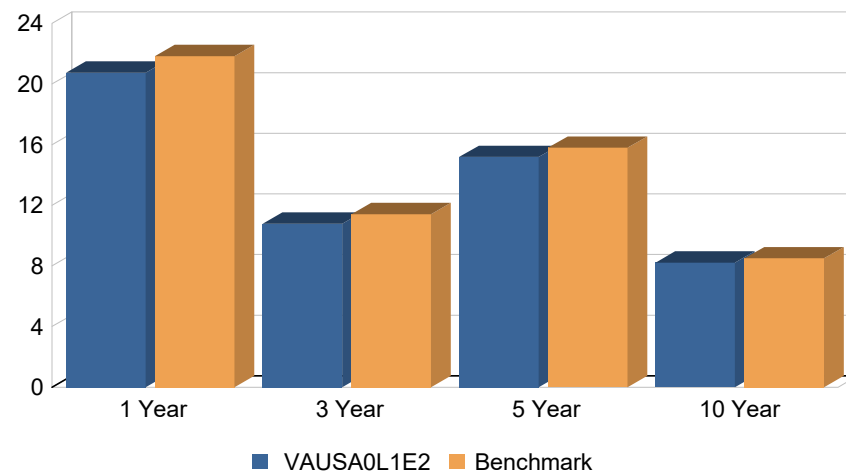
## Portfolio Characteristics

Fund AUM (\$mil): 19,537  
No. of Stocks: 2911  
% Assets in Top 10: 16.35  
Avg Market Cap (\$mil): 55,291.00  
P/E Ratio (TTM)(Long): 22.50  
P/B Ratio (TTM)(Long): 3.00  
Turnover Ratio %: 4.00

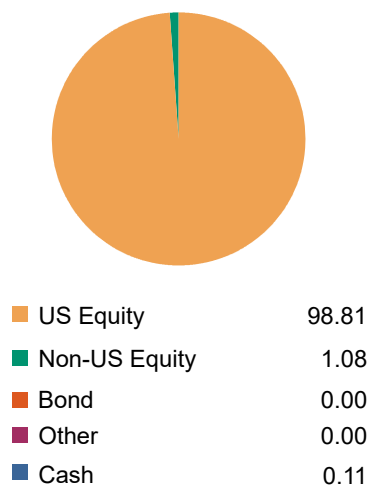
## Style



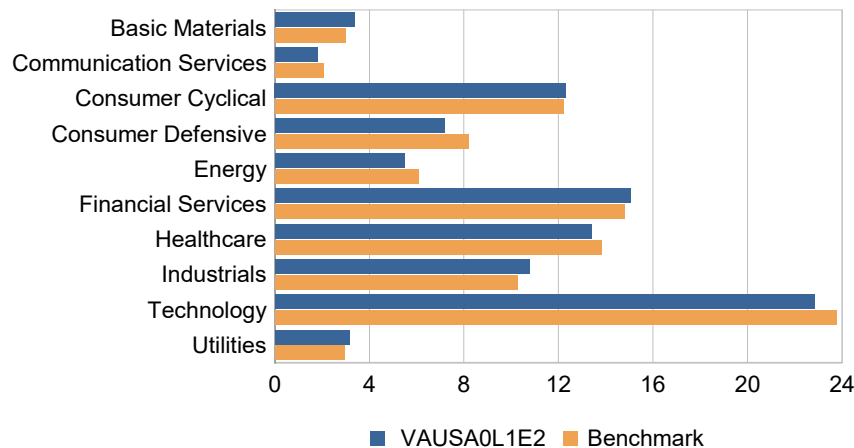
## Returns



## Asset Allocation



## Sector Allocation



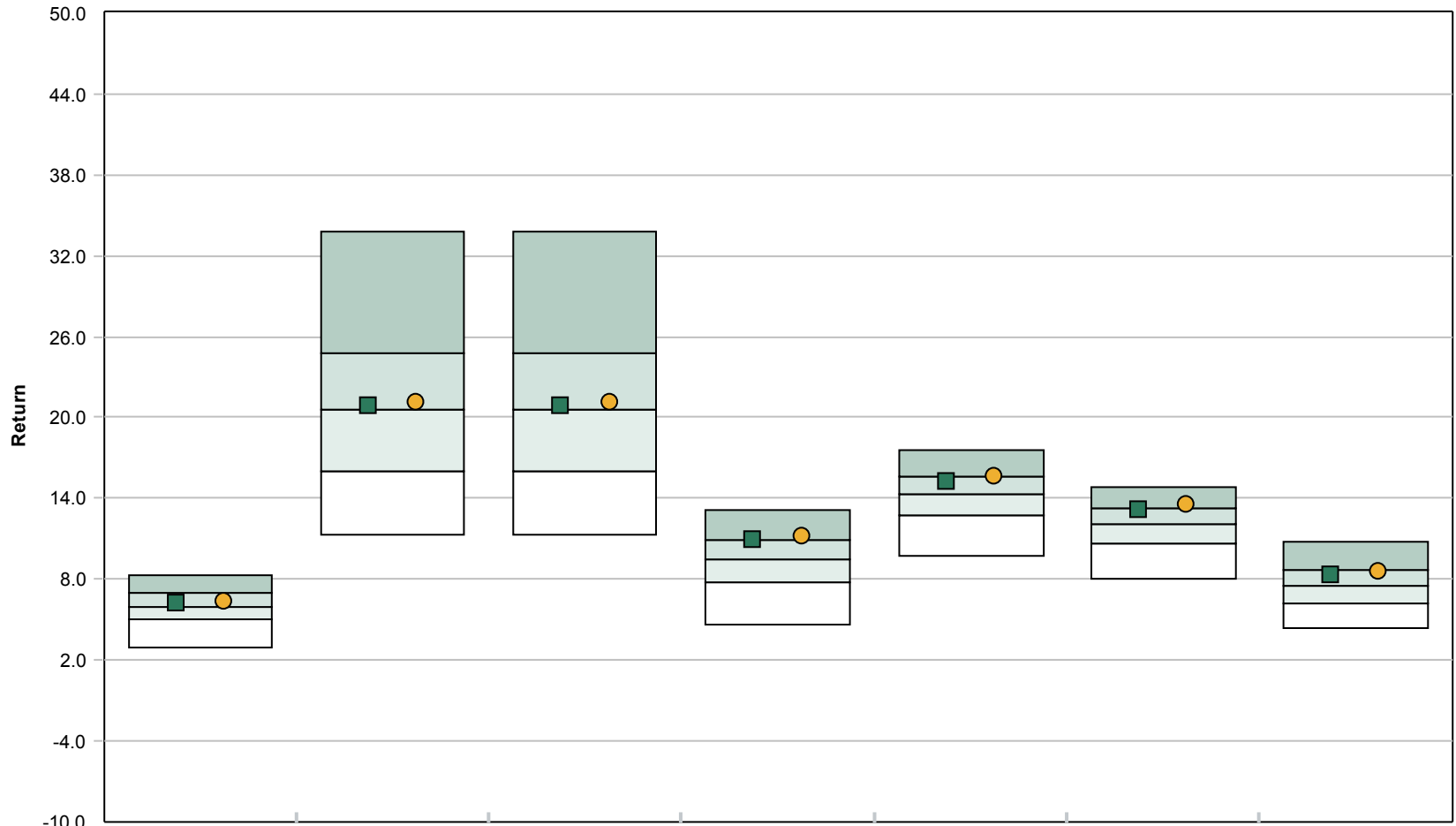
## Risk Metrics

**Standard Deviation**  
3 Year: 10.21  
5 Year: 9.73  
10 Year: 15.56

**Information Ratio**  
3 Year: -0.57  
5 Year: -0.47  
10 Year: -0.23

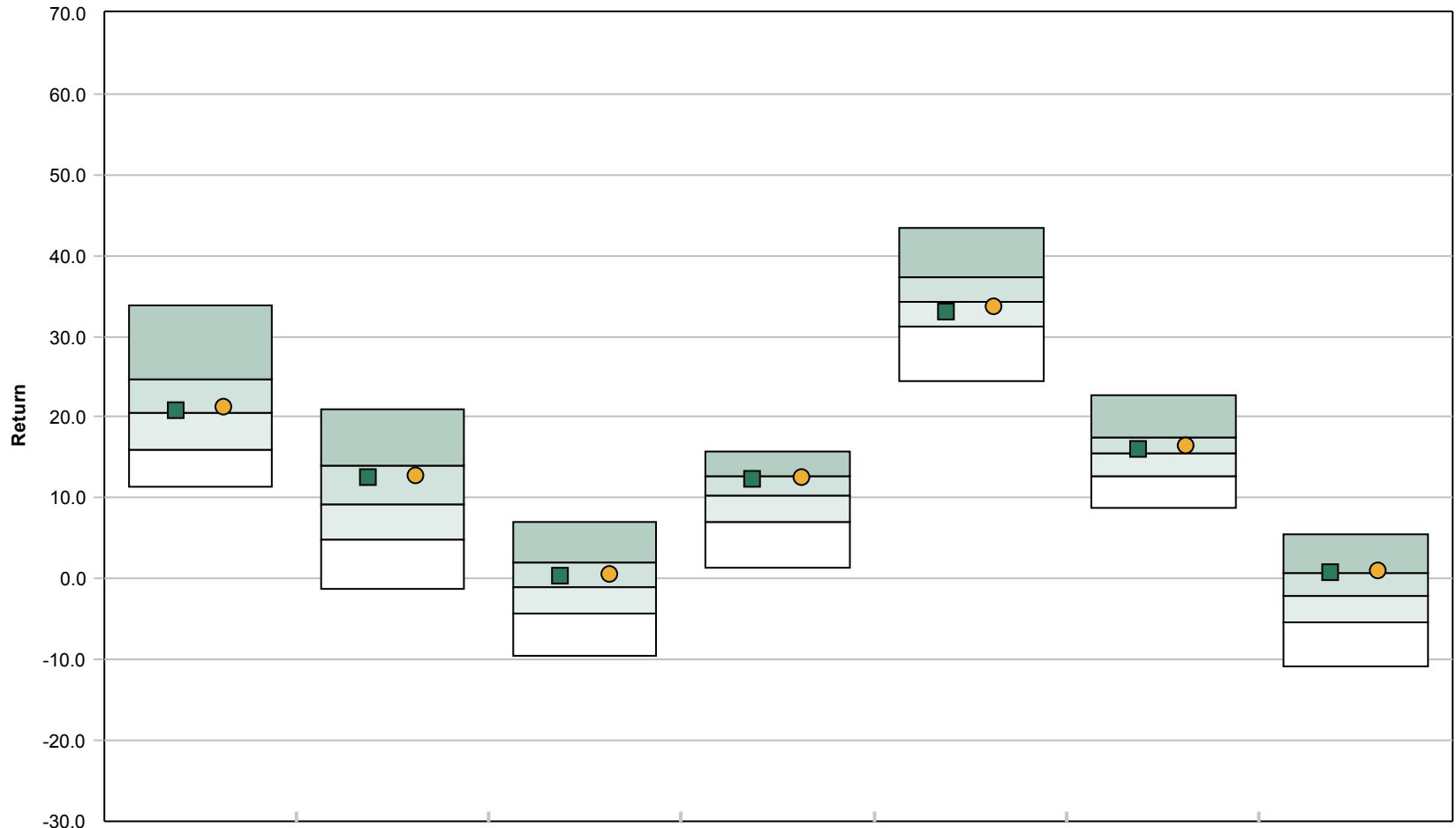
**Downside Capture**  
3 Year: 104.14  
5 Year: 104.94  
10 Year: 104.63

**Peer Group Analysis - IM U.S. All Cap Equity (SA+CF+MF)**



	<b>1 Qtr</b>	<b>YTD</b>	<b>1 Yr</b>	<b>3 Yrs</b>	<b>5 Yrs</b>	<b>7 Yrs</b>	<b>10 Yrs</b>
<span style="color: green;">■</span> CREF Equity Index Account	6.26 (44)	20.83 (49)	20.83 (49)	10.87 (27)	15.24 (34)	13.14 (28)	8.24 (36)
<span style="color: orange;">●</span> Russell 3000 Index	6.34 (41)	21.13 (46)	21.13 (46)	11.12 (23)	15.58 (25)	13.50 (20)	8.60 (28)
5th Percentile	8.25	33.85	33.85	13.18	17.58	14.84	10.77
1st Quartile	6.97	24.78	24.78	10.94	15.58	13.25	8.70
Median	6.00	20.64	20.64	9.49	14.35	12.06	7.58
3rd Quartile	5.05	15.99	15.99	7.81	12.70	10.65	6.27
95th Percentile	2.95	11.31	11.31	4.64	9.79	8.09	4.35

Peer Group Analysis - IM U.S. All Cap Equity (SA+CF+MF)

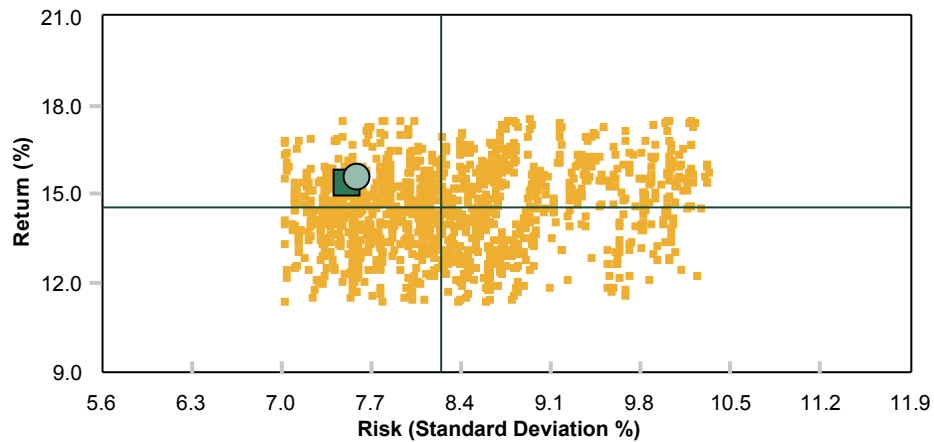


	2017	2016	2015	2014	2013	2012	2011
■ CREF Equity Index Account	20.83 (49)	12.49 (34)	0.25 (40)	12.17 (31)	32.98 (63)	15.98 (43)	0.66 (26)
● Russell 3000 Index	21.13 (46)	12.74 (31)	0.48 (37)	12.56 (26)	33.55 (57)	16.42 (37)	1.03 (23)
5th Percentile	33.85	20.99	6.99	15.78	43.42	22.64	5.48
1st Quartile	24.78	13.91	1.96	12.60	37.30	17.52	0.73
Median	20.64	9.27	-1.07	10.39	34.23	15.53	-2.04
3rd Quartile	15.99	4.94	-4.25	6.93	31.15	12.79	-5.43
95th Percentile	11.31	-1.22	-9.56	1.44	24.38	8.75	-10.85

Historical Statistics (01/01/13 - 12/31/17) \*

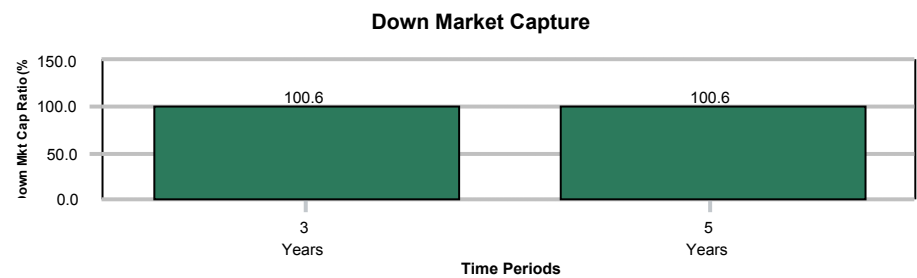
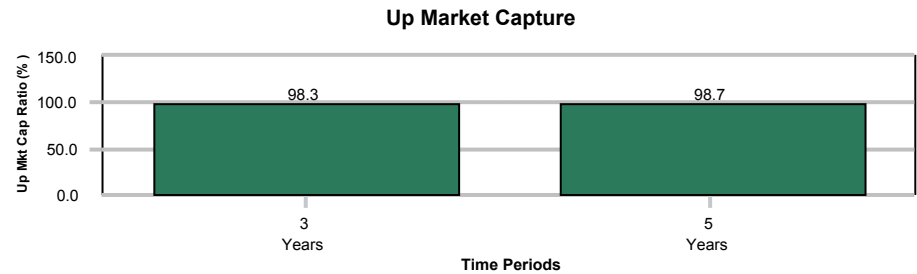
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Equity Index Account	15.34	7.52	1.94	-0.07	0.99	1.00	0.19	-1.14	7.50	10/01/2001
Russell 3000 Index	15.58	7.59	1.95	0.00	1.00	1.00	0.00	N/A	7.58	10/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.21	0.00	0.01	7.58	-1.95	0.00	10/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Equity Index Account	15.34	7.52
● Russell 3000 Index	15.58	7.59
— Median	14.59	8.25

Up Down Market Capture

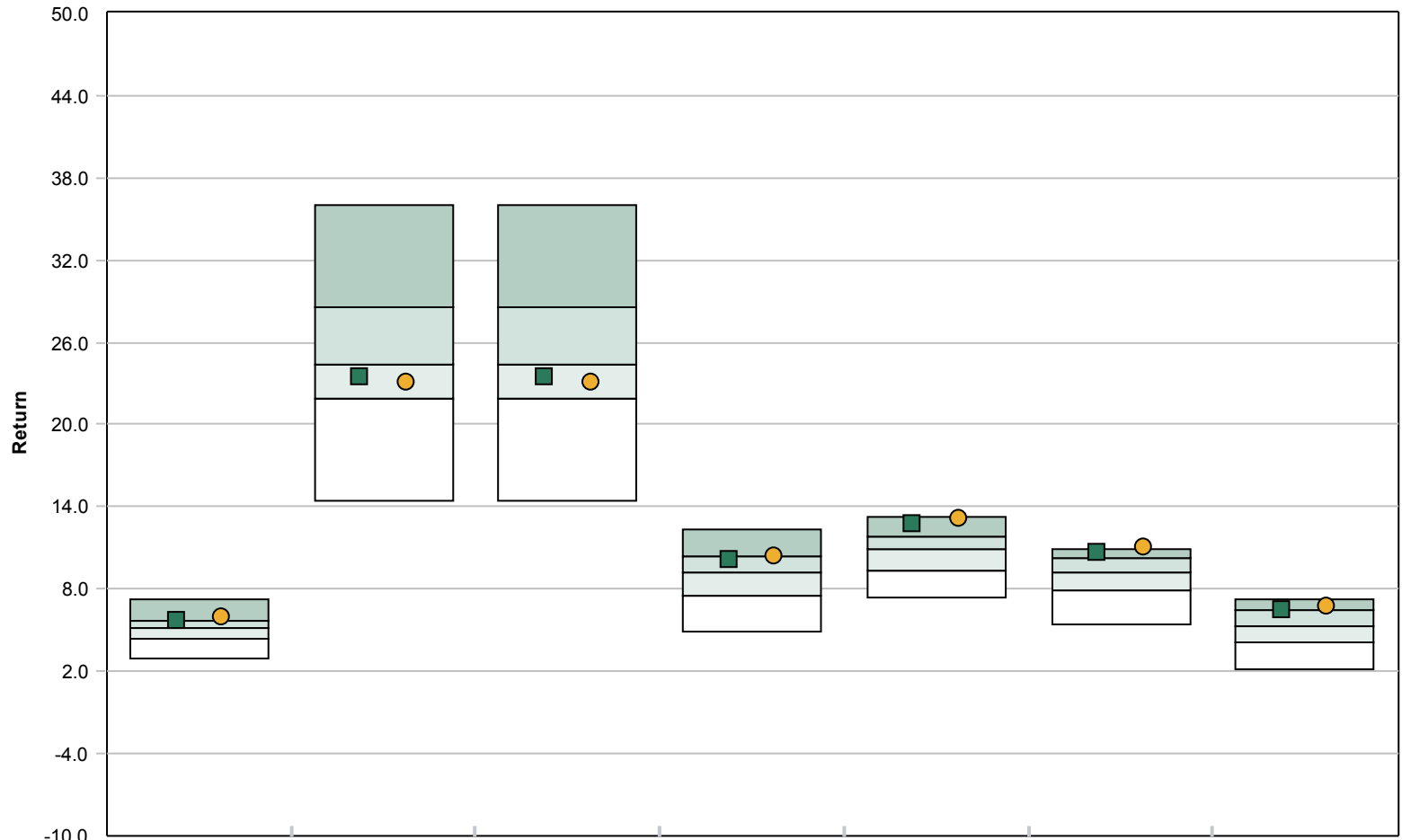


\* Quarterly periodicity used.



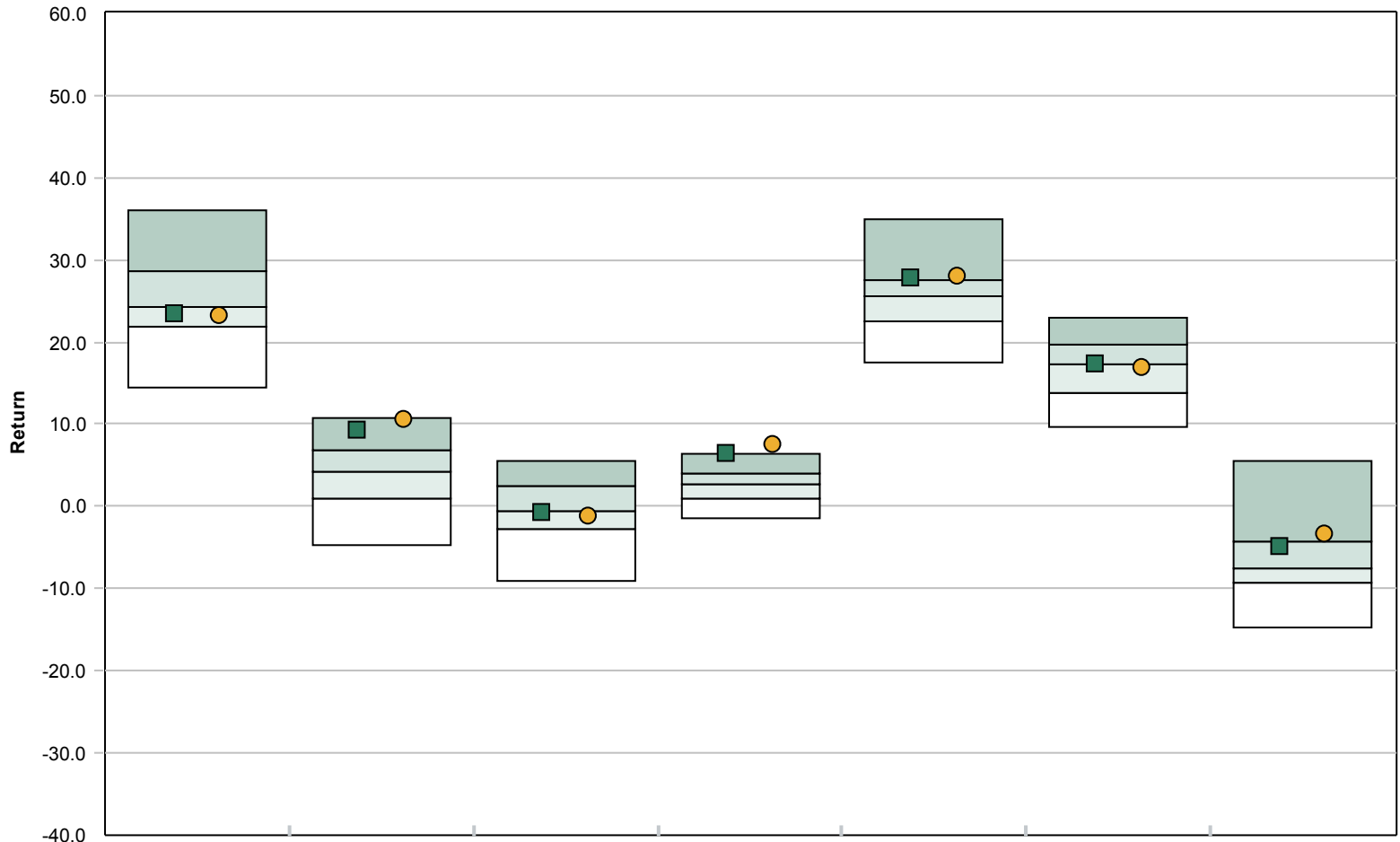


**Peer Group Analysis - IM Global Large Cap Equity (MF)**



	<b>1 Qtr</b>	<b>YTD</b>	<b>1 Yr</b>	<b>3 Yrs</b>	<b>5 Yrs</b>	<b>7 Yrs</b>	<b>10 Yrs</b>
■ CREF Stock Account	5.72 (26)	23.44 (63)	23.44 (63)	10.15 (30)	12.70 (12)	10.62 (14)	6.45 (25)
● 70% R3000 / 30% MSCI ACWI ex US	5.96 (20)	23.12 (66)	23.12 (66)	10.34 (27)	13.09 (7)	11.08 (4)	6.76 (18)
5th Percentile	7.21	35.97	35.97	12.38	13.22	10.92	7.20
1st Quartile	5.73	28.54	28.54	10.40	11.80	10.20	6.43
Median	5.11	24.37	24.37	9.20	10.95	9.19	5.35
3rd Quartile	4.37	21.91	21.91	7.55	9.38	7.86	4.17
95th Percentile	2.92	14.38	14.38	4.90	7.42	5.42	2.21

Peer Group Analysis - IM Global Large Cap Equity (MF)

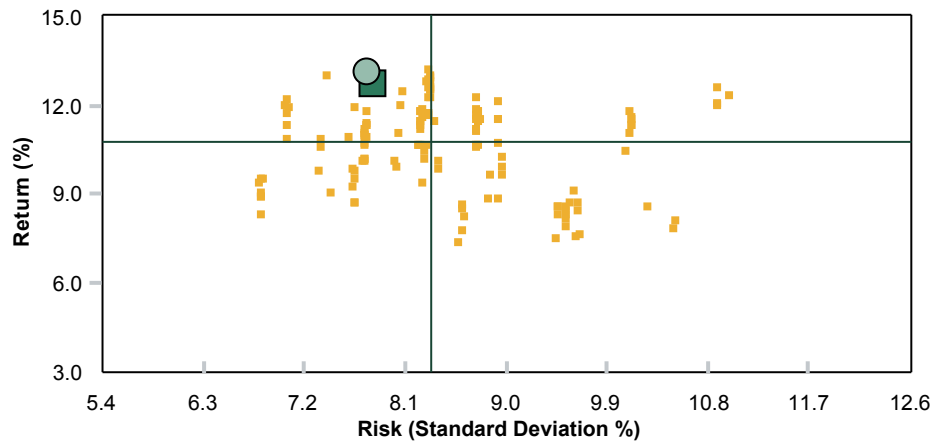


	2017	2016	2015	2014	2013	2012	2011
■ CREF Stock Account	23.44 (63)	9.17 (8)	-0.84 (53)	6.46 (4)	27.83 (23)	17.26 (51)	-4.94 (30)
● 70% R3000 / 30% MSCI ACWI ex US	23.12 (66)	10.44 (6)	-1.22 (54)	7.56 (2)	28.06 (22)	16.79 (55)	-3.45 (21)
5th Percentile	35.97	10.72	5.58	6.30	35.05	22.95	5.47
1st Quartile	28.54	6.81	2.52	4.04	27.60	19.74	-4.22
Median	24.37	4.26	-0.46	2.67	25.65	17.30	-7.61
3rd Quartile	21.91	0.98	-2.67	1.02	22.60	13.86	-9.38
95th Percentile	14.38	-4.68	-9.00	-1.38	17.44	9.78	-14.69

Historical Statistics (01/01/13 - 12/31/17) \*

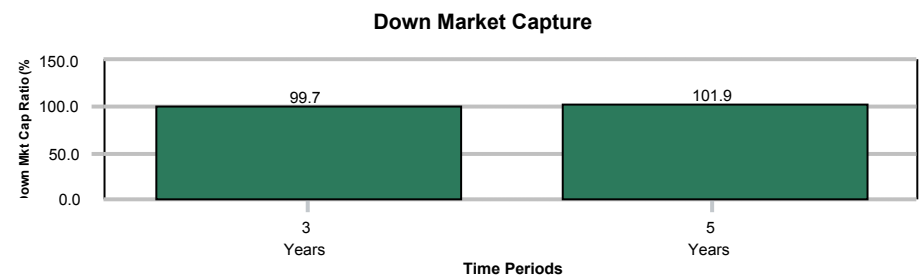
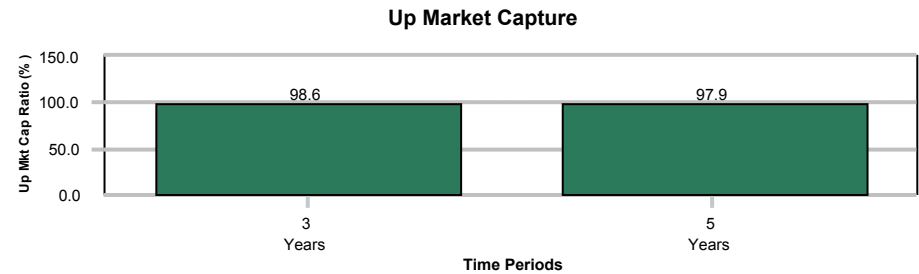
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Stock Account	12.70	7.82	1.57	-0.41	1.00	0.99	0.57	-0.61	7.79	07/01/2001
70% R3000 / 30% MSCI ACWI ex US	13.09	7.77	1.62	0.00	1.00	1.00	0.00	N/A	7.73	07/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.19	0.00	0.05	7.73	-1.62	0.00	07/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
CREF Stock Account	12.70	7.82
70% R3000 / 30% MSCI ACWI ex US	13.09	7.77
Median	10.77	8.34

Up Down Market Capture



\* Quarterly periodicity used.

# Vanguard Institutional Index I

Segal Score

**B**

Ticker: VINIX

Category: Large Blend

Subcategory: S&P 500 Tracking

Expense Ratio: 0.04

Benchmark: S&P 500

Inception Date: 07/31/1990

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: B

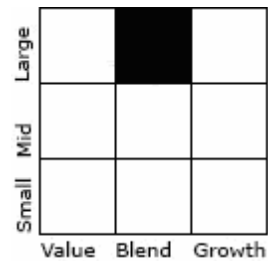
Performance: A

Risk: C

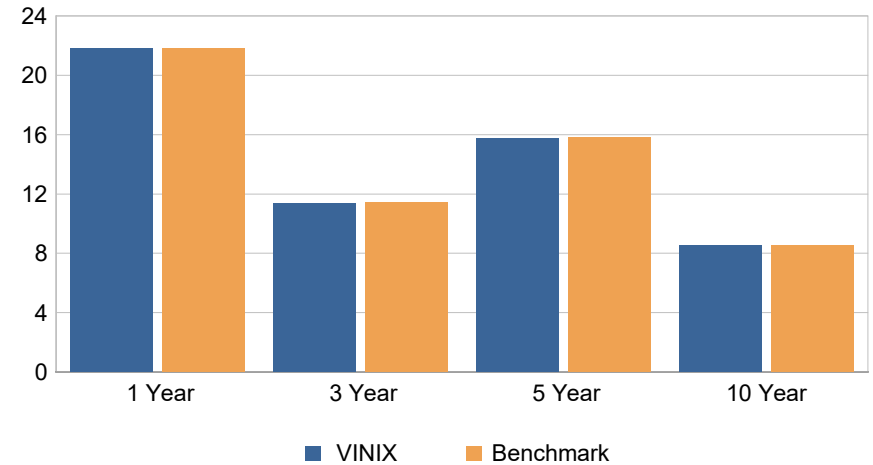
### Portfolio Characteristics

Fund AUM (\$mil):	232,158
No. of Stocks:	505
% Assets in Top 10:	19.85
Avg Market Cap (\$mil):	96,386.98
P/E Ratio (TTM)(Long):	22.87
P/B Ratio (TTM)(Long):	3.18
Turnover Ratio %:	5.00

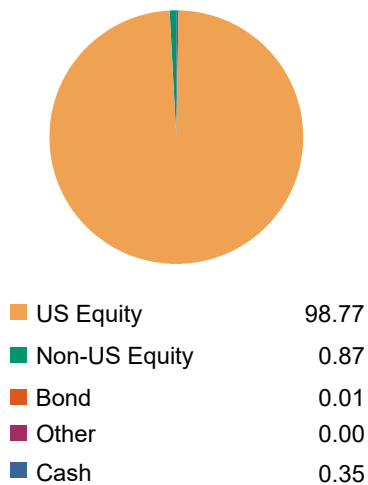
### Style



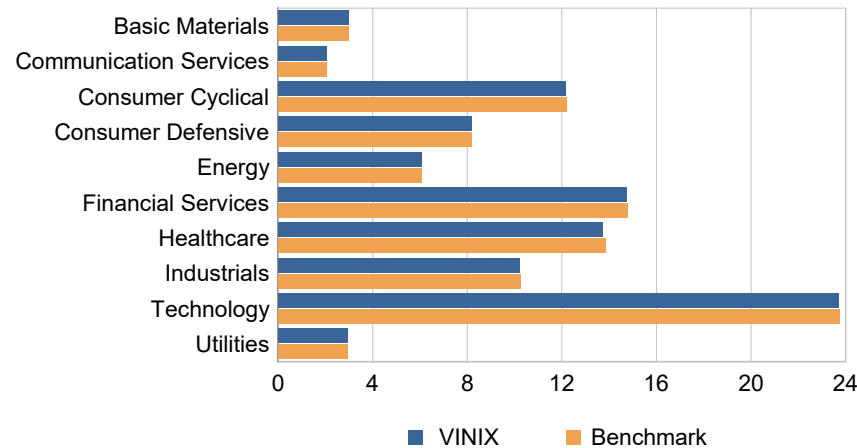
### Returns



### Asset Allocation



### Sector Allocation

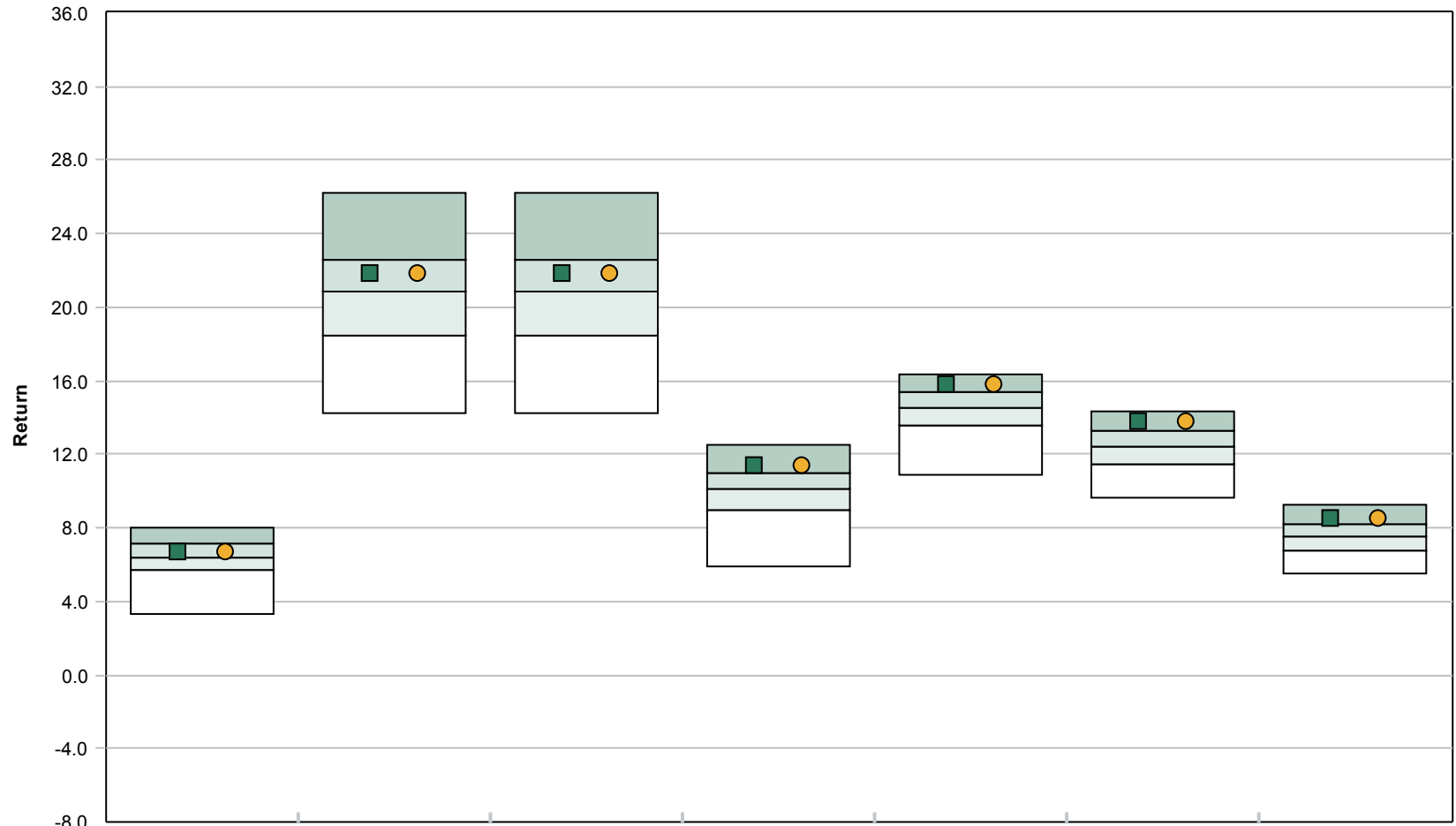


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.07	10.20
5 Year:	9.49	9.74
10 Year:	15.07	15.37
<b>Information Ratio</b>		
3 Year:	-2.56	-0.56
5 Year:	-2.99	-0.51
10 Year:	0.03	-0.28
<b>Downside Capture</b>		
3 Year:	100.06	103.82
5 Year:	100.08	104.44
10 Year:	99.97	102.32

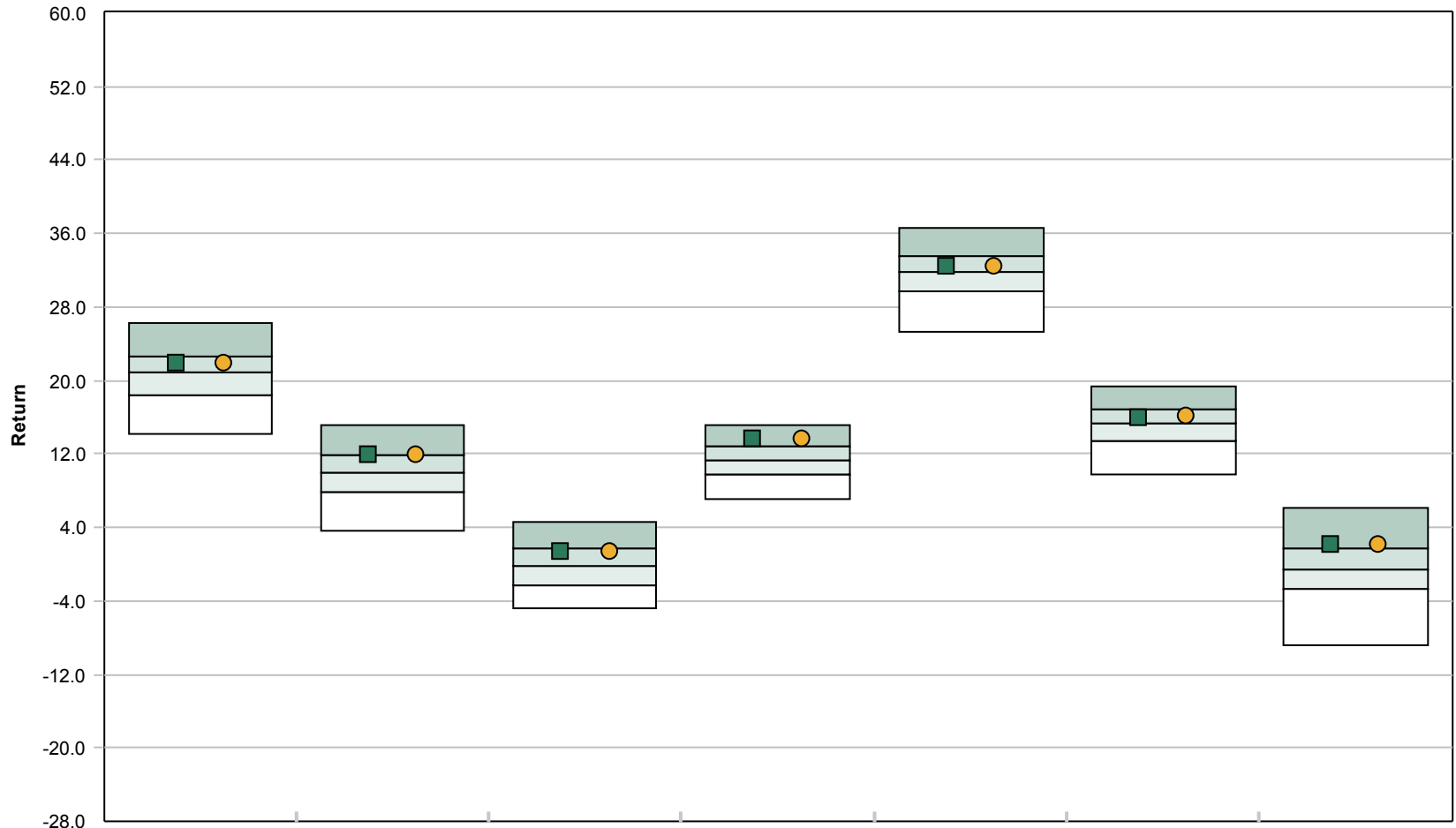
Vanguard Institutional Index

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Institutional Index	6.63 (38)	21.79 (36)	21.79 (36)	11.38 (17)	15.76 (14)	13.73 (13)	8.50 (17)
● S&P 500	6.64 (38)	21.83 (36)	21.83 (36)	11.41 (16)	15.79 (13)	13.76 (12)	8.50 (17)
5th Percentile	8.04	26.25	26.25	12.50	16.35	14.34	9.25
1st Quartile	7.15	22.62	22.62	10.99	15.36	13.26	8.19
Median	6.39	20.84	20.84	10.11	14.51	12.45	7.56
3rd Quartile	5.67	18.48	18.48	8.98	13.58	11.45	6.75
95th Percentile	3.33	14.23	14.23	5.91	10.89	9.62	5.47

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Institutional Index	21.79 (36)	11.93 (25)	1.37 (29)	13.65 (15)	32.35 (40)	15.98 (40)	2.09 (23)
● S&P 500	21.83 (36)	11.96 (25)	1.38 (29)	13.69 (15)	32.39 (39)	16.00 (40)	2.11 (23)
5th Percentile	26.25	15.08	4.53	15.19	36.54	19.33	6.22
1st Quartile	22.62	11.92	1.66	12.88	33.47	16.87	1.77
Median	20.84	9.98	-0.22	11.35	31.80	15.41	-0.57
3rd Quartile	18.48	7.93	-2.34	9.75	29.74	13.33	-2.71
95th Percentile	14.23	3.73	-4.79	7.07	25.33	9.68	-8.85

## Vanguard Institutional Index

### Fund Information

Fund Name :	Vanguard Institutional Index Fund: Vanguard Institutional Index Fund; Institutional Shares	Portfolio Assets :	\$233,655 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Butler/Louie
Ticker :	VINIX	PM Tenure :	2000--2017
Inception Date :	07/31/1990	Fund Style :	IM U.S. Large Cap Core Equity (MF)
Fund Assets :	\$141,100 Million	Style Benchmark :	S&P 500

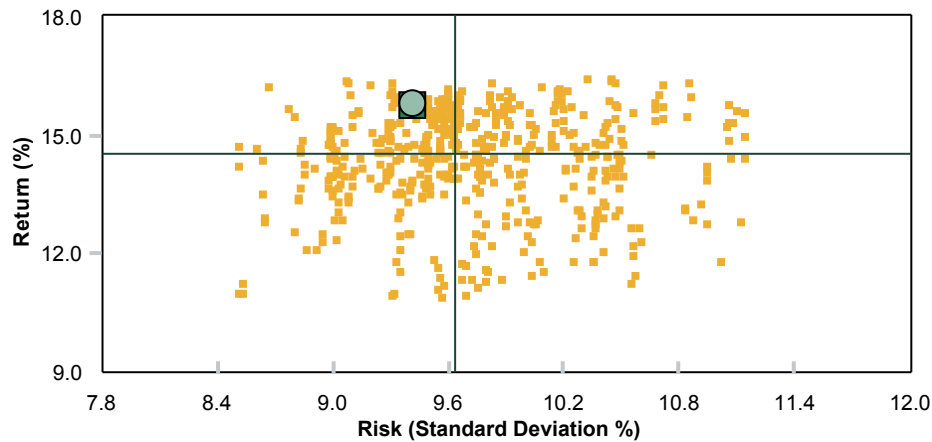
### Fund Investment Policy

The Fund seeks to match the investment performance of the Standard & Poor's 500 Composite Stock Price Index.

### Historical Statistics (01/01/13 - 12/31/17) \*

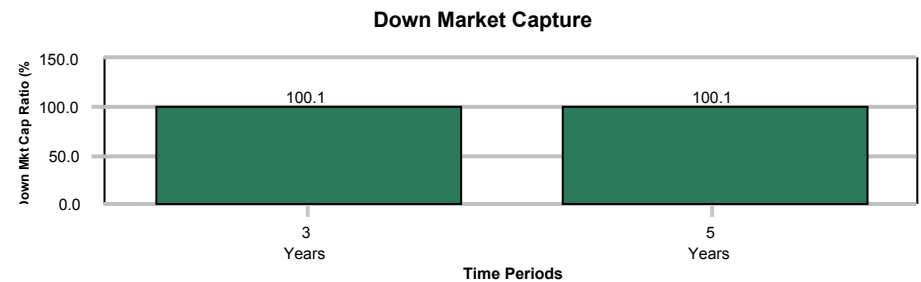
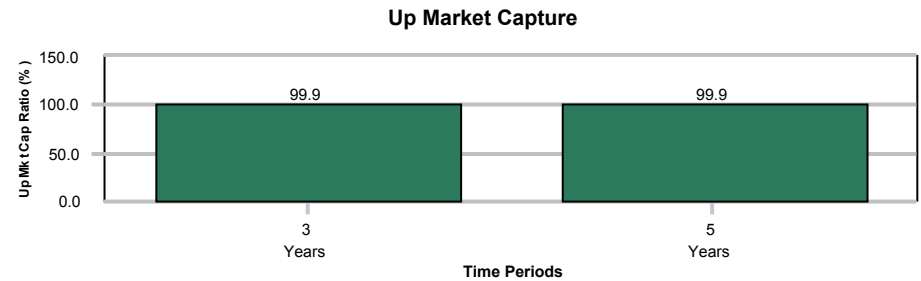
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Institutional Index	15.76	9.41	1.59	-0.03	1.00	1.00	0.01	-2.18	9.41	08/01/1990
S&P 500	15.79	9.41	1.59	0.00	1.00	1.00	0.00	N/A	9.41	08/01/1990
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.41	-1.59	0.00	08/01/1990

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard Institutional Index	15.76	9.41
● S&P 500	15.79	9.41
— Median	14.52	9.63

### Up Down Market Capture



\* Monthly periodicity used.



# American Funds Washington Mutual R6

Segal Score

**B**

Ticker: RWMGX

Category: Large Value

Subcategory: Giant Value

Expense Ratio: 0.30

Benchmark: Russell 1000 Value

Inception Date: 07/31/1952

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: D

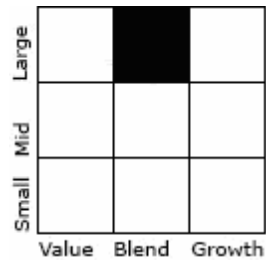
Performance: B

Risk: A

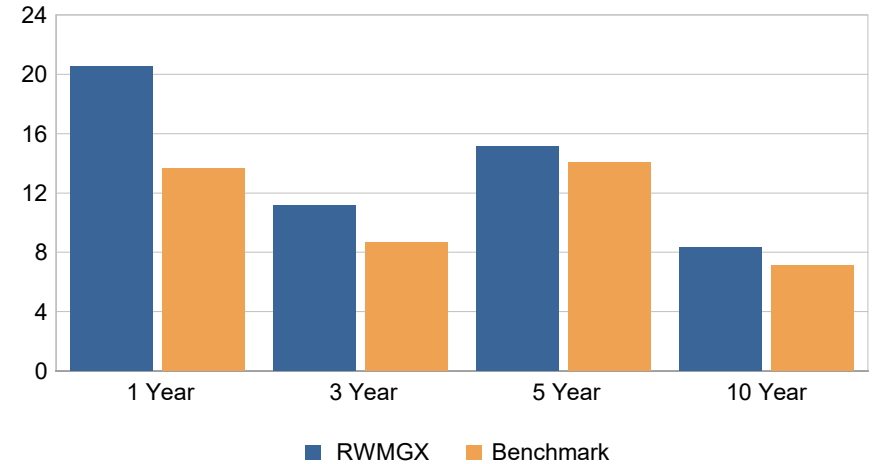
### Portfolio Characteristics

Fund AUM (\$mil):	101,125
No. of Stocks:	140
% Assets in Top 10:	23.06
Avg Market Cap (\$mil):	110,317.72
P/E Ratio (TTM)(Long):	19.61
P/B Ratio (TTM)(Long):	2.05
Turnover Ratio %:	22.00

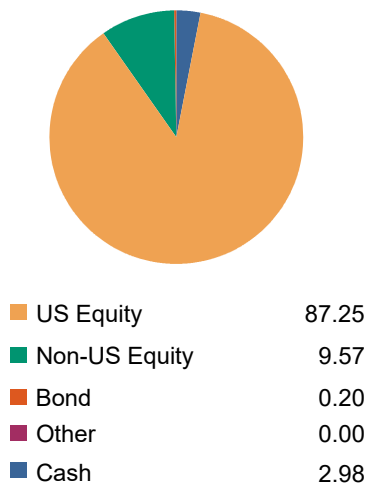
### Style



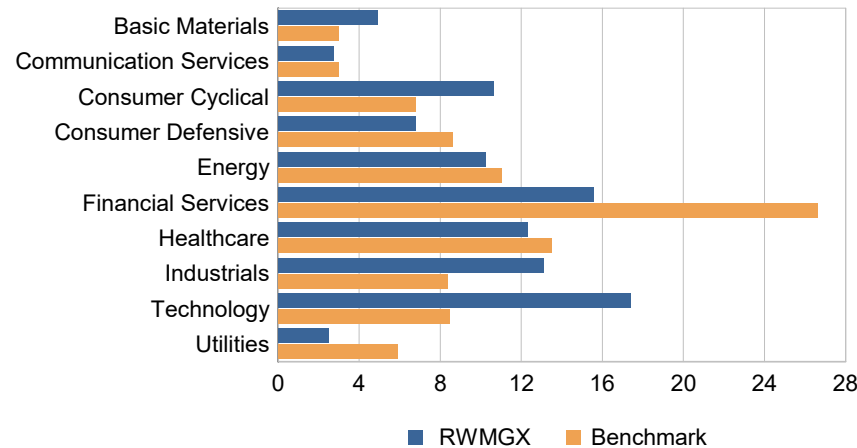
### Returns



### Asset Allocation



### Sector Allocation

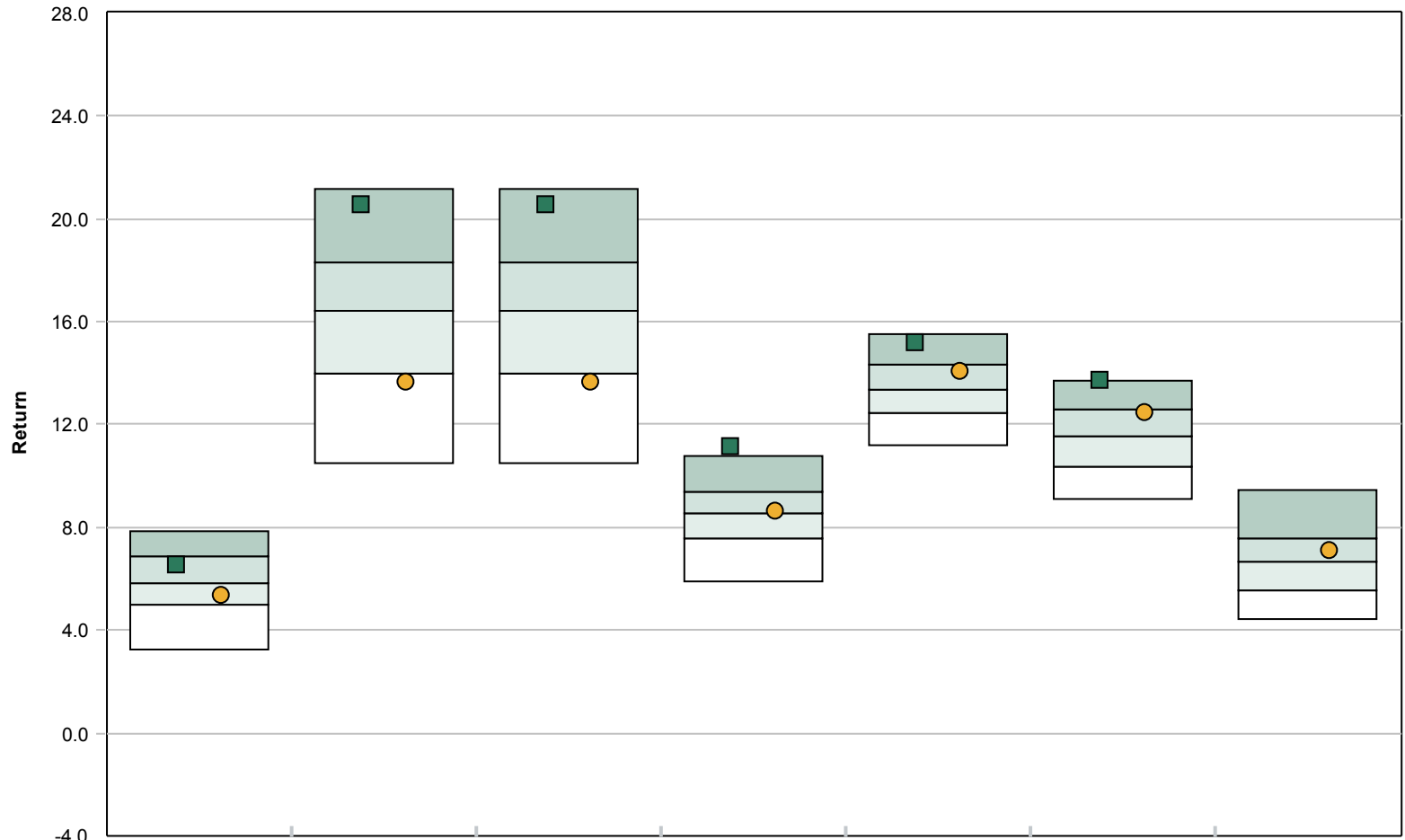


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	9.75	10.57
5 Year:	9.07	10.04
10 Year:	13.82	15.73
<b>Information Ratio</b>		
3 Year:	0.80	-0.05
5 Year:	0.34	-0.22
10 Year:	0.27	-0.04
<b>Downside Capture</b>		
3 Year:	71.78	97.41
5 Year:	74.60	98.32
10 Year:	78.17	97.73

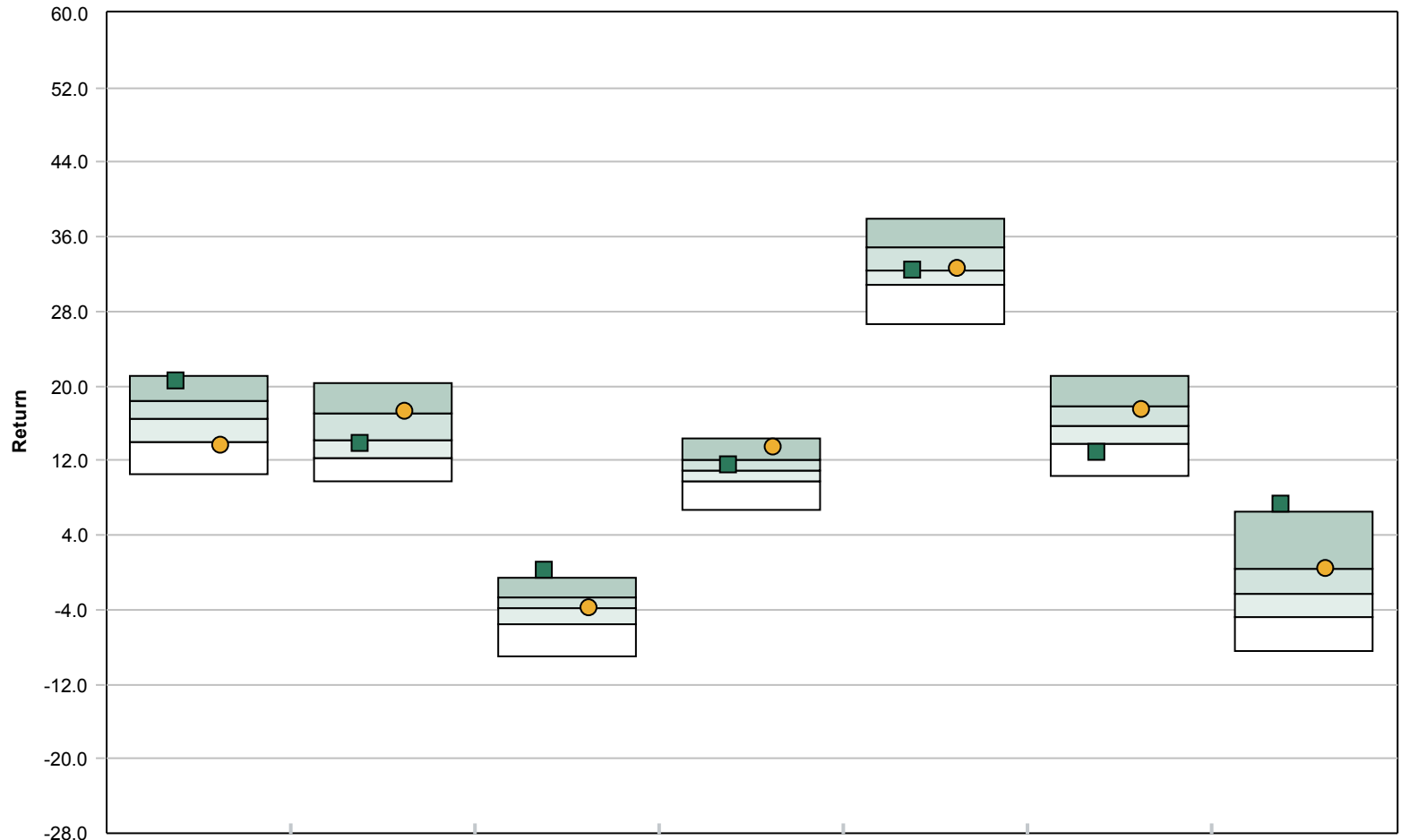
American Funds Wash Mutual Inv R6

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ American Funds Wash Mutual Inv R6	6.52 (35)	20.54 (8)	20.54 (8)	11.13 (3)	15.17 (9)	13.69 (6)	N/A
● Russell 1000 Value Index	5.33 (62)	13.66 (77)	13.66 (77)	8.65 (48)	14.04 (33)	12.46 (28)	7.10 (37)
5th Percentile	7.88	21.14	21.14	10.80	15.51	13.73	9.47
1st Quartile	6.88	18.31	18.31	9.41	14.32	12.59	7.56
Median	5.82	16.41	16.41	8.52	13.34	11.52	6.67
3rd Quartile	4.97	13.97	13.97	7.61	12.48	10.34	5.55
95th Percentile	3.23	10.52	10.52	5.89	11.16	9.13	4.46

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ American Funds Wash Mutual Inv R6	20.54 (8)	13.73 (57)	0.12 (4)	11.53 (37)	32.34 (51)	12.85 (85)	7.35 (5)
● Russell 1000 Value Index	13.66 (77)	17.34 (23)	-3.83 (50)	13.45 (8)	32.53 (48)	17.51 (28)	0.39 (25)
5th Percentile	21.14	20.38	-0.54	14.37	38.02	21.10	6.52
1st Quartile	18.31	17.07	-2.71	12.03	34.83	17.80	0.32
Median	16.41	14.12	-3.87	10.90	32.38	15.79	-2.32
3rd Quartile	13.97	12.35	-5.60	9.76	30.85	13.81	-4.86
95th Percentile	10.52	9.81	-9.01	6.75	26.72	10.31	-8.47

## American Funds Wash Mutual Inv R6

### Fund Information

Fund Name : Washington Mutual Investors Fund; Class R6 Shares  
 Fund Family : American Funds  
 Ticker : RWMGX  
 Inception Date : 05/01/2009  
 Fund Assets : \$14,930 Million  
 Portfolio Turnover : 21%

Portfolio Assets : \$100,157 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM U.S. Large Cap Value Equity (MF)  
 Style Benchmark : Russell 1000 Value Index

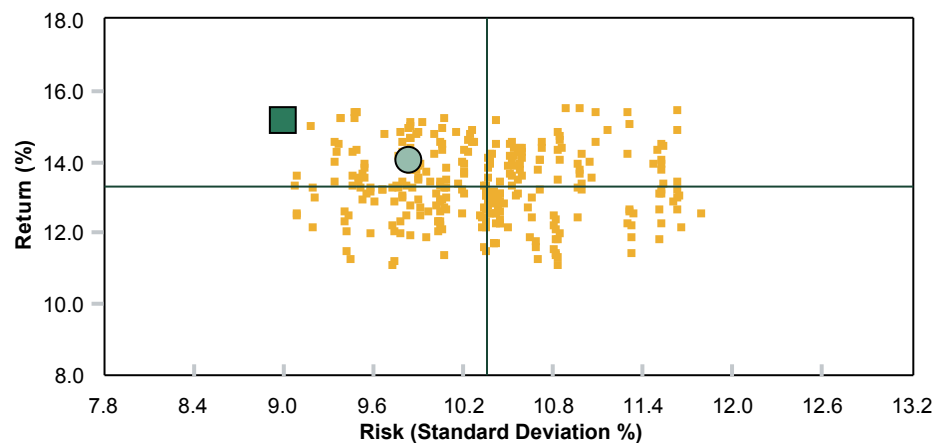
### Fund Investment Policy

The Fund seeks to produce income and to provide an opportunity for growth of principal consistent with sound common stock investing. The Fund invests primarily in common stocks of established companies that are listed on the New York Stock Exchange and have a strong record of earnings and dividends.

### Historical Statistics (01/01/13 - 12/31/17) \*

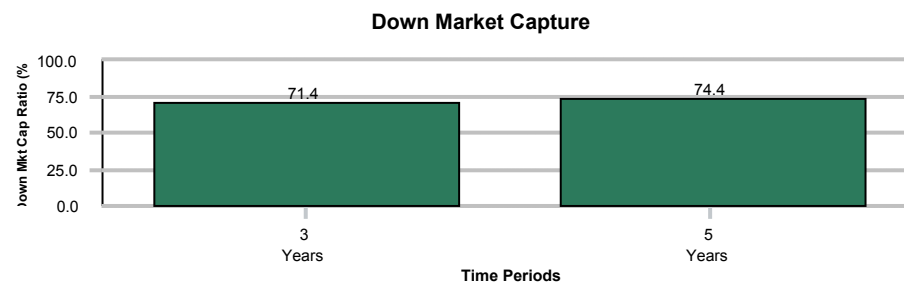
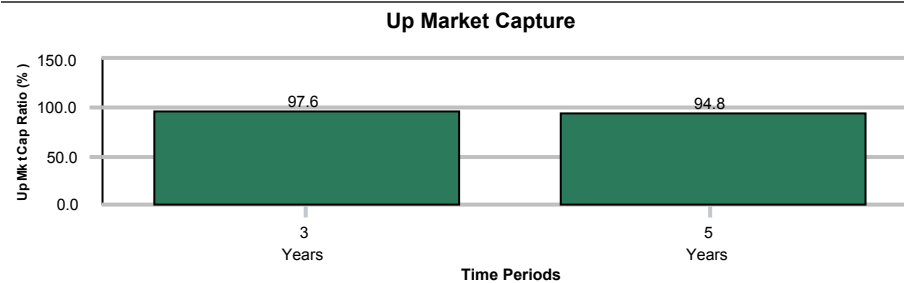
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
American Funds Wash Mutual Inv R6	15.17	9.00	1.60	2.61	0.88	0.92	2.77	0.33	8.99	06/01/2009
Russell 1000 Value Index	14.04	9.83	1.37	0.00	1.00	1.00	0.00	N/A	9.83	06/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.83	-1.37	0.00	06/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
American Funds Wash Mutual Inv R6	15.17	9.00
Russell 1000 Value Index	14.04	9.83
— Median	13.32	10.36

### Up Down Market Capture



\* Monthly periodicity used.

# TIAA RSRA2-CREF Growth R2



**Ticker:** **Category:** Large Growth  
**Expense Ratio:** **Benchmark:** Russell 1000 Growth

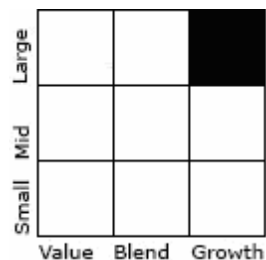
**Subcategory:** Large Core Growth  
**Inception Date:** 04/29/1994

**S<sup>3</sup> Scores**    Organization: B    Fees: A    Style/Portfolio Characteristics: B    Performance: A    Risk: B

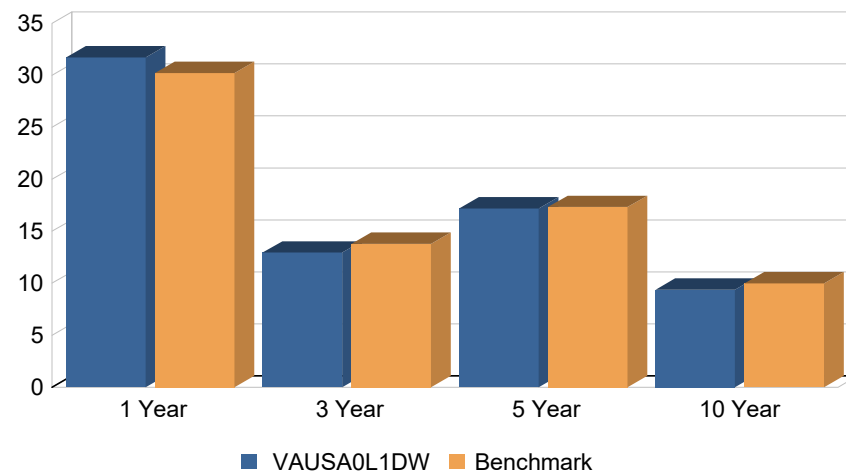
### Portfolio Characteristics

**Fund AUM (\$mil):** 25,584  
**No. of Stocks:** 629  
**% Assets in Top 10:** 30.82  
**Avg Market Cap (\$mil):** 81,523.81  
**P/E Ratio (TTM)(Long):** 26.65  
**P/B Ratio (TTM)(Long):** 5.50  
**Turnover Ratio %:** 64.00

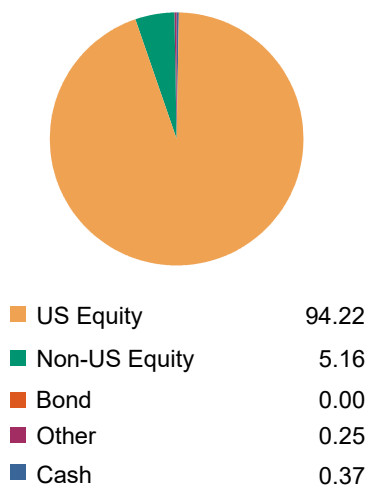
### Style



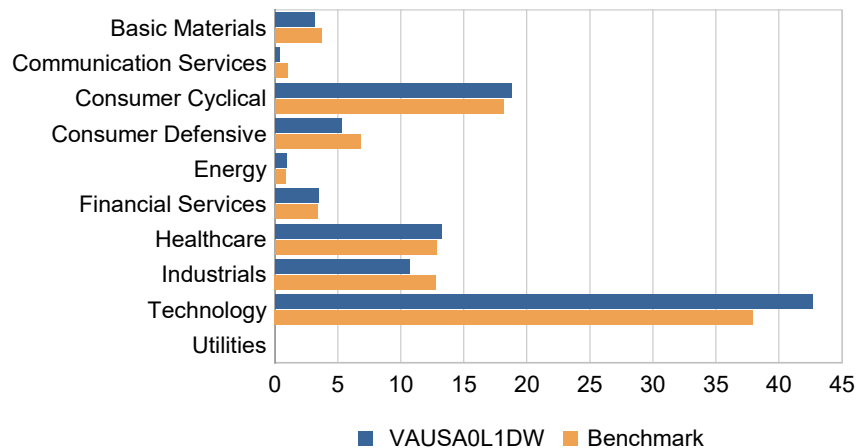
### Returns



### Asset Allocation



### Sector Allocation



### Risk Metrics

**Standard Deviation**  
**3 Year:** 11.40  
**5 Year:** 10.65  
**10 Year:** 15.89

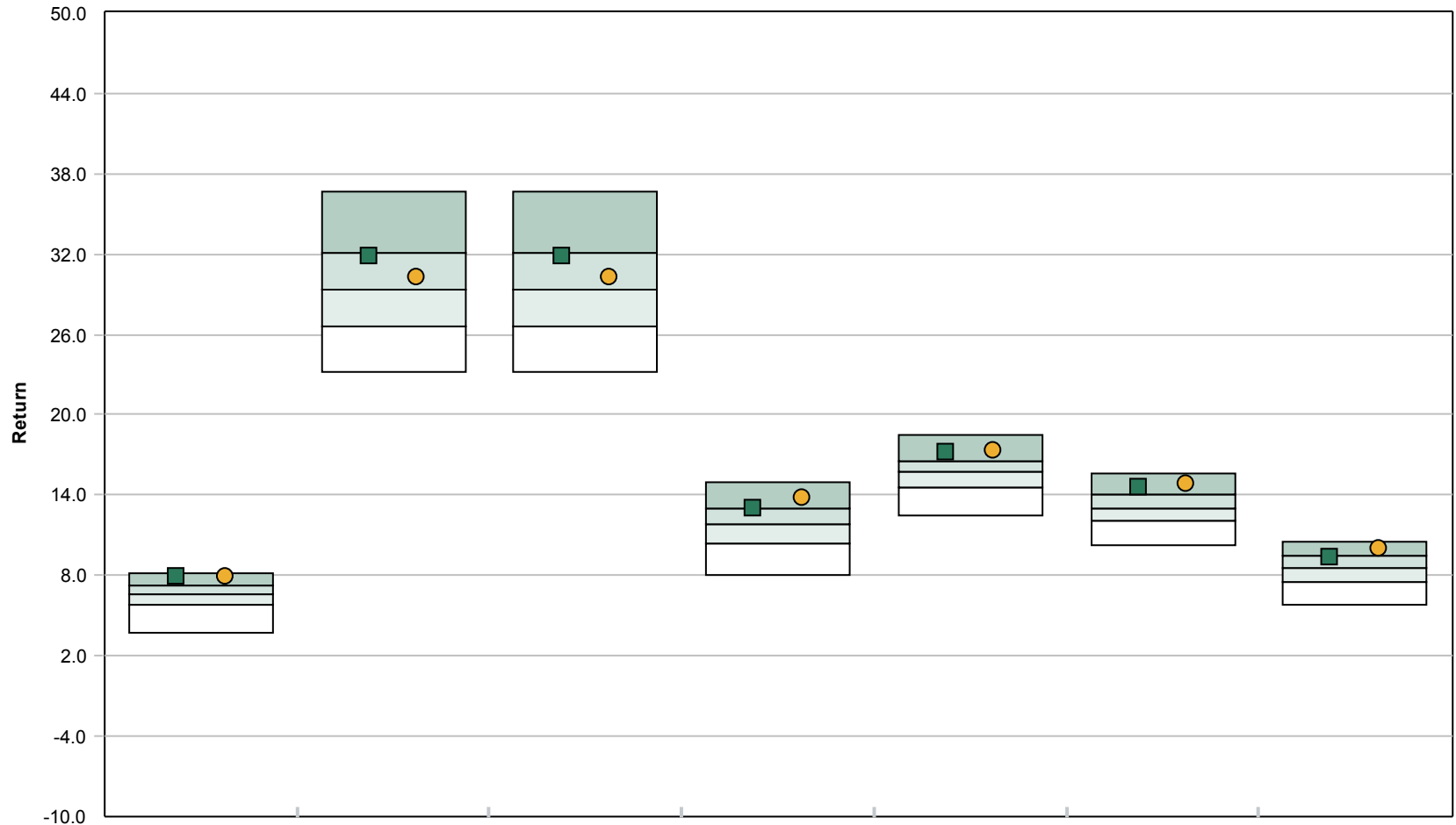
**Information Ratio**  
**3 Year:** -0.35  
**5 Year:** -0.06  
**10 Year:** -0.38

**Downside Capture**  
**3 Year:** 116.67  
**5 Year:** 113.62  
**10 Year:** 106.51

# CREF Growth Account

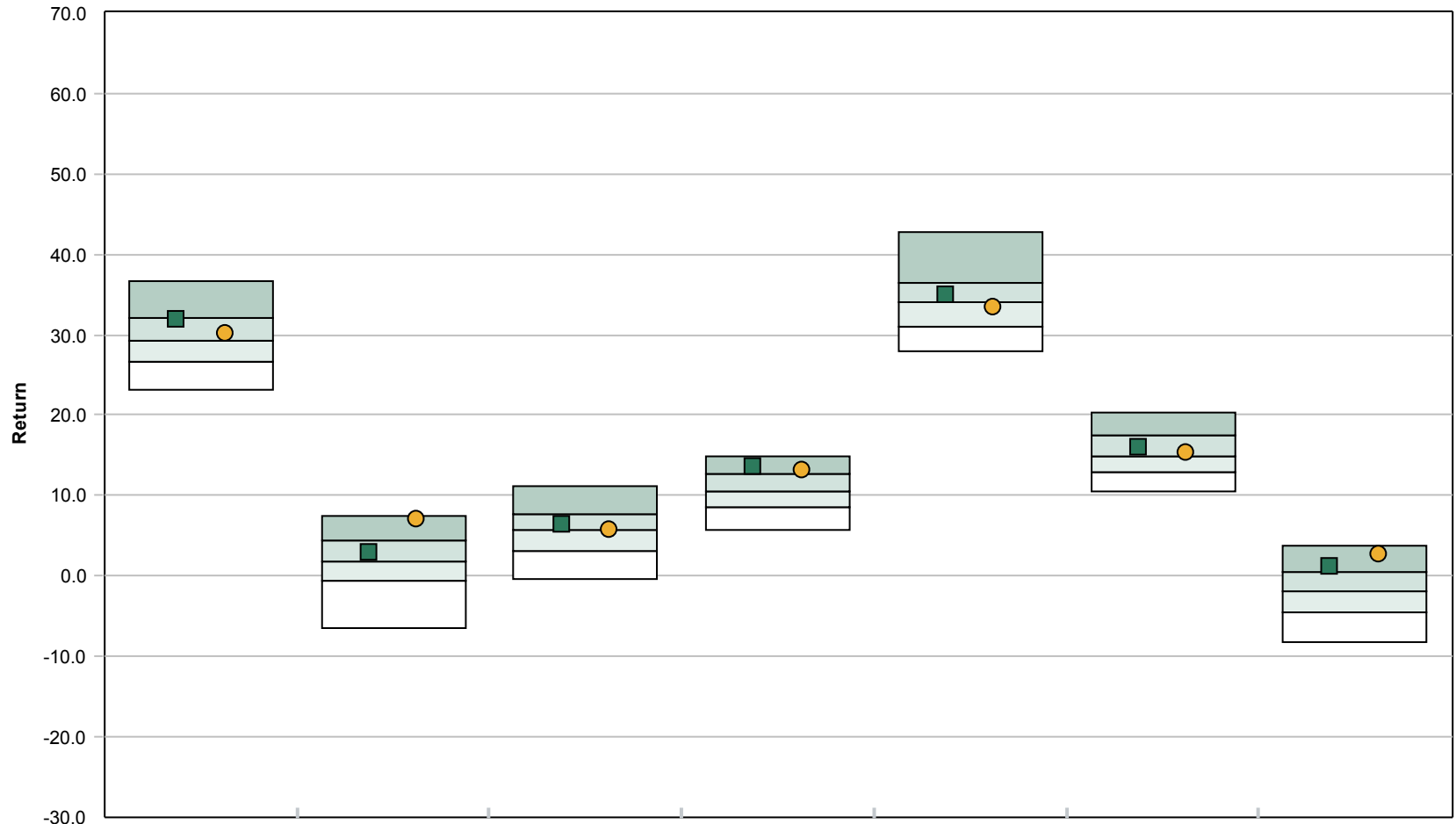
State of Maryland  
December 31, 2017  
State of Maryland  
December 31, 2017

## Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ CREF Growth Account	7.87 (10)	31.83 (27)	31.83 (27)	13.04 (25)	17.25 (16)	14.62 (15)	9.41 (26)
● Russell 1000 Growth Index	7.86 (10)	30.21 (41)	30.21 (41)	13.79 (14)	17.33 (16)	14.81 (12)	10.00 (13)
5th Percentile	8.15	36.63	36.63	15.03	18.53	15.58	10.56
1st Quartile	7.28	32.12	32.12	13.04	16.59	14.10	9.44
Median	6.66	29.36	29.36	11.77	15.71	13.06	8.53
3rd Quartile	5.77	26.56	26.56	10.34	14.56	12.08	7.48
95th Percentile	3.75	23.14	23.14	8.00	12.53	10.26	5.79

Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)

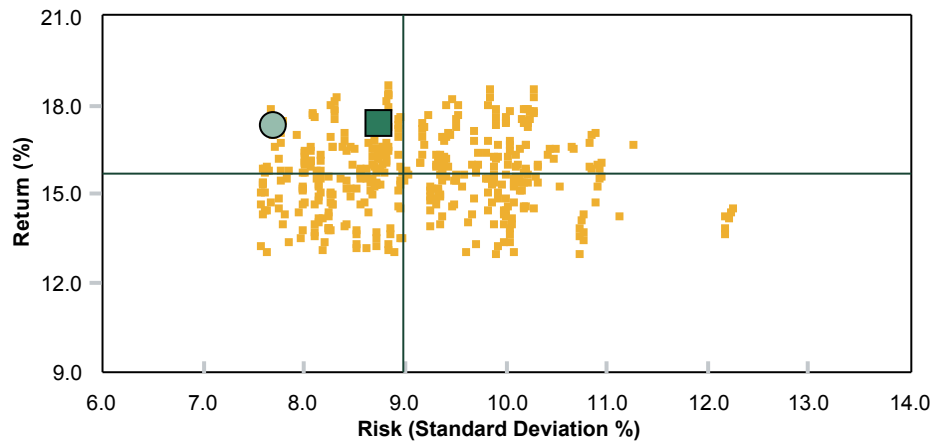


	2017	2016	2015	2014	2013	2012	2011
■ CREF Growth Account	31.83 (27)	2.92 (39)	6.47 (40)	13.65 (15)	35.00 (40)	15.87 (40)	1.19 (21)
● Russell 1000 Growth Index	30.21 (41)	7.08 (7)	5.67 (50)	13.05 (22)	33.48 (55)	15.26 (46)	2.64 (10)
5th Percentile	36.63	7.52	11.10	14.79	42.82	20.28	3.68
1st Quartile	32.12	4.38	7.76	12.72	36.44	17.56	0.53
Median	29.36	1.89	5.63	10.46	33.95	14.79	-1.85
3rd Quartile	26.56	-0.63	3.01	8.48	31.08	12.87	-4.60
95th Percentile	23.14	-6.47	-0.39	5.73	27.93	10.42	-8.18

Historical Statistics (01/01/13 - 12/31/17) \*

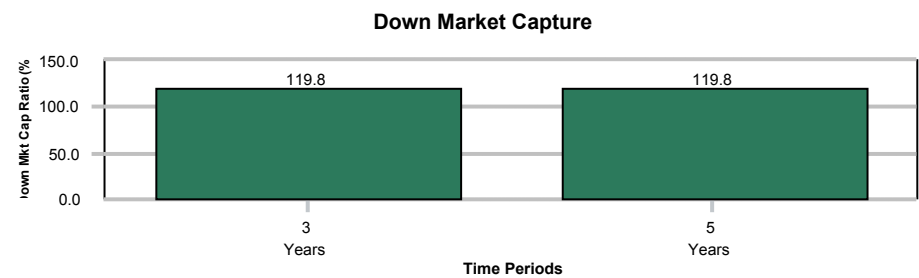
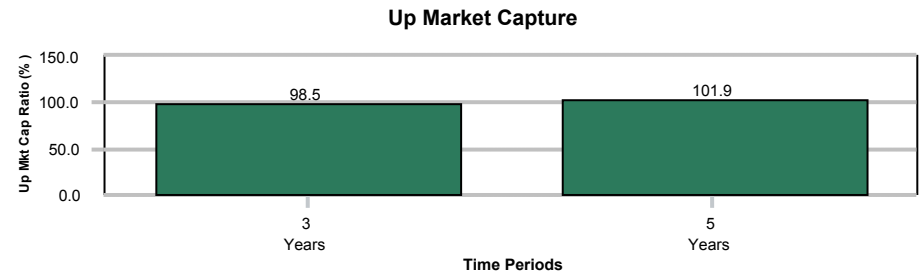
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Growth Account	17.38	8.75	1.89	-1.81	1.12	0.97	1.84	0.07	8.72	10/01/2001
Russell 1000 Growth Index	17.33	7.69	2.13	0.00	1.00	1.00	0.00	N/A	7.66	10/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.17	0.00	0.04	7.66	-2.13	0.00	10/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Growth Account	17.38	8.75
● Russell 1000 Growth Index	17.33	7.69
— Median	15.72	8.99

Up Down Market Capture



\* Quarterly periodicity used.



# Vanguard Mid Cap Index InstitutionalPlus

Segal Score

**A**

Ticker: VMCPX

Category: Mid-Cap Blend

Subcategory: Mid Core

Expense Ratio: 0.04

Benchmark: Russell Mid Cap

Inception Date: 05/21/1998

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: C

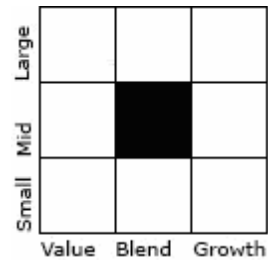
Performance: B

Risk: A

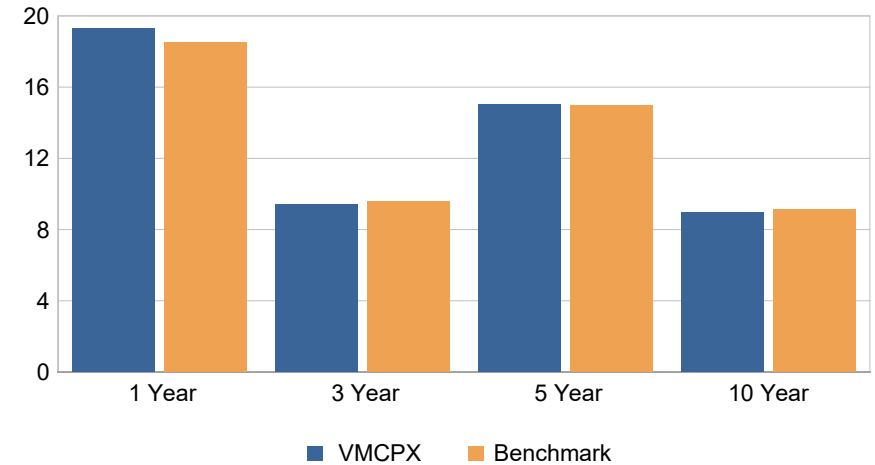
### Portfolio Characteristics

Fund AUM (\$mil):	94,733
No. of Stocks:	346
% Assets in Top 10:	4.51
Avg Market Cap (\$mil):	14,137.29
P/E Ratio (TTM)(Long):	22.14
P/B Ratio (TTM)(Long):	2.72
Turnover Ratio %:	32.00

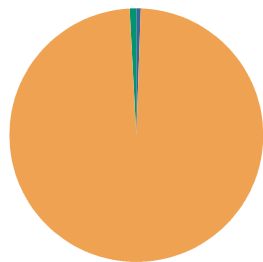
### Style



### Returns

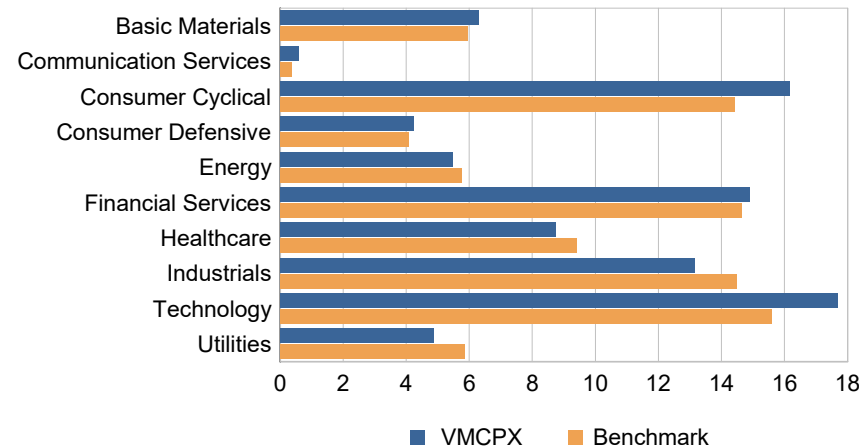


### Asset Allocation



US Equity	98.84
Non-US Equity	0.73
Bond	0.00
Other	0.00
Cash	0.43

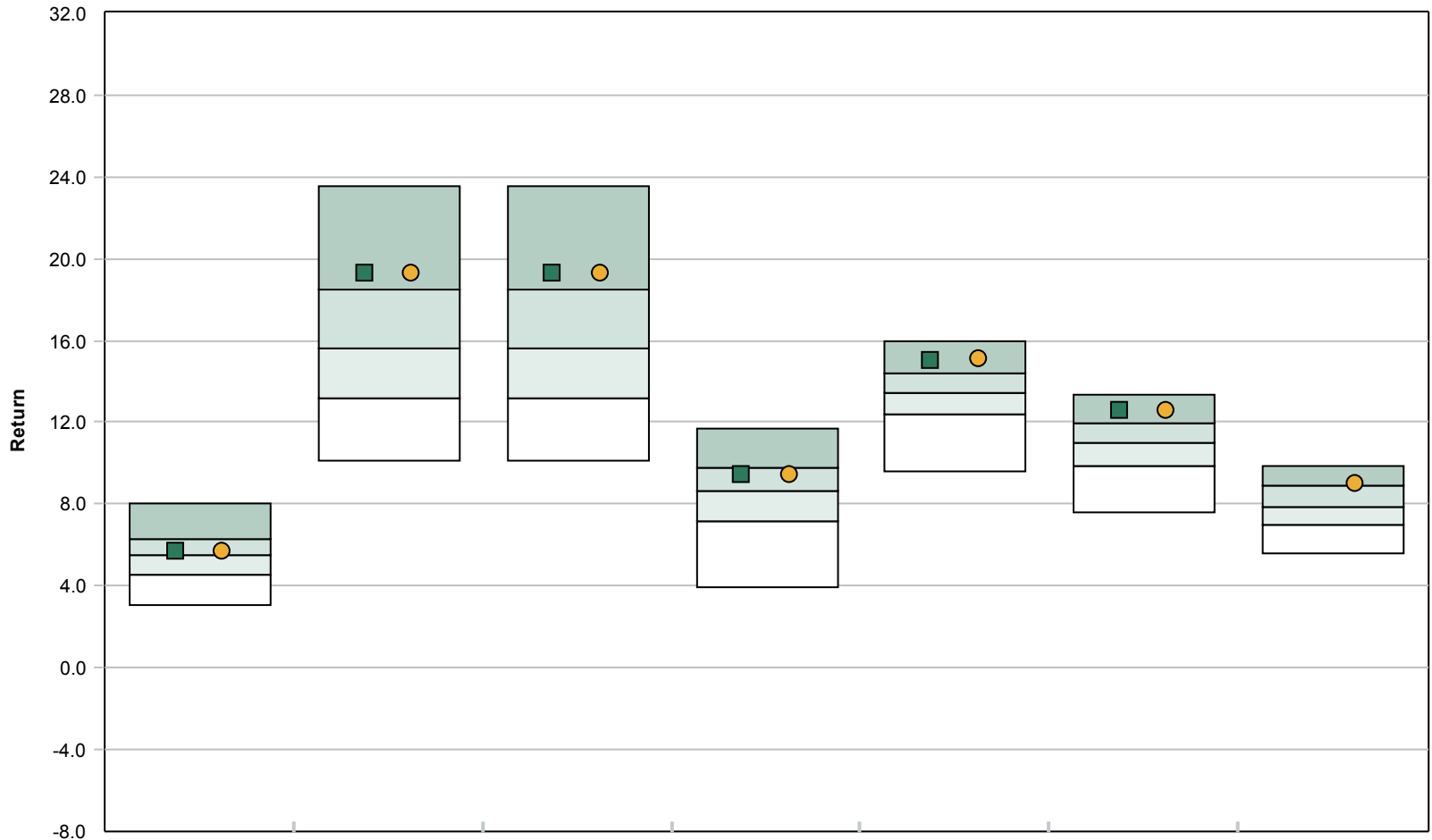
### Sector Allocation



### Risk Metrics

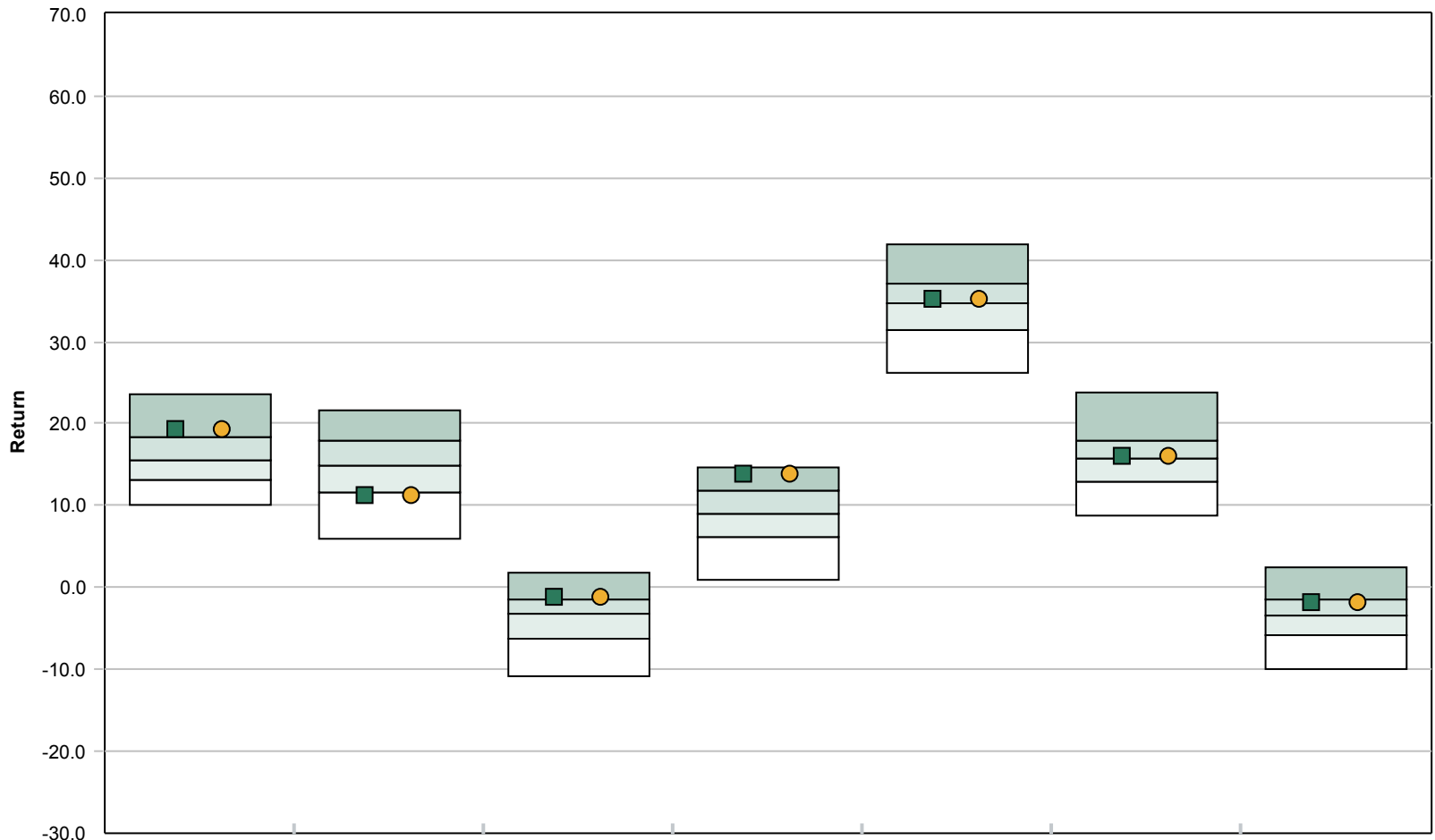
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.58	11.24
5 Year:	10.41	11.23
10 Year:	17.71	17.81
<b>Information Ratio</b>		
3 Year:	-0.11	-0.26
5 Year:	0.06	-0.35
10 Year:	-0.09	-0.15
<b>Downside Capture</b>		
3 Year:	98.45	100.82
5 Year:	98.50	108.05
10 Year:	100.53	100.56

Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard MidCap Index Instl	5.65 (45)	19.28 (18)	19.28 (18)	9.41 (33)	15.04 (12)	12.59 (16)	N/A
● Vanguard Spliced Mid Cap Index	5.65 (45)	19.30 (17)	19.30 (17)	9.42 (33)	15.06 (12)	12.60 (15)	8.96 (23)
5th Percentile	8.00	23.53	23.53	11.69	16.00	13.32	9.89
1st Quartile	6.25	18.46	18.46	9.74	14.40	12.00	8.88
Median	5.47	15.60	15.60	8.62	13.43	10.99	7.90
3rd Quartile	4.57	13.19	13.19	7.17	12.38	9.87	6.95
95th Percentile	3.06	10.14	10.14	3.94	9.59	7.60	5.62

Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard MidCap Index Instl	19.28 (18)	11.24 (78)	-1.30 (23)	13.79 (10)	35.20 (46)	16.03 (46)	-1.91 (31)
● Vanguard Spliced Mid Cap Index	19.30 (17)	11.25 (78)	-1.28 (23)	13.83 (10)	35.21 (46)	16.04 (45)	-1.91 (31)
5th Percentile	23.53	21.65	1.76	14.72	41.82	23.77	2.40
1st Quartile	18.46	17.97	-1.39	11.80	37.18	17.88	-1.55
Median	15.60	14.90	-3.18	8.99	34.77	15.71	-3.36
3rd Quartile	13.19	11.62	-6.20	6.06	31.46	12.91	-5.84
95th Percentile	10.14	5.95	-10.92	0.88	26.29	8.84	-9.99

## Vanguard MidCap Index Instl

### Fund Information

Fund Name :	Vanguard Index Funds: Vanguard Mid-Cap Index Fund; Institutional Plus Shares	Portfolio Assets :	\$97,595 Million
Fund Family :	Vanguard Group Inc	Portfolio Manager :	Butler/Johnson
Ticker :	VMCPX	PM Tenure :	2010--2016
Inception Date :	12/15/2010	Fund Style :	IM U.S. Mid Cap Core Equity (MF)
Fund Assets :	\$12,612 Million	Style Benchmark :	S&P MidCap 400

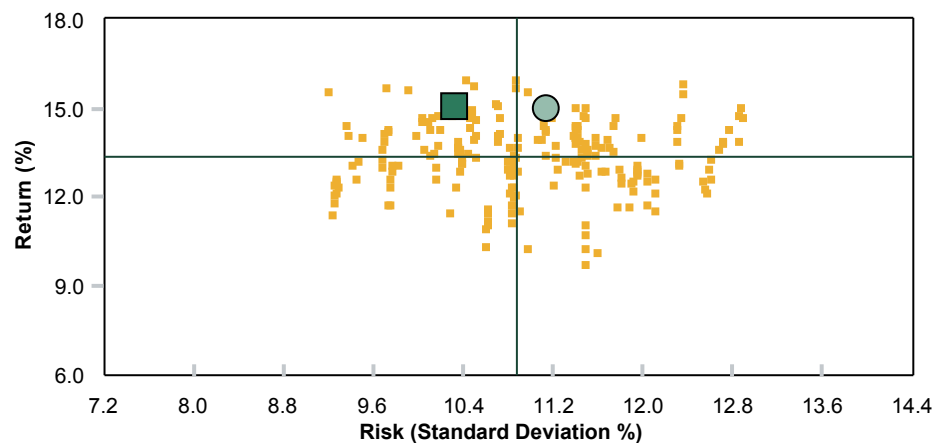
### Fund Investment Policy

The Fund seeks to track the performance of a benchmark index that measures the investment return of mid-capitalization stocks. The Fund employs a "passive management" approach designed to track the performance of the CRSP US Mid Cap Index, a broadly diversified index of stocks of medium-size U.S. companies.

### Historical Statistics (01/01/13 - 12/31/17) \*

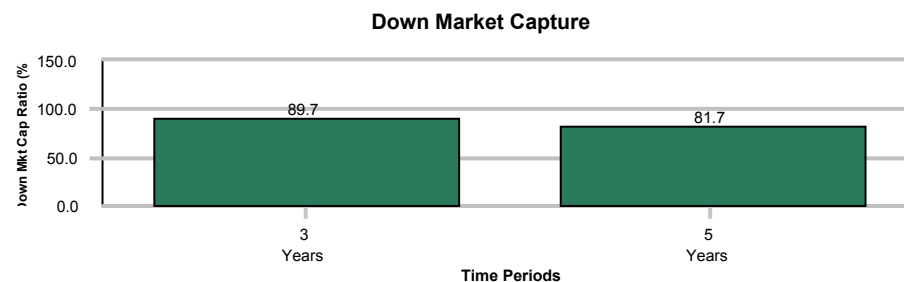
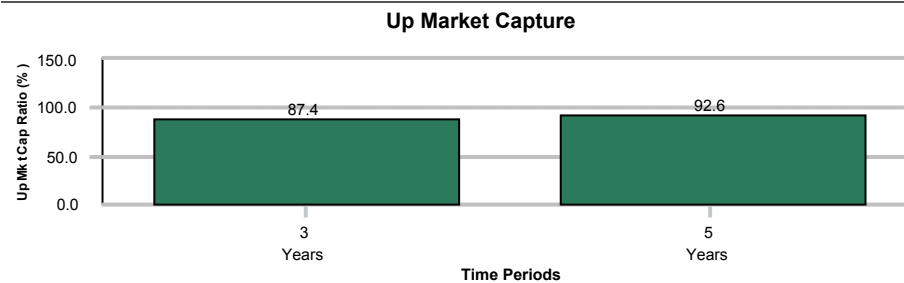
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard MidCap Index Instl	15.04	10.32	1.39	1.65	0.88	0.91	3.32	-0.02	10.32	01/01/2011
S&P MidCap 400	15.01	11.14	1.30	0.00	1.00	1.00	0.00	N/A	11.14	01/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	11.14	-1.30	0.00	01/01/2011

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard MidCap Index Instl	15.04	10.32
● S&P MidCap 400	15.01	11.14
— Median	13.40	10.87

### Up Down Market Capture



\* Monthly periodicity used.

# TIAA-CREF Small-Cap Equity Instl

Segal Score

**B**

Ticker: TISEX

Category: Small Growth

Subcategory: Small Core Growth

Expense Ratio: 0.42

Benchmark: Russell 2000 Growth

Inception Date: 10/01/2002

## S<sup>3</sup> Scores

Organization: B

Fees: A

Style/Portfolio Characteristics: A

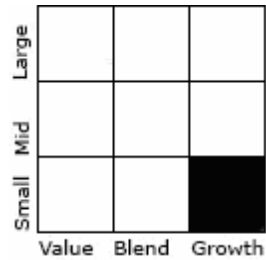
Performance: D

Risk: B

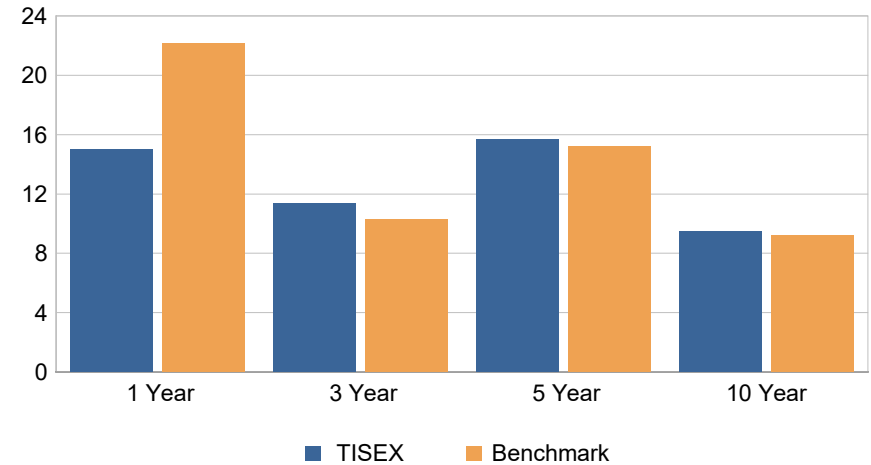
### Portfolio Characteristics

Fund AUM (\$mil):	3,824
No. of Stocks:	286
% Assets in Top 10:	5.38
Avg Market Cap (\$mil):	2,605.11
P/E Ratio (TTM)(Long):	25.59
P/B Ratio (TTM)(Long):	4.15
Turnover Ratio %:	85.00

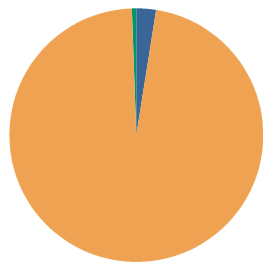
### Style



### Returns

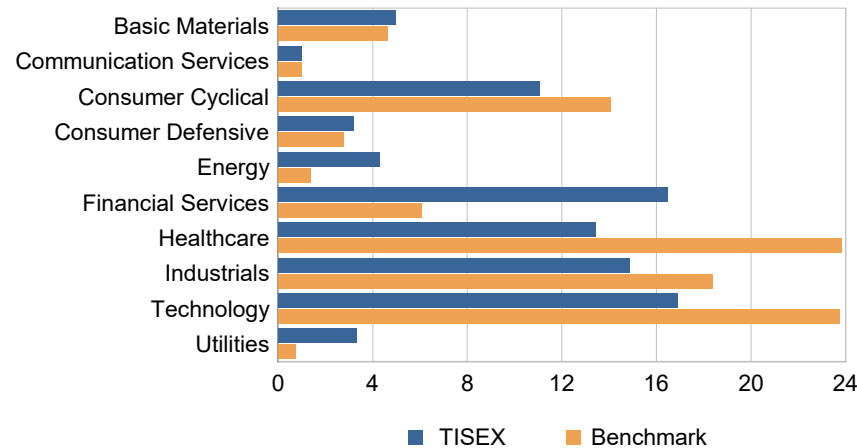


### Asset Allocation



US Equity	97.13
Non-US Equity	0.48
Bond	0.00
Other	0.00
Cash	2.39

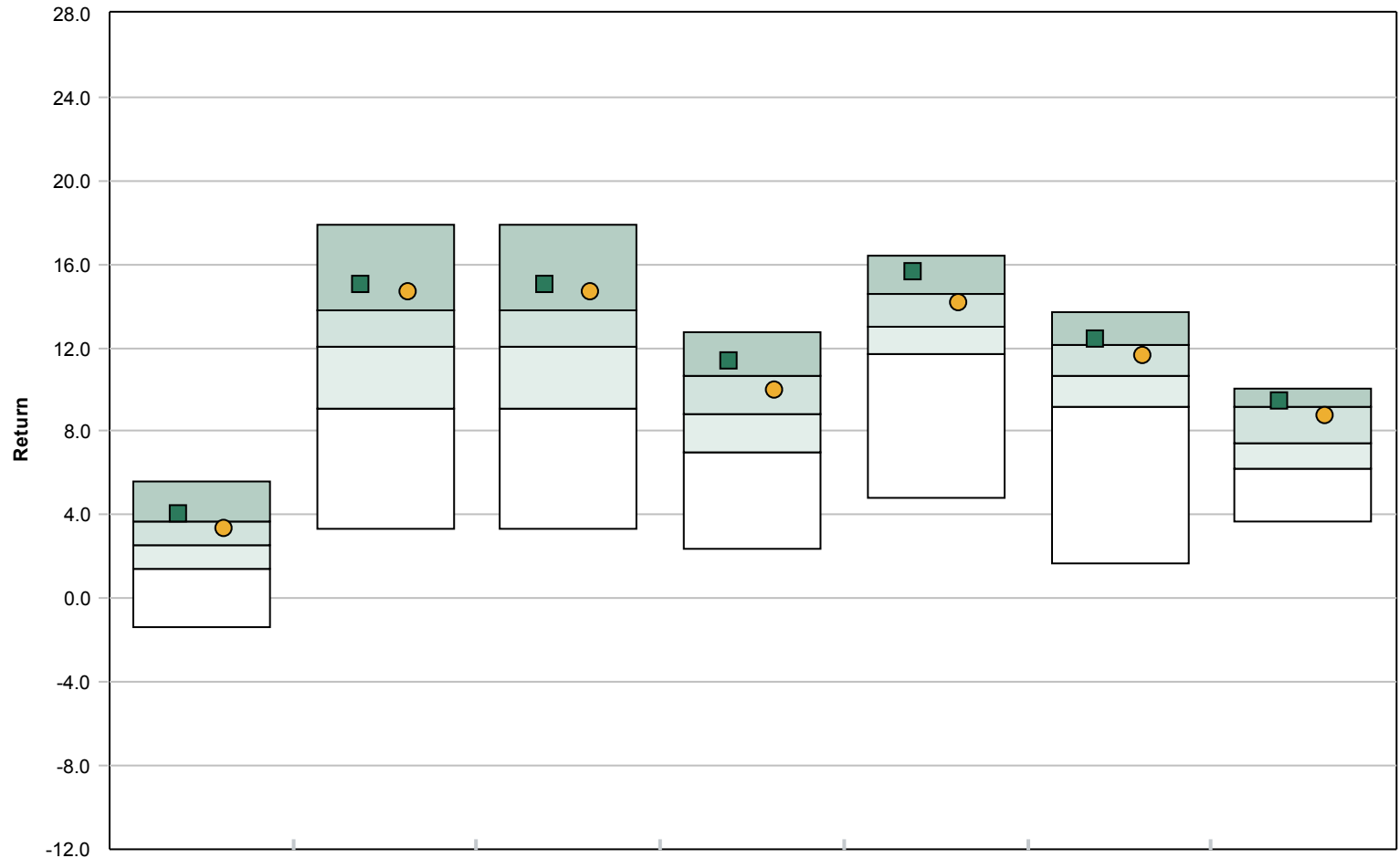
### Sector Allocation



### Risk Metrics

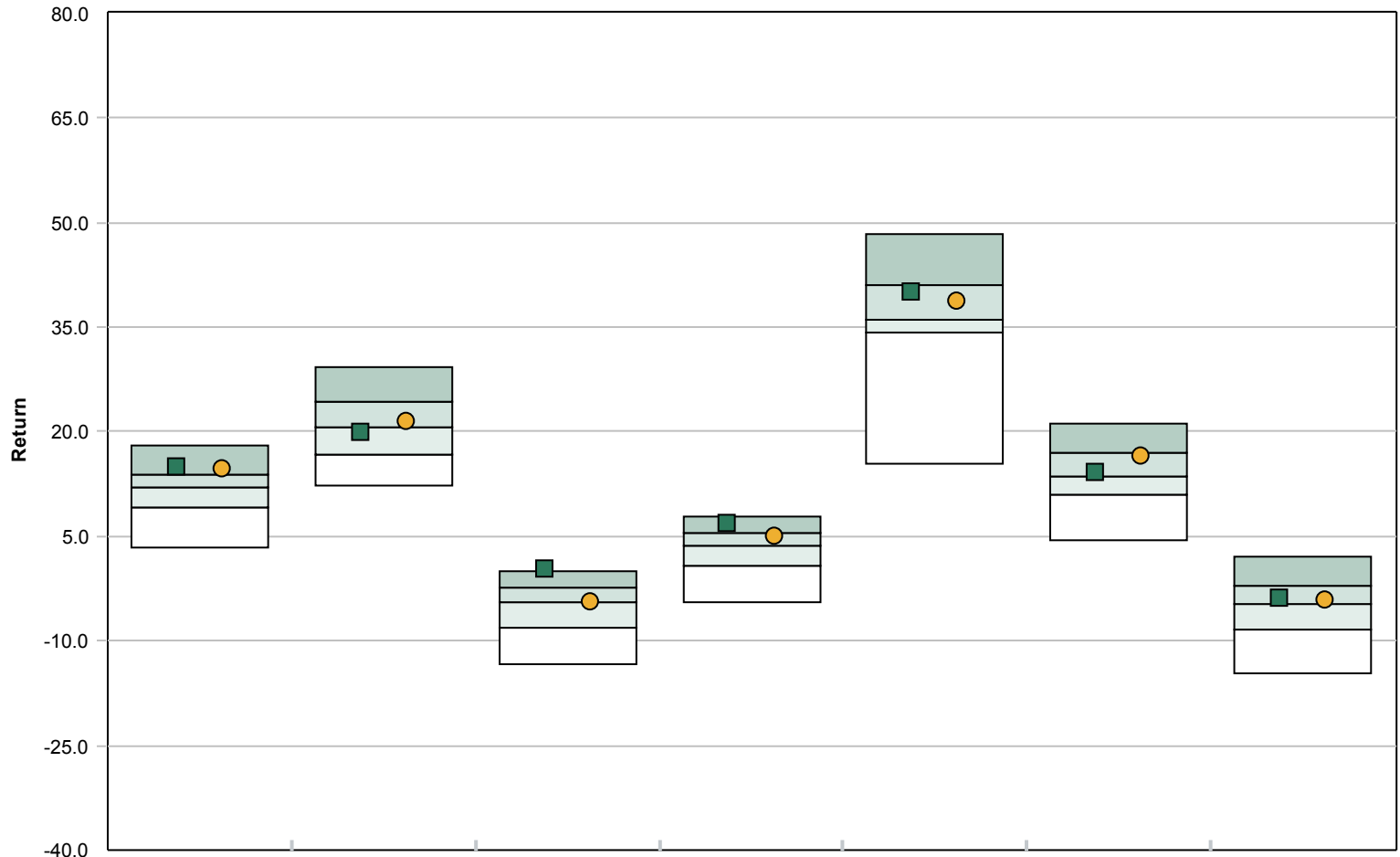
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	13.95	13.78
5 Year:	13.45	13.70
10 Year:	19.58	19.40
<b>Information Ratio</b>		
3 Year:	0.18	-0.07
5 Year:	0.08	-0.21
10 Year:	0.05	-0.09
<b>Downside Capture</b>		
3 Year:	86.16	88.15
5 Year:	83.38	90.55
10 Year:	92.66	92.94

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Small Cap Equity Instl Class	4.03 (17)	15.01 (20)	15.01 (20)	11.38 (19)	15.64 (10)	12.40 (19)	9.45 (16)
● Russell 2000 Index	3.34 (39)	14.65 (21)	14.65 (21)	9.96 (38)	14.12 (34)	11.62 (31)	8.71 (34)
5th Percentile	5.64	17.93	17.93	12.75	16.44	13.73	10.04
1st Quartile	3.67	13.82	13.82	10.66	14.55	12.13	9.14
Median	2.56	12.03	12.03	8.86	13.05	10.69	7.41
3rd Quartile	1.45	9.09	9.09	7.00	11.71	9.14	6.26
95th Percentile	-1.34	3.31	3.31	2.35	4.80	1.67	3.67

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Small Cap Equity Instl Class	15.01 (20)	19.97 (53)	0.14 (5)	6.92 (12)	39.99 (32)	14.07 (47)	-3.90 (45)
● Russell 2000 Index	14.65 (21)	21.31 (46)	-4.41 (50)	4.89 (35)	38.82 (36)	16.35 (29)	-4.18 (47)
5th Percentile	17.93	29.15	0.12	7.85	48.42	21.08	2.14
1st Quartile	13.82	24.40	-2.41	5.54	41.02	16.91	-2.03
Median	12.03	20.57	-4.42	3.53	36.11	13.58	-4.62
3rd Quartile	9.09	16.79	-8.10	0.74	34.17	11.05	-8.50
95th Percentile	3.31	12.32	-13.35	-4.54	15.41	4.48	-14.75

## TIAA-CREF Small Cap Equity Instl Class

### Fund Information

Fund Name :	TIAA-CREF Funds: Small-Cap Equity Fund; Institutional Class Shares	Portfolio Assets :	\$3,938 Million
Fund Family :	TIAA-CREF	Portfolio Manager :	Cao/Chen
Ticker :	TISEX	PM Tenure :	2008--2016
Inception Date :	10/01/2002	Fund Style :	IM U.S. Small Cap Core Equity (MF)
Fund Assets :	\$2,924 Million	Style Benchmark :	Russell 2000 Index
Portfolio Turnover :	86%		

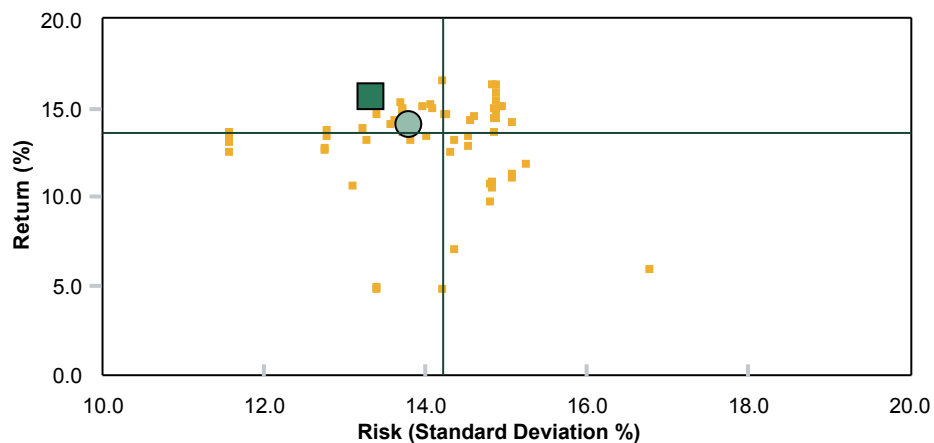
### Fund Investment Policy

The Fund seeks a favorable long-term total return, mainly through capital appreciation, primarily from equity securities of smaller domestic companies. The Fund invests at least 80% in equity securities of smaller domestic companies, across a wide range of sectors, growth rates and valuations.

### Historical Statistics (01/01/13 - 12/31/17) \*

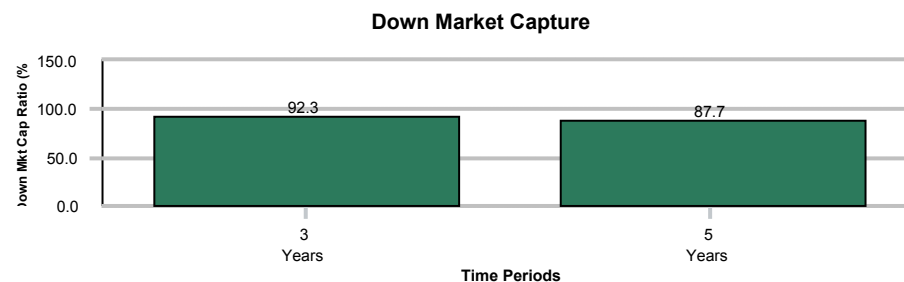
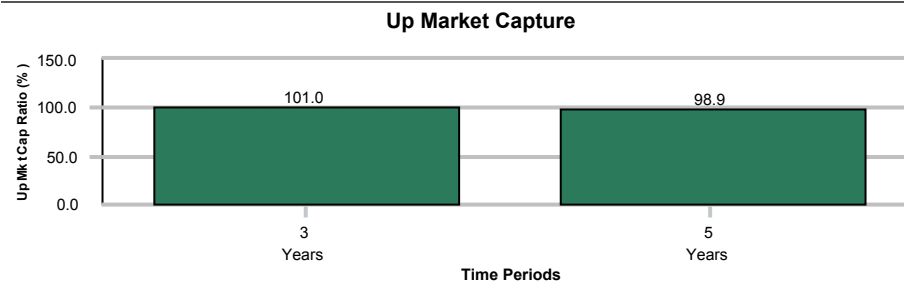
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Small Cap Equity Instl Class	15.64	13.33	1.14	1.92	0.96	0.98	2.07	0.61	13.33	11/01/2002
Russell 2000 Index	14.12	13.80	1.01	0.00	1.00	1.00	0.00	N/A	13.79	11/01/2002
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	13.79	-1.01	0.00	11/01/2002

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ TIAA-CREF Small Cap Equity Instl Class	15.64	13.33
● Russell 2000 Index	14.12	13.80
— Median	13.62	14.21

### Up Down Market Capture



\* Monthly periodicity used.



# TIAA-CREF Small-Cap Blend Idx Inst

Segal Score  
**B**

Ticker: TISBX

Category: Small Blend

Subcategory: Small Core

Expense Ratio: 0.06

Benchmark: Russell 2000

Inception Date: 10/01/2002

## S<sup>3</sup> Scores

Organization: B

Fees: A

Style/Portfolio Characteristics: B

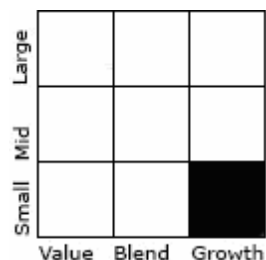
Performance: A

Risk: C

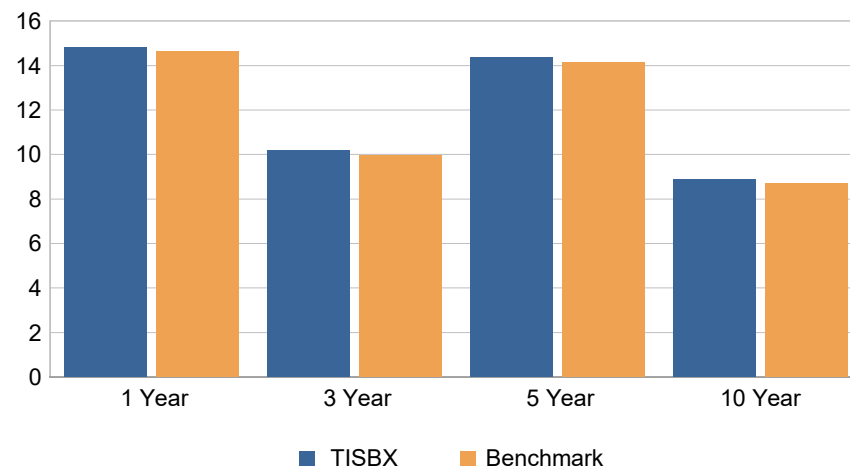
### Portfolio Characteristics

Fund AUM (\$mil):	2,439
No. of Stocks:	1974
% Assets in Top 10:	3.00
Avg Market Cap (\$mil):	1,889.49
P/E Ratio (TTM)(Long):	22.40
P/B Ratio (TTM)(Long):	2.25
Turnover Ratio %:	24.00

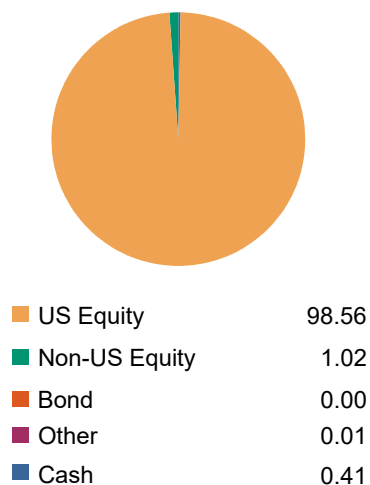
### Style



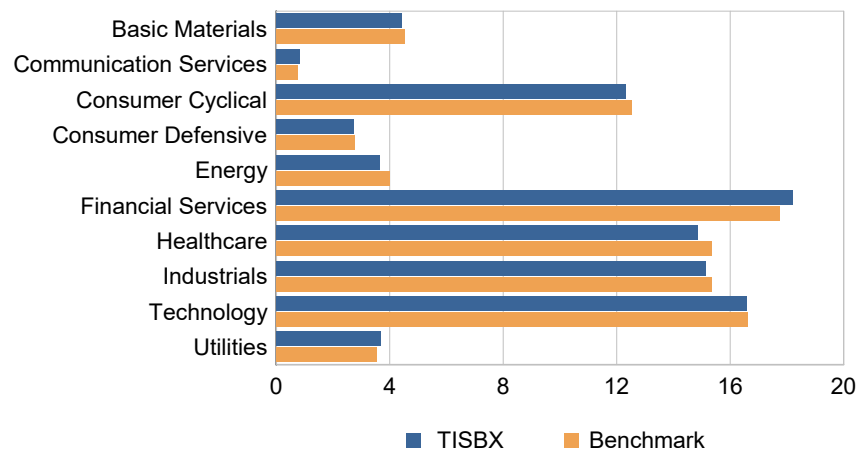
### Returns



### Asset Allocation



### Sector Allocation



### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	14.09	13.54
5 Year:	13.89	13.45
10 Year:	19.85	19.40
<b>Information Ratio</b>		
3 Year:	4.13	-0.25
5 Year:	3.93	-0.19
10 Year:	1.02	-0.11
<b>Downside Capture</b>		
3 Year:	99.31	90.07
5 Year:	99.32	90.59
10 Year:	99.51	93.38

# TIAA CREF Small Cap Blend Index Fund

## Fund Information

Fund Name :	TIAA-CREF Funds: Small-Cap Blend Index Fund; Institutional Class Shares	Portfolio Assets :	\$2,417 Million
Fund Family :	TIAA-CREF	Portfolio Manager :	Campagna/Liao
Ticker :	TISBX	PM Tenure :	2005--2014
Inception Date :	10/01/2002	Fund Style :	IM U.S. Small Cap Core Equity (MF)
Fund Assets :	\$1,792 Million	Style Benchmark :	Russell 2000 Index

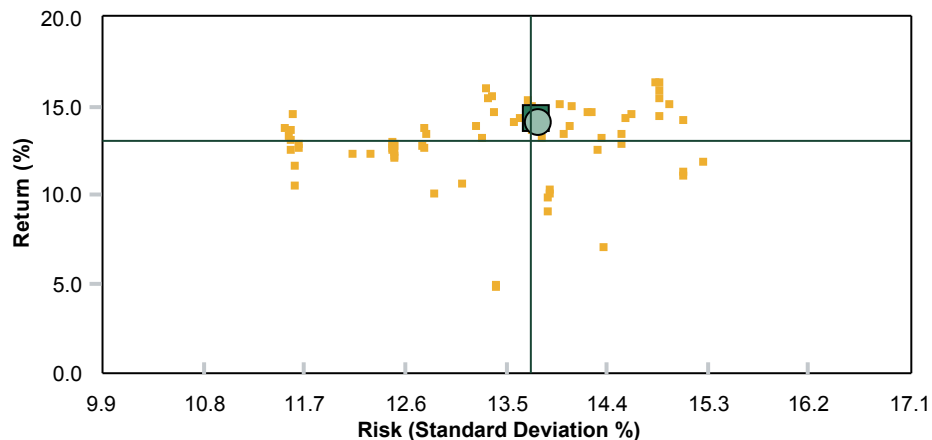
## Fund Investment Policy

The Fund seeks a favorable long-term total return. Under normal circumstances, the Fund invests at least 80% of its assets (net assets, plus the amount of any borrowings for investment purposes) in securities of its benchmark index (the Russell 2000 Index) and in small-cap securities.

## Historical Statistics (01/01/13 - 12/31/17) \*

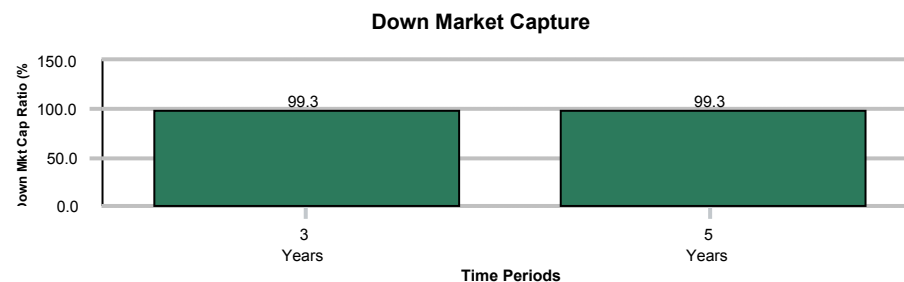
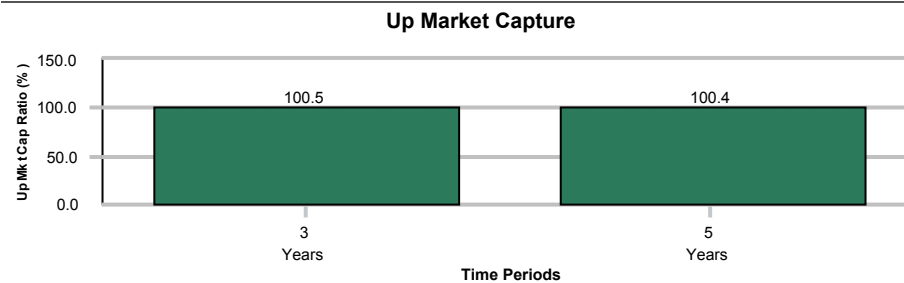
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA CREF Small Cap Blend Index Fund	14.36	13.77	1.03	0.23	1.00	1.00	0.09	2.18	13.77	11/01/2002
Russell 2000 Index	14.12	13.80	1.01	0.00	1.00	1.00	0.00	N/A	13.79	11/01/2002
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	13.79	-1.01	0.00	11/01/2002

## Peer Group Scattergram (01/01/13 to 12/31/17)



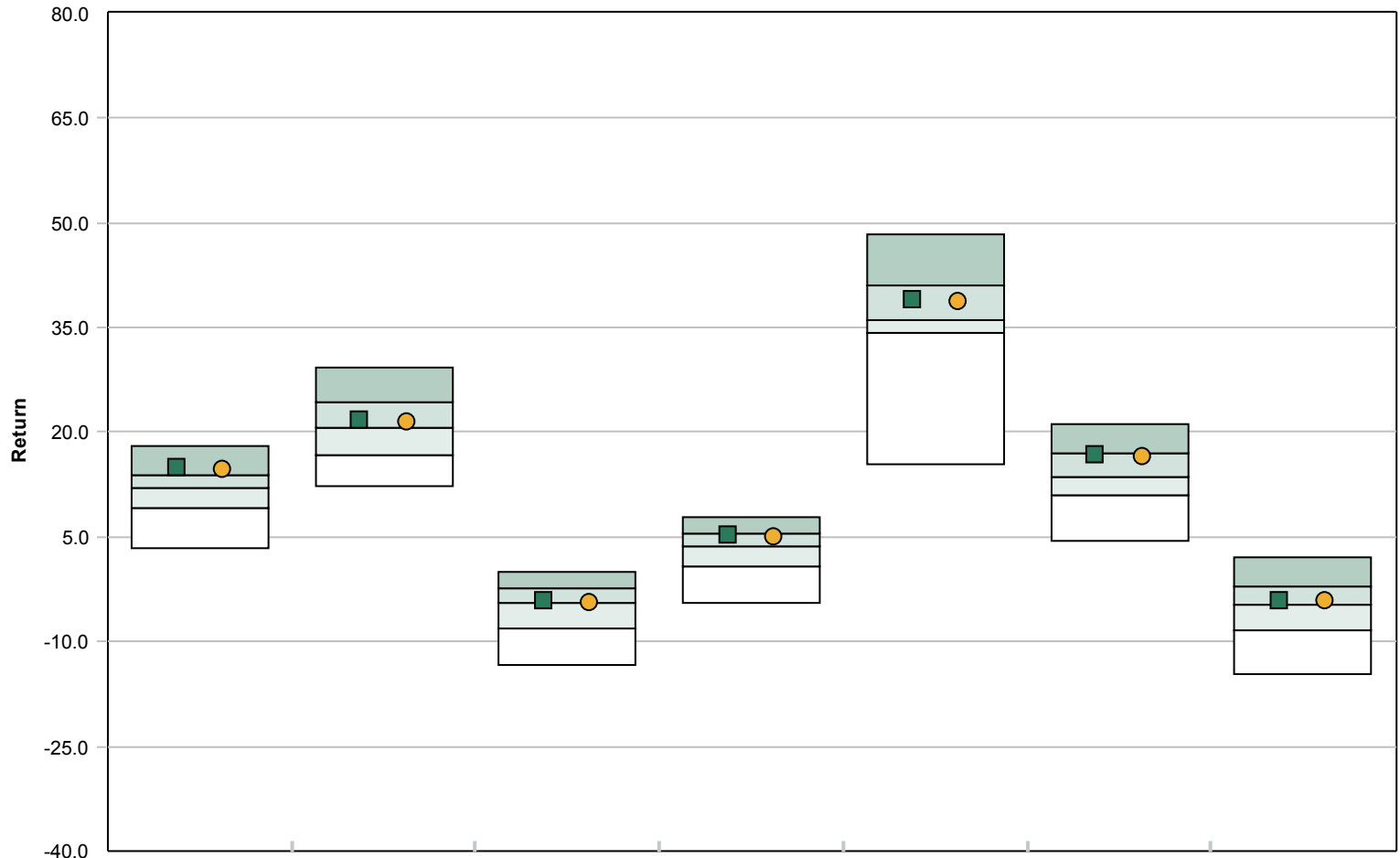
	Return	Standard Deviation
■ TIAA CREF Small Cap Blend Index Fund	14.36	13.77
● Russell 2000 Index	14.12	13.80
— Median	13.05	13.73

## Up Down Market Capture



\* Monthly periodicity used.

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA CREF Small Cap Blend Index Fund	14.83 (21)	21.58 (44)	-4.14 (48)	5.15 (32)	38.98 (35)	16.61 (28)	-4.12 (47)
● Russell 2000 Index	14.65 (21)	21.31 (46)	-4.41 (50)	4.89 (35)	38.82 (36)	16.35 (29)	-4.18 (47)
5th Percentile	17.93	29.15	0.12	7.85	48.42	21.08	2.14
1st Quartile	13.82	24.40	-2.41	5.54	41.02	16.91	-2.03
Median	12.03	20.57	-4.42	3.53	36.11	13.58	-4.62
3rd Quartile	9.09	16.79	-8.10	0.74	34.17	11.05	-8.50
95th Percentile	3.31	12.32	-13.35	-4.54	15.41	4.48	-14.75

# TIAA CREF Small Cap Blend Index Fund

## Fund Information

Fund Name :	TIAA-CREF Funds: Small-Cap Blend Index Fund; Institutional Class Shares	Portfolio Assets :	\$2,491 Million
Fund Family :	TIAA-CREF	Portfolio Manager :	Campagna/Liao
Ticker :	TISBX	PM Tenure :	2005--2014
Inception Date :	10/01/2002	Fund Style :	IM U.S. Small Cap Core Equity (MF)
Fund Assets :	\$1,865 Million	Style Benchmark :	Russell 2000 Index

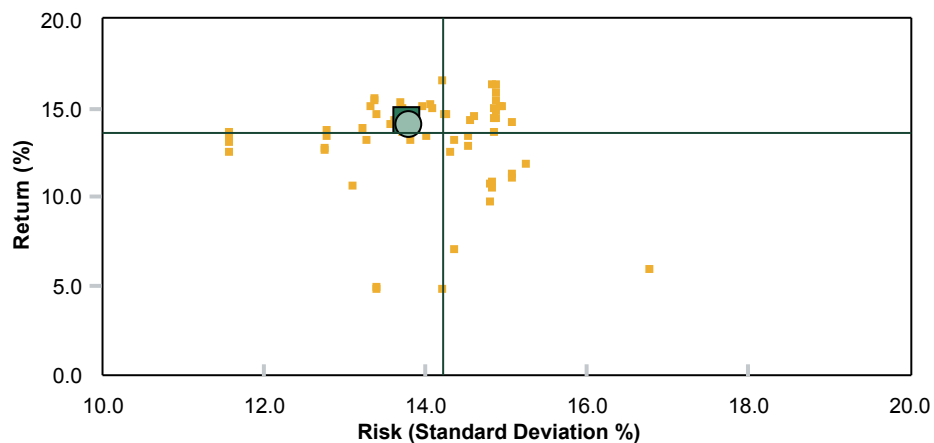
## Fund Investment Policy

The Fund seeks a favorable long-term total return. Under normal circumstances, the Fund invests at least 80% of its assets (net assets, plus the amount of any borrowings for investment purposes) in securities of its benchmark index (the Russell 2000 Index) and in small-cap securities.

## Historical Statistics (01/01/13 - 12/31/17) \*

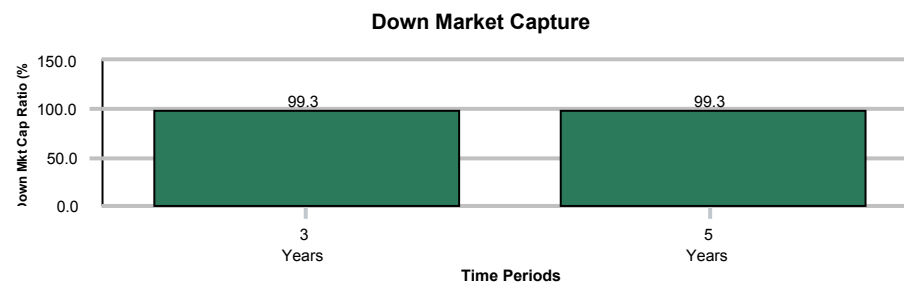
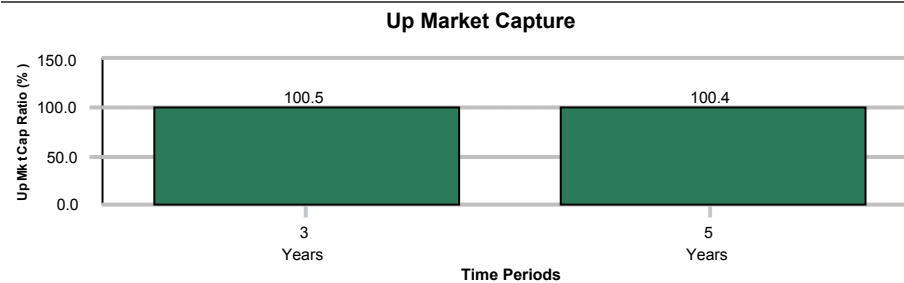
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA CREF Small Cap Blend Index Fund	14.36	13.77	1.03	0.23	1.00	1.00	0.09	2.18	13.77	11/01/2002
Russell 2000 Index	14.12	13.80	1.01	0.00	1.00	1.00	0.00	N/A	13.79	11/01/2002
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	13.79	-1.01	0.00	11/01/2002

## Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ TIAA CREF Small Cap Blend Index Fund	14.36	13.77
● Russell 2000 Index	14.12	13.80
— Median	13.62	14.21

## Up Down Market Capture



\* Monthly periodicity used.

# American Funds Europacific Growth R6

Segal Score

A

Ticker: RERGX

Category: Foreign Large Growth

Subcategory: Foreign Large Growth

Expense Ratio: 0.50

Benchmark: MSCI EAFE Growth

Inception Date: 04/16/1984

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: C

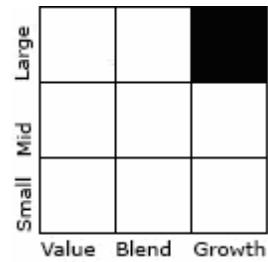
Performance: B

Risk: A

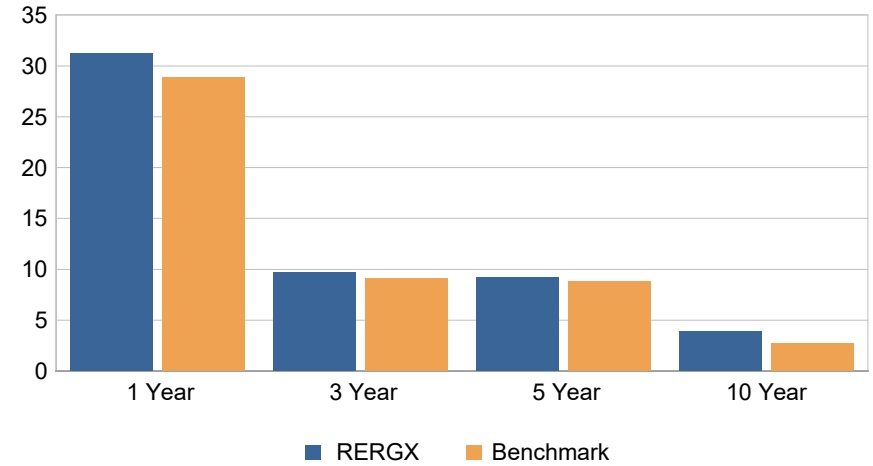
### Portfolio Characteristics

Fund AUM (\$mil):	161,942
No. of Stocks:	246
% Assets in Top 10:	15.75
Avg Market Cap (\$mil):	49,692.31
P/E Ratio (TTM)(Long):	22.27
P/B Ratio (TTM)(Long):	2.83
Turnover Ratio %:	28.00

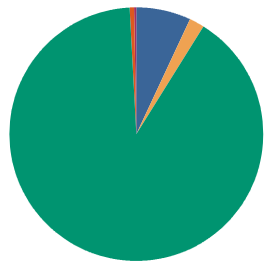
### Style



### Returns

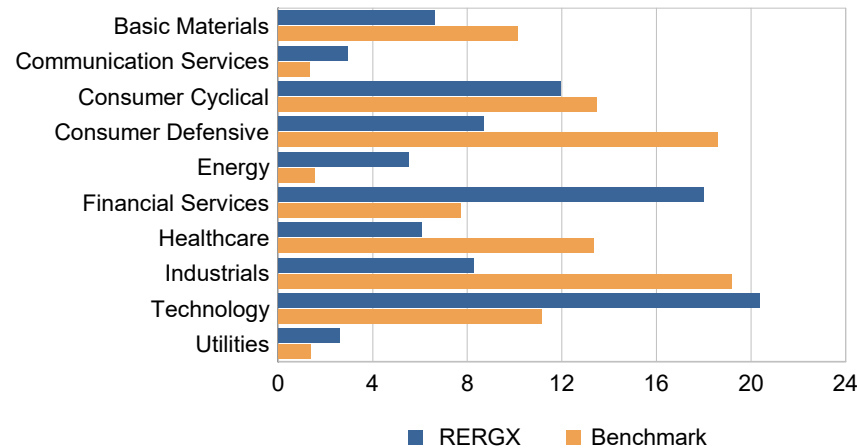


### Asset Allocation



US Equity	1.74
Non-US Equity	90.44
Bond	0.63
Other	0.17
Cash	7.03

### Sector Allocation

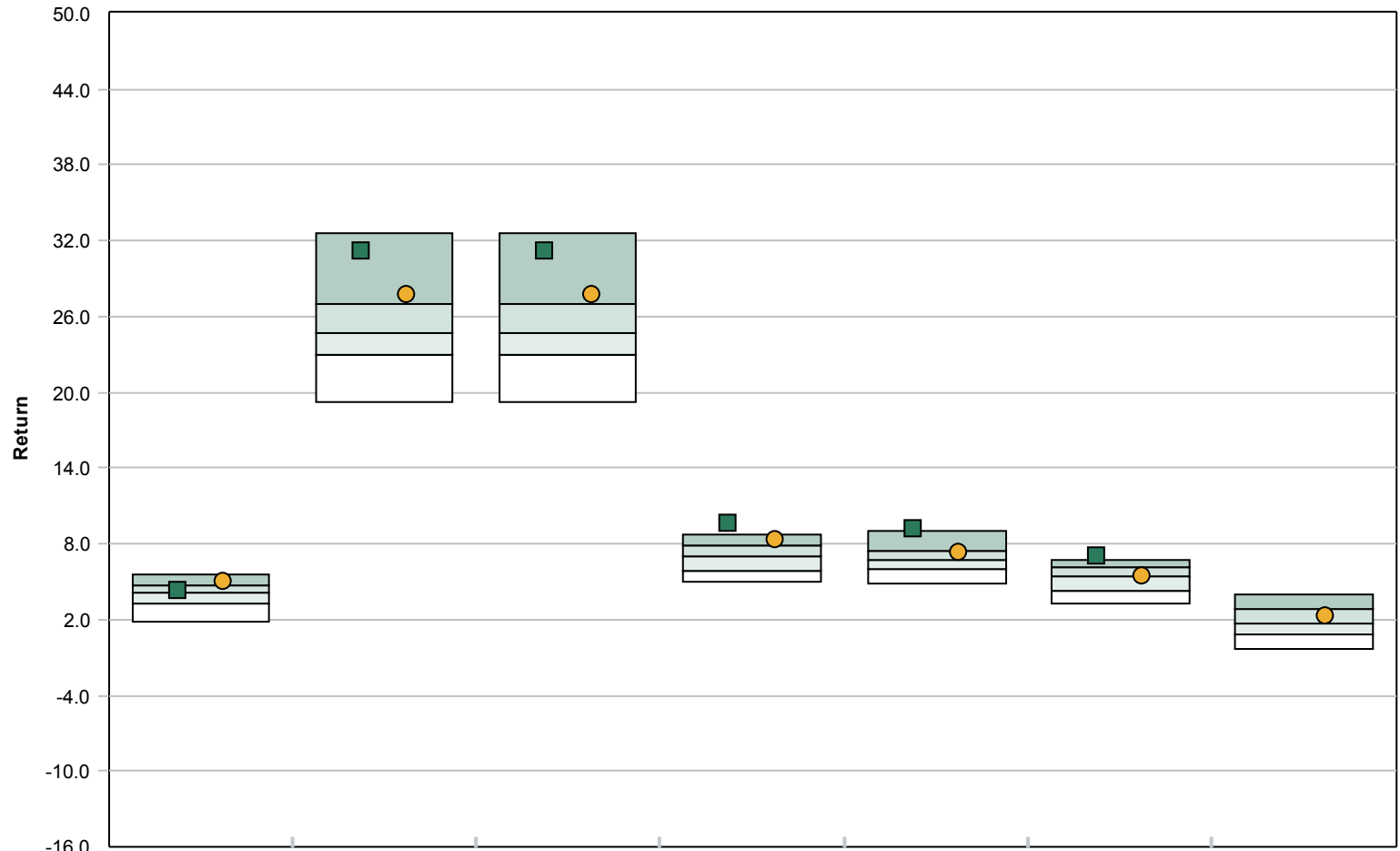


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.81	11.33
5 Year:	10.53	10.99
10 Year:	17.43	18.29
<b>Information Ratio</b>		
3 Year:	0.13	-0.03
5 Year:	0.11	-0.17
10 Year:	0.34	0.01
<b>Downside Capture</b>		
3 Year:	75.42	84.53
5 Year:	79.94	89.76
10 Year:	91.93	97.39

American Funds EuroPacific Growth R6

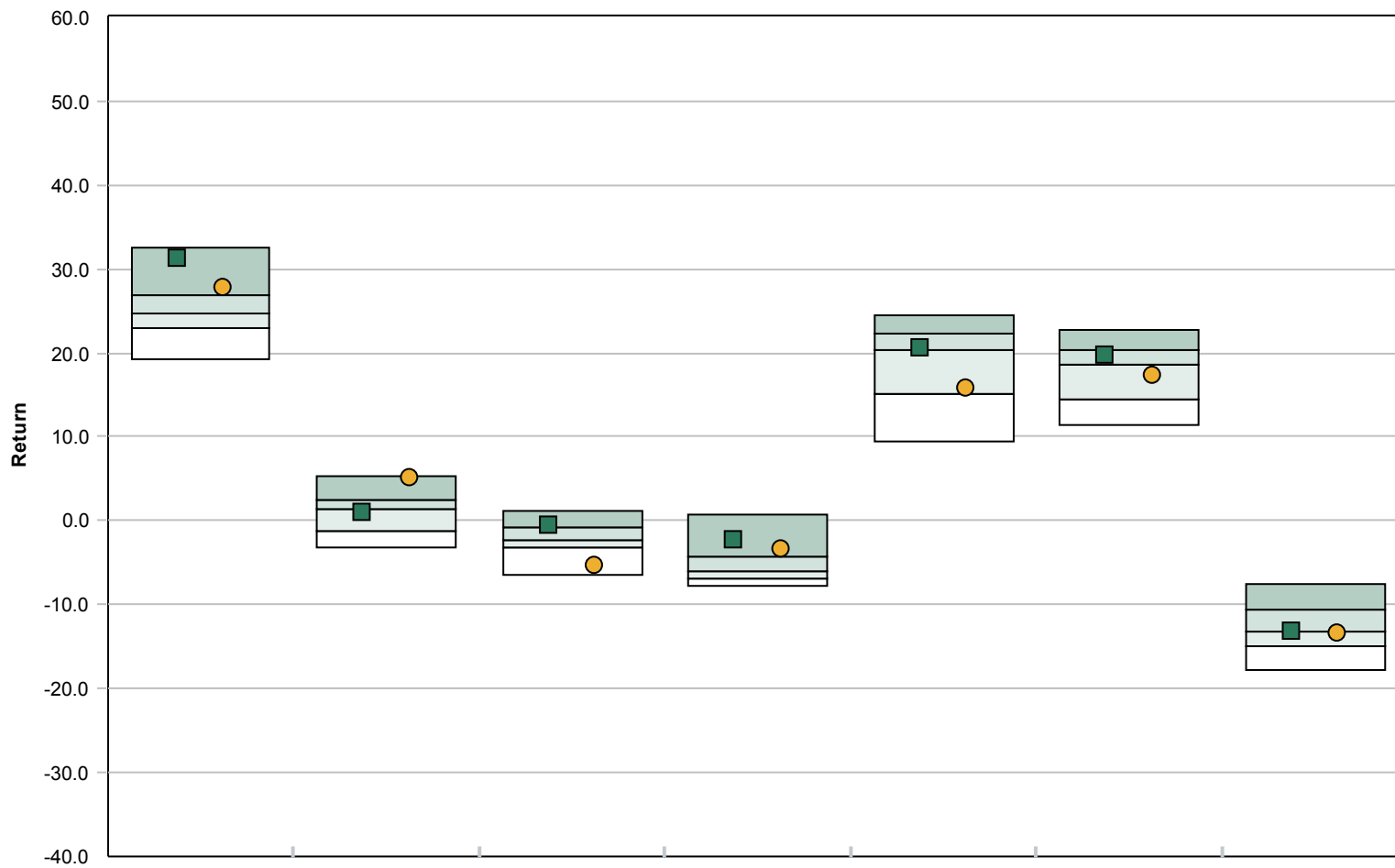
Peer Group Analysis - IM International Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ American Funds EuroPacific Growth R6	4.23 (47)	31.17 (8)	31.17 (8)	9.66 (1)	9.21 (3)	7.05 (2)	N/A
● MSCI AC World ex USA	5.06 (18)	27.77 (21)	27.77 (21)	8.33 (14)	7.28 (31)	5.41 (46)	2.31 (36)
5th Percentile	5.60	32.63	32.63	8.76	9.07	6.70	4.01
1st Quartile	4.76	26.99	26.99	7.90	7.44	6.10	2.83
Median	4.18	24.71	24.71	7.07	6.76	5.36	1.65
3rd Quartile	3.26	22.96	22.96	5.88	5.94	4.32	0.77
95th Percentile	1.90	19.28	19.28	4.98	4.84	3.26	-0.34

American Funds EuroPacific Growth R6

Peer Group Analysis - IM International Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ American Funds EuroPacific Growth R6	31.17 (8)	1.01 (59)	-0.48 (22)	-2.29 (21)	20.58 (47)	19.64 (35)	-13.31 (54)
● MSCI AC World ex USA	27.77 (21)	5.01 (6)	-5.25 (90)	-3.44 (22)	15.78 (73)	17.39 (60)	-13.33 (54)
5th Percentile	32.63	5.36	1.14	0.68	24.56	22.70	-7.49
1st Quartile	26.99	2.56	-0.88	-4.29	22.26	20.31	-10.68
Median	24.71	1.43	-2.27	-6.02	20.41	18.63	-13.13
3rd Quartile	22.96	-1.15	-3.11	-6.84	15.20	14.49	-14.92
95th Percentile	19.28	-3.25	-6.37	-7.86	9.48	11.41	-17.76

## American Funds EuroPacific Growth R6

### Fund Information

Fund Name : EuroPacific Growth Fund; Class R6 Shares  
 Fund Family : American Funds  
 Ticker : RERGX  
 Inception Date : 05/01/2009  
 Fund Assets : \$64,731 Million  
 Portfolio Turnover : 36%

Portfolio Assets : \$160,376 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM International Large Cap Core Equity (MF)  
 Style Benchmark : MSCI EAFE (Net)

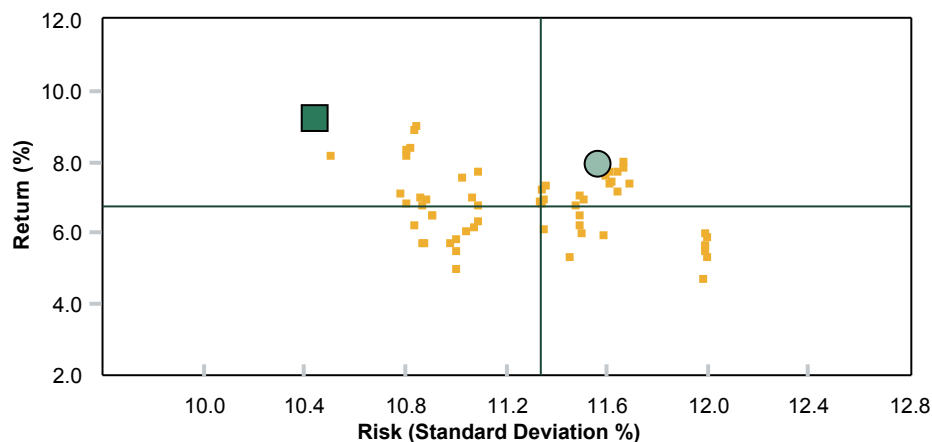
### Fund Investment Policy

The Fund seeks to provide long-term growth of capital by investing in companies based outside the United States. The Fund invests in companies based chiefly in Europe and the Pacific Basin, ranging from small firms to large corporations.

### Historical Statistics (01/01/13 - 12/31/17) \*

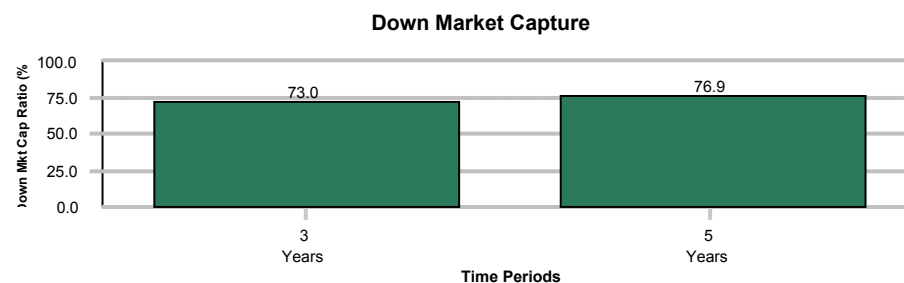
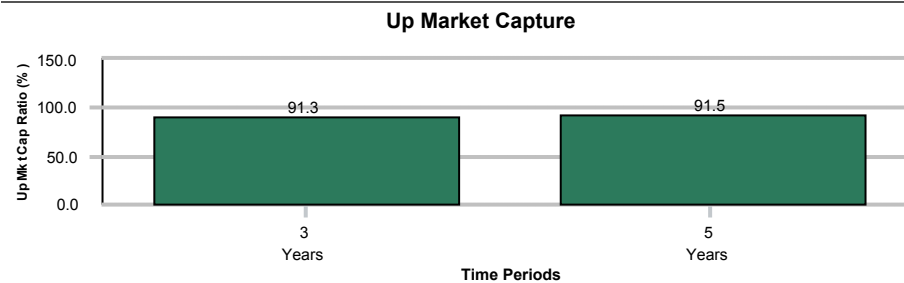
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
American Funds EuroPacific Growth R6	9.21	10.44	0.88	2.33	0.85	0.89	3.81	0.29	10.43	06/01/2009
MSCI EAFE (Net)	7.90	11.57	0.70	0.00	1.00	1.00	0.00	N/A	11.56	06/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.02	11.56	-0.70	0.00	06/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
American Funds EuroPacific Growth R6	9.21	10.44
MSCI EAFE (Net)	7.90	11.57
Median	6.75	11.34

### Up Down Market Capture



\* Monthly periodicity used.



# Vanguard Total Intl Stock Index I

Segal Score  
**B**

Ticker: VTSNX

Category: Foreign Large Blend

Subcategory: Foreign Large Core

Expense Ratio: 0.09

Benchmark: MSCI EAFE

Inception Date: 04/29/1996

## S<sup>3</sup> Scores

Organization: B

Fees: A

Style/Portfolio Characteristics: B

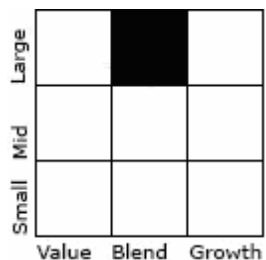
Performance: B

Risk: C

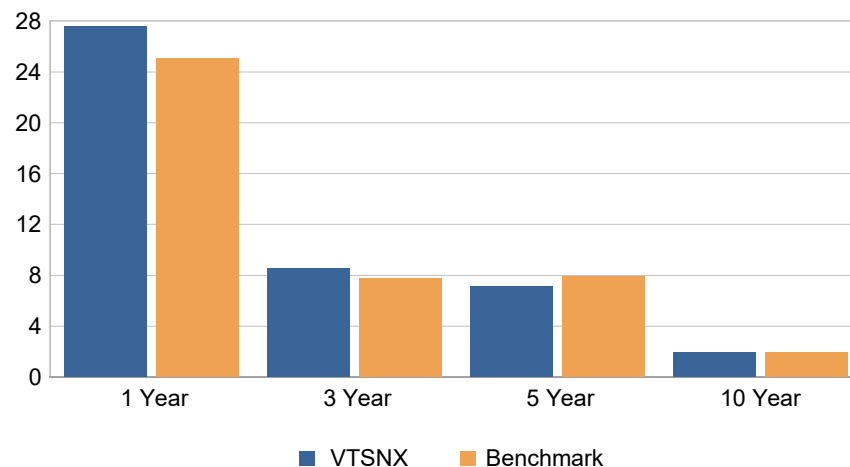
### Portfolio Characteristics

Fund AUM (\$mil):	331,182
No. of Stocks:	6101
% Assets in Top 10:	11.38
Avg Market Cap (\$mil):	23,335.87
P/E Ratio (TTM)(Long):	17.62
P/B Ratio (TTM)(Long):	1.72
Turnover Ratio %:	5.00

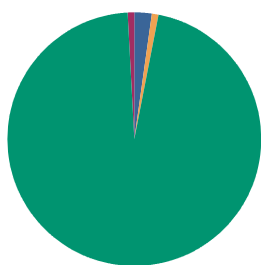
### Style



### Returns

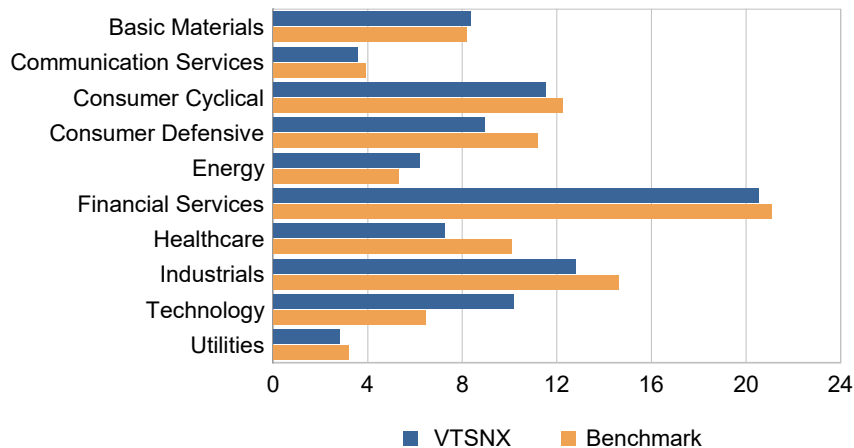


### Asset Allocation



US Equity	0.84
Non-US Equity	96.04
Bond	0.04
Other	0.81
Cash	2.27

### Sector Allocation

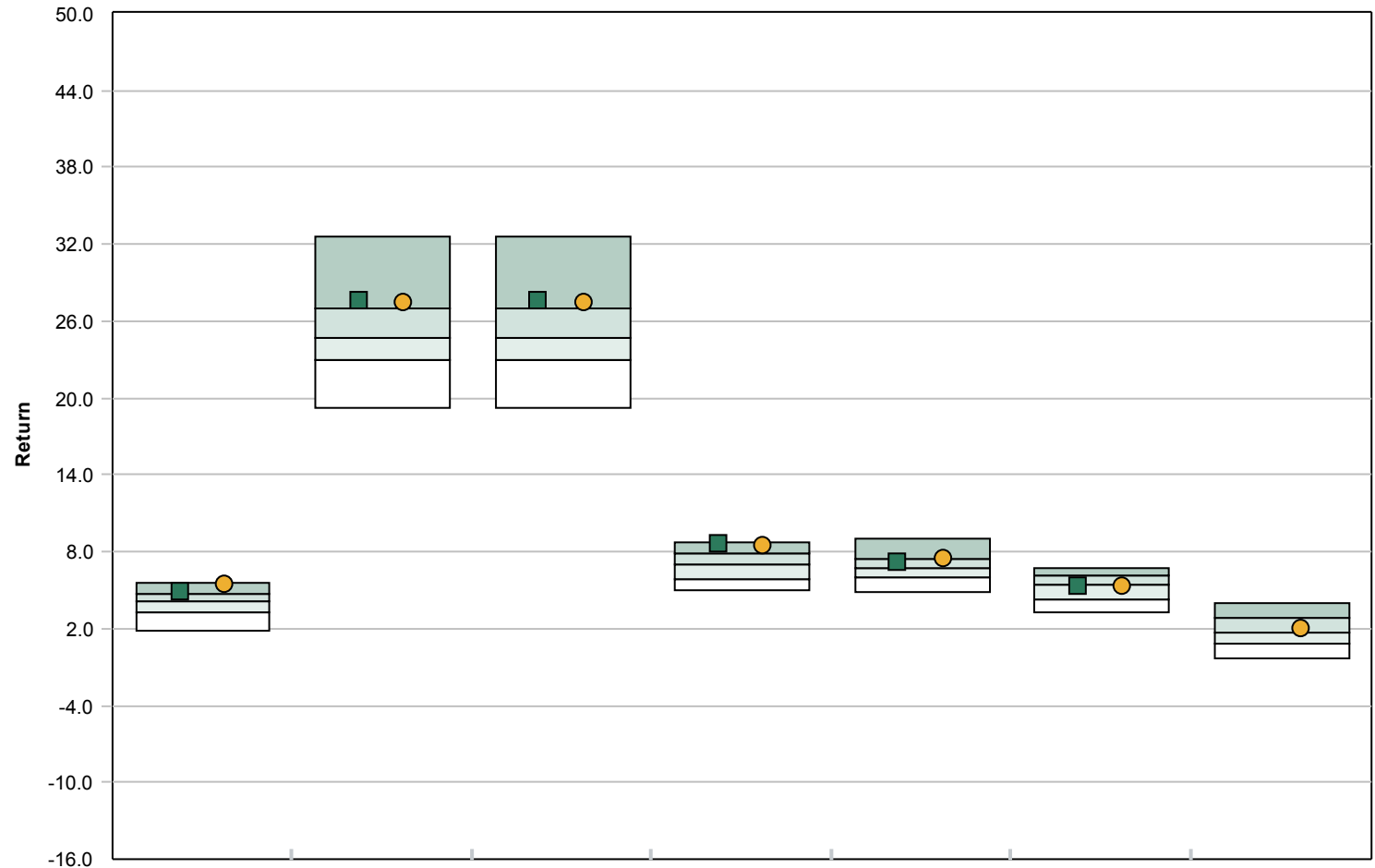


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	11.27	11.23
5 Year:	11.11	11.06
10 Year:	19.21	18.69
<b>Information Ratio</b>		
3 Year:	0.25	-0.10
5 Year:	-0.26	-0.25
10 Year:	0.00	-0.09
<b>Downside Capture</b>		
3 Year:	85.33	88.70
5 Year:	90.47	91.62
10 Year:	99.70	99.34

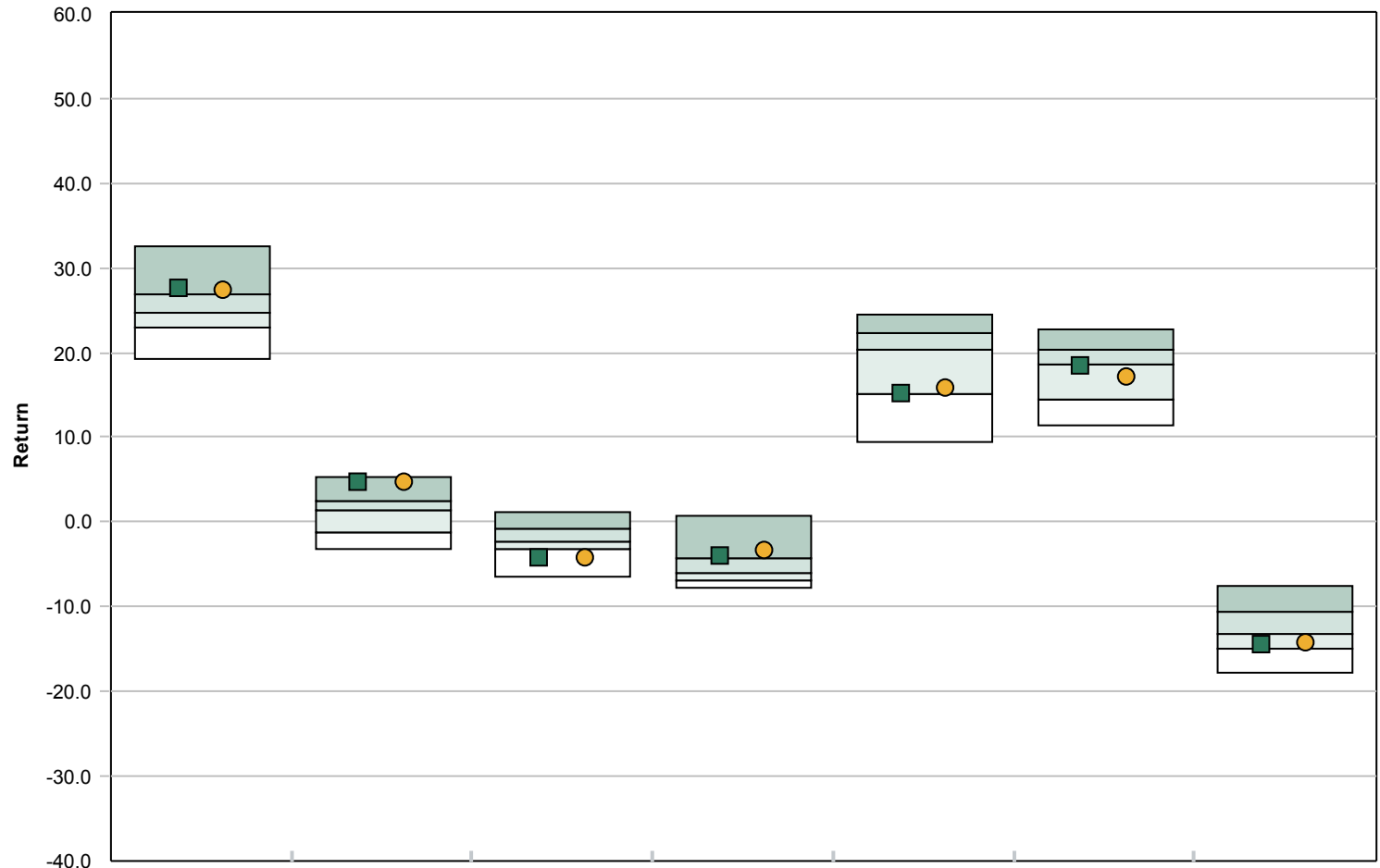
Vanguard Total Intl Stock Instl

Peer Group Analysis - IM International Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Total Intl Stock Instl	4.87 (21)	27.55 (21)	27.55 (21)	8.54 (8)	7.14 (34)	5.21 (52)	N/A
● Vanguard Spliced Total Int'l Stock Index (Net)	5.36 (15)	27.41 (21)	27.41 (21)	8.49 (8)	7.39 (26)	5.27 (51)	1.95 (43)
5th Percentile	5.60	32.63	32.63	8.76	9.07	6.70	4.01
1st Quartile	4.76	26.99	26.99	7.90	7.44	6.10	2.83
Median	4.18	24.71	24.71	7.07	6.76	5.36	1.65
3rd Quartile	3.26	22.96	22.96	5.88	5.94	4.32	0.77
95th Percentile	1.90	19.28	19.28	4.98	4.84	3.26	-0.34

Peer Group Analysis - IM International Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Total Intl Stock Instl	27.55 (21)	4.70 (7)	-4.24 (83)	-4.15 (25)	15.15 (76)	18.28 (53)	-14.51 (70)
● Vanguard Spliced Total Int'l Stock Index (Net)	27.41 (21)	4.72 (7)	-4.29 (83)	-3.39 (22)	15.76 (73)	17.04 (61)	-14.31 (69)
5th Percentile	32.63	5.36	1.14	0.68	24.56	22.70	-7.49
1st Quartile	26.99	2.56	-0.88	-4.29	22.26	20.31	-10.68
Median	24.71	1.43	-2.27	-6.02	20.41	18.63	-13.13
3rd Quartile	22.96	-1.15	-3.11	-6.84	15.20	14.49	-14.92
95th Percentile	19.28	-3.25	-6.37	-7.86	9.48	11.41	-17.76

## Vanguard Total Intl Stock Instl

### Fund Information

Fund Name : Vanguard STAR Funds: Vanguard Total International Stock Index Fund; Institutional Shares  
 Fund Family : Vanguard Group Inc  
 Ticker : VTSNX  
 Inception Date : 11/29/2010  
 Fund Assets : \$30,462 Million

Portfolio Assets : \$323,618 Million  
 Portfolio Manager : Perre/Franquin  
 PM Tenure : 2010--2017  
 Fund Style : IM International Large Cap Core Equity (MF)  
 Style Benchmark : MSCI AC World ex USA

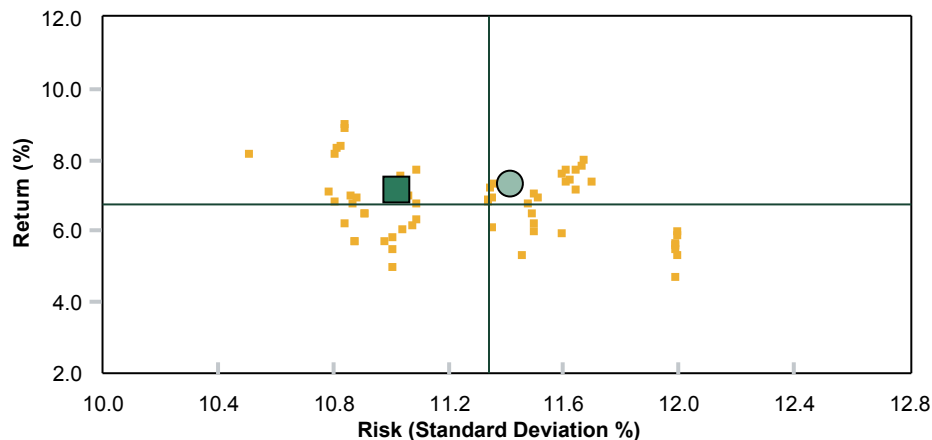
### Fund Investment Policy

The Fund seeks to track the performance of the FTSE Global All Cap ex US Index, a free-float-adjusted market capitalization weighted index designed to measure equity market performance of companies located in developed and emerging markets, excluding the United States.

### Historical Statistics (01/01/13 - 12/31/17) \*

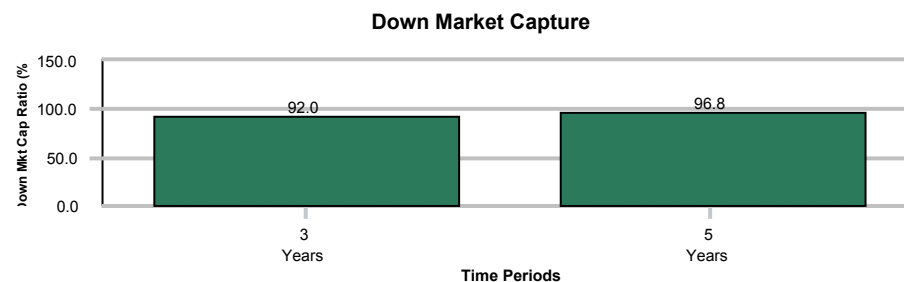
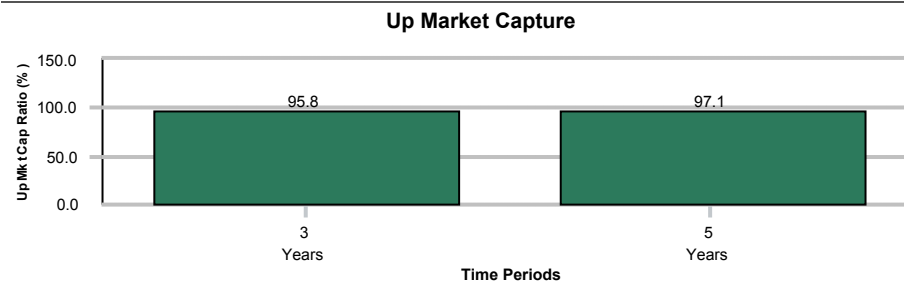
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Total Intl Stock Instl	7.14	11.02	0.66	0.15	0.96	0.98	1.58	-0.12	11.00	12/01/2010
MSCI AC World ex USA	7.28	11.41	0.65	0.00	1.00	1.00	0.00	N/A	11.39	12/01/2010
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.04	11.39	-0.65	0.00	12/01/2010

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard Total Intl Stock Instl	7.14	11.02
● MSCI AC World ex USA	7.28	11.41
— Median	6.75	11.34

### Up Down Market Capture



\* Monthly periodicity used.

# TIAA RSRA2-CREF Global Equities R2

Segal Score

**A**

Ticker:  
Expense Ratio:

Category: World Large Stock  
Benchmark: MSCI World

Subcategory: World Large Core  
Inception Date: 05/01/1992

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: A

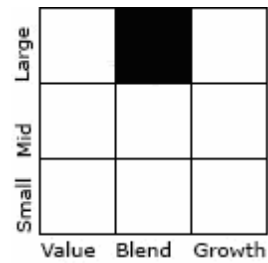
Performance: B

Risk: B

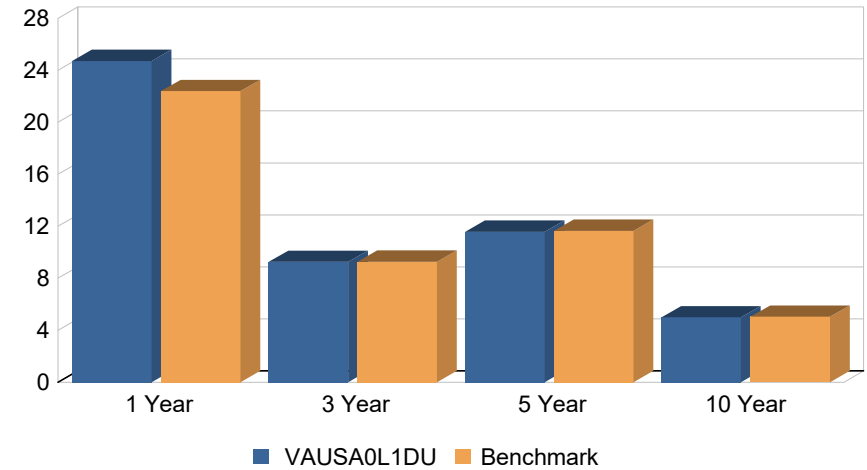
### Portfolio Characteristics

Fund AUM (\$mil):	20,780
No. of Stocks:	1867
% Assets in Top 10:	11.80
Avg Market Cap (\$mil):	51,898.30
P/E Ratio (TTM)(Long):	20.68
P/B Ratio (TTM)(Long):	2.42
Turnover Ratio %:	78.00

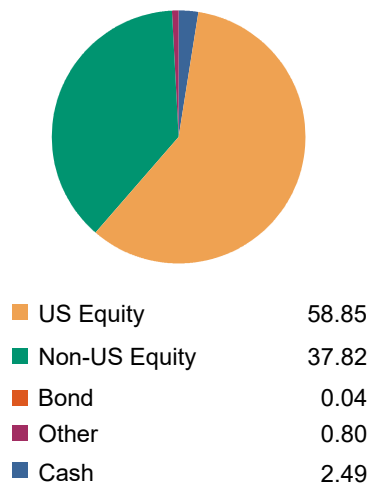
### Style



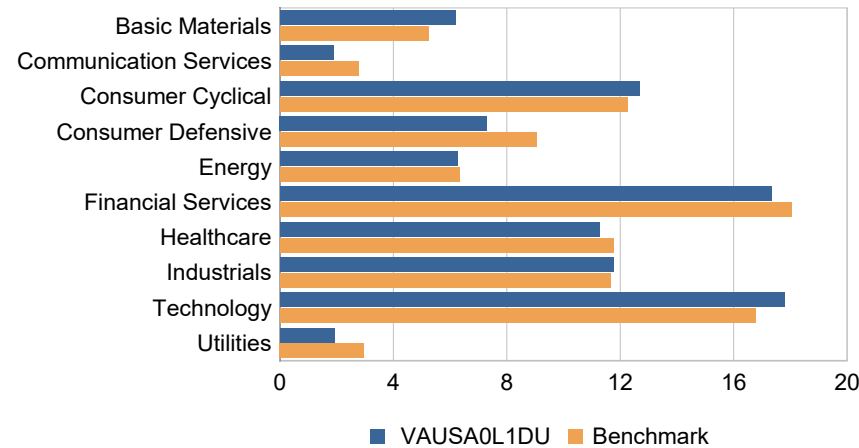
### Returns



### Asset Allocation



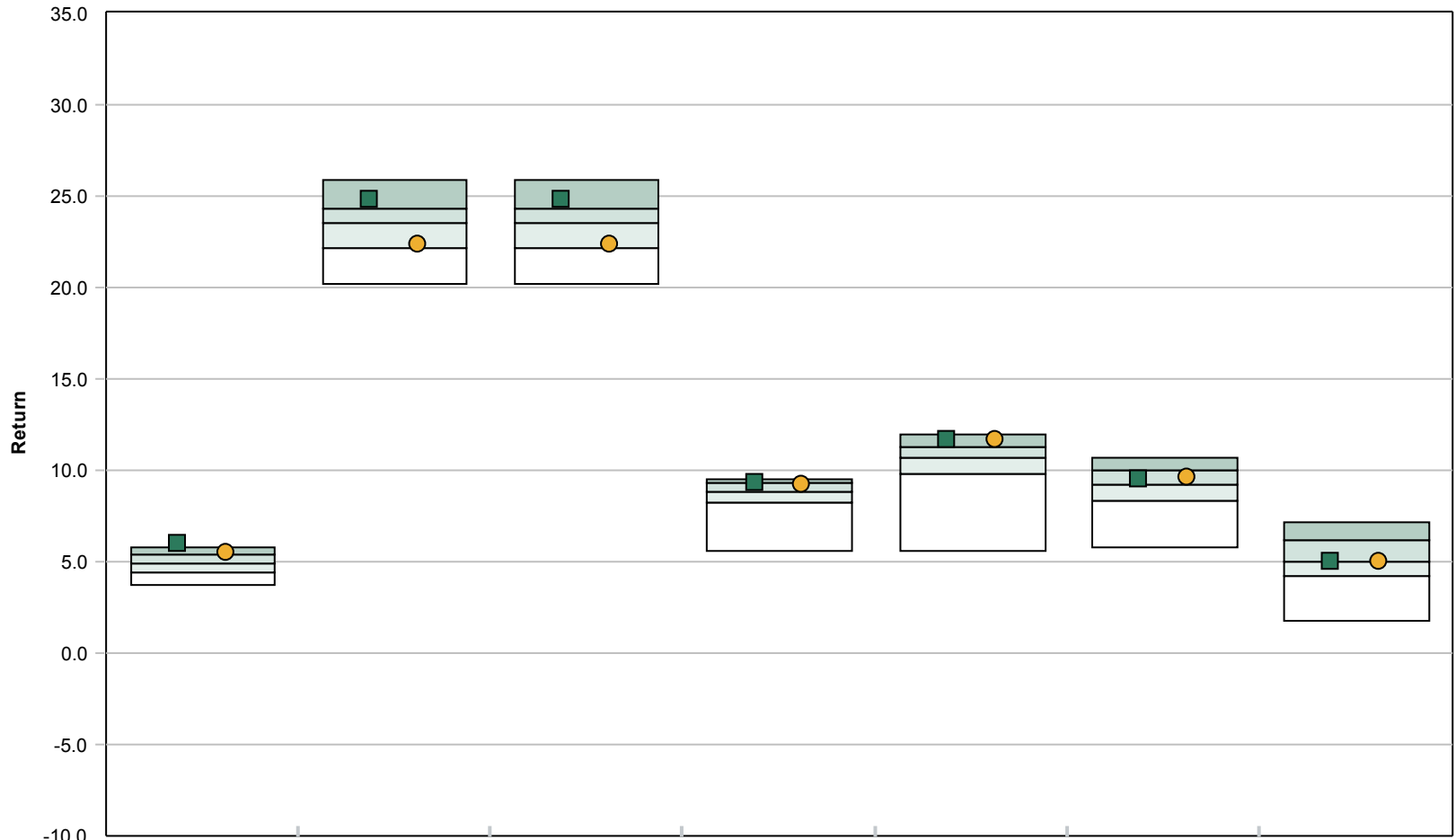
### Sector Allocation



### Risk Metrics

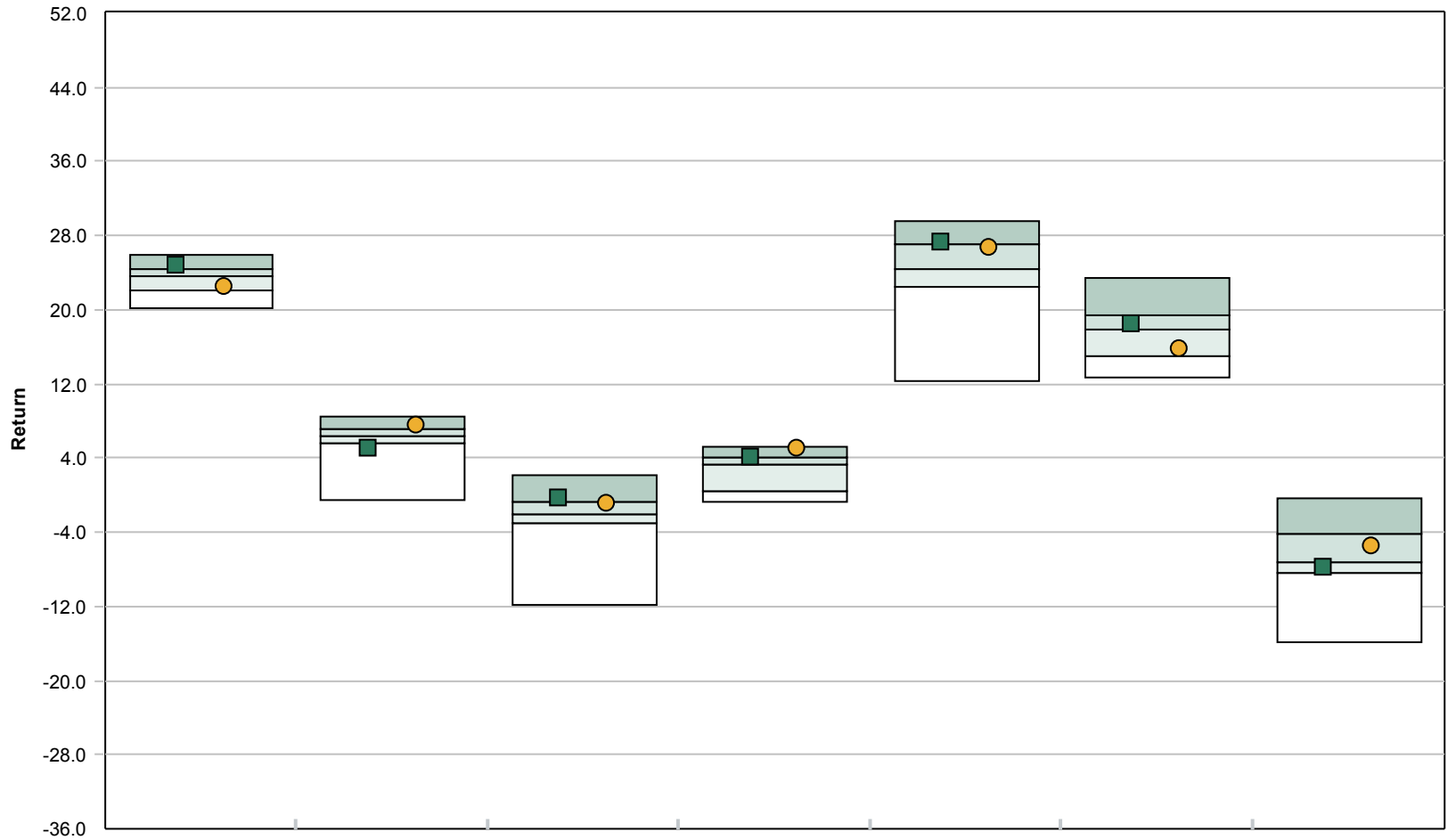
<b>Standard Deviation</b>	
3 Year:	10.29
5 Year:	9.88
10 Year:	16.82
<b>Information Ratio</b>	
3 Year:	-0.01
5 Year:	-0.04
10 Year:	-0.03
<b>Downside Capture</b>	
3 Year:	103.81
5 Year:	103.45
10 Year:	103.74

**Peer Group Analysis - IM Global Large Cap Core Equity (MF)**



	<b>1 Qtr</b>	<b>YTD</b>	<b>1 Yr</b>	<b>3 Yrs</b>	<b>5 Yrs</b>	<b>7 Yrs</b>	<b>10 Yrs</b>
■ CREF Global Equities Account	6.02 (5)	24.81 (17)	24.81 (17)	9.35 (21)	11.63 (14)	9.56 (38)	5.01 (48)
● MSCI World (Net)	5.51 (14)	22.40 (71)	22.40 (71)	9.26 (29)	11.64 (14)	9.58 (37)	5.03 (47)
5th Percentile	5.83	25.92	25.92	9.55	11.94	10.71	7.13
1st Quartile	5.34	24.31	24.31	9.32	11.28	9.99	6.14
Median	4.93	23.57	23.57	8.84	10.64	9.24	5.00
3rd Quartile	4.44	22.17	22.17	8.26	9.76	8.35	4.21
95th Percentile	3.70	20.19	20.19	5.61	5.60	5.74	1.76

**Peer Group Analysis - IM Global Large Cap Core Equity (MF)**

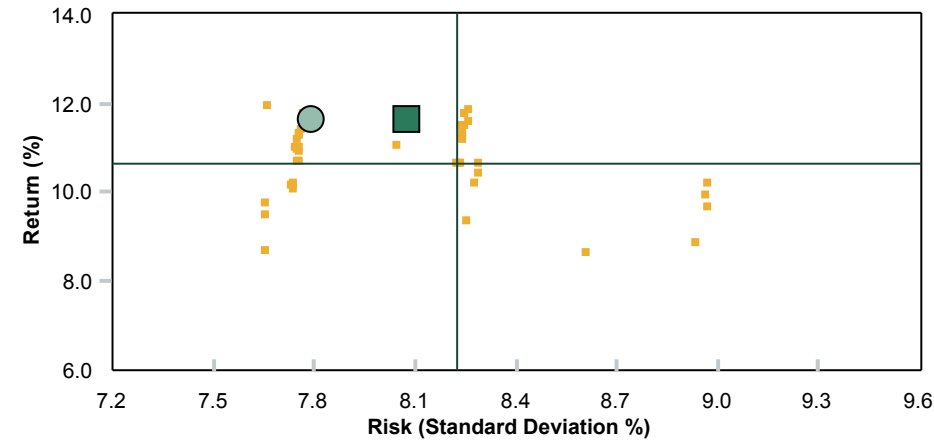


	2017	2016	2015	2014	2013	2012	2011
■ CREF Global Equities Account	24.81 (17)	5.11 (84)	-0.34 (21)	4.15 (21)	27.28 (24)	18.45 (36)	-7.73 (63)
● MSCI World (Net)	22.40 (71)	7.51 (17)	-0.87 (26)	4.94 (8)	26.68 (29)	15.83 (71)	-5.54 (46)
5th Percentile	25.92	8.49	2.23	5.17	29.48	23.42	-0.35
1st Quartile	24.31	7.11	-0.80	4.04	27.08	19.35	-4.17
Median	23.57	6.45	-2.05	3.31	24.38	17.90	-7.30
3rd Quartile	22.17	5.62	-2.94	0.48	22.45	14.91	-8.33
95th Percentile	20.19	-0.52	-11.94	-0.64	12.30	12.68	-15.78

Historical Statistics (01/01/13 - 12/31/17) \*

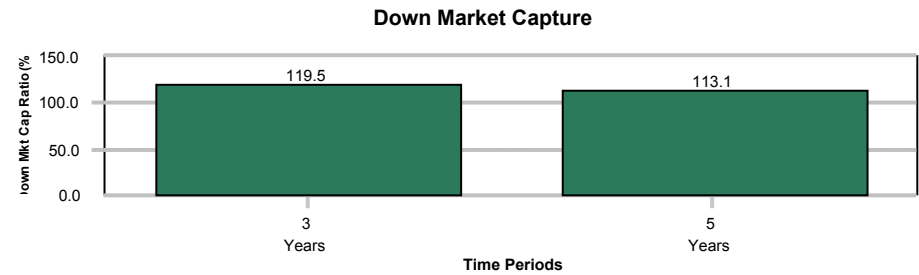
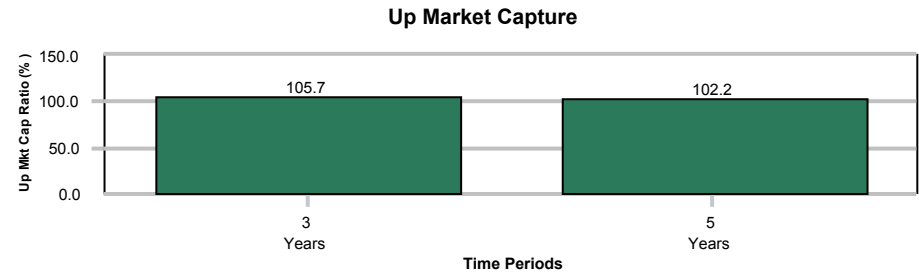
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
CREF Global Equities Account	11.63	8.08	1.40	-0.26	1.02	0.98	1.28	0.01	8.03	10/01/2001
MSCI World (Net)	11.64	7.79	1.45	0.00	1.00	1.00	0.00	N/A	7.76	10/01/2001
90 Day U.S. Treasury Bill	0.25	0.17	N/A	0.19	0.00	0.05	7.76	-1.45	0.00	10/01/2001

Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ CREF Global Equities Account	11.63	8.08
● MSCI World (Net)	11.64	7.79
— Median	10.64	8.23

Up Down Market Capture

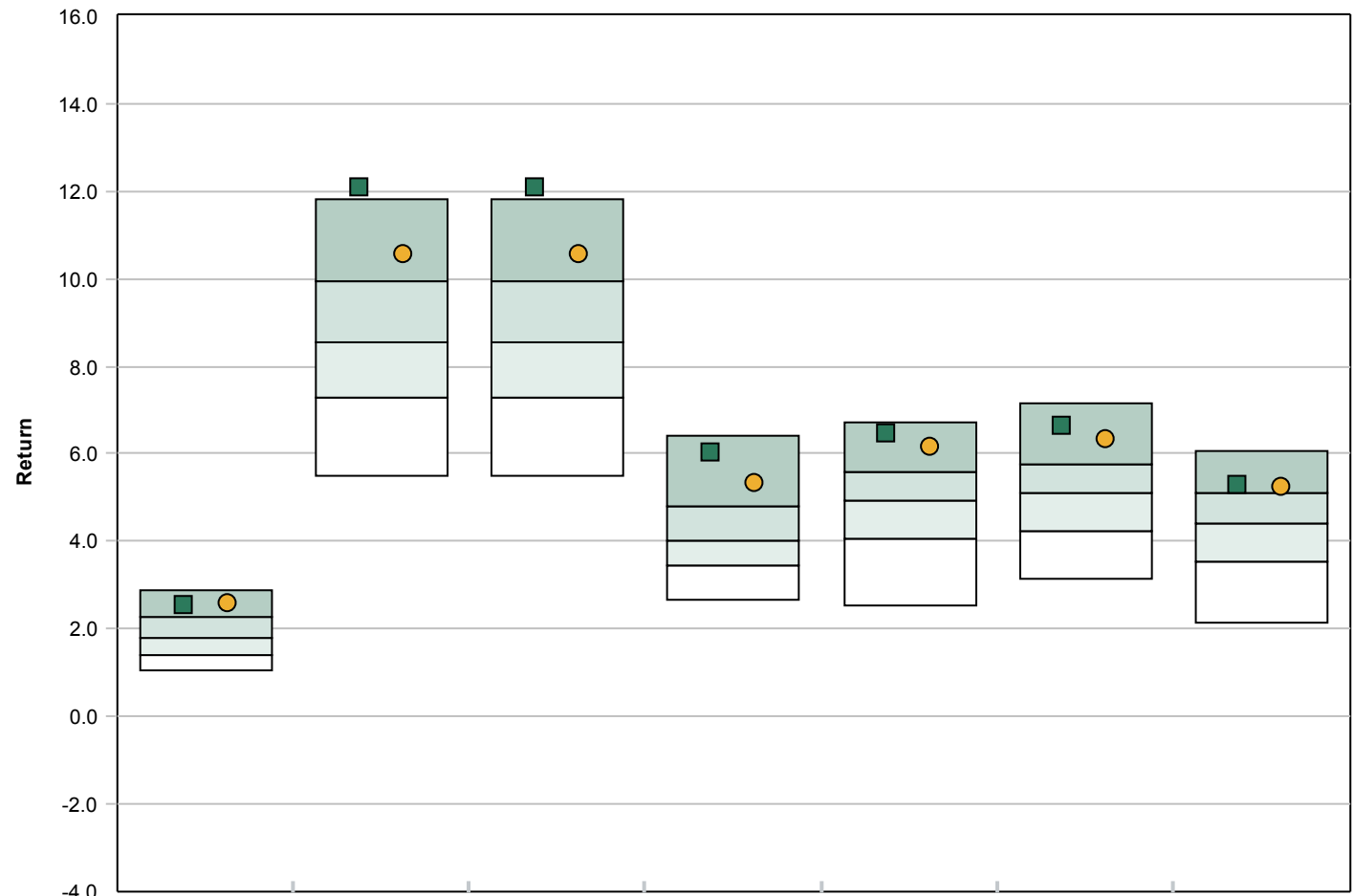


\* Quarterly periodicity used.



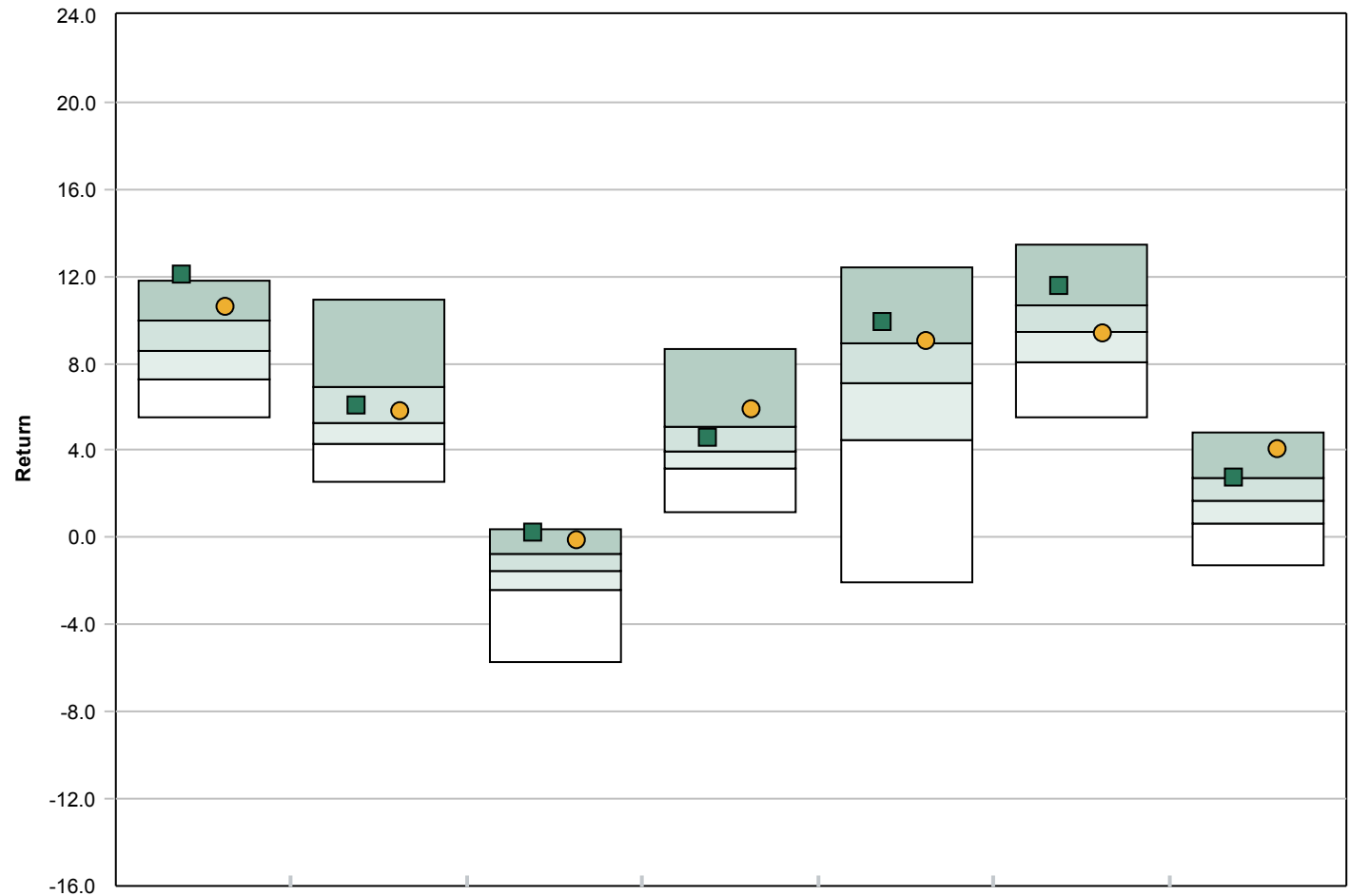
TIAA-CREF Lifecycle Retire Inc Instl

Peer Group Analysis - IM Mixed-Asset Target Alloc Consv (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle Retire Inc Instl	2.55 (12)	12.10 (4)	12.10 (4)	6.02 (6)	6.47 (8)	6.64 (9)	5.26 (21)
● TIAA-CREF Lifecycle Income Active Composite Index	2.57 (11)	10.55 (16)	10.55 (16)	5.33 (12)	6.16 (13)	6.31 (13)	5.23 (22)
5th Percentile	2.89	11.82	11.82	6.40	6.70	7.15	6.07
1st Quartile	2.26	9.95	9.95	4.80	5.59	5.75	5.11
Median	1.80	8.56	8.56	4.02	4.92	5.13	4.43
3rd Quartile	1.41	7.30	7.30	3.46	4.06	4.24	3.54
95th Percentile	1.07	5.48	5.48	2.66	2.52	3.15	2.15

Peer Group Analysis - IM Mixed-Asset Target Alloc Consv (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle Retire Inc Instl	12.10 (4)	6.04 (36)	0.25 (7)	4.52 (38)	9.85 (18)	11.51 (15)	2.78 (23)
● TIAA-CREF Lifecycle Income Active Composite Index	10.55 (16)	5.81 (40)	-0.10 (11)	5.86 (17)	9.01 (25)	9.37 (52)	4.03 (9)
5th Percentile	11.82	10.97	0.36	8.67	12.41	13.42	4.79
1st Quartile	9.95	6.90	-0.77	5.13	8.93	10.70	2.70
Median	8.56	5.28	-1.56	3.99	7.10	9.45	1.73
3rd Quartile	7.30	4.34	-2.43	3.20	4.52	8.09	0.63
95th Percentile	5.48	2.58	-5.70	1.20	-2.04	5.55	-1.27

## TIAA-Cref Lifecycle Retire Inc Instl

### Fund Information

Fund Name :	TIAA-CREF Funds: Lifecycle Retirement Income Fund; Institutional Class Shares	Portfolio Assets :	\$520 Million
Fund Family :	TIAA-CREF	Portfolio Manager :	Erickson/Cunniff
Ticker :	TLRIX	PM Tenure :	2007--2007
Inception Date :	11/30/2007	Fund Style :	IM Mixed-Asset Target Alloc Consv (MF)
Fund Assets :	\$187 Million	Style Benchmark :	TIAA-CREF Lifecycle Income Active Composite Index

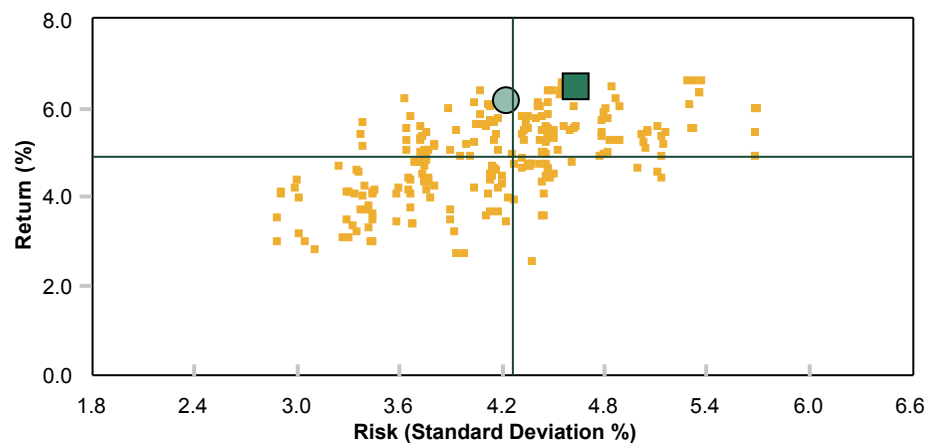
### Fund Investment Policy

The Fund seeks high total return over time consistent with an emphasis on both capital growth and income. The Fund seeks to invest in a diversified portfolio consisting of about 40% stocks and 60% bonds.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-Cref Lifecycle Retire Inc Instl	6.47	4.64	1.33	-0.21	1.08	0.98	0.79	0.39	4.62	12/01/2007
TIAA-CREF Lifecycle Income Active Composite Index	6.16	4.22	1.39	0.00	1.00	1.00	0.00	N/A	4.21	12/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.22	0.00	0.02	4.21	-1.39	0.00	12/01/2007

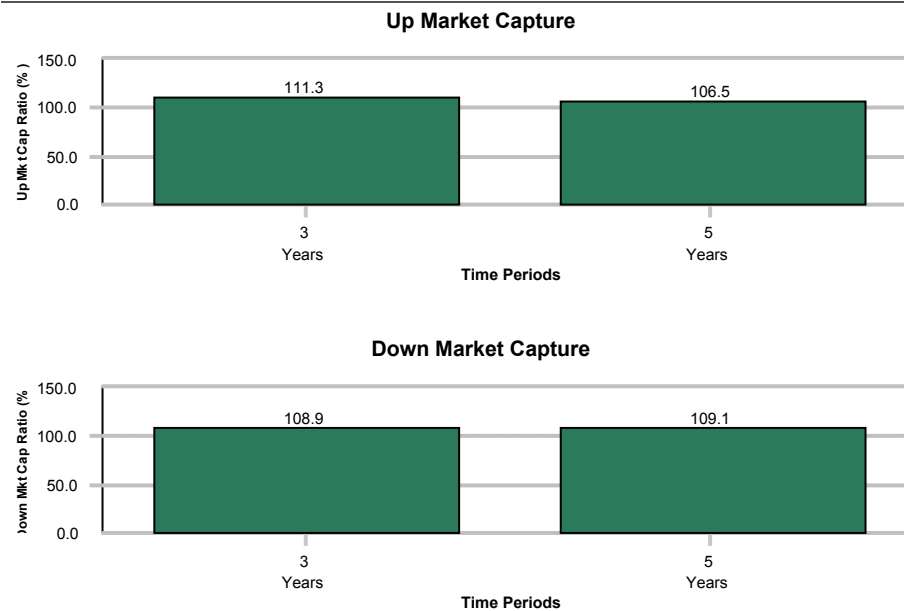
### Peer Group Scattergram (01/01/13 to 12/31/17)



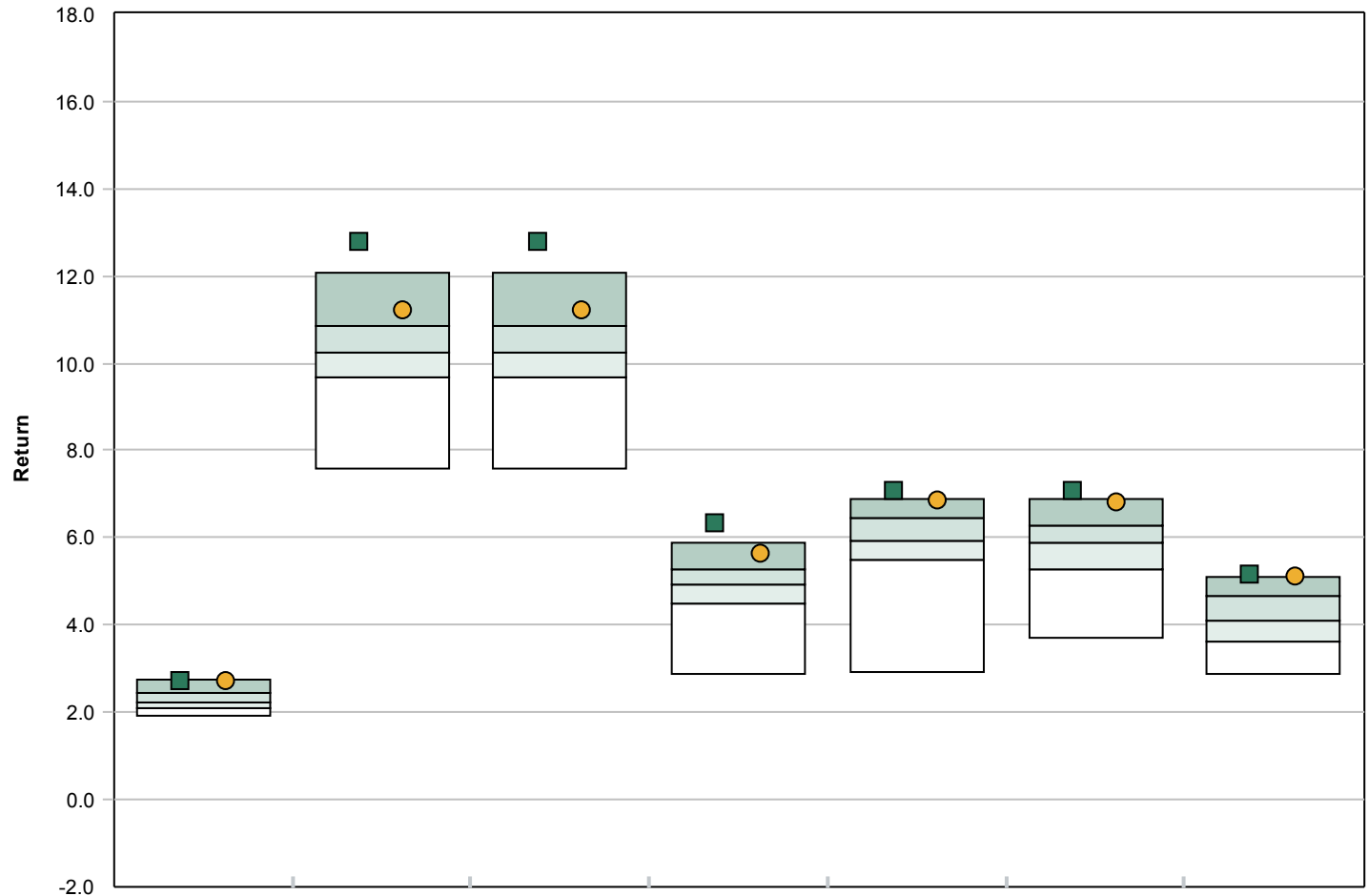
	Return	Standard Deviation
■ TIAA-Cref Lifecycle Retire Inc Instl	6.47	4.64
● TIAA-CREF Lifecycle Income Active Composite Index	6.16	4.22
— Median	4.91	4.26

\* Monthly periodicity used.

### Up Down Market Capture



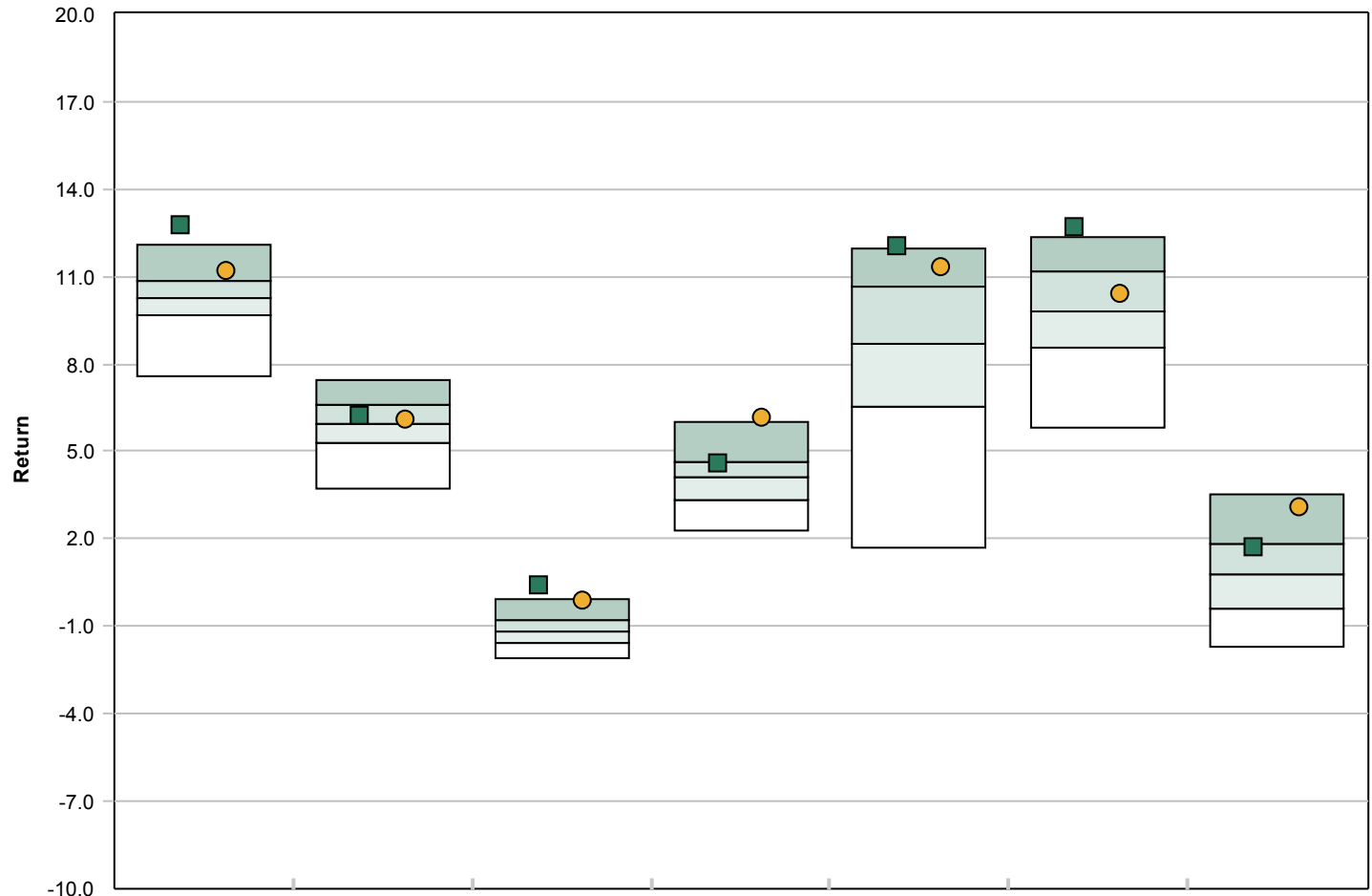
Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



■ TIAA-CREF Lifecycle 2010 Instl  
● TIAA-CREF Lifecycle 2010 Active Composite Index

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
	2.69 (10)	12.76 (1)	12.76 (1)	6.33 (1)	7.08 (4)	7.07 (4)	5.16 (2)
	2.72 (7)	11.19 (14)	11.19 (14)	5.60 (9)	6.82 (8)	6.78 (8)	5.10 (5)
5th Percentile	2.74	12.07	12.07	5.87	6.91	6.89	5.10
1st Quartile	2.45	10.84	10.84	5.27	6.44	6.30	4.66
Median	2.23	10.24	10.24	4.91	5.93	5.89	4.11
3rd Quartile	2.11	9.66	9.66	4.48	5.48	5.29	3.64
95th Percentile	1.91	7.58	7.58	2.87	2.93	3.69	2.87

Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2010 Instl	12.76 (1)	6.20 (42)	0.38 (1)	4.59 (29)	11.99 (4)	12.68 (3)	1.69 (27)
● TIAA-CREF Lifecycle 2010 Active Composite Index	11.19 (14)	6.09 (47)	-0.16 (7)	6.13 (4)	11.29 (13)	10.37 (39)	3.10 (11)
5th Percentile	12.07	7.42	-0.05	6.01	11.94	12.38	3.50
1st Quartile	10.84	6.57	-0.79	4.65	10.67	11.19	1.83
Median	10.24	5.98	-1.18	4.11	8.67	9.78	0.75
3rd Quartile	9.66	5.32	-1.60	3.33	6.50	8.56	-0.40
95th Percentile	7.58	3.70	-2.11	2.31	1.73	5.80	-1.70

## TIAA-CREF Lifecycle 2010 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2010 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCTIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$674 Million  
 Portfolio Turnover : 26%

Portfolio Assets : \$1,260 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2010 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2010 Active Composite Index

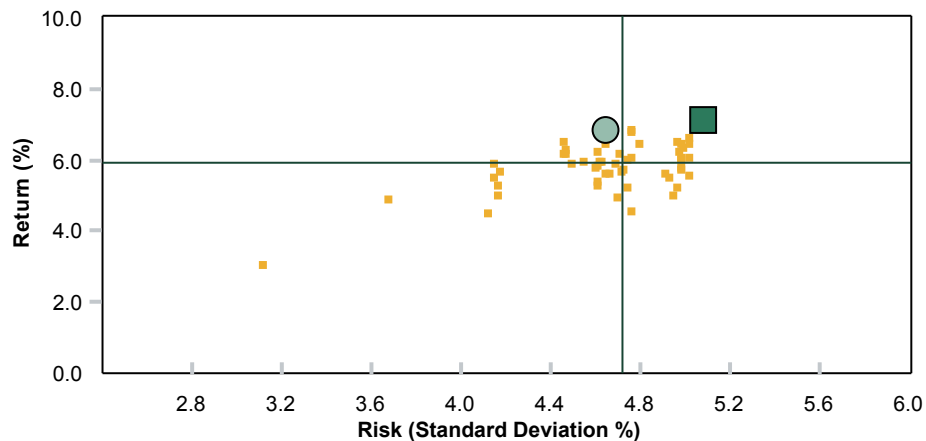
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2010.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2010 Instl	7.08	5.08	1.33	-0.28	1.08	0.98	0.83	0.32	5.07	02/01/2007
TIAA-CREF Lifecycle 2010 Active Composite Index	6.82	4.65	1.40	0.00	1.00	1.00	0.00	N/A	4.64	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	4.64	-1.40	0.00	02/01/2007

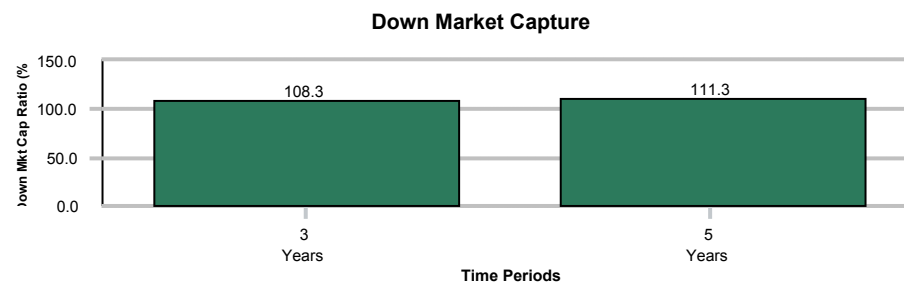
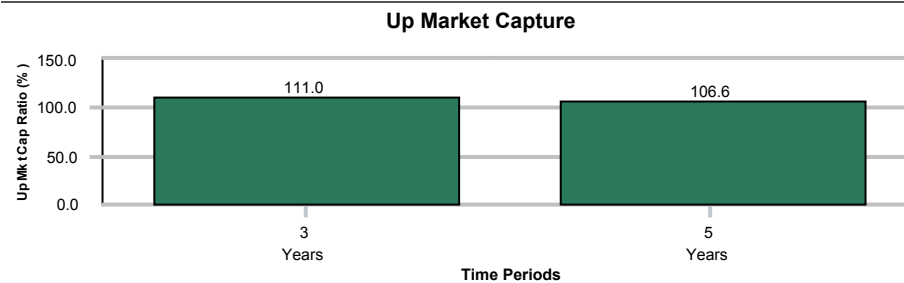
### Peer Group Scattergram (01/01/13 to 12/31/17)



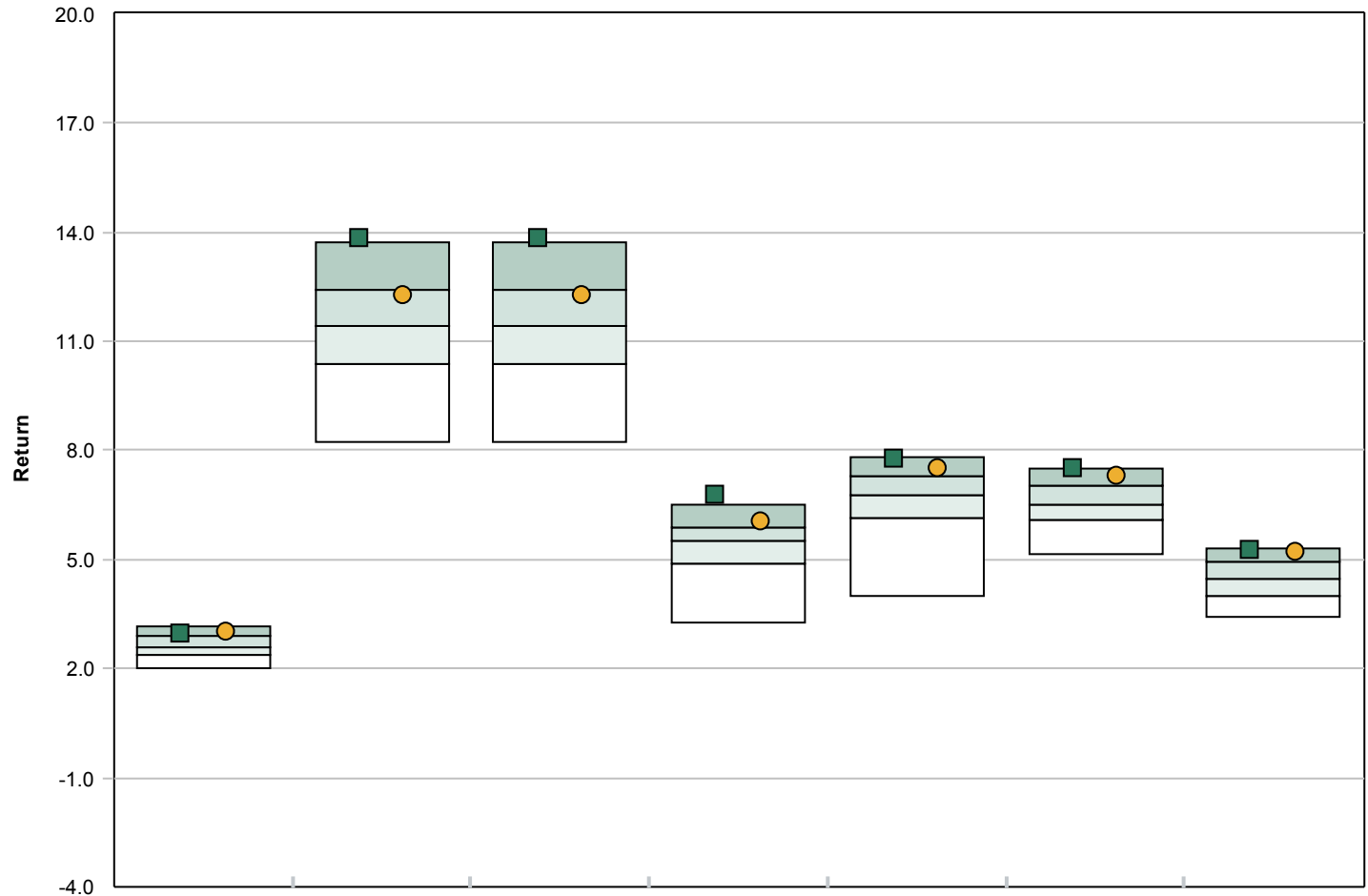
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2010 Instl	7.08	5.08
● TIAA-CREF Lifecycle 2010 Active Composite Index	6.82	4.65
— Median	5.93	4.72

\* Monthly periodicity used.

### Up Down Market Capture



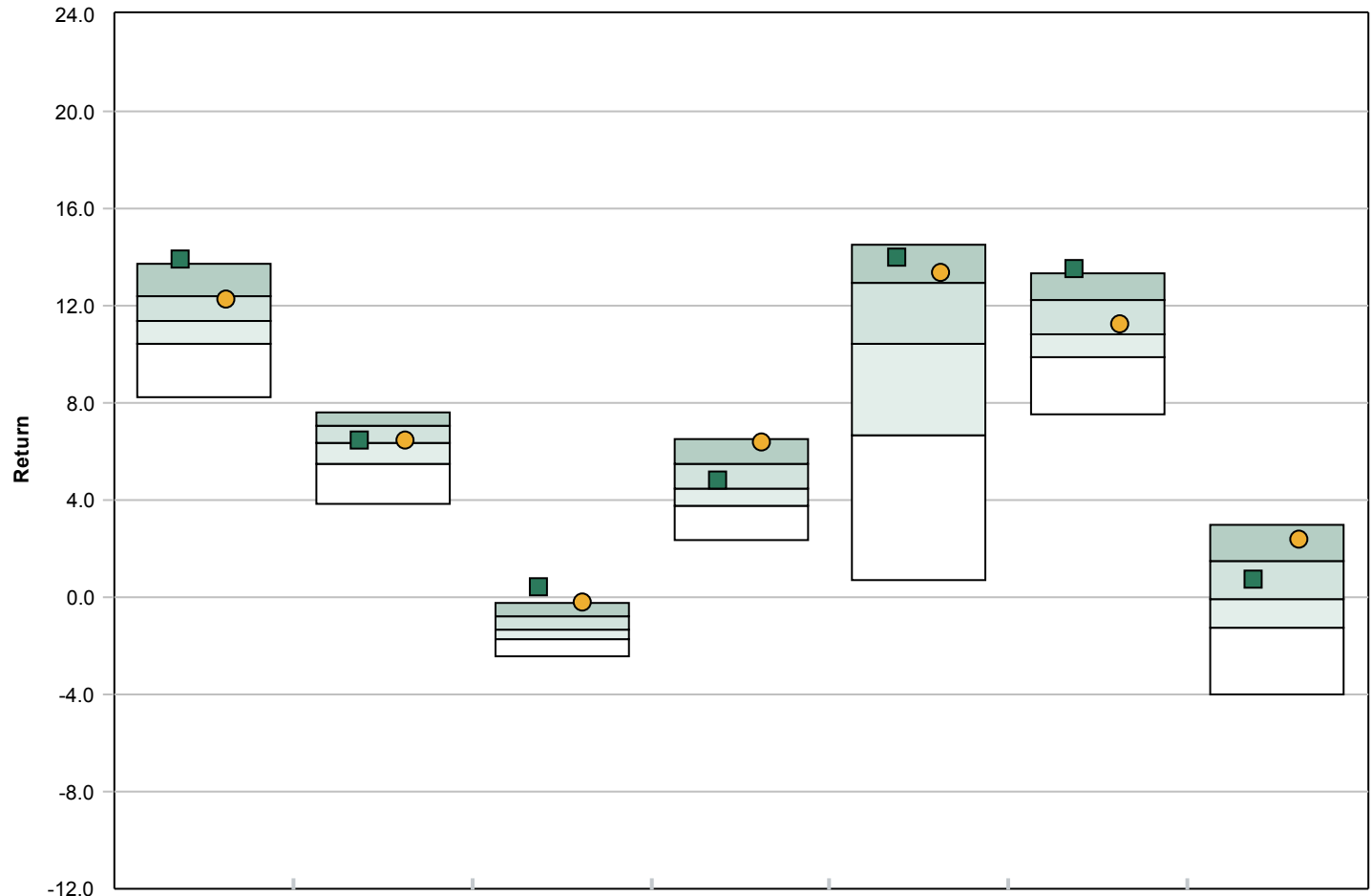
Peer Group Analysis - IM Mixed-Asset Target 2015 (MF)



■ TIAA-CREF Lifecycle 2015 Instl  
● TIAA-CREF Lifecycle 2015 Active Composite Index

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
	2.94 (19)	13.85 (2)	13.85 (2)	6.75 (2)	7.75 (7)	7.51 (6)	5.23 (7)
	3.01 (16)	12.25 (27)	12.25 (27)	6.05 (17)	7.53 (18)	7.28 (10)	5.21 (11)
5th Percentile	3.18	13.75	13.75	6.52	7.82	7.53	5.32
1st Quartile	2.88	12.43	12.43	5.87	7.28	7.03	4.92
Median	2.61	11.40	11.40	5.52	6.76	6.50	4.45
3rd Quartile	2.38	10.39	10.39	4.90	6.15	6.07	4.00
95th Percentile	1.99	8.25	8.25	3.25	4.00	5.14	3.45

Peer Group Analysis - IM Mixed-Asset Target 2015 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2015 Instl	13.85 (2)	6.40 (48)	0.42 (1)	4.77 (41)	13.96 (10)	13.47 (4)	0.74 (35)
● TIAA-CREF Lifecycle 2015 Active Composite Index	12.25 (27)	6.47 (45)	-0.22 (6)	6.36 (8)	13.32 (21)	11.22 (39)	2.33 (12)
5th Percentile	13.75	7.58	-0.20	6.48	14.52	13.36	3.01
1st Quartile	12.43	7.04	-0.80	5.48	12.91	12.25	1.50
Median	11.40	6.37	-1.30	4.47	10.42	10.81	-0.11
3rd Quartile	10.39	5.52	-1.71	3.73	6.64	9.85	-1.25
95th Percentile	8.25	3.85	-2.41	2.37	0.71	7.52	-3.99



## TIAA-CREG Lifecycle 2015 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2015 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCNIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$1,034 Million  
 Portfolio Turnover : 25%

Portfolio Assets : \$1,970 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2015 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2015 Active Composite Index

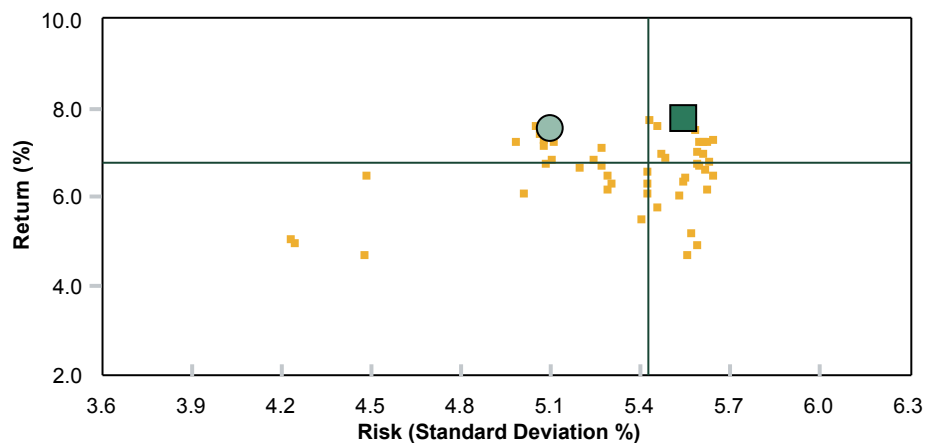
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2015.

### Historical Statistics (01/01/13 - 12/31/17) \*

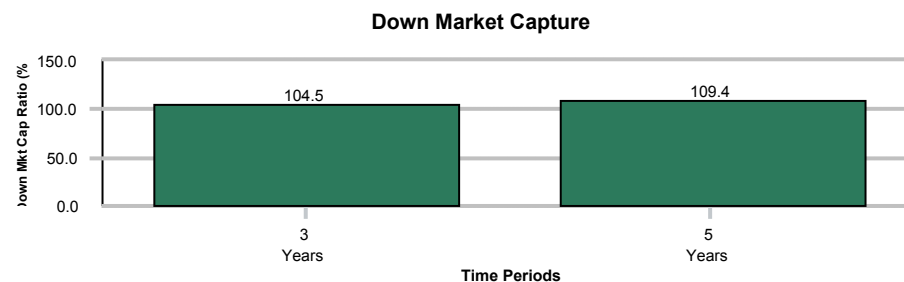
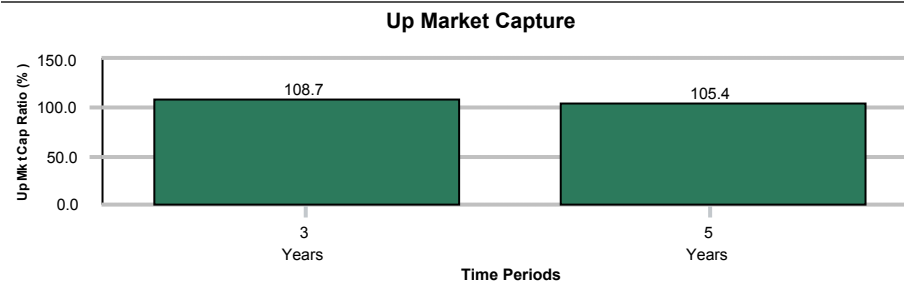
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREG Lifecycle 2015 Instl	7.75	5.55	1.34	-0.33	1.08	0.98	0.88	0.27	5.54	02/01/2007
TIAA-CREF Lifecycle 2015 Active Composite Index	7.53	5.10	1.41	0.00	1.00	1.00	0.00	N/A	5.09	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	5.09	-1.41	0.00	02/01/2007

### Peer Group Scattergram (01/01/13 to 12/31/17)



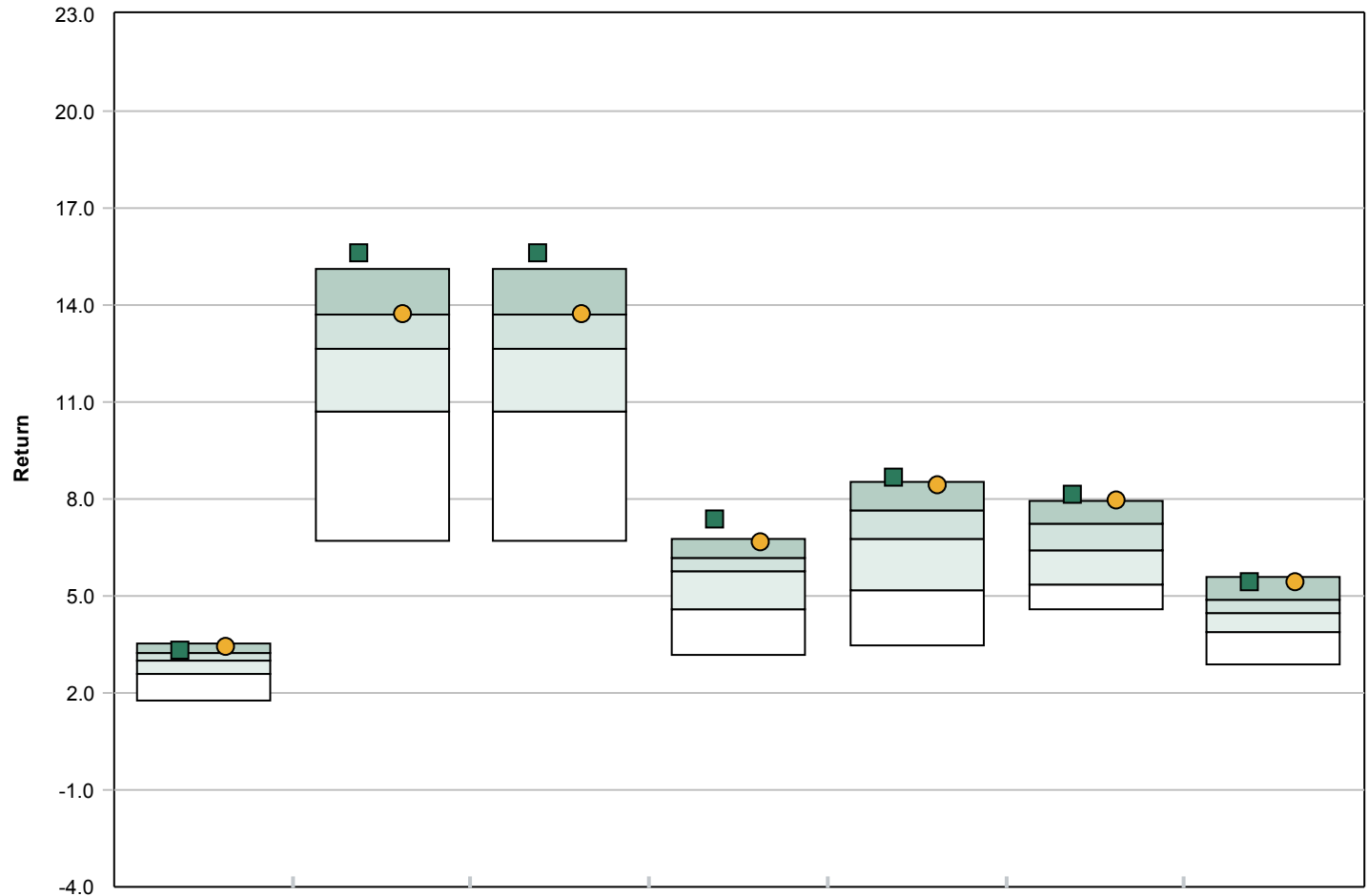
	Return	Standard Deviation
■ TIAA-CREG Lifecycle 2015 Instl	7.75	5.55
● TIAA-CREF Lifecycle 2015 Active Composite Index	7.53	5.10
— Median	6.76	5.43

### Up Down Market Capture



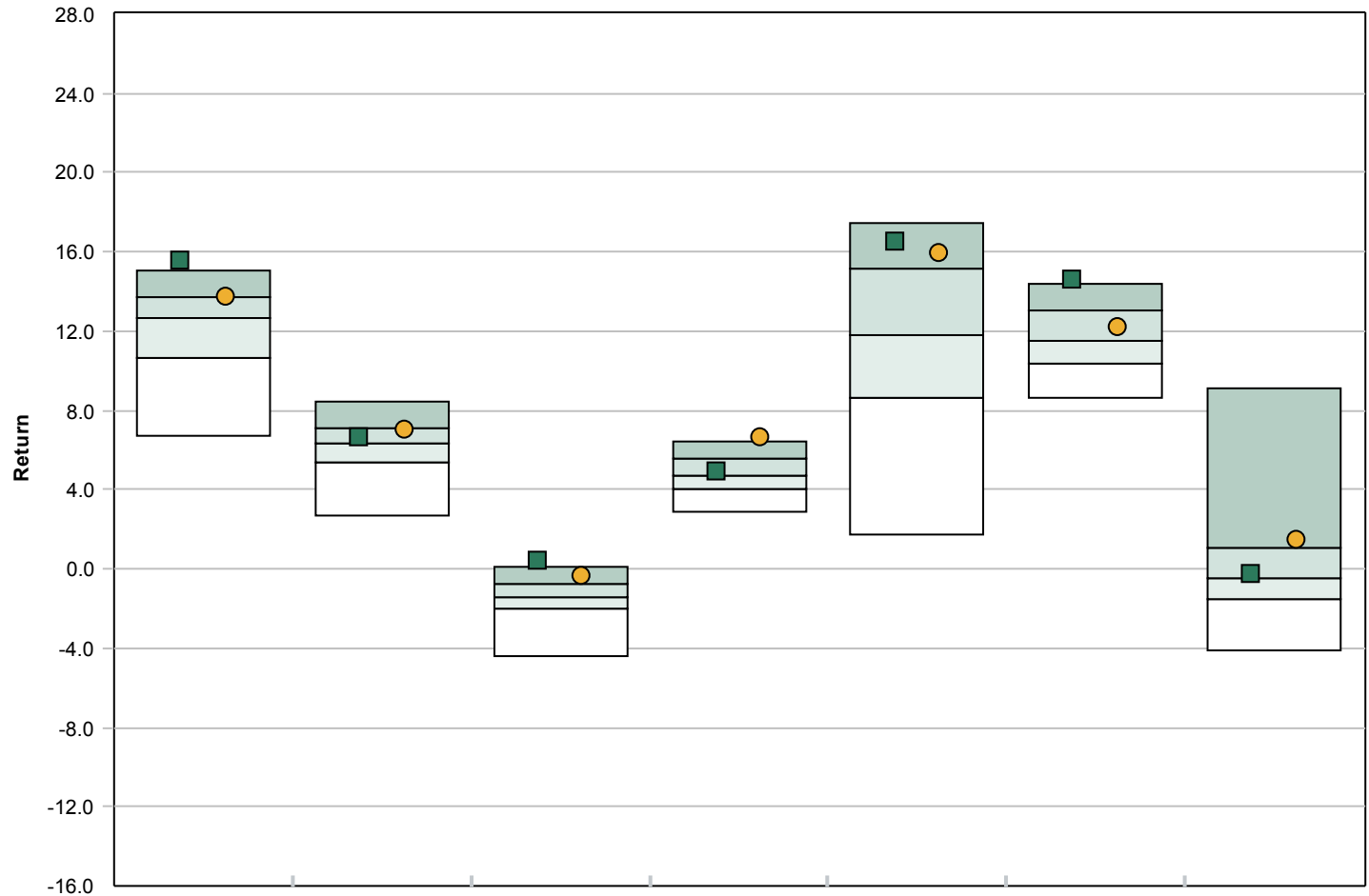
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2020 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2020 Instl	3.31 (17)	15.58 (2)	15.58 (2)	7.37 (1)	8.62 (3)	8.13 (3)	5.39 (10)
● TIAA-CREF Lifecycle 2020 Active Composite Index	3.39 (14)	13.68 (25)	13.68 (25)	6.62 (8)	8.42 (7)	7.93 (7)	5.41 (9)
5th Percentile	3.55	15.09	15.09	6.79	8.53	7.97	5.61
1st Quartile	3.23	13.68	13.68	6.20	7.67	7.21	4.89
Median	3.00	12.63	12.63	5.77	6.74	6.40	4.45
3rd Quartile	2.58	10.68	10.68	4.59	5.20	5.37	3.86
95th Percentile	1.74	6.73	6.73	3.18	3.48	4.58	2.91

Peer Group Analysis - IM Mixed-Asset Target 2020 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2020 Instl	15.58 (2)	6.66 (38)	0.42 (3)	4.86 (44)	16.50 (11)	14.62 (2)	-0.29 (48)
● TIAA-CREF Lifecycle 2020 Active Composite Index	13.68 (25)	7.01 (28)	-0.36 (13)	6.63 (4)	15.93 (17)	12.21 (39)	1.47 (14)
5th Percentile	15.09	8.49	0.15	6.42	17.44	14.36	9.11
1st Quartile	13.68	7.07	-0.78	5.61	15.16	13.06	1.04
Median	12.63	6.31	-1.44	4.72	11.84	11.53	-0.43
3rd Quartile	10.68	5.41	-2.03	4.02	8.62	10.35	-1.57
95th Percentile	6.73	2.74	-4.40	2.93	1.72	8.64	-4.08

## TIAA-CREF Lifecycle 2020 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2020 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCWIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$2,052 Million  
 Portfolio Turnover : 21%

Portfolio Assets : \$3,798 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2020 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2020 Active Composite Index

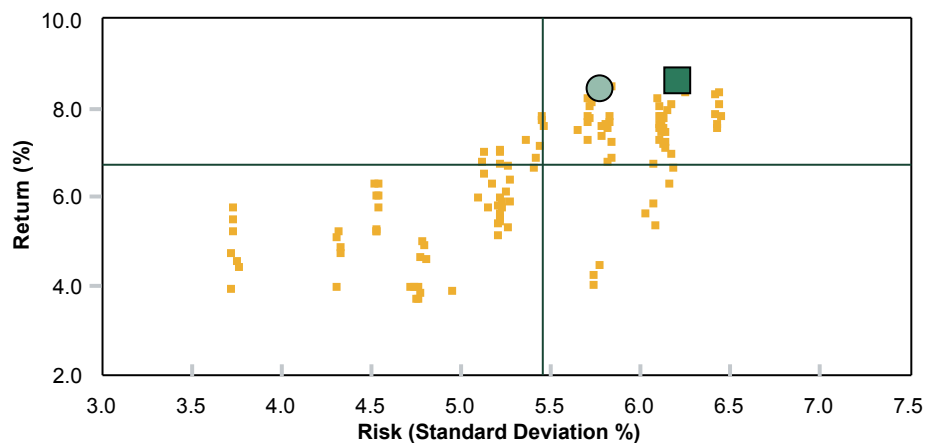
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2020.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2020 Instl	8.62	6.21	1.33	-0.31	1.06	0.98	0.99	0.21	6.20	02/01/2007
TIAA-CREF Lifecycle 2020 Active Composite Index	8.42	5.78	1.39	0.00	1.00	1.00	0.00	N/A	5.77	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	5.77	-1.39	0.00	02/01/2007

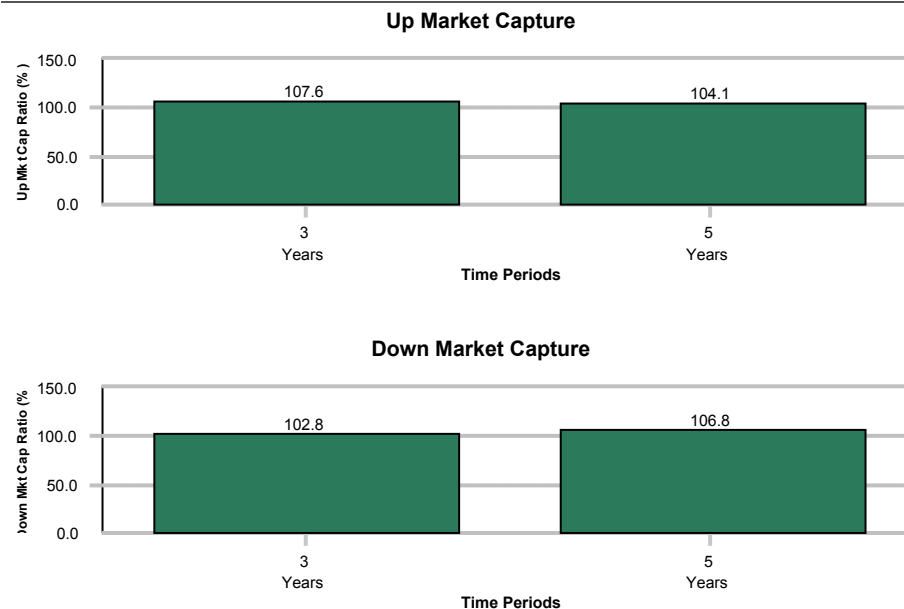
### Peer Group Scattergram (01/01/13 to 12/31/17)



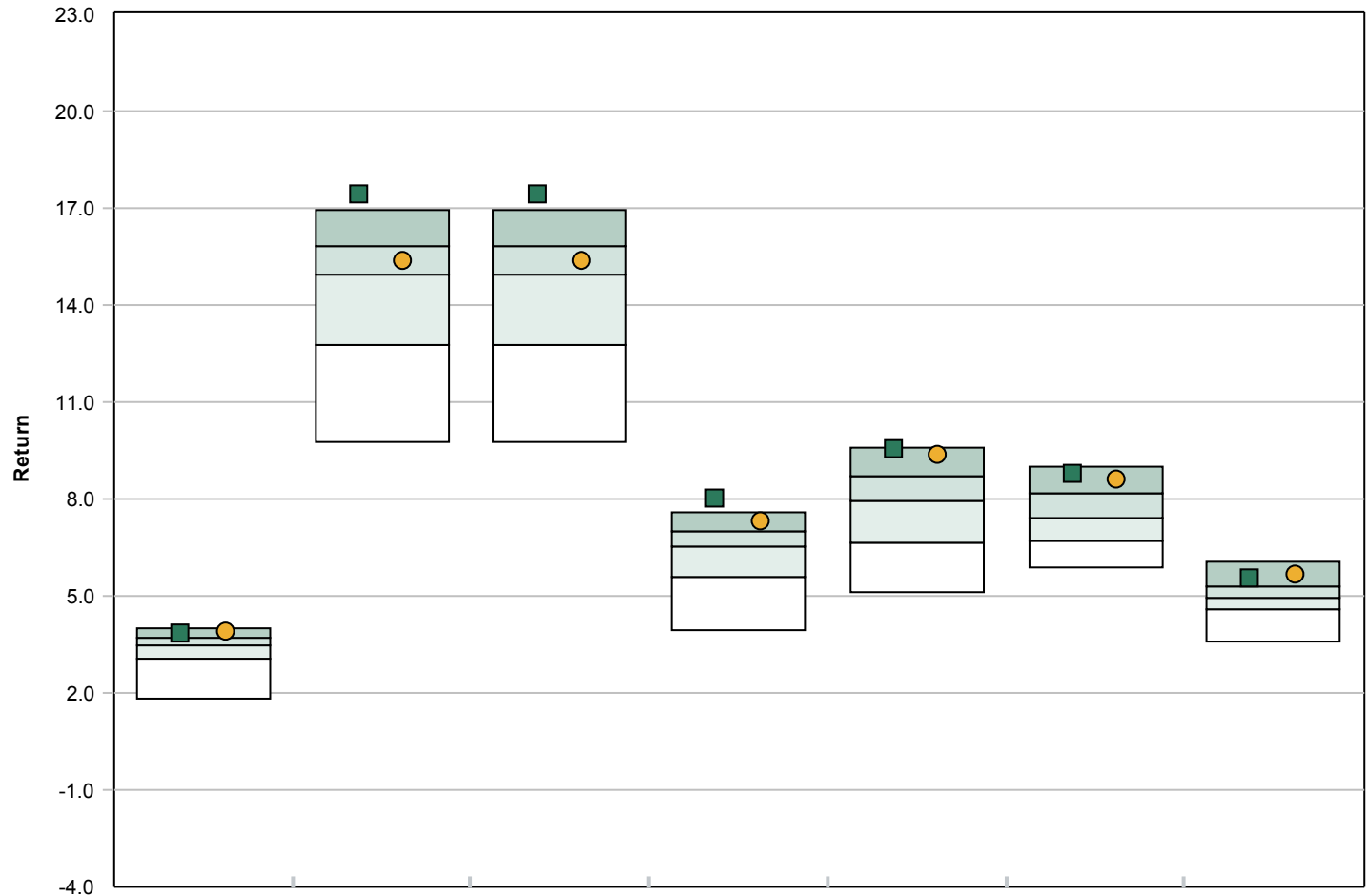
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2020 Instl	8.62	6.21
● TIAA-CREF Lifecycle 2020 Active Composite Index	8.42	5.78
— Median	6.74	5.46

\* Monthly periodicity used.

### Up Down Market Capture



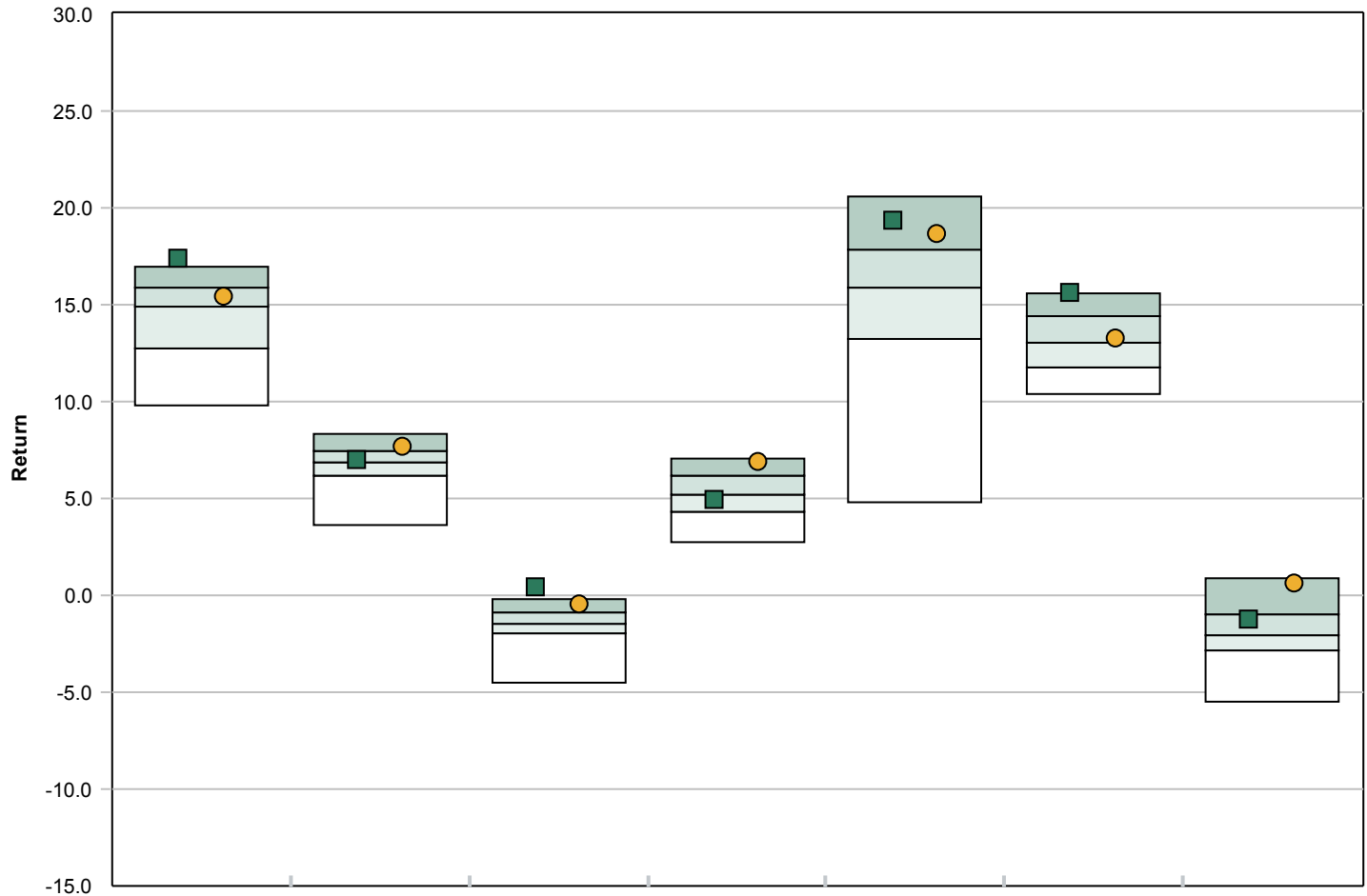
Peer Group Analysis - IM Mixed-Asset Target 2025 (MF)



■ TIAA-CREF Lifecycle 2025 Instl  
● TIAA-CREF Lifecycle 2025 Active Composite Index

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
	3.81 (15)	17.40 (1)	17.40 (1)	8.03 (1)	9.55 (6)	8.76 (8)	5.55 (20)
	3.85 (13)	15.36 (36)	15.36 (36)	7.29 (16)	9.38 (10)	8.61 (10)	5.62 (19)
5th Percentile	3.97	16.94	16.94	7.57	9.60	8.97	6.05
1st Quartile	3.69	15.84	15.84	7.03	8.74	8.16	5.31
Median	3.47	14.95	14.95	6.54	7.93	7.40	4.96
3rd Quartile	3.05	12.74	12.74	5.56	6.65	6.71	4.58
95th Percentile	1.84	9.78	9.78	3.94	5.11	5.90	3.56

Peer Group Analysis - IM Mixed-Asset Target 2025 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2025 Instl	17.40 (1)	7.00 (45)	0.36 (1)	4.87 (60)	19.33 (14)	15.60 (4)	-1.29 (36)
● TIAA-CREF Lifecycle 2025 Active Composite Index	15.36 (36)	7.61 (21)	-0.51 (17)	6.89 (6)	18.60 (19)	13.19 (47)	0.60 (6)
5th Percentile	16.94	8.38	-0.16	7.07	20.59	15.54	0.84
1st Quartile	15.84	7.49	-0.91	6.18	17.82	14.45	-0.96
Median	14.95	6.87	-1.44	5.19	15.85	13.00	-2.03
3rd Quartile	12.74	6.15	-1.93	4.36	13.19	11.74	-2.86
95th Percentile	9.78	3.63	-4.47	2.72	4.78	10.37	-5.46

## TIAA-CREF Lifecycle 2025 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2025 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCYIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$2,390 Million  
 Portfolio Turnover : 20%

Portfolio Assets : \$4,254 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2025 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2025 Active Composite Index

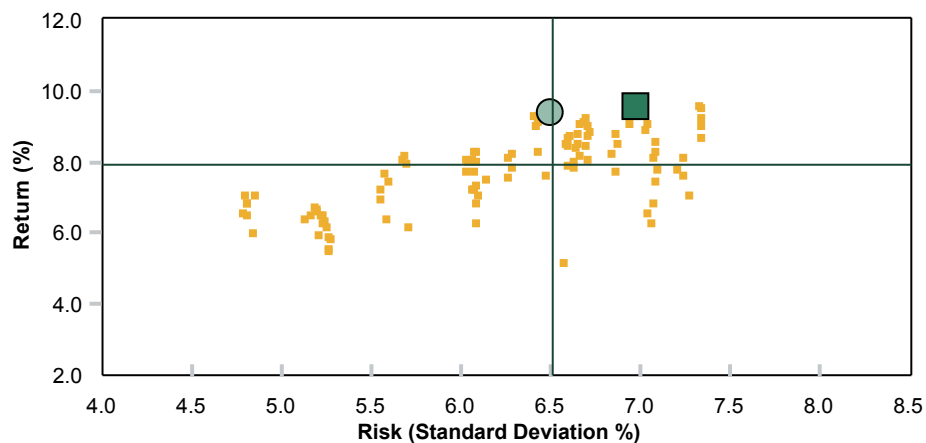
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2025.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2025 Instl	9.55	6.98	1.31	-0.40	1.06	0.98	1.09	0.17	6.97	02/01/2007
TIAA-CREF Lifecycle 2025 Active Composite Index	9.38	6.50	1.38	0.00	1.00	1.00	0.00	N/A	6.49	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	6.49	-1.38	0.00	02/01/2007

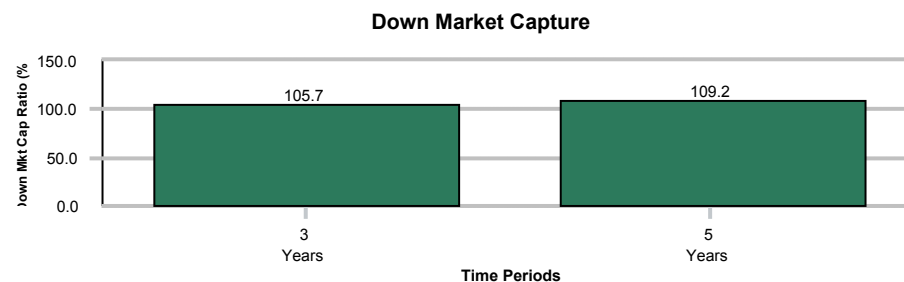
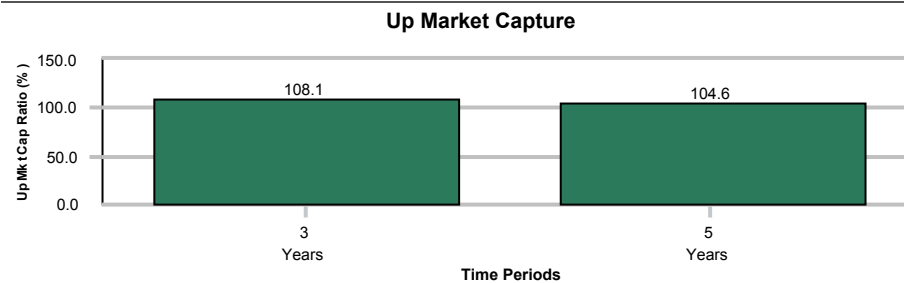
### Peer Group Scattergram (01/01/13 to 12/31/17)



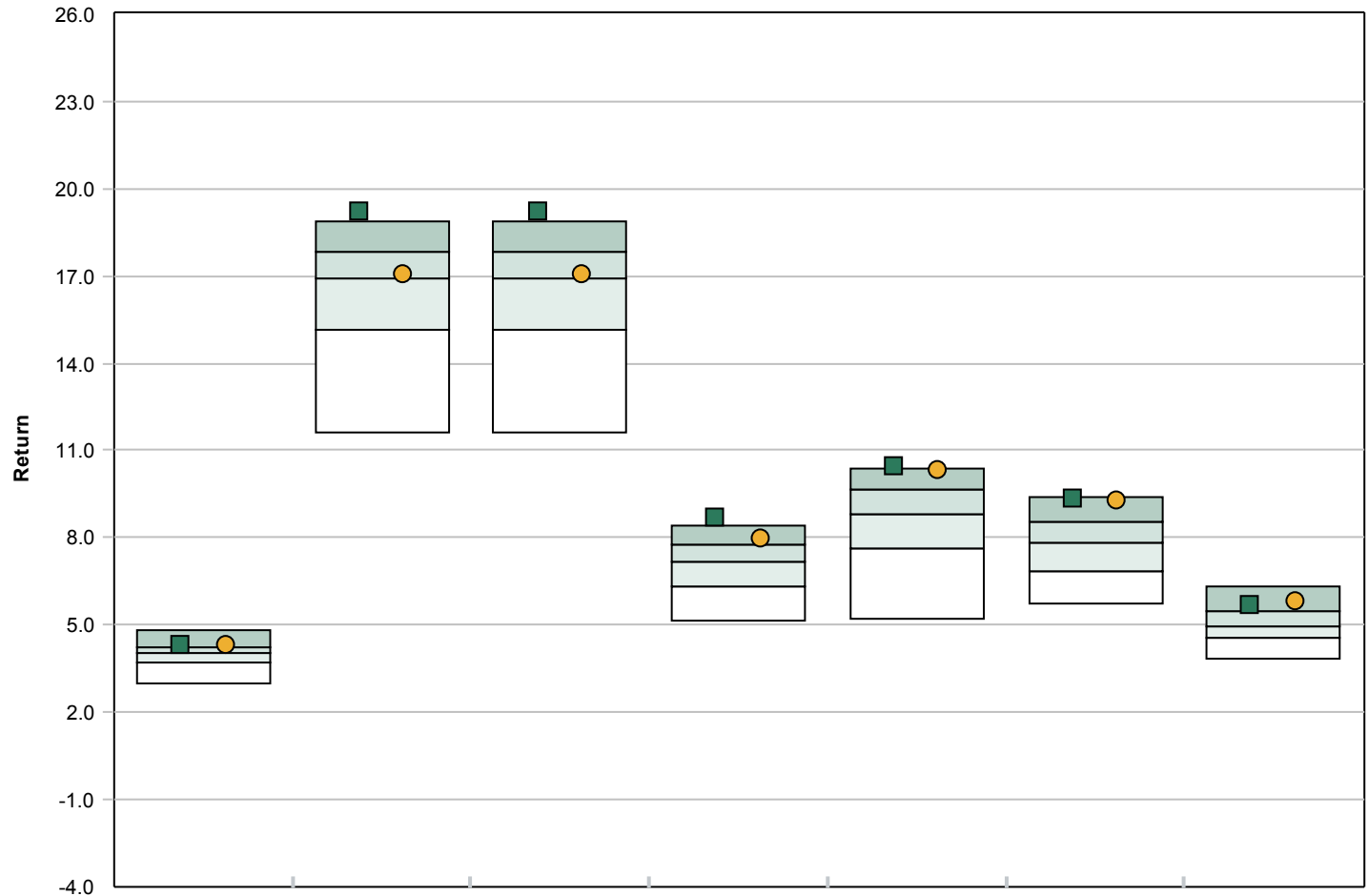
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2025 Instl	9.55	6.98
● TIAA-CREF Lifecycle 2025 Active Composite Index	9.38	6.50
— Median	7.93	6.51

\* Monthly periodicity used.

### Up Down Market Capture



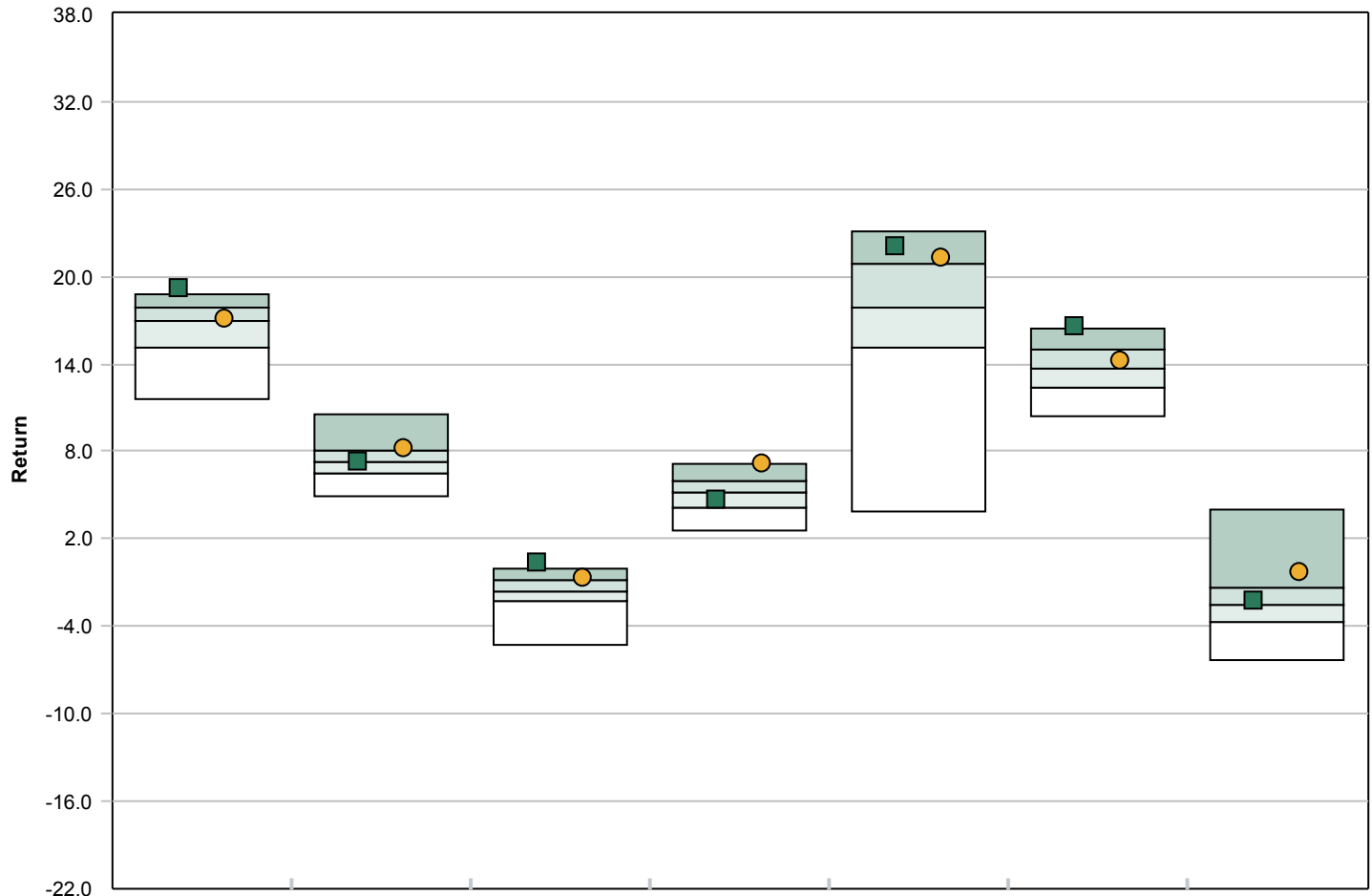
Peer Group Analysis - IM Mixed-Asset Target 2030 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2030 Instl	4.28 (22)	19.21 (2)	19.21 (2)	8.70 (2)	10.42 (5)	9.34 (6)	5.65 (19)
● TIAA-CREF Lifecycle 2030 Active Composite Index	4.32 (20)	17.07 (47)	17.07 (47)	7.96 (18)	10.33 (8)	9.28 (7)	5.81 (15)
5th Percentile	4.79	18.85	18.85	8.45	10.41	9.40	6.36
1st Quartile	4.24	17.82	17.82	7.75	9.65	8.52	5.49
Median	4.02	16.91	16.91	7.19	8.78	7.83	4.95
3rd Quartile	3.74	15.17	15.17	6.31	7.65	6.85	4.54
95th Percentile	2.98	11.63	11.63	5.12	5.23	5.73	3.82



Peer Group Analysis - IM Mixed-Asset Target 2030 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2030 Instl	19.21 (2)	7.33 (49)	0.38 (2)	4.71 (64)	22.07 (9)	16.52 (4)	-2.32 (43)
● TIAA-CREF Lifecycle 2030 Active Composite Index	17.07 (47)	8.21 (23)	-0.67 (19)	7.12 (6)	21.27 (20)	14.19 (43)	-0.28 (10)
5th Percentile	18.85	10.56	-0.05	7.17	23.05	16.47	4.00
1st Quartile	17.82	8.12	-0.89	6.02	20.82	14.97	-1.40
Median	16.91	7.31	-1.61	5.18	17.87	13.71	-2.56
3rd Quartile	15.17	6.46	-2.24	4.16	15.19	12.42	-3.68
95th Percentile	11.63	4.94	-5.22	2.52	3.83	10.42	-6.34

## TIAA-CREF Lifecycle 2030 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2030 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCRIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$2,414 Million  
 Portfolio Turnover : 20%

Portfolio Assets : \$4,180 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2030 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2030 Active Composite Index

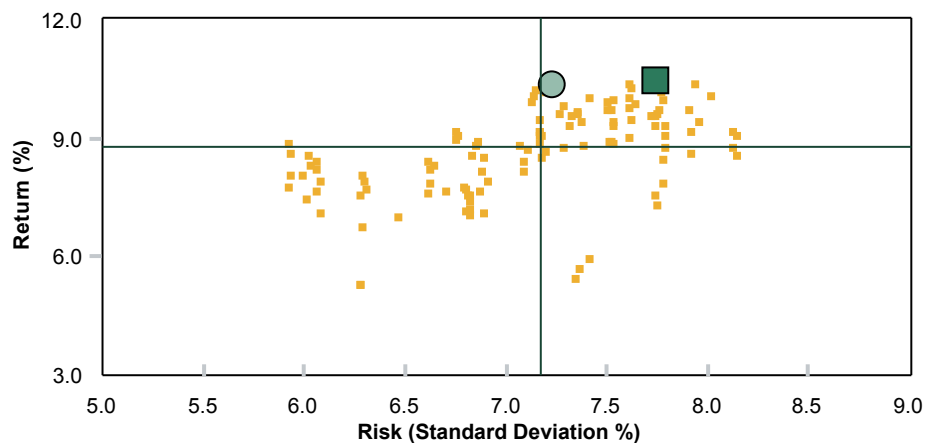
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2030.

### Historical Statistics (01/01/13 - 12/31/17) \*

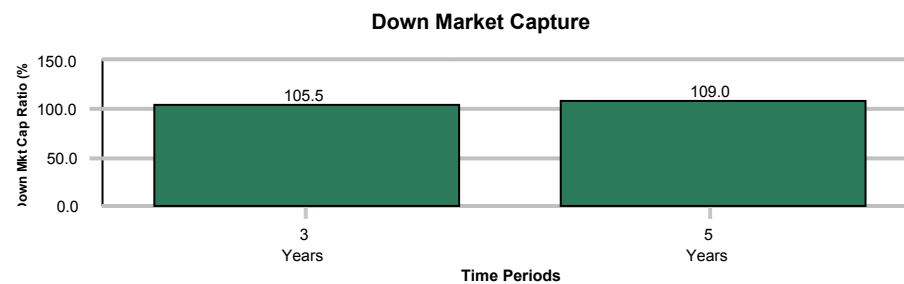
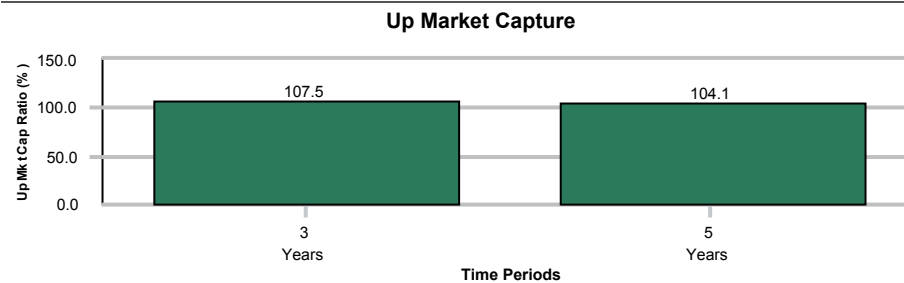
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2030 Instl	10.42	7.75	1.29	-0.49	1.06	0.98	1.18	0.11	7.74	02/01/2007
TIAA-CREF Lifecycle 2030 Active Composite Index	10.33	7.23	1.37	0.00	1.00	1.00	0.00	N/A	7.22	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	7.22	-1.37	0.00	02/01/2007

### Peer Group Scattergram (01/01/13 to 12/31/17)



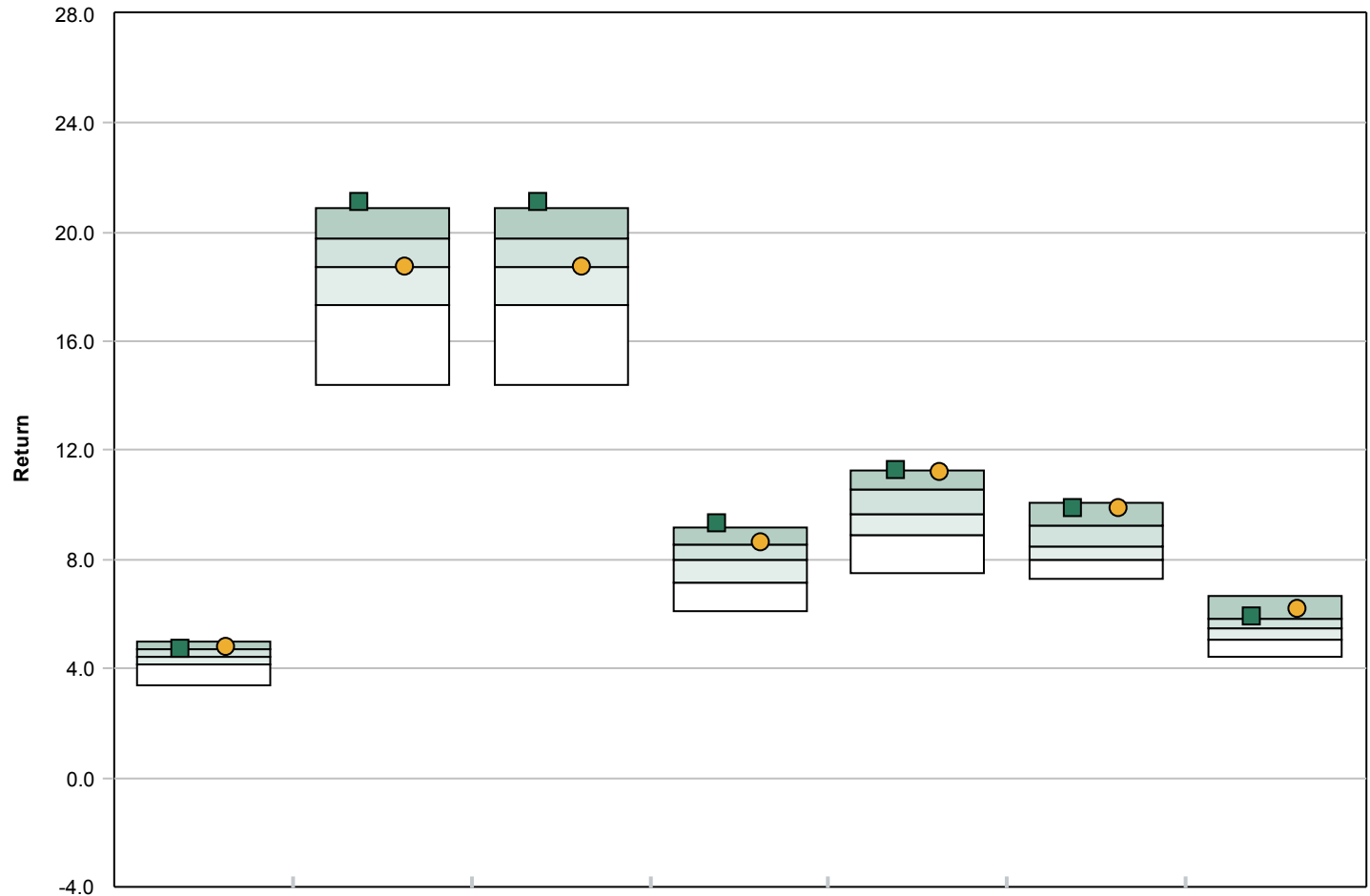
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2030 Instl	10.42	7.75
● TIAA-CREF Lifecycle 2030 Active Composite Index	10.33	7.23
— Median	8.78	7.18

### Up Down Market Capture



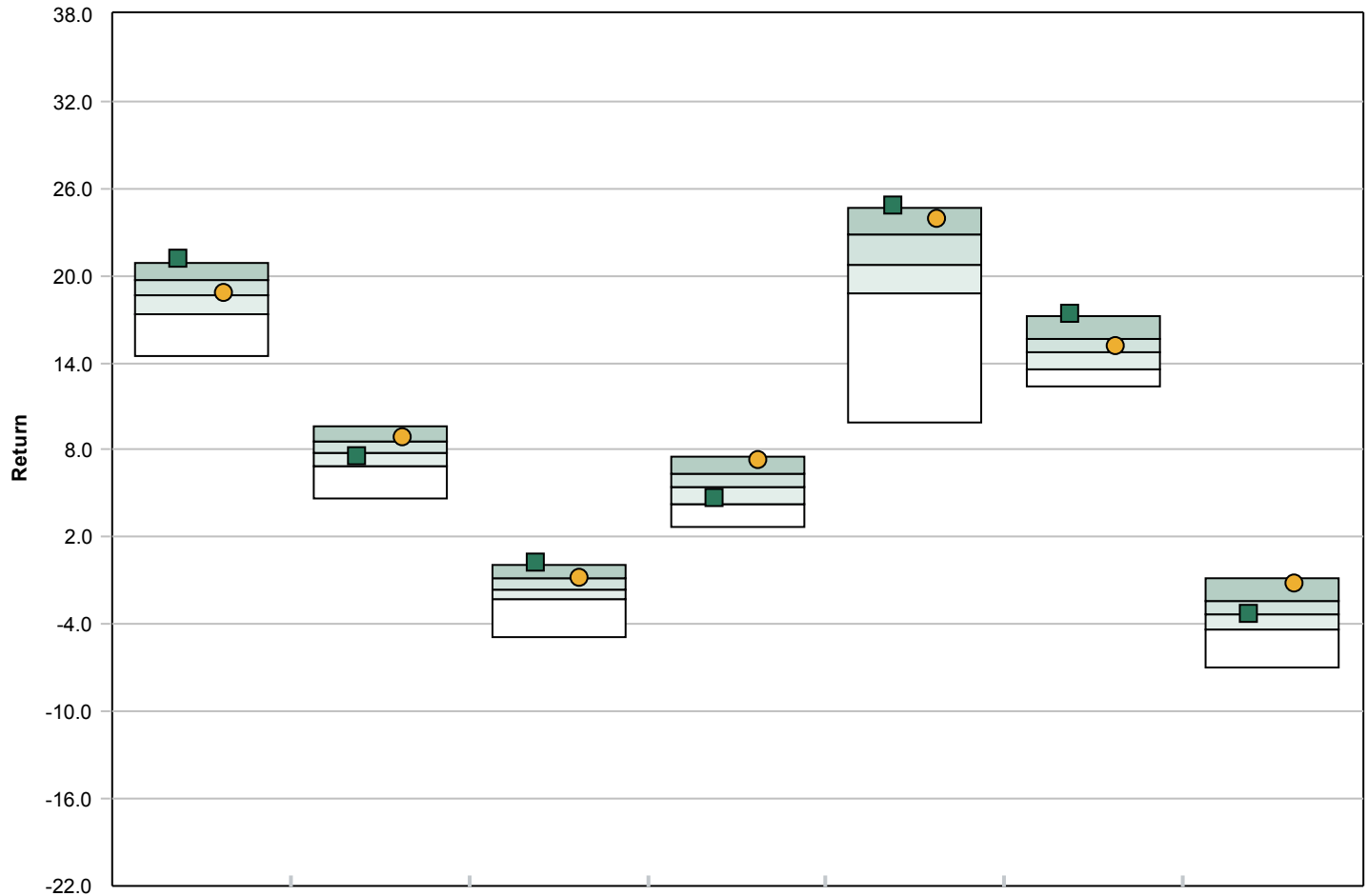
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2035 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2035 Instl	4.73 (21)	21.11 (2)	21.11 (2)	9.29 (4)	11.26 (6)	9.87 (8)	5.91 (22)
● TIAA-CREF Lifecycle 2035 Active Composite Index	4.77 (20)	18.73 (50)	18.73 (50)	8.59 (24)	11.22 (7)	9.90 (6)	6.15 (20)
5th Percentile	5.00	20.90	20.90	9.20	11.26	10.06	6.67
1st Quartile	4.69	19.75	19.75	8.53	10.56	9.22	5.80
Median	4.44	18.72	18.72	7.96	9.66	8.50	5.45
3rd Quartile	4.14	17.35	17.35	7.16	8.90	8.00	5.03
95th Percentile	3.37	14.43	14.43	6.09	7.48	7.28	4.45

Peer Group Analysis - IM Mixed-Asset Target 2035 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2035 Instl	21.11 (2)	7.52 (59)	0.24 (2)	4.67 (69)	24.76 (5)	17.32 (4)	-3.37 (54)
● TIAA-CREF Lifecycle 2035 Active Composite Index	18.73 (50)	8.79 (16)	-0.86 (27)	7.22 (9)	23.93 (10)	15.18 (42)	-1.17 (6)
5th Percentile	20.90	9.61	0.06	7.56	24.72	17.18	-0.86
1st Quartile	19.75	8.55	-0.78	6.35	22.78	15.71	-2.41
Median	18.72	7.75	-1.66	5.40	20.78	14.75	-3.34
3rd Quartile	17.35	6.87	-2.23	4.33	18.78	13.59	-4.35
95th Percentile	14.43	4.62	-4.85	2.66	9.89	12.39	-7.02

## TIAA-CREF Lifecycle 2035 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2035 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$2,534 Million  
 Portfolio Turnover : 21%

Portfolio Assets : \$4,246 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2035 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2035 Active Composite Index

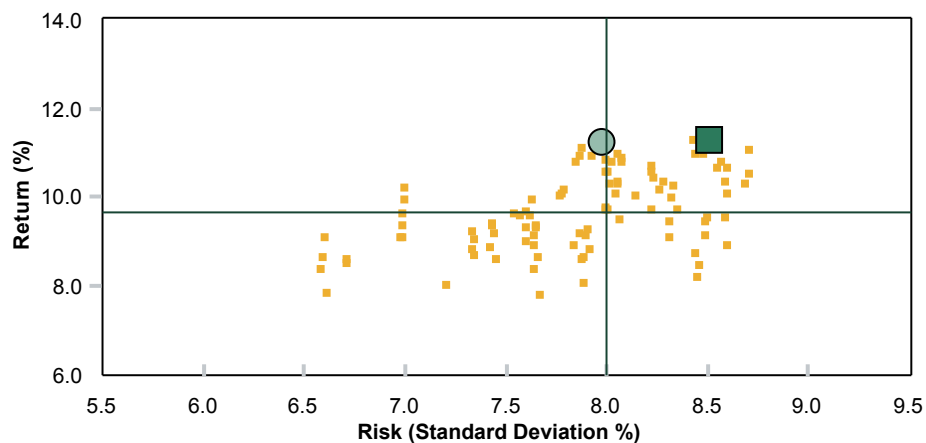
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2035.

### Historical Statistics (01/01/13 - 12/31/17) \*

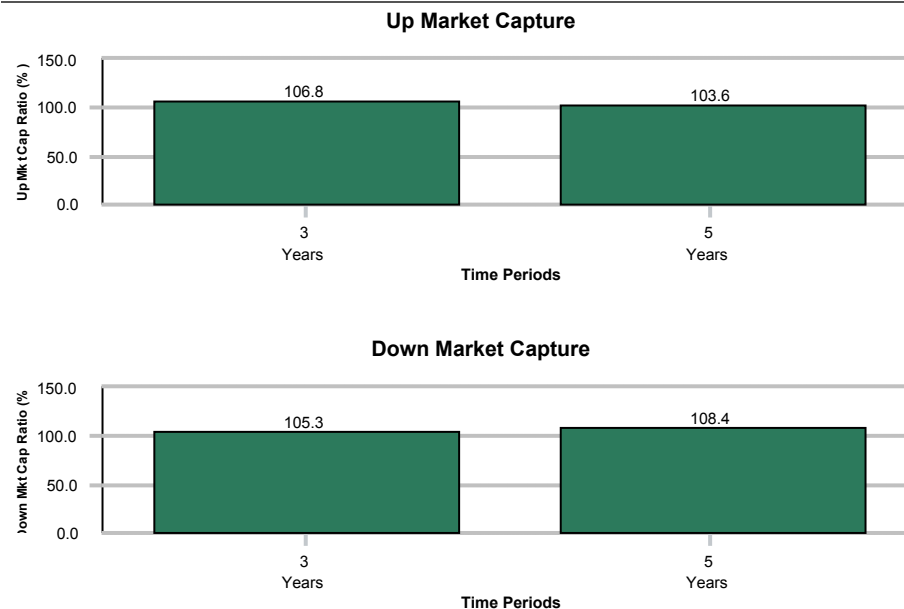
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2035 Instl	11.26	8.51	1.27	-0.53	1.06	0.98	1.28	0.06	8.50	02/01/2007
TIAA-CREF Lifecycle 2035 Active Composite Index	11.22	7.98	1.35	0.00	1.00	1.00	0.00	N/A	7.97	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	7.97	-1.35	0.00	02/01/2007

### Peer Group Scattergram (01/01/13 to 12/31/17)



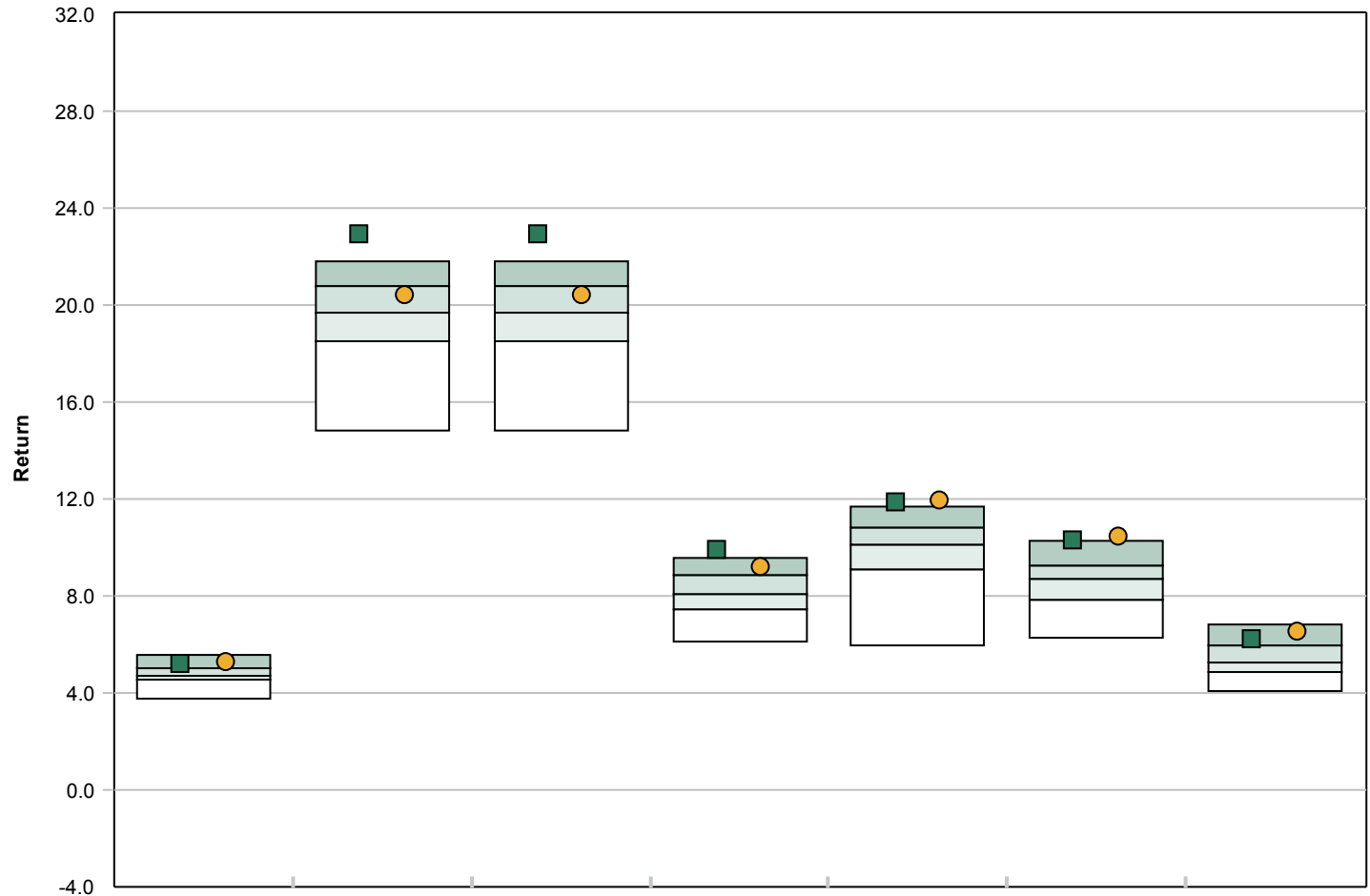
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2035 Instl	11.26	8.51
● TIAA-CREF Lifecycle 2035 Active Composite Index	11.22	7.98
— Median	9.66	8.00

### Up Down Market Capture



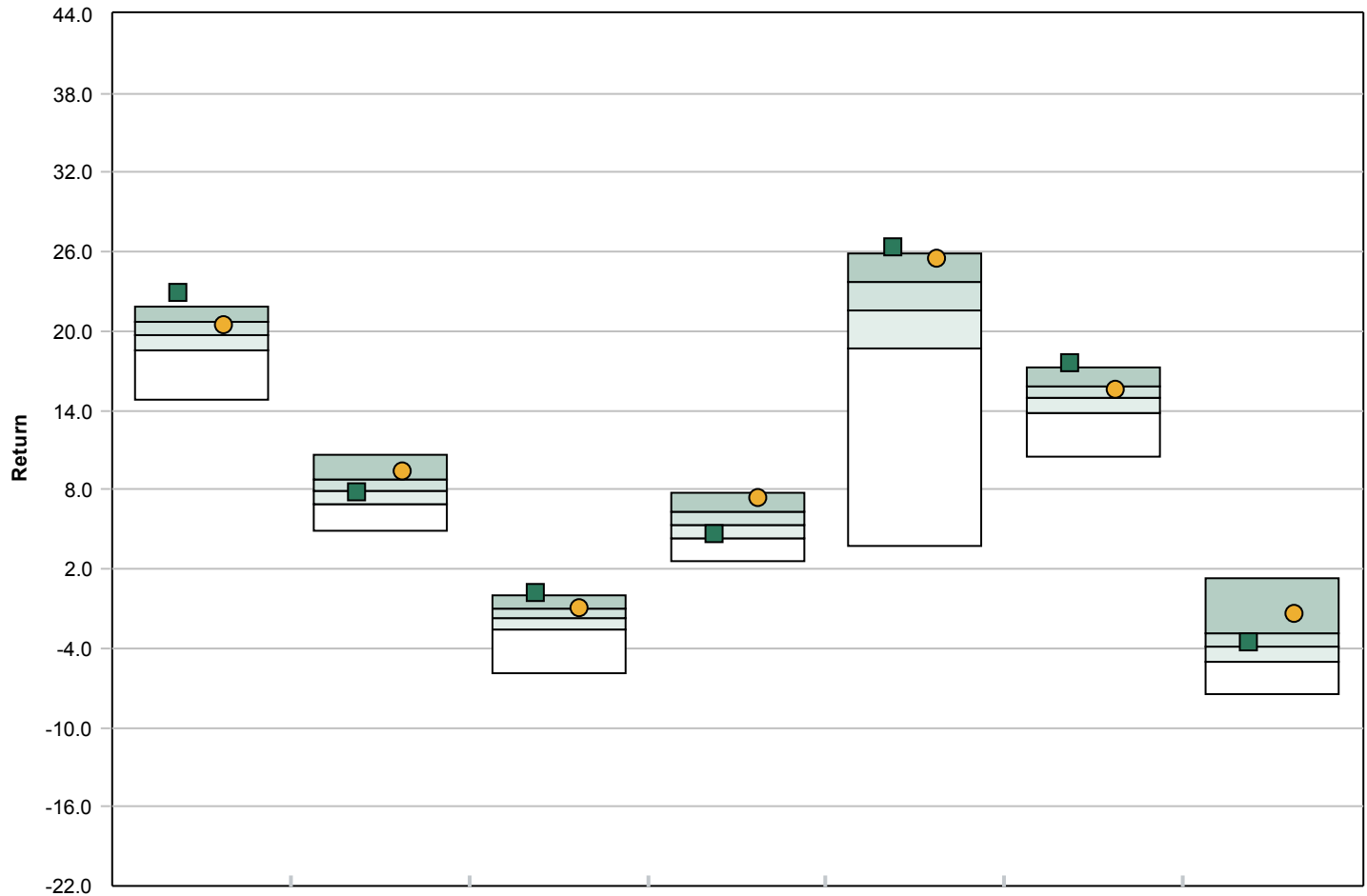
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2040 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2040 Instl	5.15 (14)	22.91 (1)	22.91 (1)	9.86 (1)	11.88 (4)	10.30 (6)	6.23 (15)
● TIAA-CREF Lifecycle 2040 Active Composite Index	5.23 (10)	20.37 (37)	20.37 (37)	9.21 (15)	11.90 (4)	10.40 (3)	6.49 (13)
5th Percentile	5.58	21.82	21.82	9.55	11.70	10.30	6.79
1st Quartile	5.00	20.76	20.76	8.87	10.81	9.27	5.94
Median	4.74	19.71	19.71	8.11	10.08	8.67	5.27
3rd Quartile	4.52	18.48	18.48	7.49	9.11	7.83	4.86
95th Percentile	3.77	14.86	14.86	6.11	5.94	6.26	4.04

Peer Group Analysis - IM Mixed-Asset Target 2040 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2040 Instl	22.91 (1)	7.78 (55)	0.09 (5)	4.63 (68)	26.33 (3)	17.52 (3)	-3.58 (42)
● TIAA-CREF Lifecycle 2040 Active Composite Index	20.37 (37)	9.37 (16)	-1.07 (29)	7.30 (11)	25.52 (7)	15.54 (34)	-1.39 (9)
5th Percentile	21.82	10.61	0.05	7.76	25.84	17.25	1.34
1st Quartile	20.76	8.78	-0.94	6.39	23.72	15.79	-2.82
Median	19.71	7.98	-1.75	5.38	21.61	14.92	-3.93
3rd Quartile	18.48	6.95	-2.61	4.27	18.67	13.80	-4.96
95th Percentile	14.86	4.95	-5.93	2.64	3.76	10.45	-7.49

## TIAA-CREF Lifecycle 2040 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2040 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TCOIX  
 Inception Date : 01/17/2007  
 Fund Assets : \$3,142 Million  
 Portfolio Turnover : 25%

Portfolio Assets : \$5,272 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2040 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2040 Active Composite Index

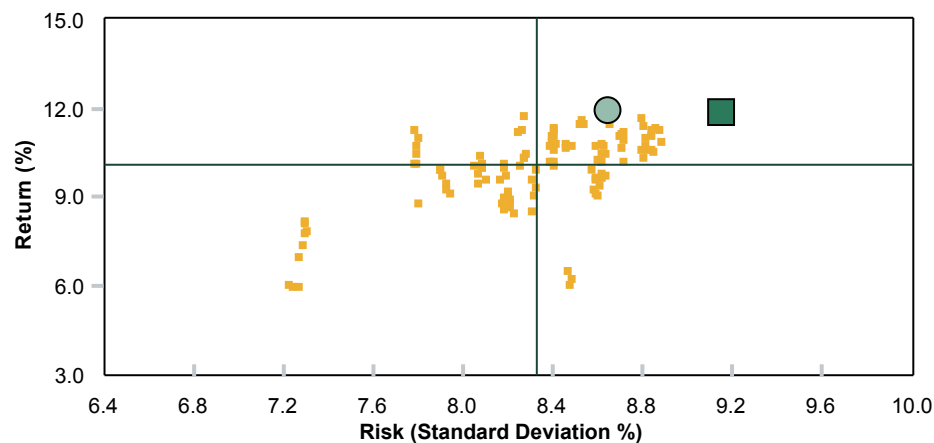
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income by investing in Underlying Funds according to an asset allocation strategy designed for investors planning to retire in or within a few years of 2040.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2040 Instl	11.88	9.16	1.25	-0.53	1.05	0.98	1.39	0.02	9.15	02/01/2007
TIAA-CREF Lifecycle 2040 Active Composite Index	11.90	8.65	1.32	0.00	1.00	1.00	0.00	N/A	8.64	02/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.64	-1.32	0.00	02/01/2007

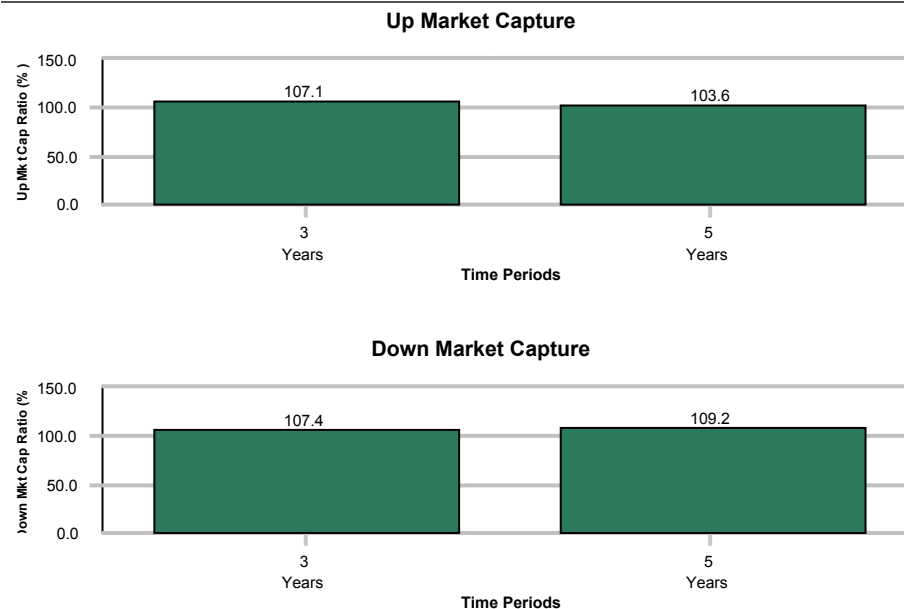
### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2040 Instl	11.88	9.16
● TIAA-CREF Lifecycle 2040 Active Composite Index	11.90	8.65
— Median	10.08	8.33

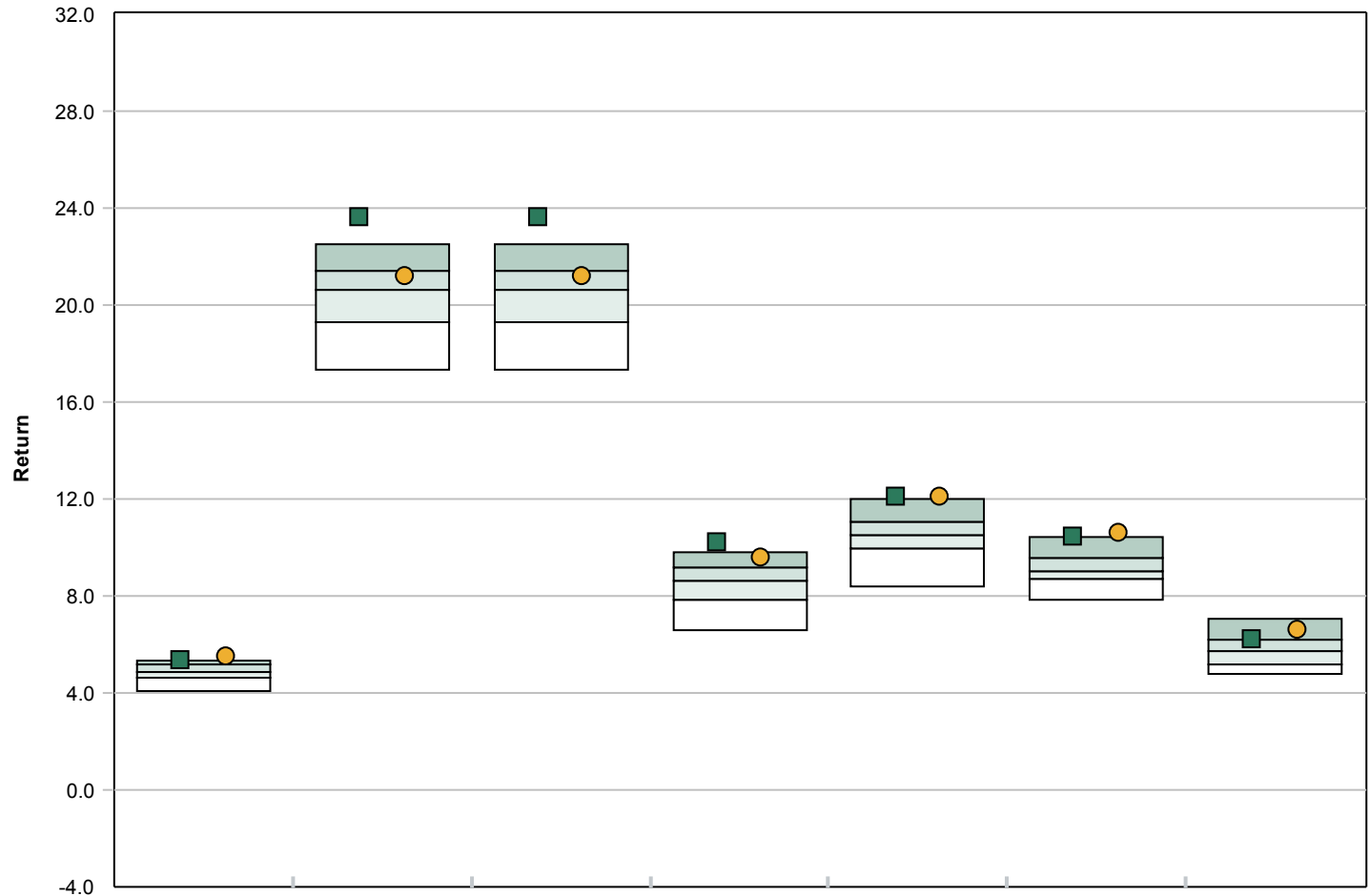
\* Monthly periodicity used.

### Up Down Market Capture



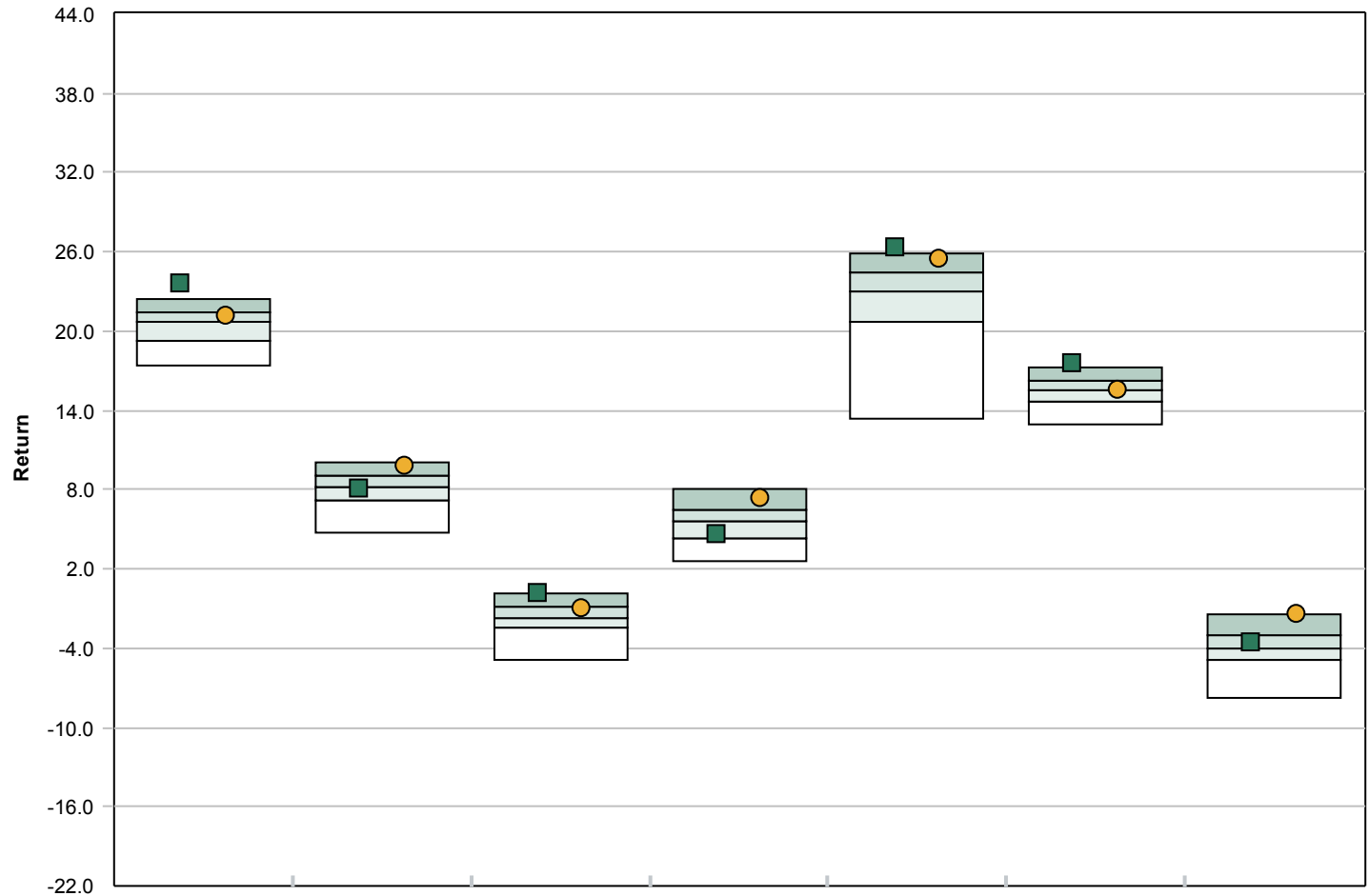


Peer Group Analysis - IM Mixed-Asset Target 2045 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2045 Instl	5.36 (6)	23.62 (1)	23.62 (1)	10.18 (1)	12.05 (4)	10.42 (8)	6.16 (28)
● TIAA-CREF Lifecycle 2045 Active Composite Index	5.48 (5)	21.18 (34)	21.18 (34)	9.57 (11)	12.12 (3)	10.55 (3)	6.60 (16)
5th Percentile	5.37	22.47	22.47	9.80	11.97	10.46	7.03
1st Quartile	5.19	21.44	21.44	9.17	11.10	9.58	6.23
Median	4.85	20.65	20.65	8.65	10.52	9.05	5.73
3rd Quartile	4.65	19.29	19.29	7.85	9.98	8.67	5.20
95th Percentile	4.07	17.35	17.35	6.58	8.36	7.85	4.80

Peer Group Analysis - IM Mixed-Asset Target 2045 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2045 Instl	23.62 (1)	8.06 (53)	0.13 (5)	4.61 (69)	26.25 (2)	17.56 (5)	-3.63 (37)
● TIAA-CREF Lifecycle 2045 Active Composite Index	21.18 (34)	9.72 (10)	-1.08 (32)	7.30 (12)	25.52 (8)	15.54 (46)	-1.39 (5)
5th Percentile	22.47	10.03	0.10	8.08	25.95	17.32	-1.48
1st Quartile	21.44	9.06	-0.88	6.50	24.47	16.22	-2.97
Median	20.65	8.18	-1.76	5.55	23.07	15.47	-4.03
3rd Quartile	19.29	7.15	-2.43	4.26	20.64	14.70	-4.91
95th Percentile	17.35	4.78	-4.95	2.64	13.40	12.99	-7.78

## TIAA-CREF Lifecycle 2045 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2045 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TTFIX  
 Inception Date : 11/30/2007  
 Fund Assets : \$1,598 Million  
 Portfolio Turnover : 23%

Portfolio Assets : \$2,659 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2045 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2045 Active Composite Index

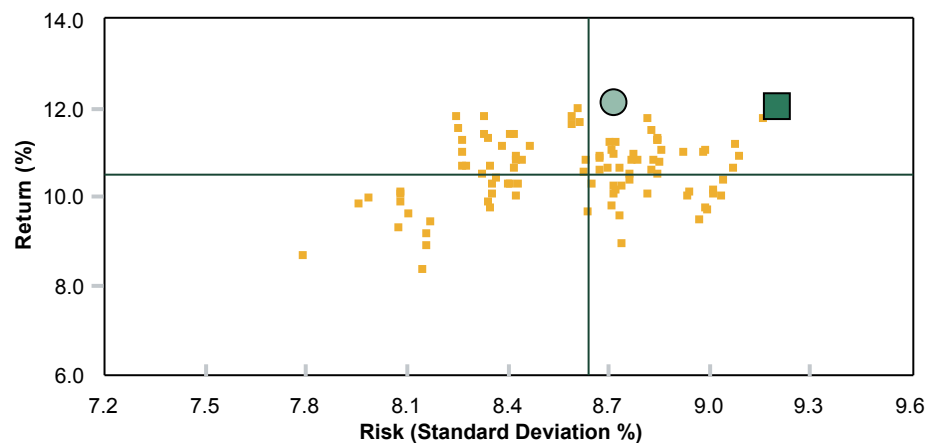
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income. The Fund seeks to allocate approximately 90% of its assets to equity Underlying Funds and 10% of its assets to fixed-income Underlying Funds.

### Historical Statistics (01/01/13 - 12/31/17) \*

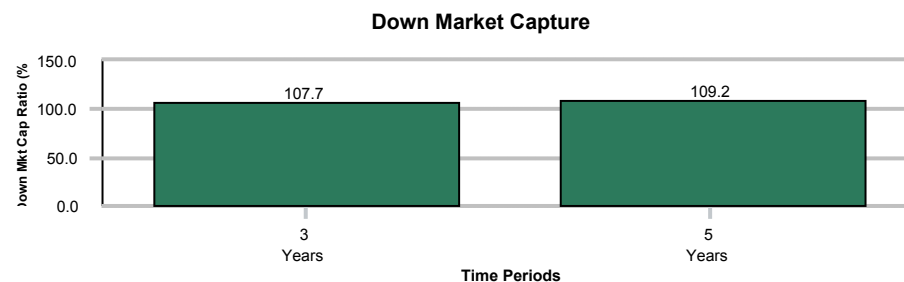
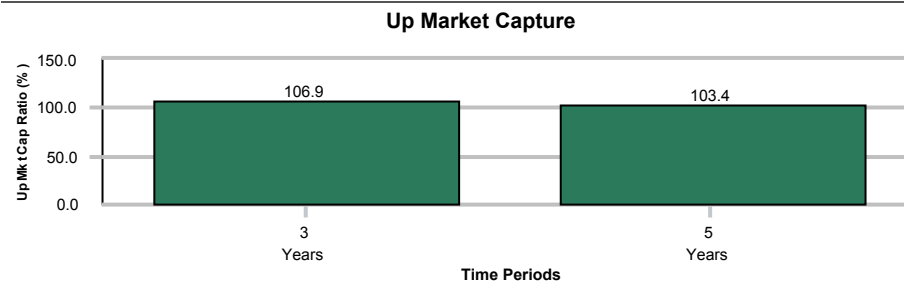
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2045 Instl	12.05	9.20	1.26	-0.54	1.04	0.98	1.38	-0.01	9.19	12/01/2007
TIAA-CREF Lifecycle 2045 Active Composite Index	12.12	8.71	1.34	0.00	1.00	1.00	0.00	N/A	8.70	12/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.70	-1.34	0.00	12/01/2007

### Peer Group Scattergram (01/01/13 to 12/31/17)



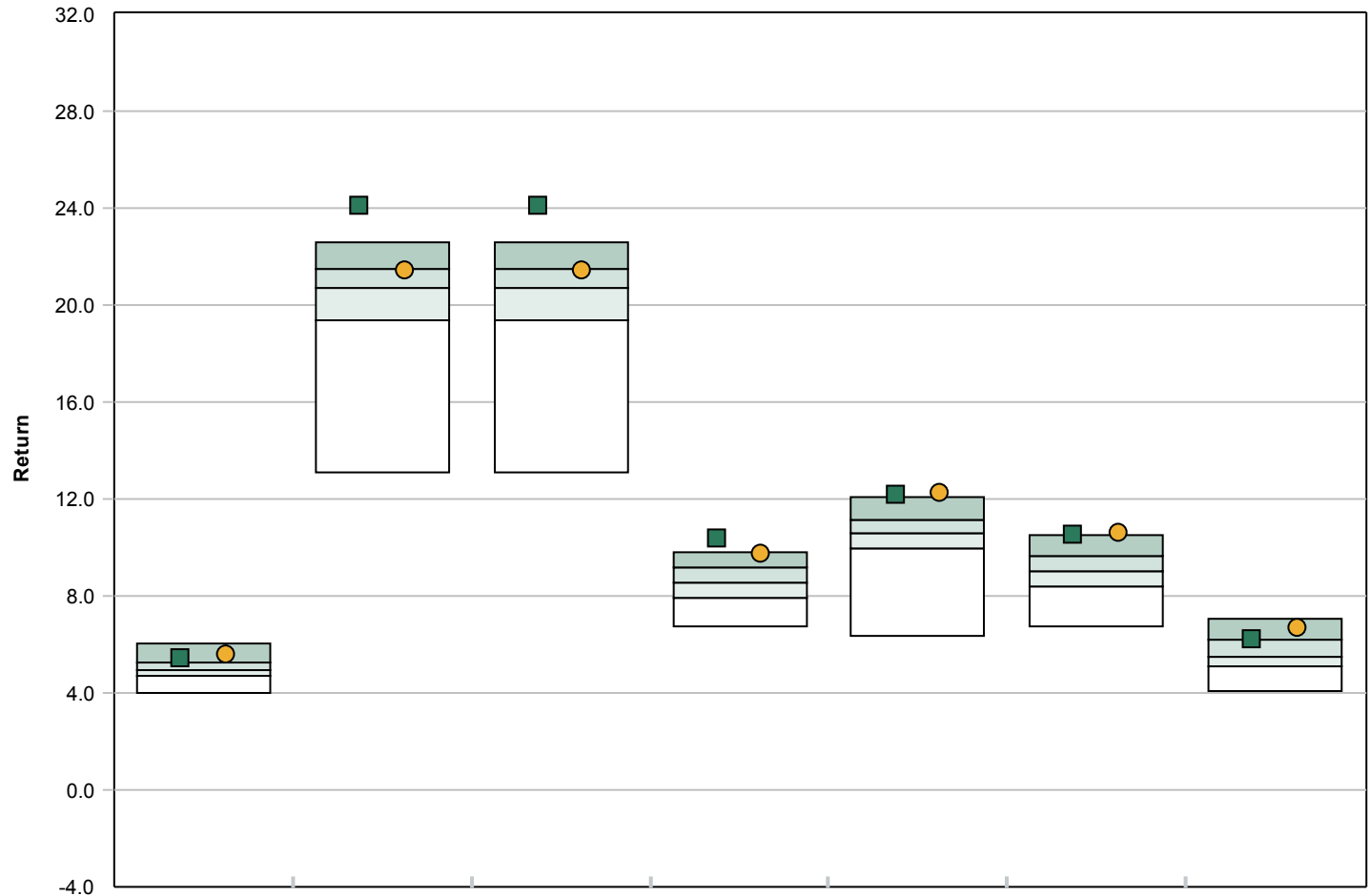
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2045 Instl	12.05	9.20
● TIAA-CREF Lifecycle 2045 Active Composite Index	12.12	8.71
— Median	10.52	8.64

### Up Down Market Capture



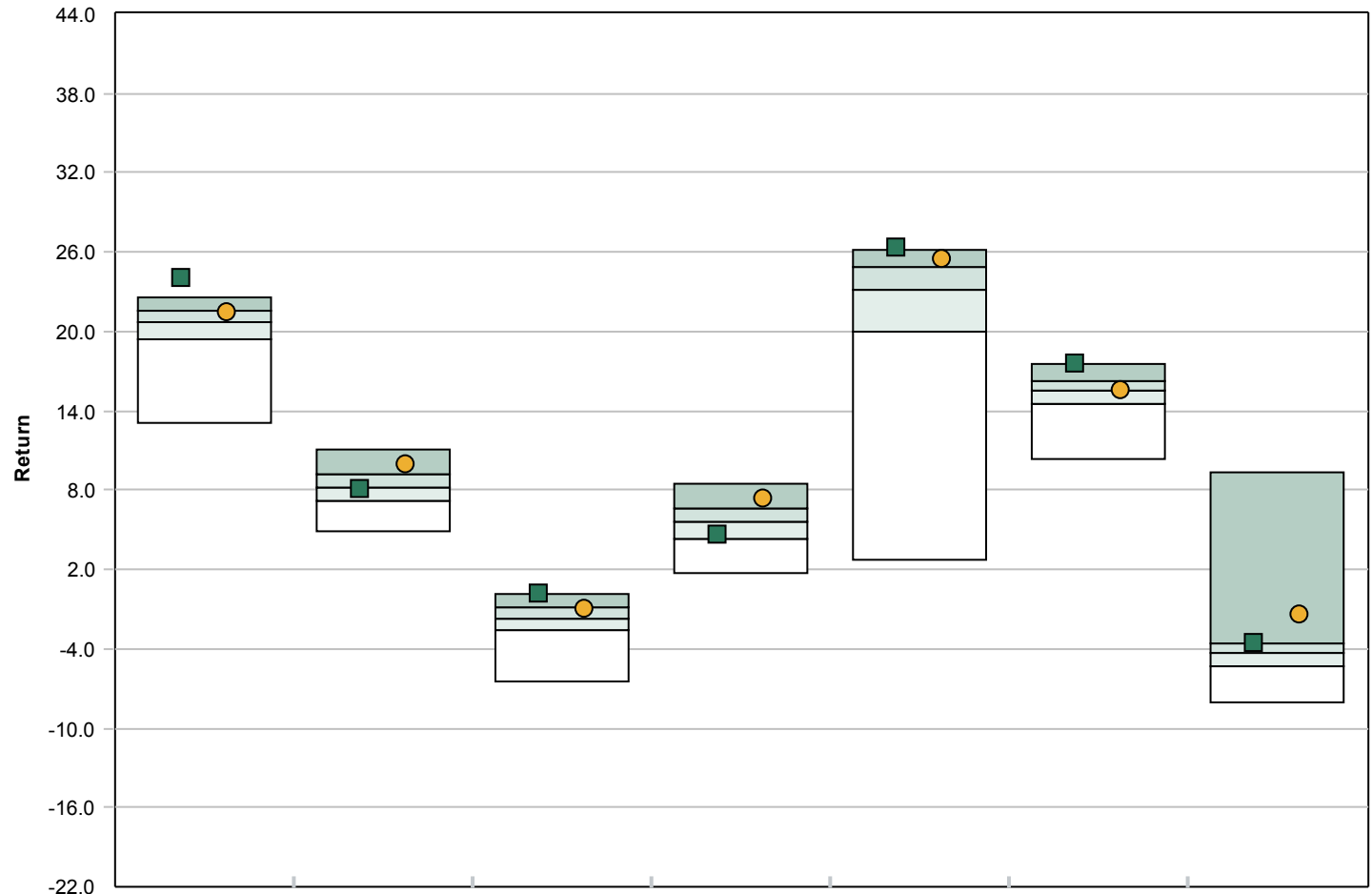
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2050 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2050 Instl	5.42 (12)	24.04 (1)	24.04 (1)	10.34 (1)	12.14 (4)	10.49 (5)	6.19 (24)
● TIAA-CREF Lifecycle 2050 Active Composite Index	5.55 (9)	21.44 (29)	21.44 (29)	9.71 (8)	12.20 (3)	10.62 (2)	6.64 (14)
5th Percentile	6.06	22.59	22.59	9.80	12.05	10.48	7.02
1st Quartile	5.25	21.53	21.53	9.17	11.11	9.61	6.18
Median	4.98	20.67	20.67	8.53	10.61	9.02	5.52
3rd Quartile	4.74	19.38	19.38	7.93	9.96	8.39	5.07
95th Percentile	4.03	13.12	13.12	6.76	6.37	6.73	4.05

Peer Group Analysis - IM Mixed-Asset Target 2050 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2050 Instl	24.04 (1)	8.10 (52)	0.18 (5)	4.59 (70)	26.25 (3)	17.53 (6)	-3.56 (26)
● TIAA-CREF Lifecycle 2050 Active Composite Index	21.44 (29)	9.91 (12)	-1.08 (32)	7.30 (15)	25.52 (15)	15.54 (48)	-1.39 (9)
5th Percentile	22.59	11.02	0.10	8.49	26.14	17.55	9.37
1st Quartile	21.53	9.18	-0.87	6.59	24.86	16.27	-3.54
Median	20.67	8.19	-1.76	5.61	23.08	15.47	-4.38
3rd Quartile	19.38	7.13	-2.61	4.32	19.99	14.52	-5.36
95th Percentile	13.12	4.94	-6.41	1.70	2.68	10.37	-8.12

## TIAA-CREF Lifecycle 2050 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2050 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TFTIX  
 Inception Date : 11/30/2007  
 Fund Assets : \$997 Million  
 Portfolio Turnover : 22%

Portfolio Assets : \$1,707 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2007--2007  
 Fund Style : IM Mixed-Asset Target 2050 (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2050 Active Composite Index

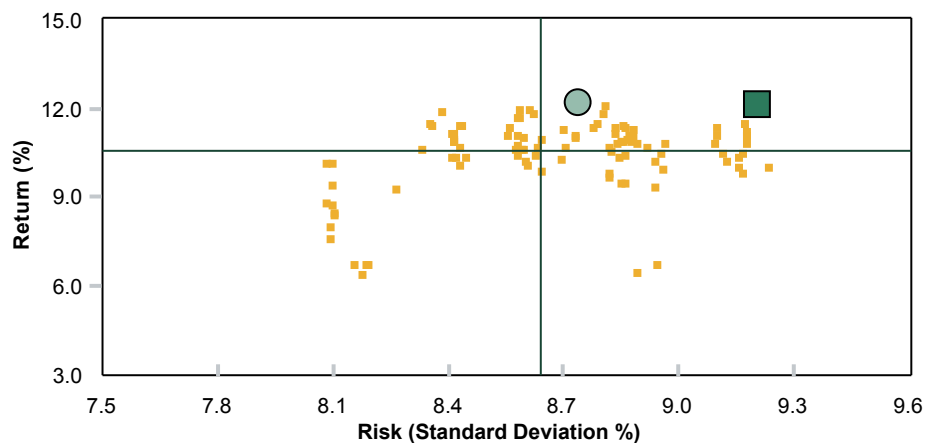
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income. The Fund seeks to allocate approximately 90% of its assets to equity Underlying Funds and 10% of its assets to fixed-income Underlying Funds.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2050 Instl	12.14	9.21	1.27	-0.52	1.04	0.98	1.39	-0.01	9.19	12/01/2007
TIAA-CREF Lifecycle 2050 Active Composite Index	12.20	8.74	1.34	0.00	1.00	1.00	0.00	N/A	8.73	12/01/2007
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.73	-1.34	0.00	12/01/2007

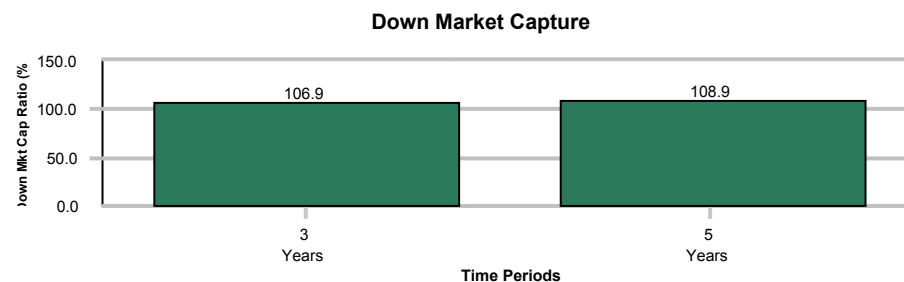
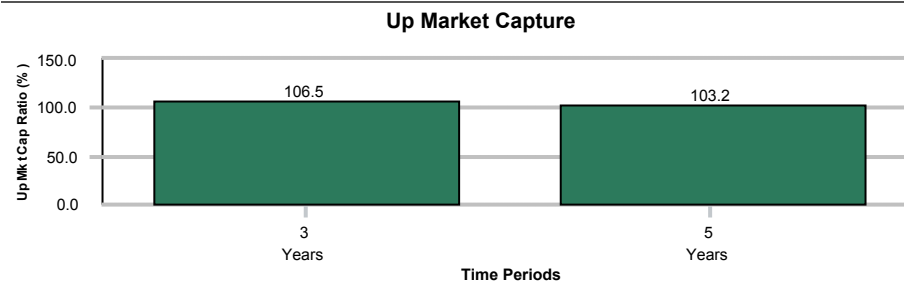
### Peer Group Scattergram (01/01/13 to 12/31/17)



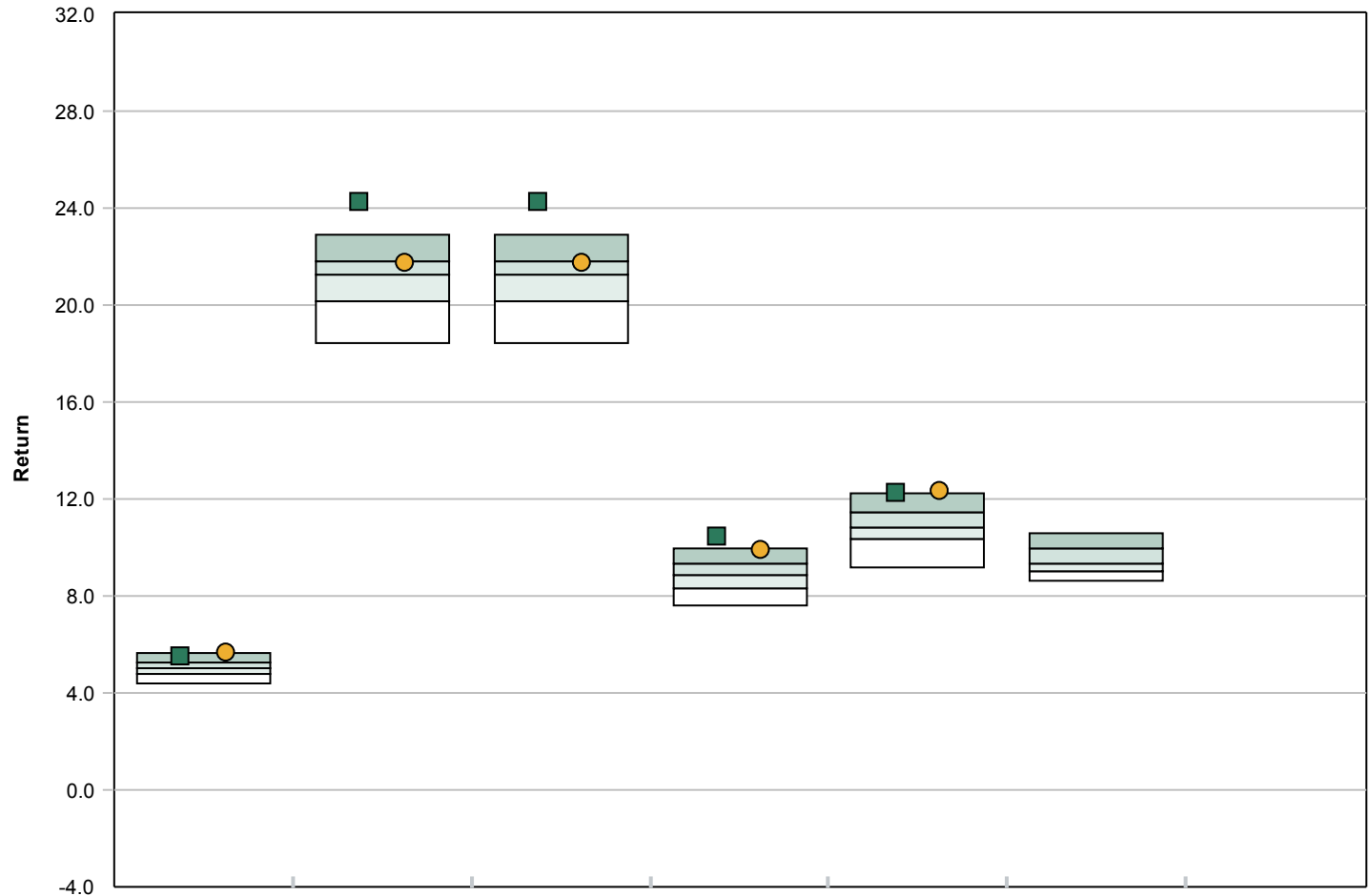
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2050 Instl	12.14	9.21
● TIAA-CREF Lifecycle 2050 Active Composite Index	12.20	8.74
— Median	10.61	8.64

\* Monthly periodicity used.

### Up Down Market Capture

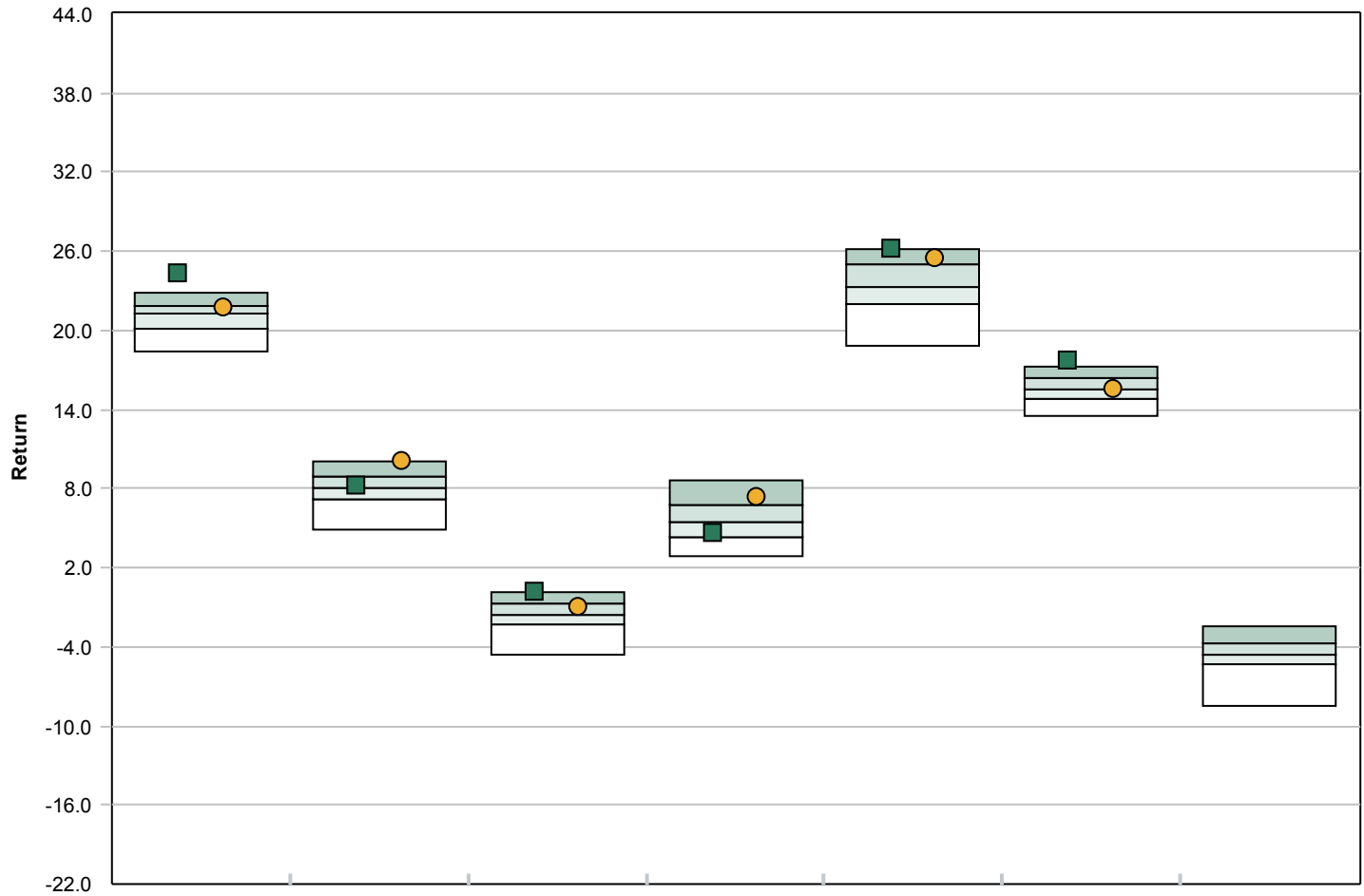


Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2055 Instl	5.46 (13)	24.23 (2)	24.23 (2)	10.43 (1)	12.20 (6)	N/A	N/A
● TIAA-CREF Lifecycle 2055 Active Composite Index	5.62 (8)	21.70 (30)	21.70 (30)	9.85 (7)	12.29 (3)	N/A	N/A
5th Percentile	5.67	22.93	22.93	9.96	12.20	10.60	N/A
1st Quartile	5.28	21.81	21.81	9.31	11.43	9.94	N/A
Median	5.05	21.23	21.23	8.85	10.84	9.33	N/A
3rd Quartile	4.82	20.14	20.14	8.28	10.32	9.01	N/A
95th Percentile	4.37	18.46	18.46	7.63	9.20	8.63	N/A

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2055 Instl	24.23 (2)	8.27 (46)	0.13 (6)	4.58 (71)	26.24 (4)	17.65 (1)	N/A
● TIAA-CREF Lifecycle 2055 Active Composite Index	21.70 (30)	10.11 (5)	-1.08 (36)	7.30 (16)	25.52 (15)	15.54 (52)	N/A
5th Percentile	22.93	10.07	0.15	8.57	26.18	17.28	-2.44
1st Quartile	21.81	8.98	-0.74	6.72	25.01	16.45	-3.78
Median	21.23	8.12	-1.64	5.45	23.24	15.58	-4.66
3rd Quartile	20.14	7.20	-2.31	4.30	22.01	14.83	-5.26
95th Percentile	18.46	4.87	-4.59	2.91	18.83	13.47	-8.51



## TIAA-CREF Lifecycle 2055 Instl

### Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2055 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TTRIX  
 Inception Date : 04/29/2011  
 Fund Assets : \$242 Million  
 Portfolio Turnover : 18%

Portfolio Assets : \$478 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2011--2011  
 Fund Style : IM Mixed-Asset Target 2055+ (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2055 Active Composite Index

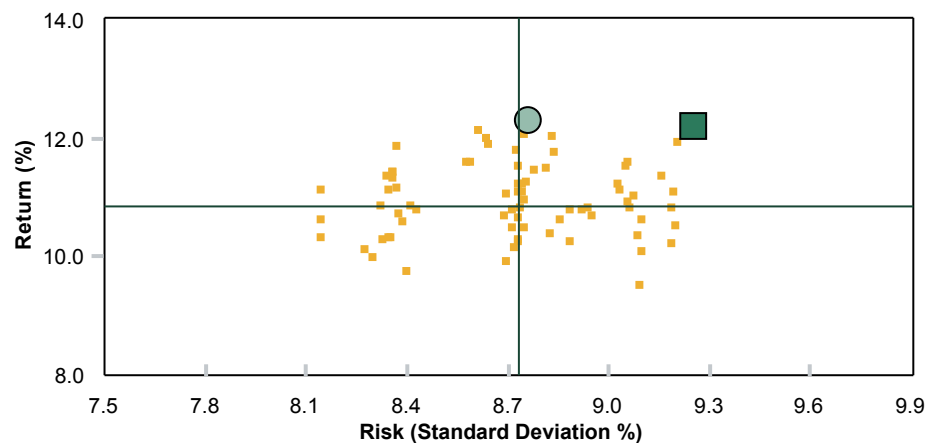
### Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income. The Fund expects to allocate approximately 90% of its assets to equity Underlying Funds and 10% of its assets to fixed-income Underlying Funds.

### Historical Statistics (01/01/13 - 12/31/17) \*

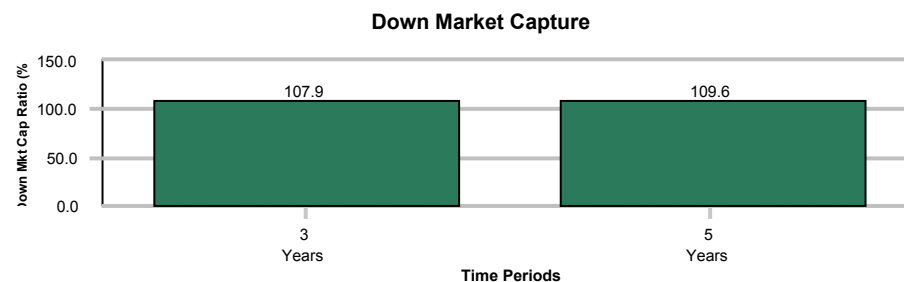
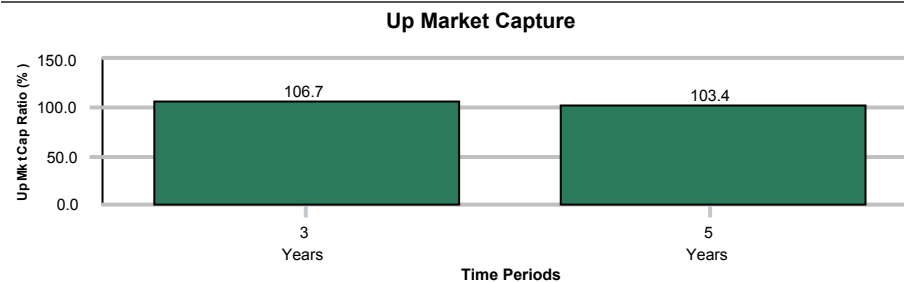
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2055 Instl	12.20	9.25	1.27	-0.58	1.04	0.98	1.42	-0.03	9.24	05/01/2011
TIAA-CREF Lifecycle 2055 Active Composite Index	12.29	8.76	1.35	0.00	1.00	1.00	0.00	N/A	8.75	05/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.75	-1.35	0.00	05/01/2011

### Peer Group Scattergram (01/01/13 to 12/31/17)



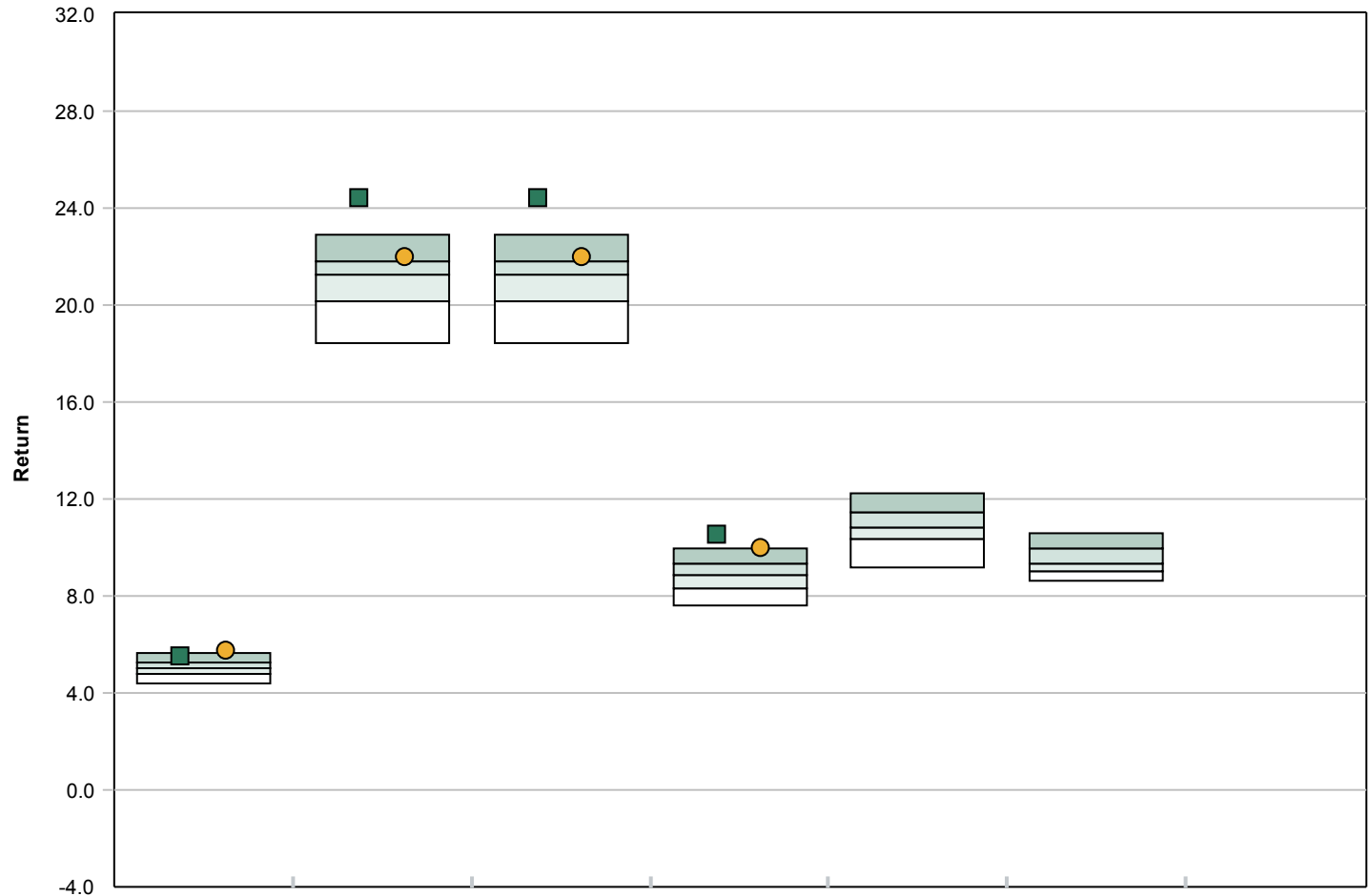
	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2055 Instl	12.20	9.25
● TIAA-CREF Lifecycle 2055 Active Composite Index	12.29	8.76
— Median	10.84	8.73

### Up Down Market Capture



\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ TIAA-CREF Lifecycle 2060 Instl	5.49 (11)	24.40 (1)	24.40 (1)	10.55 (1)	N/A	N/A	N/A
● TIAA-CREF Lifecycle 2060 Active Composite Index	5.69 (5)	21.97 (22)	21.97 (22)	10.00 (5)	N/A	N/A	N/A
5th Percentile	5.67	22.93	22.93	9.96	12.20	10.60	N/A
1st Quartile	5.28	21.81	21.81	9.31	11.43	9.94	N/A
Median	5.05	21.23	21.23	8.85	10.84	9.33	N/A
3rd Quartile	4.82	20.14	20.14	8.28	10.32	9.01	N/A
95th Percentile	4.37	18.46	18.46	7.63	9.20	8.63	N/A

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	2017	2016	2015	2014	2013	2012	2011
■ TIAA-CREF Lifecycle 2060 Instl	24.40 (1)	8.39 (41)	0.19 (4)	N/A	N/A	N/A	N/A
● TIAA-CREF Lifecycle 2060 Active Composite Index	21.97 (22)	10.31 (4)	-1.08 (36)	N/A	N/A	N/A	N/A
5th Percentile	22.93	10.07	0.15	8.57	26.18	17.28	-2.44
1st Quartile	21.81	8.98	-0.74	6.72	25.01	16.45	-3.78
Median	21.23	8.12	-1.64	5.45	23.24	15.58	-4.66
3rd Quartile	20.14	7.20	-2.31	4.30	22.01	14.83	-5.26
95th Percentile	18.46	4.87	-4.59	2.91	18.83	13.47	-8.51

# TIAA-CREF Lifecycle 2060 Instl

## Fund Information

Fund Name : TIAA-CREF Funds: Lifecycle 2060 Fund; Institutional Class Shares  
 Fund Family : TIAA-CREF  
 Ticker : TLXNX  
 Inception Date : 09/26/2014  
 Fund Assets : \$36 Million  
 Portfolio Turnover : 79%

Portfolio Assets : \$62 Million  
 Portfolio Manager : Erickson/Cunniff  
 PM Tenure : 2014--2014  
 Fund Style : IM Mixed-Asset Target 2055+ (MF)  
 Style Benchmark : TIAA-CREF Lifecycle 2060 Active Composite Index

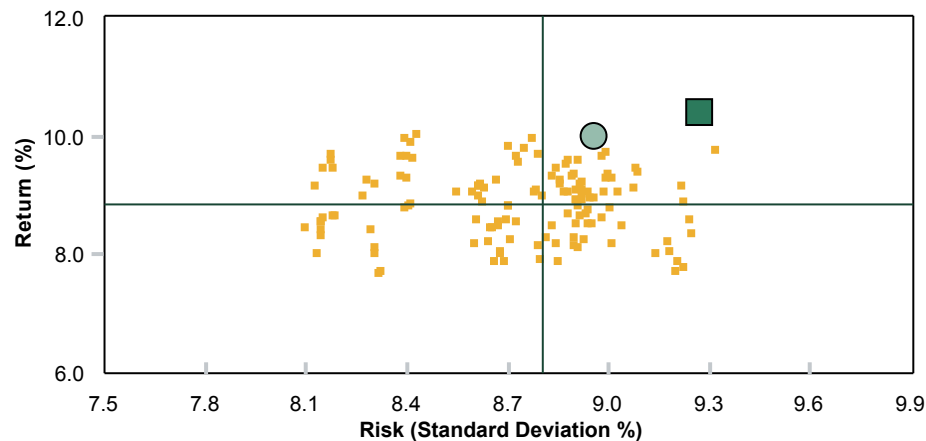
## Fund Investment Policy

The Fund seeks high total return over time through a combination of capital appreciation and income. The Fund is a fund of funds that invests in the other funds of the Trust. The Fund invests in funds according to an asset allocation strategy designed for investors retiring/planning to retire within a few years of 2060.

## Historical Statistics (10/01/14 - 12/31/17) \*

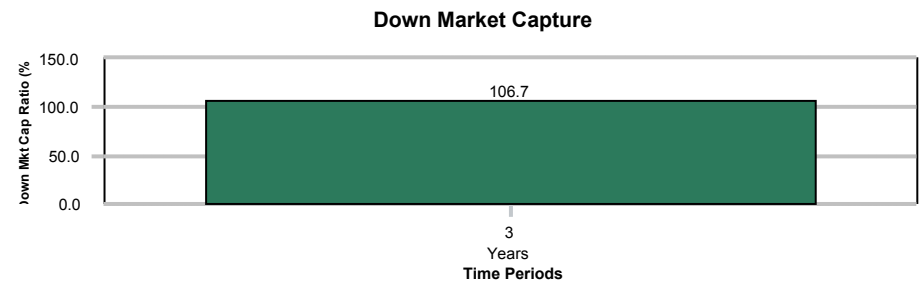
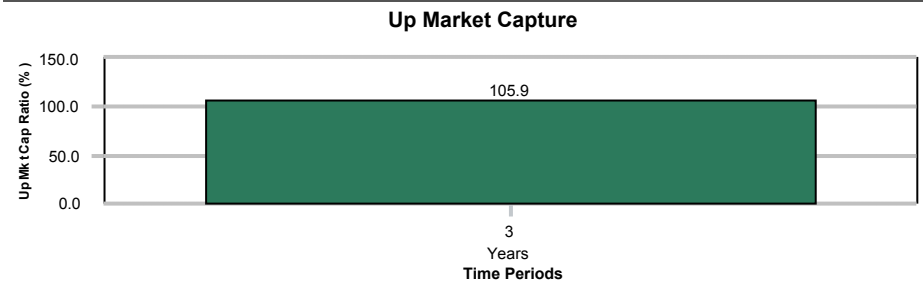
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
TIAA-CREF Lifecycle 2060 Instl	10.40	9.27	1.08	0.16	1.02	0.98	1.34	0.31	9.25	10/01/2014
TIAA-CREF Lifecycle 2060 Active Composite Index	9.99	8.96	1.08	0.00	1.00	1.00	0.00	N/A	8.93	10/01/2014
90 Day U.S. Treasury Bill	0.35	0.12	N/A	0.32	0.00	0.05	8.93	-1.08	0.00	10/01/2014

## Peer Group Scattergram (10/01/14 to 12/31/17)



	Return	Standard Deviation
■ TIAA-CREF Lifecycle 2060 Instl	10.40	9.27
● TIAA-CREF Lifecycle 2060 Active Composite Index	9.99	8.96
— Median	8.85	8.81

## Up Down Market Capture



\* Monthly periodicity used.

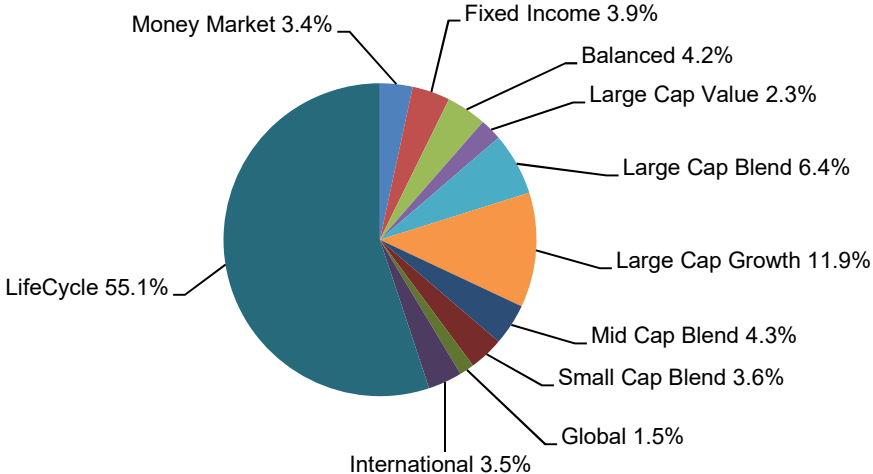
**HF GNK[ 'K XGUVO GP V'UWO O CT[**

**Plan Activity**  
January 1, 2016 through December 31, 2016

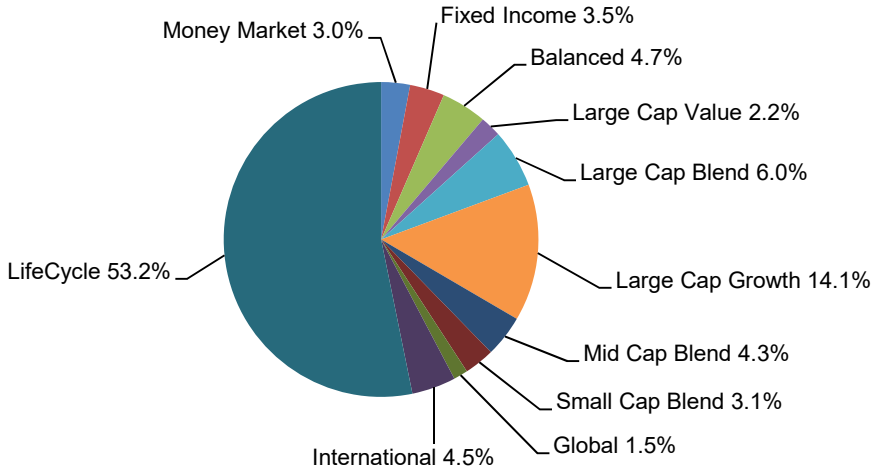
Fund	Beginning Balance Jan. 1, 2016	Contributions	Balance Forward *	Disbursements	Net Exchanges	Adjustments	Fees	Investment Gain/Loss	Ending Balance Dec. 31, 2016
Fidelity Cash Reserve	7,680,090	387,871	207,074	(237,877)	(8,042,749)	8	982	4,601	0
Vanguard Treasury MM	-	223,983	-	(115,649)	10,293,661	(0)	350	7,069	10,409,414
Fidelity U.S. Bond Index Is	6,228,965	550,909	198	(256,068)	463,228	-	1,427	150,269	7,138,928
Fidelity Inflation Protected Bond	-	61,654	-	(8,915)	1,491,847	-	92	(38,231)	1,506,446
Blackrock Inflation Protected K	1,143,731	107,156	-	(26,077)	(1,304,973)	-	250	79,913	-
WA Core Bond	1,807,727	232,991	-	(26,042)	1,261,299	-	457	95,917	3,372,349
Fidelity Balanced K	12,074,105	832,910	1,320	(276,195)	(606,625)	1	2,237	834,446	12,862,199
BlackRock Equity Dividend	5,634,209	447,227	-	(128,391)	158,267	-	1,178	959,034	7,071,524
Fidelity 500 Idx Ins	15,475,483	1,689,255	17,161	(278,286)	921,478	0	3,260	2,049,421	19,877,772
NB Socially Responsive	2,473,945	207,642	-	(47,870)	(239,084)	0	514	253,804	2,648,952
Fidelity Contrafund K	19,045,146	1,269,798	1,772	(499,575)	(756,130)	1	3,741	701,098	19,765,850
Fidelity Blue Chip Growth K	14,952,099	1,232,717	-	(302,340)	(1,850,454)	0	2,705	212,754	14,247,482
Fidelity Mid Cap Stock K	11,066,712	791,657	11,441	(261,020)	(114,378)	0	2,096	1,714,106	13,210,614
DFA US Small Cap	6,600,690	545,796	14,301	(169,818)	116,825	0	1,201	1,629,933	8,738,927
Fidelity Small Cap Index Premium	1,443,051	205,041	-	(28,815)	313,435	-	364	352,953	2,286,028
Fidelity Diversified International K	11,653,223	843,233	15,322	(227,519)	(1,000,701)	1	2,541	(406,006)	10,880,095
Fkln Mtl Global Disc R6	3,116,564	291,181	-	(53,231)	(52,790)	0	677	419,396	3,721,797
Fidelity Global ex US Idx Premium	712,854	118,307	-	(53,166)	232,002	-	147	39,487	1,049,631
Fidelity Freedom K Income	6,228,783	319,933	-	(287,600)	39,853	5	390	327,446	6,628,811
Fidelity Freedom K 2005	643,904	76,988	-	(27,562)	(12,434)	-	148	39,871	720,913
Fidelity Freedom K 2010	1,804,837	253,620	-	(79,057)	(85,497)	1	389	117,965	2,012,259
Fidelity Freedom K 2015	5,836,903	690,884	-	(321,162)	(453,034)	1	1,268	402,607	6,157,468
Fidelity Freedom K 2020	10,364,731	1,585,790	49,154	(414,257)	(90,943)	1	2,449	828,255	12,325,180
Fidelity Freedom K 2025	14,479,064	1,941,389	205,308	(463,551)	(37,175)	13	3,209	1,174,396	17,302,652
Fidelity Freedom K 2030	16,603,137	2,887,474	3,571	(747,979)	142,949	1	3,479	1,540,783	20,433,415
Fidelity Freedom K 2035	20,056,802	3,033,801	1,685	(860,338)	(47,599)	1	4,410	1,947,663	24,136,426
Fidelity Freedom K 2040	29,026,174	4,967,076	100,513	(888,689)	(481,334)	1	6,074	2,754,246	35,484,061
Fidelity Freedom K 2045	17,537,319	4,814,032	-	(733,184)	(68,521)	(11)	3,863	1,849,990	23,403,488
Fidelity Freedom K 2050	12,498,494	4,154,501	-	(657,041)	(141,022)	1	2,734	1,329,418	17,187,085
Fidelity Freedom K 2055	2,580,881	1,603,289	-	(164,631)	(49,403)	-	652	323,635	4,294,424
Fidelity Freedom K 2060	-	67,302	-	-	-	-	5	1,105	68,412
<b>Total</b>	<b>258,769,624</b>	<b>36,435,406</b>	<b>628,819</b>	<b>(8,641,904)</b>	<b>0</b>	<b>26</b>	<b>53,288</b>	<b>21,697,345</b>	<b>308,942,603</b>

\* Balance Forward represents transfer of assets to Fidelity from another provider.

**Asset Allocation as of December 31, 2016**



**Asset Allocation as of December 31, 2015**

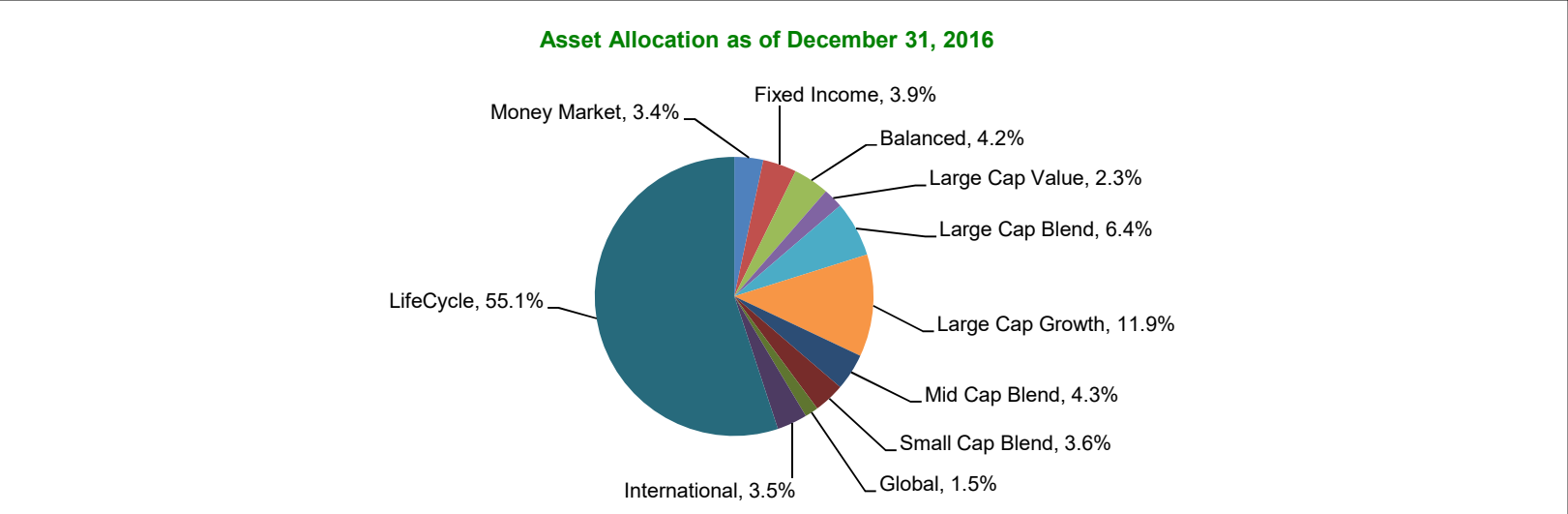
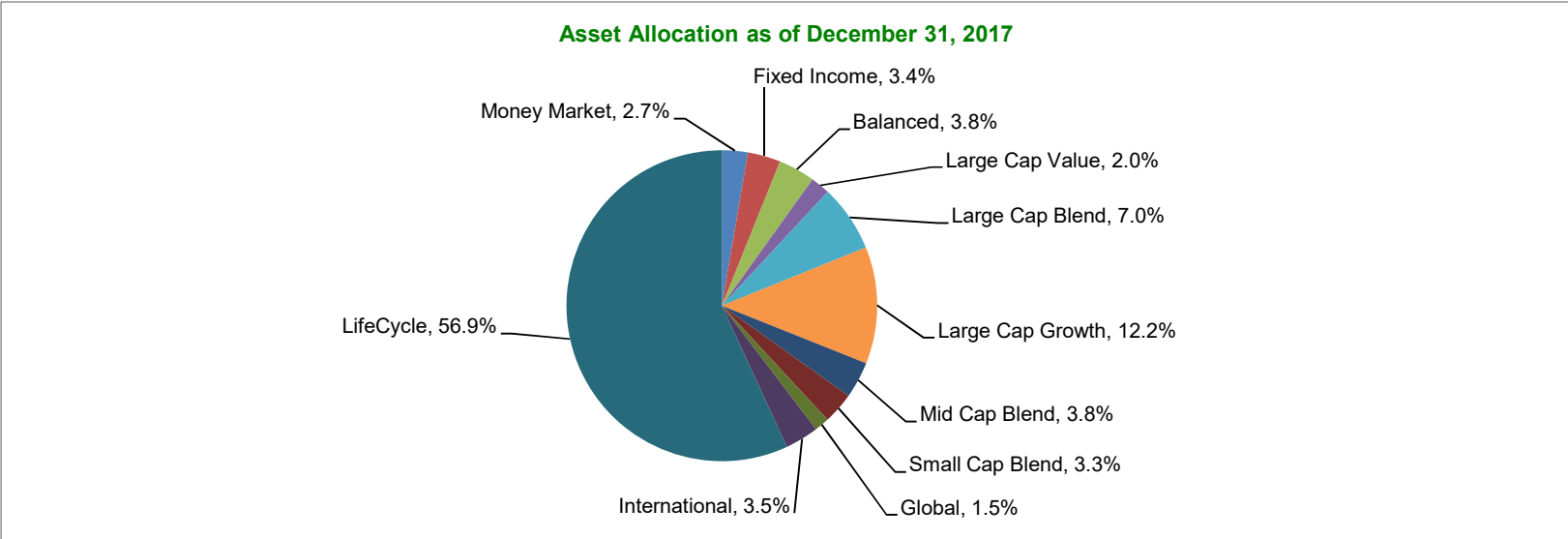


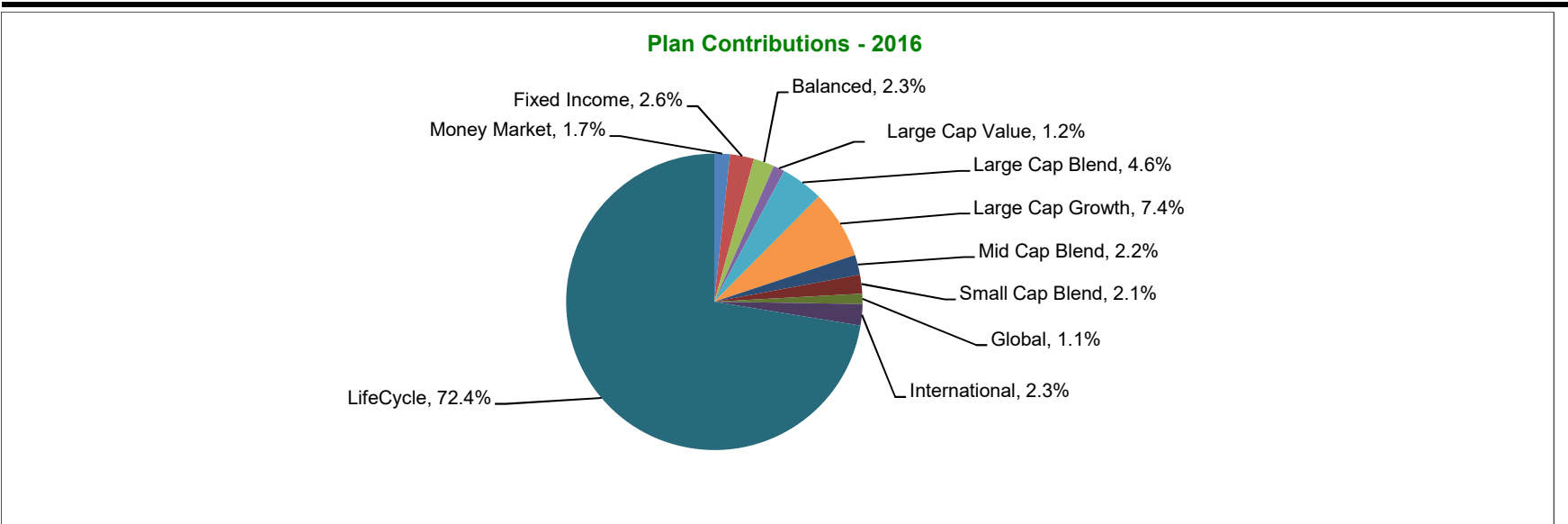
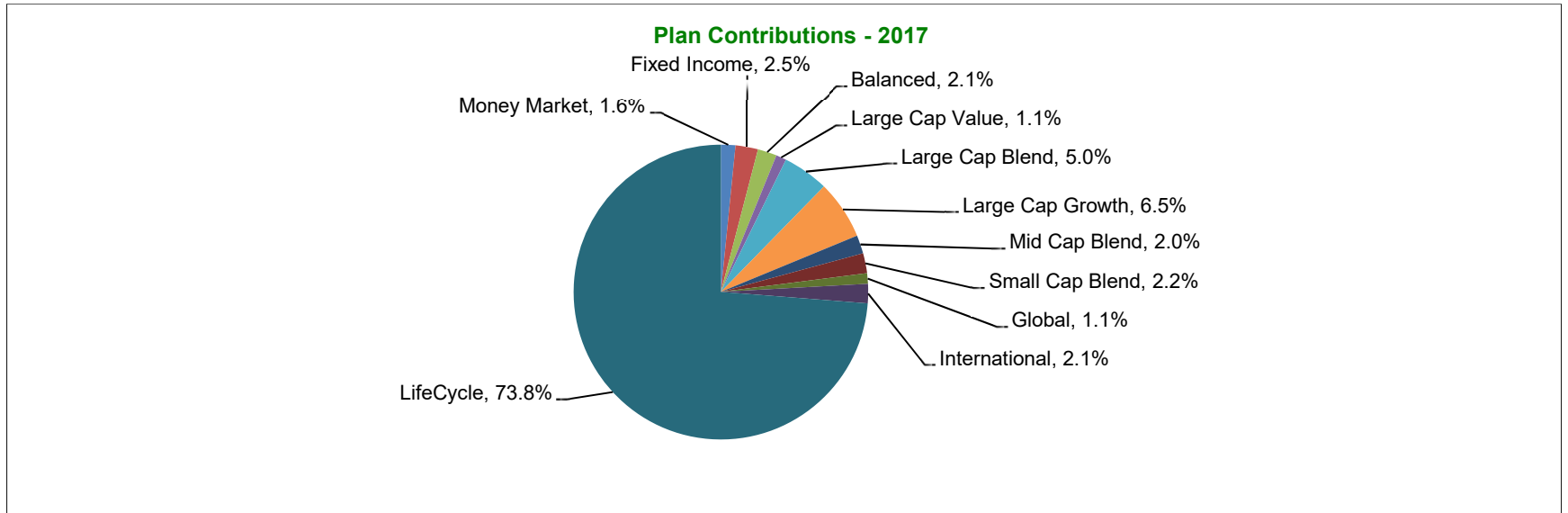
Plan Activity  
January 1, 2017 through December 31, 2017

Fund	Beginning Balance Jan. 1, 2017	Contributions	Balance Forward *	Disbursements	Net Exchanges	Adjustments	Fees	Investment Gain/Loss	Ending Balance Dec. 31, 2017
Vanguard Treasury MM	\$ 10,409,414	\$ 595,762	\$ 384	\$ (938,823)	\$ 598,421	\$ 876	\$ (5,651)	\$ 81,203	\$ 10,741,585
Fidelity U.S. Bond Index Is	\$ 7,138,928	\$ 505,548	\$ 36,719	\$ (261,805)	\$ 526,777	\$ -	\$ (976)	\$ 258,116	\$ 8,203,307
Fidelity Inflation Protected Bond	\$ 1,506,446	\$ 184,064	\$ -	\$ (55,220)	\$ 400,241	\$ -	\$ (230)	\$ 56,419	\$ 2,091,721
WA Core Bond	\$ 3,372,349	\$ 232,636	\$ 129,767	\$ (520,111)	\$ (58,224)	\$ -	\$ 299	\$ 159,232	\$ 3,315,948
Fidelity Balanced K	\$ 12,862,199	\$ 786,277	\$ 1,303	\$ (385,793)	\$ (264,017)	\$ -	\$ 7,601	\$ 2,146,574	\$ 15,154,143
BlackRock Equity Dividend	\$ 7,071,524	\$ 421,717	\$ 14,606	\$ (383,226)	\$ (279,287)	\$ -	\$ 4,751	\$ 1,144,777	\$ 7,994,862
Fidelity 500 Idx Ins	\$ 19,877,772	\$ 1,885,288	\$ 675,272	\$ (1,309,032)	\$ 1,900,801	\$ -	\$ (14,055)	\$ 4,660,256	\$ 27,676,300
NB Socially Responsive	\$ 2,648,952	\$ 164,000	\$ -	\$ (14,566)	\$ (175,487)	\$ -	\$ (1,673)	\$ 486,037	\$ 3,107,263
Fidelity Contrafund K	\$ 19,765,850	\$ 1,152,164	\$ 31,165	\$ (1,013,258)	\$ (721,649)	\$ -	\$ 13,380	\$ 6,313,695	\$ 25,541,348
Fidelity Blue Chip Growth K	\$ 14,247,482	\$ 1,107,057	\$ -	\$ (1,213,244)	\$ 638,685	\$ 3	\$ 3,730	\$ 5,053,102	\$ 19,836,814
Fidelity Mid Cap Stock K	\$ 13,210,614	\$ 748,920	\$ 22,026	\$ (709,417)	\$ (661,482)	\$ 3	\$ 7,492	\$ 2,425,998	\$ 15,044,154
DFA US Small Cap	\$ 8,738,927	\$ 568,126	\$ 21,968	\$ (186,663)	\$ (651,772)	\$ 3	\$ (174)	\$ 995,267	\$ 9,485,681
Fidelity Small Cap Index Premium	\$ 2,286,028	\$ 254,362	\$ -	\$ (24,529)	\$ 656,515	\$ -	\$ (1,285)	\$ 403,216	\$ 3,574,308
Fidelity Diversified International K	\$ 10,880,095	\$ 793,071	\$ 22,943	\$ (453,540)	\$ (212,498)	\$ -	\$ 9,342	\$ 2,912,832	\$ 13,952,246
Fkln Mtl Global Disc R6	\$ 3,721,797	\$ 271,870	\$ -	\$ (220,011)	\$ (119,027)	\$ -	\$ (635)	\$ 373,438	\$ 4,027,433
Fidelity Global ex US Idx Premium	\$ 1,049,631	\$ 158,027	\$ -	\$ (38,704)	\$ 445,191	\$ 3	\$ (1,001)	\$ 346,217	\$ 1,959,365
Fidelity Freedom K Income	\$ 6,628,811	\$ 207,606	\$ -	\$ (71,207)	\$ (7,174,949)	\$ -	\$ (12,215)	\$ 421,954	\$ (0)
Fidelity Freedom Income K	\$ -	\$ 161,343	\$ -	\$ (191,813)	\$ 7,163,186	\$ -	\$ (4,065)	\$ 130,666	\$ 7,259,316
Fidelity Freedom K 2005	\$ 720,913	\$ 38,018	\$ -	\$ (8,513)	\$ (807,614)	\$ -	\$ 159	\$ 57,037	\$ -
Fidelity Freedom 2005 K	\$ -	\$ 27,941	\$ -	\$ (1,038)	\$ 776,325	\$ -	\$ 143	\$ 20,870	\$ 824,240
Fidelity Freedom K 2010	\$ 2,012,259	\$ 125,978	\$ -	\$ (64,184)	\$ (2,254,987)	\$ -	\$ (296)	\$ 181,230	\$ -
Fidelity Freedom 2010 K	\$ -	\$ 96,308	\$ -	\$ (41,096)	\$ 2,185,267	\$ -	\$ 173	\$ 75,052	\$ 2,315,703
Fidelity Freedom K 2015	\$ 6,157,468	\$ 414,526	\$ 130,438	\$ (293,252)	\$ (7,040,230)	\$ -	\$ 993	\$ 630,057	\$ 0
Fidelity Freedom 2015 K	\$ -	\$ 248,540	\$ 28,277	\$ (73,770)	\$ 6,743,732	\$ -	\$ 1,174	\$ 283,347	\$ 7,231,300
Fidelity Freedom K 2020	\$ 12,325,180	\$ 1,114,425	\$ 139,389	\$ (206,016)	\$ (14,746,101)	\$ -	\$ 2,175	\$ 1,370,948	\$ (0)
Fidelity Freedom 2020 K	\$ -	\$ 638,741	\$ 2,232	\$ (16,528)	\$ 14,738,163	\$ -	\$ 2,836	\$ 682,375	\$ 16,047,819
Fidelity Freedom K 2025	\$ 17,302,652	\$ 1,076,300	\$ 83,840	\$ (337,329)	\$ (20,155,448)	\$ -	\$ 2,336	\$ 2,027,649	\$ -
Fidelity Freedom 2025 K	\$ -	\$ 881,269	\$ 1,592	\$ (156,116)	\$ 20,642,664	\$ 1,486	\$ 3,330	\$ 1,050,035	\$ 22,424,260
Fidelity Freedom K 2030	\$ 20,433,415	\$ 1,655,601	\$ 75,847	\$ (348,903)	\$ (24,579,854)	\$ (645)	\$ 644	\$ 2,763,895	\$ 0
Fidelity Freedom 2030 K	\$ -	\$ 1,145,077	\$ 92,954	\$ (131,902)	\$ 24,247,656	\$ 583	\$ 3,642	\$ 1,509,224	\$ 26,867,234
Fidelity Freedom K 2035	\$ 24,136,426	\$ 2,184,630	\$ 223	\$ (375,346)	\$ (29,480,188)	\$ -	\$ (2,767)	\$ 3,537,021	\$ -
Fidelity Freedom 2035 K	\$ -	\$ 1,272,856	\$ -	\$ (618,765)	\$ 29,336,562	\$ 511	\$ 2,782	\$ 2,071,434	\$ 32,065,379
Fidelity Freedom K 2040	\$ 35,484,061	\$ 2,660,028	\$ 1,030	\$ (540,279)	\$ (42,761,815)	\$ -	\$ (4,475)	\$ 5,161,450	\$ -
Fidelity Freedom 2040 K	\$ -	\$ 1,903,915	\$ -	\$ (281,894)	\$ 42,015,108	\$ 1,746	\$ 4,462	\$ 3,083,579	\$ 46,726,915
Fidelity Freedom K 2045	\$ 23,403,488	\$ 2,805,402	\$ -	\$ (508,218)	\$ (29,154,628)	\$ -	\$ (26,760)	\$ 3,480,715	\$ 0
Fidelity Freedom 2045 K	\$ -	\$ 2,015,087	\$ -	\$ (371,750)	\$ 28,513,550	\$ 340	\$ (5,612)	\$ 2,123,285	\$ 32,274,900
Fidelity Freedom K 2050	\$ 17,187,085	\$ 2,465,583	\$ 10,016	\$ (580,847)	\$ (21,617,945)	\$ 15	\$ (43,181)	\$ 2,579,274	\$ -
Fidelity Freedom 2050 K	\$ -	\$ 1,996,969	\$ -	\$ (222,411)	\$ 21,403,705	\$ 527	\$ (13,124)	\$ 1,595,900	\$ 24,761,566
Fidelity Freedom K 2055	\$ 4,294,424	\$ 1,189,645	\$ -	\$ (214,577)	\$ (5,925,354)	\$ -	\$ (24,945)	\$ 680,808	\$ -
Fidelity Freedom 2055 K	\$ -	\$ 981,058	\$ -	\$ (82,201)	\$ 5,818,492	\$ 6	\$ (9,122)	\$ 452,690	\$ 7,160,923
Fidelity Freedom K 2060	\$ 68,412	\$ 141,194	\$ -	\$ (4,566)	\$ (222,590)	\$ -	\$ (2,282)	\$ 19,831	\$ (0)
Fidelity Freedom 2060 K	\$ -	\$ 182,802	\$ -	\$ -	\$ 314,106	\$ -	\$ (1,643)	\$ 23,033	\$ 518,298
<b>Total</b>	<b>\$ 308,942,603</b>	<b>\$37,459,730</b>	<b>\$1,521,989</b>	<b>(\$13,470,464)</b>	<b>\$0</b>	<b>\$5,455</b>	<b>(\$104,721)</b>	<b>\$63,829,735</b>	<b>\$ 398,184,328</b>

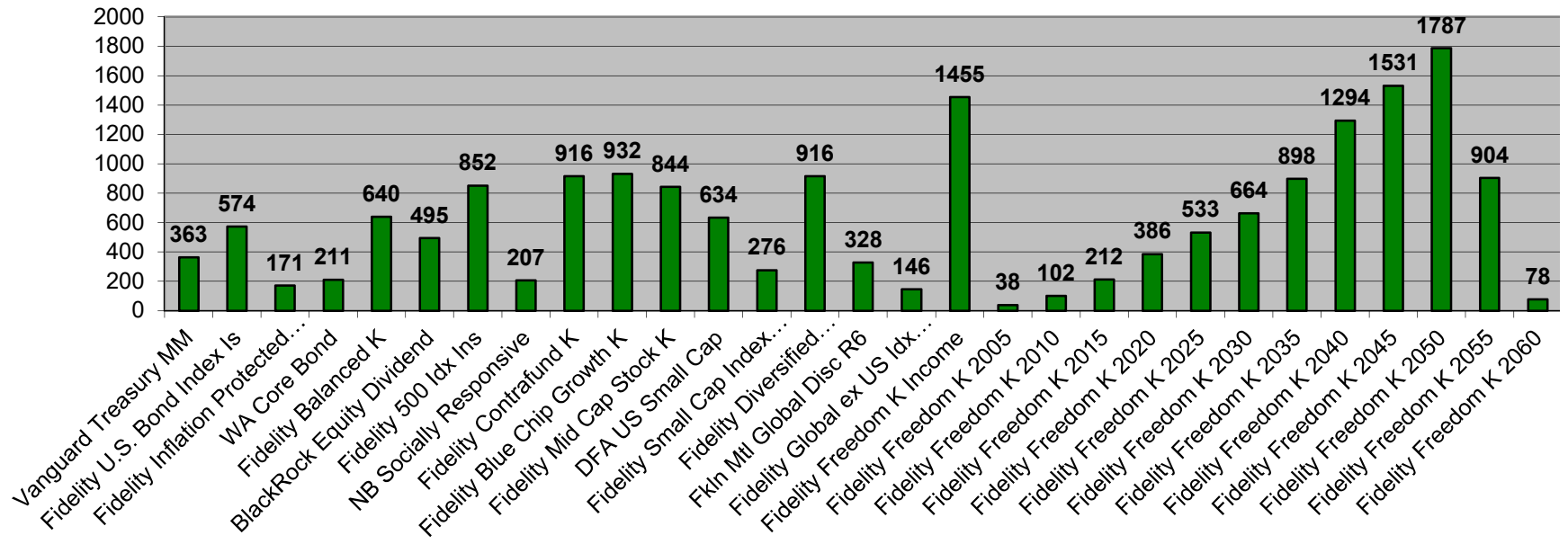
\* Balance Forward represents transfer of assets to Fidelity from another provider.



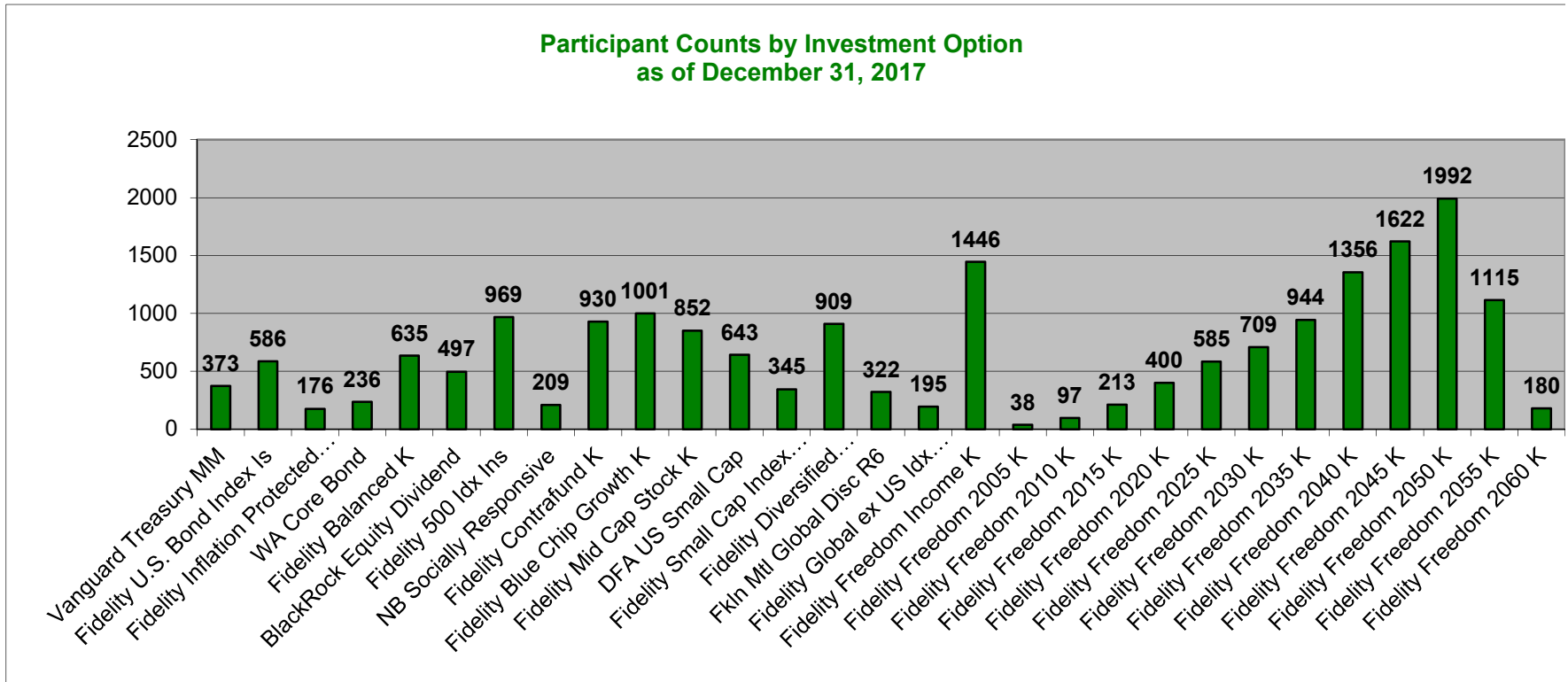




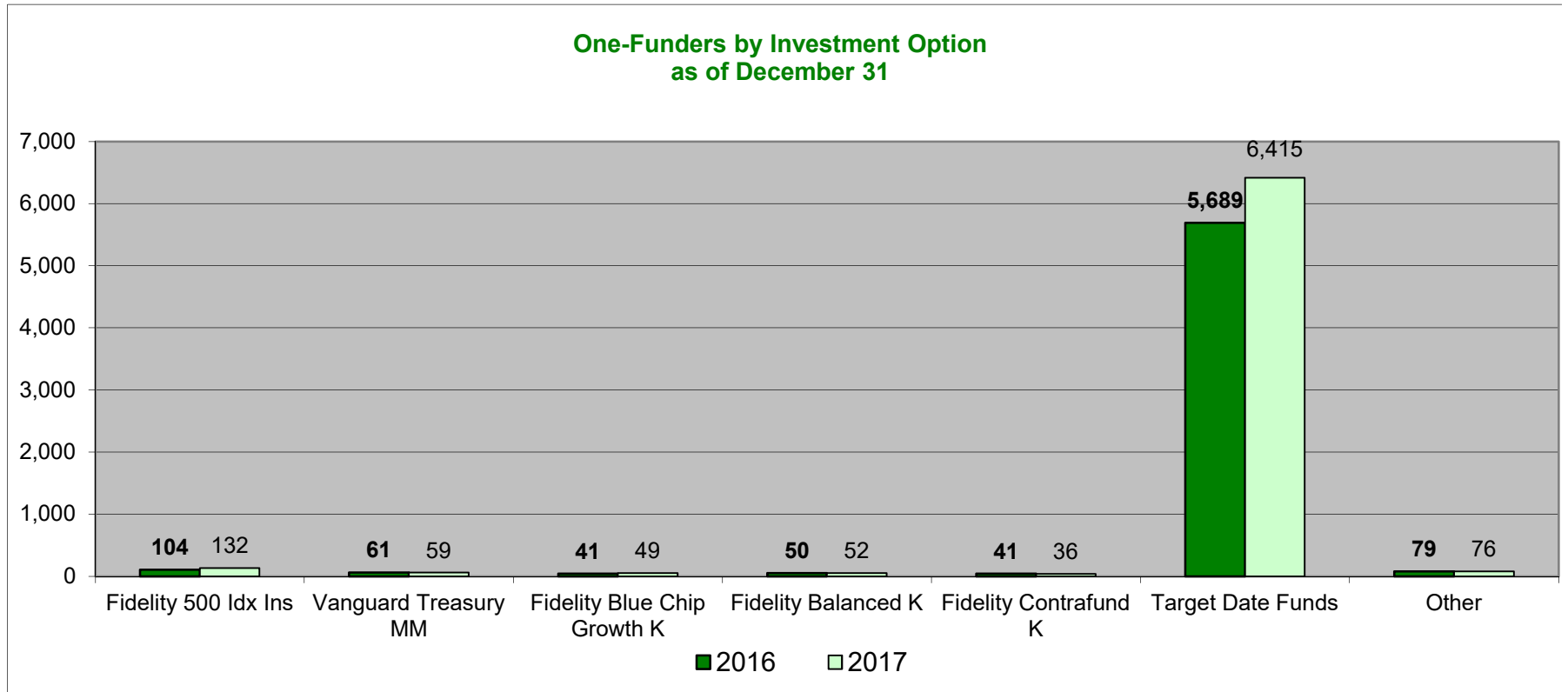
Participant Counts by Investment Option  
as of December 31, 2016



Participant Counts by Investment Option  
as of December 31, 2017



State of Maryland ORP - Fidelity



Total as of December 31, 2016

**6,065**

Total as of December 31, 2017

**6,819**

Average Participant Account Balances

	Fidelity	
	Dec. 31, 2016	Dec. 31, 2017
Total Participant Accounts	9,682	10,548
Total Assets	\$ 308,942,603	\$ 398,184,328
Average Account Balance	\$ 31,909	\$ 37,750

Fidelity Freedom Funds  
 Asset Allocation  
 Ended December 31, 2017

	Domestic Equity	International Equity	Fixed Income	Short-Term & Other	Total Equity	Total Fixed Income	Total Cash & Other
Freedom Income Class K	16.6%	10.7%	45.0%	27.7%	27.3%	45.0%	27.7%
Freedom 2005 Class K	24.0%	14.1%	40.8%	21.1%	38.1%	40.8%	21.1%
Freedom 2010 Class K	30.1%	17.0%	36.7%	16.2%	47.1%	36.7%	16.2%
Freedom 2015 Class K	36.4%	19.8%	32.3%	1.5%	56.2%	32.3%	1.5%
Freedom 2020 Class K	40.7%	21.7%	28.9%	8.7%	62.4%	28.9%	8.7%
Freedom 2025 Class K	44.9%	23.5%	25.2%	6.4%	68.4%	25.2%	6.4%
Freedom 2030 Class K	54.4%	27.6%	17.1%	0.9%	82.0%	17.1%	0.9%
Freedom 2035 Class K	62.1%	30.9%	6.0%	1.0%	93.0%	6.0%	1.0%
Freedom 2040 Class K	62.8%	31.2%	5.1%	0.9%	94.0%	5.1%	0.9%
Freedom 2045 Class K	62.8%	31.2%	5.0%	1.0%	94.0%	5.0%	1.0%
Freedom 2050 Class K	62.8%	31.2%	5.0%	1.0%	94.0%	5.0%	1.0%
Freedom 2055 Class K	62.8%	31.2%	5.0%	1.0%	94.0%	5.0%	1.0%
Freedom 2060 Class K	62.8%	31.3%	4.9%	1.0%	94.1%	4.9%	1.0%

State of Maryland

Comparative Performance

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>State of Maryland Fidelity</b>	<b>398,184</b>	<b>100.00</b>						
Vanguard Treasury MM	10,742	2.70	0.27	0.79	0.79	0.36	0.22	0.09
90 Day U.S. Treasury Bill			0.28	0.86	0.86	0.38	0.25	
Fidelity U.S. Bond Index Is	8,203	2.06	0.36	3.48	3.48	2.16	2.03	0.04
Blmbg. Barc. U.S. Aggregate			0.39	3.54	3.54	2.24	2.10	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.34	3.58	3.58	2.14	1.95	
Fidelity U.S. Bond Index Is Rank			47	55	55	49	44	
Western Asset Core Bond	3,316	0.83	0.72	5.21	5.21	3.50	3.16	0.45
Blmbg. Barc. U.S. Aggregate			0.39	3.54	3.54	2.24	2.10	
IM U.S. Broad Market Core Fixed Income (MF) Median			0.34	3.58	3.58	2.14	1.95	
Western Asset Core Bond Rank			7	4	4	2	2	
Fidelity Inflation Protected Index	2,092	0.53	1.31	3.05	3.05	1.97	0.07	0.09
Blmbg. Barc. U.S. TIPS			1.26	3.01	3.01	2.05	0.13	
IM U.S. TIPS (MF) Median			1.11	2.63	2.63	1.60	-0.27	
Fidelity Inflation Protected Index Rank			25	28	28	28	27	
Fidelity Balanced K	15,154	3.81	3.64	16.62	16.62	7.88	10.85	0.46
60% S&P 500 / 40% Bloomberg Barclays Aggregate			4.12	14.21	14.21	7.80	10.25	
IM All Balanced (MF) Median			3.49	14.15	14.15	6.22	7.78	
Fidelity Balanced K Rank			47	36	36	23	11	
Blackrock Equity Dividend	7,995	2.01	5.41	16.76	16.76	10.67	13.07	0.73
Russell 1000 Value Index			5.33	13.66	13.66	8.65	14.04	
IM U.S. Large Cap Value Equity (MF) Median			5.82	16.41	16.41	8.52	13.34	
Blackrock Equity Dividend Rank			61	44	44	7	60	
Fidelity 500 Index; Instl.	27,676	6.95	6.64	21.78	21.78	11.38	15.75	0.03
S&P 500			6.64	21.83	21.83	11.41	15.79	
IM U.S. Large Cap Core Equity (MF) Median			6.39	20.84	20.84	10.11	14.51	
Fidelity 500 Index; Instl. Rank			38	36	36	17	14	



**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>NB Socially Responsive</b>	<b>3,107</b>	<b>0.78</b>	<b>5.51</b>	<b>18.57</b>	<b>18.57</b>	<b>9.14</b>	<b>14.70</b>	<b>0.85</b>
S&P 500			6.64	21.83	21.83	11.41	15.79	
IM U.S. Large Cap Core Equity (MF) Median			6.39	20.84	20.84	10.11	14.51	
NB Socially Responsive Rank			79	75	75	73	44	
<b>Fidelity Contrafund K</b>	<b>25,541</b>	<b>6.41</b>	<b>6.74</b>	<b>32.35</b>	<b>32.35</b>	<b>13.43</b>	<b>16.54</b>	<b>0.65</b>
S&P 500			6.64	21.83	21.83	11.41	15.79	
IM U.S. Large Cap Core Equity (MF) Median			6.39	20.84	20.84	10.11	14.51	
Fidelity Contrafund K Rank			33	2	2	2	4	
<b>Fidelity Blue Chip Growth K</b>	<b>19,837</b>	<b>4.98</b>	<b>7.16</b>	<b>36.20</b>	<b>36.20</b>	<b>13.81</b>	<b>18.82</b>	<b>0.59</b>
Russell 1000 Growth Index			7.86	30.21	30.21	13.79	17.33	
IM U.S. Large Cap Growth Equity (MF) Median			6.66	29.36	29.36	11.77	15.71	
Fidelity Blue Chip Growth K Rank			30	7	7	14	4	
<b>Fidelity Mid Cap Stock K</b>	<b>15,044</b>	<b>3.78</b>	<b>5.07</b>	<b>18.80</b>	<b>18.80</b>	<b>9.88</b>	<b>14.64</b>	<b>0.46</b>
Russell Midcap Index			6.07	18.52	18.52	9.58	14.96	
IM U.S. Mid Cap Core Equity (MF) Median			5.47	15.60	15.60	8.62	13.43	
Fidelity Mid Cap Stock K Rank			60	23	23	23	21	
<b>DFA U.S. Small Cap Portfolio</b>	<b>9,486</b>	<b>2.38</b>	<b>3.80</b>	<b>11.52</b>	<b>11.52</b>	<b>10.04</b>	<b>14.63</b>	<b>0.37</b>
Russell 2000 Index			3.34	14.65	14.65	9.96	14.12	
IM U.S. Small Cap Core Equity (MF) Median			2.56	12.03	12.03	8.86	13.05	
DFA U.S. Small Cap Portfolio Rank			20	53	53	37	23	
<b>Fidelity Spartan Small Cap Index</b>	<b>3,574</b>	<b>0.90</b>	<b>3.38</b>	<b>14.83</b>	<b>14.83</b>	<b>10.17</b>	<b>14.32</b>	<b>0.05</b>
Russell 2000 Index			3.34	14.65	14.65	9.96	14.12	
IM U.S. Small Cap Core Equity (MF) Median			2.56	12.03	12.03	8.86	13.05	
Fidelity Spartan Small Cap Index Rank			38	21	21	33	31	
<b>Fidelity Diversified Int'l Fund K</b>	<b>13,952</b>	<b>3.50</b>	<b>3.70</b>	<b>26.79</b>	<b>26.79</b>	<b>8.06</b>	<b>8.93</b>	<b>0.82</b>
MSCI EAFE (Net)			4.23	25.03	25.03	7.80	7.90	
IM International Large Cap Core Equity (MF) Median			4.18	24.71	24.71	7.07	6.76	
Fidelity Diversified Int'l Fund K Rank			63	27	27	19	7	

State of Maryland

Comparative Performance

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
Mutual Global Discovery	4,027	1.01	1.10	9.98	9.98	6.35	9.80	0.85
MSCI World (Net)			5.51	22.40	22.40	9.26	11.64	
IM Global Equity (MF) Median			4.83	22.27	22.27	8.09	10.77	
Mutual Global Discovery Rank			93	94	94	70	60	
Fidelity Spartan Global ex US Idx Adv	1,959	0.49	4.73	27.35	27.35	7.90	6.52	0.10
MSCI AC World ex USA (Net)			5.00	27.19	27.19	7.83	6.80	
IM International Equity (MF) Median			4.66	28.74	28.74	8.35	7.14	
Fidelity Spartan Global ex US Idx Adv Rank			49	59	59	59	60	
Fidelity Freedom Income Fund K	7,259	1.82	1.64	8.14	8.14	4.25	4.23	0.42
Fidelity Freedom Income Composite Benchmark			1.66	7.10	7.10	3.65	4.09	
IM Mixed-Asset Target Alloc Consv (MF) Median			1.80	8.56	8.56	4.02	4.92	
Fidelity Freedom Income Fund K Rank			60	59	59	39	70	
Fidelity Freedom 2005 K	824	0.21	2.16	10.45	10.45	5.25	5.64	0.44
Fidelity Freedom 2005 Composite Benchmark			2.21	9.24	9.24	4.65	5.69	
IM Mixed-Asset Target 2010 (MF) Median			2.23	10.24	10.24	4.91	5.93	
Fidelity Freedom 2005 K Rank			69	40	40	29	66	
Fidelity Freedom 2010 K	2,316	0.58	2.70	12.52	12.52	6.09	6.82	0.47
Fidelity Freedom 2010 Composite Benchmark			2.70	11.08	11.08	5.44	6.98	
IM Mixed-Asset Target 2010 (MF) Median			2.23	10.24	10.24	4.91	5.93	
Fidelity Freedom 2010 K Rank			9	2	2	3	8	
Fidelity Freedom 2015 K	7,231	1.82	3.08	14.30	14.30	6.83	7.48	0.50
Fidelity Freedom 2015 Composite Benchmark			3.22	12.99	12.99	6.27	7.73	
IM Mixed-Asset Target 2015 (MF) Median			2.61	11.40	11.40	5.52	6.76	
Fidelity Freedom 2015 K Rank			13	1	1	1	18	
Fidelity Freedom 2020 K	16,048	4.03	3.45	15.64	15.64	7.36	8.09	0.54
Fidelity Freedom 2020 Composite Benchmark			3.58	14.33	14.33	6.82	8.39	
IM Mixed-Asset Target 2020 (MF) Median			3.00	12.63	12.63	5.77	6.74	
Fidelity Freedom 2020 K Rank			11	1	1	2	13	

**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
<b>Fidelity Freedom 2025 K</b>	<b>22,424</b>	<b>5.63</b>	<b>3.77</b>	<b>16.87</b>	<b>16.87</b>	<b>7.84</b>	<b>9.07</b>	<b>0.57</b>
Fidelity Freedom 2025 Composite Benchmark			3.91	15.58	15.58	7.34	9.54	
IM Mixed-Asset Target 2025 (MF) Median			3.47	14.95	14.95	6.54	7.93	
Fidelity Freedom 2025 K Rank			20	6	6	2	16	
<b>Fidelity Freedom 2030 K</b>	<b>26,867</b>	<b>6.75</b>	<b>4.38</b>	<b>19.86</b>	<b>19.86</b>	<b>8.97</b>	<b>10.06</b>	<b>0.61</b>
Fidelity Freedom 2030 Composite Benchmark			4.62	18.41	18.41	8.48	10.58	
IM Mixed-Asset Target 2030 (MF) Median			4.02	16.91	16.91	7.19	8.78	
Fidelity Freedom 2030 K Rank			18	1	1	1	13	
<b>Fidelity Freedom 2035 K</b>	<b>32,065</b>	<b>8.05</b>	<b>5.00</b>	<b>22.01</b>	<b>22.01</b>	<b>9.77</b>	<b>11.04</b>	<b>0.64</b>
Fidelity Freedom 2035 Composite Benchmark			5.29	20.75	20.75	9.38	11.75	
IM Mixed-Asset Target 2035 (MF) Median			4.44	18.72	18.72	7.96	9.66	
Fidelity Freedom 2035 K Rank			5	1	1	1	9	
<b>Fidelity Freedom 2040 K</b>	<b>46,727</b>	<b>11.73</b>	<b>5.16</b>	<b>22.38</b>	<b>22.38</b>	<b>9.88</b>	<b>11.17</b>	<b>0.64</b>
Fidelity Freedom 2040 Composite Benchmark			5.38	20.96	20.96	9.45	11.89	
IM Mixed-Asset Target 2040 (MF) Median			4.74	19.71	19.71	8.11	10.08	
Fidelity Freedom 2040 K Rank			13	2	2	1	18	
<b>Fidelity Freedom 2045 K</b>	<b>32,275</b>	<b>8.11</b>	<b>5.12</b>	<b>22.36</b>	<b>22.36</b>	<b>9.87</b>	<b>11.28</b>	<b>0.64</b>
Fidelity Freedom 2045 Composite Benchmark			5.38	20.96	20.96	9.45	12.01	
IM Mixed-Asset Target 2045 (MF) Median			4.85	20.65	20.65	8.65	10.52	
Fidelity Freedom 2045 K Rank			31	6	6	4	20	
<b>Fidelity Freedom 2050 K</b>	<b>24,762</b>	<b>6.22</b>	<b>5.10</b>	<b>22.33</b>	<b>22.33</b>	<b>9.85</b>	<b>11.31</b>	<b>0.64</b>
Fidelity Freedom 2050 Composite Benchmark			5.38	20.96	20.96	9.45	12.06	
IM Mixed-Asset Target 2050 (MF) Median			4.98	20.67	20.67	8.53	10.61	
Fidelity Freedom 2050 K Rank			36	8	8	4	20	
<b>Fidelity Freedom 2055 K</b>	<b>7,161</b>	<b>1.80</b>	<b>5.09</b>	<b>22.37</b>	<b>22.37</b>	<b>9.86</b>	<b>11.46</b>	<b>0.64</b>
Fidelity Freedom 2055 Composite Benchmark			5.38	20.96	20.96	9.45	12.28	
IM Mixed-Asset Target 2055+ (MF) Median			5.05	21.23	21.23	8.85	10.84	
Fidelity Freedom 2055 K Rank			47	12	12	6	24	

**State of Maryland**

**Comparative Performance**

	Allocation		Performance (%)					Expense Ratio
	Market Value (\$000)	%	1 Quarter	Year To Date	1 Year	3 Years	5 Years	
Fidelity Freedom 2060 K	518	0.13	5.11	22.21	22.21	9.82		0.64
Fidelity Freedom 2060 Composite Benchmark			5.38	20.96	20.96	9.45		
IM Mixed-Asset Target 2055+ (MF) Median			5.05	21.23	21.23	8.85	10.84	
Fidelity Freedom 2060 K Rank			45	16	16	8		

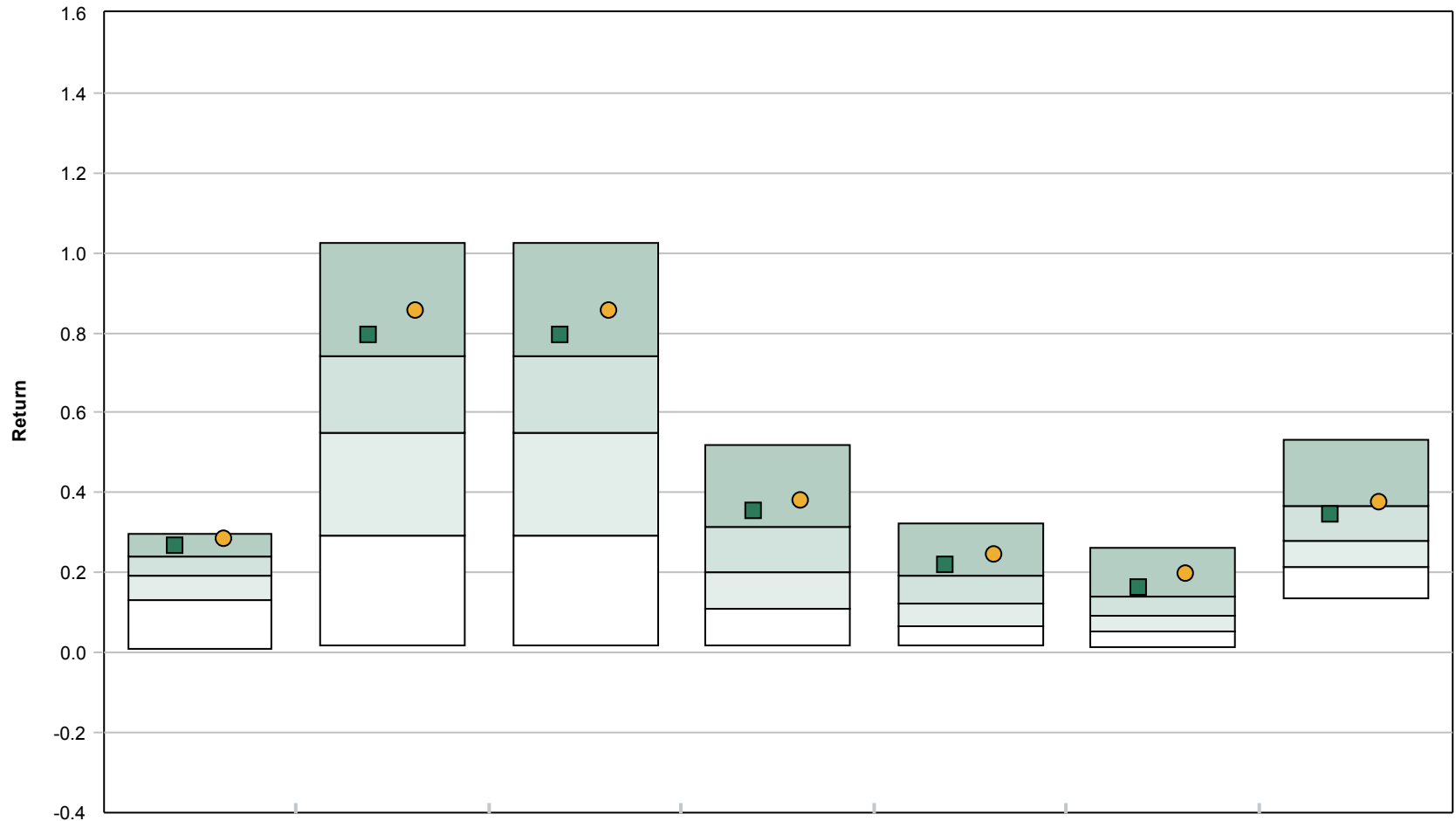
## Scoring System Summary

Ticker	Fund Name	Fund Category	Mar 2017	Jun 2017	Sep 2017	Dec 2017
MADVX	BlackRock Equity Dividend Instl	Large Value	B	B	C	C
DFSTX	DFA US Small Cap I	Small Blend	B	B	B	B
FXSIX	Fidelity® 500 Index Institutional	Large Blend	B	B	B	B
FBAKX	Fidelity® Balanced K	Allocation--50% to 70% Equity			A	B
FBGKX	Fidelity® Blue Chip Growth K	Large Growth	B	C	B	B
FCNKX	Fidelity® Contrafund® K	Large Growth	B	B	B	B
FDIKX	Fidelity® Diversified International K	Foreign Large Growth	B	B	B	B
FSGDX	Fidelity® Global ex US Index Premium	Foreign Large Blend	B	C	B	B
FSIYX	Fidelity® Inflation-Prot Bd Idx Prem	Inflation-Protected Bond	B	C	B	B
FKMCX	Fidelity® Mid-Cap Stock K	Mid-Cap Growth	C	C	C	C
FSSVX	Fidelity® Small Cap Index Premium	Small Blend	B	B	B	B
FXSTX	Fidelity® US Bond Index Institutional	Intermediate-Term Bond	C	C	D	D
FMDRX	Franklin Mutual Global Discovery R6	World Large Stock	B	<i>B</i>	B	B
NBSRX	Neuberger Berman Socially Rspns Inv V	Large Growth	C	C	C	C
WATFX	Western Asset Core Bond I	Intermediate-Term Bond	B	B	B	B

For Active Funds:		
Grade		Action
<b>A</b>	Above Average	No Action
<b>B</b>	Above Average	No Action
<b>C</b>	Average	Closely Monitor
<b>D</b>	Watch list	Fund Alert
<b>F</b>	Immediate Action	Terminate
<b>NA</b>	< than 3 years of history	Check share class and inception date

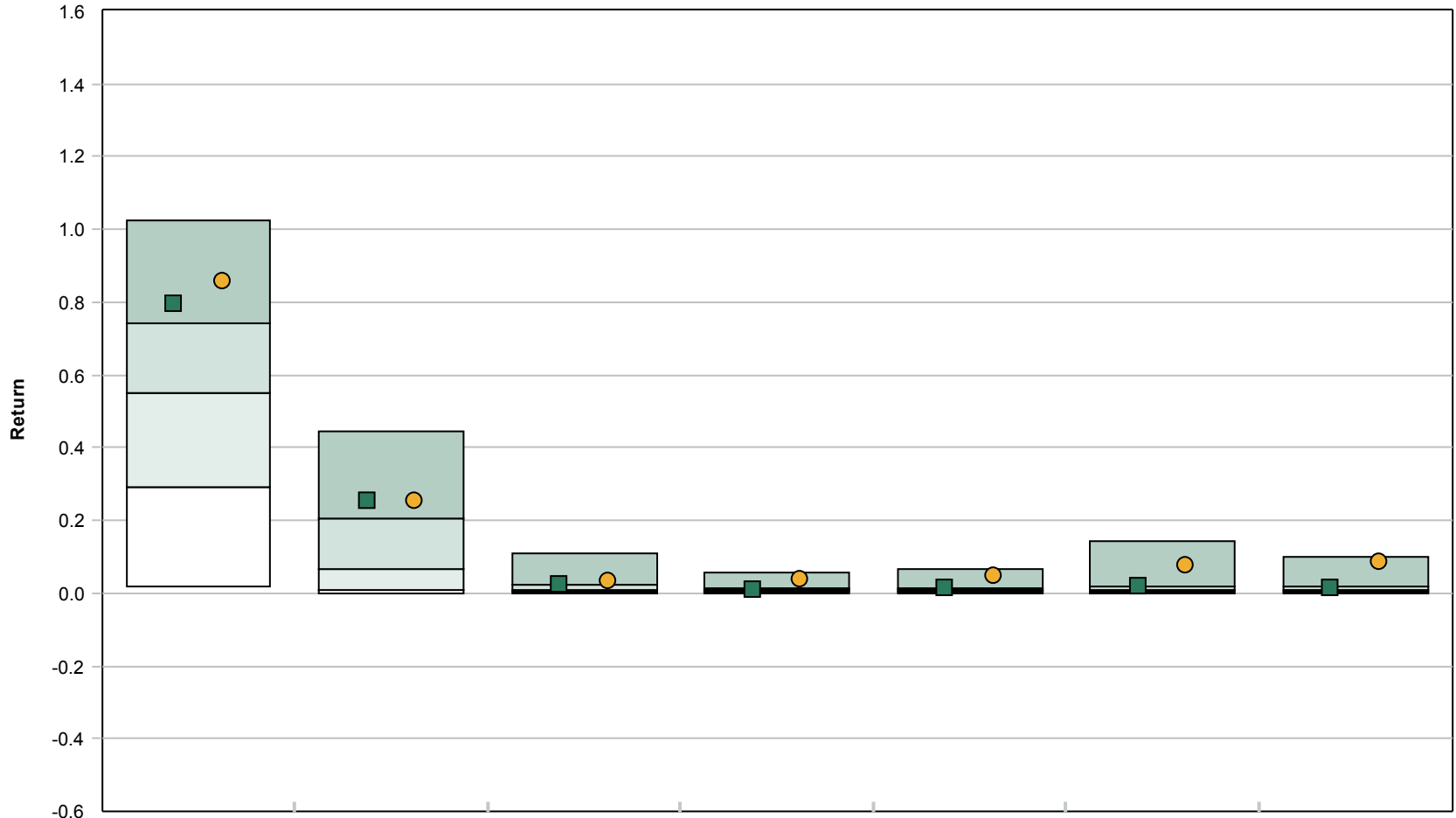
For Index Funds:		
Grade		Action
<b>A</b>	Satisfactory	No Action
<b>B</b>	Satisfactory	No Action
<b>C</b>	Satisfactory	No Action
<b>D</b>	Immediate Action	Terminate
<b>F</b>	Immediate Action	Terminate
<b>NA</b>	< than 3 years of history	Check share class and inception date

Peer Group Analysis - IM U.S. Taxable Money Market (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Vanguard Treasury MM	0.27 (12)	0.79 (17)	0.79 (17)	0.36 (16)	0.22 (16)	0.16 (16)	0.35 (31)
● 90 Day U.S. Treasury Bill	0.28 (9)	0.86 (12)	0.86 (12)	0.38 (13)	0.25 (12)	0.20 (11)	0.38 (23)
5th Percentile	0.30	1.02	1.02	0.52	0.32	0.26	0.53
1st Quartile	0.24	0.74	0.74	0.32	0.19	0.14	0.37
Median	0.19	0.55	0.55	0.20	0.12	0.09	0.28
3rd Quartile	0.13	0.29	0.29	0.11	0.07	0.05	0.22
95th Percentile	0.01	0.02	0.02	0.02	0.02	0.01	0.14

Peer Group Analysis - IM U.S. Taxable Money Market (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Vanguard Treasury MM	0.79 (17)	0.25 (18)	0.02 (27)	0.01 (48)	0.01 (28)	0.02 (29)	0.02 (29)
● 90 Day U.S. Treasury Bill	0.86 (12)	0.25 (18)	0.03 (22)	0.04 (9)	0.05 (9)	0.08 (11)	0.08 (7)
5th Percentile	1.02	0.44	0.11	0.06	0.07	0.14	0.10
1st Quartile	0.74	0.20	0.02	0.01	0.01	0.02	0.02
Median	0.55	0.06	0.01	0.01	0.01	0.01	0.01
3rd Quartile	0.29	0.01	0.01	0.00	0.00	0.00	0.00
95th Percentile	0.02	0.00	0.00	0.00	0.00	0.00	0.00



## Vanguard Treasury MM

### Fund Information

Fund Name : Vanguard Admiral Funds: Vanguard Treasury Money Market Fund; Investor Shares  
 Fund Family : Vanguard Group Inc  
 Ticker : VUSXX  
 Inception Date : 12/14/1992  
 Fund Assets : \$15,847 Million

Portfolio Assets : \$15,847 Million  
 Portfolio Manager : David R. Glocke  
 PM Tenure : 1997  
 Fund Style : IM U.S. Taxable Money Market (MF)  
 Style Benchmark : 90 Day U.S. Treasury Bill

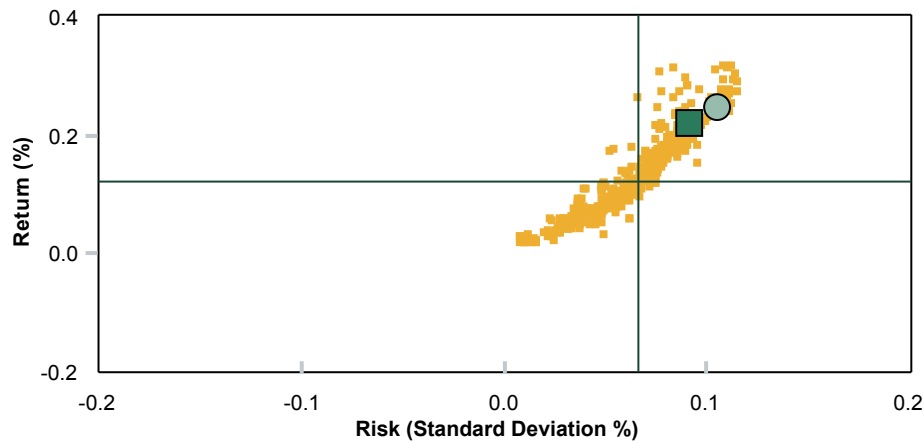
### Fund Investment Policy

The Fund seeks to provide current income while maintaining liquidity and a stable share price of \$1. At least 80% of the Funds assets will be invested in U.S. Treasury securities. The Fund maintains a dollar-weighted average maturity of 60 days or less and a dollar-weighted average life of 120 days or less.

### Historical Statistics (01/01/13 - 12/31/17) \*

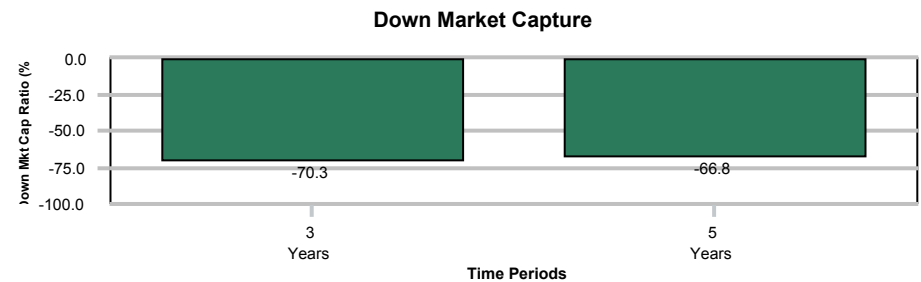
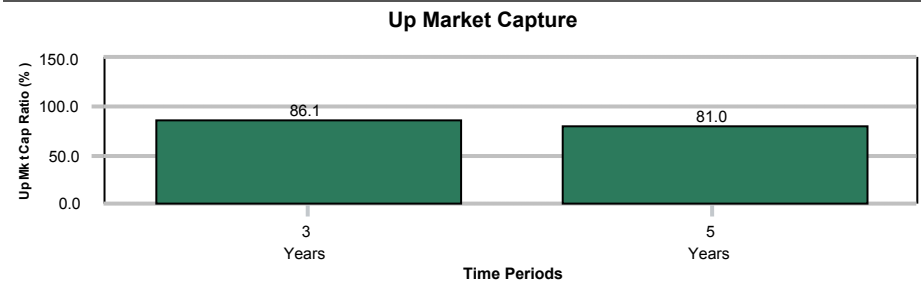
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Vanguard Treasury MM	0.22	0.09	-0.74	0.02	0.82	0.88	0.04	-0.74	0.04	01/01/1993
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.00	1.00	1.00	0.00	N/A	0.00	01/01/1993

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Vanguard Treasury MM	0.22	0.09
● 90 Day U.S. Treasury Bill	0.25	0.11
— Median	0.12	0.07

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® US Bond Index Institutional

Segal Score

C

Ticker: FXSTX

Category: Intermediate-Term Bond

Subcategory: Intermediate Investment Grade (4-6)

Expense Ratio: 0.04

Benchmark: BBgBarc US Agg Bond

Inception Date: 03/08/1990

## S<sup>3</sup> Scores

Organization: D

Fees: A

Style/Portfolio Characteristics: B

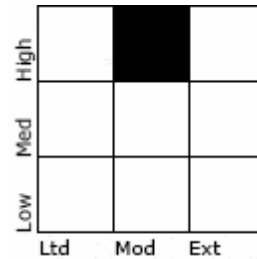
Performance: D

Risk: F

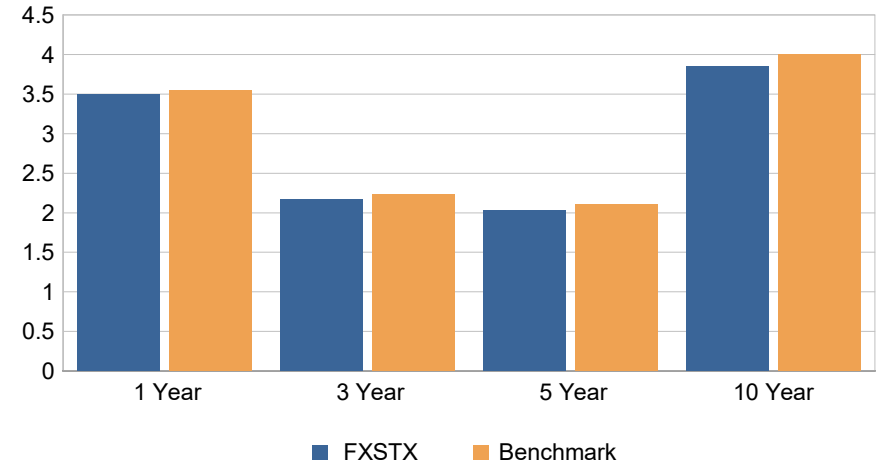
### Portfolio Characteristics

Fund AUM (\$mil):	35,382
No. of Bonds:	1,813.00
% Assets in Top 10:	
Avg Eff Duration:	5.83
Avg Eff Maturity:	0.00
Yield to Maturity:	2.56
Turnover Ratio %:	118.00

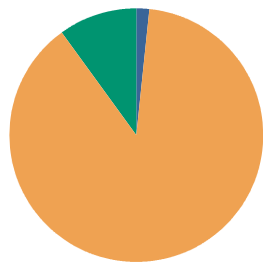
### Style



### Returns

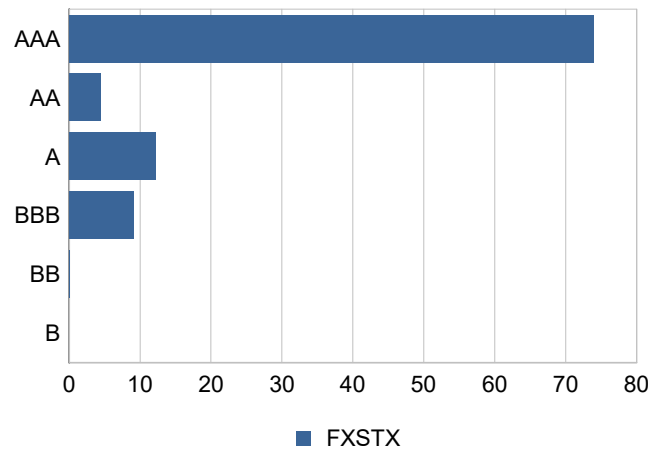


### Asset Allocation



US Bond	88.40
Non-US Bond	9.83
Equity	0.00
Other	0.09
Cash	1.69

### Sector Allocation

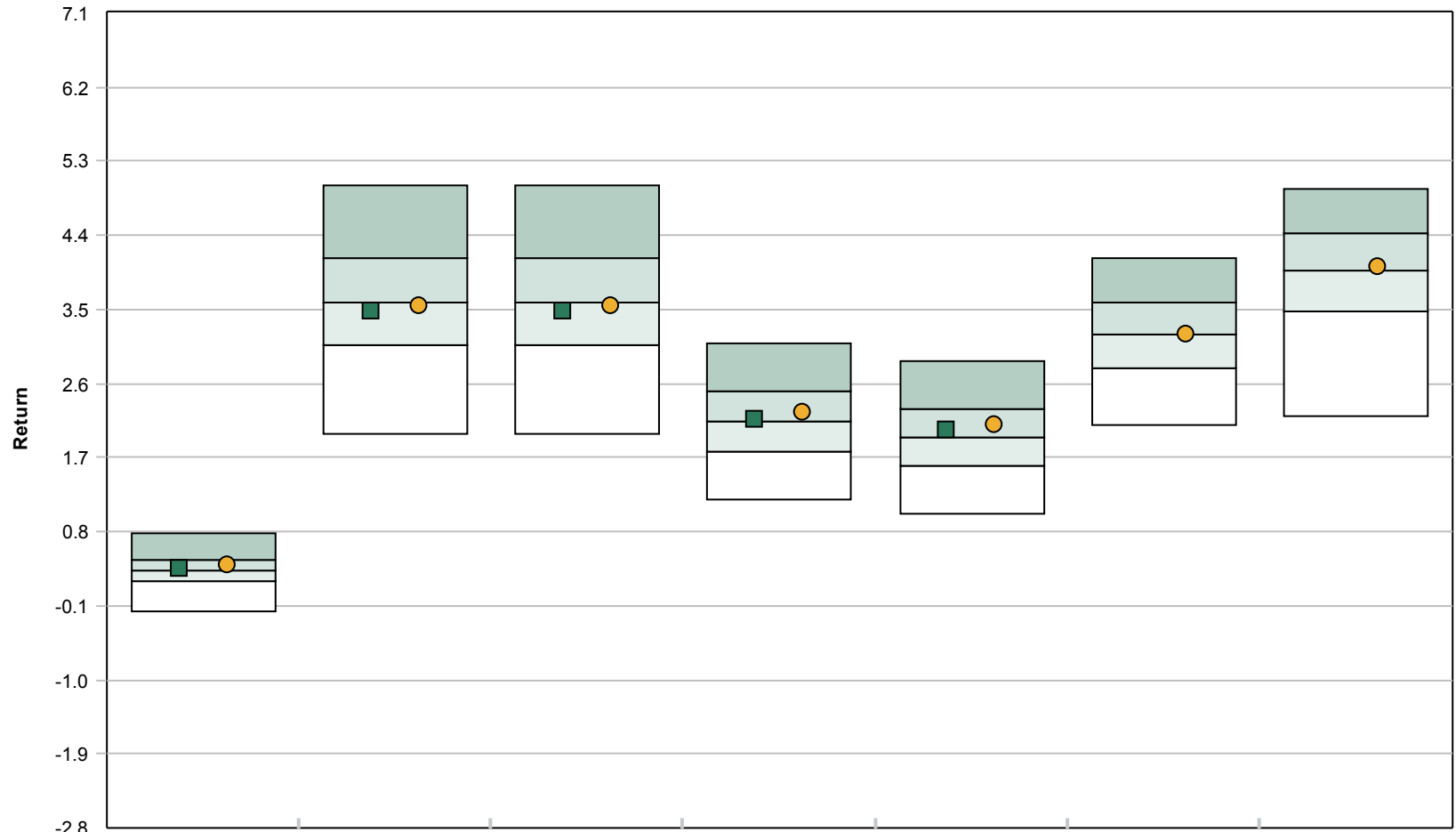


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	2.96	2.76
5 Year:	2.99	2.88
10 Year:	3.21	3.64
<b>Information Ratio</b>		
3 Year:	-0.48	-0.06
5 Year:	-0.35	-0.05
10 Year:	-0.35	0.06
<b>Downside Capture</b>		
3 Year:	107.00	92.71
5 Year:	106.68	95.88
10 Year:	101.90	102.18

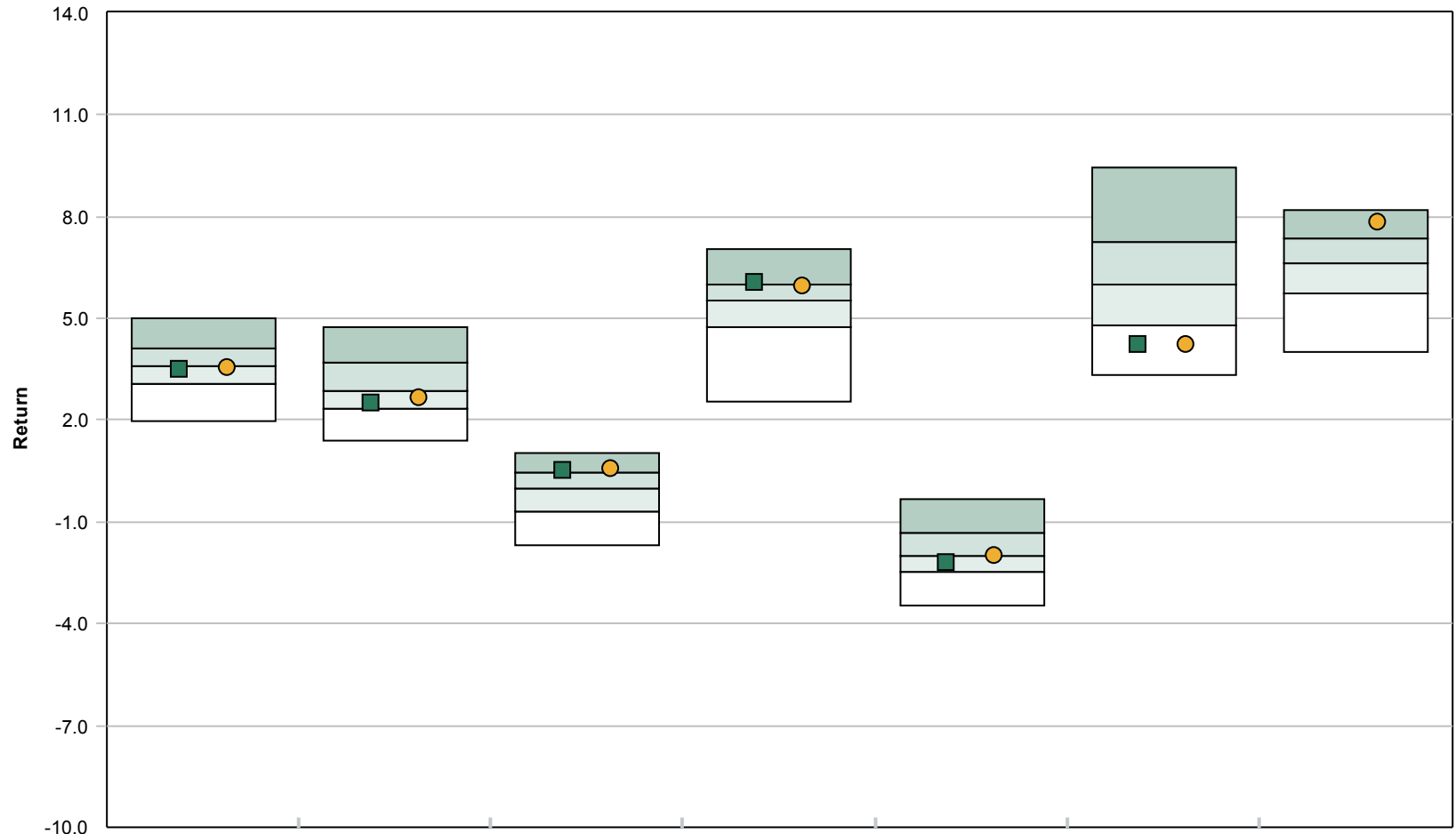
Fidelity U.S. Bond Index Is

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity U.S. Bond Index Is	0.36 (47)	3.48 (55)	3.48 (55)	2.16 (49)	2.03 (44)	N/A	N/A
● Blmbg. Barc. U.S. Aggregate	0.39 (38)	3.54 (52)	3.54 (52)	2.24 (42)	2.10 (39)	3.20 (49)	4.01 (49)
5th Percentile	0.79	5.00	5.00	3.09	2.86	4.12	4.97
1st Quartile	0.47	4.13	4.13	2.50	2.30	3.59	4.42
Median	0.34	3.58	3.58	2.14	1.95	3.19	3.98
3rd Quartile	0.19	3.06	3.06	1.78	1.60	2.79	3.47
95th Percentile	-0.18	1.98	1.98	1.19	1.02	2.09	2.20

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity U.S. Bond Index Is	3.48 (55)	2.50 (68)	0.53 (20)	6.05 (23)	-2.21 (62)	4.22 (81)	N/A
● Blmbg. Barc. U.S. Aggregate	3.54 (52)	2.65 (61)	0.55 (18)	5.97 (26)	-2.02 (53)	4.21 (81)	7.84 (11)
5th Percentile	5.00	4.77	1.03	7.06	-0.35	9.43	8.20
1st Quartile	4.13	3.68	0.44	5.98	-1.34	7.24	7.37
Median	3.58	2.85	0.00	5.55	-1.98	5.99	6.65
3rd Quartile	3.06	2.35	-0.67	4.76	-2.48	4.82	5.72
95th Percentile	1.98	1.42	-1.71	2.53	-3.44	3.35	4.00

## Fidelity U.S. Bond Index Is

### Fund Information

Fund Name :	Fidelity Salem Street Trust: Fidelity US Bond Index Fund; Institutional Class Shares	Portfolio Assets :	\$34,615 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Small/Bettencourt
Ticker :	FXSTX	PM Tenure :	2015--2014
Inception Date :	05/04/2011	Fund Style :	IM U.S. Broad Market Core Fixed Income (MF)
Fund Assets :	\$4,031 Million	Style Benchmark :	Blmbg. Barc. U.S. Aggregate

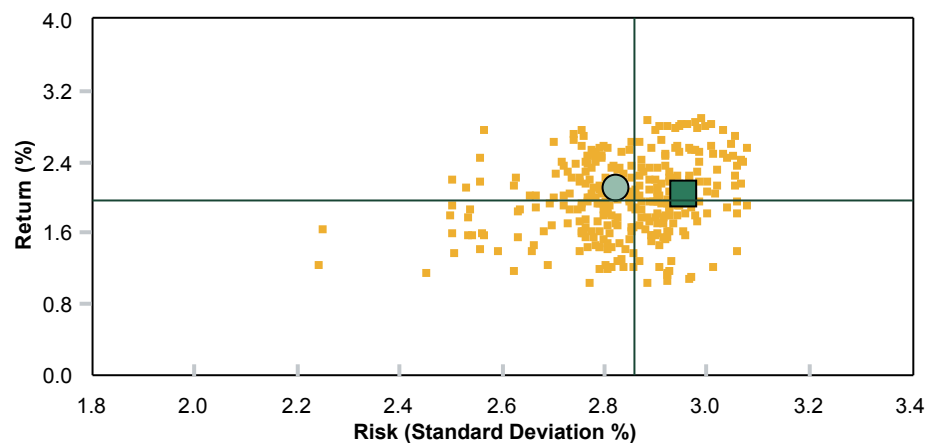
### Fund Investment Policy

The Fund seeks to provide investment results that correspond to the total return of the bonds in the Barclays Aggregate Bond Index (the Aggregate Bond Index). The Fund invests at least 80% of its assets in bonds of the Index using statistical sampling techniques.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity U.S. Bond Index Is	2.03	2.96	0.62	-0.16	1.04	0.99	0.25	-0.25	2.95	06/01/2011
Blmbg. Barc. U.S. Aggregate	2.10	2.82	0.67	0.00	1.00	1.00	0.00	N/A	2.81	06/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.01	2.81	-0.67	0.00	06/01/2011

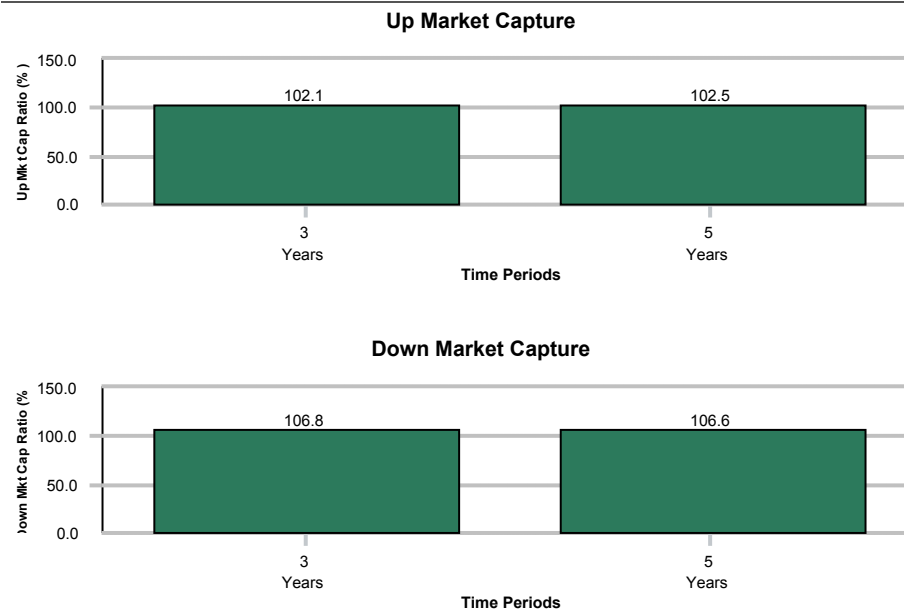
### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity U.S. Bond Index Is	2.03	2.96
● Blmbg. Barc. U.S. Aggregate	2.10	2.82
— Median	1.96	2.86

\* Monthly periodicity used.

### Up Down Market Capture



# Western Asset Core Bond I



Ticker: WATFX

Category: Intermediate-Term Bond

Subcategory: Intermediate Investment Grade (4-6)

Expense Ratio: 0.45

Benchmark: BBGBarc US Agg Bond

Inception Date: 09/04/1990

## S<sup>3</sup> Scores

Organization: A

Fees: B

Style/Portfolio Characteristics: C

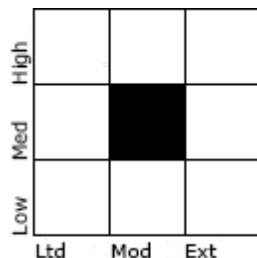
Performance: A

Risk: B

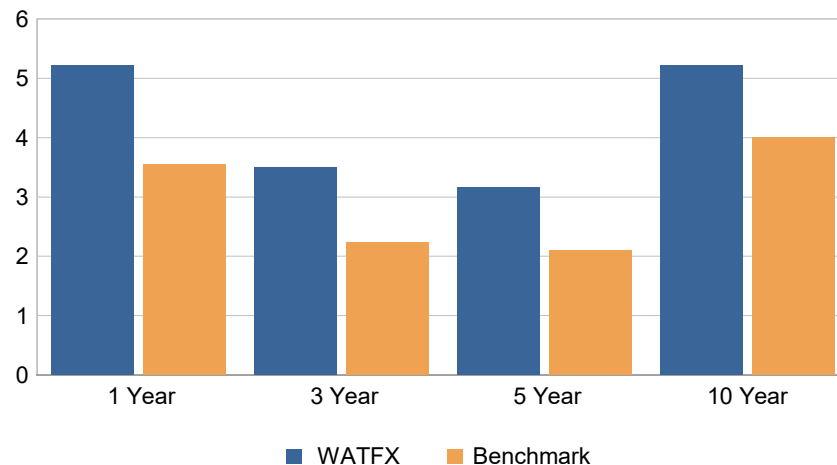
### Portfolio Characteristics

Fund AUM (\$mil):	9,411
No. of Bonds:	1,553.00
% Assets in Top 10:	
Avg Eff Duration:	6.50
Avg Eff Maturity:	12.43
Yield to Maturity:	3.64
Turnover Ratio %:	147.00

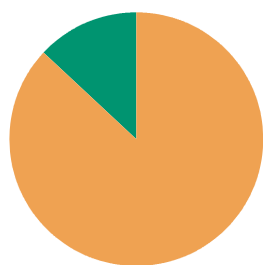
### Style



### Returns

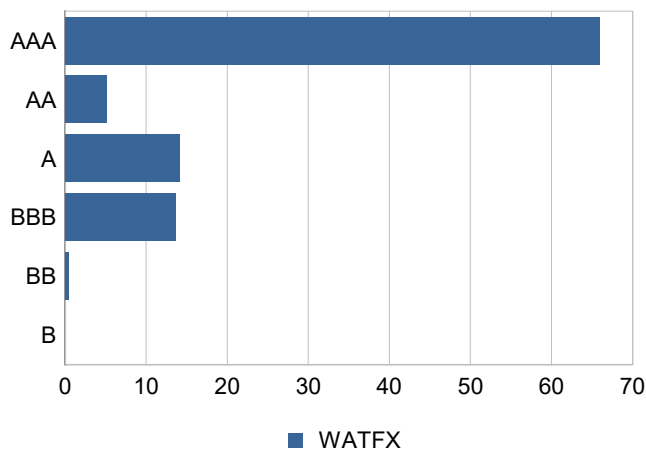


### Asset Allocation



US Bond	87.23
Non-US Bond	13.01
Equity	0.00
Other	0.00
Cash	-0.23

### Sector Allocation

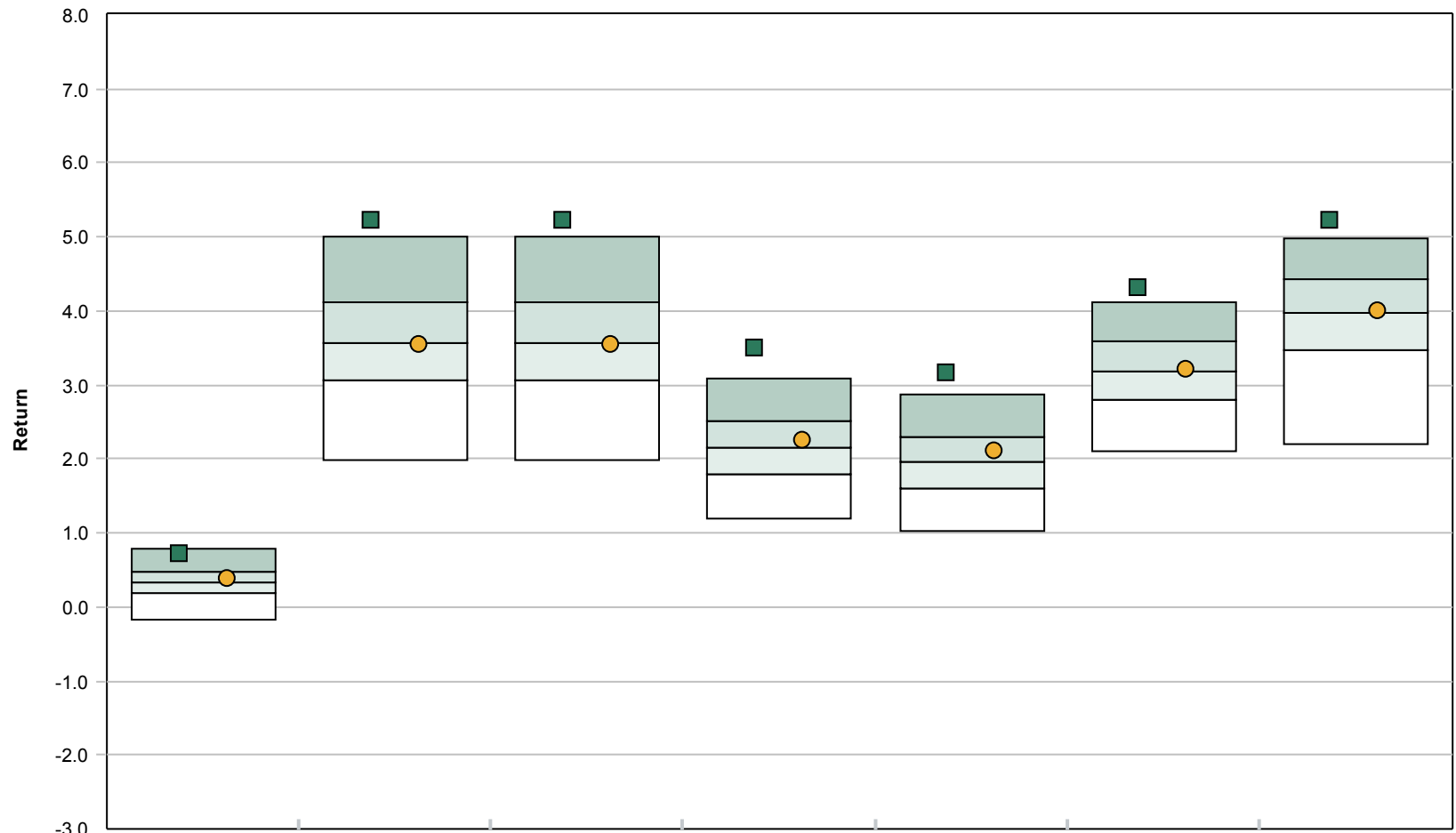


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	2.91	2.76
5 Year:	3.02	2.88
10 Year:	5.94	3.64
<b>Information Ratio</b>		
3 Year:	2.21	-0.06
5 Year:	1.58	-0.05
10 Year:	0.20	0.06
<b>Downside Capture</b>		
3 Year:	83.05	92.71
5 Year:	90.64	95.88
10 Year:	131.55	102.18

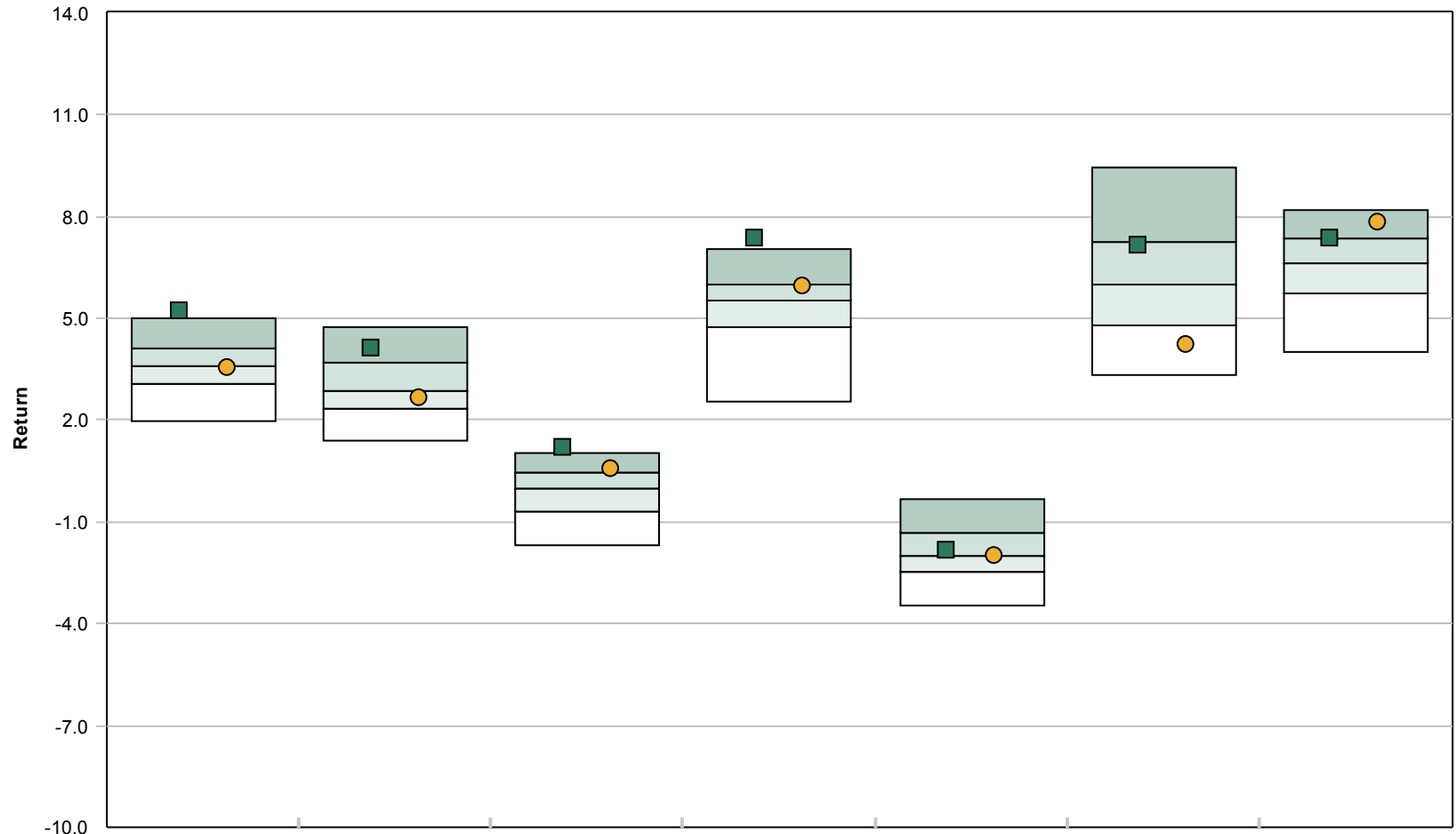
Western Asset Core Bond

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Western Asset Core Bond	0.72 (7)	5.21 (4)	5.21 (4)	3.50 (2)	3.16 (2)	4.32 (4)	5.22 (1)
● Bimbg. Barc. U.S. Aggregate	0.39 (38)	3.54 (52)	3.54 (52)	2.24 (42)	2.10 (39)	3.20 (49)	4.01 (49)
5th Percentile	0.79	5.00	5.00	3.09	2.86	4.12	4.97
1st Quartile	0.47	4.13	4.13	2.50	2.30	3.59	4.42
Median	0.34	3.58	3.58	2.14	1.95	3.19	3.98
3rd Quartile	0.19	3.06	3.06	1.78	1.60	2.79	3.47
95th Percentile	-0.18	1.98	1.98	1.19	1.02	2.09	2.20

Peer Group Analysis - IM U.S. Broad Market Core Fixed Income (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Western Asset Core Bond	5.21 (4)	4.12 (15)	1.21 (4)	7.38 (3)	-1.86 (44)	7.15 (27)	7.38 (25)
● Blmbg. Barc. U.S. Aggregate	3.54 (52)	2.65 (61)	0.55 (18)	5.97 (26)	-2.02 (53)	4.21 (81)	7.84 (11)
5th Percentile	5.00	4.77	1.03	7.06	-0.35	9.43	8.20
1st Quartile	4.13	3.68	0.44	5.98	-1.34	7.24	7.37
Median	3.58	2.85	0.00	5.55	-1.98	5.99	6.65
3rd Quartile	3.06	2.35	-0.67	4.76	-2.48	4.82	5.72
95th Percentile	1.98	1.42	-1.71	2.53	-3.44	3.35	4.00



## Western Asset Core Bond

### Fund Information

Fund Name :	Western Asset Funds, Inc: Western Asset Core Bond Fund; Class I Shares	Portfolio Assets :	\$9,181 Million
Fund Family :	Legg Mason	Portfolio Manager :	Team Managed
Ticker :	WATFX	PM Tenure :	
Inception Date :	09/04/1990	Fund Style :	IM U.S. Broad Market Core Fixed Income (MF)
Fund Assets :	\$5,433 Million	Style Benchmark :	Blmbg. Barc. U.S. Aggregate

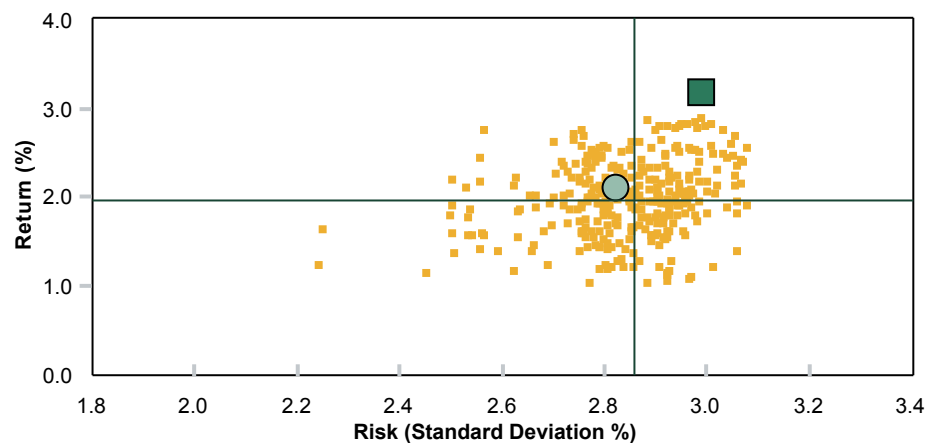
### Fund Investment Policy

The Fund seeks to maximize total return, consistent with prudent investment management and liquidity needs, by investing in a broad range of fixed income securities, to obtain the average duration specified for the portfolio.

### Historical Statistics (01/01/13 - 12/31/17) \*

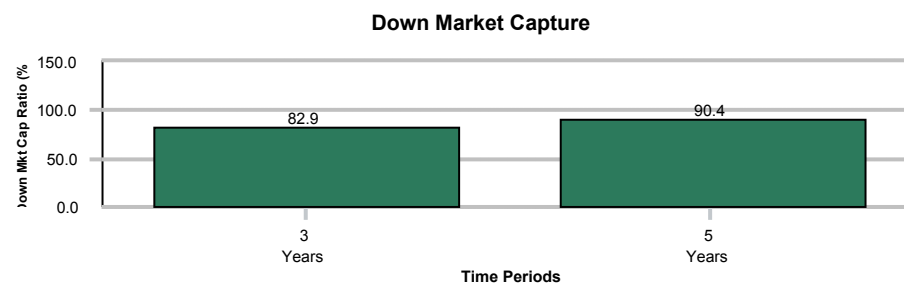
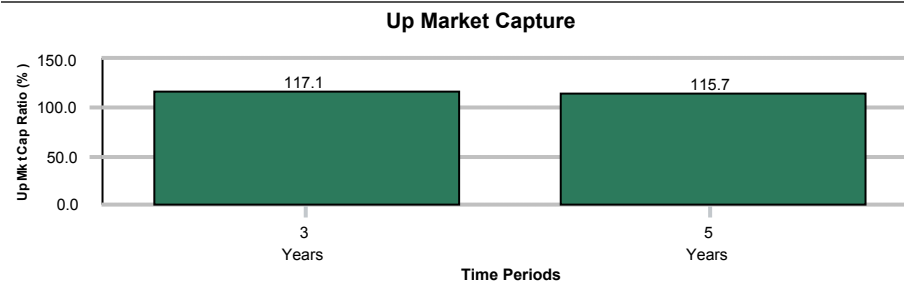
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Western Asset Core Bond	3.16	2.99	0.98	1.00	1.02	0.93	0.77	1.35	2.98	08/01/1998
Blmbg. Barc. U.S. Aggregate	2.10	2.82	0.67	0.00	1.00	1.00	0.00	N/A	2.81	08/01/1998
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.01	2.81	-0.67	0.00	08/01/1998

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Western Asset Core Bond	3.16	2.99
● Blmbg. Barc. U.S. Aggregate	2.10	2.82
— Median	1.96	2.86

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Inflation-Prot Bd Idx Prem

Segal Score

**B**

Ticker: FSIYX

Category: Inflation-Protected Bond

Subcategory: Inflation-Protected Bond

Expense Ratio: 0.09

Benchmark: BBgBarc US Treasury US TIPS

Inception Date: 05/16/2012

## S<sup>3</sup> Scores

Organization: F

Fees: A

Style/Portfolio Characteristics: A

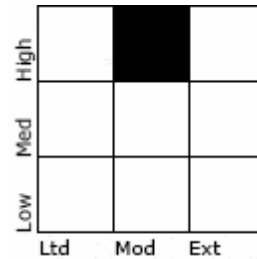
Performance: A

Risk: C

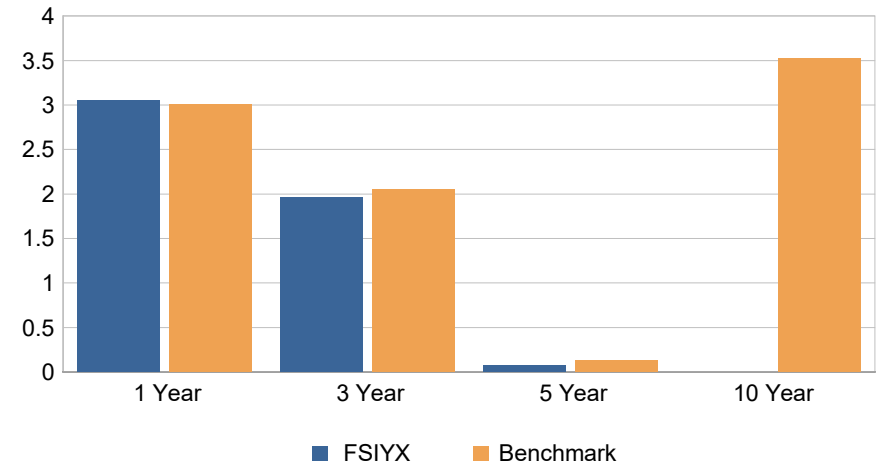
### Portfolio Characteristics

Fund AUM (\$mil):	2,734
No. of Bonds:	38.00
% Assets in Top 10:	
Avg Eff Duration:	5.53
Avg Eff Maturity:	0.00
Yield to Maturity:	0.00
Turnover Ratio %:	39.00

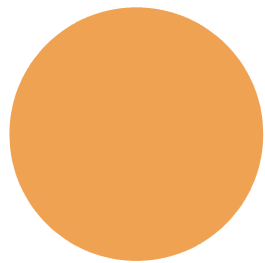
### Style



### Returns

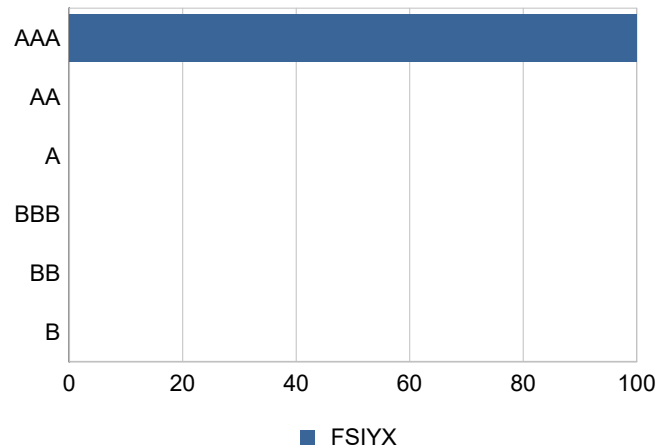


### Asset Allocation



US Bond	99.94
Non-US Bond	0.00
Equity	0.00
Other	0.00
Cash	0.06

### Sector Allocation

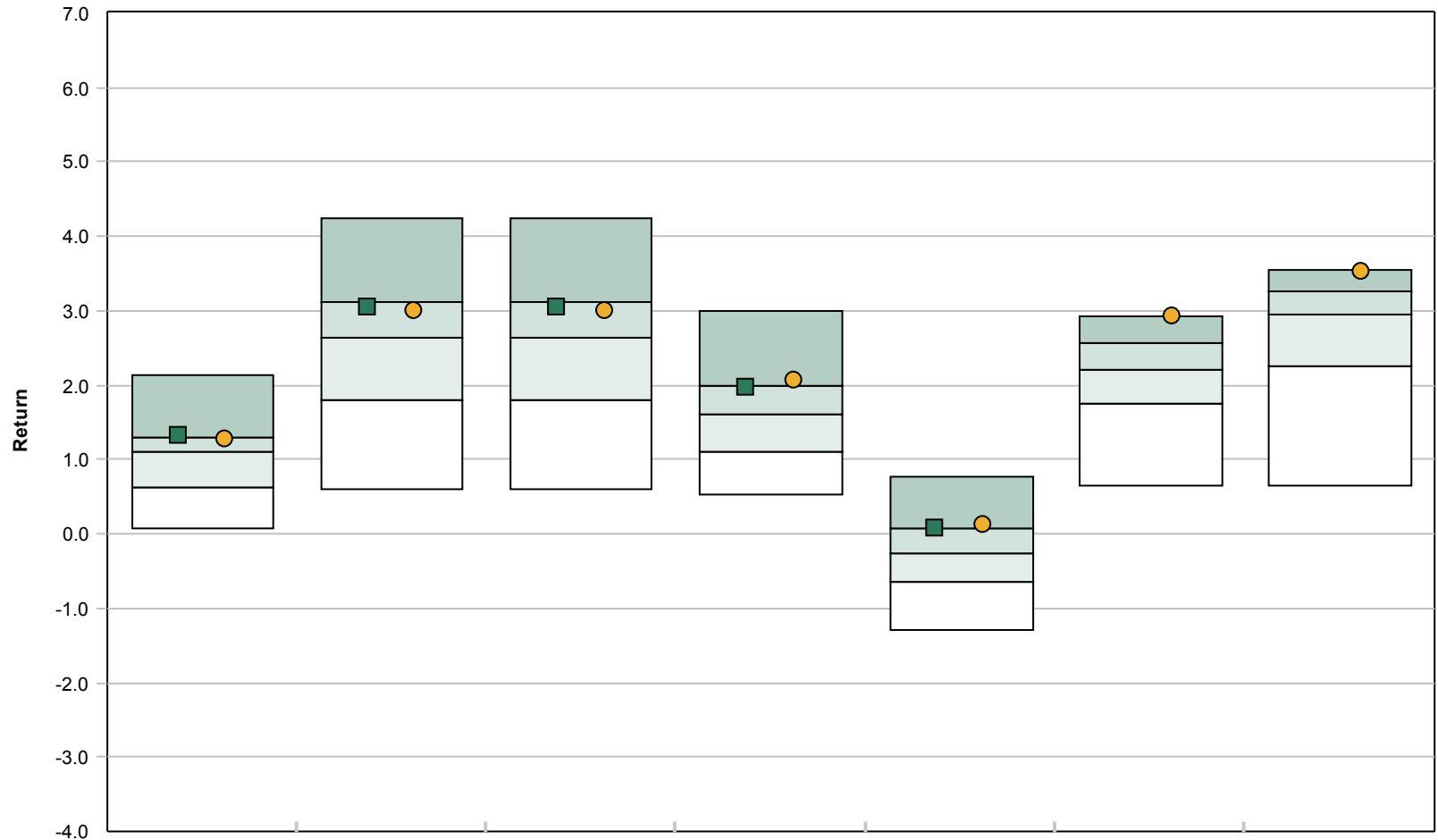


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	3.77	3.51
5 Year:	4.66	4.31
10 Year:		6.10
<b>Information Ratio</b>		
3 Year:	-0.22	-0.48
5 Year:	-0.21	-0.49
10 Year:		-0.49
<b>Downside Capture</b>		
3 Year:	108.42	100.62
5 Year:	105.18	99.75
10 Year:		100.52

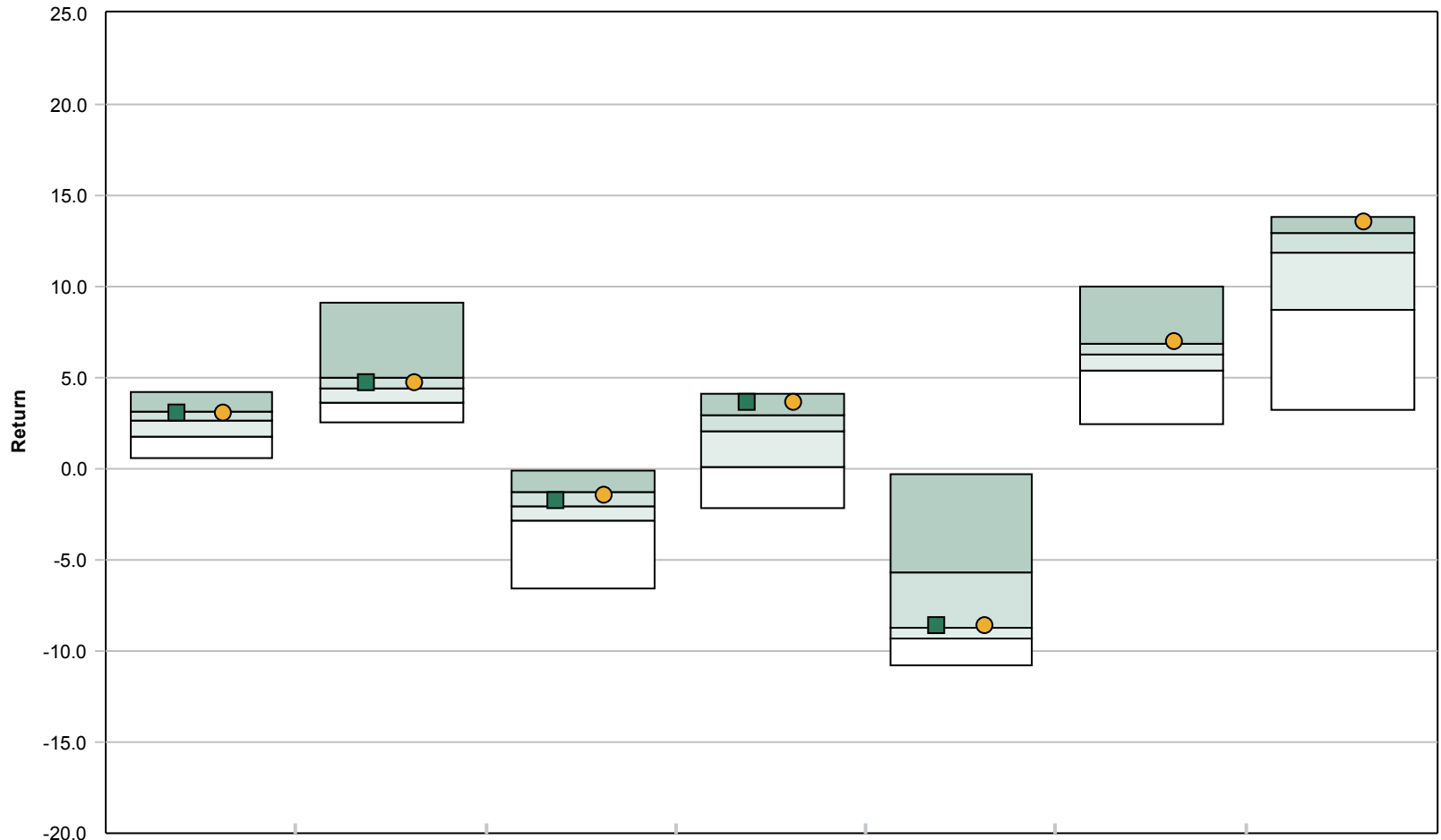
Fidelity Inflation Protected Index

Peer Group Analysis - IM U.S. TIPS (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Inflation Protected Index	1.31 (25)	3.05 (28)	3.05 (28)	1.97 (28)	0.07 (27)	N/A	N/A
● Blmbg. Barc. U.S. TIPS	1.26 (31)	3.01 (30)	3.01 (30)	2.05 (24)	0.13 (20)	2.92 (6)	3.53 (9)
5th Percentile	2.14	4.23	4.23	3.01	0.77	2.92	3.56
1st Quartile	1.30	3.11	3.11	1.99	0.08	2.57	3.27
Median	1.11	2.63	2.63	1.60	-0.27	2.21	2.95
3rd Quartile	0.62	1.80	1.80	1.10	-0.64	1.74	2.26
95th Percentile	0.07	0.59	0.59	0.53	-1.30	0.64	0.64

Peer Group Analysis - IM U.S. TIPS (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Inflation Protected Index	3.05 (28)	4.73 (35)	-1.76 (40)	3.65 (8)	-8.67 (49)	N/A	N/A
● Blmbg. Barc. U.S. TIPS	3.01 (30)	4.68 (36)	-1.44 (29)	3.64 (8)	-8.61 (45)	6.98 (22)	13.56 (7)
5th Percentile	4.23	9.10	-0.12	4.10	-0.27	9.98	13.80
1st Quartile	3.11	4.96	-1.28	2.98	-5.68	6.86	12.90
Median	2.63	4.39	-2.07	2.10	-8.70	6.31	11.88
3rd Quartile	1.80	3.59	-2.89	0.15	-9.27	5.38	8.77
95th Percentile	0.59	2.59	-6.60	-2.18	-10.75	2.48	3.21

## Fidelity Inflation Protected Index

### Fund Information

Fund Name :	Fidelity Salem Street Trust: Fidelity Inflation-Protected Bond Index Fd; Premium Class	Portfolio Assets :	\$1,612 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Small/Bettencourt
Ticker :	FSIYX	PM Tenure :	2015--2014
Inception Date :	05/16/2012	Fund Style :	IM U.S. TIPS (MF)
Fund Assets :	\$759 Million	Style Benchmark :	Blmbg. Barc. U.S. TIPS

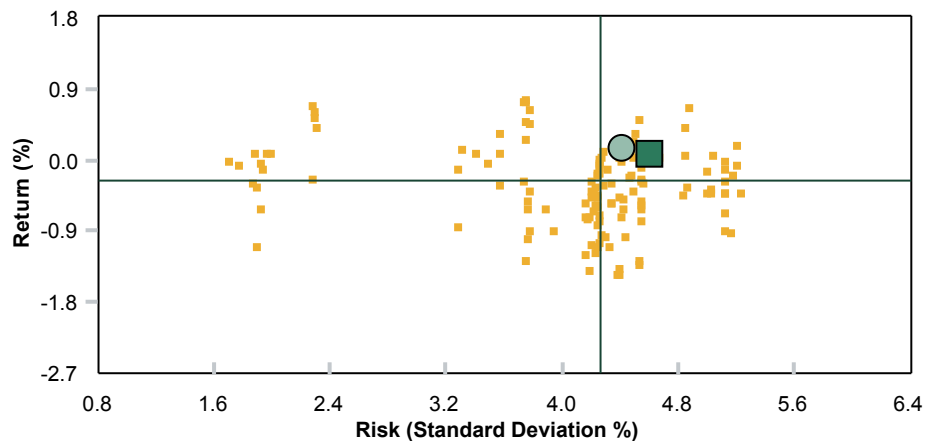
### Fund Investment Policy

The Fund seeks to provide investment results that correspond to the total return of the inflation-protected sector of the United States Treasury market. The Fund will normally invest at least 80% of assets in inflation-protected debt securities included in the Barclays US Treasury inflation-Protected Securities Index.

### Historical Statistics (01/01/13 - 12/31/17) \*

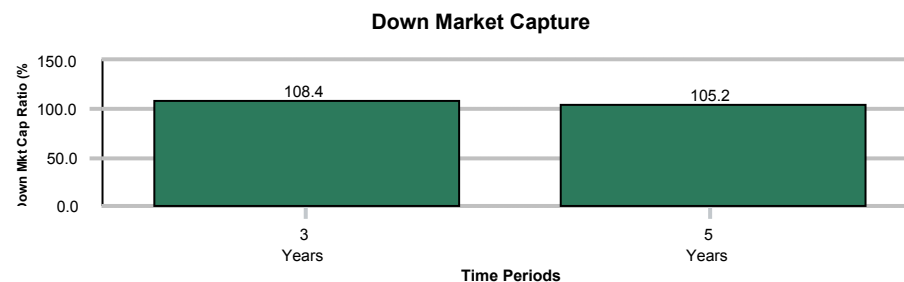
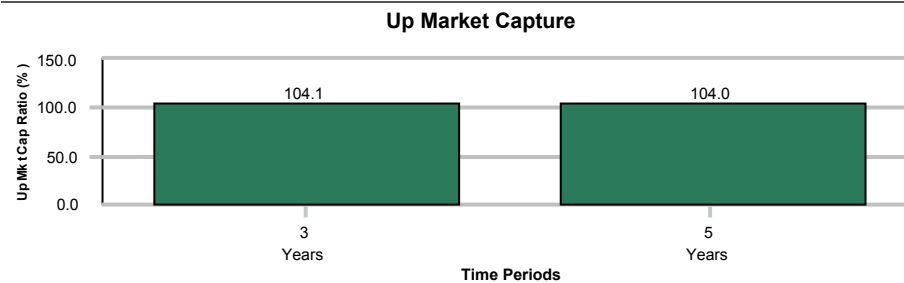
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Inflation Protected Index	0.07	4.62	-0.01	-0.06	1.04	0.99	0.51	-0.10	4.60	07/01/2004
Blmbg. Barc. U.S. TIPS	0.13	4.42	0.00	0.00	1.00	1.00	0.00	N/A	4.40	07/01/2004
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.03	4.40	0.00	0.00	07/01/2004

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Inflation Protected Index	0.07	4.62
● Blmbg. Barc. U.S. TIPS	0.13	4.42
— Median	-0.27	4.26

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Balanced K

Segal Score

**A**

Ticker: FBAKX

Category: Allocation--50% to 70% Equity

Subcategory: Moderate Allocation

Expense Ratio: 0.46

Benchmark: DJ Moderate

Inception Date: 11/06/1986

## S<sup>3</sup> Scores

Organization: B

Fees: A

Style/Portfolio Characteristics: A

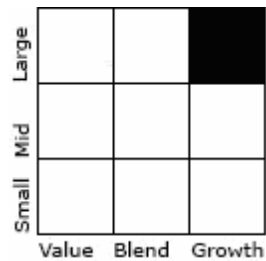
Performance: A

Risk: C

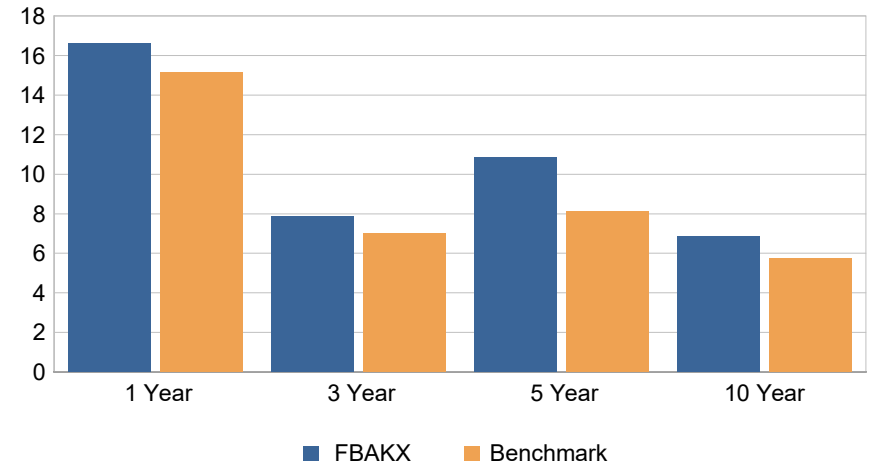
### Portfolio Characteristics

Fund AUM (\$mil):	32,637
No. of Stocks:	269
% Assets in Top 10:	100.00
Avg Market Cap (\$mil):	51,417.22
P/E Ratio (TTM)(Long):	19.88
P/B Ratio (TTM)(Long):	2.38
Turnover Ratio %:	244.00

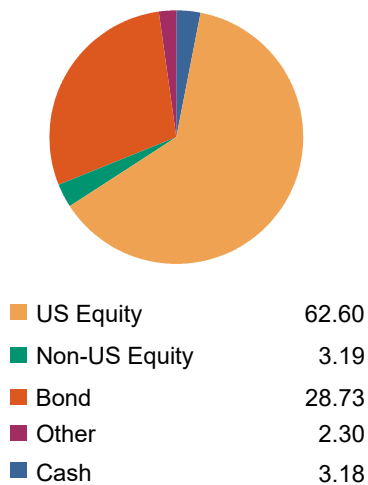
### Style



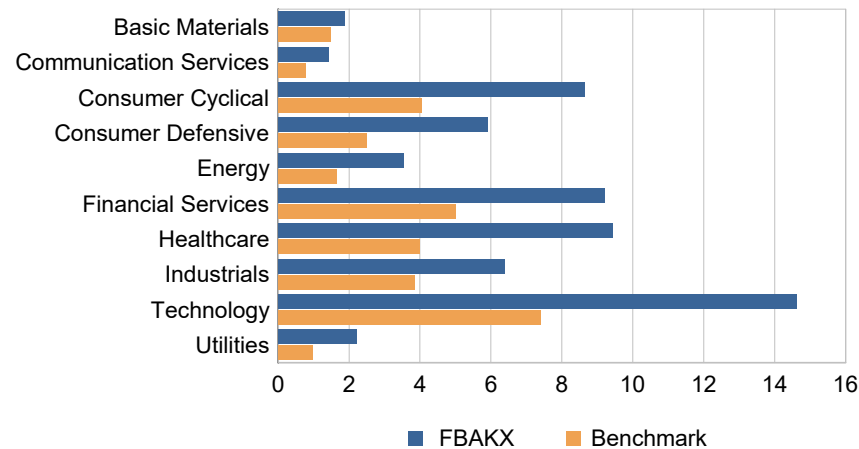
### Returns



### Asset Allocation



### Sector Allocation

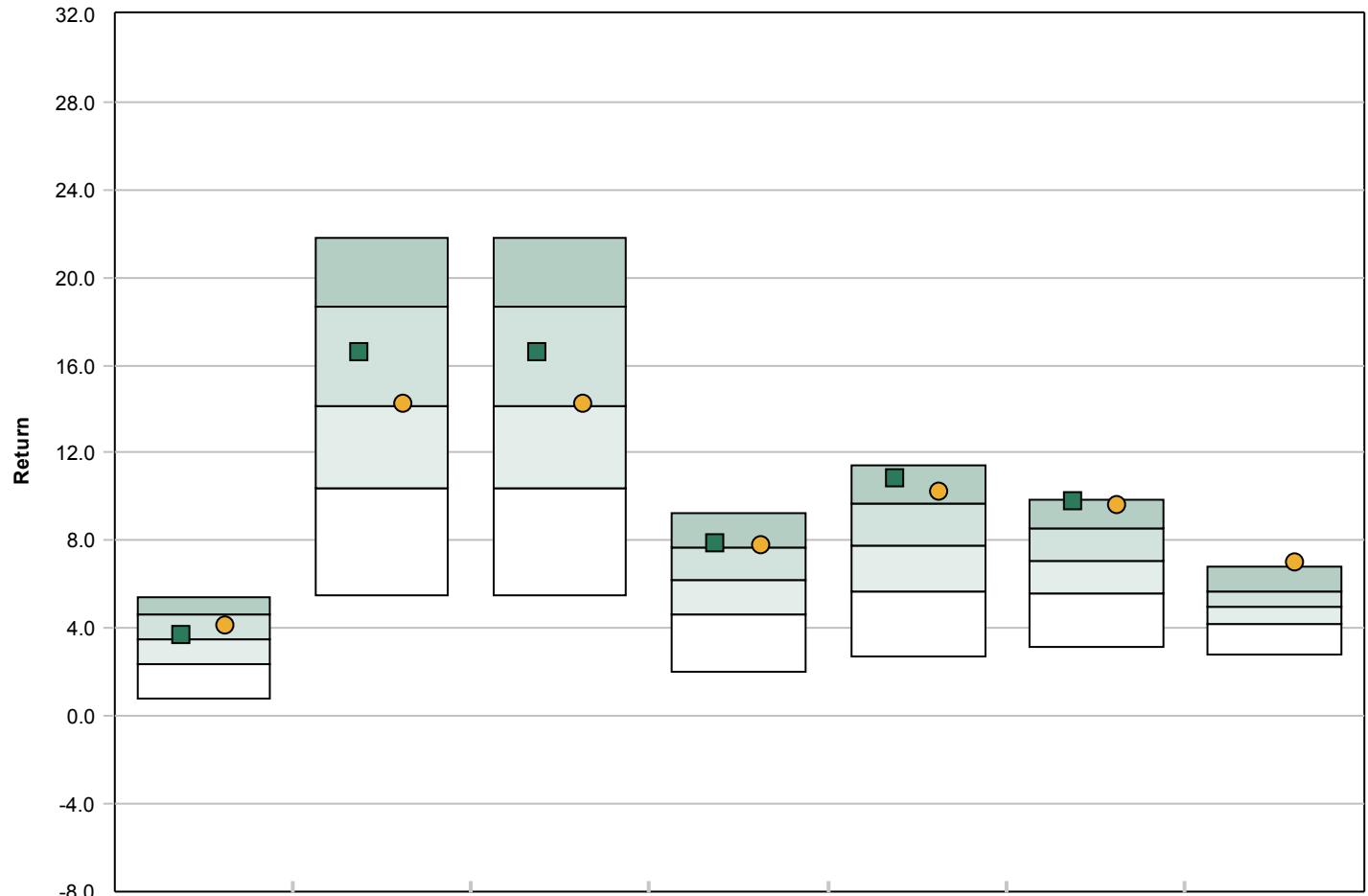


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	7.22	6.53
5 Year:	6.86	6.45
10 Year:	11.16	10.81
<b>Information Ratio</b>		
3 Year:	0.37	-0.31
5 Year:	1.01	0.12
10 Year:	0.34	-0.06
<b>Downside Capture</b>		
3 Year:	110.30	107.31
5 Year:	90.41	99.38
10 Year:	106.82	106.11

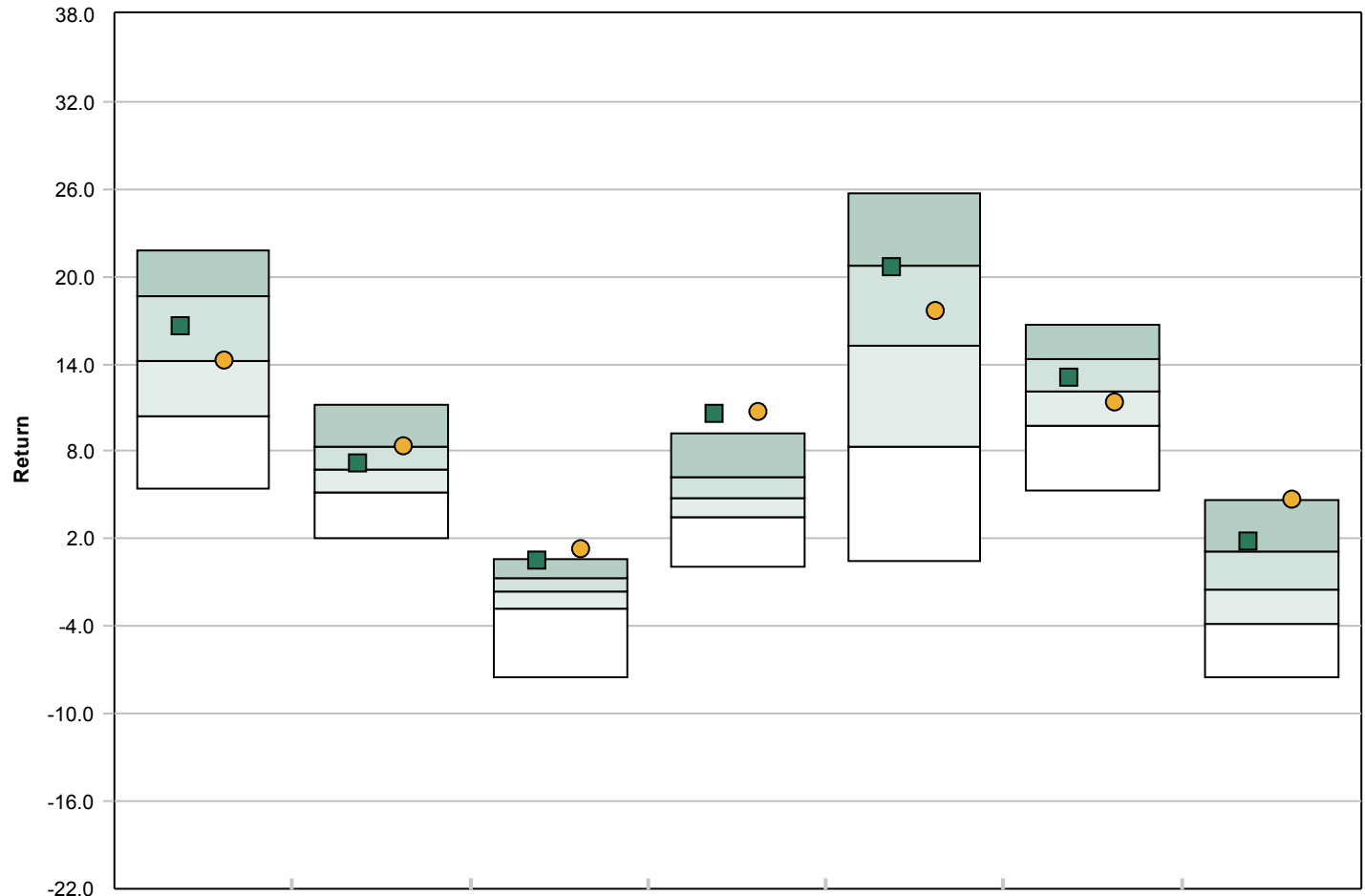
Fidelity Balanced K

Peer Group Analysis - IM All Balanced (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Balanced K	3.64 (47)	16.62 (36)	16.62 (36)	7.88 (23)	10.85 (11)	9.81 (6)	N/A
● 60% S&P 500 / 40% Bloomberg Barclays Aggregate	4.12 (37)	14.21 (50)	14.21 (50)	7.80 (24)	10.25 (18)	9.59 (8)	6.98 (5)
5th Percentile	5.39	21.83	21.83	9.24	11.41	9.89	6.82
1st Quartile	4.62	18.68	18.68	7.69	9.73	8.53	5.71
Median	3.49	14.15	14.15	6.22	7.78	7.11	5.00
3rd Quartile	2.37	10.41	10.41	4.66	5.67	5.62	4.18
95th Percentile	0.78	5.51	5.51	2.03	2.72	3.19	2.81

Peer Group Analysis - IM All Balanced (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Balanced K	16.62 (36)	7.12 (43)	0.50 (7)	10.52 (3)	20.64 (26)	13.04 (39)	1.76 (20)
● 60% S&P 500 / 40% Bloomberg Barclays Aggregate	14.21 (50)	8.31 (25)	1.28 (4)	10.62 (3)	17.56 (40)	11.31 (60)	4.69 (5)
5th Percentile	21.83	11.18	0.68	9.22	25.74	16.64	4.63
1st Quartile	18.68	8.27	-0.72	6.20	20.68	14.34	1.14
Median	14.15	6.73	-1.66	4.74	15.20	12.13	-1.48
3rd Quartile	10.41	5.21	-2.77	3.45	8.34	9.81	-3.77
95th Percentile	5.51	2.01	-7.44	0.08	0.55	5.30	-7.43



## Fidelity Balanced K

### Fund Information

Fund Name : Fidelity Puritan Trust: Fidelity Balanced Fund; Class K Shares  
 Fund Family : Fidelity Management & Research Company  
 Ticker : FBAKX  
 Inception Date : 05/09/2008  
 Fund Assets : \$8,773 Million  
 Portfolio Turnover : 91%

Portfolio Assets : \$32,486 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM All Balanced (MF)  
 Style Benchmark : 60% S&P 500 / 40% Bloomberg Barclays Aggregate

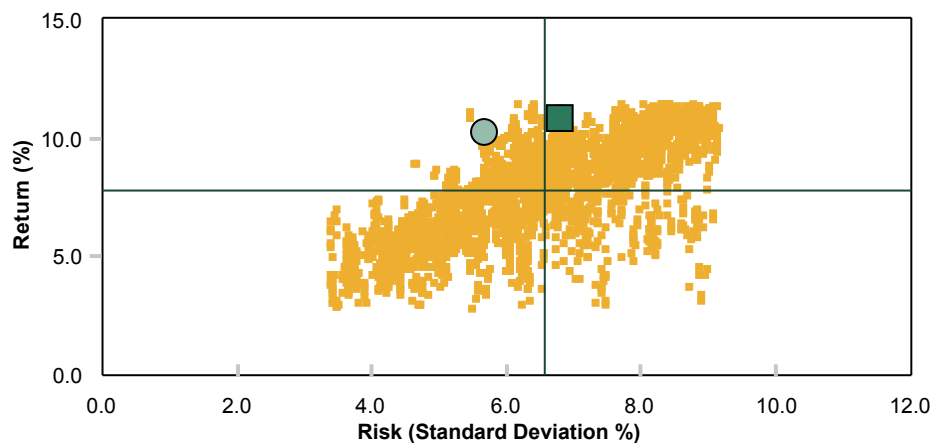
### Fund Investment Policy

The Fund seeks income and capital growth by investing 60% of its assets in stocks and other equity securities and the remainder in bonds and other debt securities, including lower-quality debt securities, when its outlook is neutral. It invests at least 25% in fixed-income senior securities.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Balanced K	10.85	6.80	1.52	-0.99	1.16	0.94	1.85	0.33	6.80	06/01/2008
60% S&P 500 / 40% Bloomberg Barclays Aggregate	10.25	5.69	1.71	0.00	1.00	1.00	0.00	N/A	5.68	06/01/2008
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.00	5.68	-1.71	0.00	06/01/2008

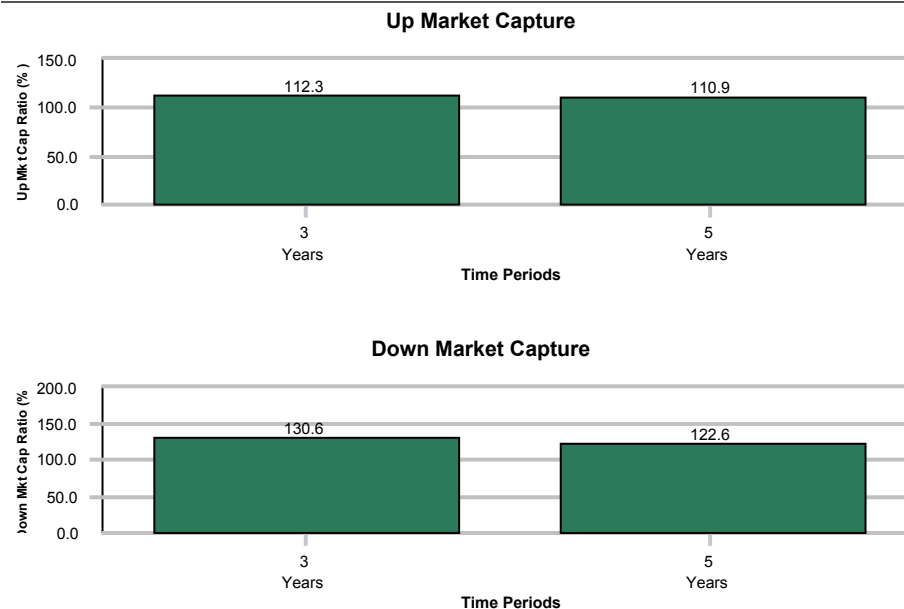
### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Balanced K	10.85	6.80
● 60% S&P 500 / 40% Bloomberg Barclays Aggregate	10.25	5.69
— Median	7.77	6.57

\* Monthly periodicity used.

### Up Down Market Capture



# BlackRock Equity Dividend Instl

Segal Score

C

Ticker: MADVX

Category: Large Value

Subcategory: Large Deep Value

Expense Ratio: 0.73

Benchmark: Russell 1000 Value

Inception Date: 11/29/1988

## S<sup>3</sup> Scores

Organization: D

Fees: B

Style/Portfolio Characteristics: B

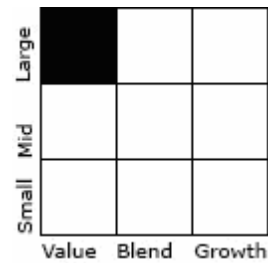
Performance: C

Risk: B

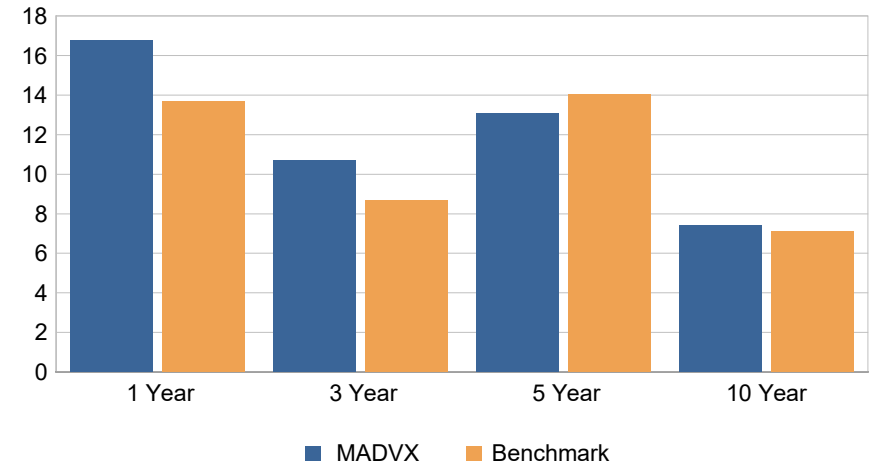
### Portfolio Characteristics

Fund AUM (\$mil):	21,640
No. of Stocks:	89
% Assets in Top 10:	23.06
Avg Market Cap (\$mil):	90,824.69
P/E Ratio (TTM)(Long):	19.61
P/B Ratio (TTM)(Long):	2.05
Turnover Ratio %:	15.00

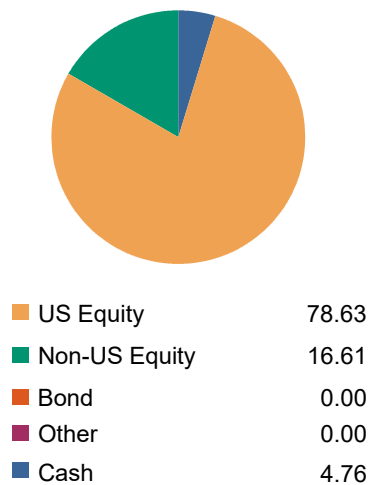
### Style



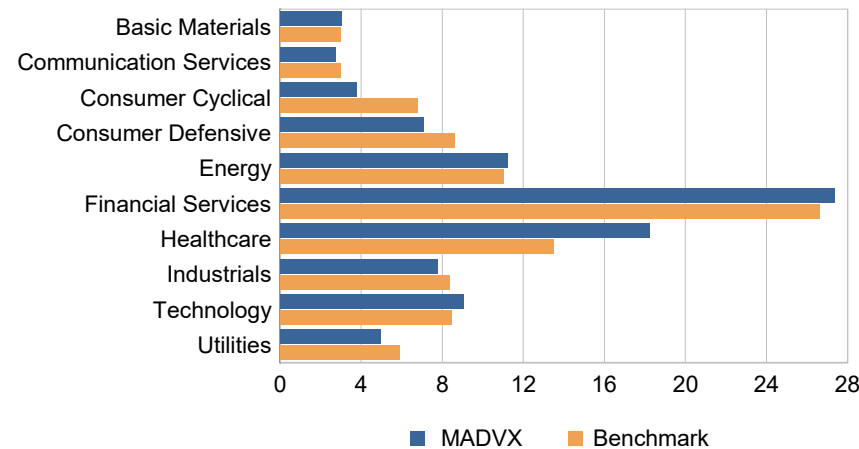
### Returns



### Asset Allocation



### Sector Allocation

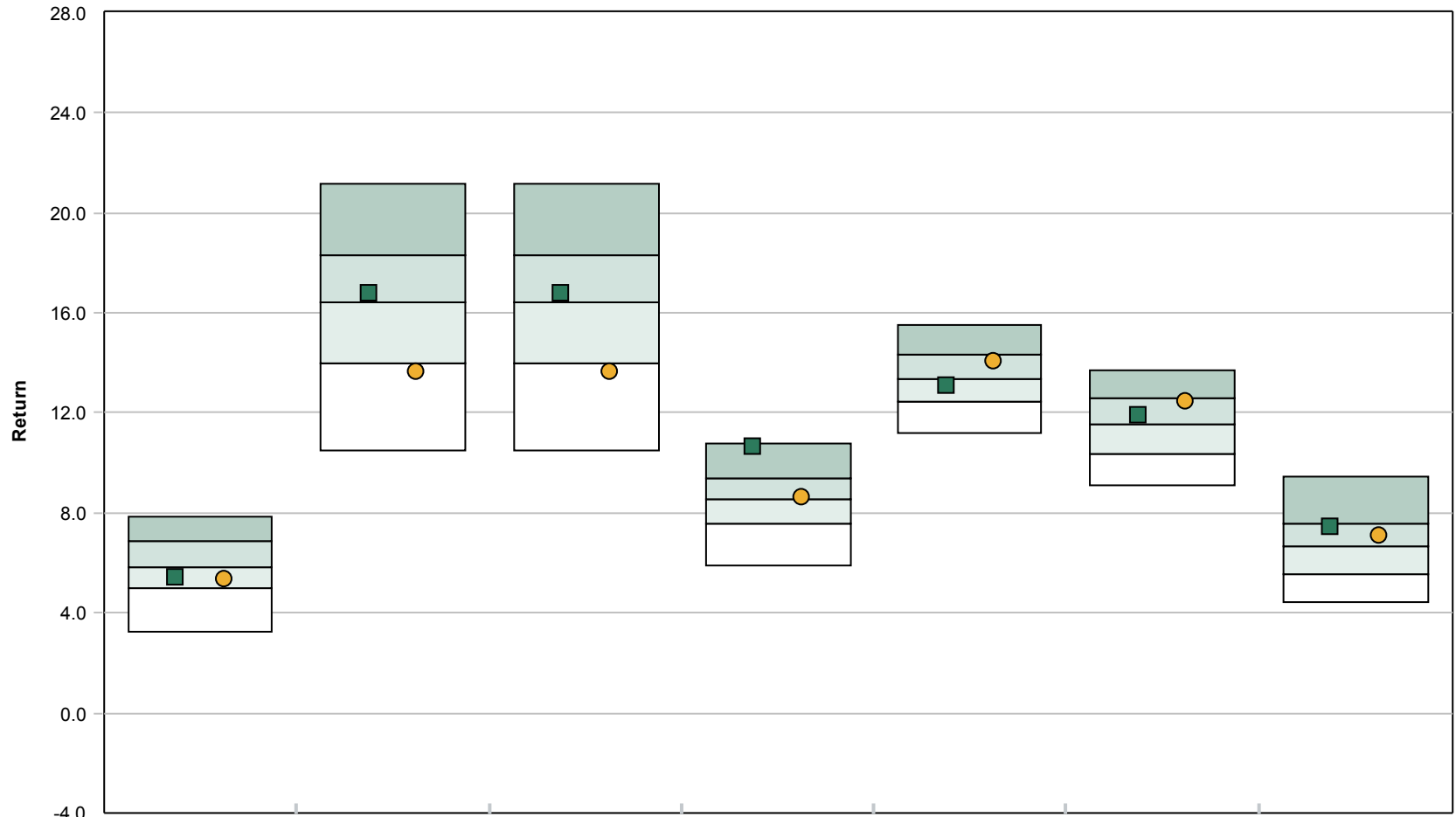


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.21	10.57
5 Year:	9.33	10.04
10 Year:	13.62	15.73
<b>Information Ratio</b>		
3 Year:	0.72	-0.05
5 Year:	-0.28	-0.22
10 Year:	0.06	-0.04
<b>Downside Capture</b>		
3 Year:	85.94	97.41
5 Year:	90.05	98.32
10 Year:	80.46	97.73

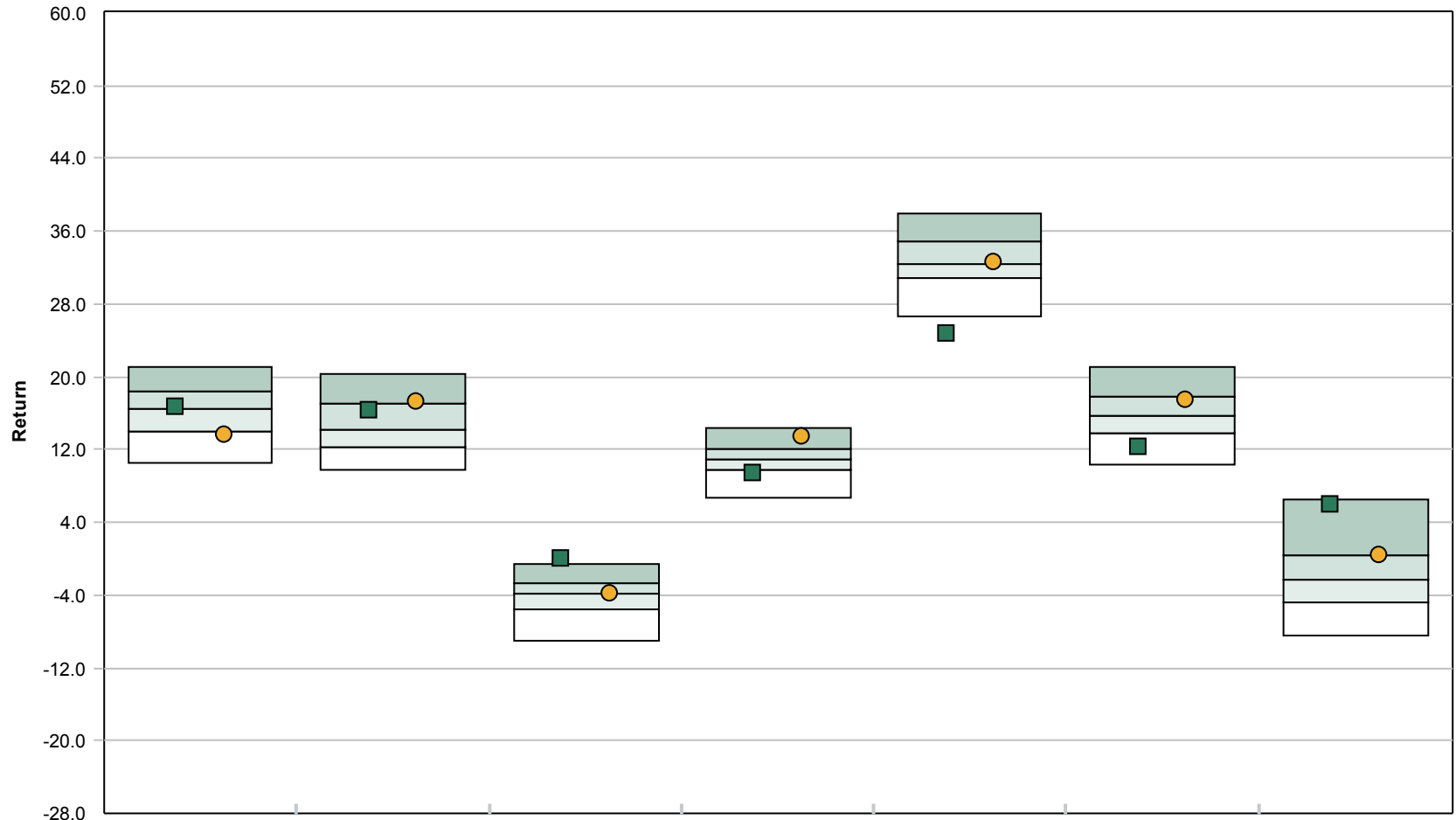
**Blackrock Equity Dividend**

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Blackrock Equity Dividend	5.41 (61)	16.76 (44)	16.76 (44)	10.67 (7)	13.07 (60)	11.89 (41)	7.44 (28)
● Russell 1000 Value Index	5.33 (62)	13.66 (77)	13.66 (77)	8.65 (48)	14.04 (33)	12.46 (28)	7.10 (37)
5th Percentile	7.88	21.14	21.14	10.80	15.51	13.73	9.47
1st Quartile	6.88	18.31	18.31	9.41	14.32	12.59	7.56
Median	5.82	16.41	16.41	8.52	13.34	11.52	6.67
3rd Quartile	4.97	13.97	13.97	7.61	12.48	10.34	5.55
95th Percentile	3.23	10.52	10.52	5.89	11.16	9.13	4.46

Peer Group Analysis - IM U.S. Large Cap Value Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Blackrock Equity Dividend	16.76 (44)	16.21 (30)	-0.10 (4)	9.35 (81)	24.67 (98)	12.18 (89)	5.92 (6)
● Russell 1000 Value Index	13.66 (77)	17.34 (23)	-3.83 (50)	13.45 (8)	32.53 (48)	17.51 (28)	0.39 (25)
5th Percentile	21.14	20.38	-0.54	14.37	38.02	21.10	6.52
1st Quartile	18.31	17.07	-2.71	12.03	34.83	17.80	0.32
Median	16.41	14.12	-3.87	10.90	32.38	15.79	-2.32
3rd Quartile	13.97	12.35	-5.60	9.76	30.85	13.81	-4.86
95th Percentile	10.52	9.81	-9.01	6.75	26.72	10.31	-8.47

## Blackrock Equity Dividend

### Fund Information

Fund Name : BlackRock Equity Dividend Fund; Institutional Shares  
 Fund Family : BlackRock Inc  
 Ticker : MADVX  
 Inception Date : 11/29/1988  
 Fund Assets : \$12,576 Million  
 Portfolio Turnover : 29%

Portfolio Assets : \$21,757 Million  
 Portfolio Manager : DeSpirito/Zhao/Tapia  
 PM Tenure : 2014--2017--2017  
 Fund Style : IM U.S. Large Cap Value Equity (MF)  
 Style Benchmark : Russell 1000 Value Index

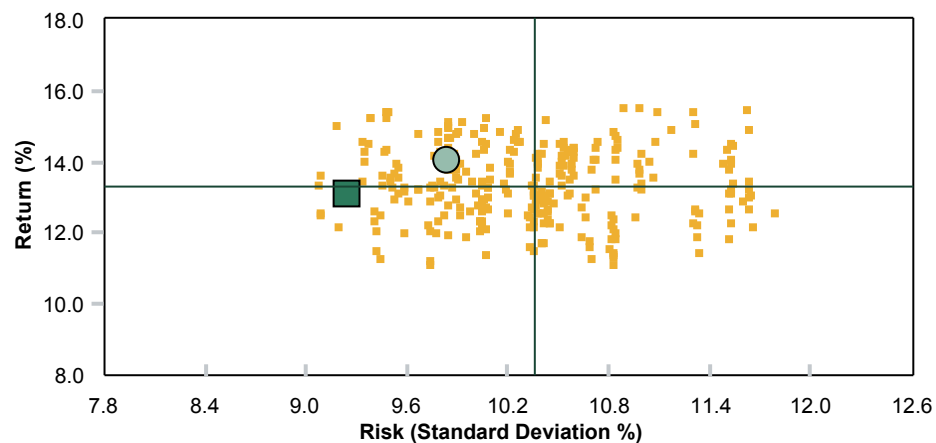
### Fund Investment Policy

The Fund seeks to provide shareholders with long-term total return by investing primarily in a diversified portfolio of dividend paying common stocks which yield more than the S&P 500 Composite Stock Price Index.

### Historical Statistics (01/01/13 - 12/31/17) \*

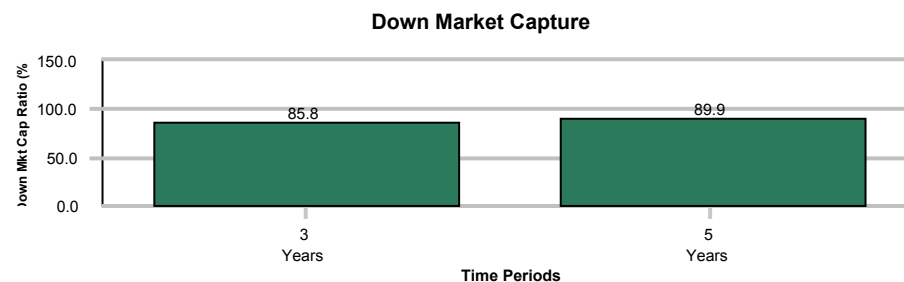
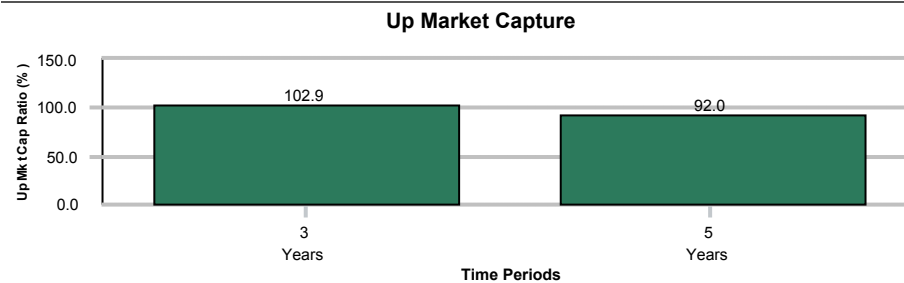
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Blackrock Equity Dividend	13.07	9.25	1.35	0.28	0.91	0.94	2.42	-0.38	9.24	12/01/1988
Russell 1000 Value Index	14.04	9.83	1.37	0.00	1.00	1.00	0.00	N/A	9.83	12/01/1988
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.83	-1.37	0.00	12/01/1988

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
Blackrock Equity Dividend	13.07	9.25
Russell 1000 Value Index	14.04	9.83
Median	13.32	10.36

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® 500 Index Institutional

Segal Score

**B**

Ticker: FXSIX

Category: Large Blend

Subcategory: S&P 500 Tracking

Expense Ratio: 0.03

Benchmark: S&P 500

Inception Date: 02/17/1988

## S<sup>3</sup> Scores

Organization: A

Fees: A

Style/Portfolio Characteristics: B

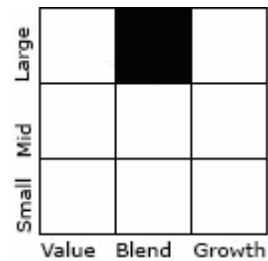
Performance: A

Risk: C

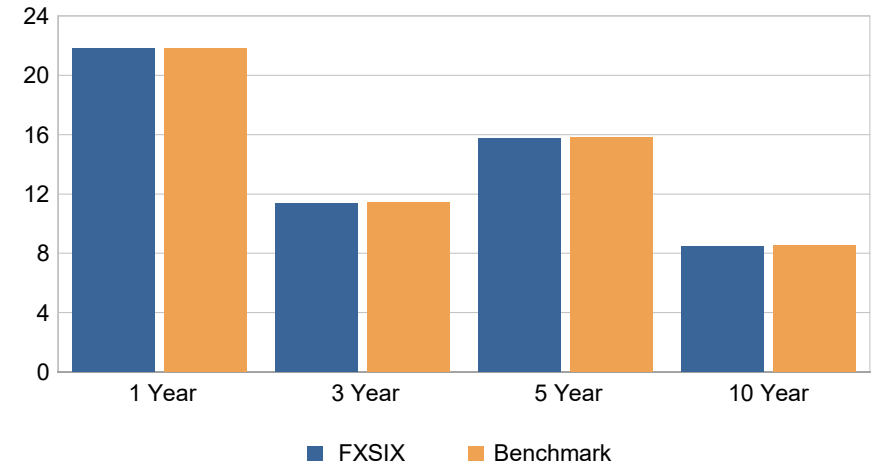
### Portfolio Characteristics

Fund AUM (\$mil):	139,520
No. of Stocks:	505
% Assets in Top 10:	19.85
Avg Market Cap (\$mil):	95,375.71
P/E Ratio (TTM)(Long):	22.87
P/B Ratio (TTM)(Long):	3.18
Turnover Ratio %:	4.00

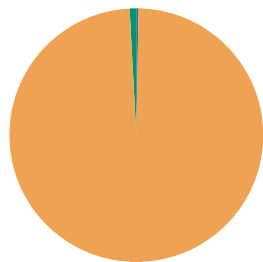
### Style



### Returns

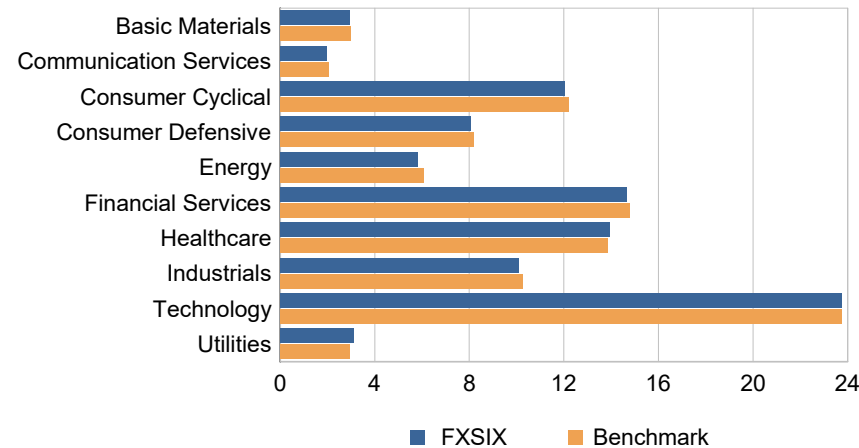


### Asset Allocation



US Equity	98.80
Non-US Equity	0.91
Bond	0.01
Other	0.00
Cash	0.28

### Sector Allocation

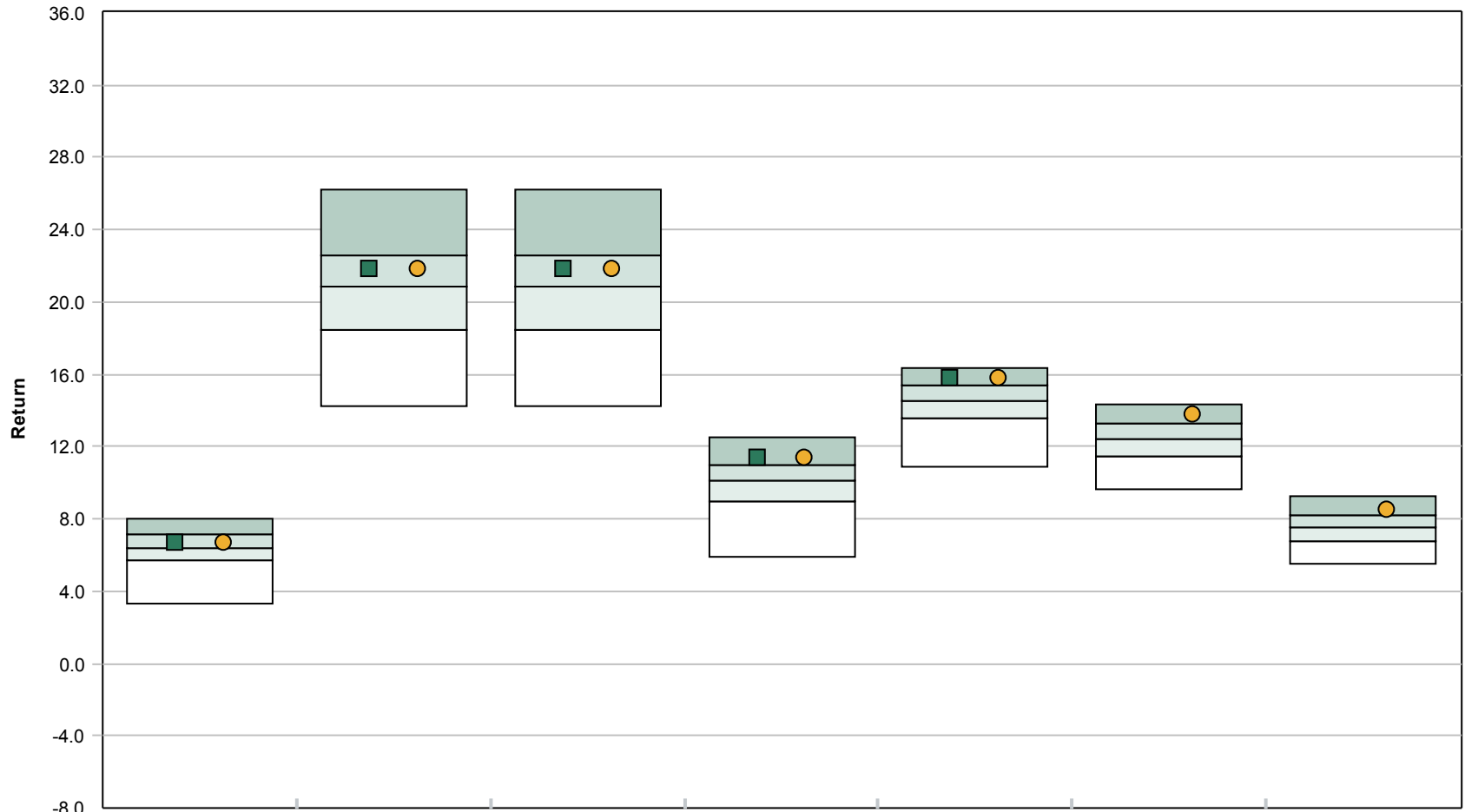


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.07	10.20
5 Year:	9.50	9.74
10 Year:	15.08	15.37
<b>Information Ratio</b>		
3 Year:	-1.86	-0.56
5 Year:	-2.09	-0.51
10 Year:	-1.17	-0.28
<b>Downside Capture</b>		
3 Year:	100.07	103.82
5 Year:	100.08	104.44
10 Year:	100.09	102.32

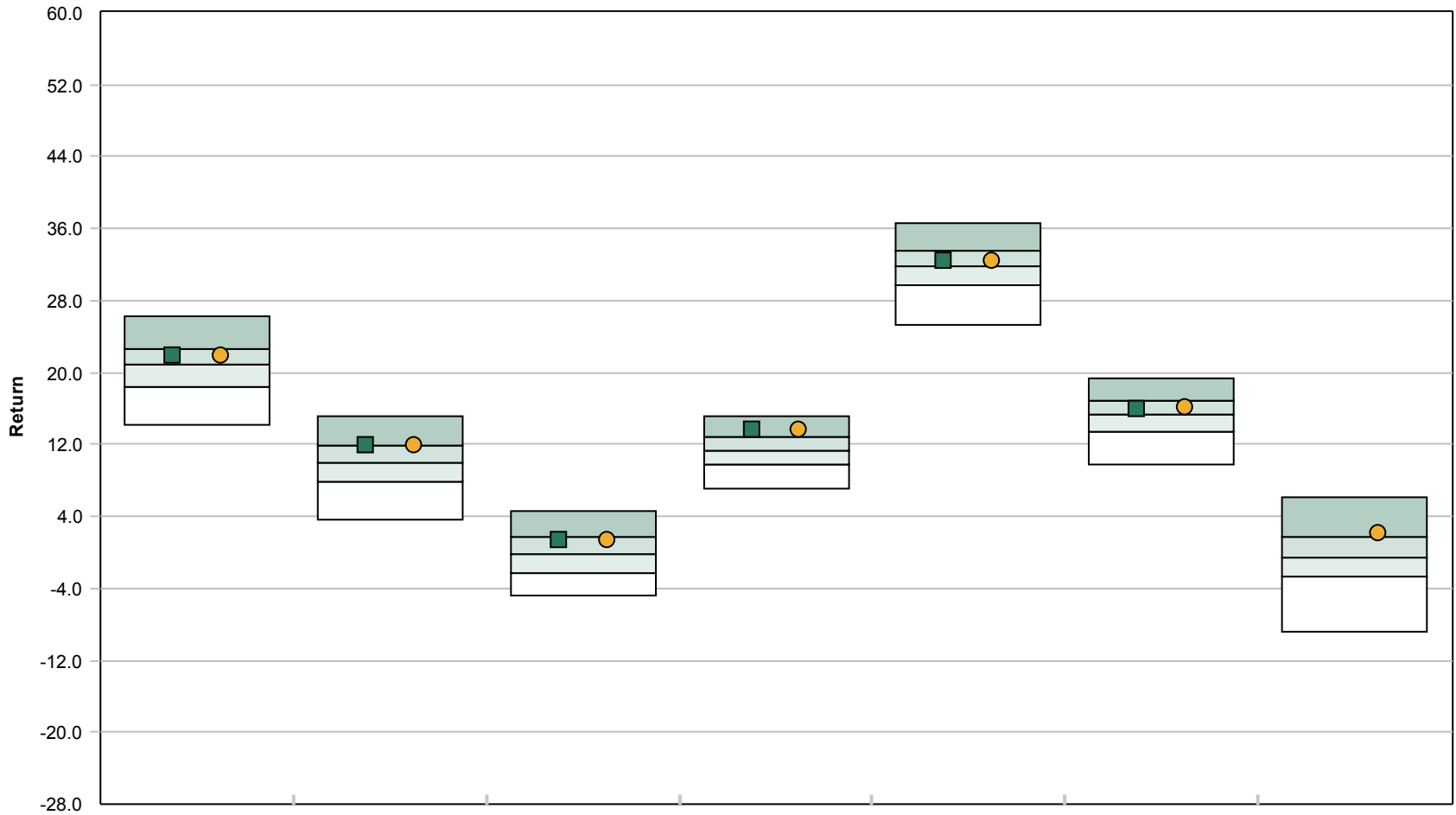
Fidelity 500 Index; Instl.

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity 500 Index; Instl.	6.64 (38)	21.78 (36)	21.78 (36)	11.38 (17)	15.75 (14)	N/A	N/A
● S&P 500	6.64 (38)	21.83 (36)	21.83 (36)	11.41 (16)	15.79 (13)	13.76 (12)	8.50 (17)
5th Percentile	8.04	26.25	26.25	12.50	16.35	14.34	9.25
1st Quartile	7.15	22.62	22.62	10.99	15.36	13.26	8.19
Median	6.39	20.84	20.84	10.11	14.51	12.45	7.56
3rd Quartile	5.67	18.48	18.48	8.98	13.58	11.45	6.75
95th Percentile	3.33	14.23	14.23	5.91	10.89	9.62	5.47

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity 500 Index; Instl.	21.78 (36)	11.93 (25)	1.36 (29)	13.65 (15)	32.35 (40)	15.96 (41)	N/A
● S&P 500	21.83 (36)	11.96 (25)	1.38 (29)	13.69 (15)	32.39 (39)	16.00 (40)	2.11 (23)
5th Percentile	26.25	15.08	4.53	15.19	36.54	19.33	6.22
1st Quartile	22.62	11.92	1.66	12.88	33.47	16.87	1.77
Median	20.84	9.98	-0.22	11.35	31.80	15.41	-0.57
3rd Quartile	18.48	7.93	-2.34	9.75	29.74	13.33	-2.71
95th Percentile	14.23	3.73	-4.79	7.07	25.33	9.68	-8.85



**Fidelity 500 Index; Instl.**

**Fund Information**

Fund Name : Fidelity Concord Street Trust: Fidelity 500 Index Fund; Institutional Class Shares  
 Fund Family : Fidelity Management & Research Company  
 Ticker : FXSIX  
 Inception Date : 05/04/2011  
 Fund Assets : \$34,738 Million

Portfolio Assets : \$136,827 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM U.S. Large Cap Core Equity (MF)  
 Style Benchmark : S&P 500

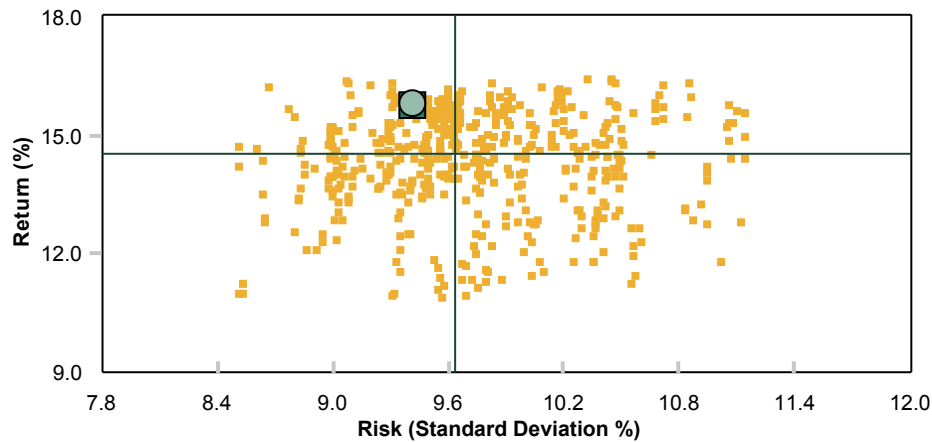
**Fund Investment Policy**

The Fund seeks a total return which corresponds to that of the S&P 500 Index. The Fund invests at least 80% of its assets in common stocks included in the Index. The Fund may lend securities to earn income and uses statistical sampling techniques in stock selection.

**Historical Statistics (01/01/13 - 12/31/17) \***

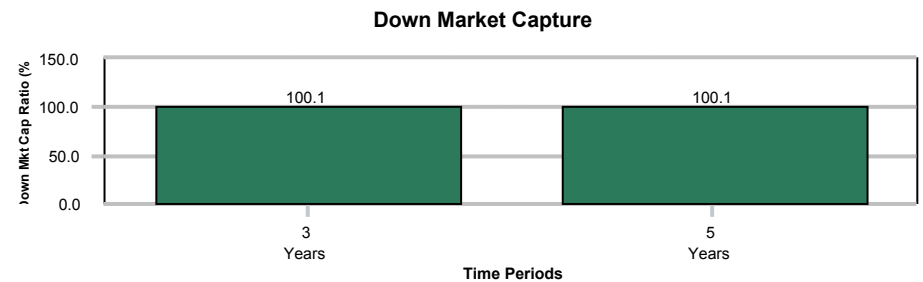
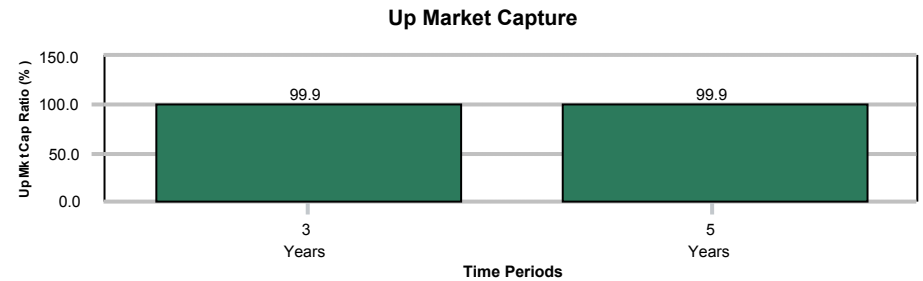
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity 500 Index; Instl.	15.75	9.42	1.58	-0.03	1.00	1.00	0.02	-1.40	9.41	06/01/2011
S&P 500	15.79	9.41	1.59	0.00	1.00	1.00	0.00	N/A	9.41	06/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.41	-1.59	0.00	06/01/2011

**Peer Group Scattergram (01/01/13 to 12/31/17)**



	Return	Standard Deviation
Fidelity 500 Index; Instl.	15.75	9.42
S&P 500	15.79	9.41
— Median	14.52	9.63

**Up Down Market Capture**



\* Monthly periodicity used.

# Neuberger Berman Socially Rspns Inv



Ticker: NBSRX

Category: Large Growth

Subcategory: Large Valuation-Sensitive Growth

Expense Ratio: 0.85

Benchmark: Russell 1000 Growth

Inception Date: 03/16/1994

## S<sup>3</sup> Scores

Organization: B

Fees: B

Style/Portfolio Characteristics: C

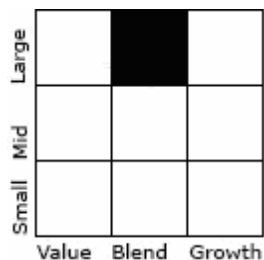
Performance: D

Risk: C

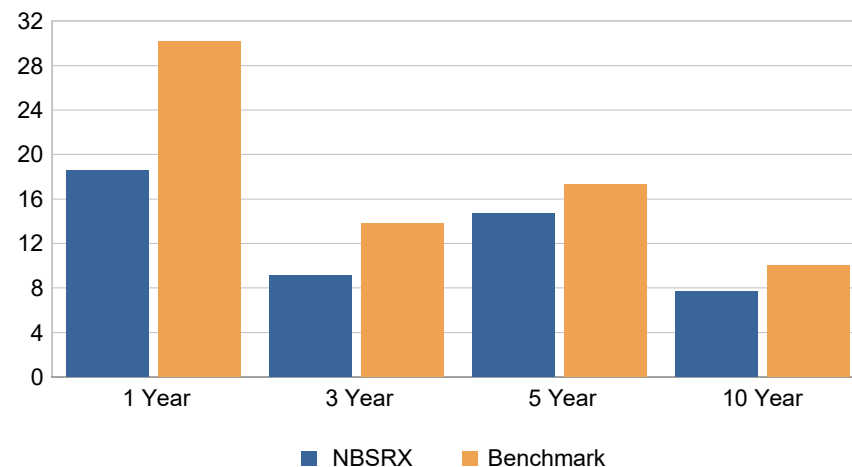
### Portfolio Characteristics

Fund AUM (\$mil):	2,357
No. of Stocks:	37
% Assets in Top 10:	29.98
Avg Market Cap (\$mil):	42,338.60
P/E Ratio (TTM)(Long):	26.46
P/B Ratio (TTM)(Long):	6.35
Turnover Ratio %:	35.00

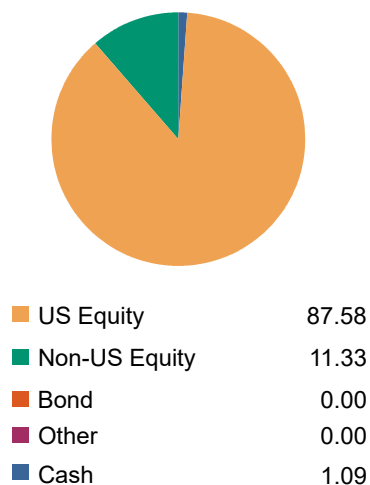
### Style



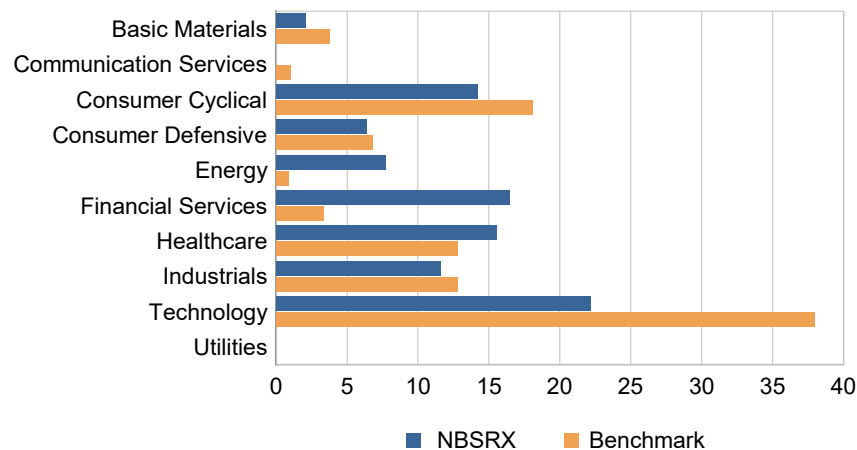
### Returns



### Asset Allocation



### Sector Allocation

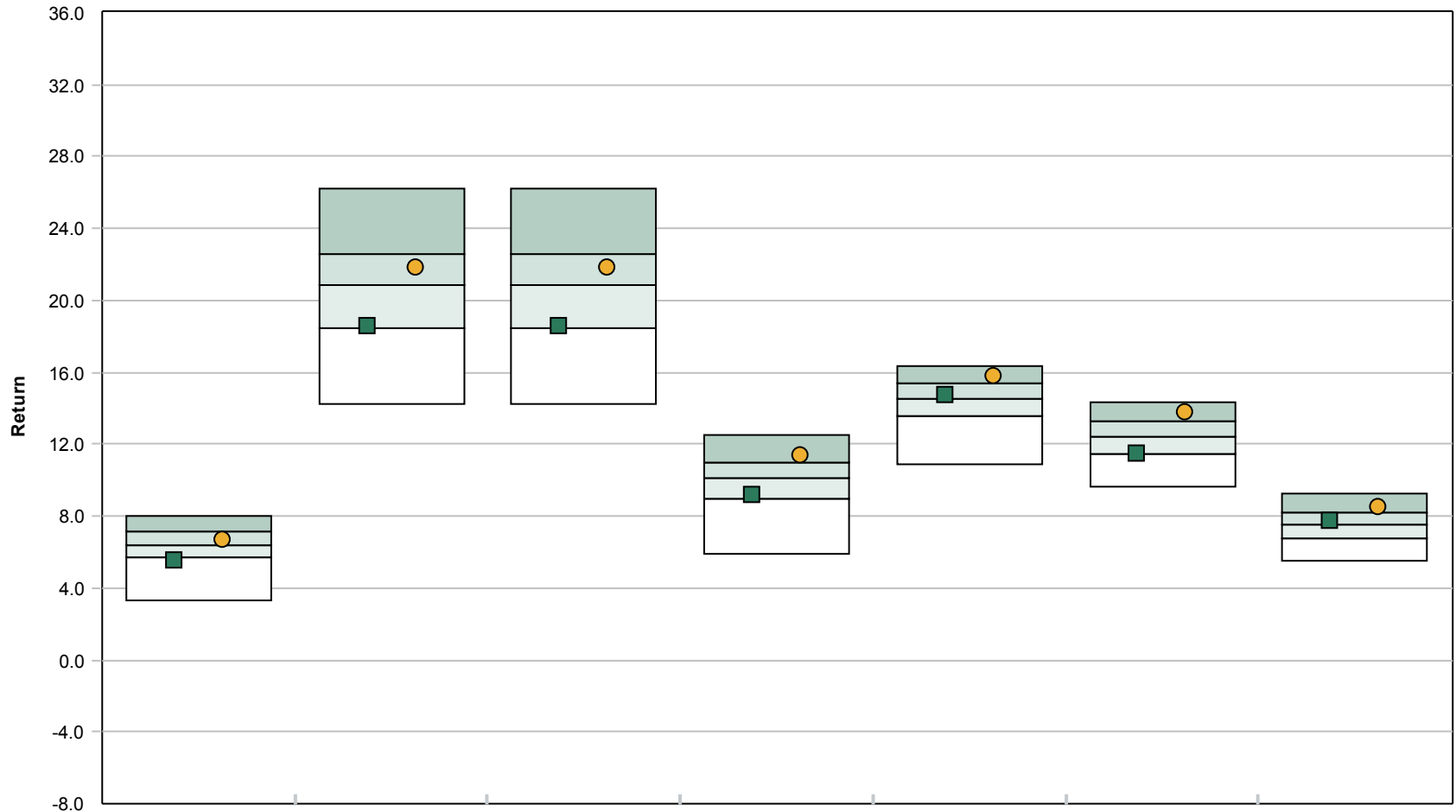


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.05	11.28
5 Year:	10.12	10.69
10 Year:	15.54	16.32
<b>Information Ratio</b>		
3 Year:	-1.29	-0.61
5 Year:	-0.58	-0.44
10 Year:	-0.45	-0.34
<b>Downside Capture</b>		
3 Year:	93.85	110.31
5 Year:	93.62	108.56
10 Year:	100.68	107.54

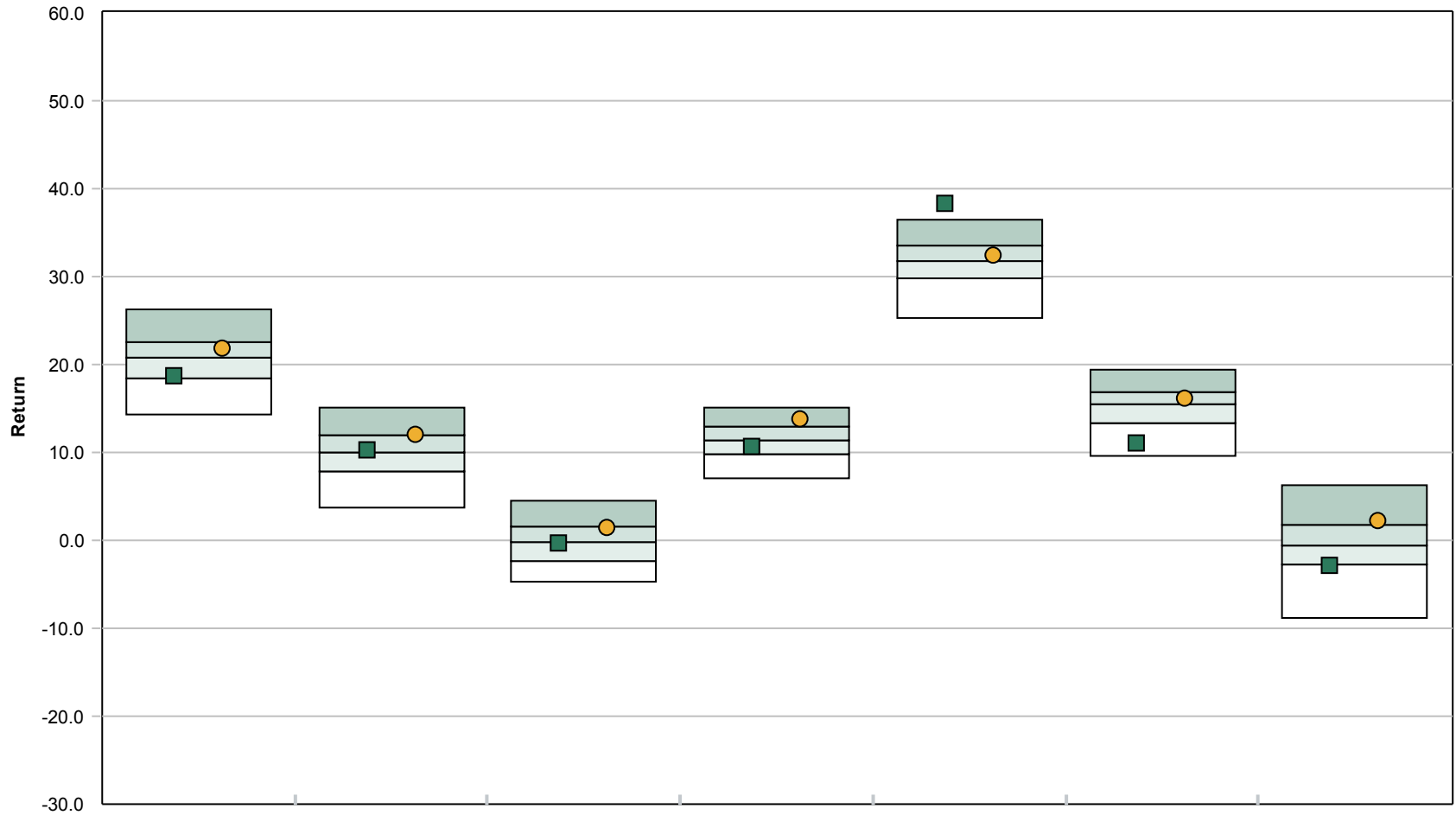
NB Socially Responsive

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ NB Socially Responsive	5.51 (79)	18.57 (75)	18.57 (75)	9.14 (73)	14.70 (44)	11.47 (75)	7.70 (45)
● S&P 500	6.64 (38)	21.83 (36)	21.83 (36)	11.41 (16)	15.79 (13)	13.76 (12)	8.50 (17)
5th Percentile	8.04	26.25	26.25	12.50	16.35	14.34	9.25
1st Quartile	7.15	22.62	22.62	10.99	15.36	13.26	8.19
Median	6.39	20.84	20.84	10.11	14.51	12.45	7.56
3rd Quartile	5.67	18.48	18.48	8.98	13.58	11.45	6.75
95th Percentile	3.33	14.23	14.23	5.91	10.89	9.62	5.47

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ NB Socially Responsive	18.57 (75)	10.10 (48)	-0.41 (53)	10.50 (65)	38.20 (2)	10.95 (91)	-2.90 (77)
● S&P 500	21.83 (36)	11.96 (25)	1.38 (29)	13.69 (15)	32.39 (39)	16.00 (40)	2.11 (23)
5th Percentile	26.25	15.08	4.53	15.19	36.54	19.33	6.22
1st Quartile	22.62	11.92	1.66	12.88	33.47	16.87	1.77
Median	20.84	9.98	-0.22	11.35	31.80	15.41	-0.57
3rd Quartile	18.48	7.93	-2.34	9.75	29.74	13.33	-2.71
95th Percentile	14.23	3.73	-4.79	7.07	25.33	9.68	-8.85

## NB Socially Responsive

### Fund Information

Fund Name : Neuberger Berman Equity Funds: Neuberger Berman Socially Responsive Fund; Investor Class Shares

Portfolio Assets : \$2,466 Million

Fund Family : Neuberger Berman Management LLC

Portfolio Manager : Team Managed

Ticker : NBSRX

PM Tenure :

Inception Date : 03/16/1994

Fund Style : IM U.S. Large Cap Core Equity (MF)

Fund Assets : \$763 Million

Style Benchmark : S&P 500

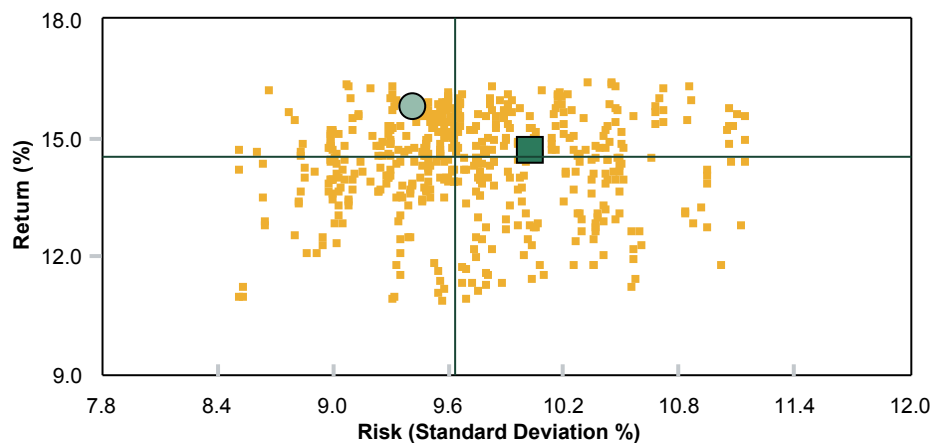
### Fund Investment Policy

The Fund seeks long-term growth of capital by investing primarily in securities of companies that meet the fund's financial criteria and social policy. The Fund invests primarily in common stocks of mid- to large-capitalization companies that show leadership in socially progressive areas.

### Historical Statistics (01/01/13 - 12/31/17) \*

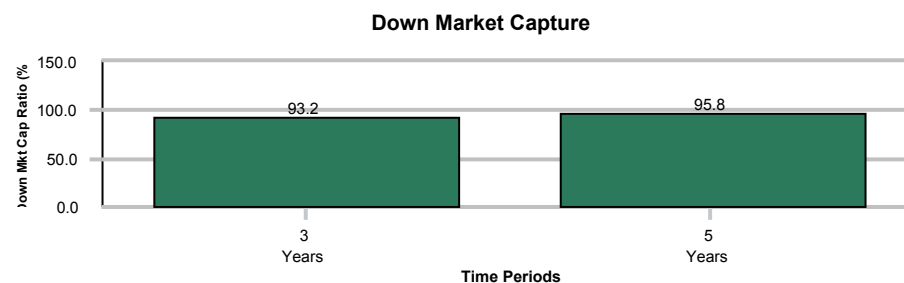
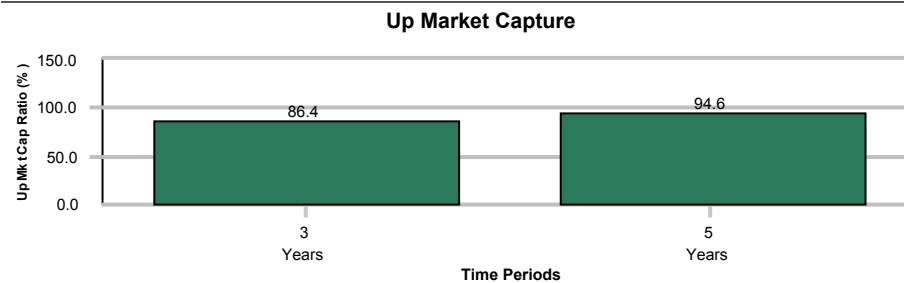
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
NB Socially Responsive	14.70	10.03	1.40	-1.03	1.01	0.90	3.23	-0.28	10.04	04/01/1994
S&P 500	15.79	9.41	1.59	0.00	1.00	1.00	0.00	N/A	9.41	04/01/1994
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.41	-1.59	0.00	04/01/1994

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ NB Socially Responsive	14.70	10.03
● S&P 500	15.79	9.41
— Median	14.52	9.63

### Up Down Market Capture



\* Monthly periodicity used.

Ticker: FCNKX

Category: Large Growth

Subcategory: Large Core Growth

Expense Ratio: 0.58

Benchmark: Russell 1000 Growth

Inception Date: 05/17/1967

**S<sup>3</sup> Scores**

Organization: A

Fees: A

Style/Portfolio Characteristics: D

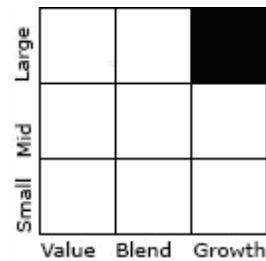
Performance: B

Risk: A

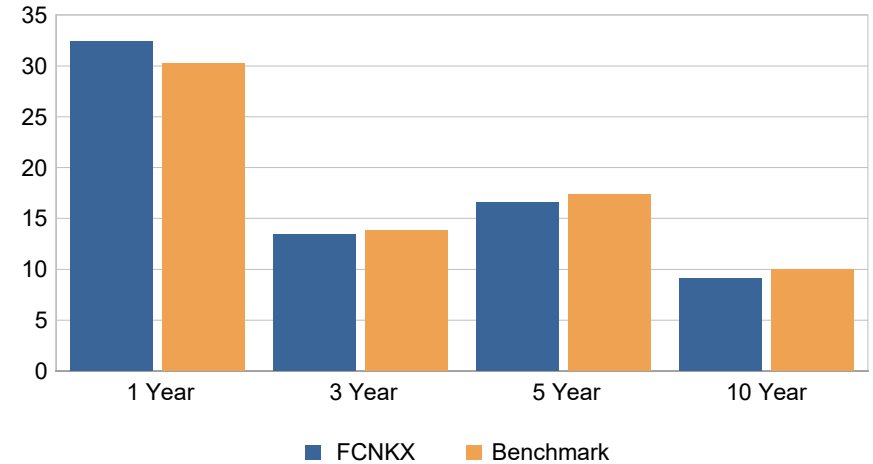
Portfolio Characteristics

Fund AUM (\$mil):	123,728
No. of Stocks:	293
% Assets in Top 10:	29.98
Avg Market Cap (\$mil):	121,953.37
P/E Ratio (TTM)(Long):	26.46
P/B Ratio (TTM)(Long):	6.35
Turnover Ratio %:	46.00

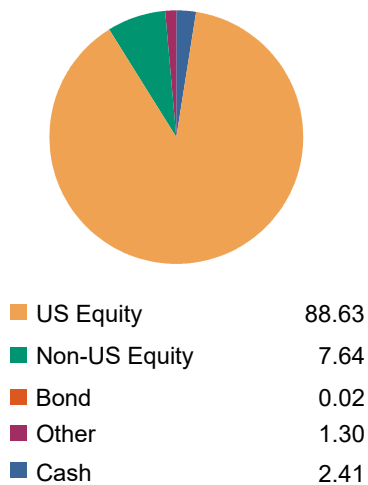
Style



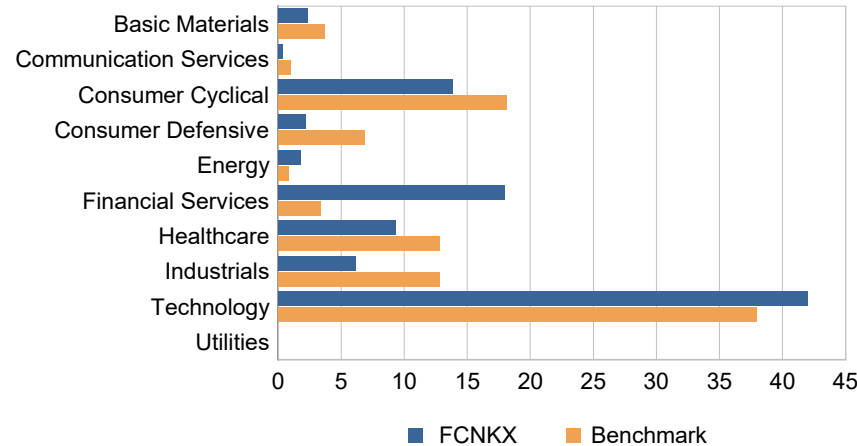
Returns



Asset Allocation



Sector Allocation

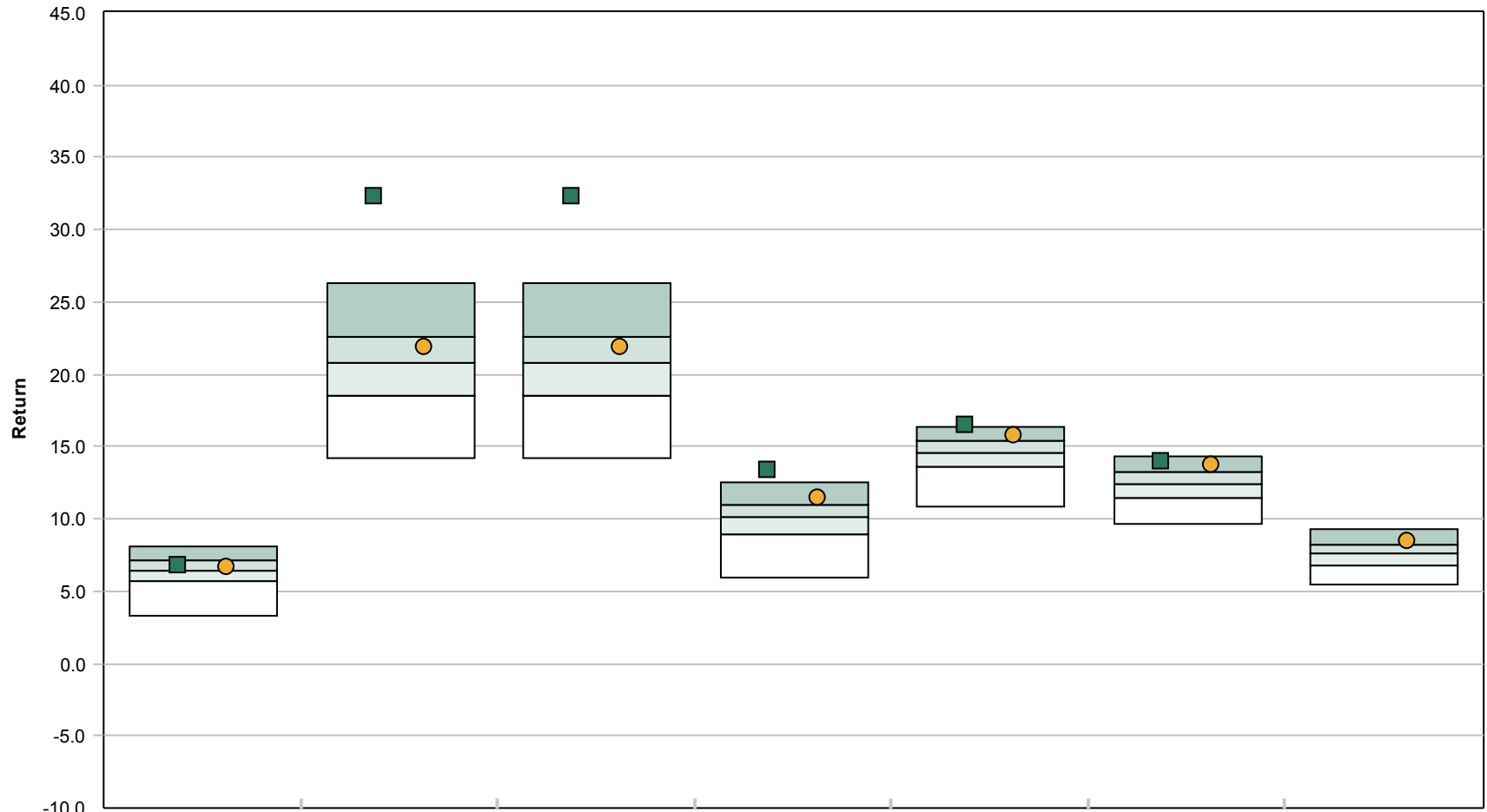


Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	10.09	11.28
5 Year:	9.71	10.69
10 Year:	14.27	16.32
<b>Information Ratio</b>		
3 Year:	-0.13	-0.61
5 Year:	-0.33	-0.44
10 Year:	-0.29	-0.34
<b>Downside Capture</b>		
3 Year:	87.34	110.31
5 Year:	90.44	108.56
10 Year:	92.08	107.54

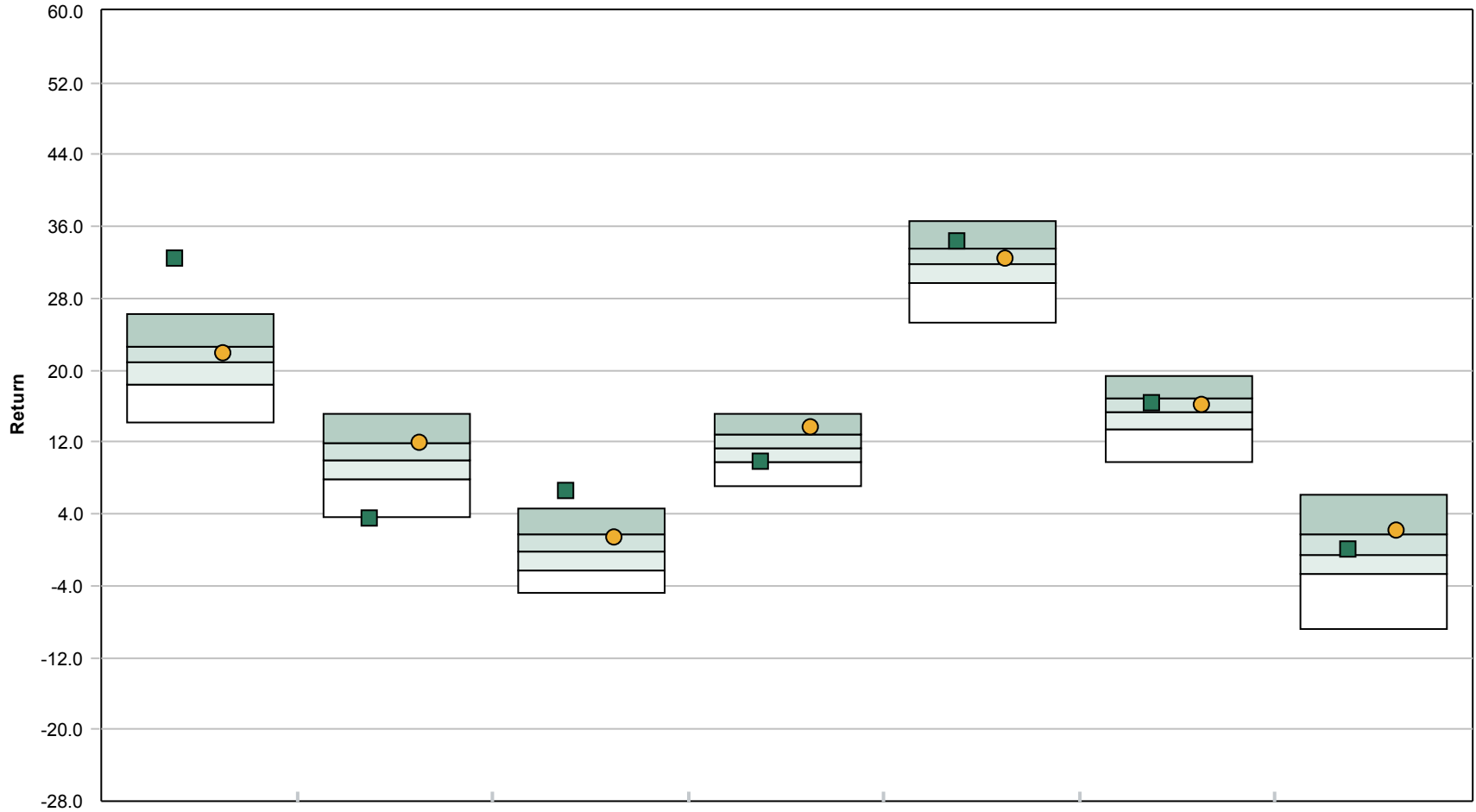
Fidelity Contrafund K

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Contrafund K	6.74 (33)	32.35 (2)	32.35 (2)	13.43 (2)	16.54 (4)	13.99 (9)	N/A
● S&P 500	6.64 (38)	21.83 (36)	21.83 (36)	11.41 (16)	15.79 (13)	13.76 (12)	8.50 (17)
5th Percentile	8.04	26.25	26.25	12.50	16.35	14.34	9.25
1st Quartile	7.15	22.62	22.62	10.99	15.36	13.26	8.19
Median	6.39	20.84	20.84	10.11	14.51	12.45	7.56
3rd Quartile	5.67	18.48	18.48	8.98	13.58	11.45	6.75
95th Percentile	3.33	14.23	14.23	5.91	10.89	9.62	5.47

Peer Group Analysis - IM U.S. Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Contrafund K	32.35 (2)	3.48 (97)	6.55 (1)	9.68 (77)	34.30 (19)	16.38 (32)	-0.01 (44)
● S&P 500	21.83 (36)	11.96 (25)	1.38 (29)	13.69 (15)	32.39 (39)	16.00 (40)	2.11 (23)
5th Percentile	26.25	15.08	4.53	15.19	36.54	19.33	6.22
1st Quartile	22.62	11.92	1.66	12.88	33.47	16.87	1.77
Median	20.84	9.98	-0.22	11.35	31.80	15.41	-0.57
3rd Quartile	18.48	7.93	-2.34	9.75	29.74	13.33	-2.71
95th Percentile	14.23	3.73	-4.79	7.07	25.33	9.68	-8.85



## Fidelity Contrafund K

### Fund Information

Fund Name : Fidelity Contrafund; Class K Shares  
 Fund Family : Fidelity Management & Research Company  
 Ticker : FCNKX  
 Inception Date : 05/09/2008  
 Fund Assets : \$33,749 Million  
 Portfolio Turnover : 41%

Portfolio Assets : \$124,619 Million  
 Portfolio Manager : William Danoff  
 PM Tenure : 2008  
 Fund Style : IM U.S. Large Cap Growth Equity (MF)  
 Style Benchmark : S&P 500

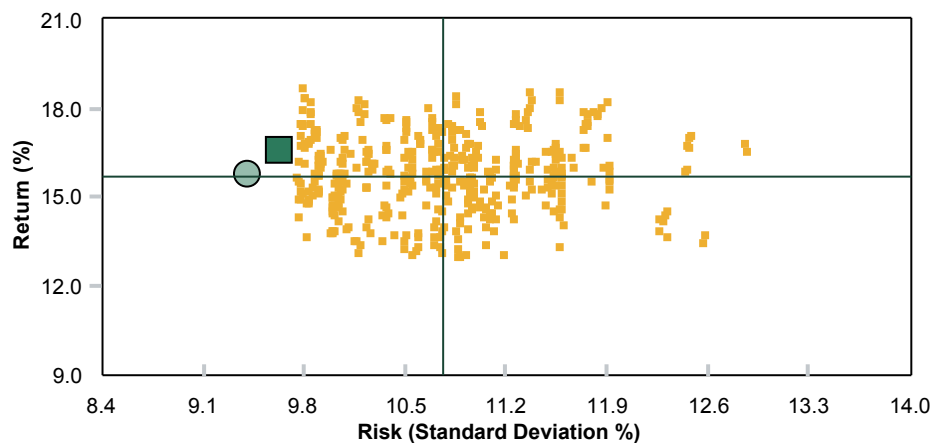
### Fund Investment Policy

The Fund seeks capital appreciation. The Fund seeks to achieve its investment objective by investing in securities of companies whose value it believes is not fully recognized by the public. The Fund normally invests primarily in common stocks and may invest in both domestic and foreign issuers.

### Historical Statistics (01/01/13 - 12/31/17) \*

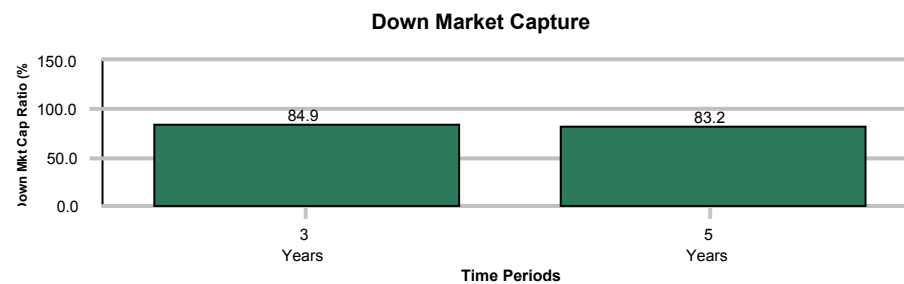
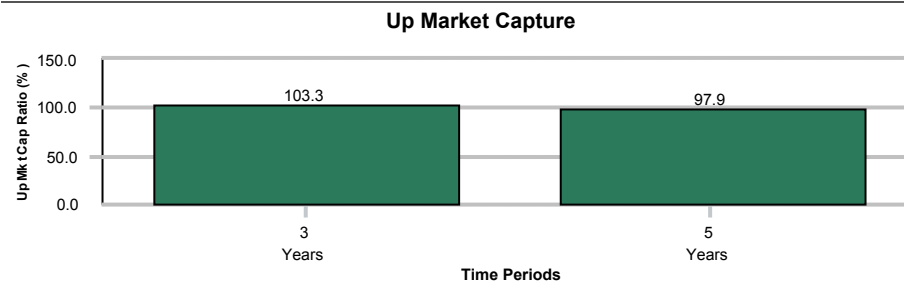
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Contrafund K	16.54	9.63	1.62	1.99	0.91	0.80	4.39	0.15	9.62	06/01/2008
S&P 500	15.79	9.41	1.59	0.00	1.00	1.00	0.00	N/A	9.41	06/01/2008
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	9.41	-1.59	0.00	06/01/2008

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Contrafund K	16.54	9.63
● S&P 500	15.79	9.41
— Median	15.72	10.76

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Blue Chip Growth K

Segal Score

**B**

Ticker: FBGKX

Category: Large Growth

Subcategory: Large Core Growth

Expense Ratio: 0.59

Benchmark: Russell 1000 Growth

Inception Date: 12/31/1987

## S<sup>3</sup> Scores

Organization: C

Fees: A

Style/Portfolio Characteristics: C

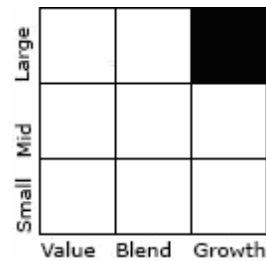
Performance: A

Risk: C

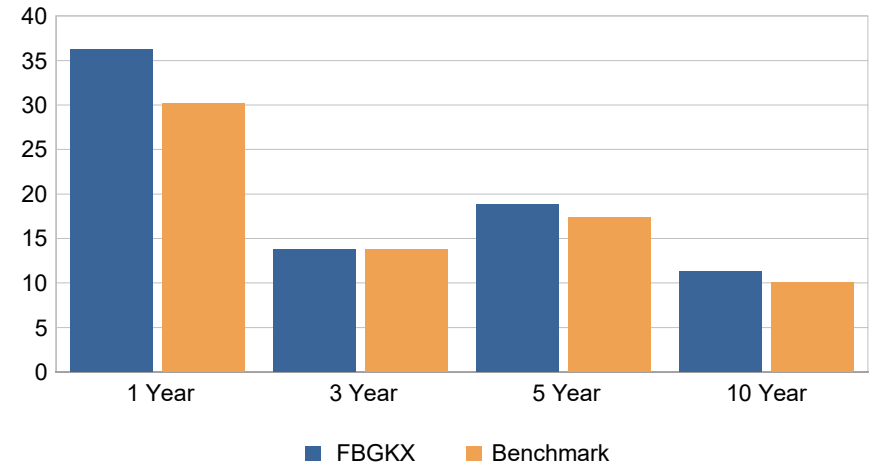
### Portfolio Characteristics

Fund AUM (\$mil):	23,228
No. of Stocks:	395
% Assets in Top 10:	29.98
Avg Market Cap (\$mil):	84,720.68
P/E Ratio (TTM)(Long):	26.46
P/B Ratio (TTM)(Long):	6.35
Turnover Ratio %:	75.00

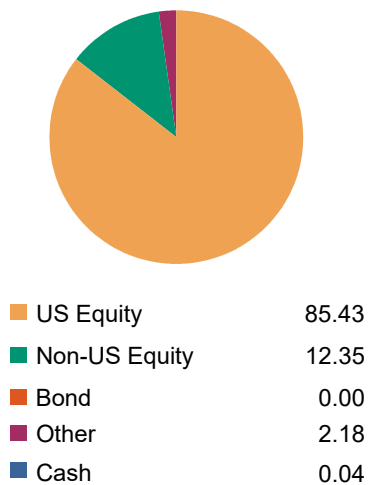
### Style



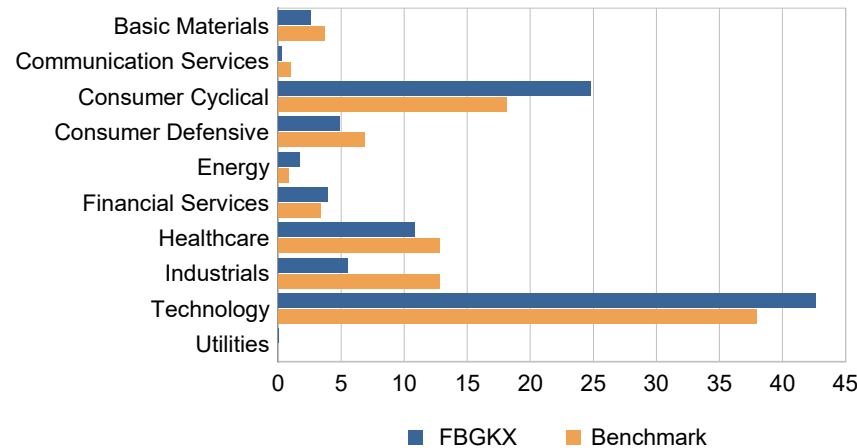
### Returns



### Asset Allocation



### Sector Allocation

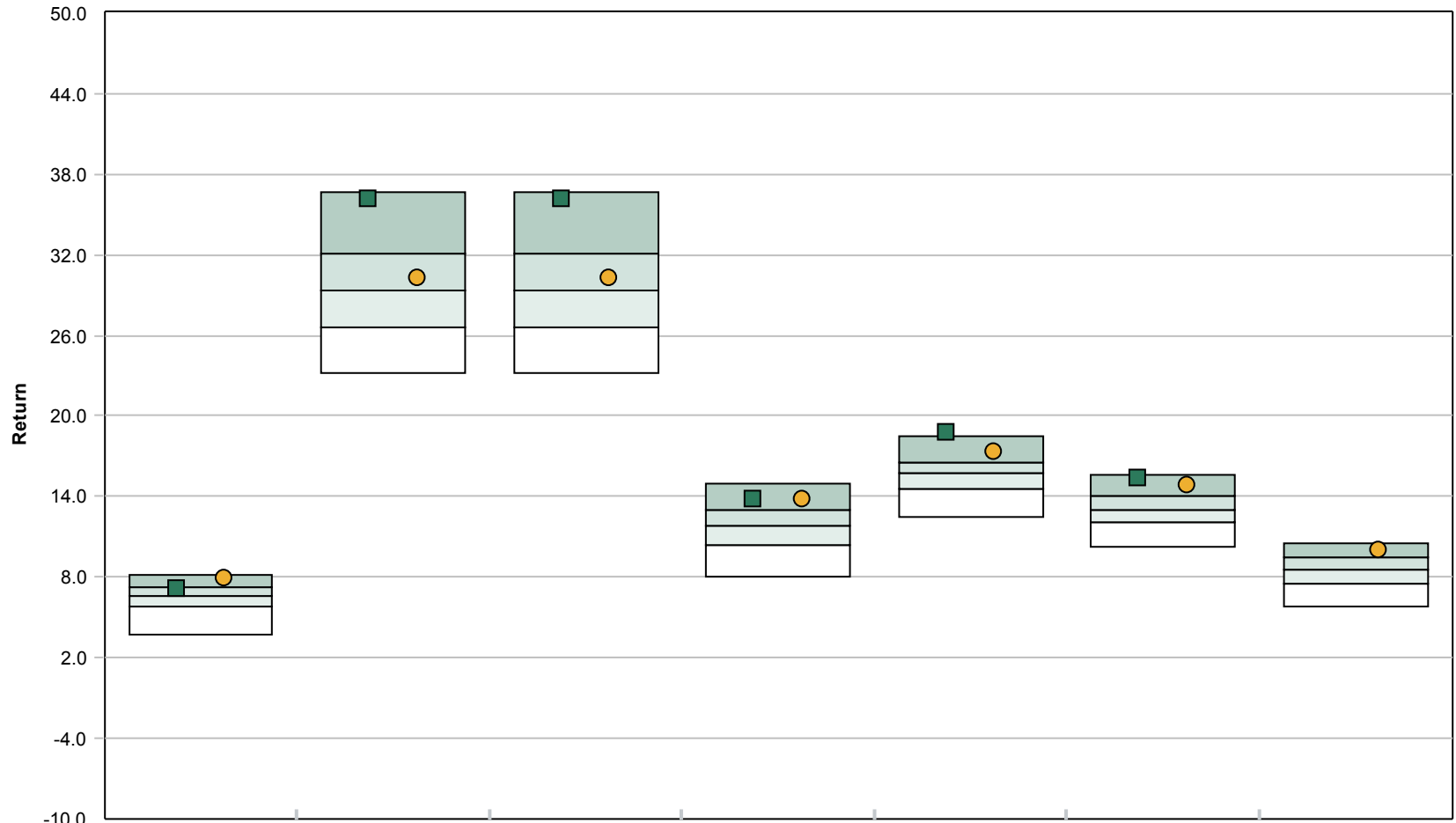


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	12.03	11.28
5 Year:	11.45	10.69
10 Year:	17.25	16.32
<b>Information Ratio</b>		
3 Year:	0.00	-0.61
5 Year:	0.29	-0.44
10 Year:	0.26	-0.34
<b>Downside Capture</b>		
3 Year:	120.24	110.31
5 Year:	114.51	108.56
10 Year:	111.93	107.54

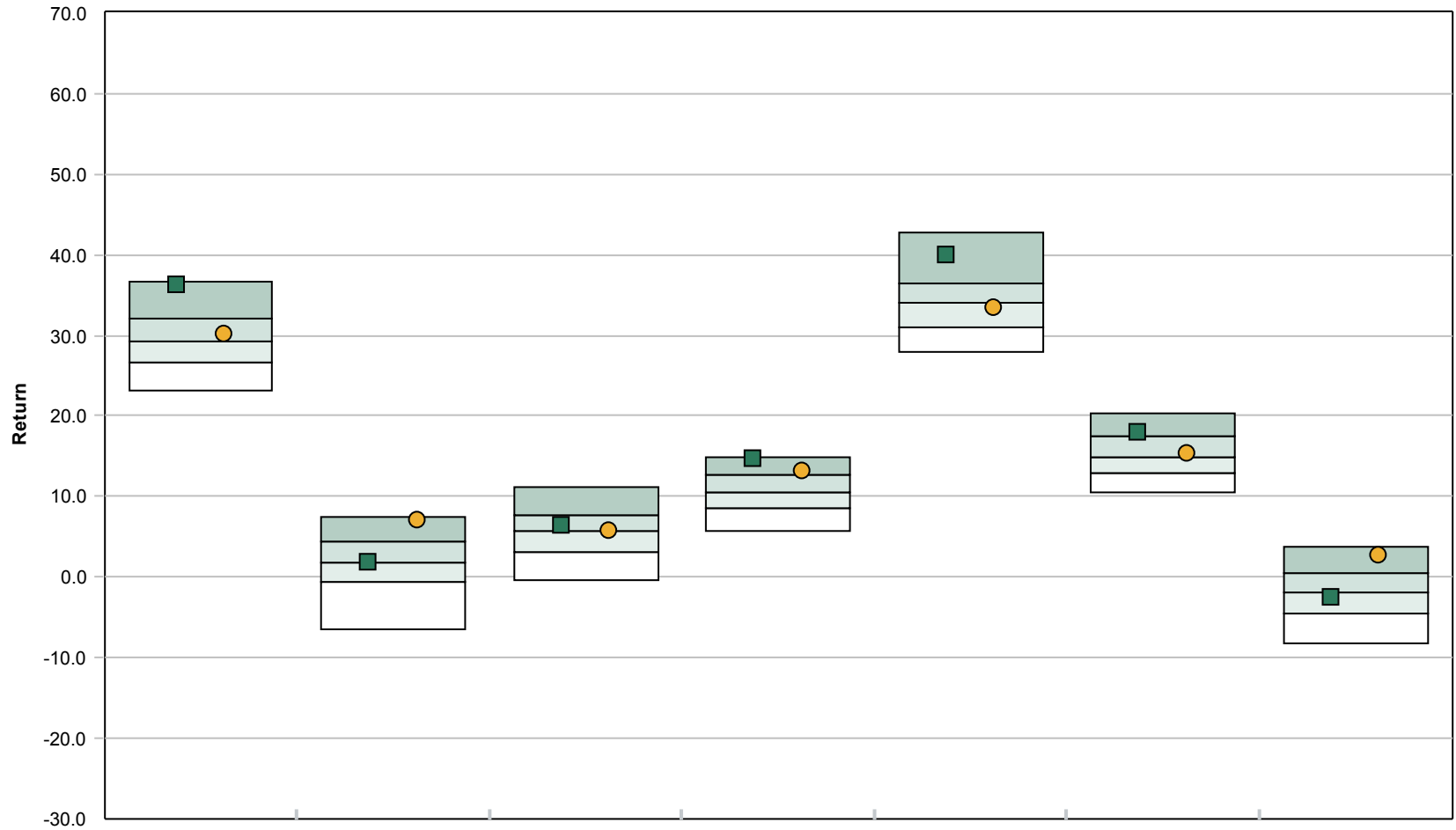
Fidelity Blue Chip Growth K

Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Blue Chip Growth K	7.16 (30)	36.20 (7)	36.20 (7)	13.81 (14)	18.82 (4)	15.38 (7)	N/A
● Russell 1000 Growth Index	7.86 (10)	30.21 (41)	30.21 (41)	13.79 (14)	17.33 (16)	14.81 (12)	10.00 (13)
5th Percentile	8.15	36.63	36.63	15.03	18.53	15.58	10.56
1st Quartile	7.28	32.12	32.12	13.04	16.59	14.10	9.44
Median	6.66	29.36	29.36	11.77	15.71	13.06	8.53
3rd Quartile	5.77	26.56	26.56	10.34	14.56	12.08	7.48
95th Percentile	3.75	23.14	23.14	8.00	12.53	10.26	5.79

Peer Group Analysis - IM U.S. Large Cap Growth Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Blue Chip Growth K	36.20 (7)	1.71 (52)	6.40 (40)	14.74 (6)	40.03 (10)	17.95 (22)	-2.56 (58)
● Russell 1000 Growth Index	30.21 (41)	7.08 (7)	5.67 (50)	13.05 (22)	33.48 (55)	15.26 (46)	2.64 (10)
5th Percentile	36.63	7.52	11.10	14.79	42.82	20.28	3.68
1st Quartile	32.12	4.38	7.76	12.72	36.44	17.56	0.53
Median	29.36	1.89	5.63	10.46	33.95	14.79	-1.85
3rd Quartile	26.56	-0.63	3.01	8.48	31.08	12.87	-4.60
95th Percentile	23.14	-6.47	-0.39	5.73	27.93	10.42	-8.18

## Fidelity Blue Chip Growth K

### Fund Information

Fund Name : Fidelity Securities Fund: Fidelity Blue Chip Growth Fund; Class K Shares  
 Fund Family : Fidelity Management & Research Company  
 Ticker : FBGKX  
 Inception Date : 05/09/2008  
 Fund Assets : \$5,589 Million

Portfolio Assets : \$26,975 Million  
 Portfolio Manager : Sonu Kalra  
 PM Tenure : 2009  
 Fund Style : IM U.S. Large Cap Growth Equity (MF)  
 Style Benchmark : Russell 1000 Growth Index

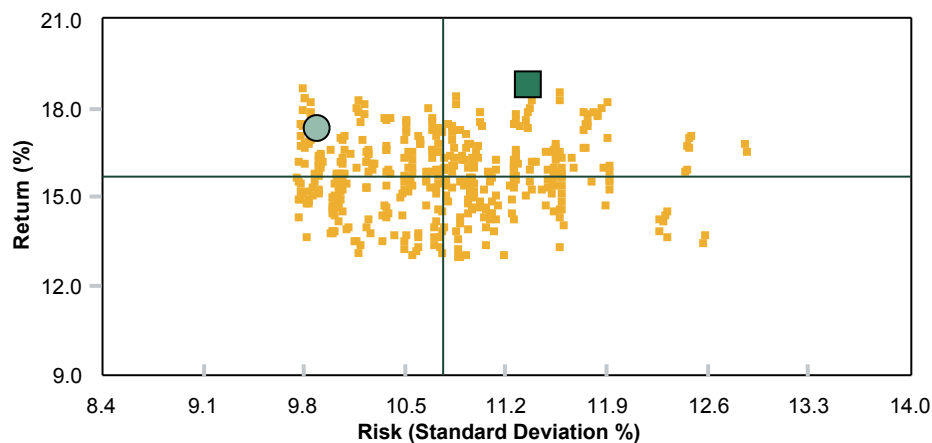
### Fund Investment Policy

The Fund seeks long-term growth of capital by investing at least 65% of total assets in domestic or foreign blue chip firms (those with a market capitalization of at least \$200 million, if the firm's stock is included in the S&P 500 or the Dow Jones Industrial average, or \$1 billion if not included in either Index).

### Historical Statistics (01/01/13 - 12/31/17) \*

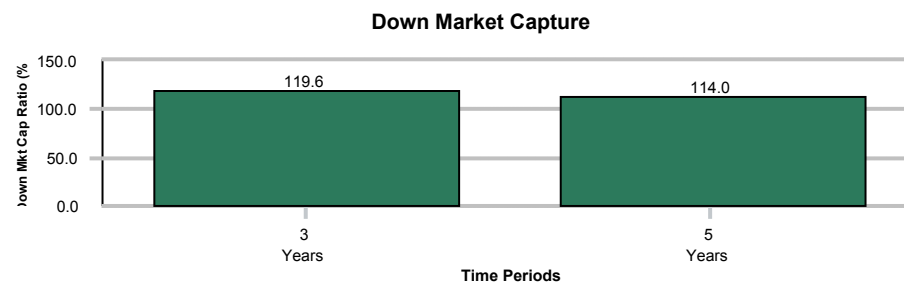
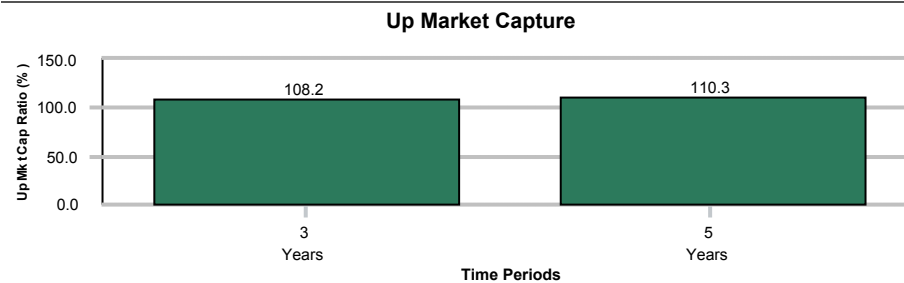
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Blue Chip Growth K	18.82	11.36	1.57	0.13	1.08	0.88	3.95	0.36	11.35	06/01/2008
Russell 1000 Growth Index	17.33	9.89	1.65	0.00	1.00	1.00	0.00	N/A	9.89	06/01/2008
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	9.89	-1.65	0.00	06/01/2008

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Blue Chip Growth K	18.82	11.36
● Russell 1000 Growth Index	17.33	9.89
— Median	15.72	10.76

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Mid-Cap Stock K

Segal Score

C

Ticker: FKMCX

Category: Mid-Cap Growth

Subcategory: Mid Valuation-Sensitive Growth

Expense Ratio: 0.46

Benchmark: Russell Mid Cap Growth

Inception Date: 03/29/1994

## S<sup>3</sup> Scores

Organization: D

Fees: A

Style/Portfolio Characteristics: C

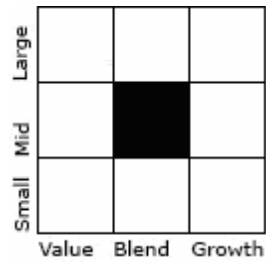
Performance: C

Risk: B

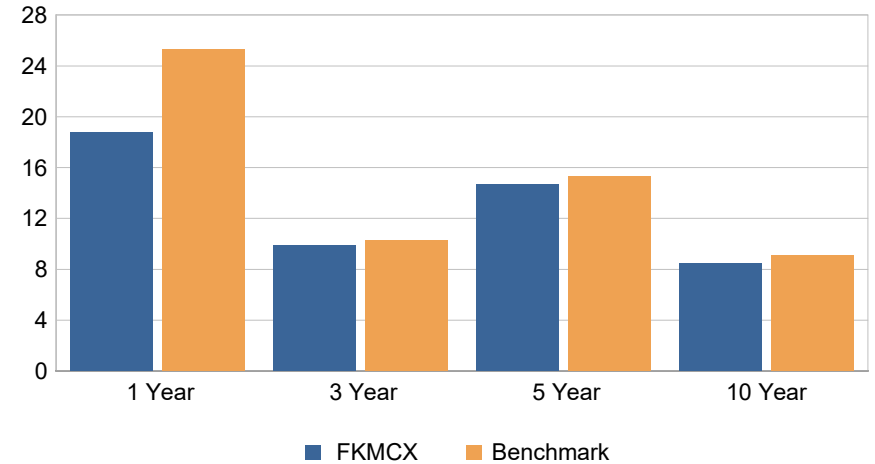
### Portfolio Characteristics

Fund AUM (\$mil):	8,227
No. of Stocks:	163
% Assets in Top 10:	9.63
Avg Market Cap (\$mil):	9,553.52
P/E Ratio (TTM)(Long):	28.24
P/B Ratio (TTM)(Long):	5.50
Turnover Ratio %:	46.00

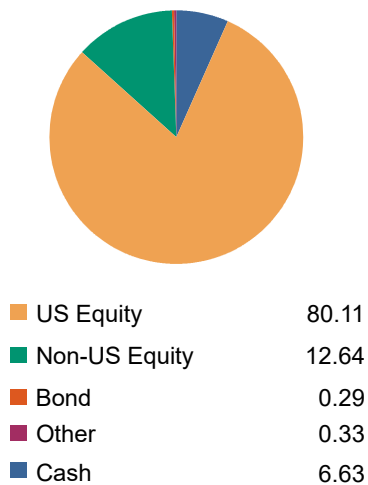
### Style



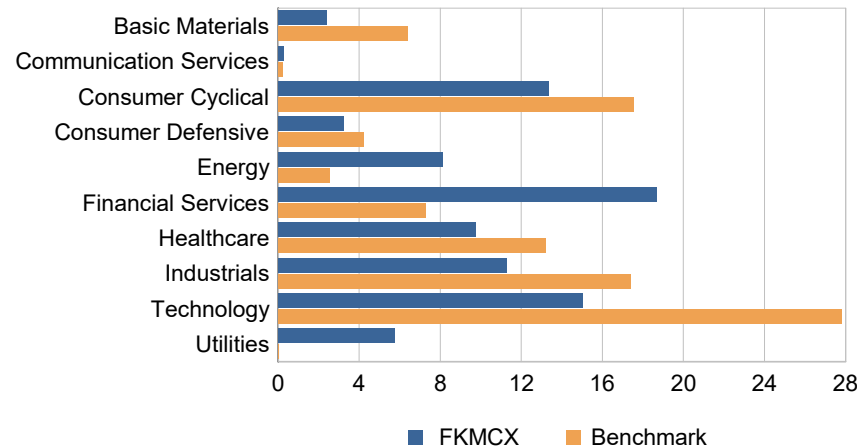
### Returns



### Asset Allocation



### Sector Allocation

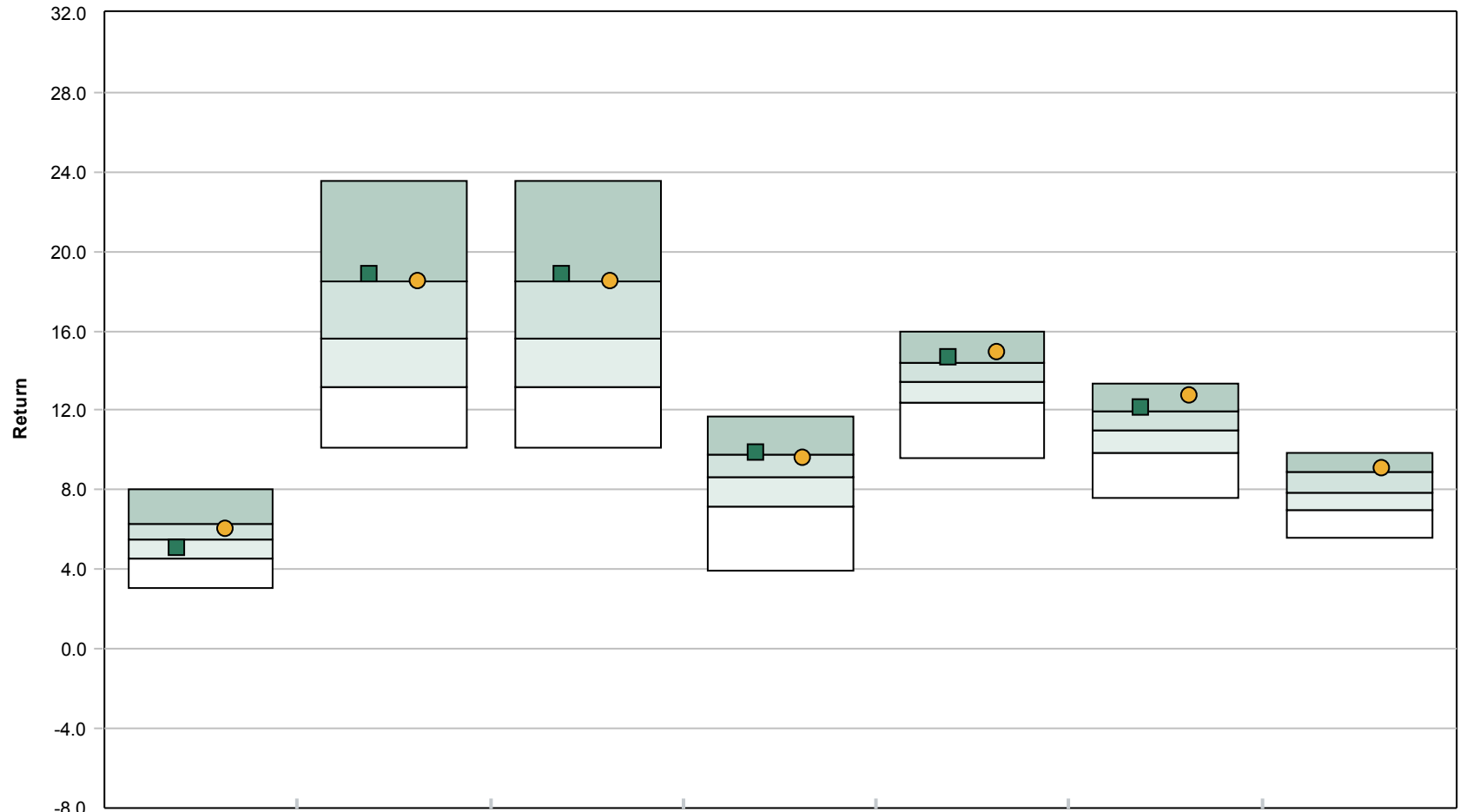


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	9.91	11.70
5 Year:	10.14	11.36
10 Year:	19.16	17.88
<b>Information Ratio</b>		
3 Year:	-0.11	-0.15
5 Year:	-0.17	-0.38
10 Year:	-0.11	-0.24
<b>Downside Capture</b>		
3 Year:	74.88	102.39
5 Year:	81.26	104.93
10 Year:	104.35	101.49

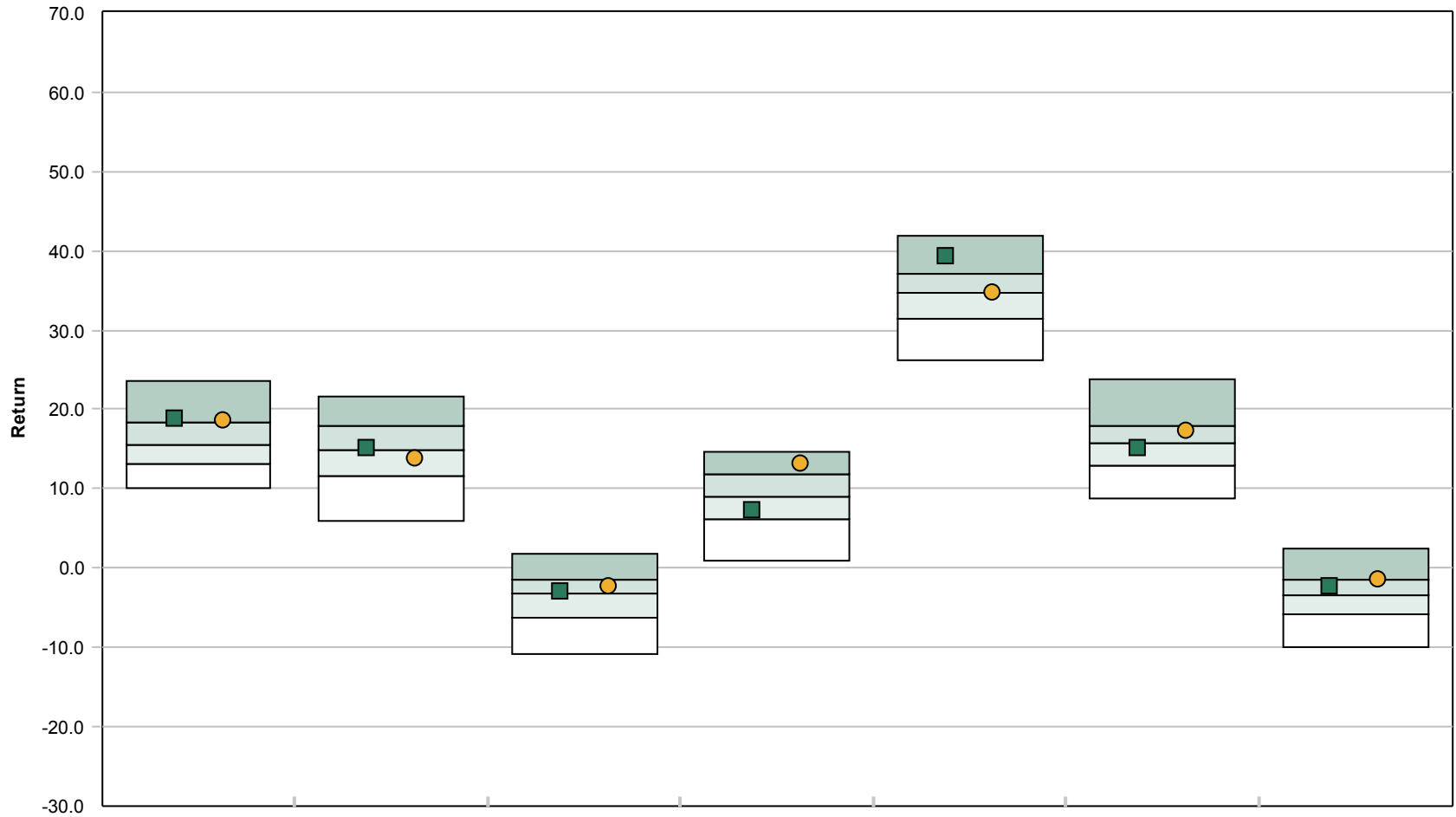
Fidelity Mid Cap Stock K

Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Mid Cap Stock K	5.07 (60)	18.80 (23)	18.80 (23)	9.88 (23)	14.64 (21)	12.13 (23)	N/A
● Russell Midcap Index	6.07 (31)	18.52 (25)	18.52 (25)	9.58 (30)	14.96 (15)	12.76 (14)	9.11 (19)
5th Percentile	8.00	23.53	23.53	11.69	16.00	13.32	9.89
1st Quartile	6.25	18.46	18.46	9.74	14.40	12.00	8.88
Median	5.47	15.60	15.60	8.62	13.43	10.99	7.90
3rd Quartile	4.57	13.19	13.19	7.17	12.38	9.87	6.95
95th Percentile	3.06	10.14	10.14	3.94	9.59	7.60	5.62

Peer Group Analysis - IM U.S. Mid Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Mid Cap Stock K	18.80 (23)	15.10 (49)	-2.97 (49)	7.23 (68)	39.20 (13)	15.12 (57)	-2.25 (36)
● Russell Midcap Index	18.52 (25)	13.80 (60)	-2.44 (38)	13.22 (15)	34.76 (51)	17.28 (33)	-1.55 (25)
5th Percentile	23.53	21.65	1.76	14.72	41.82	23.77	2.40
1st Quartile	18.46	17.97	-1.39	11.80	37.18	17.88	-1.55
Median	15.60	14.90	-3.18	8.99	34.77	15.71	-3.36
3rd Quartile	13.19	11.62	-6.20	6.06	31.46	12.91	-5.84
95th Percentile	10.14	5.95	-10.92	0.88	26.29	8.84	-9.99



## Fidelity Mid Cap Stock K

### Fund Information

Fund Name :	Fidelity Commonwealth Trust: Fidelity Mid-Cap Stock Fund; Class K Shares	Portfolio Assets :	\$8,227 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Roth/Stafford
Ticker :	FKMCX	PM Tenure :	2011--2017
Inception Date :	05/09/2008	Fund Style :	IM U.S. Mid Cap Core Equity (MF)
Fund Assets :	\$2,418 Million	Style Benchmark :	Russell Midcap Index

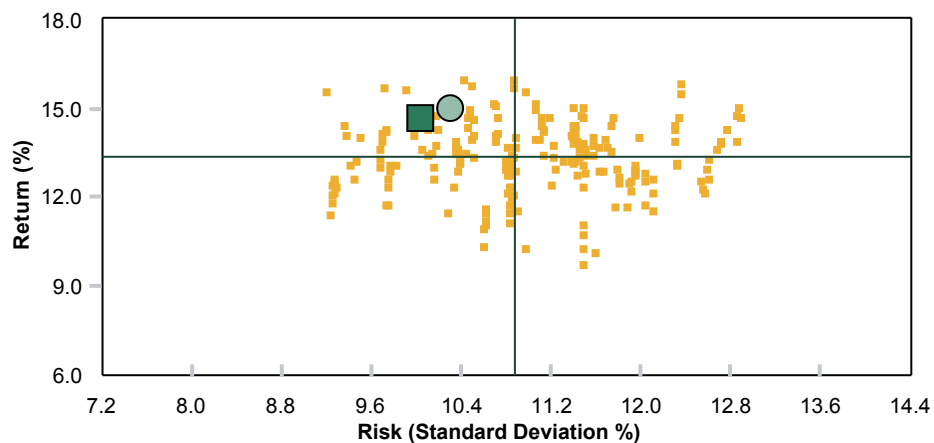
### Fund Investment Policy

The Fund seeks long-term growth of capital. The Fund normally invests at least 80% of its assets in common stocks of companies with medium market capitalizations (which, for purposes of this Fund, are those companies with market capitalizations similar to companies in the Russell Midcap Index or the S&P MidCap 400).

### Historical Statistics (01/01/13 - 12/31/17) \*

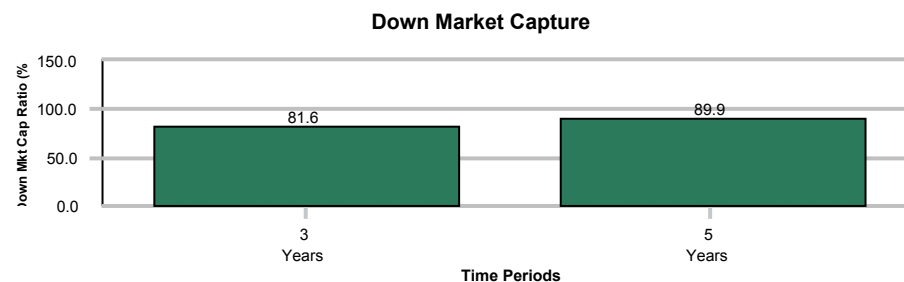
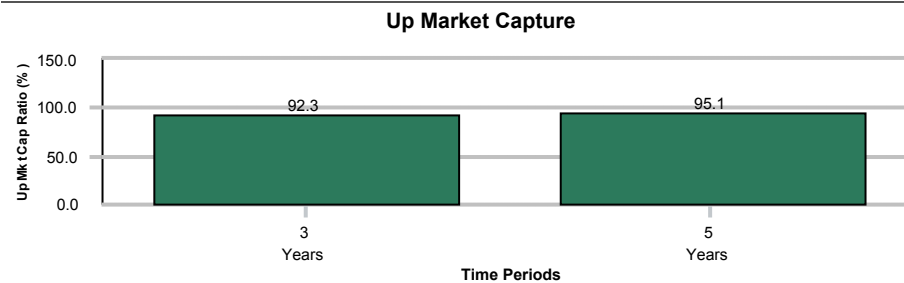
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Mid Cap Stock K	14.64	10.05	1.39	0.57	0.94	0.93	2.72	-0.11	10.05	06/01/2008
Russell Midcap Index	14.96	10.31	1.39	0.00	1.00	1.00	0.00	N/A	10.31	06/01/2008
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	10.31	-1.39	0.00	06/01/2008

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Mid Cap Stock K	14.64	10.05
● Russell Midcap Index	14.96	10.31
— Median	13.40	10.87

### Up Down Market Capture



\* Monthly periodicity used.

# DFA US Small Cap I

Segal Score  
**B**

Ticker: DFSTX

Category: Small Blend

Subcategory: Small Core

Expense Ratio: 0.37

Benchmark: Russell 2000

Inception Date: 03/19/1992

## S<sup>3</sup> Scores

Organization: C

Fees: A

Style/Portfolio Characteristics: B

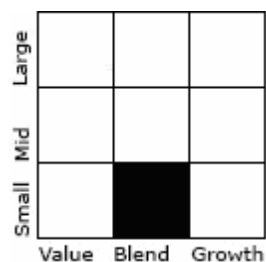
Performance: C

Risk: C

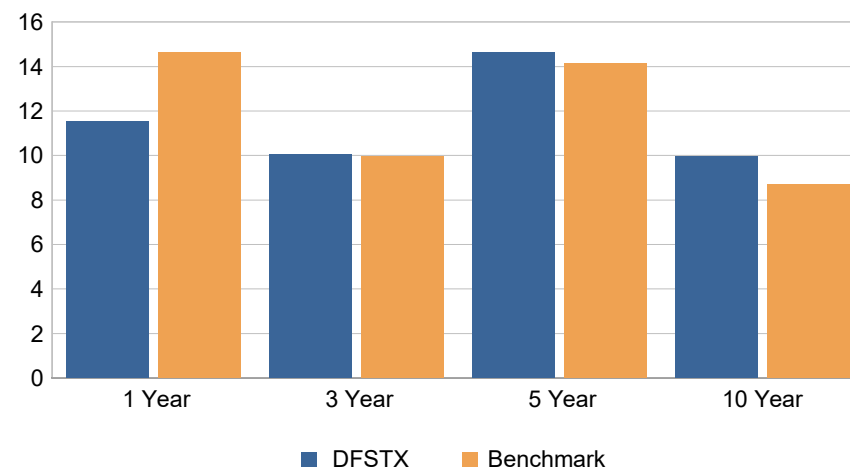
### Portfolio Characteristics

Fund AUM (\$mil):	17,320
No. of Stocks:	1930
% Assets in Top 10:	3.00
Avg Market Cap (\$mil):	1,951.33
P/E Ratio (TTM)(Long):	22.40
P/B Ratio (TTM)(Long):	2.25
Turnover Ratio %:	10.00

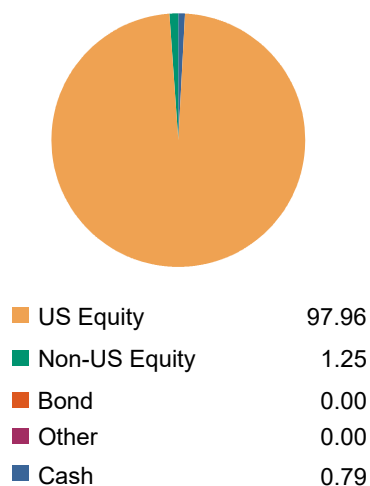
### Style



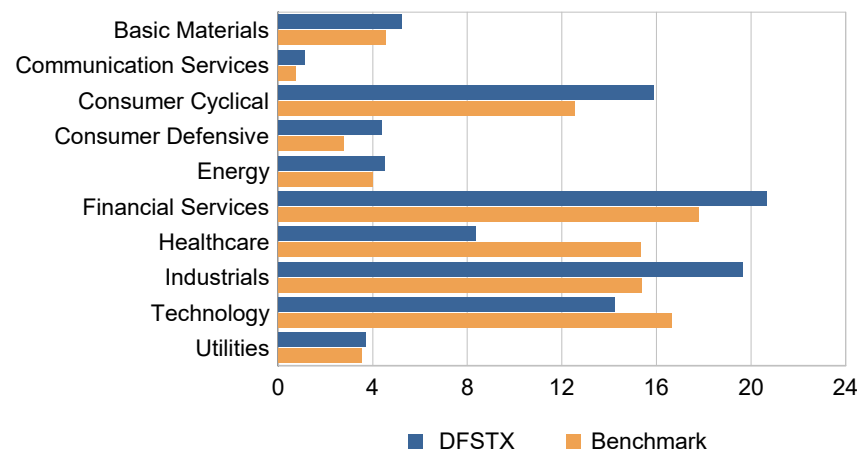
### Returns



### Asset Allocation



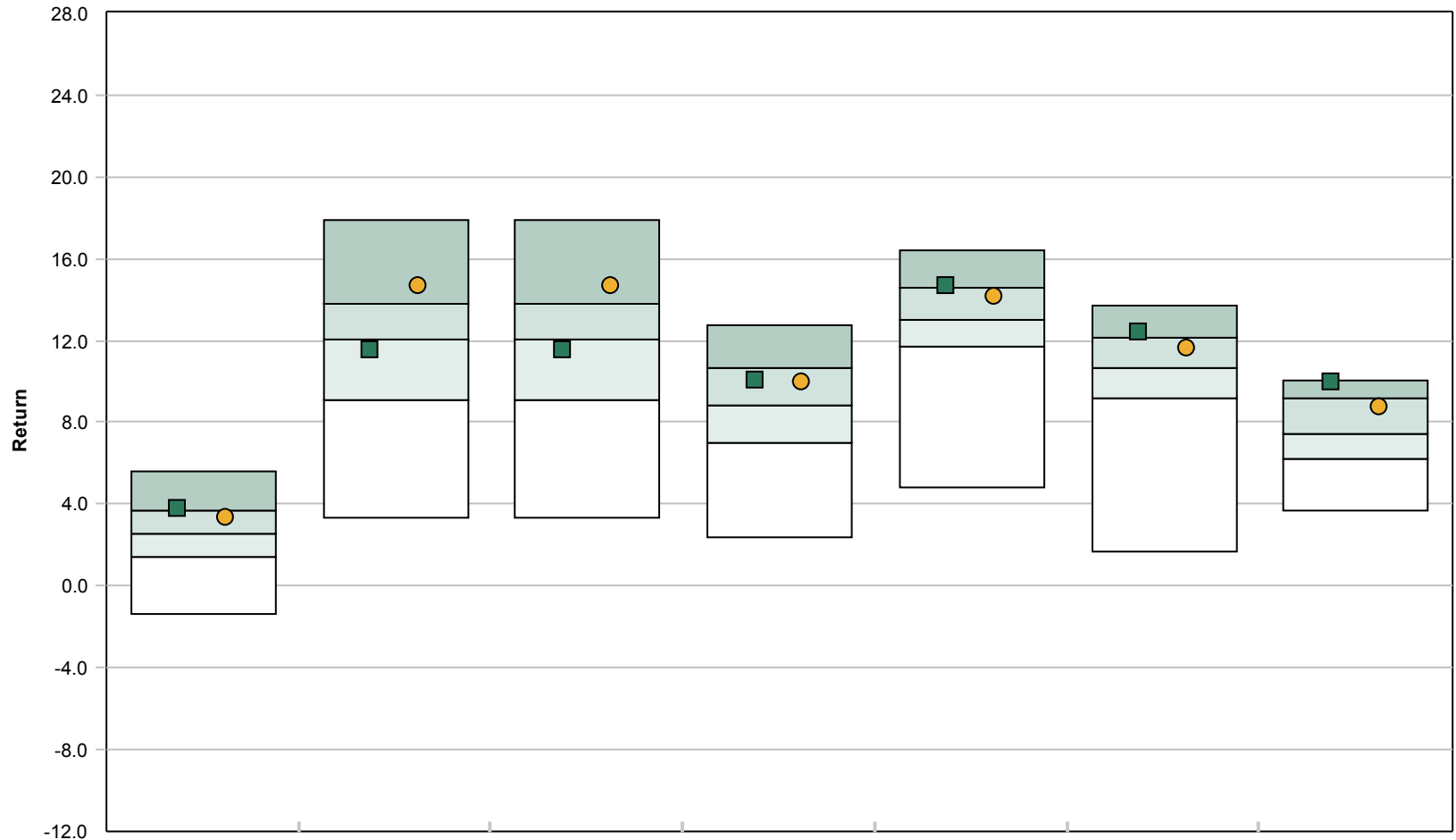
### Sector Allocation



### Risk Metrics

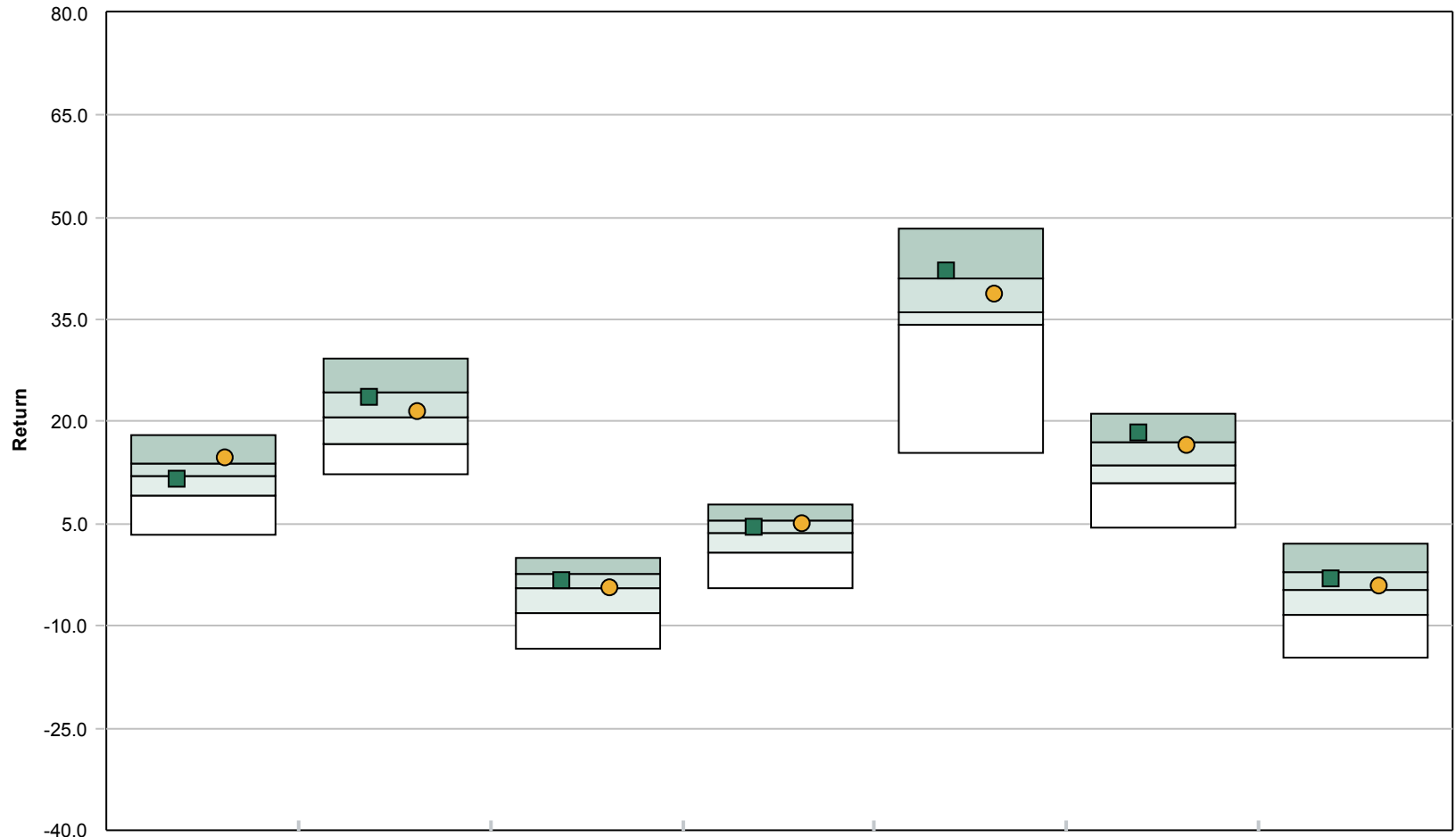
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	13.54	13.54
5 Year:	13.53	13.45
10 Year:	20.25	19.40
<b>Information Ratio</b>		
3 Year:	0.02	-0.25
5 Year:	0.15	-0.19
10 Year:	0.40	-0.11
<b>Downside Capture</b>		
3 Year:	89.35	90.07
5 Year:	91.30	90.59
10 Year:	96.91	93.38

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ DFA U.S. Small Cap Portfolio	3.80 (20)	11.52 (53)	11.52 (53)	10.04 (37)	14.63 (23)	12.42 (19)	9.97 (6)
● Russell 2000 Index	3.34 (39)	14.65 (21)	14.65 (21)	9.96 (38)	14.12 (34)	11.62 (31)	8.71 (34)
5th Percentile	5.64	17.93	17.93	12.75	16.44	13.73	10.04
1st Quartile	3.67	13.82	13.82	10.66	14.55	12.13	9.14
Median	2.56	12.03	12.03	8.86	13.05	10.69	7.41
3rd Quartile	1.45	9.09	9.09	7.00	11.71	9.14	6.26
95th Percentile	-1.34	3.31	3.31	2.35	4.80	1.67	3.67

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ DFA U.S. Small Cap Portfolio	11.52 (53)	23.53 (32)	-3.29 (34)	4.44 (39)	42.21 (21)	18.39 (15)	-3.15 (36)
● Russell 2000 Index	14.65 (21)	21.31 (46)	-4.41 (50)	4.89 (35)	38.82 (36)	16.35 (29)	-4.18 (47)
5th Percentile	17.93	29.15	0.12	7.85	48.42	21.08	2.14
1st Quartile	13.82	24.40	-2.41	5.54	41.02	16.91	-2.03
Median	12.03	20.57	-4.42	3.53	36.11	13.58	-4.62
3rd Quartile	9.09	16.79	-8.10	0.74	34.17	11.05	-8.50
95th Percentile	3.31	12.32	-13.35	-4.54	15.41	4.48	-14.75

## DFA U.S. Small Cap Portfolio

### Fund Information

Fund Name : DFA Investment Dimensions Group Inc: US Small Cap Portfolio; Institutional Class Shares  
 Fund Family : Dimensional Fund Advisors LP  
 Ticker : DFSTX  
 Inception Date : 03/19/1992  
 Fund Assets : \$17,435 Million

Portfolio Assets : \$17,435 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM U.S. Small Cap Core Equity (MF)  
 Style Benchmark : Russell 2000 Index

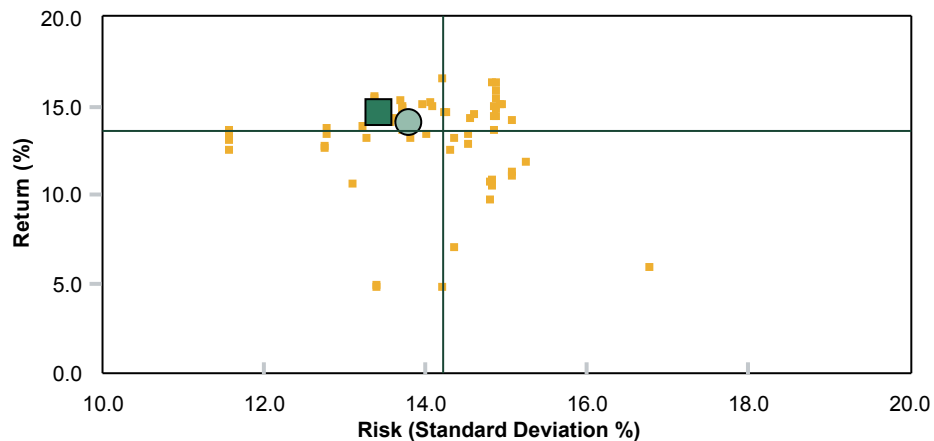
### Fund Investment Policy

The Fund seeks to invest in a broad and diverse group of small U.S. companies having readily marketable securities.

### Historical Statistics (01/01/13 - 12/31/17) \*

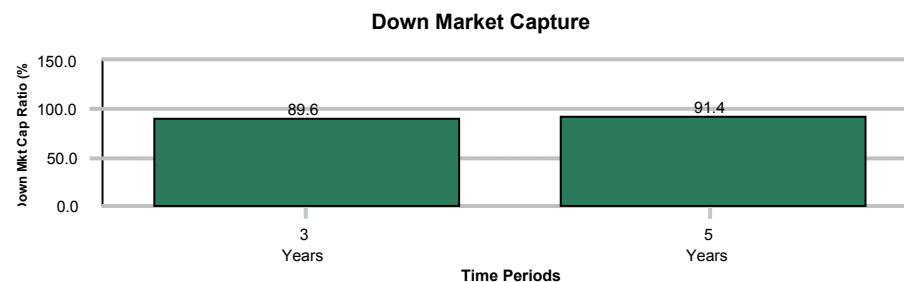
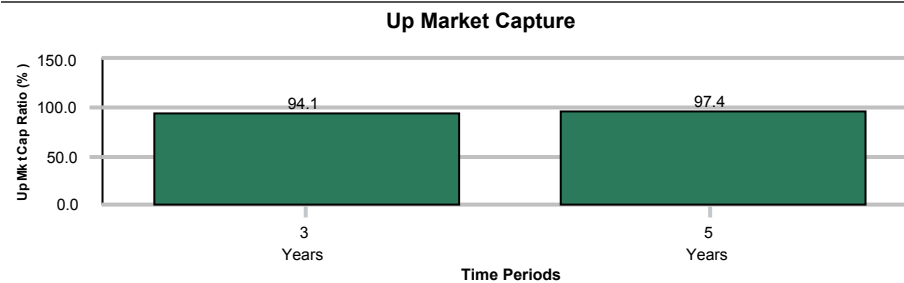
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
DFA U.S. Small Cap Portfolio	14.63	13.42	1.07	1.00	0.96	0.97	2.47	0.16	13.42	04/01/1992
Russell 2000 Index	14.12	13.80	1.01	0.00	1.00	1.00	0.00	N/A	13.79	04/01/1992
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	13.79	-1.01	0.00	04/01/1992

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ DFA U.S. Small Cap Portfolio	14.63	13.42
● Russell 2000 Index	14.12	13.80
— Median	13.62	14.21

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Small Cap Index Premium

Segal Score

**B**

Ticker: FSSVX

Category: Small Blend

Subcategory: Small Core

Expense Ratio: 0.05

Benchmark: Russell 2000

Inception Date: 09/08/2011

## S<sup>3</sup> Scores

Organization: C

Fees: A

Style/Portfolio Characteristics: C

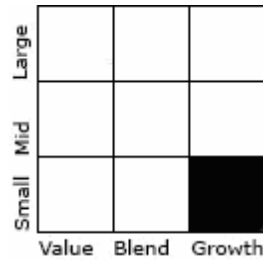
Performance: A

Risk: C

### Portfolio Characteristics

Fund AUM (\$mil):	4,177
No. of Stocks:	1988
% Assets in Top 10:	3.00
Avg Market Cap (\$mil):	1,825.12
P/E Ratio (TTM)(Long):	22.40
P/B Ratio (TTM)(Long):	2.25
Turnover Ratio %:	11.00

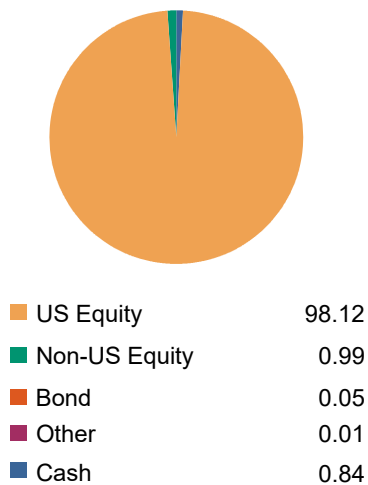
### Style



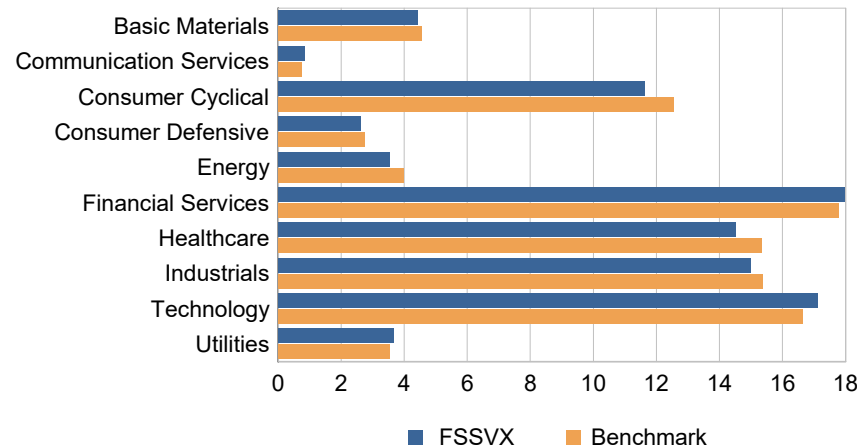
### Returns



### Asset Allocation



### Sector Allocation

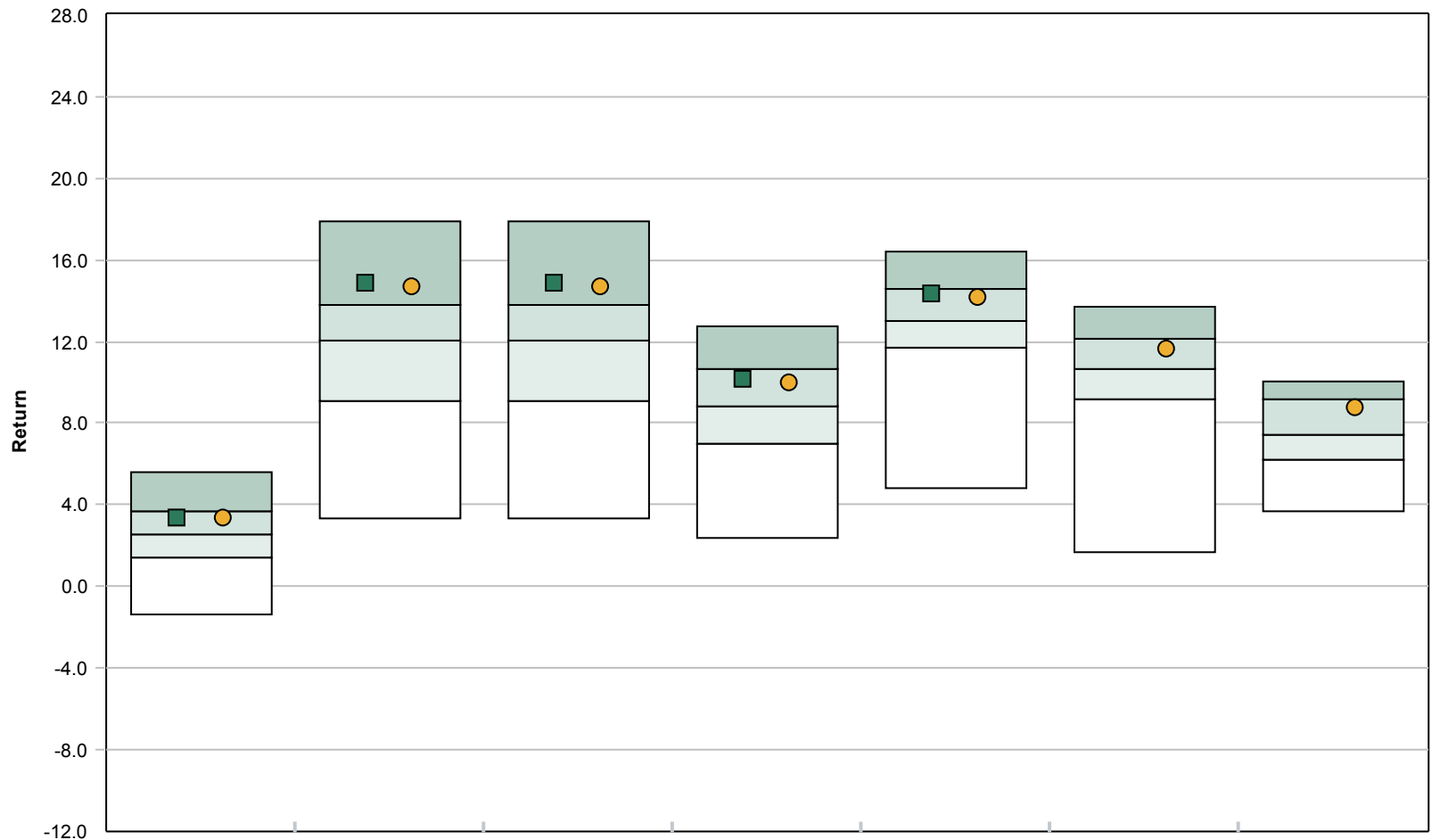


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	14.12	13.54
5 Year:	13.93	13.45
10 Year:	-	19.40
<b>Information Ratio</b>		
3 Year:	3.56	-0.25
5 Year:	2.67	-0.19
10 Year:	-	-0.11
<b>Downside Capture</b>		
3 Year:	99.66	90.07
5 Year:	99.65	90.59
10 Year:	-	93.38

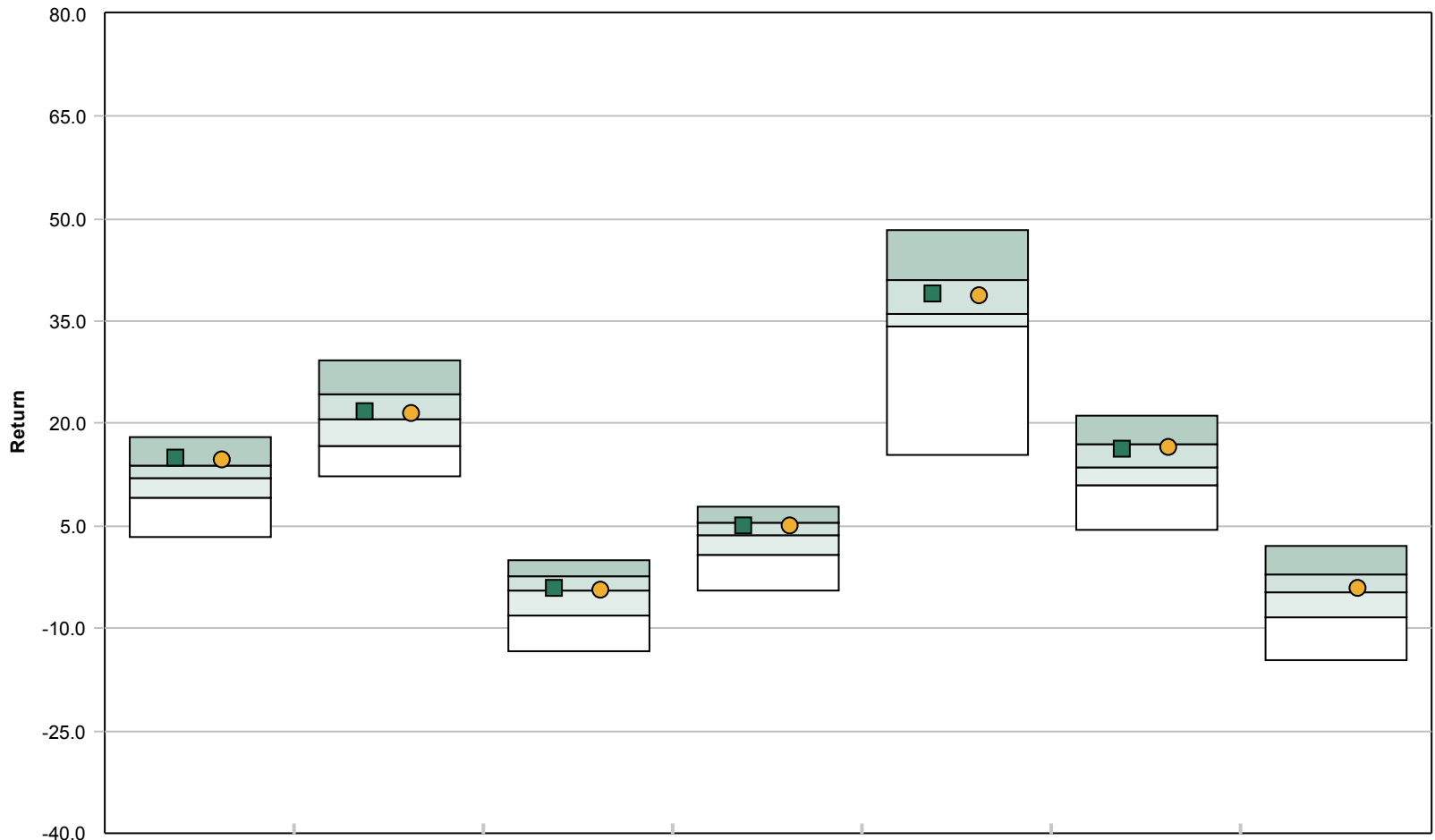
Fidelity Spartan Small Cap Index

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Spartan Small Cap Index	3.38 (38)	14.83 (21)	14.83 (21)	10.17 (33)	14.32 (31)	N/A	N/A
● Russell 2000 Index	3.34 (39)	14.65 (21)	14.65 (21)	9.96 (38)	14.12 (34)	11.62 (31)	8.71 (34)
5th Percentile	5.64	17.93	17.93	12.75	16.44	13.73	10.04
1st Quartile	3.67	13.82	13.82	10.66	14.55	12.13	9.14
Median	2.56	12.03	12.03	8.86	13.05	10.69	7.41
3rd Quartile	1.45	9.09	9.09	7.00	11.71	9.14	6.26
95th Percentile	-1.34	3.31	3.31	2.35	4.80	1.67	3.67

Peer Group Analysis - IM U.S. Small Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Spartan Small Cap Index	14.83 (21)	21.58 (44)	-4.22 (48)	5.09 (33)	38.97 (35)	16.32 (29)	N/A
● Russell 2000 Index	14.65 (21)	21.31 (46)	-4.41 (50)	4.89 (35)	38.82 (36)	16.35 (29)	-4.18 (47)
5th Percentile	17.93	29.15	0.12	7.85	48.42	21.08	2.14
1st Quartile	13.82	24.40	-2.41	5.54	41.02	16.91	-2.03
Median	12.03	20.57	-4.42	3.53	36.11	13.58	-4.62
3rd Quartile	9.09	16.79	-8.10	0.74	34.17	11.05	-8.50
95th Percentile	3.31	12.32	-13.35	-4.54	15.41	4.48	-14.75



## Fidelity Spartan Small Cap Index

### Fund Information

Fund Name :	Fidelity Salem Street Trust: Fidelity Small Cap Index Fund; Premium Class	Portfolio Assets :	\$4,095 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Team Managed
Ticker :	FSSVX	PM Tenure :	
Inception Date :	09/08/2011	Fund Style :	IM U.S. Small Cap Core Equity (MF)
Fund Assets :	\$2,823 Million	Style Benchmark :	Russell 2000 Index

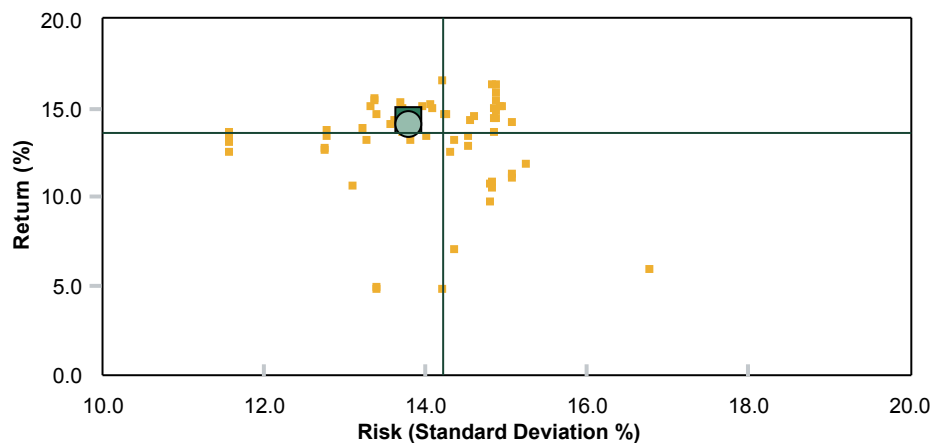
### Fund Investment Policy

The Fund seeks to provide investment results that correspond to the total return of stocks of small-capitalization United States companies. The Fund normally investing at least 80% of assets in securities included in the Russell 2000 Index and lends securities to earn income for the fund.

### Historical Statistics (01/01/13 - 12/31/17) \*

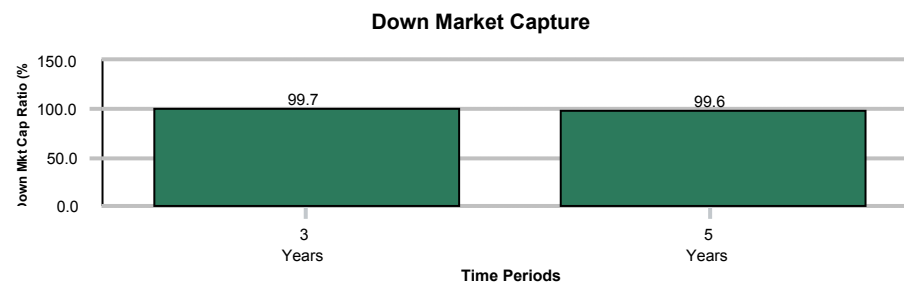
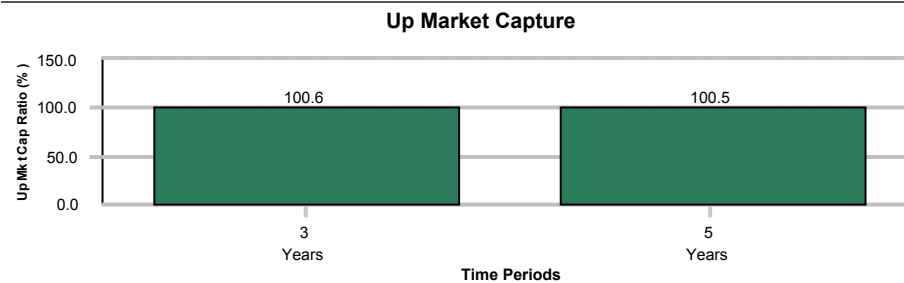
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Spartan Small Cap Index	14.32	13.81	1.03	0.16	1.00	1.00	0.10	1.84	13.81	10/01/2011
Russell 2000 Index	14.12	13.80	1.01	0.00	1.00	1.00	0.00	N/A	13.79	10/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.00	13.79	-1.01	0.00	10/01/2011

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Spartan Small Cap Index	14.32	13.81
● Russell 2000 Index	14.12	13.80
— Median	13.62	14.21

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Diversified International K

Segal Score

**B**

Ticker: FDIKX

Category: Foreign Large Growth

Subcategory: Foreign Large Growth

Expense Ratio: 0.92

Benchmark: MSCI EAFE Growth

Inception Date: 12/27/1991

## S<sup>3</sup> Scores

Organization: A

Fees: B

Style/Portfolio Characteristics: B

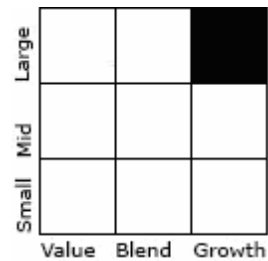
Performance: D

Risk: C

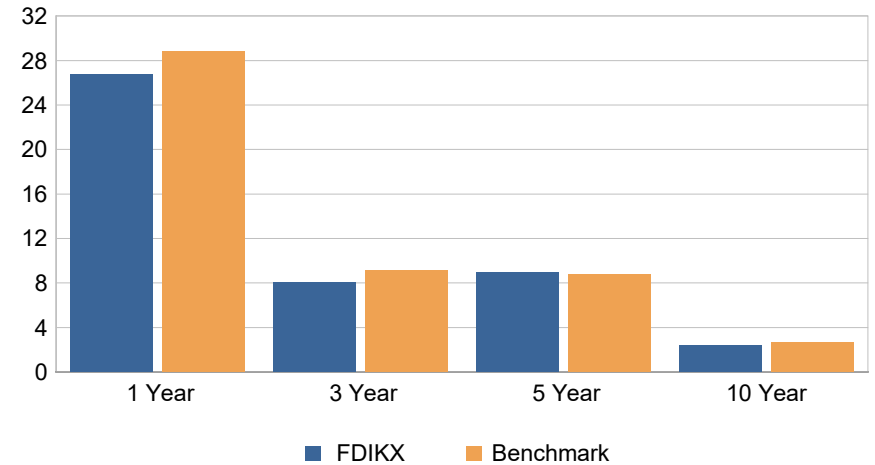
### Portfolio Characteristics

Fund AUM (\$mil):	19,185
No. of Stocks:	221
% Assets in Top 10:	15.75
Avg Market Cap (\$mil):	30,701.56
P/E Ratio (TTM)(Long):	22.27
P/B Ratio (TTM)(Long):	2.83
Turnover Ratio %:	52.00

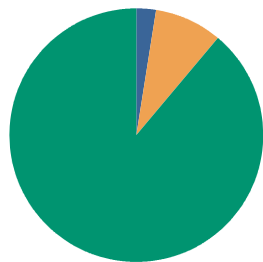
### Style



### Returns

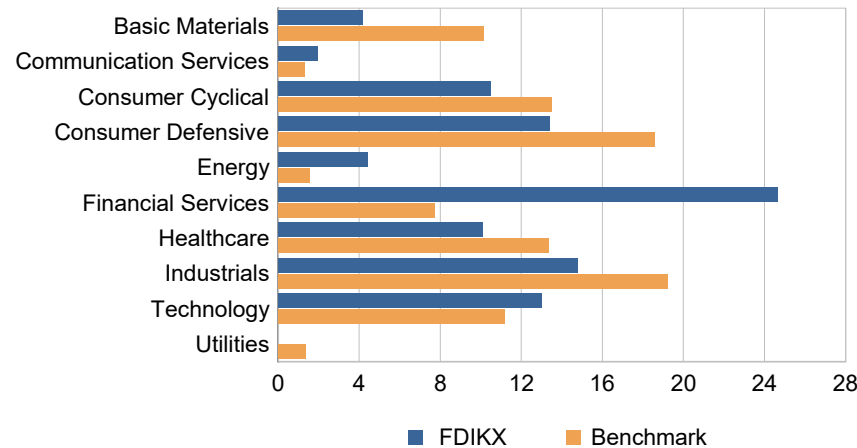


### Asset Allocation



US Equity	8.64
Non-US Equity	88.75
Bond	0.00
Other	0.00
Cash	2.61

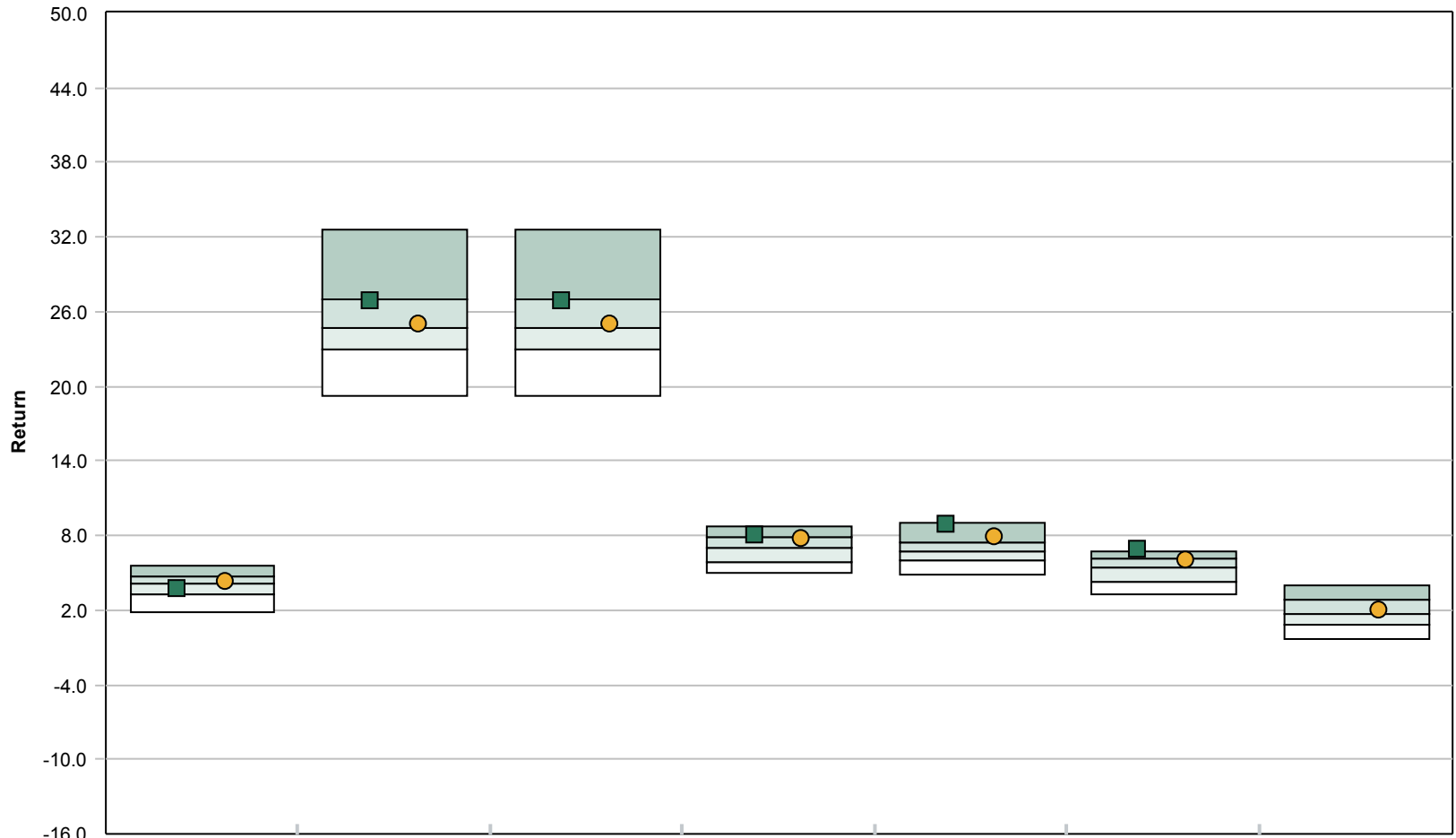
### Sector Allocation



### Risk Metrics

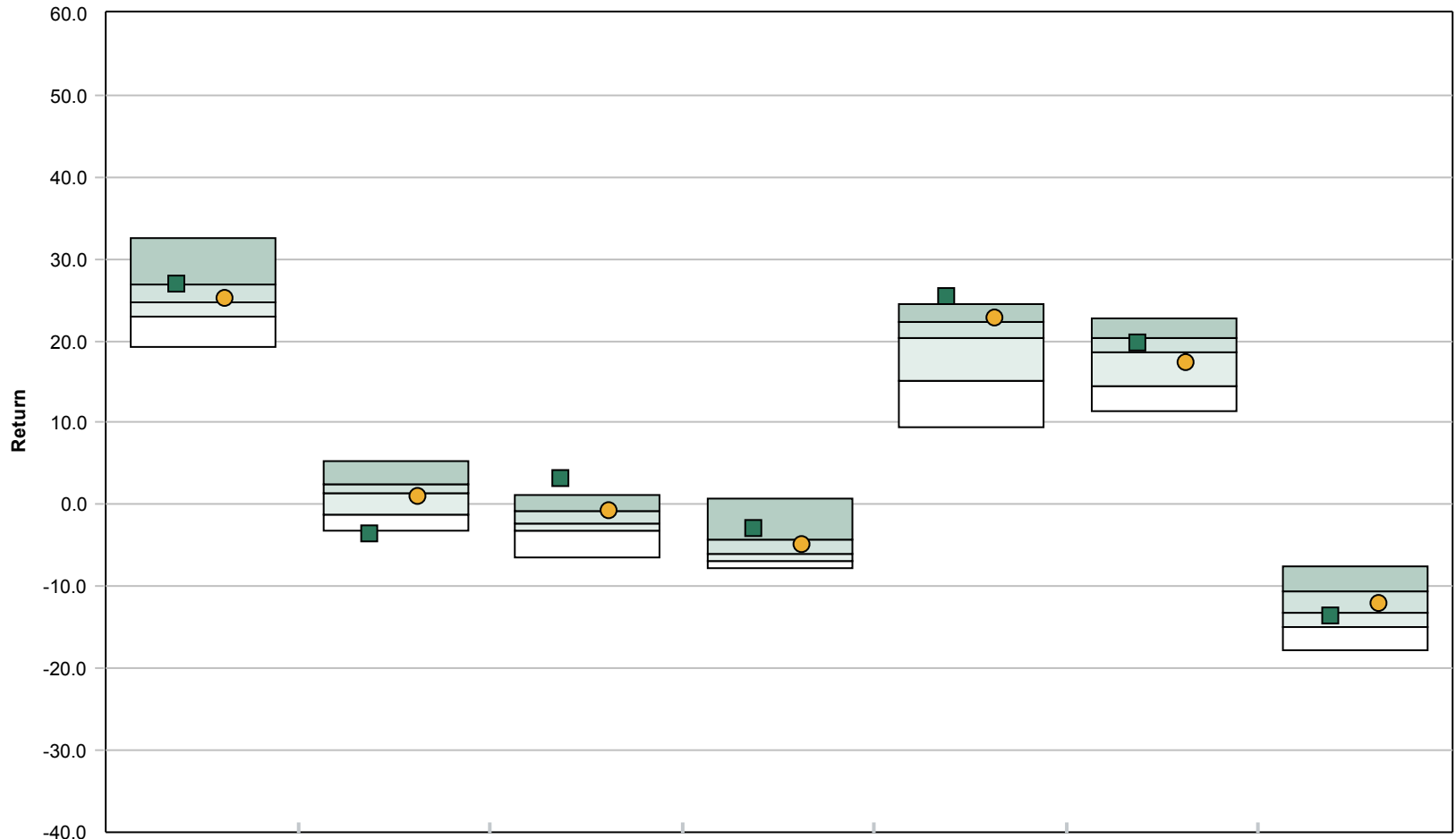
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	11.27	11.33
5 Year:	11.09	10.99
10 Year:	18.74	18.29
<b>Information Ratio</b>		
3 Year:	-0.42	-0.03
5 Year:	0.05	-0.17
10 Year:	-0.12	0.01
<b>Downside Capture</b>		
3 Year:	86.16	84.53
5 Year:	89.33	89.76
10 Year:	103.67	97.39

Peer Group Analysis - IM International Large Cap Core Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Diversified Int'l Fund K	3.70 (63)	26.79 (27)	26.79 (27)	8.06 (19)	8.93 (7)	6.79 (3)	N/A
● MSCI EAFE (Net)	4.23 (46)	25.03 (43)	25.03 (43)	7.80 (28)	7.90 (17)	6.04 (29)	1.94 (43)
5th Percentile	5.60	32.63	32.63	8.76	9.07	6.70	4.01
1st Quartile	4.76	26.99	26.99	7.90	7.44	6.10	2.83
Median	4.18	24.71	24.71	7.07	6.76	5.36	1.65
3rd Quartile	3.26	22.96	22.96	5.88	5.94	4.32	0.77
95th Percentile	1.90	19.28	19.28	4.98	4.84	3.26	-0.34

Peer Group Analysis - IM International Large Cap Core Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Diversified Int'l Fund K	26.79 (27)	-3.60 (97)	3.24 (1)	-3.05 (22)	25.34 (2)	19.61 (35)	-13.62 (58)
● MSCI EAFE (Net)	25.03 (43)	1.00 (59)	-0.81 (25)	-4.90 (32)	22.78 (19)	17.32 (60)	-12.14 (38)
5th Percentile	32.63	5.36	1.14	0.68	24.56	22.70	-7.49
1st Quartile	26.99	2.56	-0.88	-4.29	22.26	20.31	-10.68
Median	24.71	1.43	-2.27	-6.02	20.41	18.63	-13.13
3rd Quartile	22.96	-1.15	-3.11	-6.84	15.20	14.49	-14.92
95th Percentile	19.28	-3.25	-6.37	-7.86	9.48	11.41	-17.76

## Fidelity Diversified Int'l Fund K

### Fund Information

Fund Name :	Fidelity Investment Trust: Fidelity Diversified International Fund; Class K Shares	Portfolio Assets :	\$19,528 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	William Bower
Ticker :	FDIKX	PM Tenure :	2008
Inception Date :	05/09/2008	Fund Style :	IM International Large Cap Core Equity (MF)
Fund Assets :	\$8,005 Million	Style Benchmark :	MSCI EAFE (Net)

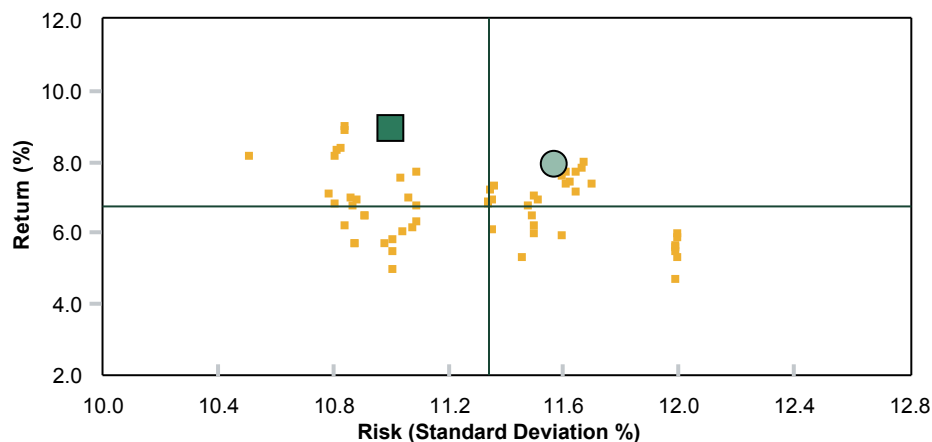
### Fund Investment Policy

The Fund seeks capital growth by normally investing at least 65% of total assets in foreign securities, normally investing primarily in common stocks and allocating investments across countries and regions considering size of market and region relative to size of international market as a whole.

### Historical Statistics (01/01/13 - 12/31/17) \*

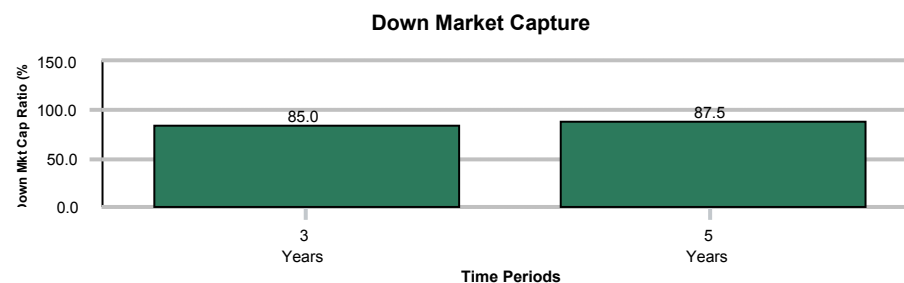
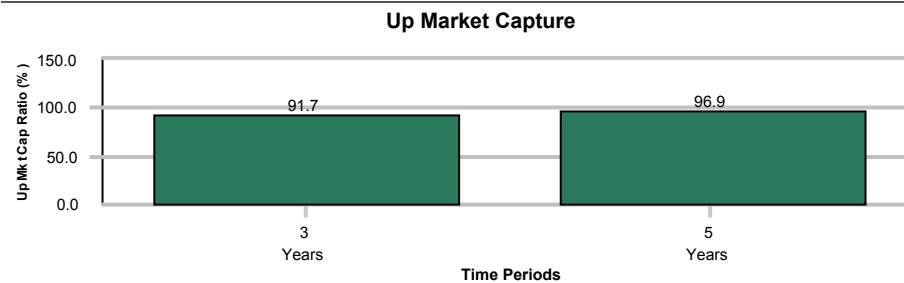
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Diversified Int'l Fund K	8.93	11.00	0.81	1.65	0.91	0.92	3.35	0.27	10.99	06/01/2008
MSCI EAFE (Net)	7.90	11.57	0.70	0.00	1.00	1.00	0.00	N/A	11.56	06/01/2008
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.24	0.00	0.02	11.56	-0.70	0.00	06/01/2008

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Diversified Int'l Fund K	8.93	11.00
● MSCI EAFE (Net)	7.90	11.57
— Median	6.75	11.34

### Up Down Market Capture



\* Monthly periodicity used.

# Franklin Mutual Global Discovery R6

Segal Score  
**B**

Ticker: FMDRX

Category: World Large Stock

Subcategory: World Large Value

Expense Ratio: 0.85

Benchmark: MSCI World

Inception Date: 12/31/1992

## S<sup>3</sup> Scores

Organization: B

Fees: B

Style/Portfolio Characteristics: A

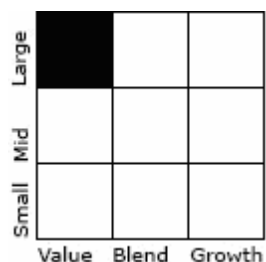
Performance: C

Risk: B

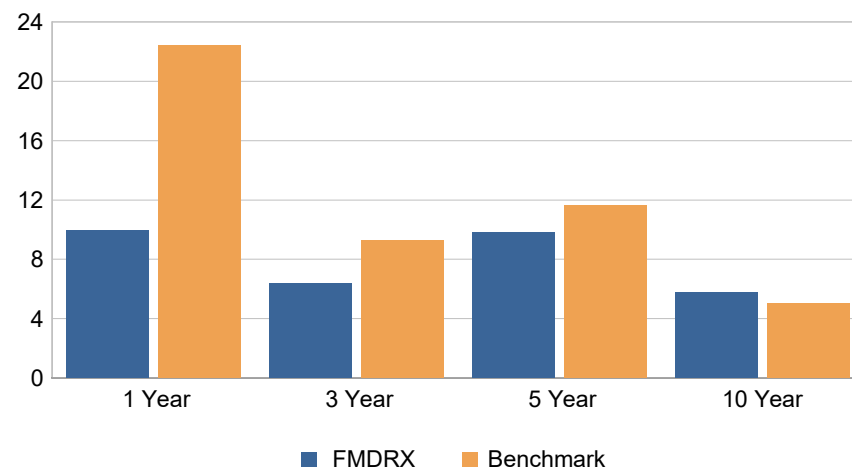
### Portfolio Characteristics

Fund AUM (\$mil):	21,841
No. of Stocks:	99
% Assets in Top 10:	10.97
Avg Market Cap (\$mil):	53,721.57
P/E Ratio (TTM)(Long):	20.26
P/B Ratio (TTM)(Long):	2.37
Turnover Ratio %:	23.57

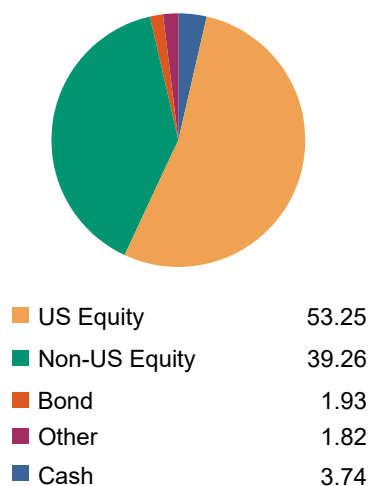
### Style



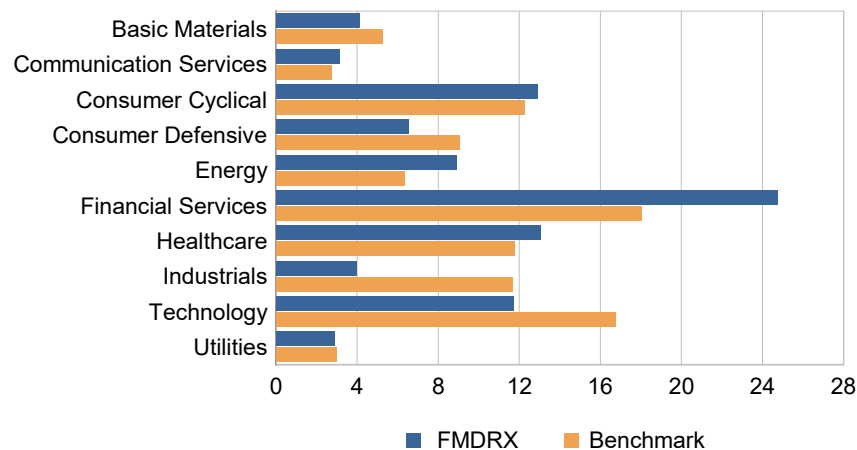
### Returns



### Asset Allocation



### Sector Allocation

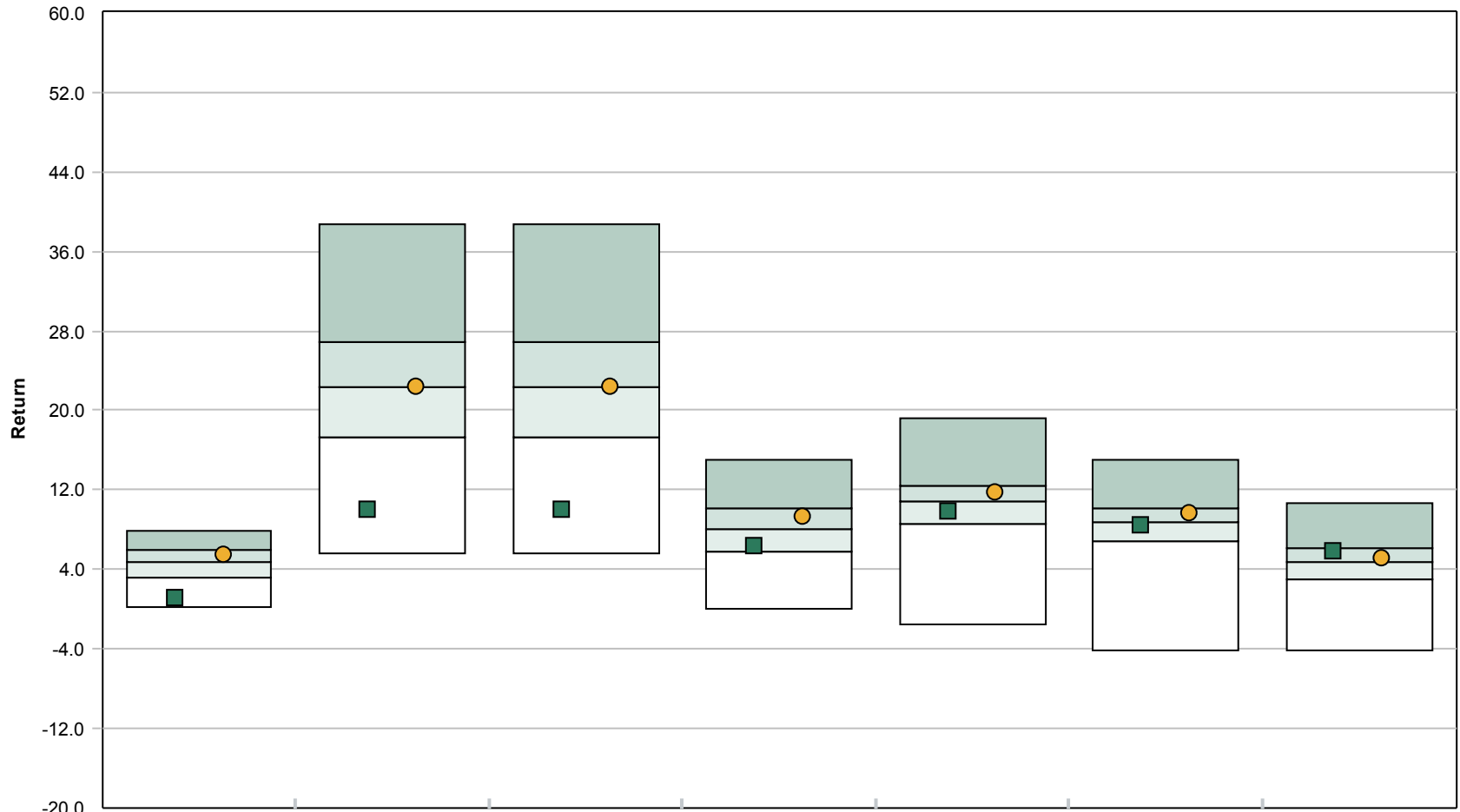


### Risk Metrics

	Actual	Median
<b>Standard Deviation</b>		
3 Year:	9.55	10.47
5 Year:	8.89	10.25
10 Year:	11.13	16.88
<b>Information Ratio</b>		
3 Year:	-0.59	-0.14
5 Year:	-0.43	-0.22
10 Year:	0.09	-0.03
<b>Downside Capture</b>		
3 Year:	91.19	95.77
5 Year:	87.28	102.19
10 Year:	62.66	101.92

Mutual Global Discovery

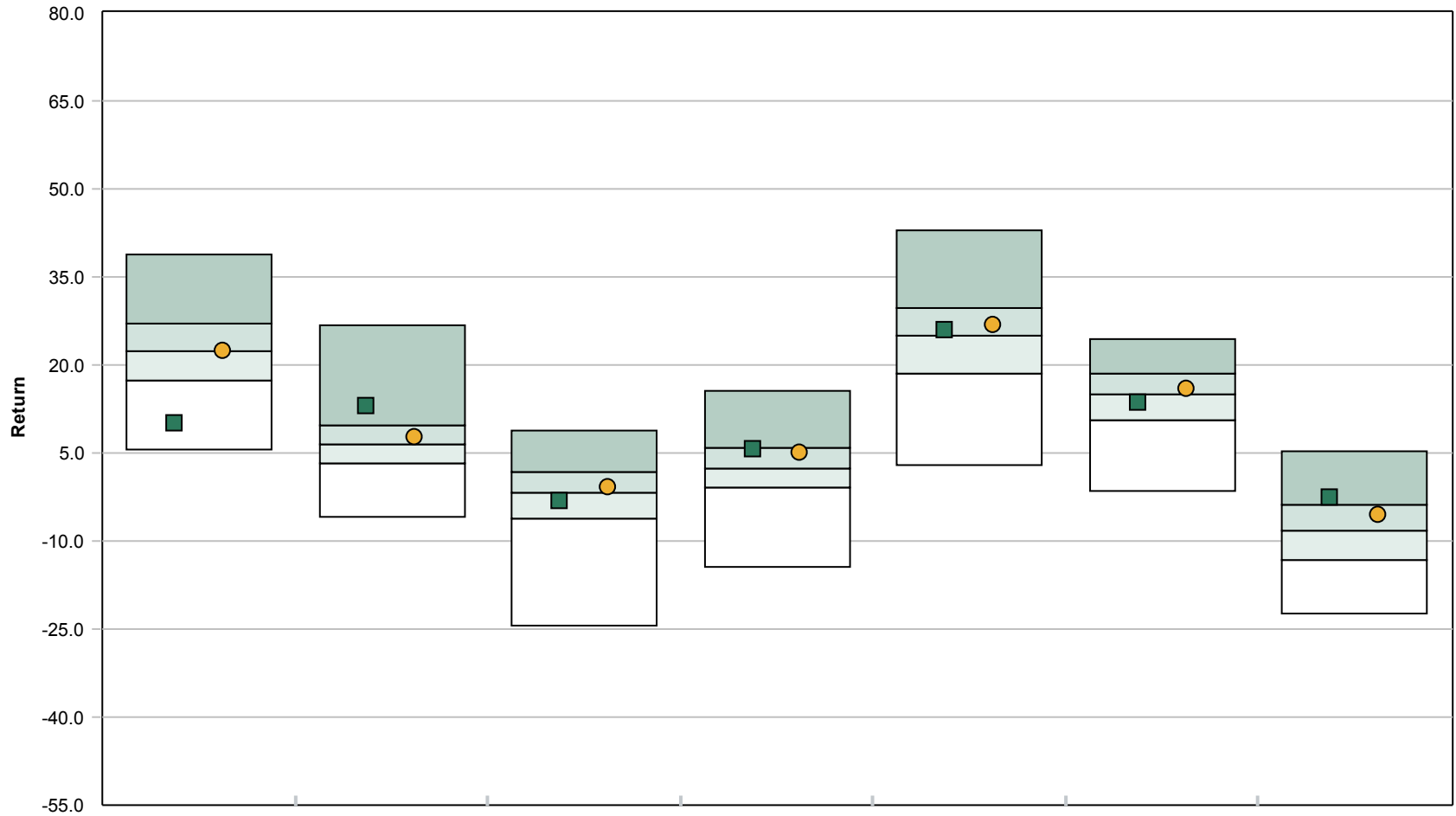
Peer Group Analysis - IM Global Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Mutual Global Discovery	1.10 (93)	9.98 (94)	9.98 (94)	6.35 (70)	9.80 (60)	8.46 (54)	5.77 (31)
● MSCI World (Net)	5.51 (35)	22.40 (49)	22.40 (49)	9.26 (36)	11.64 (36)	9.58 (33)	5.03 (45)
5th Percentile	7.93	38.69	38.69	14.95	19.24	15.12	10.74
1st Quartile	5.95	26.92	26.92	10.08	12.49	10.14	6.07
Median	4.83	22.27	22.27	8.09	10.77	8.70	4.81
3rd Quartile	3.26	17.22	17.22	5.88	8.53	6.83	3.00
95th Percentile	0.21	5.56	5.56	0.09	-1.58	-4.07	-4.12

Mutual Global Discovery

Peer Group Analysis - IM Global Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Mutual Global Discovery	9.98 (94)	13.02 (16)	-3.23 (64)	5.46 (27)	25.84 (47)	13.65 (59)	-2.68 (21)
● MSCI World (Net)	22.40 (49)	7.51 (40)	-0.87 (42)	4.94 (31)	26.68 (42)	15.83 (44)	-5.54 (32)
5th Percentile	38.69	26.66	8.75	15.47	43.00	24.31	5.33
1st Quartile	26.92	9.80	1.78	5.78	29.75	18.56	-3.84
Median	22.27	6.38	-1.86	2.49	25.06	15.04	-8.29
3rd Quartile	17.22	3.13	-6.23	-0.91	18.51	10.58	-13.16
95th Percentile	5.56	-6.00	-24.40	-14.30	2.84	-1.51	-22.26



## Mutual Global Discovery

### Fund Information

Fund Name : Franklin Mutual Series Funds: Franklin Mutual Global Discovery Fund; Portfolio Assets : \$22,117 Million  
Class R6 Shares

Fund Family : Franklin Templeton Investments Portfolio Manager : Langerman/Brugere-Trelat/Ranki  
Ticker : FMDRX PM Tenure : 2013--2013--2013  
Inception Date : 05/01/2013 Fund Style : IM Global Equity (MF)  
Fund Assets : \$2,158 Million Style Benchmark : MSCI World (Net)

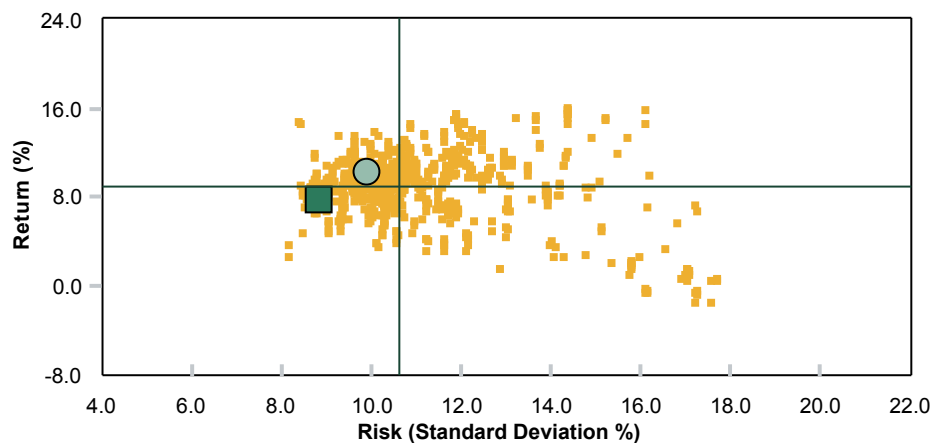
### Fund Investment Policy

The Fund seeks capital appreciation. Under normal market conditions, the Fund invests mainly in equity securities of companies that the Manager believes are available at market prices less than their value based on certain recognized criteria. The fund generally invests a majority of its assets in foreign securities.

### Historical Statistics (06/01/13 - 12/31/17) \*

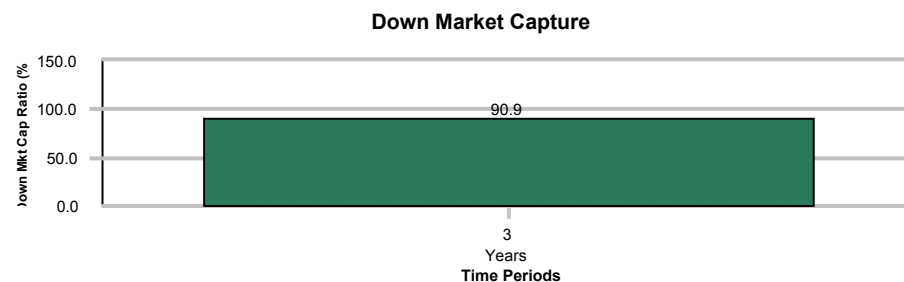
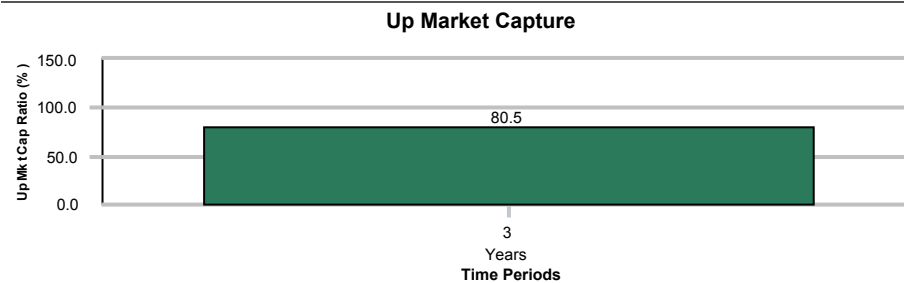
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Mutual Global Discovery	7.79	8.83	0.87	-0.65	0.84	0.88	3.41	-0.68	8.83	06/01/2013
MSCI World (Net)	10.19	9.92	1.01	0.00	1.00	1.00	0.00	N/A	9.91	06/01/2013
90 Day U.S. Treasury Bill	0.26	0.11	N/A	0.25	0.00	0.01	9.91	-1.01	0.00	06/01/2013

### Peer Group Scattergram (06/01/13 to 12/31/17)



	Return	Standard Deviation
■ Mutual Global Discovery	7.79	8.83
● MSCI World (Net)	10.19	9.92
— Median	9.01	10.64

### Up Down Market Capture



\* Monthly periodicity used.

# Fidelity® Global ex US Index Premium

Segal Score

**B**

Ticker: FSGDX

Category: Foreign Large Blend

Subcategory: Foreign Large Core

Expense Ratio: 0.10

Benchmark: MSCI EAFE

Inception Date: 09/08/2011

## S<sup>3</sup> Scores

Organization: C

Fees: A

Style/Portfolio Characteristics: A

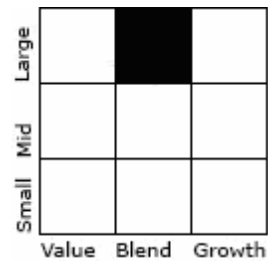
Performance: C

Risk: D

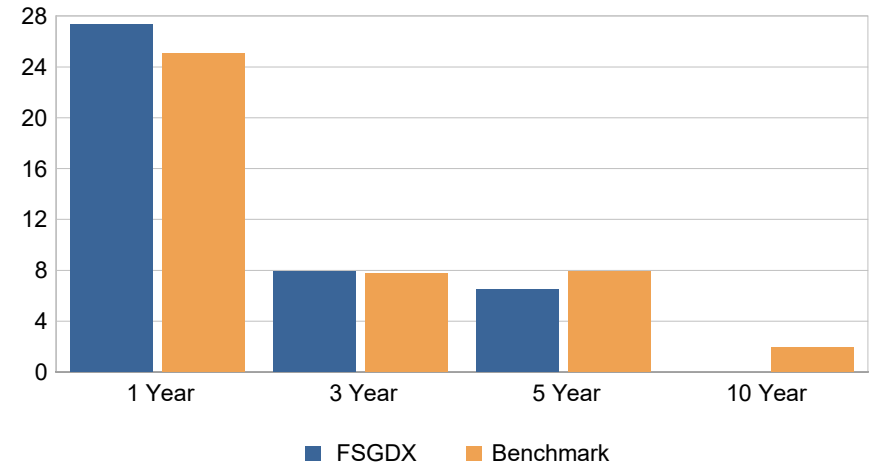
### Portfolio Characteristics

Fund AUM (\$mil):	3,284
No. of Stocks:	1843
% Assets in Top 10:	11.38
Avg Market Cap (\$mil):	36,286.87
P/E Ratio (TTM)(Long):	17.62
P/B Ratio (TTM)(Long):	1.72
Turnover Ratio %:	6.00

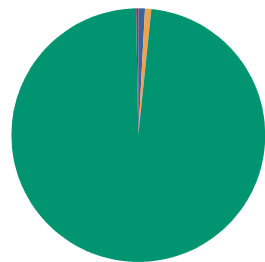
### Style



### Returns

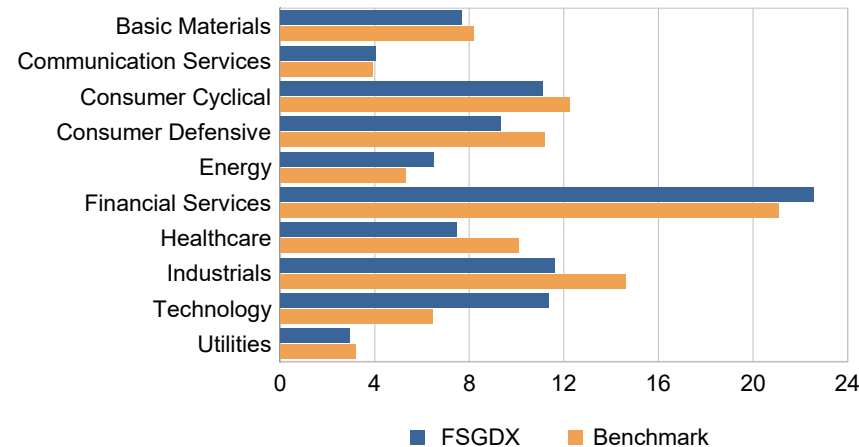


### Asset Allocation



US Equity	0.76
Non-US Equity	98.20
Bond	0.00
Other	0.16
Cash	0.88

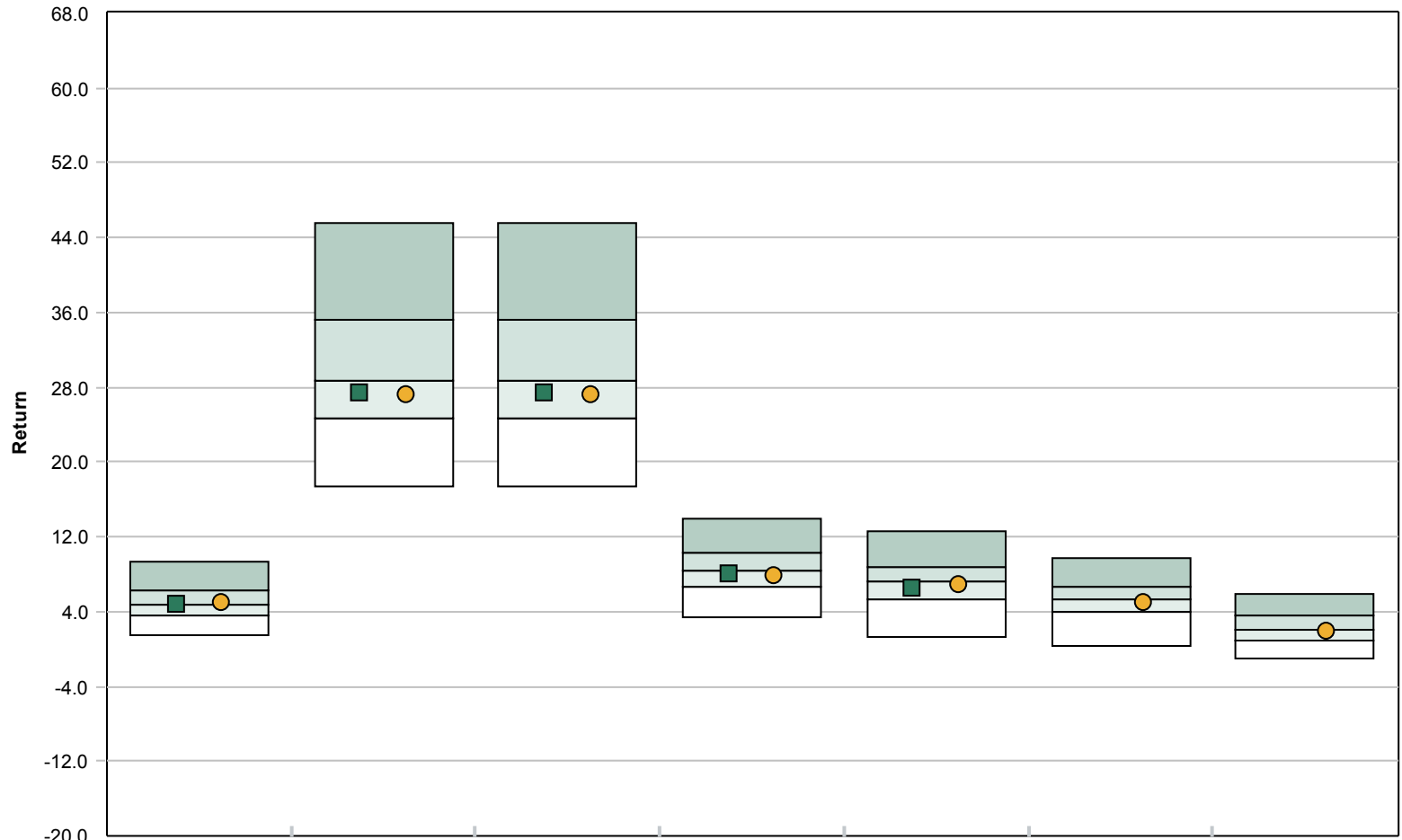
### Sector Allocation



### Risk Metrics

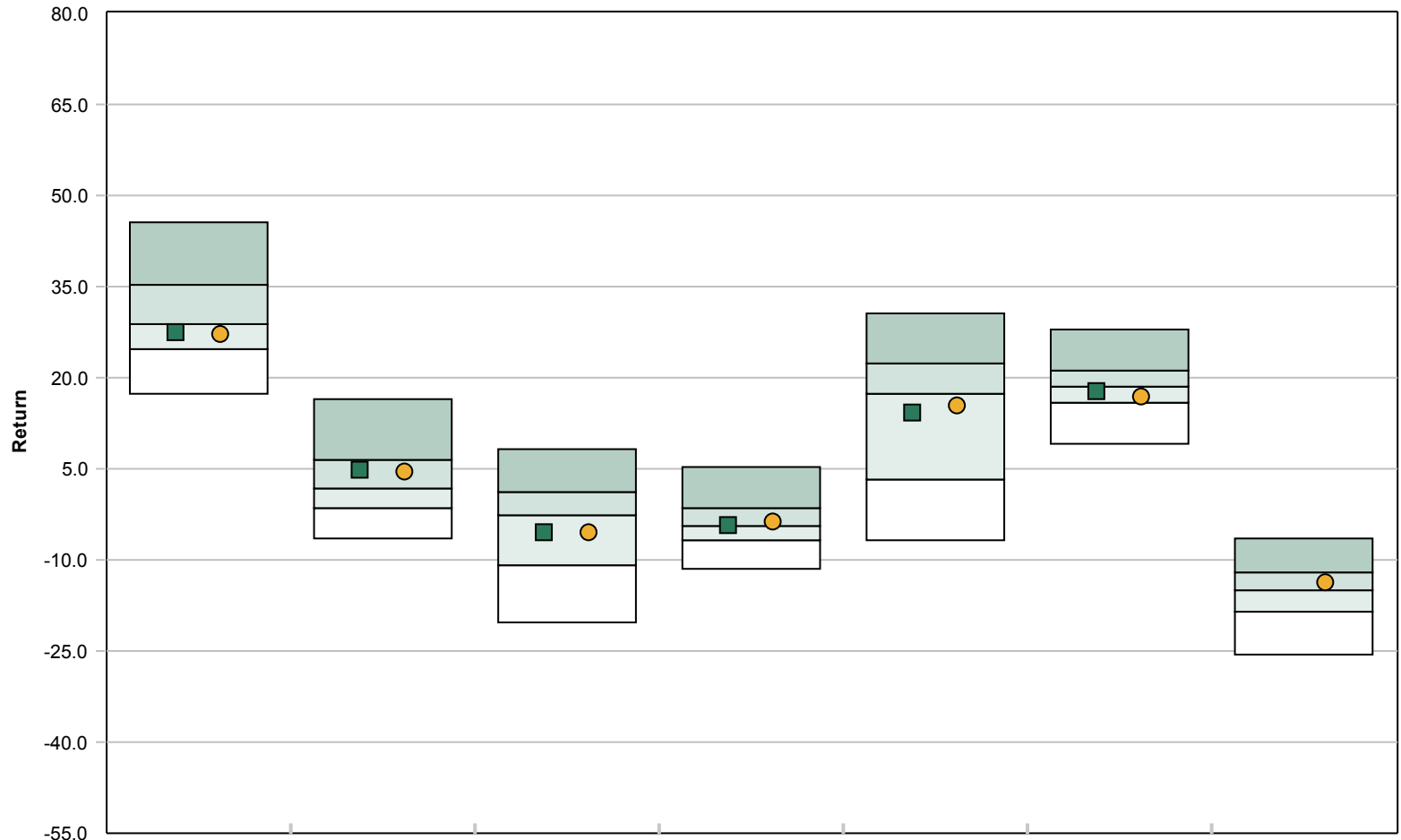
	Actual	Median
<b>Standard Deviation</b>		
3 Year:	11.42	11.23
5 Year:	11.16	11.06
10 Year:		18.69
<b>Information Ratio</b>		
3 Year:	0.03	-0.10
5 Year:	-0.45	-0.25
10 Year:		-0.09
<b>Downside Capture</b>		
3 Year:	89.78	88.70
5 Year:	94.09	91.62
10 Year:		99.34

Peer Group Analysis - IM International Equity (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Spartan Global ex US Idx Adv	4.73 (49)	27.35 (59)	27.35 (59)	7.90 (59)	6.52 (60)	N/A	N/A
● MSCI AC World ex USA (Net)	5.00 (45)	27.19 (60)	27.19 (60)	7.83 (60)	6.80 (56)	4.93 (60)	1.84 (56)
5th Percentile	9.24	45.51	45.51	13.96	12.59	9.79	5.89
1st Quartile	6.33	35.29	35.29	10.22	8.76	6.69	3.51
Median	4.66	28.74	28.74	8.35	7.14	5.38	2.08
3rd Quartile	3.58	24.76	24.76	6.65	5.24	3.88	0.99
95th Percentile	1.46	17.34	17.34	3.45	1.29	0.36	-1.04

Peer Group Analysis - IM International Equity (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Spartan Global ex US Idx Adv	27.35 (59)	4.64 (34)	-5.72 (61)	-4.40 (50)	14.18 (60)	17.68 (60)	N/A
● MSCI AC World ex USA (Net)	27.19 (60)	4.50 (34)	-5.66 (61)	-3.87 (43)	15.29 (56)	16.83 (68)	-13.71 (40)
5th Percentile	45.51	16.58	8.16	5.27	30.68	27.82	-6.40
1st Quartile	35.29	6.52	1.16	-1.45	22.45	21.31	-11.93
Median	28.74	1.77	-2.78	-4.47	17.44	18.60	-14.87
3rd Quartile	24.76	-1.40	-10.74	-6.78	3.27	15.77	-18.63
95th Percentile	17.34	-6.46	-20.16	-11.60	-6.87	9.11	-25.69

## Fidelity Spartan Global ex US Idx Adv

### Fund Information

Fund Name : Fidelity Salem Street Trust: Fidelity Global ex US Index Fund; Premium Class  
 Fund Family : Fidelity Management & Research Company  
 Ticker : FSGDX  
 Inception Date : 09/08/2011  
 Fund Assets : \$1,616 Million

Portfolio Assets : \$3,166 Million  
 Portfolio Manager : Team Managed  
 PM Tenure :  
 Fund Style : IM International Equity (MF)  
 Style Benchmark : MSCI AC World ex USA (Net)

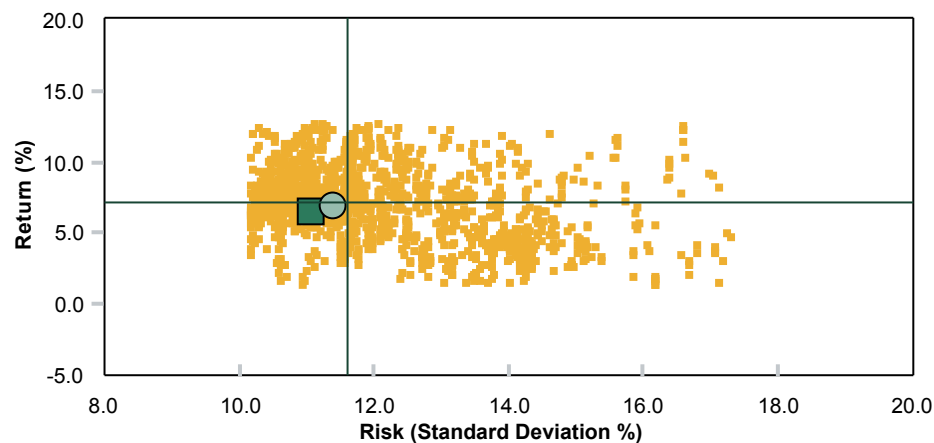
### Fund Investment Policy

The Fund seeks to provide investment results that correspond to the total return of foreign developed and emerging stock markets. The Fund normally investing at least 80% of assets in securities included in the MSCI ACWI ex USA Index and in depository receipts representing securities included in the index.

### Historical Statistics (01/01/13 - 12/31/17) \*

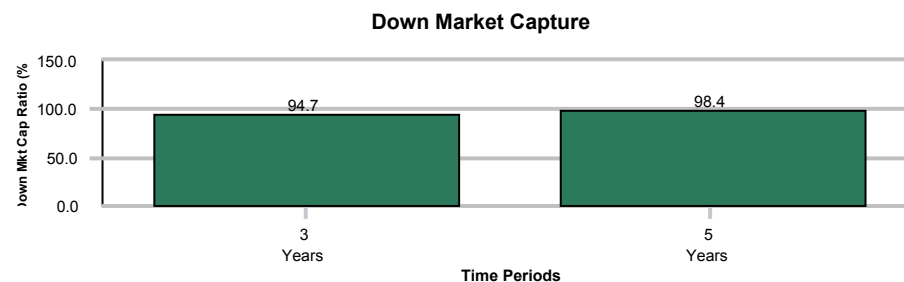
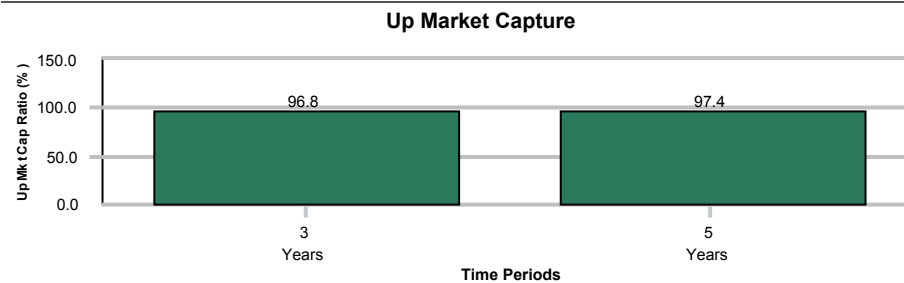
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Spartan Global ex US Idx Adv	6.52	11.07	0.61	-0.04	0.96	0.98	1.43	-0.21	11.05	10/01/2011
MSCI AC World ex USA (Net)	6.80	11.40	0.62	0.00	1.00	1.00	0.00	N/A	11.38	10/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.04	11.38	-0.62	0.00	10/01/2011

### Peer Group Scattergram (01/01/13 to 12/31/17)



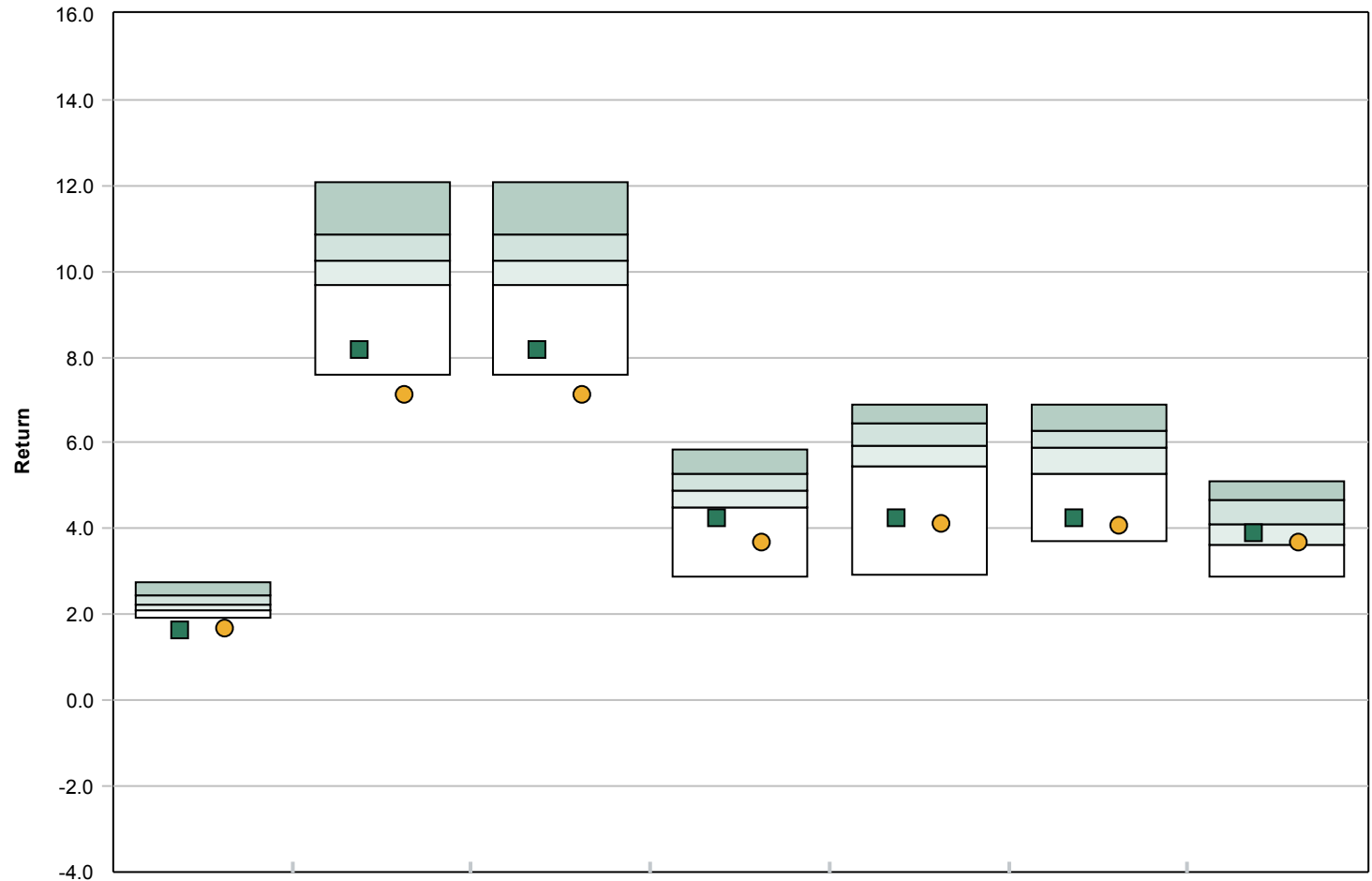
	Return	Standard Deviation
■ Fidelity Spartan Global ex US Idx Adv	6.52	11.07
● MSCI AC World ex USA (Net)	6.80	11.40
— Median	7.13	11.60

### Up Down Market Capture



\* Monthly periodicity used.

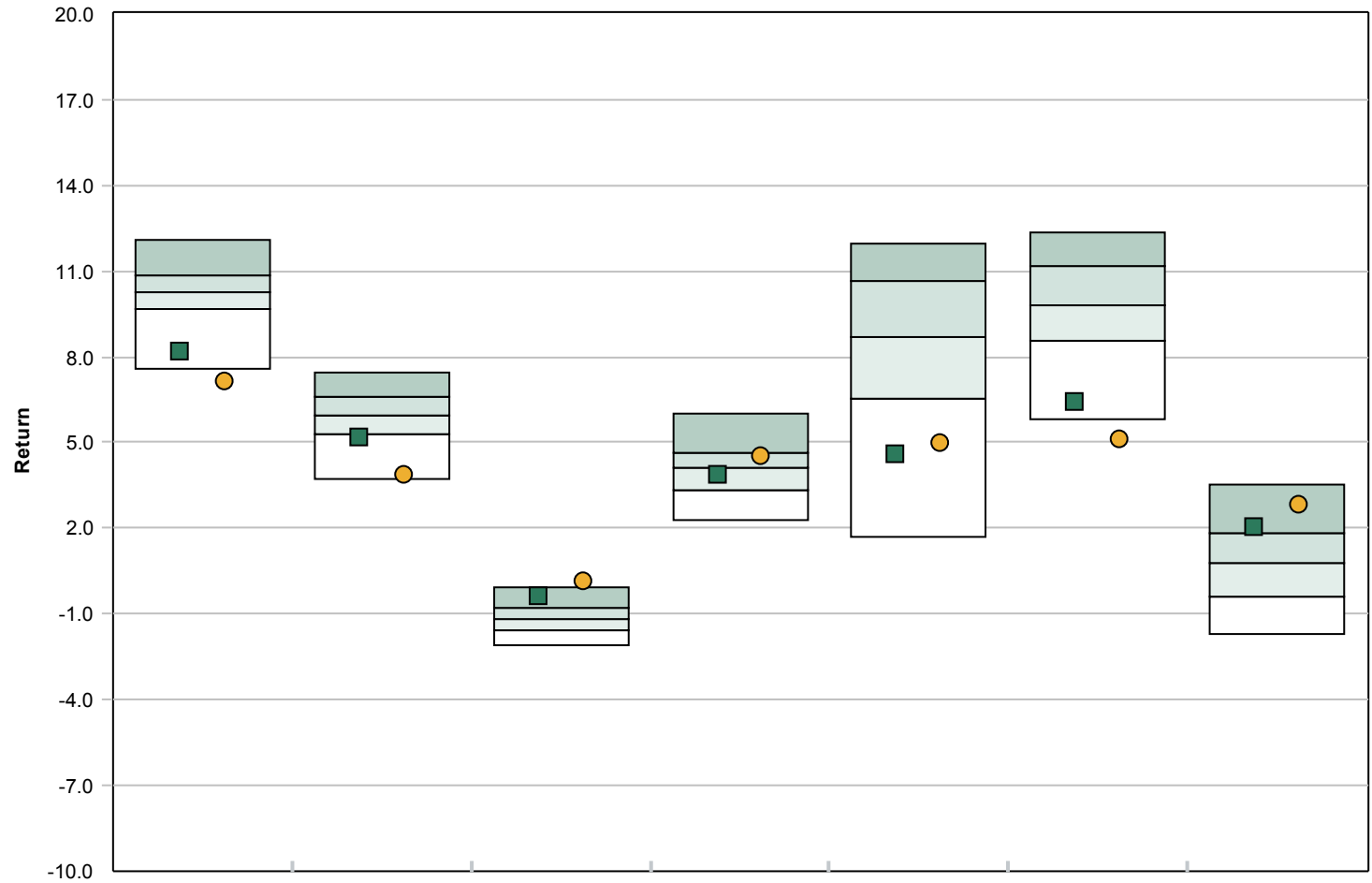
Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



■ Fidelity Freedom Income Fund K  
● Fidelity Freedom Income Composite Benchmark

	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
Fidelity Freedom Income Fund K	1.64 (100)	8.14 (95)	8.14 (95)	4.25 (87)	4.23 (93)	4.22 (92)	3.90 (60)
Fidelity Freedom Income Composite Benchmark	1.66 (100)	7.10 (96)	7.10 (96)	3.65 (94)	4.09 (93)	4.04 (94)	3.65 (75)
5th Percentile	2.74	12.07	12.07	5.87	6.91	6.89	5.10
1st Quartile	2.45	10.84	10.84	5.27	6.44	6.30	4.66
Median	2.23	10.24	10.24	4.91	5.93	5.89	4.11
3rd Quartile	2.11	9.66	9.66	4.48	5.48	5.29	3.64
95th Percentile	1.91	7.58	7.58	2.87	2.93	3.69	2.87

Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom Income Fund K	8.14 (95)	5.16 (81)	-0.38 (15)	3.86 (59)	4.56 (89)	6.40 (93)	2.02 (24)
● Fidelity Freedom Income Composite Benchmark	7.10 (96)	3.85 (95)	0.12 (3)	4.54 (31)	4.95 (87)	5.07 (98)	2.83 (14)
5th Percentile	12.07	7.42	-0.05	6.01	11.94	12.38	3.50
1st Quartile	10.84	6.57	-0.79	4.65	10.67	11.19	1.83
Median	10.24	5.98	-1.18	4.11	8.67	9.78	0.75
3rd Quartile	9.66	5.32	-1.60	3.33	6.50	8.56	-0.40
95th Percentile	7.58	3.70	-2.11	2.31	1.73	5.80	-1.70

## Fidelity Freedom Income Fund K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom Income Fund; Class K Shares	Portfolio Assets :	\$3,785 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FNSHX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2010 (MF)
Fund Assets :	\$1,635 Million	Style Benchmark :	Fidelity Freedom Income Composite Benchmark

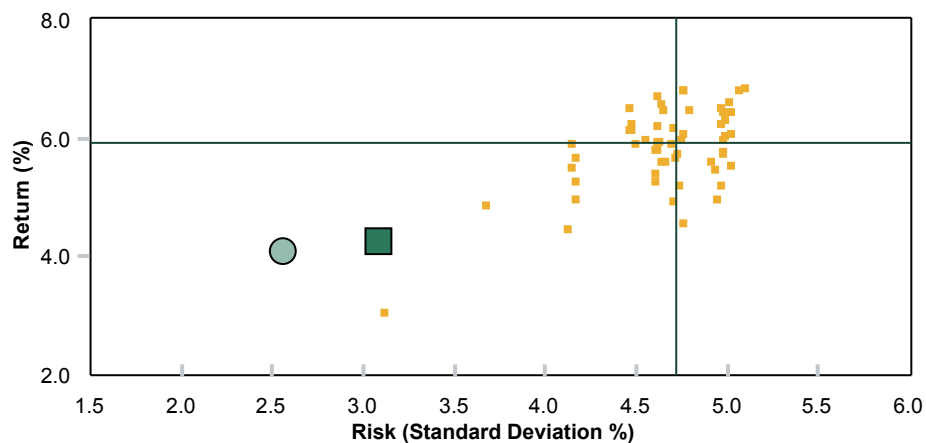
### Fund Investment Policy

The Fund seeks high current income and, secondarily, capital appreciation. Invests in Fidelity equity, fixed-income, and money market (underlying Fidelity funds). Assets are allocated according to a stable strategy designed for investors already in retirement.

### Historical Statistics (01/01/13 - 12/31/17) \*

	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom Income Fund K	4.23	3.08	1.29	-0.57	1.18	0.96	0.78	0.20	3.07	08/01/2009
Fidelity Freedom Income Composite Benchmark	4.09	2.56	1.49	0.00	1.00	1.00	0.00	N/A	2.55	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.22	0.01	0.03	2.55	-1.49	0.00	08/01/2009

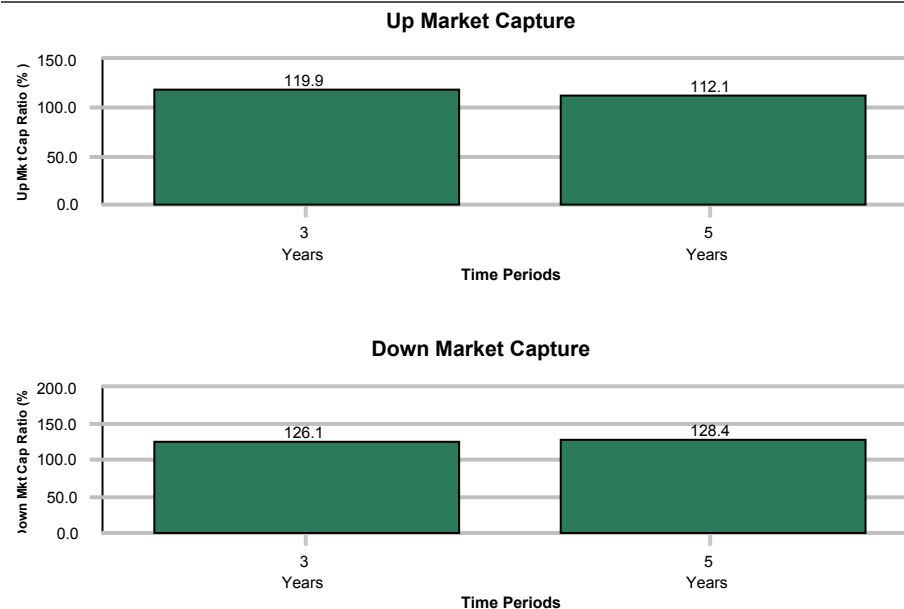
### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Freedom Income Fund K	4.23	3.08
● Fidelity Freedom Income Composite Benchmark	4.09	2.56
— Median	5.93	4.72

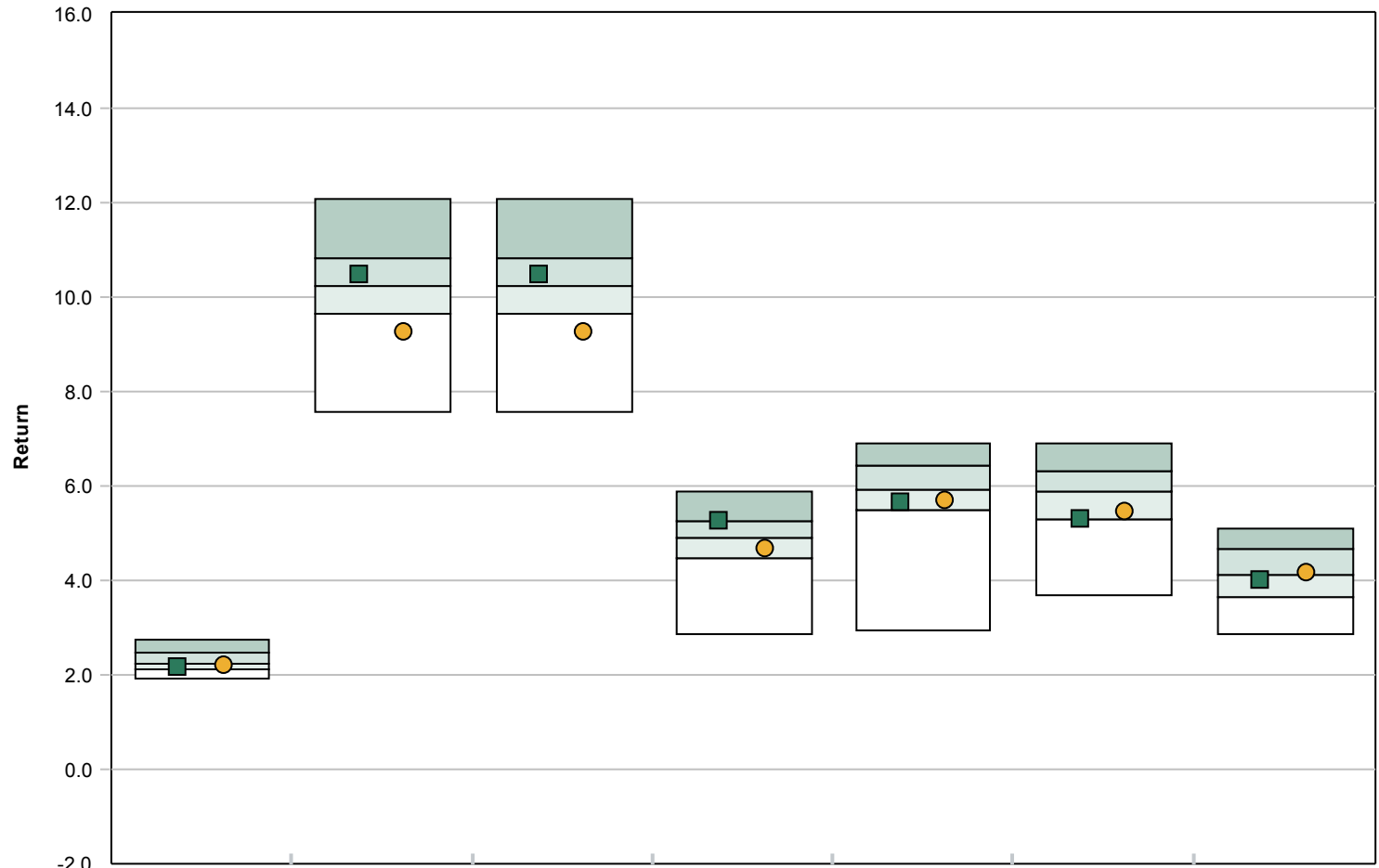
\* Monthly periodicity used.

### Up Down Market Capture



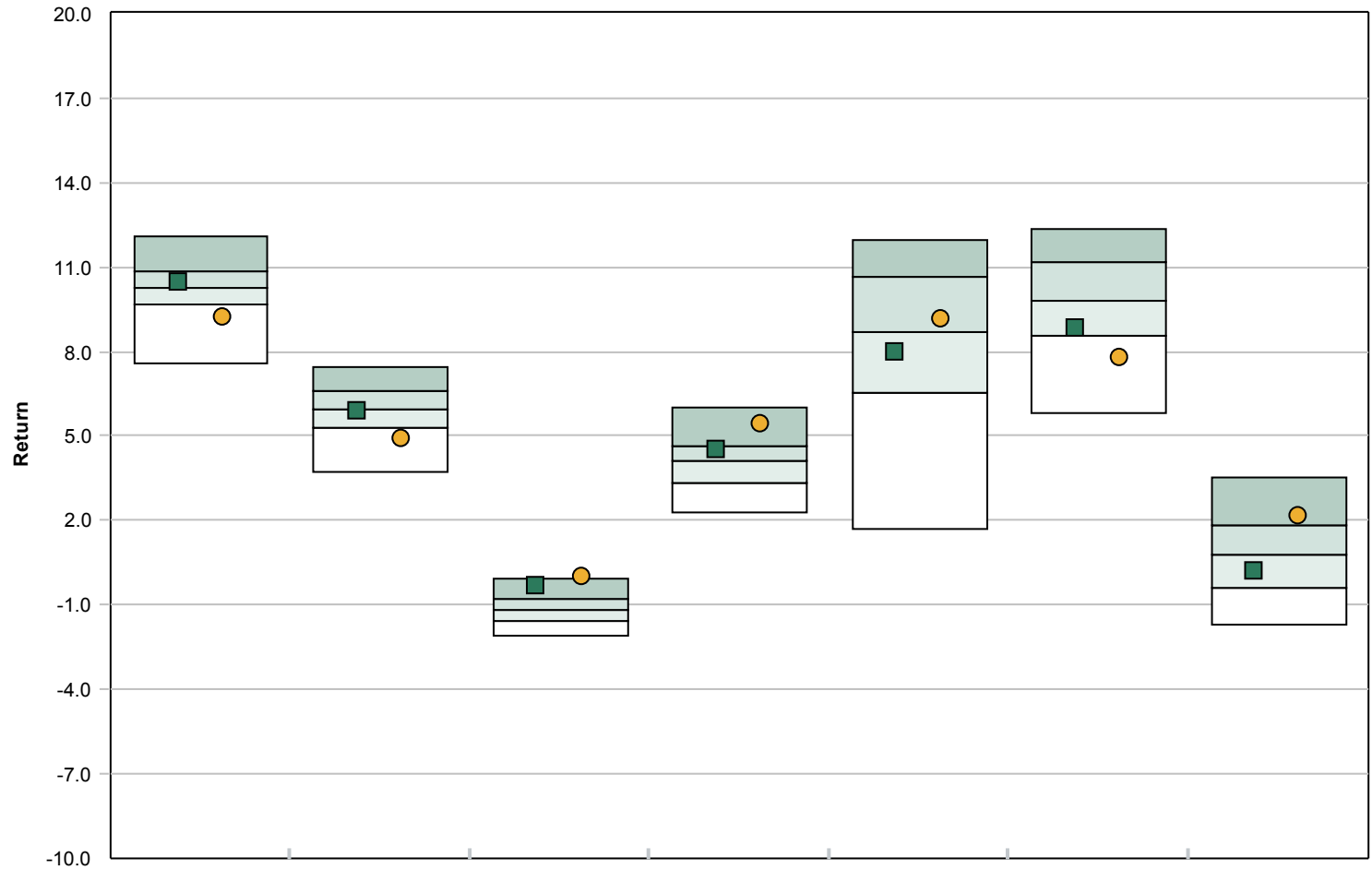


Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2005 K	2.16 (69)	10.45 (40)	10.45 (40)	5.25 (29)	5.64 (66)	5.29 (75)	3.99 (55)
● Fidelity Freedom 2005 Composite Benchmark	2.21 (54)	9.24 (80)	9.24 (80)	4.65 (68)	5.69 (65)	5.47 (70)	4.18 (45)
5th Percentile	2.74	12.07	12.07	5.87	6.91	6.89	5.10
1st Quartile	2.45	10.84	10.84	5.27	6.44	6.30	4.66
Median	2.23	10.24	10.24	4.91	5.93	5.89	4.11
3rd Quartile	2.11	9.66	9.66	4.48	5.48	5.29	3.64
95th Percentile	1.91	7.58	7.58	2.87	2.93	3.69	2.87

Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2005 K	10.45 (40)	5.91 (53)	-0.33 (13)	4.50 (33)	8.01 (58)	8.82 (71)	0.18 (64)
● Fidelity Freedom 2005 Composite Benchmark	9.24 (80)	4.93 (87)	-0.02 (5)	5.40 (13)	9.15 (49)	7.79 (84)	2.14 (24)
5th Percentile	12.07	7.42	-0.05	6.01	11.94	12.38	3.50
1st Quartile	10.84	6.57	-0.79	4.65	10.67	11.19	1.83
Median	10.24	5.98	-1.18	4.11	8.67	9.78	0.75
3rd Quartile	9.66	5.32	-1.60	3.33	6.50	8.56	-0.40
95th Percentile	7.58	3.70	-2.11	2.31	1.73	5.80	-1.70

## Fidelity Freedom 2005 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2005 Fund; Class K Shares	Portfolio Assets :	\$1,036 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNJX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2010 (MF)
Fund Assets :	\$431 Million	Style Benchmark :	Fidelity Freedom 2005 Composite Benchmark

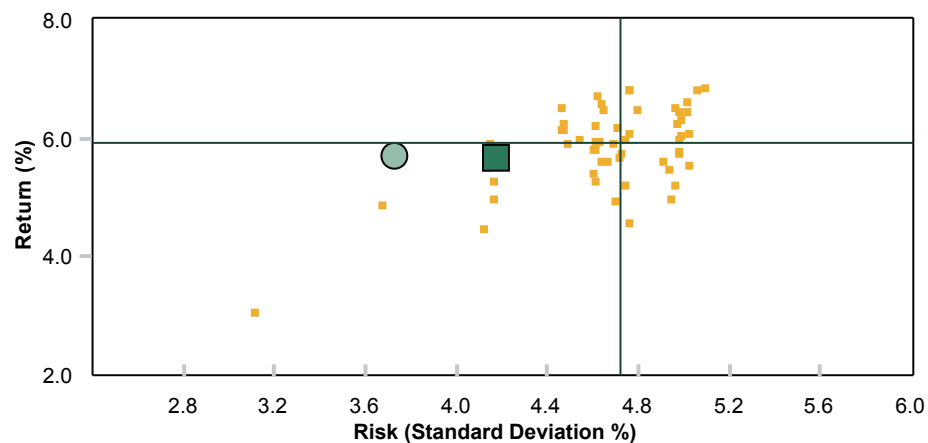
### Fund Investment Policy

The Fund seeks high total return. It invests in a combination of Fidelity equity, fixed-income, and money market funds (underlying Fidelity funds) and allocates its assets among these funds according to an asset allocation strategy.

### Historical Statistics (01/01/13 - 12/31/17) \*

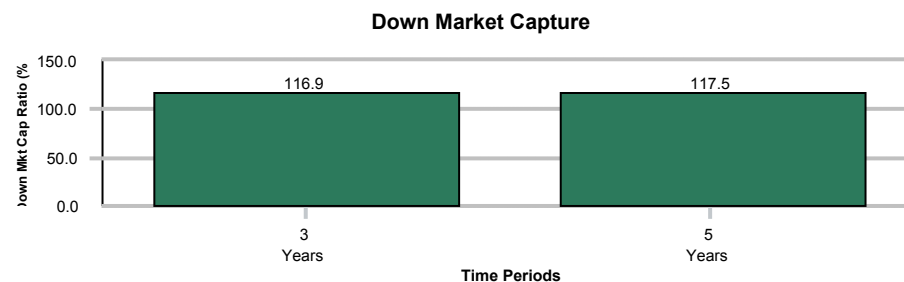
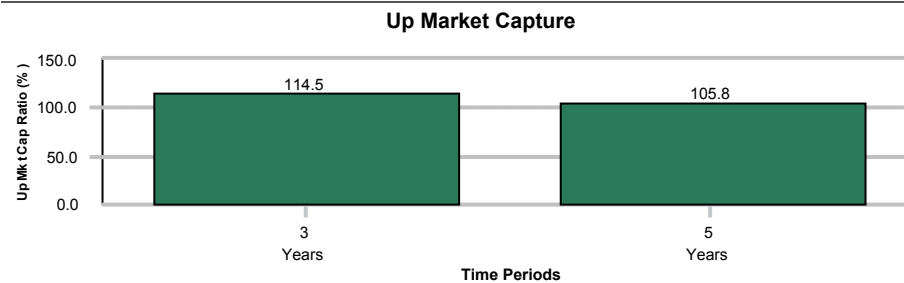
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2005 K	5.64	4.18	1.28	-0.59	1.10	0.97	0.82	-0.03	4.16	08/01/2009
Fidelity Freedom 2005 Composite Benchmark	5.69	3.73	1.44	0.00	1.00	1.00	0.00	N/A	3.72	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	3.72	-1.44	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



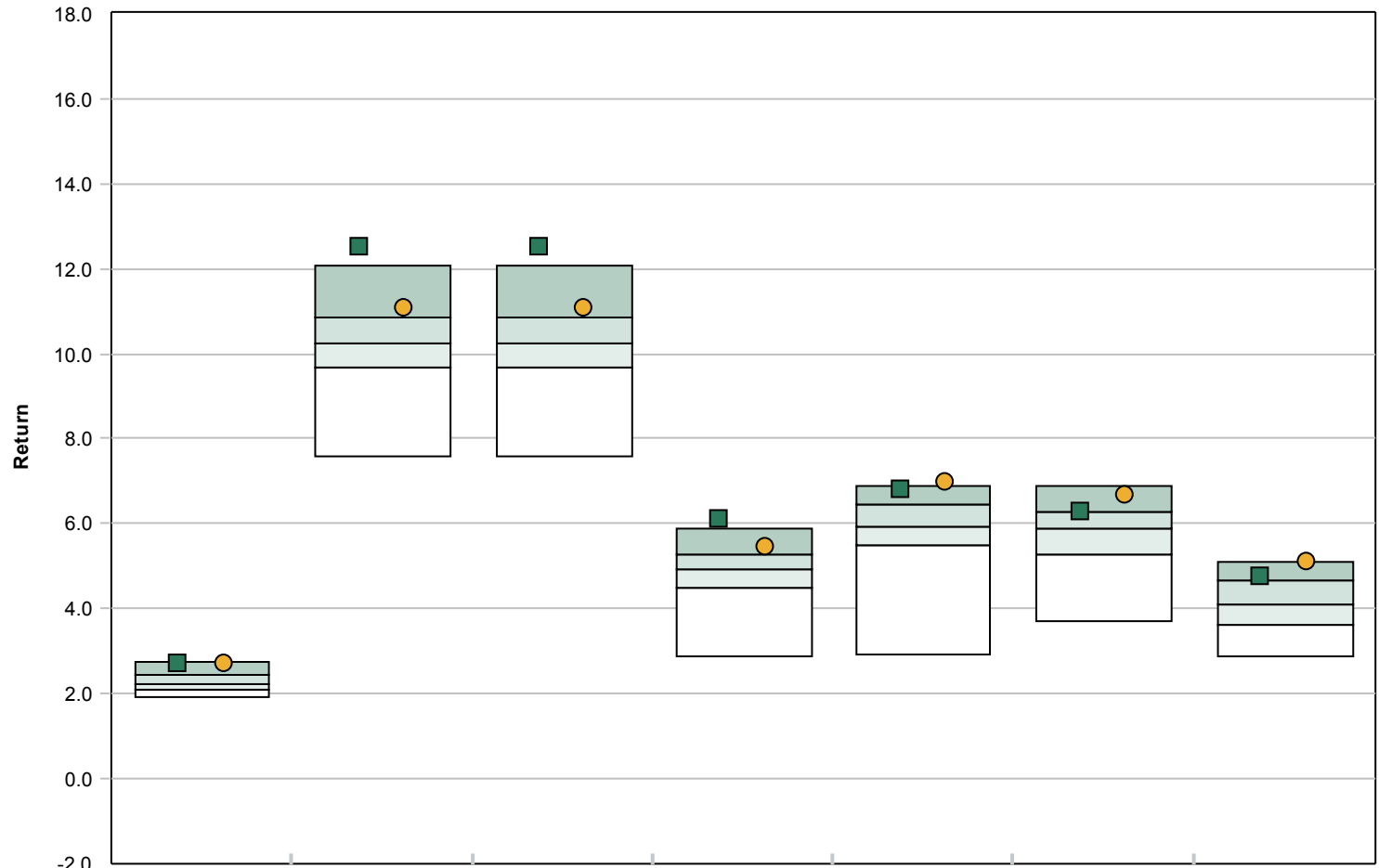
	Return	Standard Deviation
■ Fidelity Freedom 2005 K	5.64	4.18
● Fidelity Freedom 2005 Composite Benchmark	5.69	3.73
— Median	5.93	4.72

### Up Down Market Capture



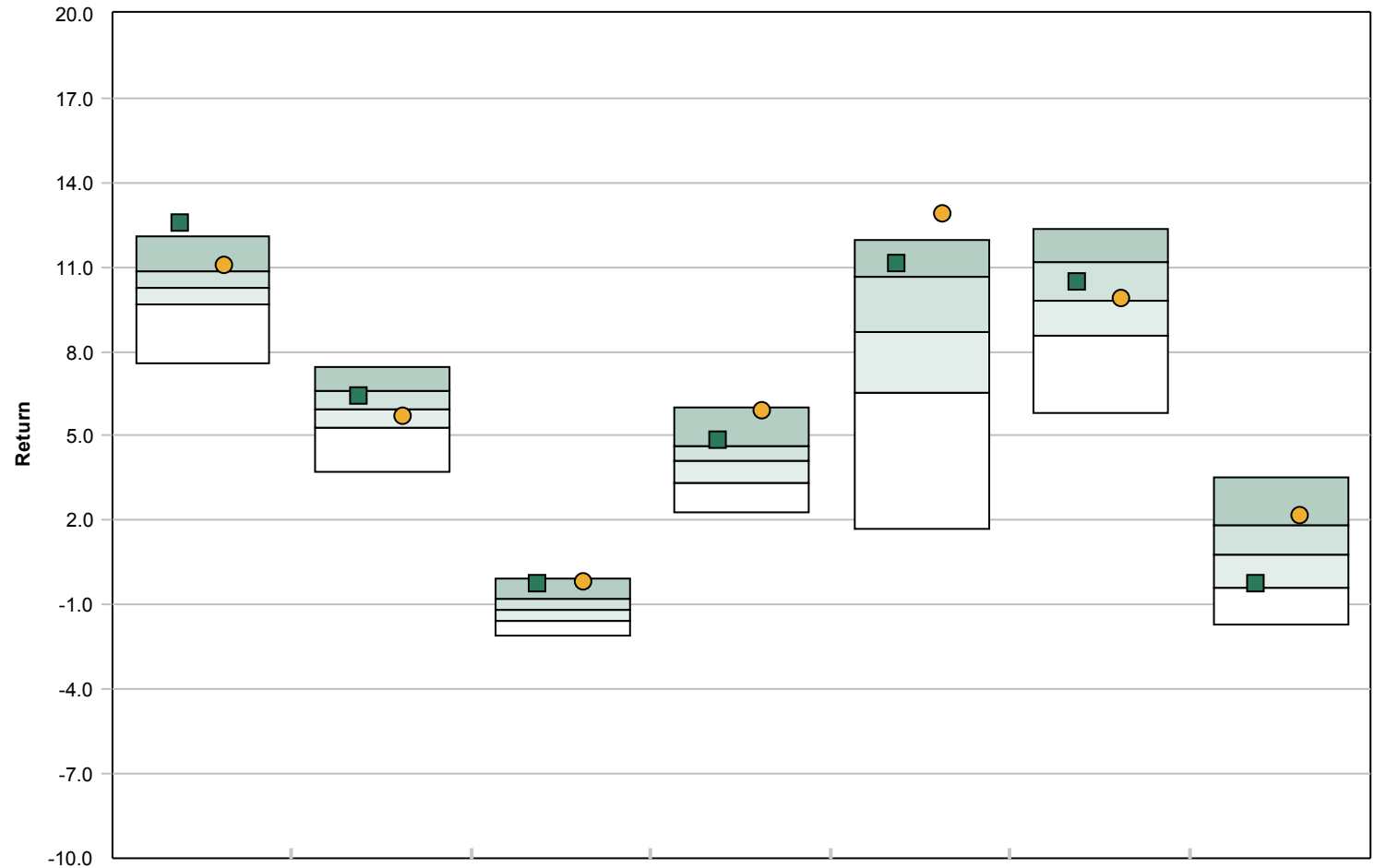
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2010 K	2.70 (9)	12.52 (2)	12.52 (2)	6.09 (3)	6.82 (8)	6.28 (26)	4.77 (21)
● Fidelity Freedom 2010 Composite Benchmark	2.70 (8)	11.08 (19)	11.08 (19)	5.44 (17)	6.98 (5)	6.68 (14)	5.12 (4)
5th Percentile	2.74	12.07	12.07	5.87	6.91	6.89	5.10
1st Quartile	2.45	10.84	10.84	5.27	6.44	6.30	4.66
Median	2.23	10.24	10.24	4.91	5.93	5.89	4.11
3rd Quartile	2.11	9.66	9.66	4.48	5.48	5.29	3.64
95th Percentile	1.91	7.58	7.58	2.87	2.93	3.69	2.87

Peer Group Analysis - IM Mixed-Asset Target 2010 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2010 K	12.52 (2)	6.42 (30)	-0.28 (11)	4.84 (22)	11.08 (17)	10.43 (38)	-0.28 (74)
● Fidelity Freedom 2010 Composite Benchmark	11.08 (19)	5.71 (61)	-0.17 (7)	5.87 (8)	12.89 (1)	9.89 (49)	2.16 (24)
5th Percentile	12.07	7.42	-0.05	6.01	11.94	12.38	3.50
1st Quartile	10.84	6.57	-0.79	4.65	10.67	11.19	1.83
Median	10.24	5.98	-1.18	4.11	8.67	9.78	0.75
3rd Quartile	9.66	5.32	-1.60	3.33	6.50	8.56	-0.40
95th Percentile	7.58	3.70	-2.11	2.31	1.73	5.80	-1.70

## Fidelity Freedom 2010 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2010 Fund; Class K Shares	Portfolio Assets :	\$6,757 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNKX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2010 (MF)
Fund Assets :	\$2,566 Million	Style Benchmark :	Fidelity Freedom 2010 Composite Benchmark

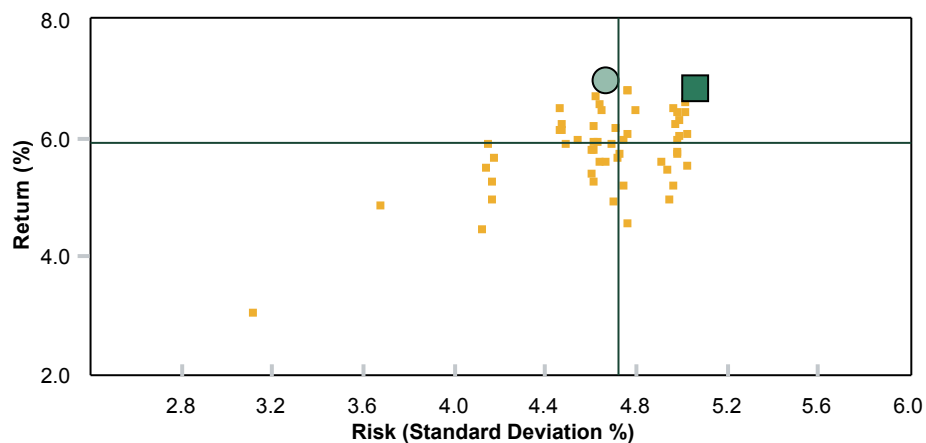
### Fund Investment Policy

The Fund seeks high total return. Invests in a mix of Fidelity equity, fixed-income and money market funds using a moderate asset allocation strategy designed for investors expecting to retire around the year 2010.

### Historical Statistics (01/01/13 - 12/31/17) \*

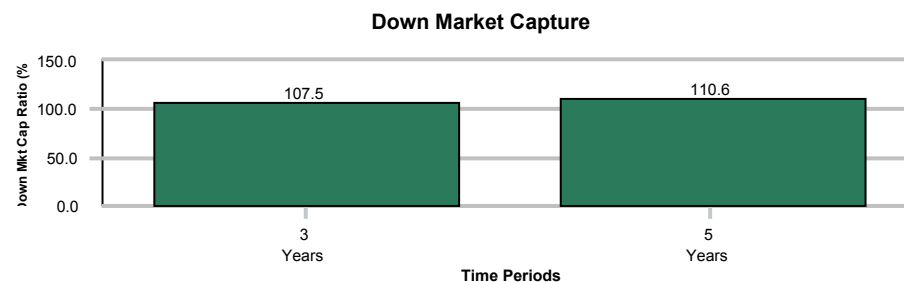
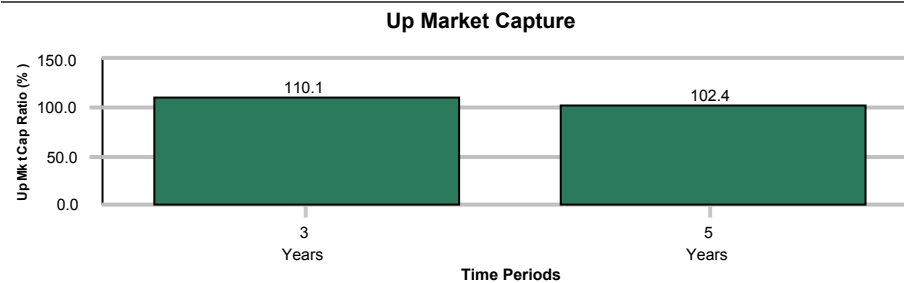
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2010 K	6.82	5.07	1.29	-0.61	1.07	0.97	0.89	-0.15	5.05	08/01/2009
Fidelity Freedom 2010 Composite Benchmark	6.98	4.67	1.42	0.00	1.00	1.00	0.00	N/A	4.66	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	4.66	-1.42	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Freedom 2010 K	6.82	5.07
● Fidelity Freedom 2010 Composite Benchmark	6.98	4.67
— Median	5.93	4.72

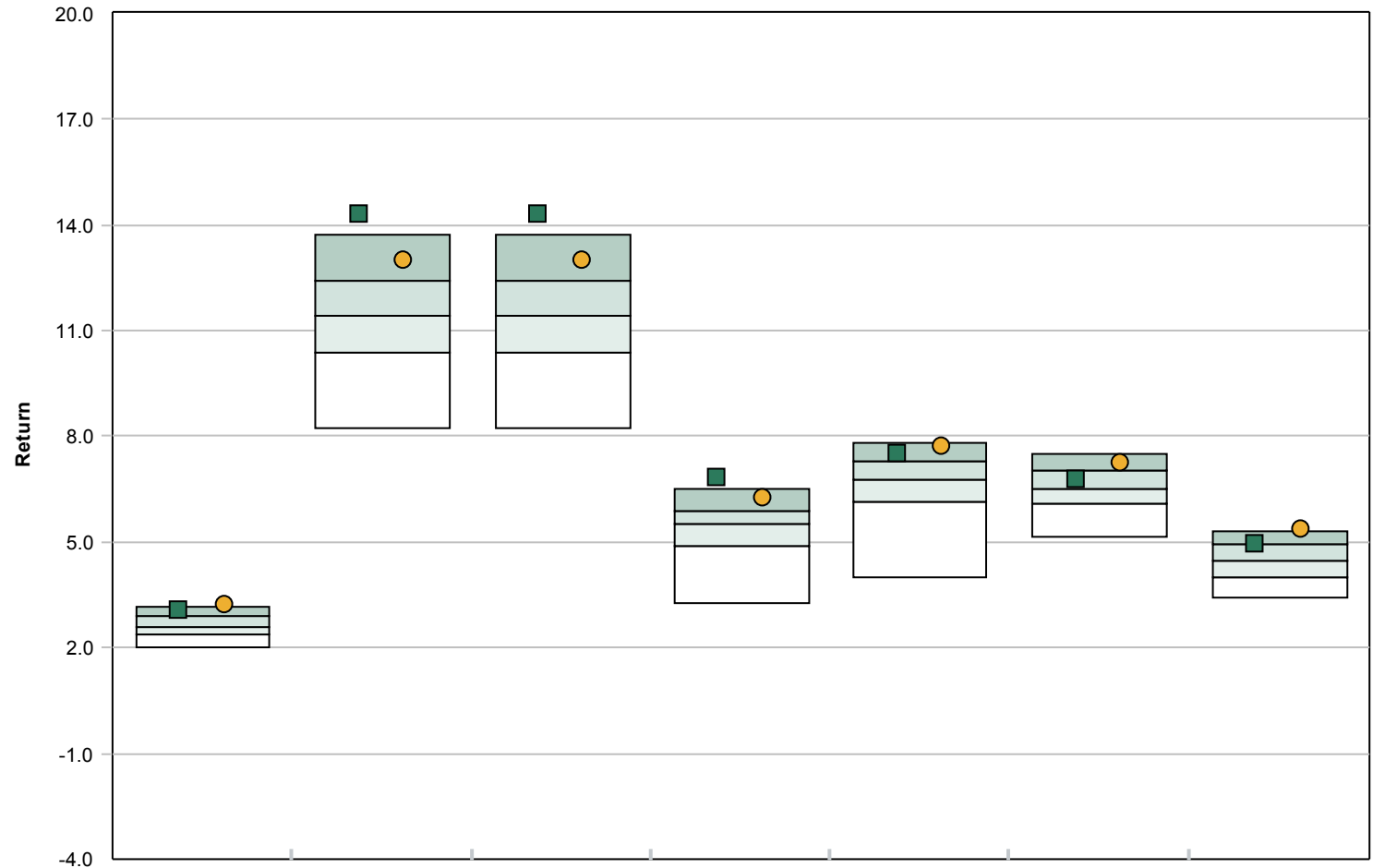
### Up Down Market Capture



\* Monthly periodicity used.

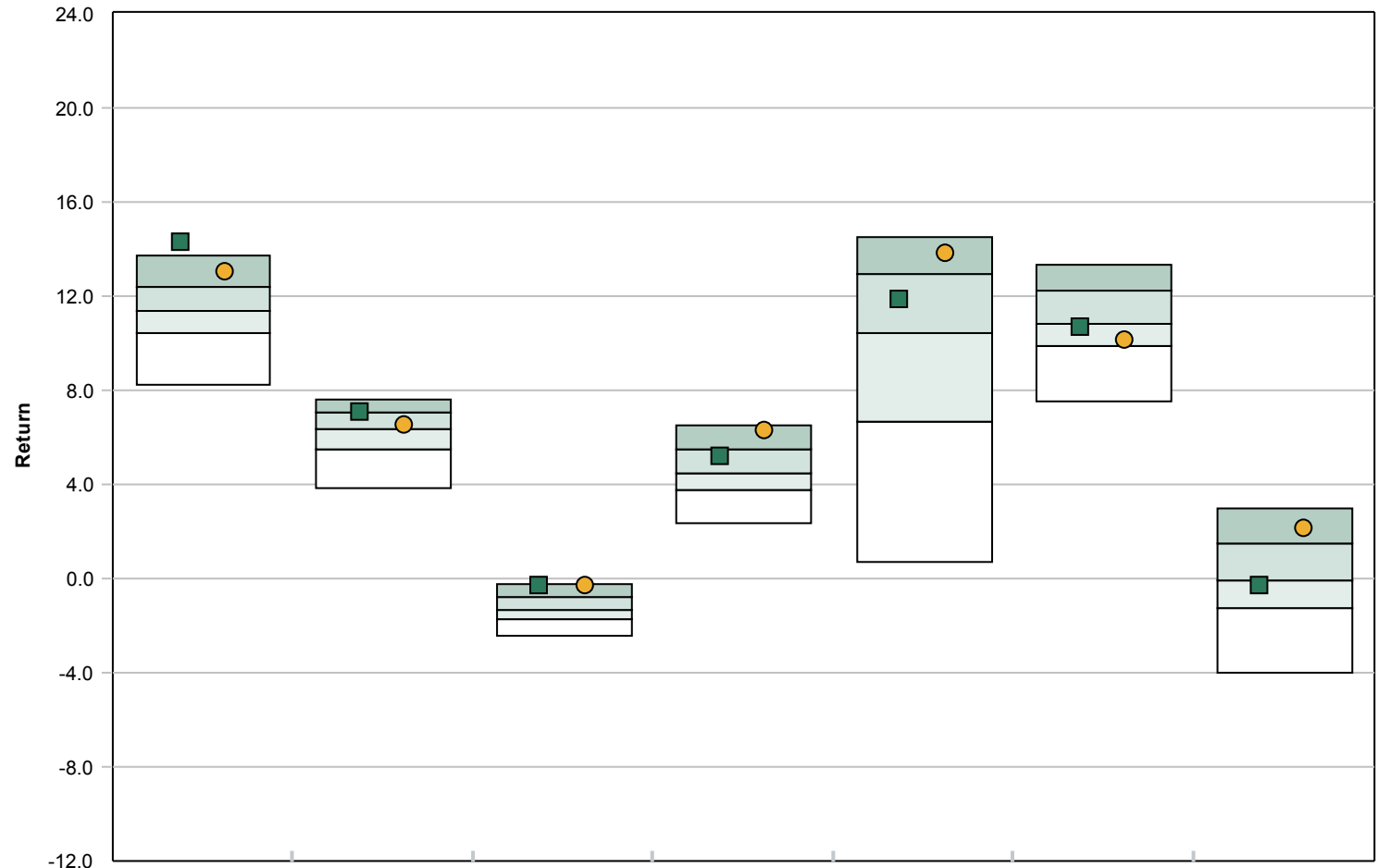
Fidelity Freedom 2015 K

Peer Group Analysis - IM Mixed-Asset Target 2015 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2015 K	3.08 (13)	14.30 (1)	14.30 (1)	6.83 (1)	7.48 (18)	6.78 (40)	4.93 (24)
● Fidelity Freedom 2015 Composite Benchmark	3.22 (3)	12.99 (13)	12.99 (13)	6.27 (11)	7.73 (9)	7.25 (16)	5.35 (5)
5th Percentile	3.18	13.75	13.75	6.52	7.82	7.53	5.32
1st Quartile	2.88	12.43	12.43	5.87	7.28	7.03	4.92
Median	2.61	11.40	11.40	5.52	6.76	6.50	4.45
3rd Quartile	2.38	10.39	10.39	4.90	6.15	6.07	4.00
95th Percentile	1.99	8.25	8.25	3.25	4.00	5.14	3.45

Peer Group Analysis - IM Mixed-Asset Target 2015 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2015 K	14.30 (1)	7.04 (26)	-0.34 (7)	5.17 (32)	11.88 (37)	10.68 (55)	-0.34 (57)
● Fidelity Freedom 2015 Composite Benchmark	12.99 (13)	6.53 (42)	-0.30 (7)	6.24 (11)	13.80 (11)	10.14 (69)	2.13 (18)
5th Percentile	13.75	7.58	-0.20	6.48	14.52	13.36	3.01
1st Quartile	12.43	7.04	-0.80	5.48	12.91	12.25	1.50
Median	11.40	6.37	-1.30	4.47	10.42	10.81	-0.11
3rd Quartile	10.39	5.52	-1.71	3.73	6.64	9.85	-1.25
95th Percentile	8.25	3.85	-2.41	2.37	0.71	7.52	-3.99



## Fidelity Freedom 2015 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2015 Fund; Class K Shares	Portfolio Assets :	\$10,453 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNLX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2020 (MF)
Fund Assets :	\$4,910 Million	Style Benchmark :	Fidelity Freedom 2015 Composite Benchmark

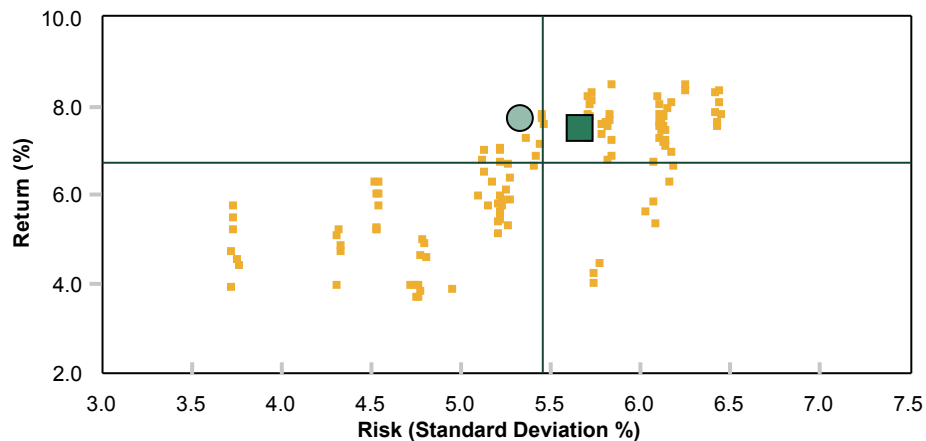
### Fund Investment Policy

The Fund seeks high total return by investing in Fidelity equity, fixed-income, and money market funds (underlying Fidelity funds). It is targeted to investors expected to retire around the year 2015.

### Historical Statistics (01/01/13 - 12/31/17) \*

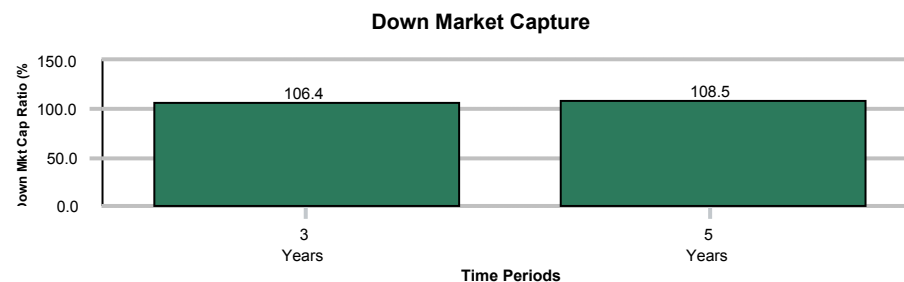
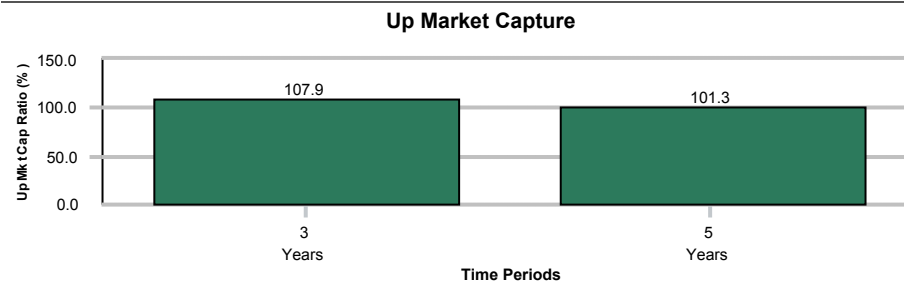
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2015 K	7.48	5.66	1.27	-0.60	1.05	0.98	0.88	-0.24	5.65	08/01/2009
Fidelity Freedom 2015 Composite Benchmark	7.73	5.33	1.38	0.00	1.00	1.00	0.00	N/A	5.32	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	5.32	-1.38	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



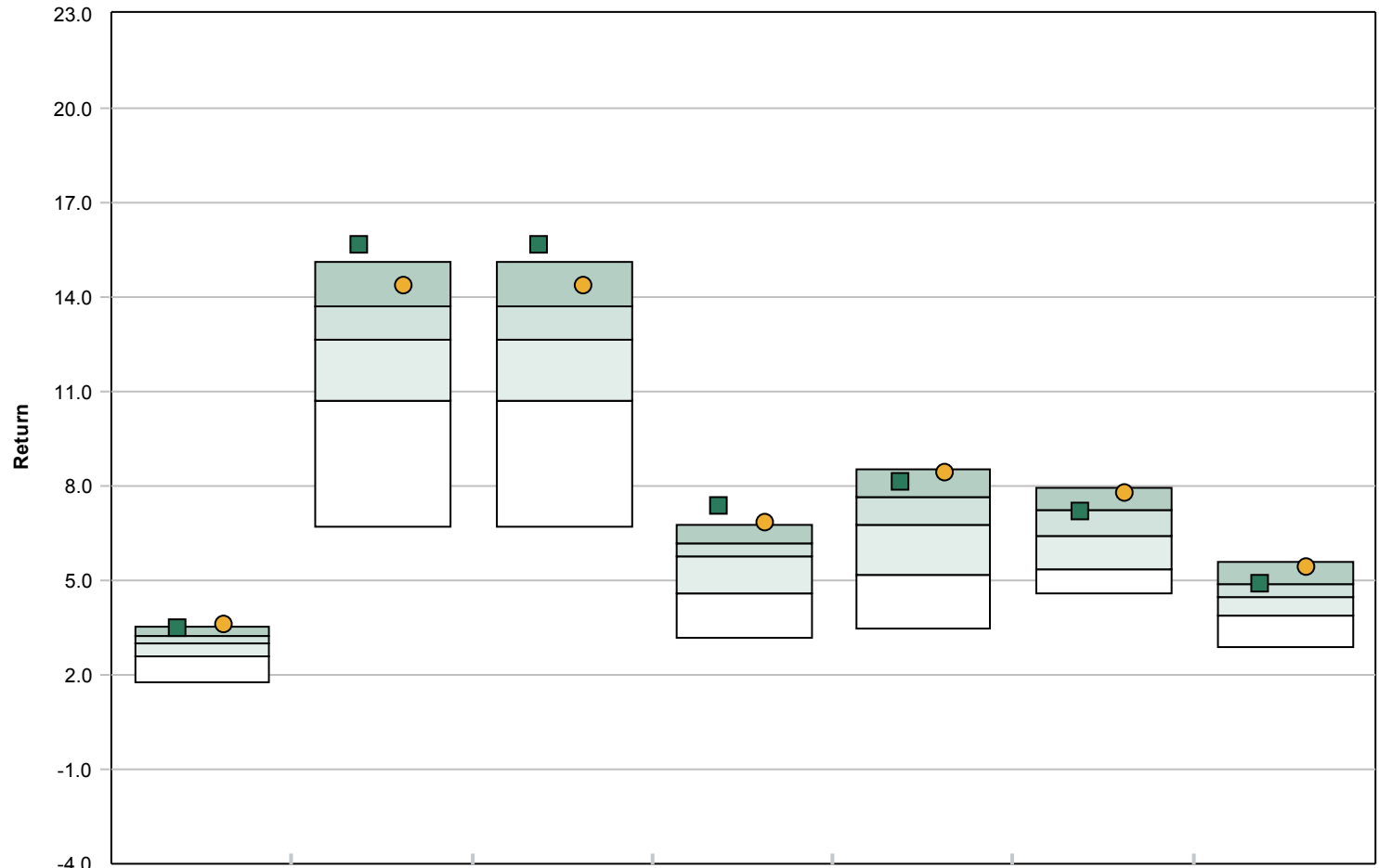
	Return	Standard Deviation
■ Fidelity Freedom 2015 K	7.48	5.66
● Fidelity Freedom 2015 Composite Benchmark	7.73	5.33
— Median	6.74	5.46

### Up Down Market Capture



\* Monthly periodicity used.

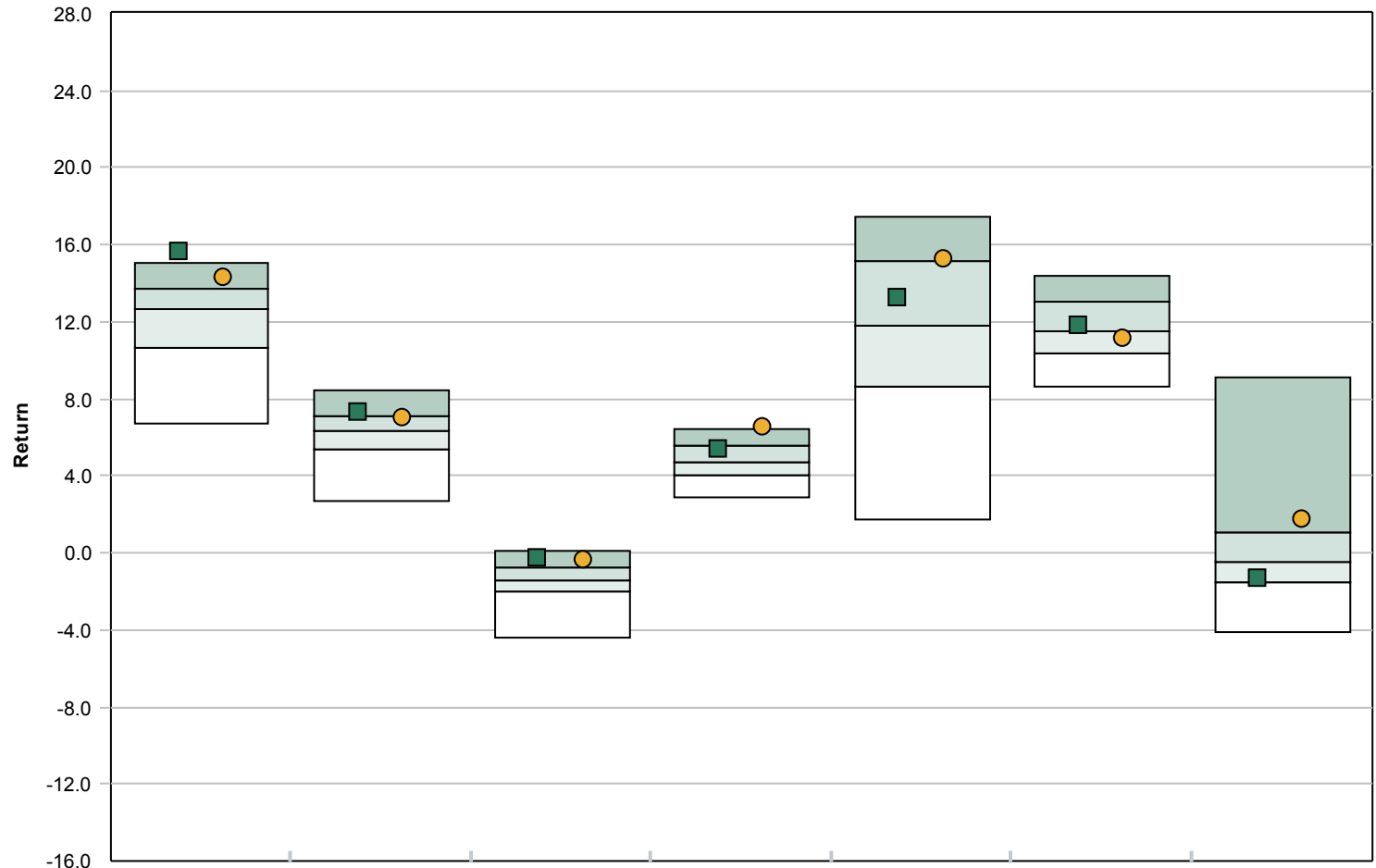
Peer Group Analysis - IM Mixed-Asset Target 2020 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2020 K	3.45 (11)	15.64 (1)	15.64 (1)	7.36 (2)	8.09 (13)	7.20 (27)	4.86 (26)
● Fidelity Freedom 2020 Composite Benchmark	3.58 (5)	14.33 (10)	14.33 (10)	6.82 (5)	8.39 (7)	7.79 (10)	5.42 (9)
5th Percentile	3.55	15.09	15.09	6.79	8.53	7.97	5.61
1st Quartile	3.23	13.68	13.68	6.20	7.67	7.21	4.89
Median	3.00	12.63	12.63	5.77	6.74	6.40	4.45
3rd Quartile	2.58	10.68	10.68	4.59	5.20	5.37	3.86
95th Percentile	1.74	6.73	6.73	3.18	3.48	4.58	2.91

Fidelity Freedom 2020 K

Peer Group Analysis - IM Mixed-Asset Target 2020 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2020 K	15.64 (1)	7.26 (22)	-0.23 (11)	5.34 (30)	13.22 (39)	11.77 (46)	-1.36 (69)
● Fidelity Freedom 2020 Composite Benchmark	14.33 (10)	7.04 (26)	-0.40 (14)	6.51 (5)	15.24 (25)	11.13 (61)	1.70 (11)
5th Percentile	15.09	8.49	0.15	6.42	17.44	14.36	9.11
1st Quartile	13.68	7.07	-0.78	5.61	15.16	13.06	1.04
Median	12.63	6.31	-1.44	4.72	11.84	11.53	-0.43
3rd Quartile	10.68	5.41	-2.03	4.02	8.62	10.35	-1.57
95th Percentile	6.73	2.74	-4.40	2.93	1.72	8.64	-4.08

## Fidelity Freedom 2020 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2020 Fund; Class K Shares	Portfolio Assets :	\$30,266 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNOX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2020 (MF)
Fund Assets :	\$17,064 Million	Style Benchmark :	Fidelity Freedom 2020 Composite Benchmark

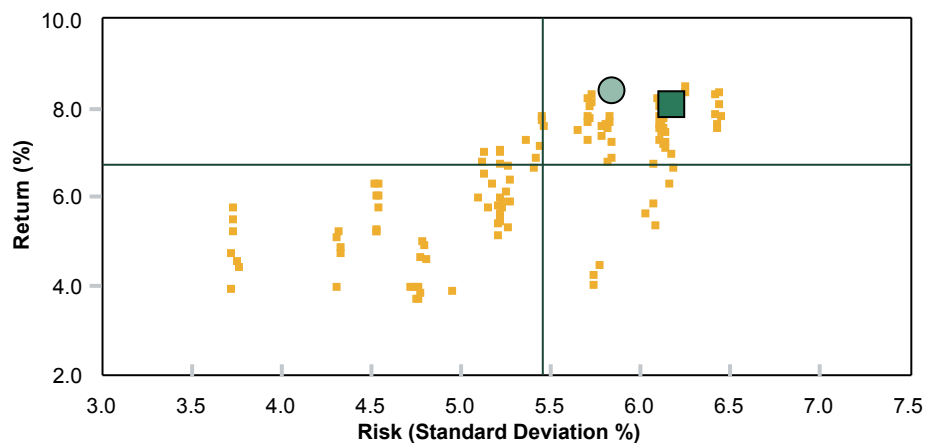
### Fund Investment Policy

The Fund seeks high total return. Invests in a mix of Fidelity equity, fixed-income and money market funds using a moderate asset allocation strategy designed for investors expecting to retire around the year 2020.

### Historical Statistics (01/01/13 - 12/31/17) \*

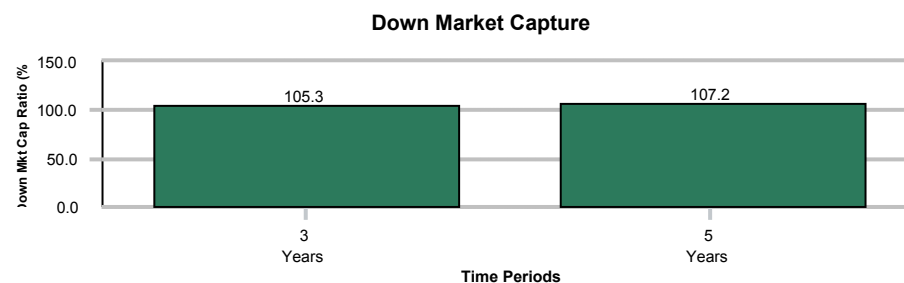
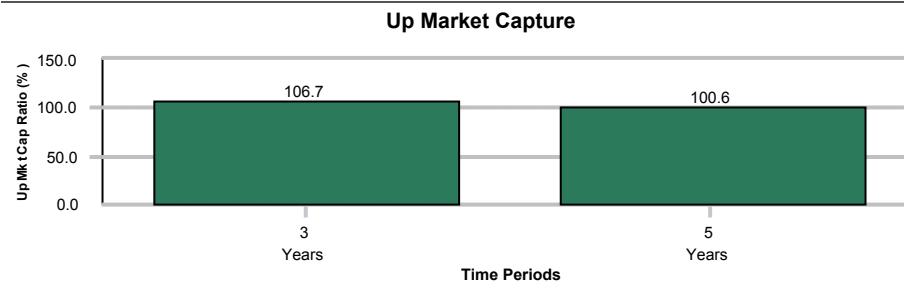
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2020 K	8.09	6.18	1.26	-0.62	1.04	0.98	0.96	-0.27	6.16	08/01/2009
Fidelity Freedom 2020 Composite Benchmark	8.39	5.85	1.37	0.00	1.00	1.00	0.00	N/A	5.84	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	5.84	-1.37	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



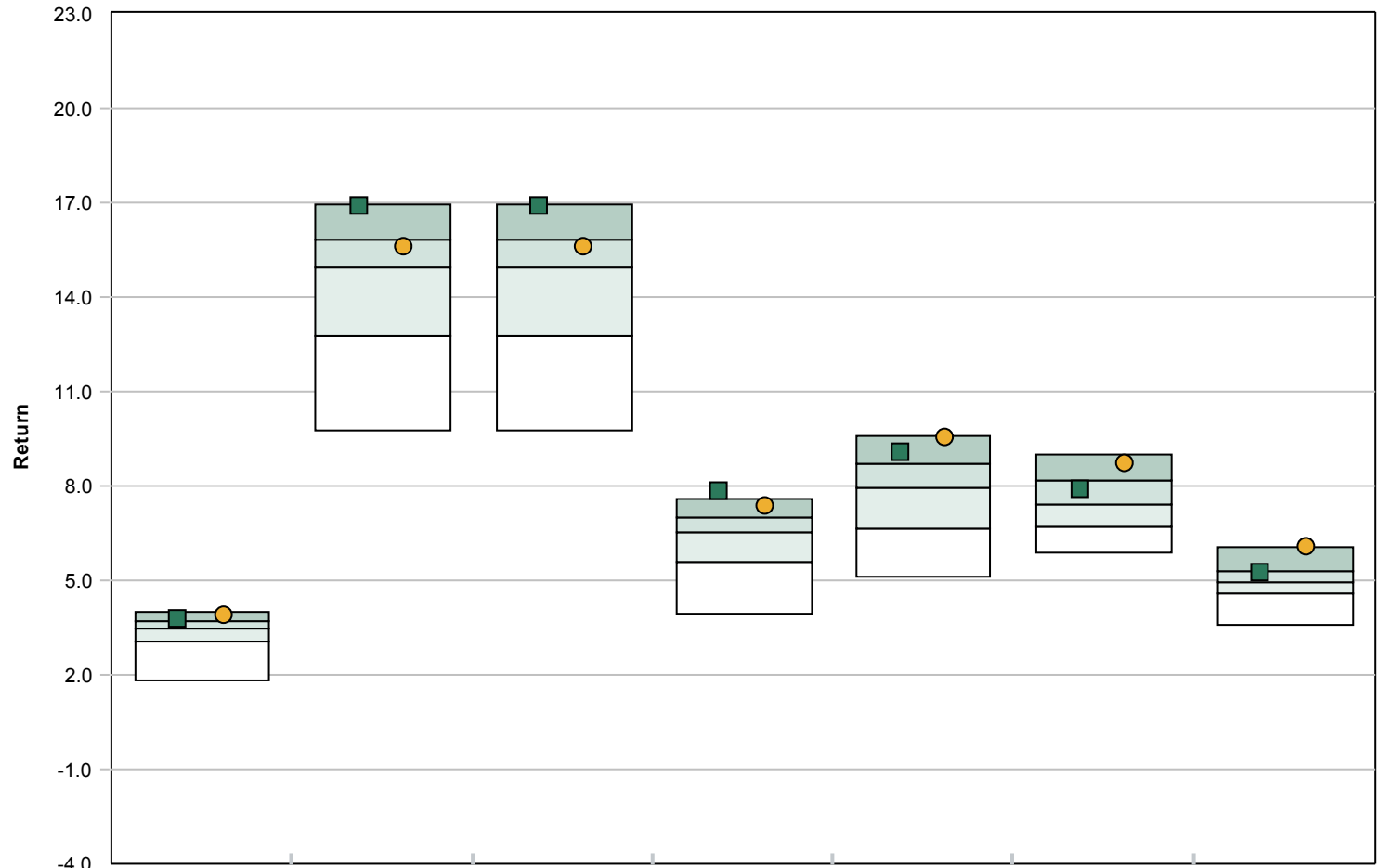
	Return	Standard Deviation
■ Fidelity Freedom 2020 K	8.09	6.18
● Fidelity Freedom 2020 Composite Benchmark	8.39	5.85
— Median	6.74	5.46

### Up Down Market Capture



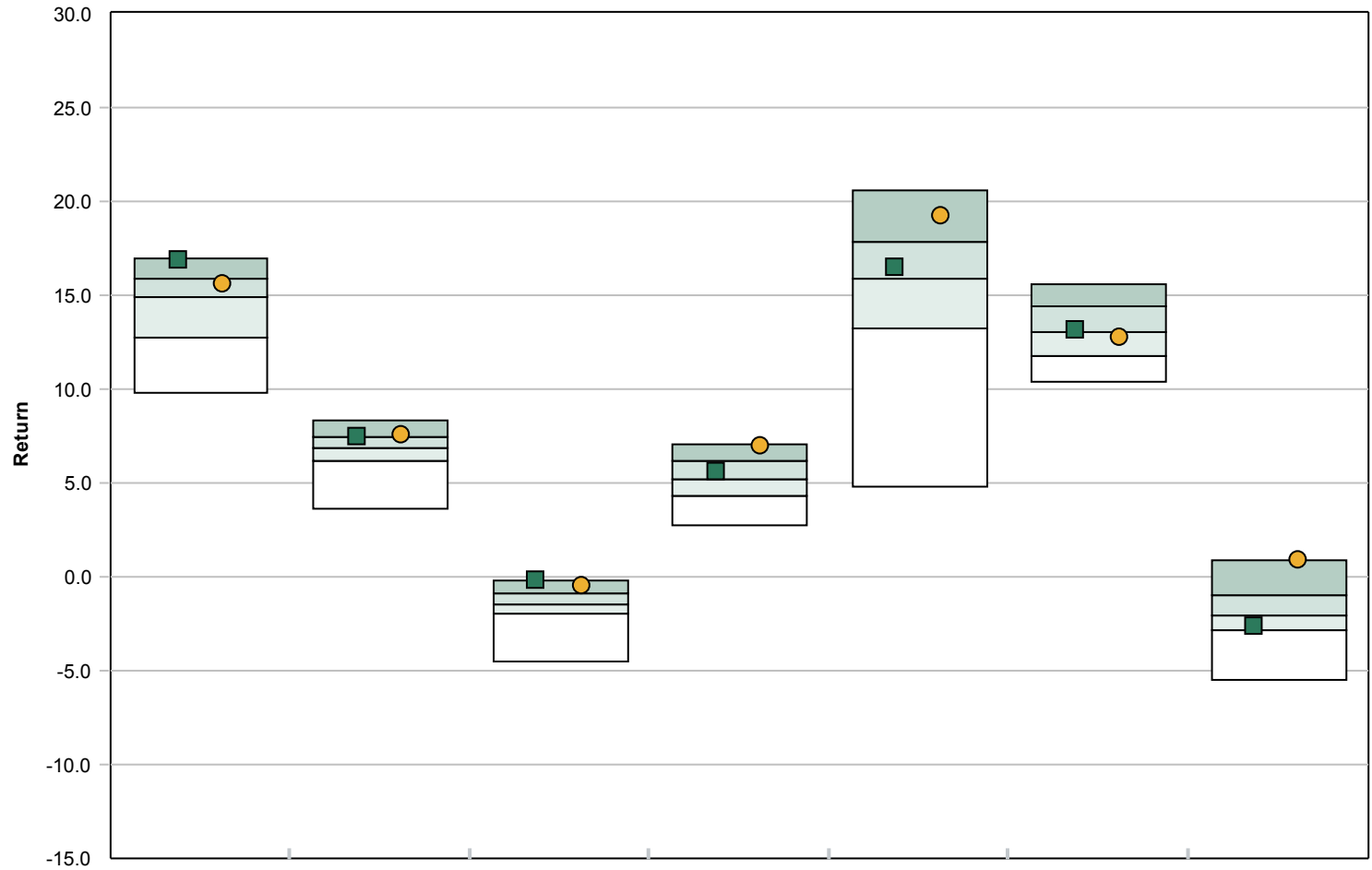
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2025 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2025 K	3.77 (20)	16.87 (6)	16.87 (6)	7.84 (2)	9.07 (16)	7.87 (33)	5.26 (37)
● Fidelity Freedom 2025 Composite Benchmark	3.91 (8)	15.58 (31)	15.58 (31)	7.34 (13)	9.54 (6)	8.72 (8)	6.07 (5)
5th Percentile	3.97	16.94	16.94	7.57	9.60	8.97	6.05
1st Quartile	3.69	15.84	15.84	7.03	8.74	8.16	5.31
Median	3.47	14.95	14.95	6.54	7.93	7.40	4.96
3rd Quartile	3.05	12.74	12.74	5.56	6.65	6.71	4.58
95th Percentile	1.84	9.78	9.78	3.94	5.11	5.90	3.56

Peer Group Analysis - IM Mixed-Asset Target 2025 (MF)



■ Fidelity Freedom 2025 K  
● Fidelity Freedom 2025 Composite Benchmark

	2017	2016	2015	2014	2013	2012	2011
Fidelity Freedom 2025 K	16.87 (6)	7.47 (26)	-0.16 (6)	5.63 (37)	16.50 (43)	13.15 (48)	-2.65 (71)
Fidelity Freedom 2025 Composite Benchmark	15.58 (31)	7.57 (22)	-0.52 (17)	7.00 (6)	19.18 (15)	12.78 (54)	0.92 (5)
5th Percentile	16.94	8.38	-0.16	7.07	20.59	15.54	0.84
1st Quartile	15.84	7.49	-0.91	6.18	17.82	14.45	-0.96
Median	14.95	6.87	-1.44	5.19	15.85	13.00	-2.03
3rd Quartile	12.74	6.15	-1.93	4.36	13.19	11.74	-2.86
95th Percentile	9.78	3.63	-4.47	2.72	4.78	10.37	-5.46

# Fidelity Freedom 2025 K

## Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2025 Fund; Class K Shares	Portfolio Assets :	\$26,774 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNPX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2030 (MF)
Fund Assets :	\$15,717 Million	Style Benchmark :	Fidelity Freedom 2025 Composite Benchmark

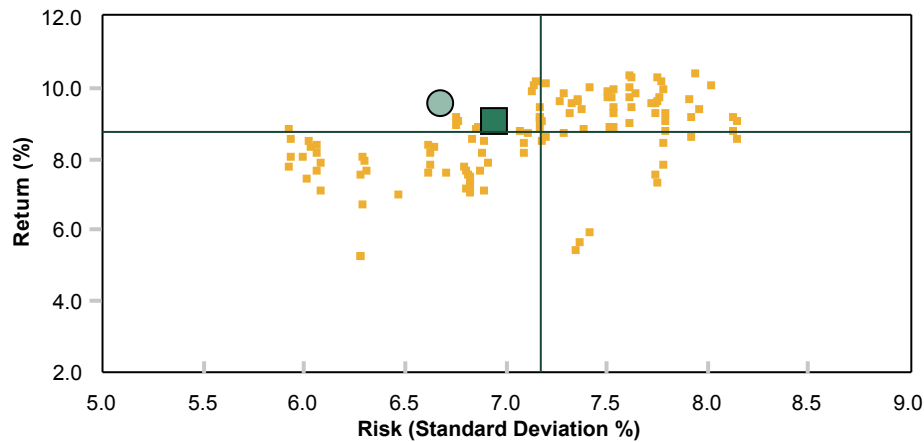
## Fund Investment Policy

The Fund seeks high total return through investing in a combination of Fidelity equity, fixed-income, and money market funds (underlying Fidelity funds). It is targeted to investors expected to retire around the year 2025.

## Historical Statistics (01/01/13 - 12/31/17) \*

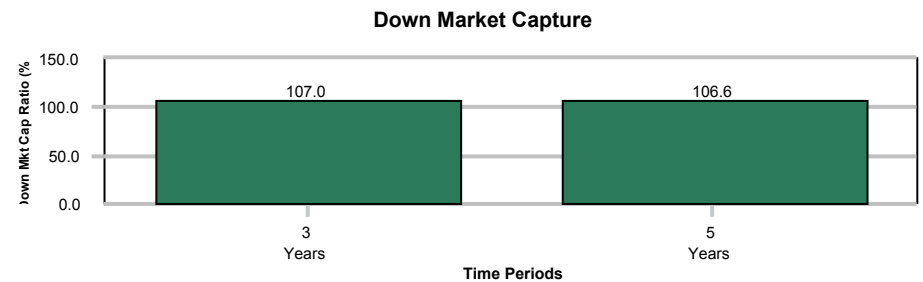
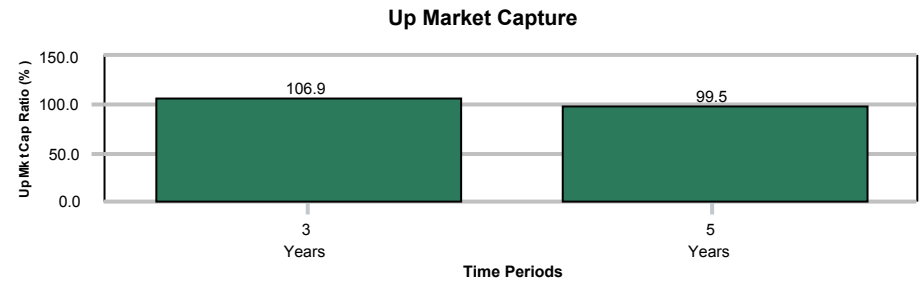
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2025 K	9.07	6.94	1.26	-0.68	1.03	0.98	1.05	-0.40	6.93	08/01/2009
Fidelity Freedom 2025 Composite Benchmark	9.54	6.68	1.37	0.00	1.00	1.00	0.00	N/A	6.67	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	6.67	-1.37	0.00	08/01/2009

## Peer Group Scattergram (01/01/13 to 12/31/17)



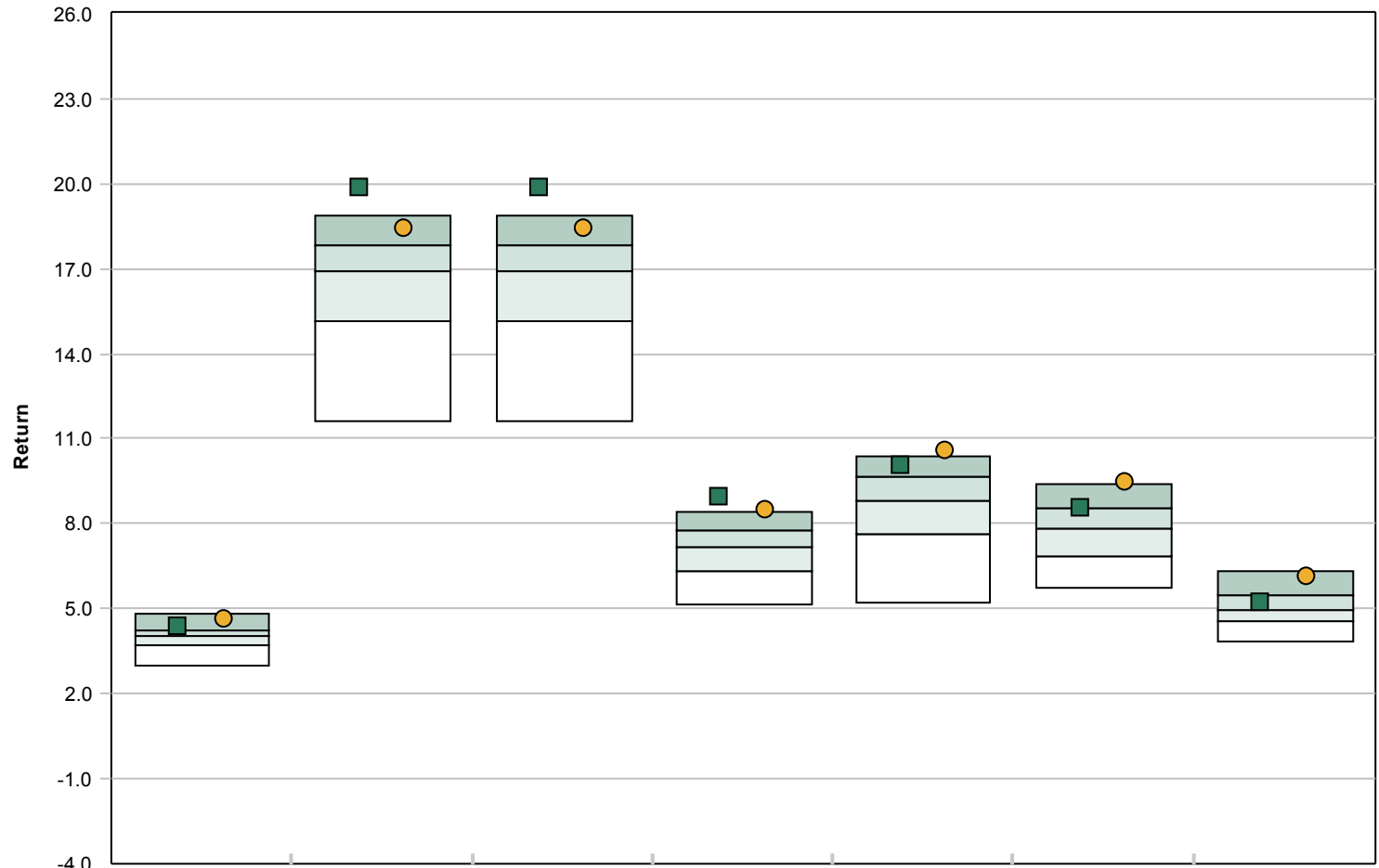
	Return	Standard Deviation
■ Fidelity Freedom 2025 K	9.07	6.94
● Fidelity Freedom 2025 Composite Benchmark	9.54	6.68
— Median	8.78	7.18

## Up Down Market Capture



\* Monthly periodicity used.

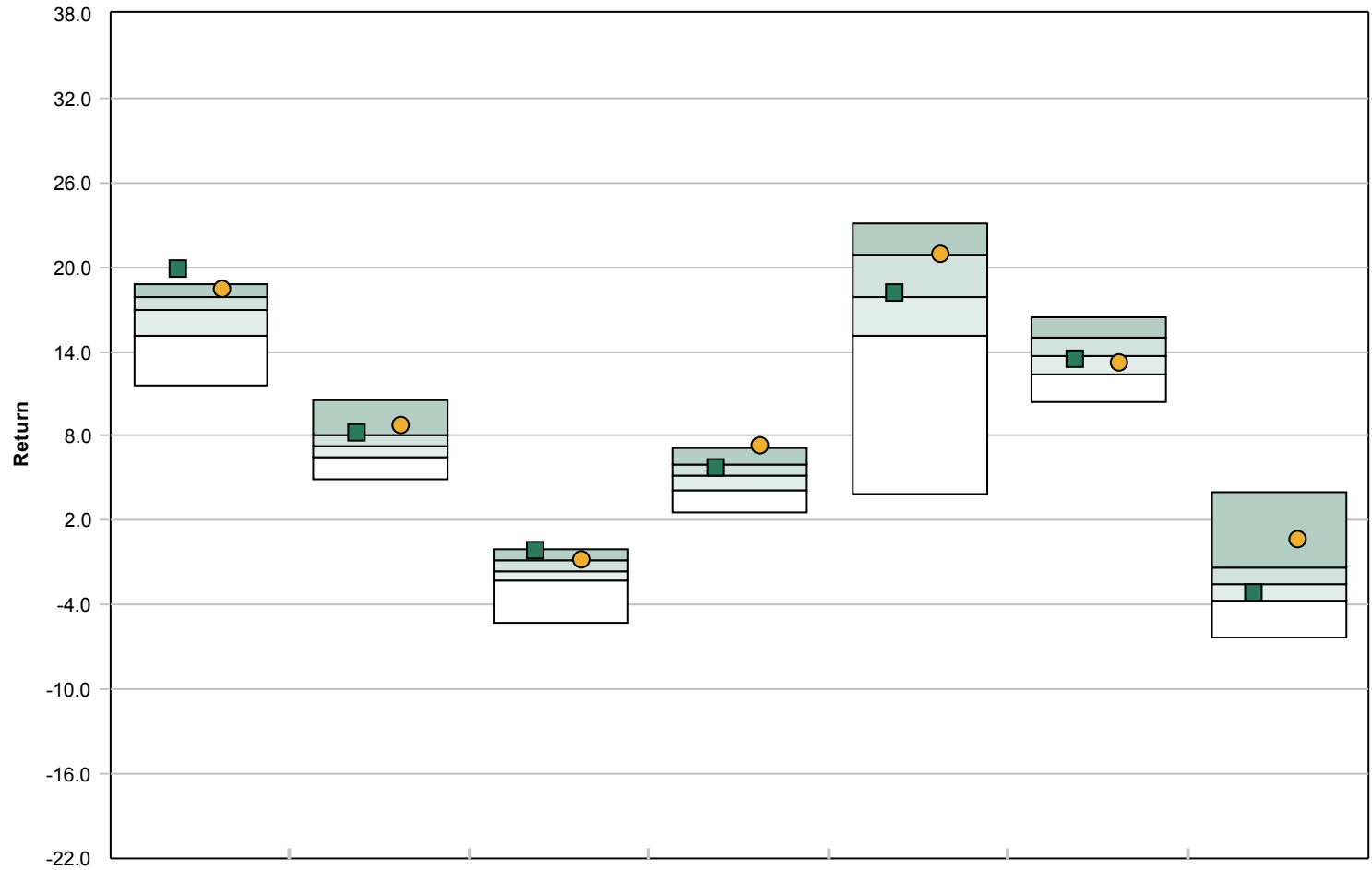
Peer Group Analysis - IM Mixed-Asset Target 2030 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2030 K	4.38 (18)	19.86 (1)	19.86 (1)	8.97 (1)	10.06 (13)	8.54 (24)	5.24 (36)
● Fidelity Freedom 2030 Composite Benchmark	4.62 (6)	18.41 (11)	18.41 (11)	8.48 (5)	10.58 (5)	9.46 (5)	6.14 (10)
5th Percentile	4.79	18.85	18.85	8.45	10.41	9.40	6.36
1st Quartile	4.24	17.82	17.82	7.75	9.65	8.52	5.49
Median	4.02	16.91	16.91	7.19	8.78	7.83	4.95
3rd Quartile	3.74	15.17	15.17	6.31	7.65	6.85	4.54
95th Percentile	2.98	11.63	11.63	5.12	5.23	5.73	3.82



Peer Group Analysis - IM Mixed-Asset Target 2030 (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2030 K	19.86 (1)	8.13 (25)	-0.16 (7)	5.67 (34)	18.13 (48)	13.47 (55)	-3.15 (66)
● Fidelity Freedom 2030 Composite Benchmark	18.41 (11)	8.75 (11)	-0.86 (25)	7.22 (5)	20.82 (26)	13.21 (61)	0.58 (8)
5th Percentile	18.85	10.56	-0.05	7.17	23.05	16.47	4.00
1st Quartile	17.82	8.12	-0.89	6.02	20.82	14.97	-1.40
Median	16.91	7.31	-1.61	5.18	17.87	13.71	-2.56
3rd Quartile	15.17	6.46	-2.24	4.16	15.19	12.42	-3.68
95th Percentile	11.63	4.94	-5.22	2.52	3.83	10.42	-6.34

## Fidelity Freedom 2030 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2030 Fund; Class K Shares	Portfolio Assets :	\$31,377 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNQX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2030 (MF)
Fund Assets :	\$18,448 Million	Style Benchmark :	Fidelity Freedom 2030 Composite Benchmark

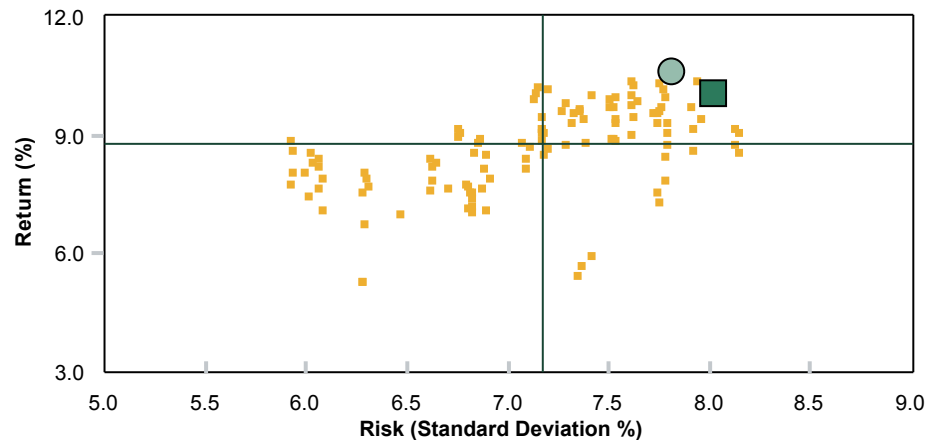
### Fund Investment Policy

The Fund seeks high total return. Invests in a mix of Fidelity equity, fixed-income and money market funds using a moderate asset allocation strategy designed for investors expecting to retire around the year 2030.

### Historical Statistics (01/01/13 - 12/31/17) \*

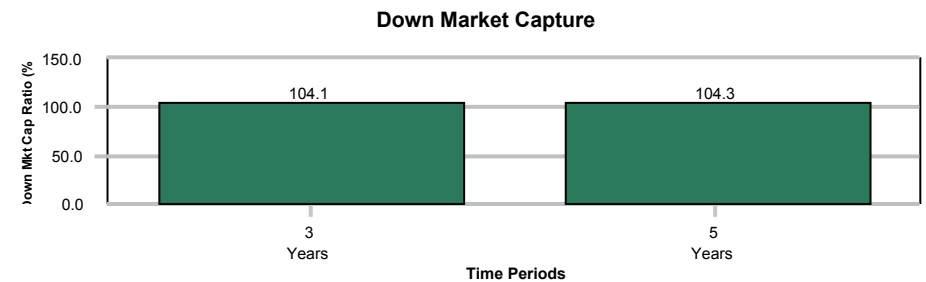
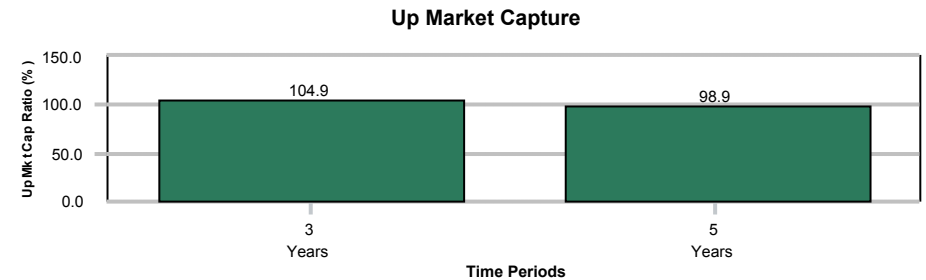
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2030 K	10.06	8.02	1.21	-0.63	1.02	0.98	1.15	-0.40	8.01	08/01/2009
Fidelity Freedom 2030 Composite Benchmark	10.58	7.81	1.30	0.00	1.00	1.00	0.00	N/A	7.80	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	7.80	-1.30	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



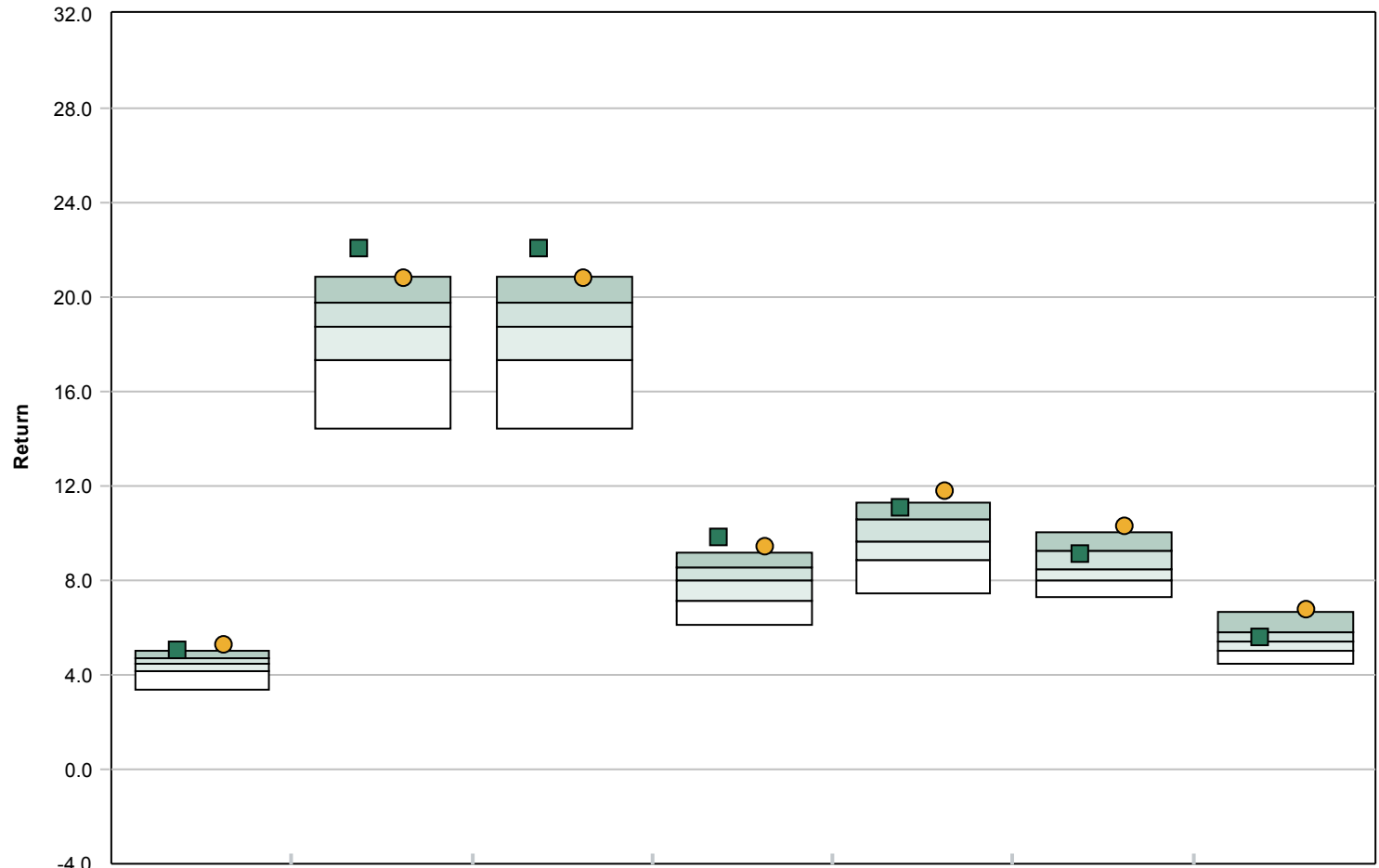
	Return	Standard Deviation
■ Fidelity Freedom 2030 K	10.06	8.02
● Fidelity Freedom 2030 Composite Benchmark	10.58	7.81
— Median	8.78	7.18

### Up Down Market Capture



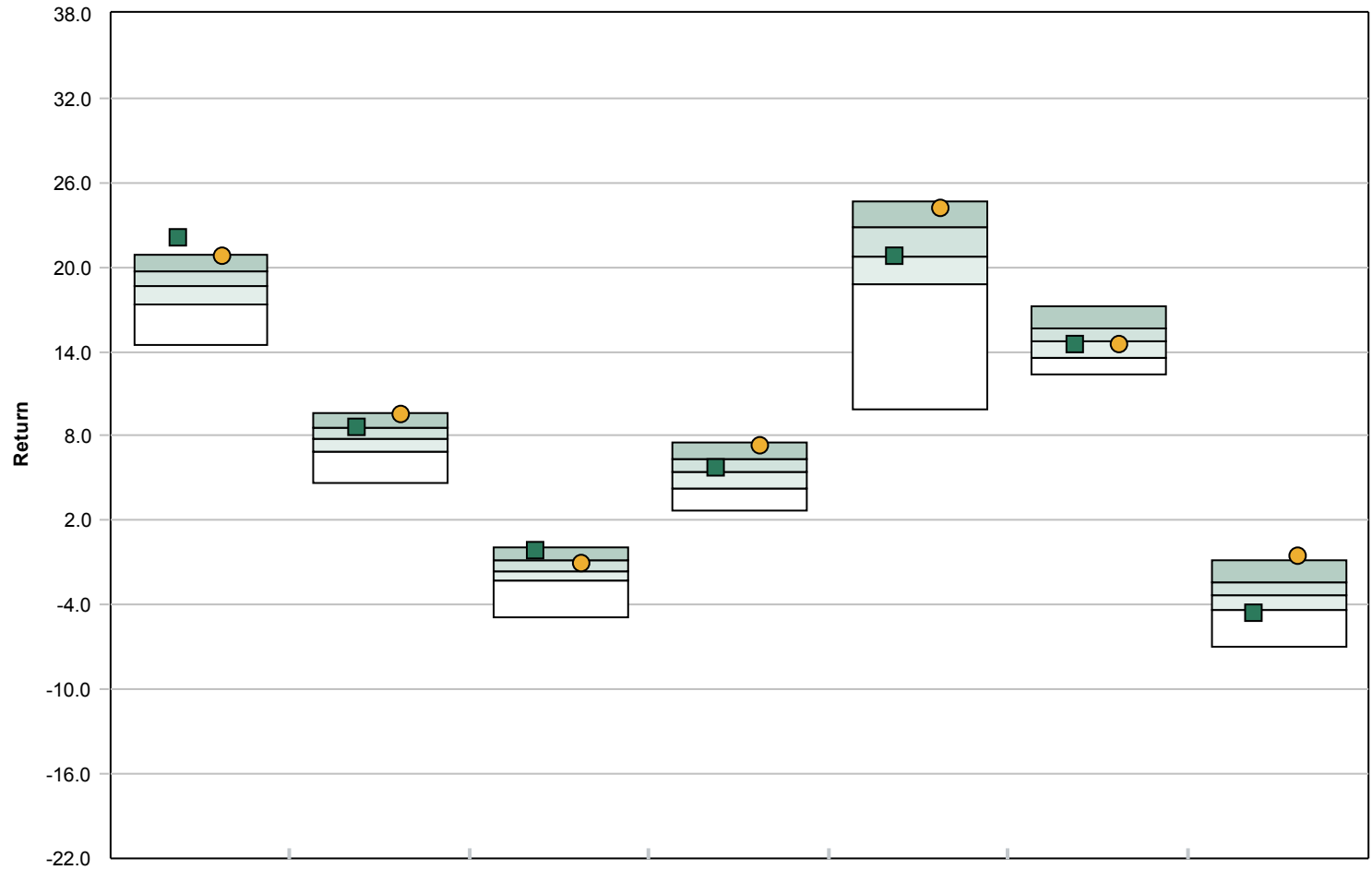
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2035 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2035 K	5.00 (5)	22.01 (1)	22.01 (1)	9.77 (1)	11.04 (9)	9.13 (30)	5.59 (42)
● Fidelity Freedom 2035 Composite Benchmark	5.29 (1)	20.75 (7)	20.75 (7)	9.38 (3)	11.75 (3)	10.29 (3)	6.74 (5)
5th Percentile	5.00	20.90	20.90	9.20	11.26	10.06	6.67
1st Quartile	4.69	19.75	19.75	8.53	10.56	9.22	5.80
Median	4.44	18.72	18.72	7.96	9.66	8.50	5.45
3rd Quartile	4.14	17.35	17.35	7.16	8.90	8.00	5.03
95th Percentile	3.37	14.43	14.43	6.09	7.48	7.28	4.45

Peer Group Analysis - IM Mixed-Asset Target 2035 (MF)



■ Fidelity Freedom 2035 K  
● Fidelity Freedom 2035 Composite Benchmark

	2017	2016	2015	2014	2013	2012	2011
	22.01 (1)	8.63 (21)	-0.21 (11)	5.75 (39)	20.68 (53)	14.45 (59)	-4.59 (80)
	20.75 (7)	9.53 (6)	-1.05 (31)	7.29 (7)	24.11 (9)	14.53 (56)	-0.56 (5)
5th Percentile	20.90	9.61	0.06	7.56	24.72	17.18	-0.86
1st Quartile	19.75	8.55	-0.78	6.35	22.78	15.71	-2.41
Median	18.72	7.75	-1.66	5.40	20.78	14.75	-3.34
3rd Quartile	17.35	6.87	-2.23	4.33	18.78	13.59	-4.35
95th Percentile	14.43	4.62	-4.85	2.66	9.89	12.39	-7.02

## Fidelity Freedom 2035 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2035 Fund; Class K Shares	Portfolio Assets :	\$21,304 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNUX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2035 (MF)
Fund Assets :	\$12,982 Million	Style Benchmark :	Fidelity Freedom 2035 Composite Benchmark

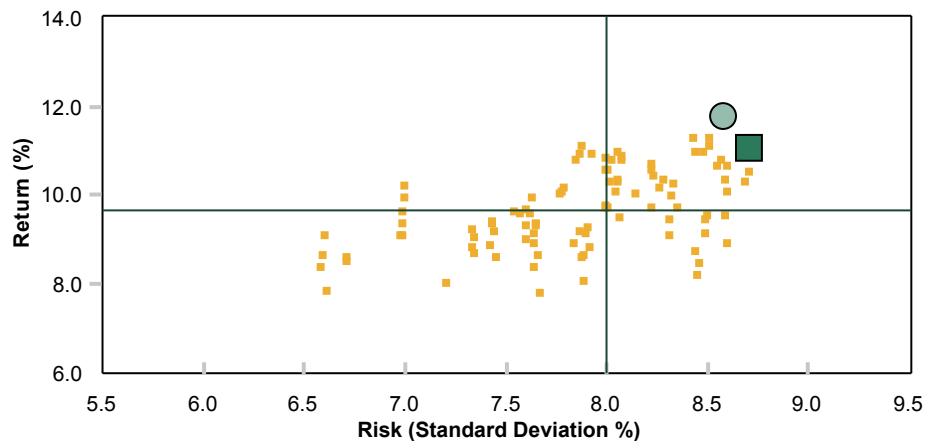
### Fund Investment Policy

The Fund seeks high total return through investing in a combination of Fidelity equity, fixed-income, and money market funds (underlying Fidelity funds). It is targeted to investors expected to retire around the year 2035.

### Historical Statistics (01/01/13 - 12/31/17) \*

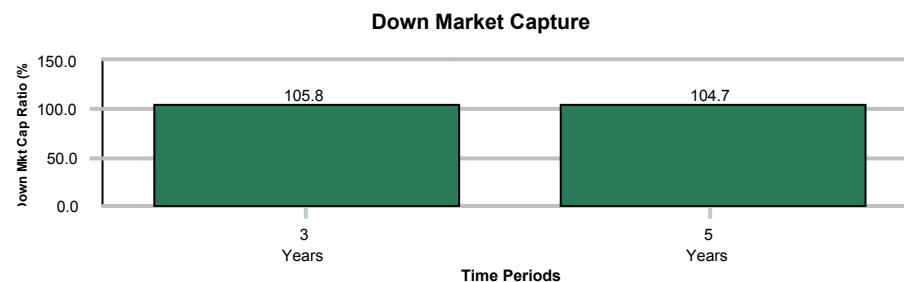
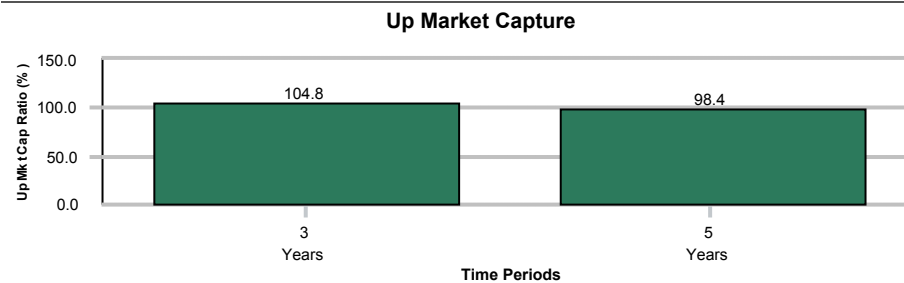
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2035 K	11.04	8.71	1.22	-0.68	1.00	0.98	1.22	-0.52	8.69	08/01/2009
Fidelity Freedom 2035 Composite Benchmark	11.75	8.59	1.32	0.00	1.00	1.00	0.00	N/A	8.58	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.58	-1.32	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



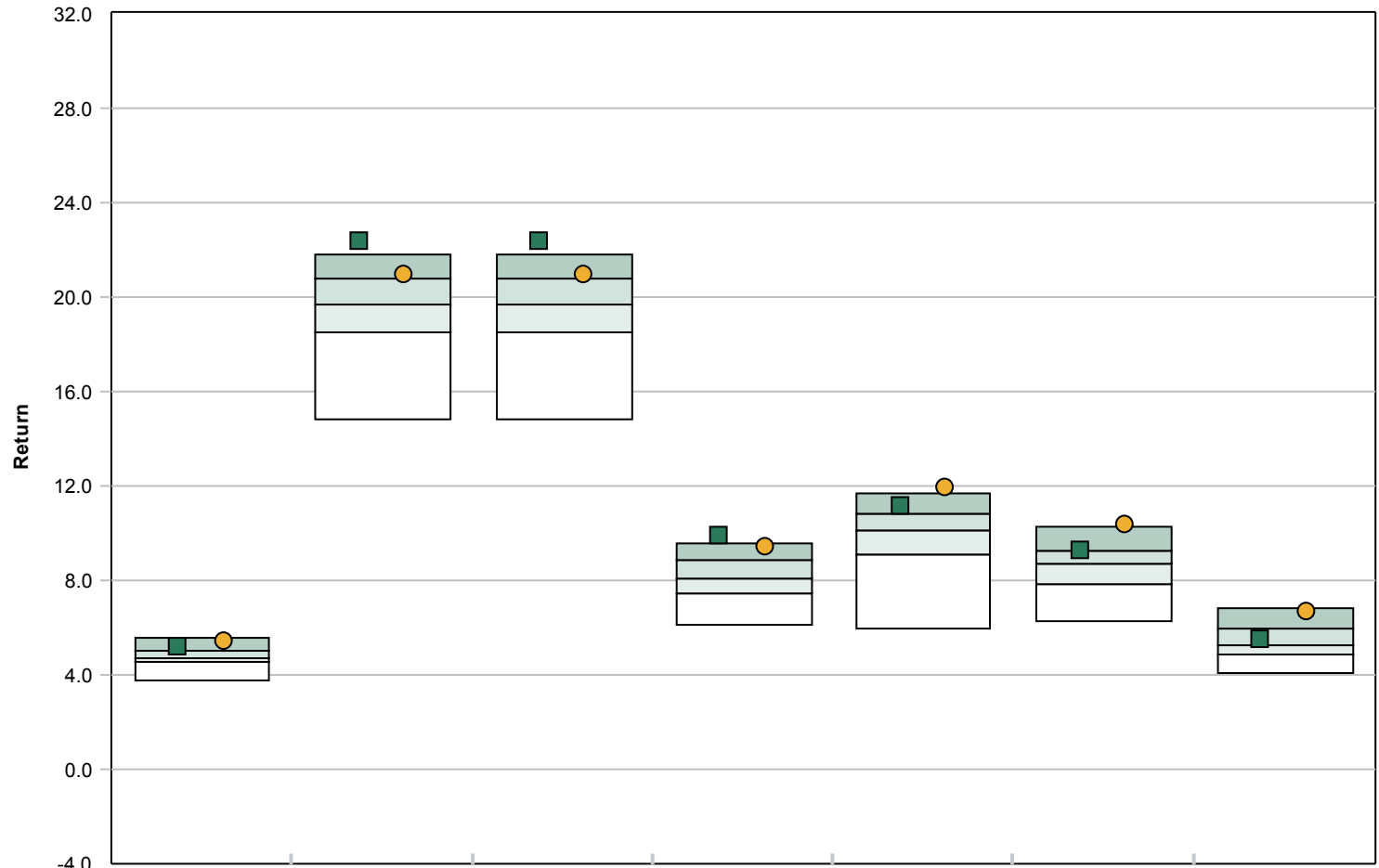
	Return	Standard Deviation
■ Fidelity Freedom 2035 K	11.04	8.71
● Fidelity Freedom 2035 Composite Benchmark	11.75	8.59
— Median	9.66	8.00

### Up Down Market Capture



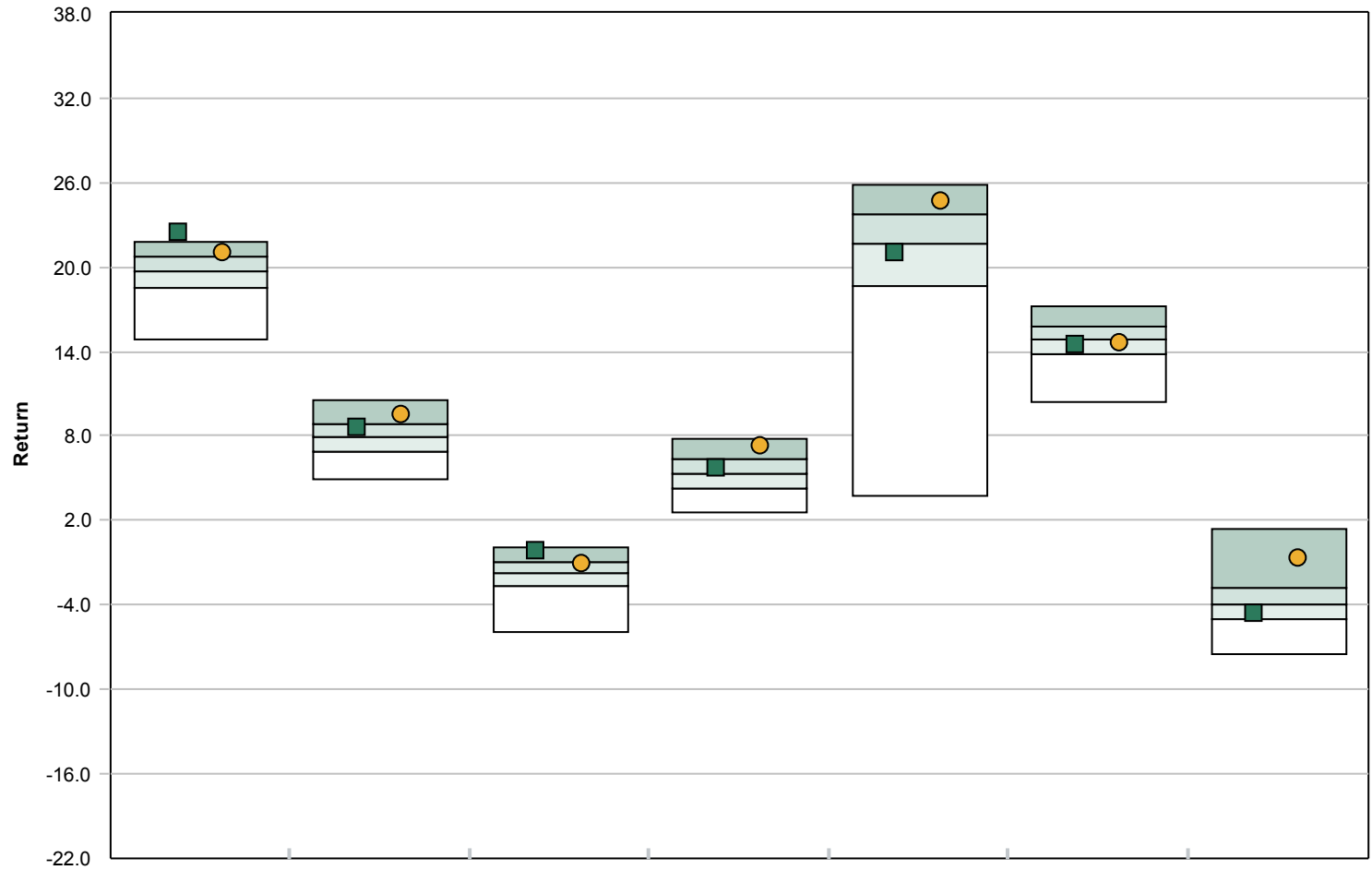
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2040 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2040 K	5.16 (13)	22.38 (2)	22.38 (2)	9.88 (1)	11.17 (18)	9.22 (27)	5.53 (40)
● Fidelity Freedom 2040 Composite Benchmark	5.38 (7)	20.96 (21)	20.96 (21)	9.45 (9)	11.89 (4)	10.39 (4)	6.70 (8)
5th Percentile	5.58	21.82	21.82	9.55	11.70	10.30	6.79
1st Quartile	5.00	20.76	20.76	8.87	10.81	9.27	5.94
Median	4.74	19.71	19.71	8.11	10.08	8.67	5.27
3rd Quartile	4.52	18.48	18.48	7.49	9.11	7.83	4.86
95th Percentile	3.77	14.86	14.86	6.11	5.94	6.26	4.04

Peer Group Analysis - IM Mixed-Asset Target 2040 (MF)



■ Fidelity Freedom 2040 K  
● Fidelity Freedom 2040 Composite Benchmark

	2017	2016	2015	2014	2013	2012	2011
	22.38 (2)	8.60 (35)	-0.18 (11)	5.71 (41)	21.05 (55)	14.53 (62)	-4.63 (64)
	20.96 (21)	9.54 (14)	-1.05 (28)	7.29 (11)	24.66 (13)	14.64 (59)	-0.63 (8)
5th Percentile	21.82	10.61	0.05	7.76	25.84	17.25	1.34
1st Quartile	20.76	8.78	-0.94	6.39	23.72	15.79	-2.82
Median	19.71	7.98	-1.75	5.38	21.61	14.92	-3.93
3rd Quartile	18.48	6.95	-2.61	4.27	18.67	13.80	-4.96
95th Percentile	14.86	4.95	-5.93	2.64	3.76	10.45	-7.49

## Fidelity Freedom 2040 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2040 Fund; Class K Shares	Portfolio Assets :	\$22,031 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNVX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2035 (MF)
Fund Assets :	\$13,575 Million	Style Benchmark :	Fidelity Freedom 2040 Composite Benchmark

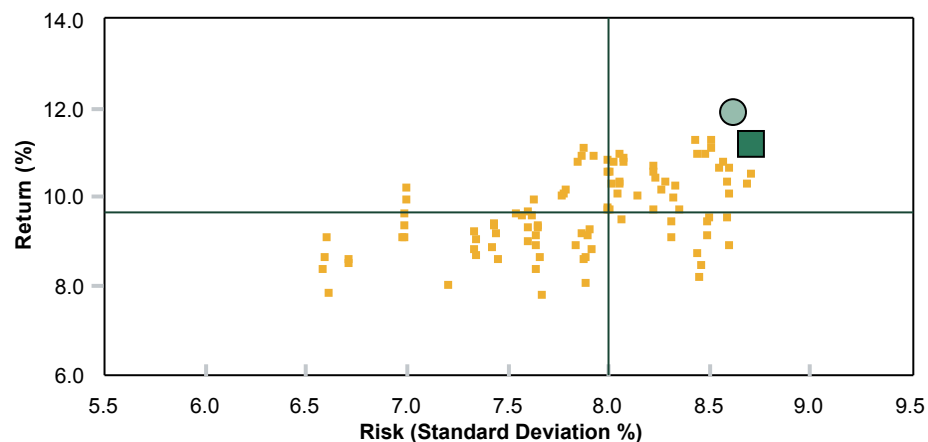
### Fund Investment Policy

The Fund seeks high total return. Invests in a mix of Fidelity equity, fixed-income, and money market funds using an increasingly conservative allocation strategy designed for investors expecting to retire around the year 2040.

### Historical Statistics (01/01/13 - 12/31/17) \*

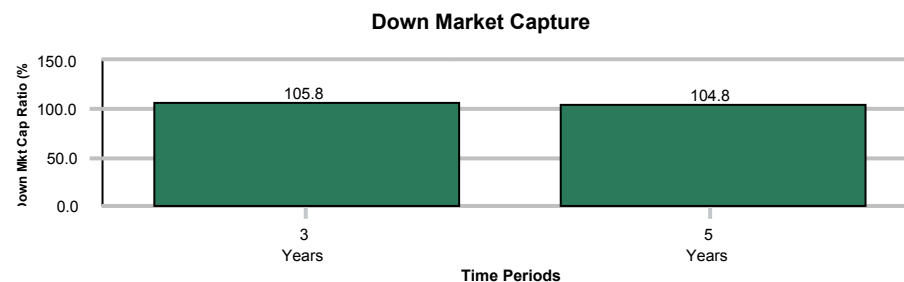
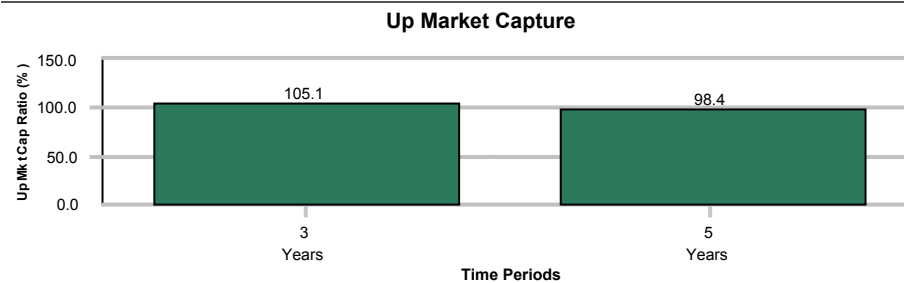
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2040 K	11.17	8.71	1.24	-0.65	1.00	0.98	1.24	-0.52	8.70	08/01/2009
Fidelity Freedom 2040 Composite Benchmark	11.89	8.62	1.33	0.00	1.00	1.00	0.00	N/A	8.61	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.61	-1.33	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Freedom 2040 K	11.17	8.71
● Fidelity Freedom 2040 Composite Benchmark	11.89	8.62
— Median	9.66	8.00

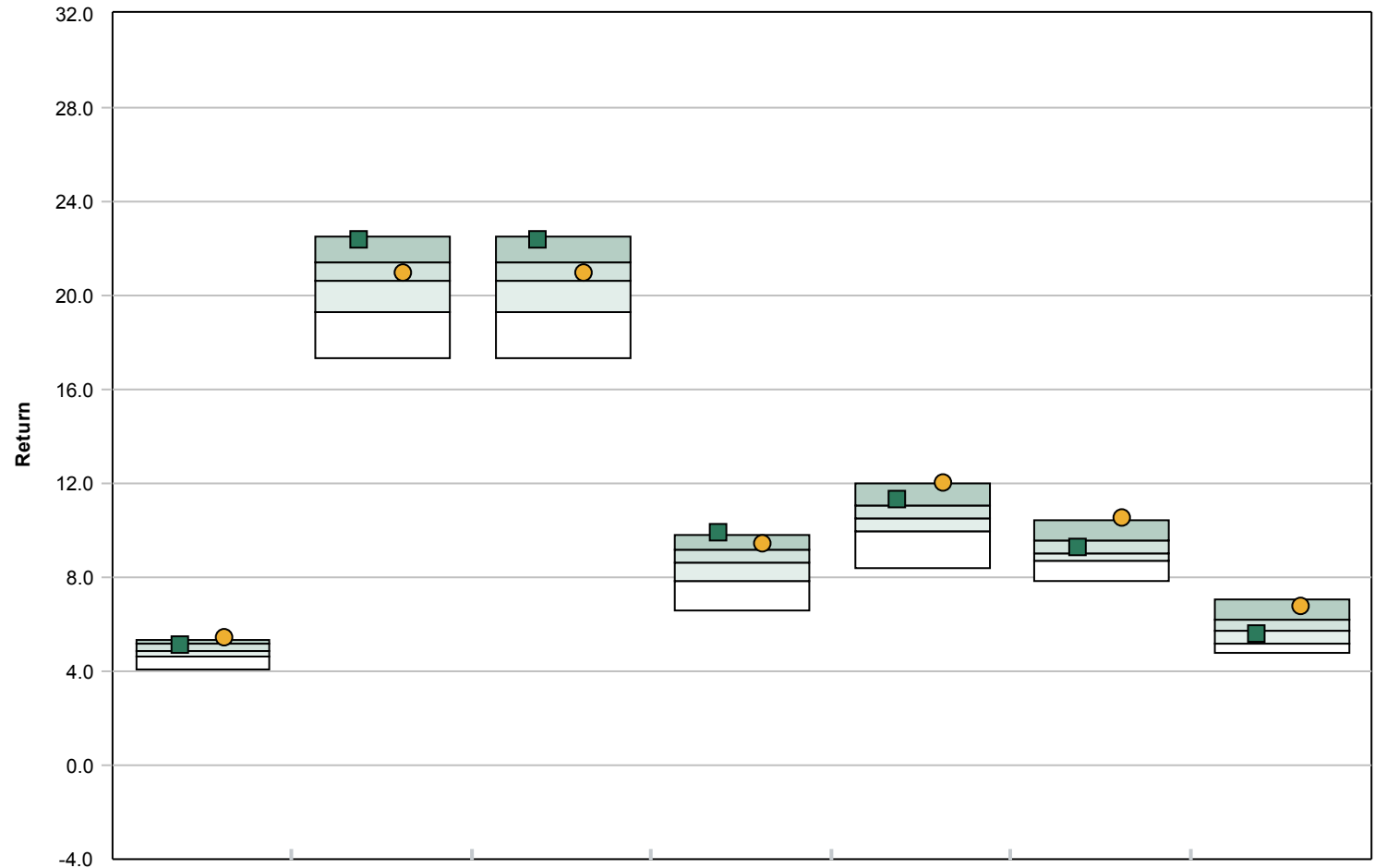
### Up Down Market Capture



\* Monthly periodicity used.

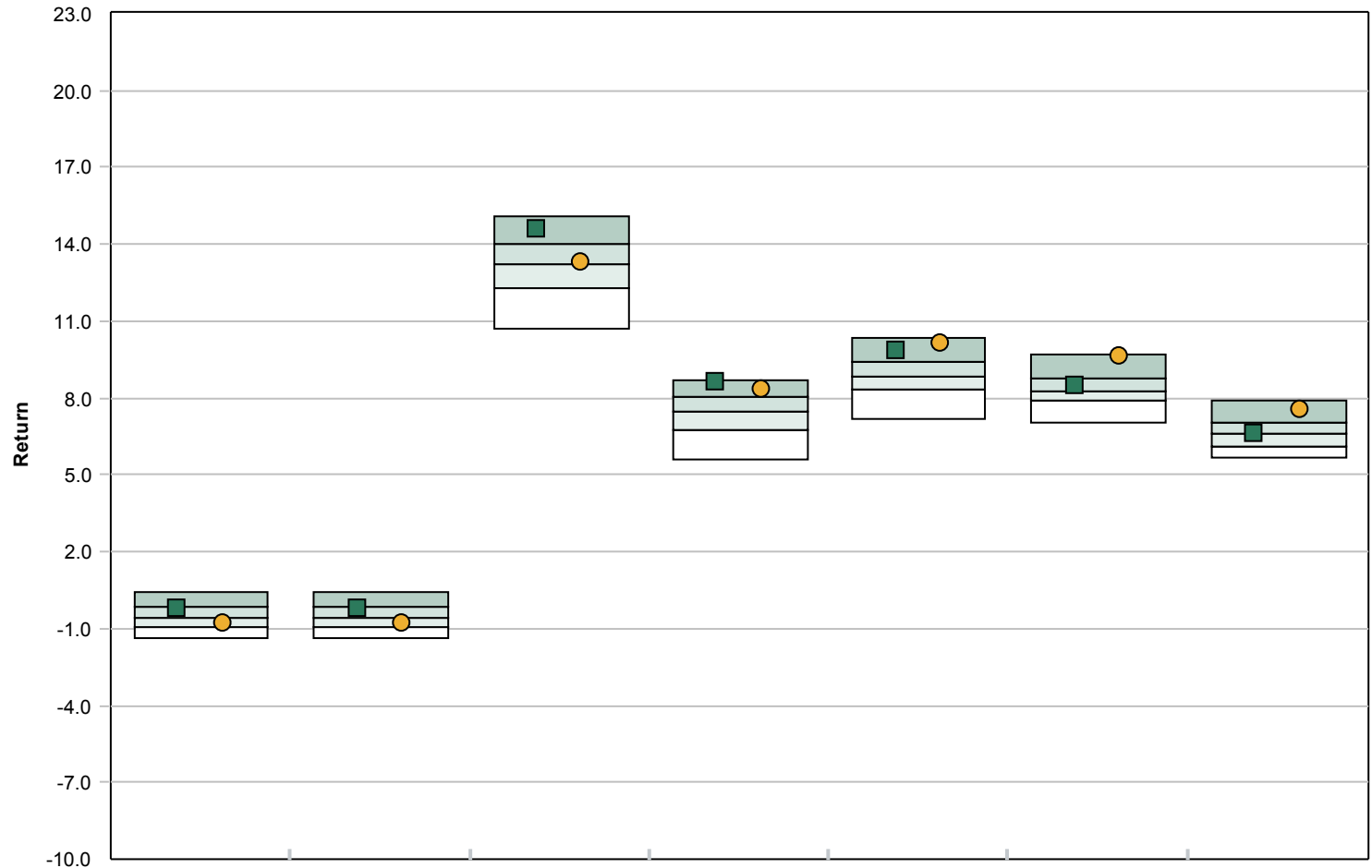


Peer Group Analysis - IM Mixed-Asset Target 2045 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2045 K	5.12 (31)	22.36 (6)	22.36 (6)	9.87 (4)	11.28 (20)	9.27 (39)	5.54 (59)
● Fidelity Freedom 2045 Composite Benchmark	5.38 (5)	20.96 (42)	20.96 (42)	9.45 (13)	12.01 (5)	10.47 (5)	6.73 (14)
5th Percentile	5.37	22.47	22.47	9.80	11.97	10.46	7.03
1st Quartile	5.19	21.44	21.44	9.17	11.10	9.58	6.23
Median	4.85	20.65	20.65	8.65	10.52	9.05	5.73
3rd Quartile	4.65	19.29	19.29	7.85	9.98	8.67	5.20
95th Percentile	4.07	17.35	17.35	6.58	8.36	7.85	4.80

Peer Group Analysis - IM Mixed-Asset Target 2045 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2045 K	-0.25 (29)	-0.25 (29)	14.62 (12)	8.65 (7)	9.82 (15)	8.45 (40)	6.60 (50)
● Fidelity Freedom 2045 Composite Benchmark	-0.81 (64)	-0.81 (64)	13.33 (48)	8.33 (15)	10.12 (9)	9.61 (7)	7.57 (15)
5th Percentile	0.41	0.41	15.09	8.70	10.35	9.68	7.90
1st Quartile	-0.13	-0.13	14.04	8.07	9.38	8.78	7.04
Median	-0.58	-0.58	13.24	7.51	8.87	8.26	6.60
3rd Quartile	-0.93	-0.93	12.25	6.74	8.36	7.87	6.12
95th Percentile	-1.40	-1.40	10.67	5.58	7.16	7.07	5.65

## Fidelity Freedom 2045 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2045 Fund; Class K Shares	Portfolio Assets :	\$12,948 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FSNZX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2035 (MF)
Fund Assets :	\$8,749 Million	Style Benchmark :	Fidelity Freedom 2045 Composite Benchmark

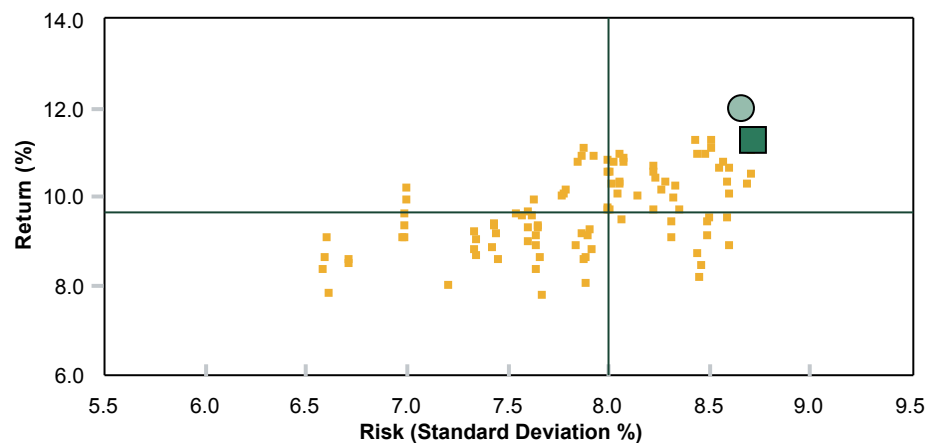
### Fund Investment Policy

The Fund seeks high total return until its target retirement date. Thereafter the Fund's objective will be to seek high current income and, as a secondary objective, capital appreciation. The Fund invests in a combination of underlying Fidelity equity, fixed-income, and short-term funds.

### Historical Statistics (01/01/13 - 12/31/17) \*

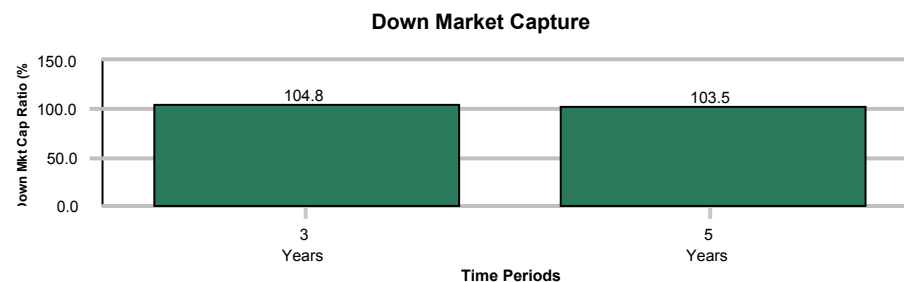
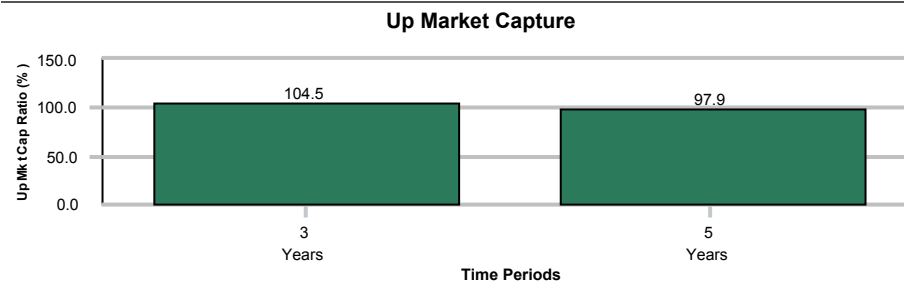
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2045 K	11.28	8.72	1.25	-0.62	1.00	0.98	1.22	-0.53	8.71	08/01/2009
Fidelity Freedom 2045 Composite Benchmark	12.01	8.66	1.33	0.00	1.00	1.00	0.00	N/A	8.65	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.65	-1.33	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



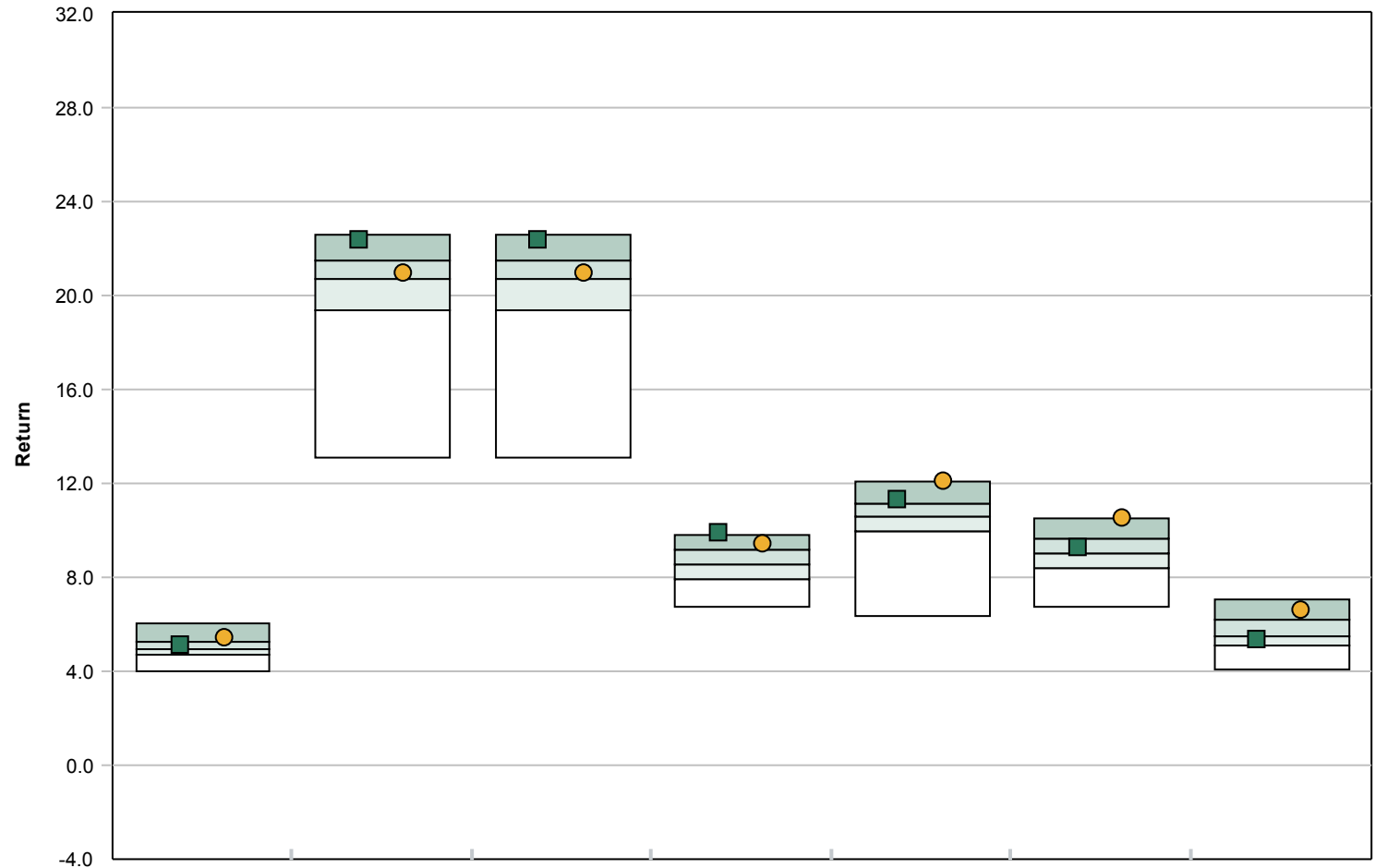
	Return	Standard Deviation
■ Fidelity Freedom 2045 K	11.28	8.72
● Fidelity Freedom 2045 Composite Benchmark	12.01	8.66
— Median	9.66	8.00

### Up Down Market Capture



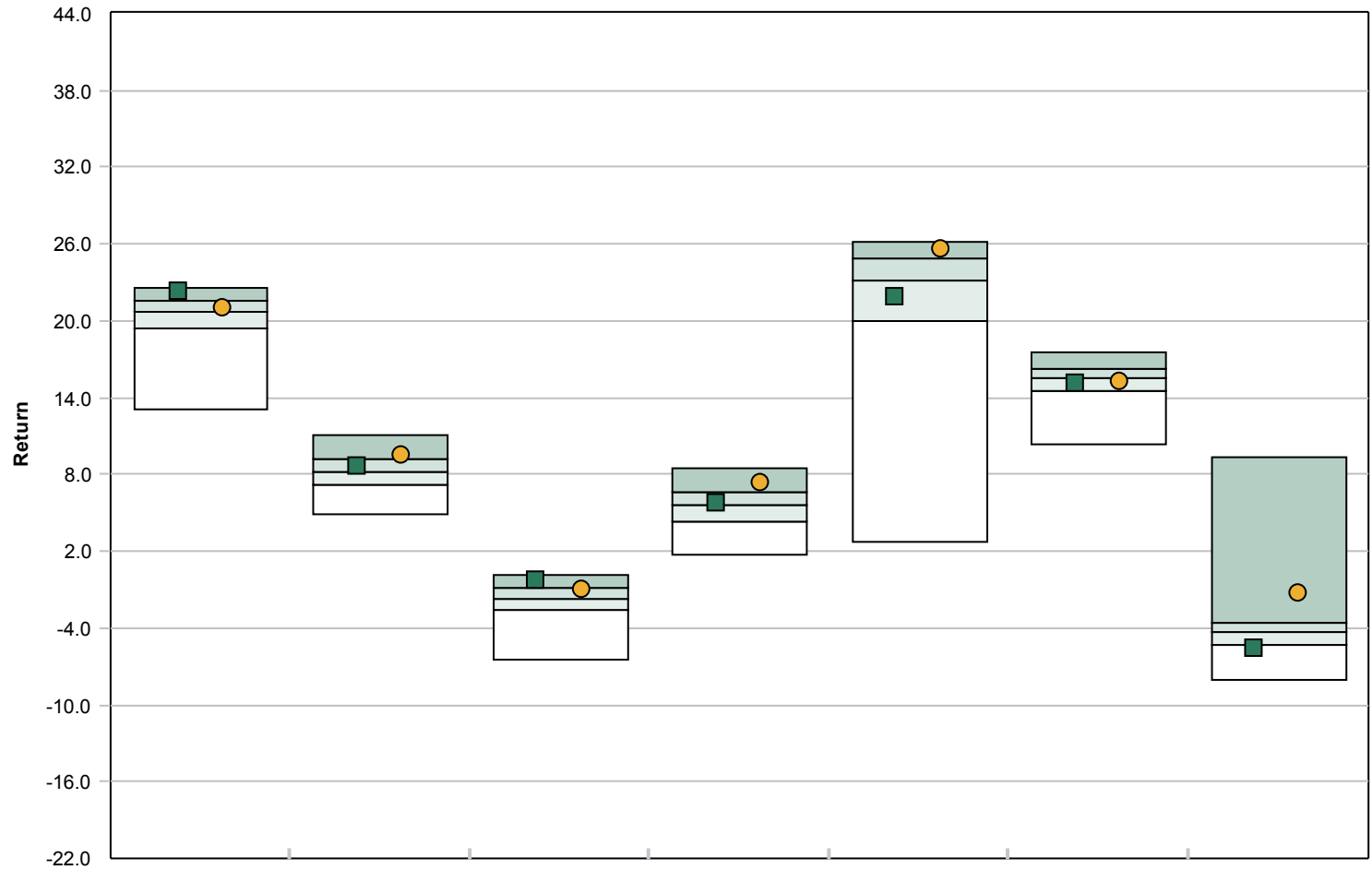
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2050 (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2050 K	5.10 (36)	22.33 (8)	22.33 (8)	9.85 (4)	11.31 (20)	9.24 (39)	5.31 (60)
● Fidelity Freedom 2050 Composite Benchmark	5.38 (17)	20.96 (46)	20.96 (46)	9.45 (13)	12.06 (5)	10.49 (5)	6.60 (15)
5th Percentile	6.06	22.59	22.59	9.80	12.05	10.48	7.02
1st Quartile	5.25	21.53	21.53	9.17	11.11	9.61	6.18
Median	4.98	20.67	20.67	8.53	10.61	9.02	5.52
3rd Quartile	4.74	19.38	19.38	7.93	9.96	8.39	5.07
95th Percentile	4.03	13.12	13.12	6.76	6.37	6.73	4.05

Peer Group Analysis - IM Mixed-Asset Target 2050 (MF)



■ Fidelity Freedom 2050 K  
● Fidelity Freedom 2050 Composite Benchmark

	2017	2016	2015	2014	2013	2012	2011
	22.33 (8)	8.63 (40)	-0.24 (12)	5.78 (42)	21.87 (62)	15.06 (63)	-5.57 (80)
	20.96 (46)	9.54 (17)	-1.05 (31)	7.29 (15)	25.62 (13)	15.18 (59)	-1.23 (8)
5th Percentile	22.59	11.02	0.10	8.49	26.14	17.55	9.37
1st Quartile	21.53	9.18	-0.87	6.59	24.86	16.27	-3.54
Median	20.67	8.19	-1.76	5.61	23.08	15.47	-4.38
3rd Quartile	19.38	7.13	-2.61	4.32	19.99	14.52	-5.36
95th Percentile	13.12	4.94	-6.41	1.70	2.68	10.37	-8.12

## Fidelity Freedom 2050 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2050 Fund; Class K Shares	Portfolio Assets :	\$10,863 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FNSBX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2035 (MF)
Fund Assets :	\$7,395 Million	Style Benchmark :	Fidelity Freedom 2050 Composite Benchmark

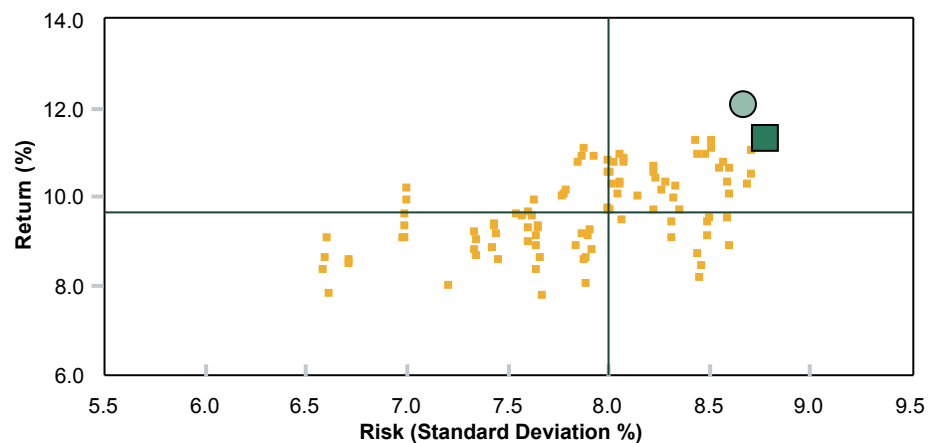
### Fund Investment Policy

The Fund seeks high total return until its target retirement date. Thereafter the Fund's objective will be to seek high current income and, as a secondary objective, capital appreciation. The Fund invests in a combination of underlying Fidelity equity, fixed-income, and short-term funds.

### Historical Statistics (01/01/13 - 12/31/17) \*

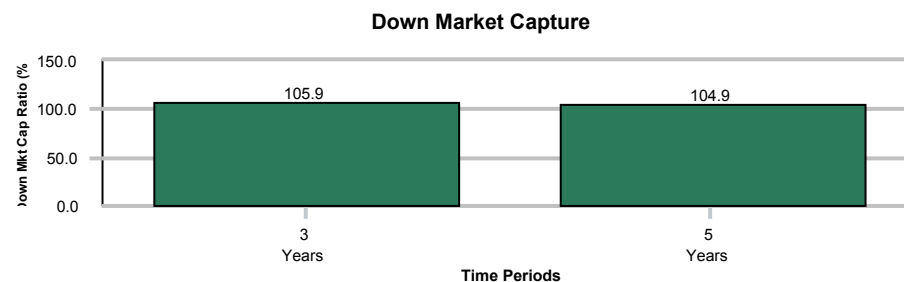
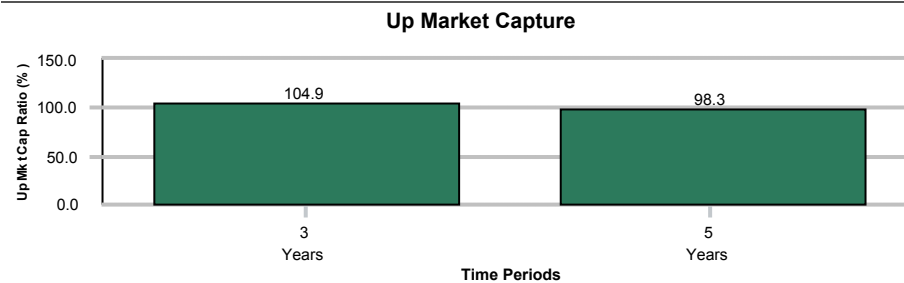
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2050 K	11.31	8.78	1.24	-0.69	1.00	0.98	1.24	-0.54	8.77	08/01/2009
Fidelity Freedom 2050 Composite Benchmark	12.06	8.67	1.34	0.00	1.00	1.00	0.00	N/A	8.66	08/01/2009
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.66	-1.34	0.00	08/01/2009

### Peer Group Scattergram (01/01/13 to 12/31/17)



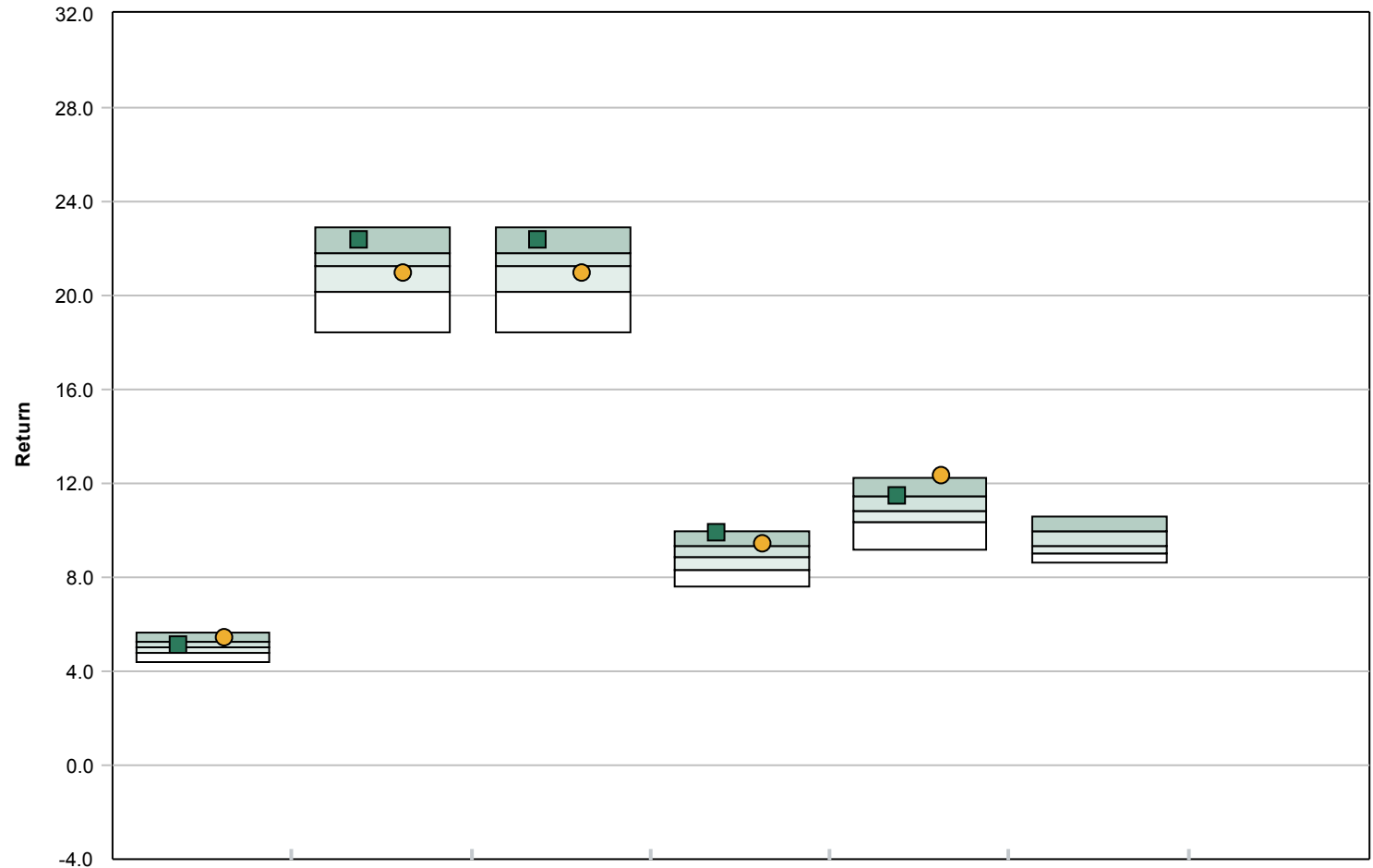
	Return	Standard Deviation
■ Fidelity Freedom 2050 K	11.31	8.78
● Fidelity Freedom 2050 Composite Benchmark	12.06	8.67
— Median	9.66	8.00

### Up Down Market Capture



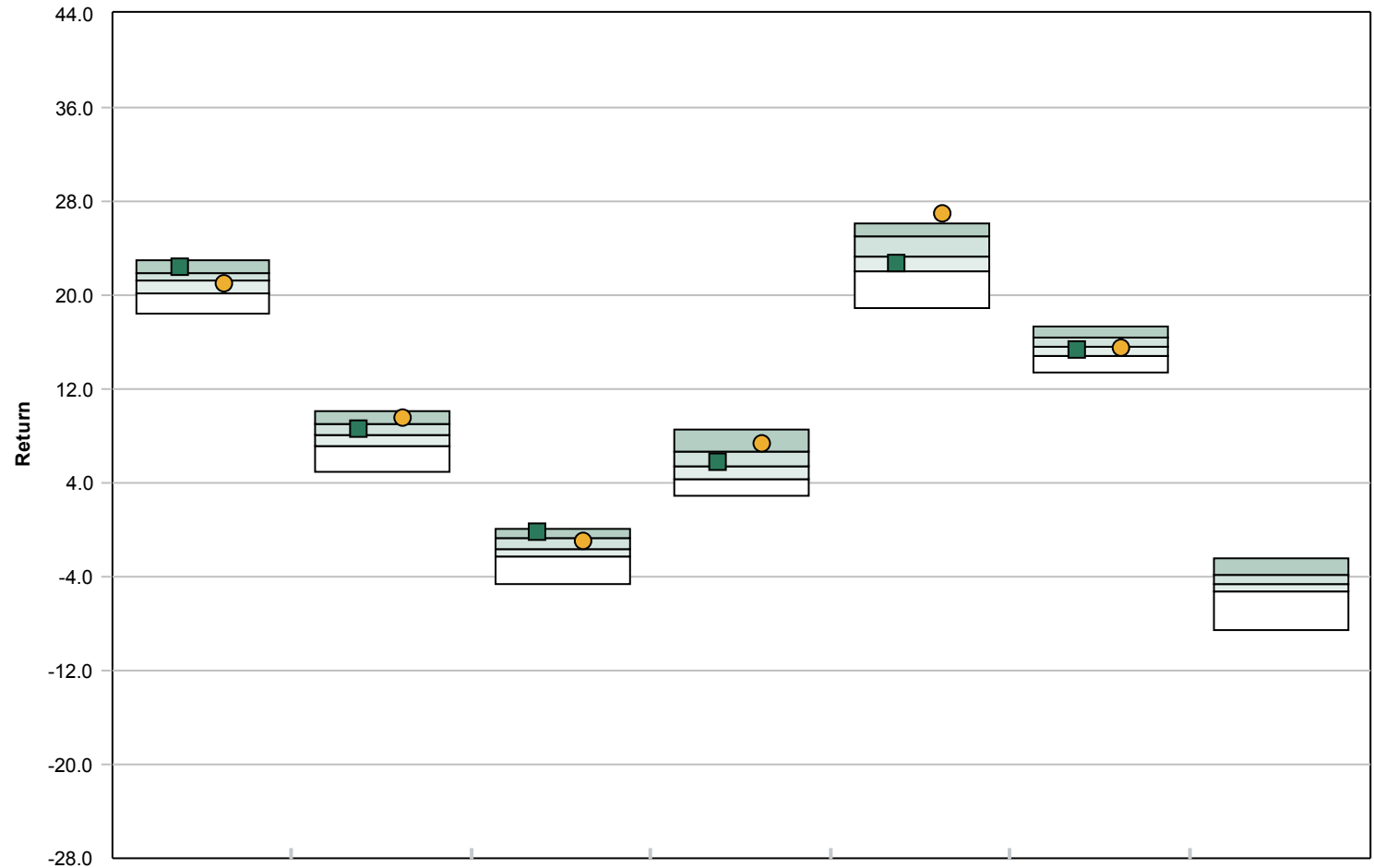
\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2055 K	5.09 (47)	22.37 (12)	22.37 (12)	9.86 (6)	11.46 (24)	N/A	N/A
● Fidelity Freedom 2055 Composite Benchmark	5.38 (16)	20.96 (58)	20.96 (58)	9.45 (19)	12.28 (3)	N/A	N/A
5th Percentile	5.67	22.93	22.93	9.96	12.20	10.60	N/A
1st Quartile	5.28	21.81	21.81	9.31	11.43	9.94	N/A
Median	5.05	21.23	21.23	8.85	10.84	9.33	N/A
3rd Quartile	4.82	20.14	20.14	8.28	10.32	9.01	N/A
95th Percentile	4.37	18.46	18.46	7.63	9.20	8.63	N/A

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2055 K	22.37 (12)	8.56 (37)	-0.20 (13)	5.75 (42)	22.71 (66)	15.32 (60)	N/A
● Fidelity Freedom 2055 Composite Benchmark	20.96 (58)	9.54 (16)	-1.05 (35)	7.29 (16)	26.85 (1)	15.49 (56)	N/A
5th Percentile	22.93	10.07	0.15	8.57	26.18	17.28	-2.44
1st Quartile	21.81	8.98	-0.74	6.72	25.01	16.45	-3.78
Median	21.23	8.12	-1.64	5.45	23.24	15.58	-4.66
3rd Quartile	20.14	7.20	-2.31	4.30	22.01	14.83	-5.26
95th Percentile	18.46	4.87	-4.59	2.91	18.83	13.47	-8.51



# Fidelity Freedom 2055 K

## Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2055 Fund; Class K Shares	Portfolio Assets :	\$4,031 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Sumsion/Dierdorf
Ticker :	FNSDX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2050 (MF)
Fund Assets :	\$2,801 Million	Style Benchmark :	Fidelity Freedom 2055 Composite Benchmark

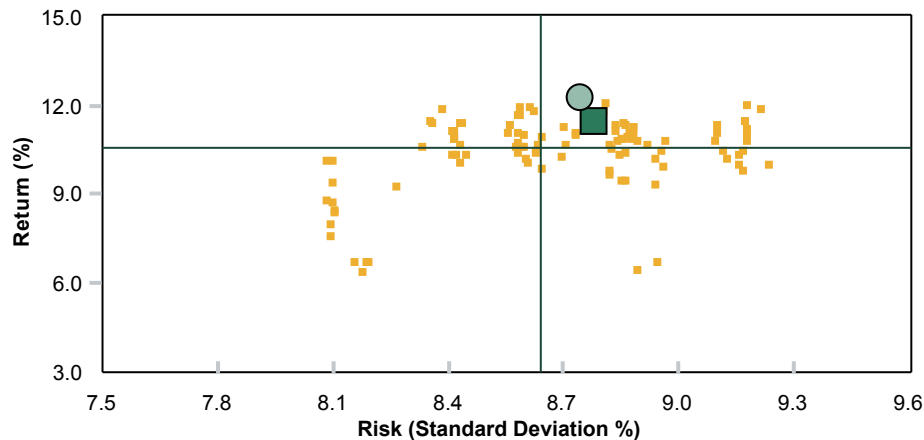
## Fund Investment Policy

The Fund seeks high total return until its target retirement date. The Fund will invest in combination of underlying Fidelity domestic equity funds, international equity funds, bond funds, and short-term funds using a moderate asset allocation strategy designed for investors expecting to retire around the year 2055.

## Historical Statistics (01/01/13 - 12/31/17) \*

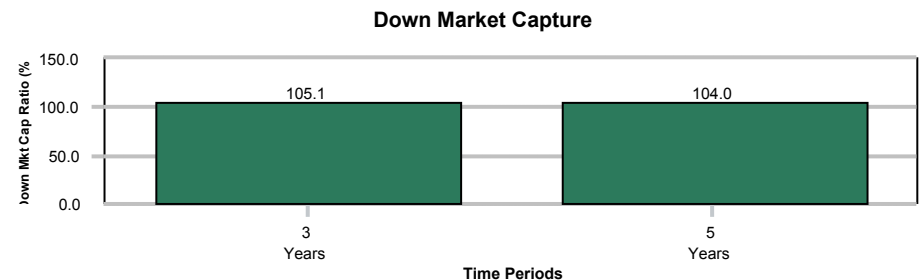
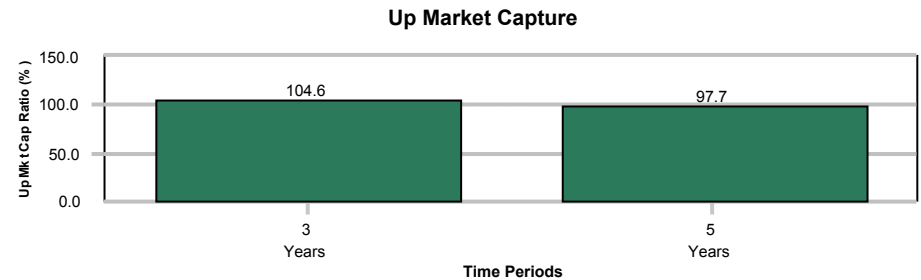
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2055 K	11.46	8.78	1.26	-0.66	0.99	0.98	1.27	-0.58	8.77	07/01/2011
Fidelity Freedom 2055 Composite Benchmark	12.28	8.74	1.35	0.00	1.00	1.00	0.00	N/A	8.73	07/01/2011
90 Day U.S. Treasury Bill	0.25	0.11	N/A	0.23	0.00	0.01	8.73	-1.35	0.00	07/01/2011

## Peer Group Scattergram (01/01/13 to 12/31/17)



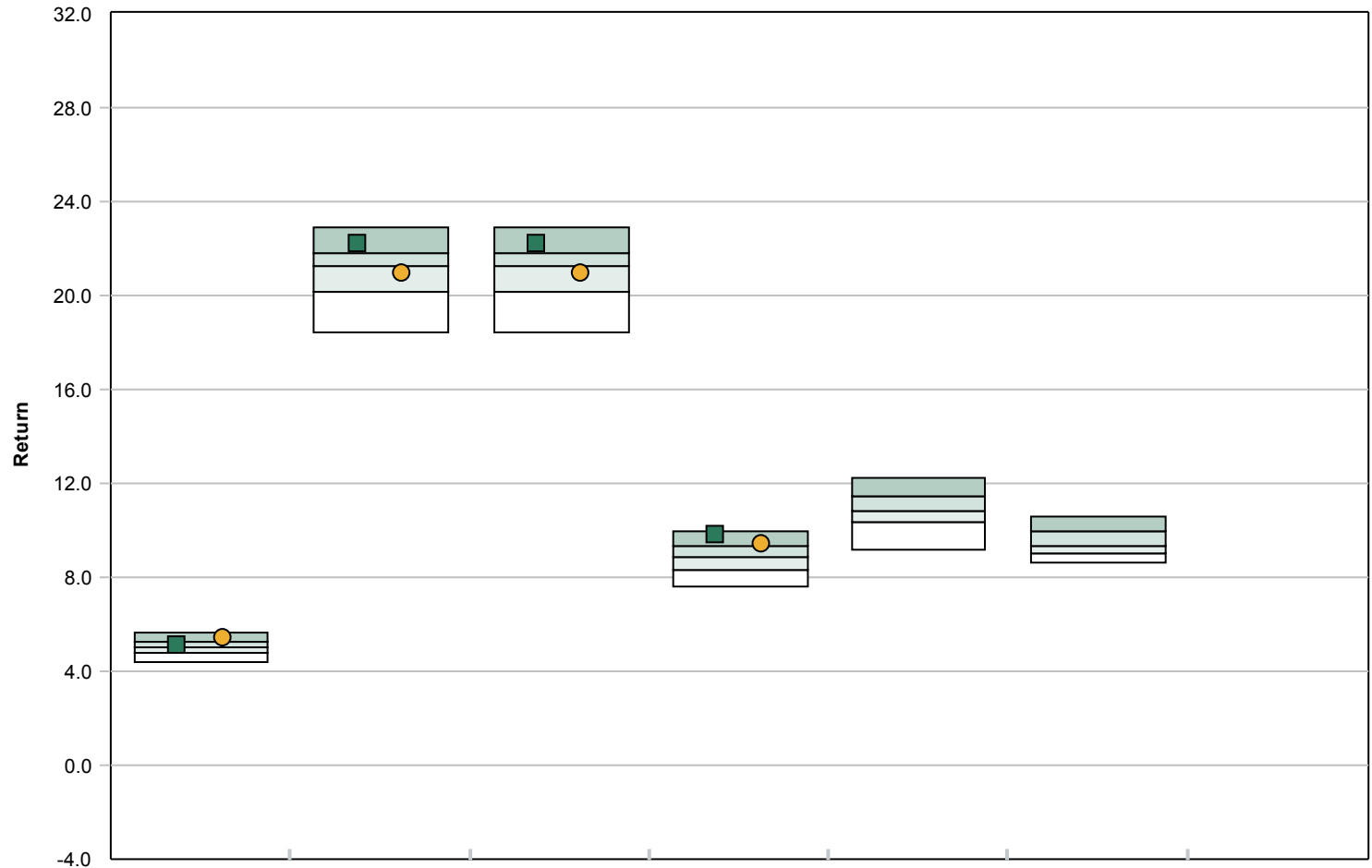
	Return	Standard Deviation
■ Fidelity Freedom 2055 K	11.46	8.78
● Fidelity Freedom 2055 Composite Benchmark	12.28	8.74
— Median	10.61	8.64

## Up Down Market Capture



\* Monthly periodicity used.

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	1 Qtr	YTD	1 Yr	3 Yrs	5 Yrs	7 Yrs	10 Yrs
■ Fidelity Freedom 2060 K	5.11 (45)	22.21 (16)	22.21 (16)	9.82 (8)	N/A	N/A	N/A
● Fidelity Freedom 2060 Composite Benchmark	5.38 (16)	20.96 (58)	20.96 (58)	9.45 (19)	N/A	N/A	N/A
5th Percentile	5.67	22.93	22.93	9.96	12.20	10.60	N/A
1st Quartile	5.28	21.81	21.81	9.31	11.43	9.94	N/A
Median	5.05	21.23	21.23	8.85	10.84	9.33	N/A
3rd Quartile	4.82	20.14	20.14	8.28	10.32	9.01	N/A
95th Percentile	4.37	18.46	18.46	7.63	9.20	8.63	N/A

Peer Group Analysis - IM Mixed-Asset Target 2055+ (MF)



	2017	2016	2015	2014	2013	2012	2011
■ Fidelity Freedom 2060 K	22.21 (16)	8.61 (35)	-0.22 (15)	N/A	N/A	N/A	N/A
● Fidelity Freedom 2060 Composite Benchmark	20.96 (58)	9.54 (16)	-1.05 (35)	N/A	N/A	N/A	N/A
5th Percentile	22.93	10.07	0.15	8.57	26.18	17.28	-2.44
1st Quartile	21.81	8.98	-0.74	6.72	25.01	16.45	-3.78
Median	21.23	8.12	-1.64	5.45	23.24	15.58	-4.66
3rd Quartile	20.14	7.20	-2.31	4.30	22.01	14.83	-5.26
95th Percentile	18.46	4.87	-4.59	2.91	18.83	13.47	-8.51

## Fidelity Freedom 2060 K

### Fund Information

Fund Name :	Fidelity Aberdeen Street Trust: Fidelity Freedom 2060 Fund; Class K Shares	Portfolio Assets :	\$634 Million
Fund Family :	Fidelity Management & Research Company	Portfolio Manager :	Dierdorf/Sumsion
Ticker :	FNSFX	PM Tenure :	2017--2017
Inception Date :	07/20/2017	Fund Style :	IM Mixed-Asset Target 2055+ (MF)
Fund Assets :	\$432 Million	Style Benchmark :	Fidelity Freedom 2060 Composite Benchmark

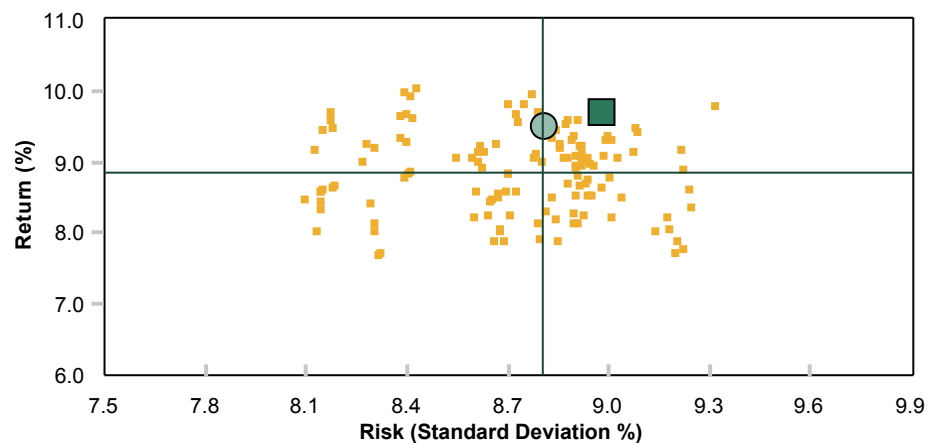
### Fund Investment Policy

The Fund seeks high total return until its target retirement date. The fund's objective will be to seek high current income and, as a secondary objective, capital appreciation. The Fund invests in a combination of underlying Fidelity domestic equity funds, international equity funds, bond funds and short-term funds.

### Historical Statistics (10/01/14 - 12/31/17) \*

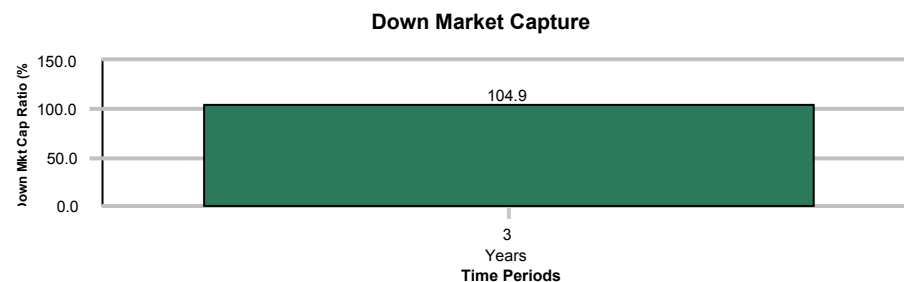
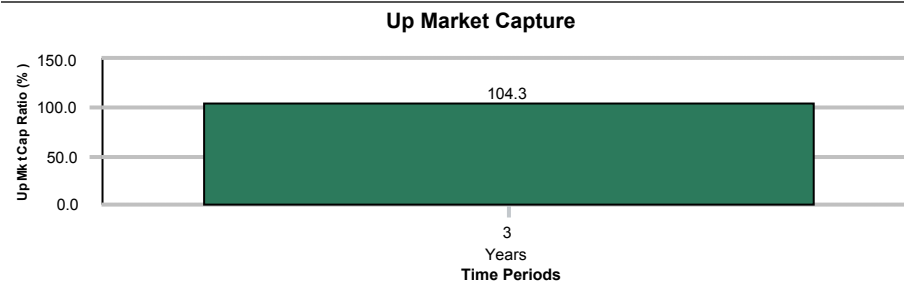
	Return	Standard Deviation	Sharpe Ratio	Alpha	Beta	R-Squared	Tracking Error	Information Ratio	Excess Risk	Inception Date
Fidelity Freedom 2060 K	9.68	8.98	1.04	0.09	1.01	0.98	1.14	0.18	8.96	10/01/2014
Fidelity Freedom 2060 Composite Benchmark	9.48	8.81	1.04	0.00	1.00	1.00	0.00	N/A	8.79	10/01/2014
90 Day U.S. Treasury Bill	0.35	0.12	N/A	0.32	0.00	0.05	8.79	-1.04	0.00	10/01/2014

### Peer Group Scattergram (10/01/14 to 12/31/17)



	Return	Standard Deviation
■ Fidelity Freedom 2060 K	9.68	8.98
● Fidelity Freedom 2060 Composite Benchmark	9.48	8.81
— Median	8.85	8.81

### Up Down Market Capture



\* Monthly periodicity used.

**VCTI GV'F CVG'HWP F'CP CN[ UKU**

# Target Date Fund Comparison

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## ➤ Target Date Funds Analyzed

TDF Series	Vehicle	Management Style
American Funds Target Date Retirement	Mutual Fund	Active
Fidelity Freedom	Mutual Fund	Active
T. Rowe Price Retirement	Mutual Fund	Active
TIAA-CREF Lifecycle	Mutual Fund	Active
JPMorgan SmartRetirement	Mutual Fund	Blend Active / Passive
SSgA Target Retirement	Mutual Fund	Passive
Vanguard Target Retirement	Mutual Fund	Passive

## ➤ Benchmark:

- S&P Target Date Index Series

## ➤ Peer Universe:

- Morningstar Category U.S. Fund Target Date Series

# Asset Class Overview – Target Date Funds

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- **Target Date Fund Basics:** Target date funds are designed to provide participants with a simplified investment option that is diversified among asset classes and shifts to a more conservative asset allocation over time. The appeal of investing in a target date fund is that asset allocation, diversification and risk are managed by the investment manager and participants make only one investment decision, selecting the target date.
  - Target date funds are typically structured as a fund-of-fund portfolio, with underlying funds selected by either the investment manager (proprietary) or plan sponsor/consultant (custom). Funds are diversified among equity, bonds and cash-equivalent instruments. Most investment managers refine the three broad asset classes to include some combination of Non-U.S. Developed, Emerging Markets, High Yield, Inflation Linked Bonds, REITs and Commodities.
  - The strategic allocation, or glide path, for target date funds gradually becomes more conservative by reducing the equity allocation as the funds approach a specified target date.
  - At first glance, target date funds seem to be an easy investment option for 401(k) participants to reach their retirement goals, while also fulfilling the plan sponsor's fiduciary responsibility. Despite the perceived simplicities of target date funds, the structure of target date funds and the variation of composition among providers can make the investment selection process more complicated for fiduciaries.

## Asset Class Overview – Target Date Funds cont.

### ➤ Target Date Fund Terminology:

- **Glide Path:** The strategic, or long-term, asset allocation for the target date fund series. The glide path illustrates equity allocation shifts a participant can expect over time.
- **Landing Point:** The point at which a target date fund reaches its lowest equity allocation and shifts from active asset allocation to static asset allocation. Stated as number of years post-retirement.
- **Roll-down:** The reduction in the equity allocation beginning 15 to 20 years before the target date. We quantify roll-down by calculating the slope of the glide path to retirement.
- **Target Date:** At this time, dates are typically in five year increments, which indicate the target retirement year for the participant, generally age 65. The most common vintages are 2010 through 2060 and providers are expected to continue adding new vintages over time.

### ➤ Target Date Fund Benchmark:

- **S&P Target Date Index Series:** The benchmark series represents a broad consensus of asset class exposure from an annual survey of target date fund managers. For inclusion in the annual survey, fund suites must be identified as target date funds in Morningstar's databases (CIT and mutual fund vehicles) and have a minimum of \$100 million in assets. At least 25% of surveyed target date fund suites must have exposure to an existing asset class in one or more of the respective funds for inclusion in the index (30% for new asset classes). Reconstituted annually in May, the index glide path is the average weight among target date funds by target date year for eligible asset classes, with a minimum 0.5% allocation for existing asset classes and 1.5% for new asset classes. The index is rebalanced monthly to the glide path weights.
- Based on the annual survey, near-dated target date indices are rolled into the Retirement Income Index once the target year has less than 20% of fund sponsors. Similarly, far-dated target date indices are launched once there are at least 30% of fund sponsors.

Asset Class	Index
US LargeCap	S&P 500 (TR)
US MidCap	S&P 400 (TR)
US SmallCap	S&P 600 (TR)
International Equities	S&P Developed Ex-U.S. BMI (US Dollar) Net Total Return
Emerging Market Equities	S&P Emerging BMI (US Dollar) Net Total Return
US REITs	Dow Jones U.S. Select REIT Total Return Index (US Dollar)
International REITs	S&P Developed Ex-U.S. REIT (US Dollar) Net Total Return

Asset Class	Index
Core Fixed Income	S&P U.S. Aggregate Bond Index TR
Cash Equivalents	S&P U.S. Treasury Bond 0-1 Year Index Total Return
TIPS	S&P US Treasury TIPS Index TR
High Yield Corporate Bonds	S&P 500 High Yield Corporate Bond Index
Commodities	S&P GSCI TR

Effective June 1<sup>st</sup>, 2017, Standard and Poor's replaced the iShares ETFs with corresponding S&P Dow Jones indices



# Research Process

- **Target Date Fund Research Framework:** In evaluating target date funds, Segal Marco Advisors (“SMA”) focuses on firms with experienced asset allocation teams as well as best in class investment products. The research framework has two components:
  1. **Quantitative:** Quantitative metrics are particularly important when evaluating target date funds in order to capture the multiple layers within an asset allocation strategy. The metrics assess the effectiveness of strategic asset allocation (the glide path), underlying fund selection and diversification.
  2. **Qualitative:** The qualitative assessment requires in-depth discussions with the asset allocation teams, as well as leveraging SMA’s proprietary manager research for a holistic view of the asset management firm.

Qualitative
<ul style="list-style-type: none"> <li>▪ <b>People &amp; Organization:</b> <ul style="list-style-type: none"> <li>✓ Organizational support of their own TDF</li> <li>✓ Favorable peer track record of five or more years</li> <li>✓ Substantial firm commitment to Defined Contribution</li> <li>✓ Tenure and investment professional stability</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Glide path Methodology:</b> <ul style="list-style-type: none"> <li>✓ Well-defined portfolio construction process</li> <li>✓ Quality of capital market inputs</li> <li>✓ Stability of the strategic allocation overtime</li> <li>✓ Logical roll-down in equity exposure</li> <li>✓ Through or to retirement</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Structure &amp; Review:</b> <ul style="list-style-type: none"> <li>✓ Investment objective aligned with plan demographics</li> <li>✓ Sector exposure of the look-through portfolio</li> <li>✓ Fund selection – internally managed and open architecture</li> <li>✓ Tactical asset allocation</li> <li>✓ Periodic review and rebalance</li> </ul> </li> </ul>

Quantitative
<ul style="list-style-type: none"> <li>▪ <b>Performance:</b> <ul style="list-style-type: none"> <li>✓ Absolute, relative, peer group and market cycle performance evaluation</li> <li>✓ Balanced risk/reward profile</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Asset Allocation:</b> <ul style="list-style-type: none"> <li>✓ Asset class representation</li> <li>✓ Broad diversification and risk control</li> <li>✓ Style or capitalization biases</li> <li>✓ Flexible in adding new asset classes</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Underlying Investments:</b> <ul style="list-style-type: none"> <li>✓ Alpha Rating – SMA’s proprietary manager research</li> <li>✓ Value add of active versus passive</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>▪ <b>Fees:</b> <ul style="list-style-type: none"> <li>✓ Appropriateness given the asset allocation and underlying fund structure</li> <li>✓ Competitive within peer group</li> </ul> </li> </ul>

- All information throughout this report is as of December 31, 2017, unless otherwise indicated.

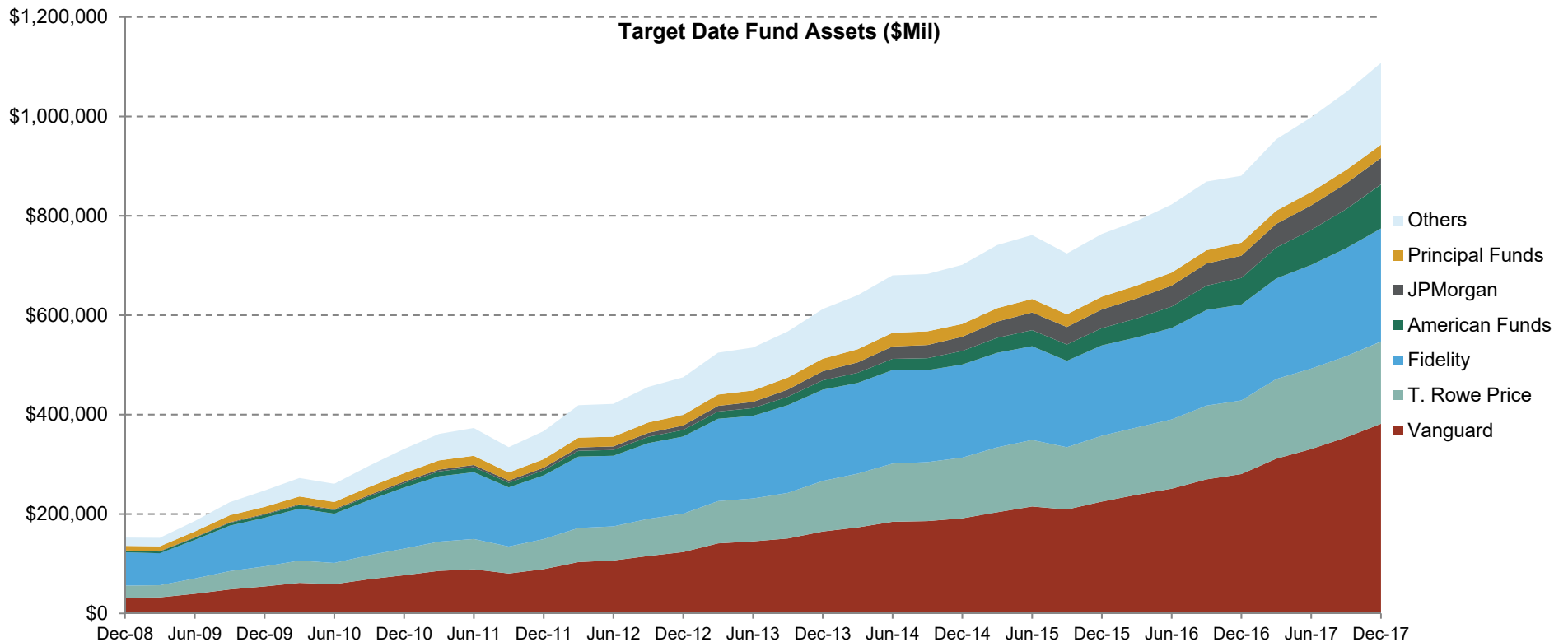
# Target Date Fund – Assets Under Management

➤ TDF assets concentrated among a few providers

- Approximately 66.7% of TDF mutual fund assets are managed by Vanguard, T. Rowe Price and Fidelity.
- Of the 41 mutual fund families offering TDFs, 93.4% of TDF assets are managed by the top ten providers.

TDF Provider	Total Net Assets (\$Bil)	Market Share
Vanguard	381	38.2%
Fidelity	227	20.5%
T. Rowe Price	166	14.9%
American Funds	89	8.9%
JPMorgan	53	5.4%

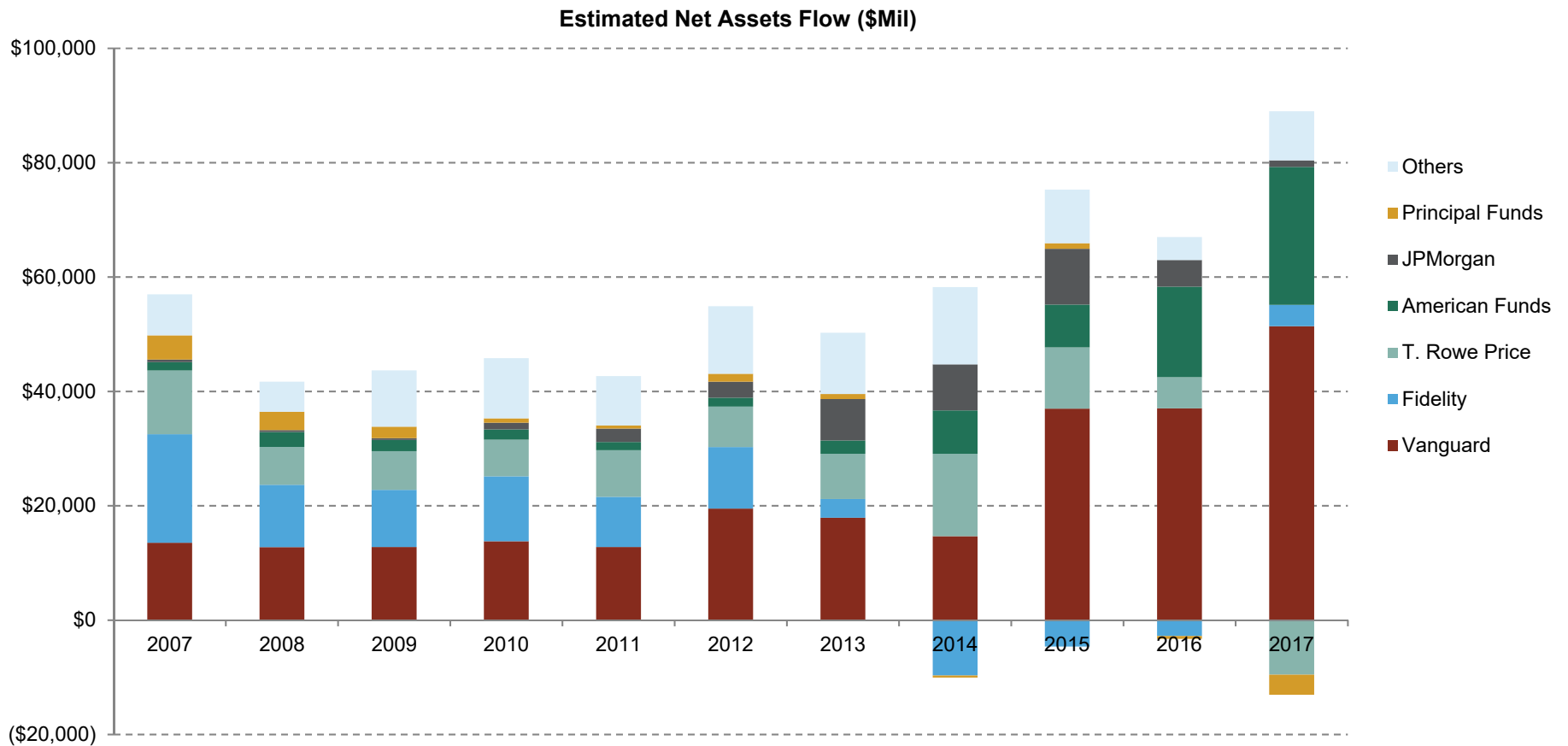
TDF Provider	Total Net Assets (\$Bil)	Market Share
TIAA-CREF	44	4.4%
Principal	26	2.6%
American Century	19	1.9%
BlackRock	18	1.8%
John Hancock	17	1.7%



Source: Morningstar Direct; 12/31/2017

# Target Date Fund – Net Asset Flow

- Largest TDF providers losing market share of net asset flows
  - During 2017, the three largest TDF providers received 60% of total net asset flows due to Vanguard's significant asset flows. The third largest provider saw mutual fund outflows in 2017.
  - Vanguard became the industry's largest target-date mutual fund provider, unseating Fidelity in July 2014.
  - Within active target-date mutual fund providers, American Funds received the largest asset inflows in 2016 and 2017.



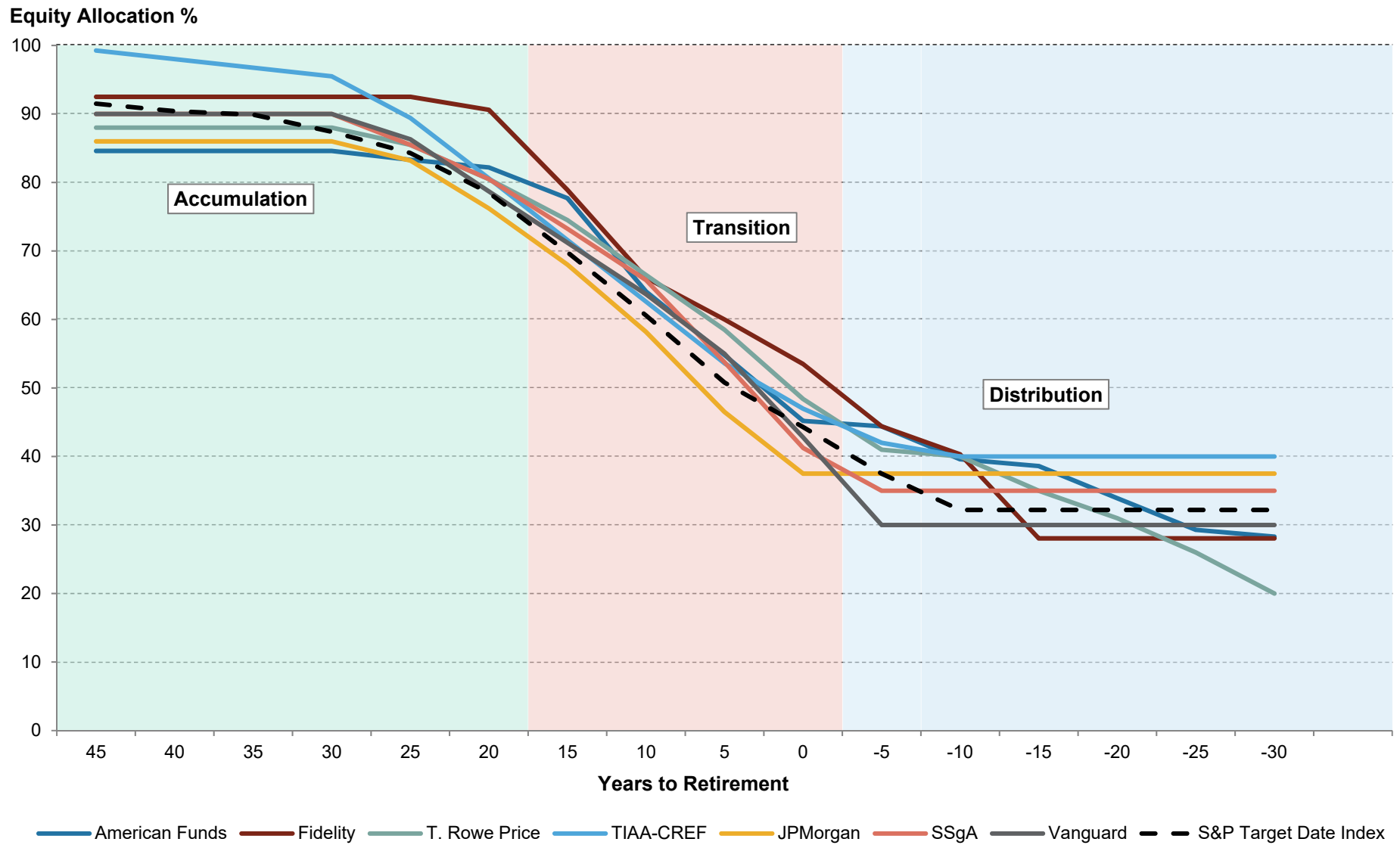
Source: Morningstar Direct; 12/31/2017

# Product Summary

	American Funds Target Date Retirement	Fidelity Freedom	T. Rowe Price Retirement	TIAA-CREF Lifecycle	JPMorgan SmartRetirement	SSgA Target Retirement	Vanguard Target Retirement
<b>Inception Date</b>	<b>02/01/2007</b>	<b>10/17/1996</b>	<b>09/30/2002</b>	<b>10/15/2004</b>	<b>7/2/2012</b>	<b>02/01/2005</b>	<b>10/27/2003</b>
<b>Fund Family TDF Assets (\$mil)</b>	<b>\$88,662</b>	<b>\$260,026</b>	<b>\$232,134</b>	<b>\$43,578</b>	<b>\$111,013</b>	<b>\$62,694</b>	<b>\$622,808</b>
<b>Series Total Assets (\$mil)</b>	<b>\$88,662</b>	<b>\$185,225</b>	<b>\$166,914</b>	<b>\$31,163</b>	<b>\$3,528</b>	<b>\$4,425</b>	<b>\$381,489</b>
2010/Income	2,830	11,612	10,274	1,365	276	136	22,236
2015	4,640	10,539	9,391	2,011	-	246	25,385
2020	12,316	30,628	26,863	3,874	506	777	51,850
2025	14,558	27,242	24,454	4,352	569	833	63,107
2030	15,444	31,929	28,945	4,289	601	781	54,144
2035	11,988	21,667	18,929	4,356	460	585	51,282
2040	10,480	22,439	20,425	5,395	458	459	40,612
2045	7,246	13,219	11,837	2,737	310	301	35,587
2050	5,815	11,113	9,001	1,759	240	213	23,722
2055	2,751	4,159	3,846	500	99	82	10,109
2060	593	677	405	69	6	12	3,454
<b># of Underlying Funds</b>	<b>16-21</b>	<b>18-26</b>	<b>17-23</b>	<b>17-23</b>	<b>14-17</b>	<b>5-11</b>	<b>4-5</b>
<b>Glidepath Type</b>	<b>Through</b>	<b>Through</b>	<b>Through</b>	<b>Through</b>	<b>To</b>	<b>Through</b>	<b>Through</b>
<b>Landing Point</b>	<b>30 Yrs Post</b>	<b>15 Yrs Post</b>	<b>30 Yrs Post</b>	<b>10 Yrs Post</b>	<b>At Retire</b>	<b>5 Yrs Post</b>	<b>7 Yrs Post</b>

Source: asset managers; 12/31/2017  
Fund Family assets represent all vintages of the TDF series and share classes offered.

# Glidepath



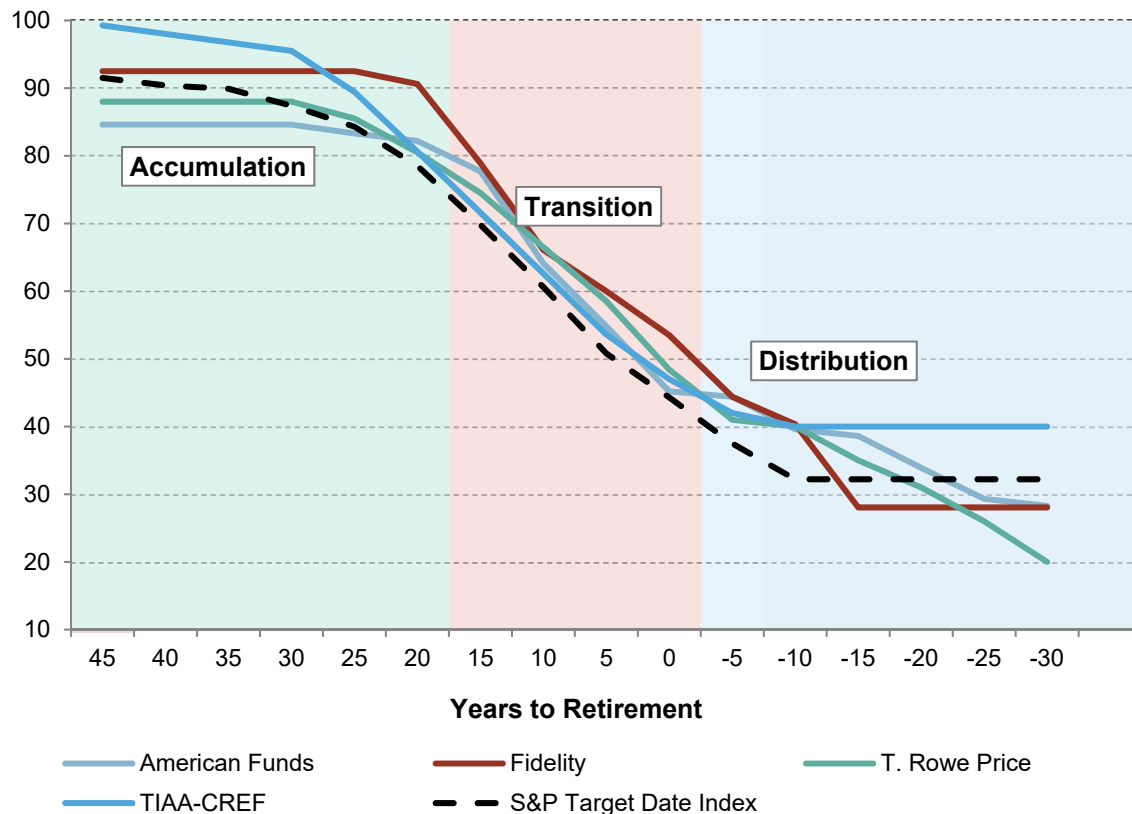
Source: Asset managers, S&P Dow Jones Indices; 12/31/2017

# Glidepath – Active TDF Series

## Equity Allocation %

	Accumulation		Transition			Retirement
	2060	2045	2030	2025	2020	Retirement
American Funds	84.6	84.6	77.7	64.1	54.8	45.2
Fidelity	92.5	92.5	78.9	66.1	60.0	53.5
T. Rowe Price	88.0	88.0	74.5	66.5	58.5	48.4
TIAA-CREF	99.3	95.5	71.6	62.6	53.6	47.0
S&P Target Date Index	91.5	87.4	69.8	60.6	50.8	44.3

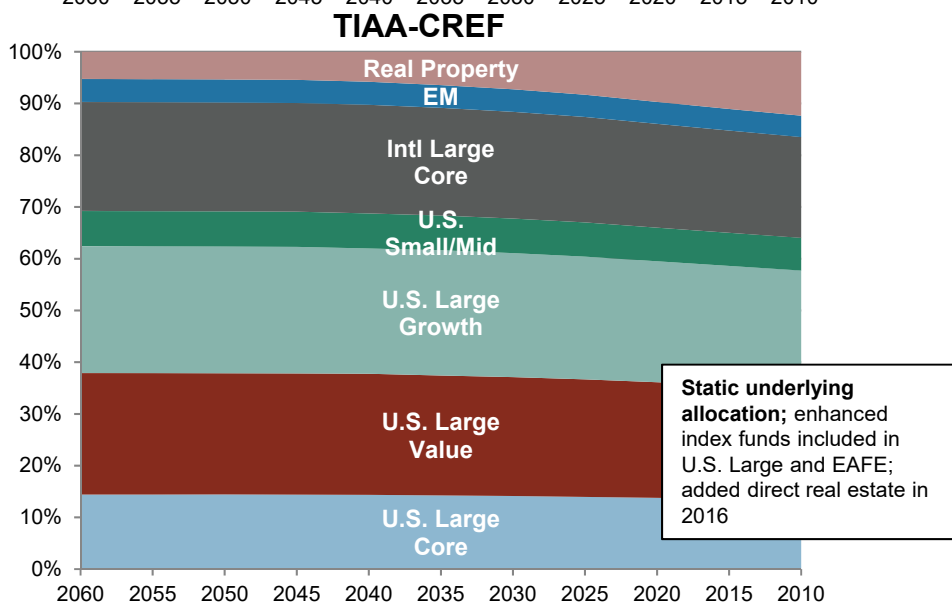
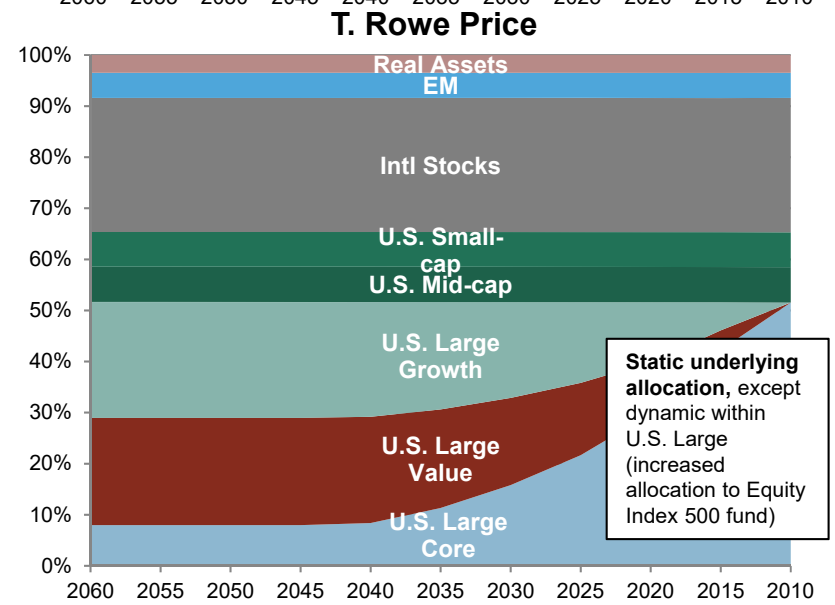
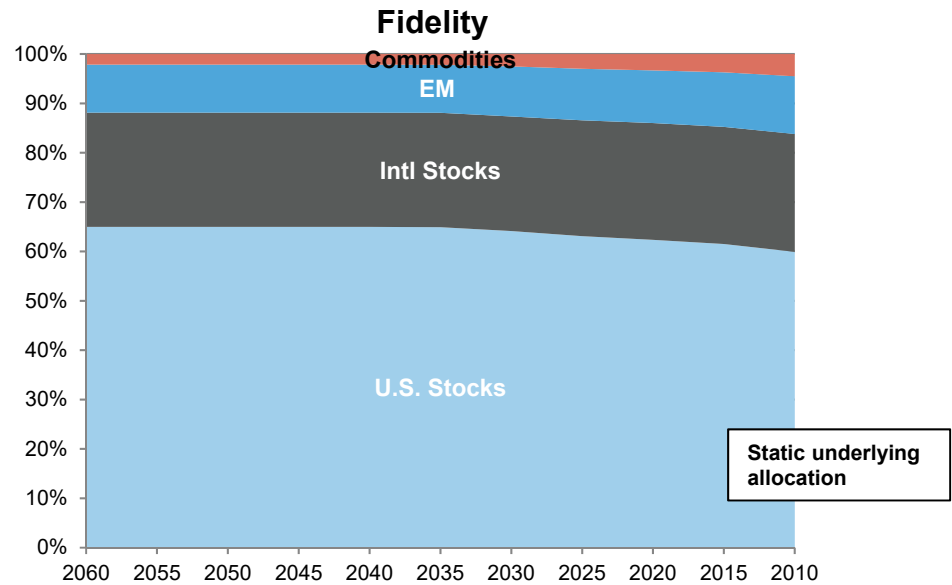
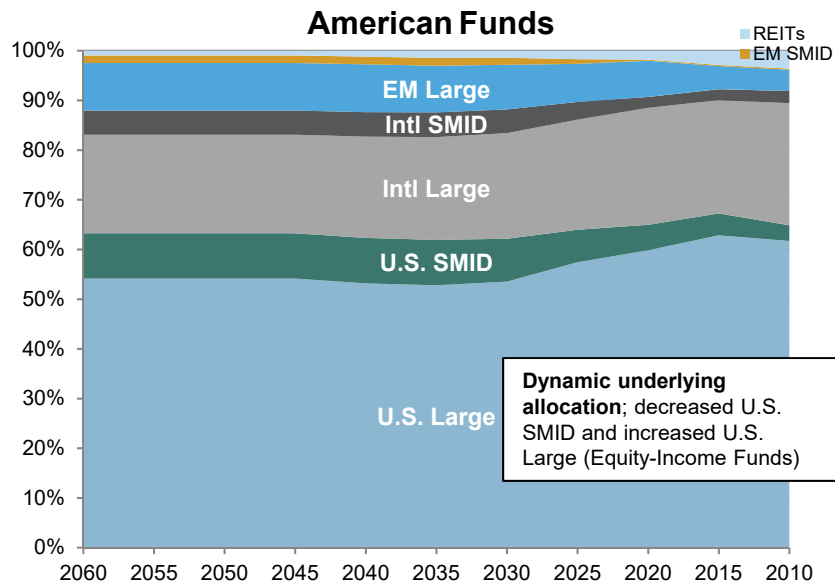
## Equity Allocation %



**Roll-down:** The steeper the roll-down, the greater the reduction in the equity allocation in the years leading to retirement.

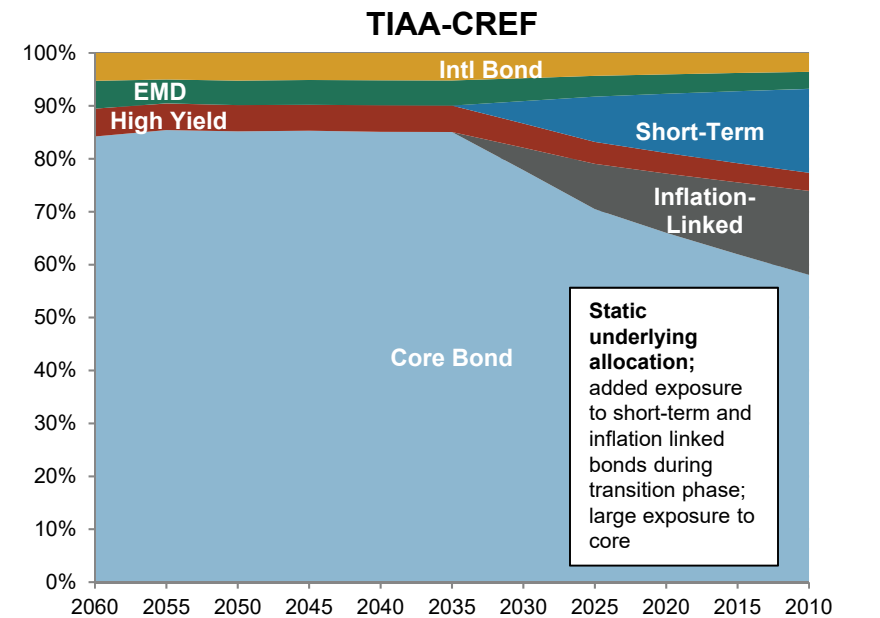
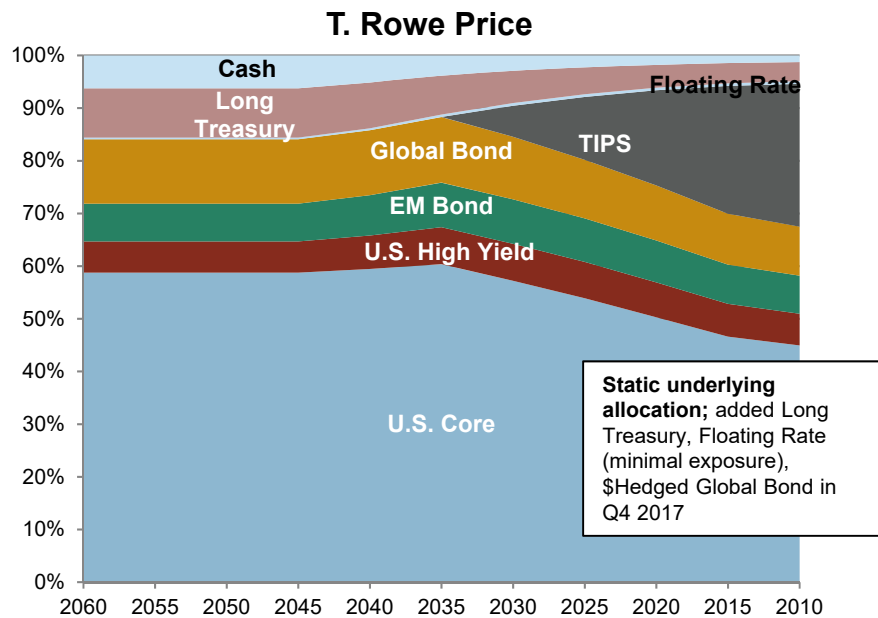
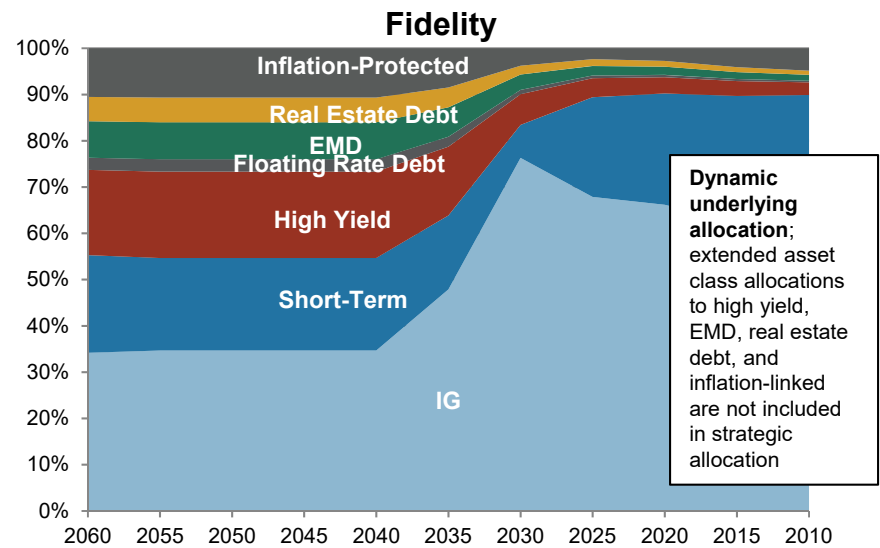
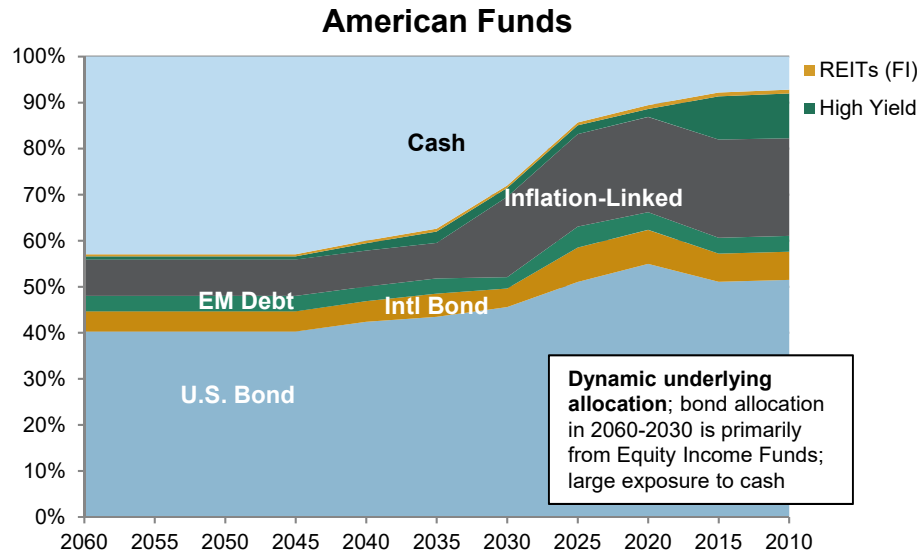
	Accumulation (2045) to Transition (2030)	Transition (2030) to Retirement (2015)
American Funds	-2.3	-10.8
Fidelity	-4.5	-8.5
T. Rowe Price	-4.5	-8.7
TIAA-CREF	-8.0	-8.2
S&P Target Date Index	-5.9	-8.5

# Equity Allocation – Active TDF Series



Source: Asset managers; 12/31/2017

# Fixed Income Allocation – Active TDF Series



Source: Asset managers; 12/31/2017



# Underlying Investments – Active TDF Series

American Funds	Fidelity	T. Rowe Price	TIAA-CREF
<b>Objective / Fund</b>	<b>Asset Class / Fund</b>	<b>Asset Class / Fund</b>	<b>Asset Class / Fund</b>
<b>Growth</b>	<b>U.S. Equity</b>	<b>U.S. Equity</b>	<b>U.S. Equity</b>
AMCAP	Series 100 Index	TRP Equity Index 500	Growth & Income
EuroPacific Growth	Series Growth and Income	TRP Value	Large-Cap Growth
The Growth of America	Series All-Sector Equity	TRP Growth Stock	Enhanced Large-Cap Growth Index
The New Economy	Series 1000 Value Index	TRP Mid-Cap Value	Large-Cap Value
New Perspective Fund	Series Stock Selector Large Cap Value	TRP Mid-Cap Growth	Enhanced Large-Cap Value Index
New World	Series Value Discovery (Equity-Income)*	TRP New Horizons	Small-Cap Equity
SMALLCAP World	Series Growth Company	TRP Small-Cap Value	Small/Mid-Cap Equity
<b>Growth-and-Income</b>	Series Blue Chip Growth	TRP Small-Cap Stock	<b>Non-U.S. Equity</b>
American Mutual	Series Small Cap Opportunities	<b>Non-U.S. Equity</b>	International Opportunities
Capital World Growth and Income	Series Small Cap Discovery	TRP International Stock	International Equity
Fundamental Investors	Series Opportunistic Insights	TRP Overseas Stock	Enhanced International Equity Index
International Growth and Income	Series Intrinsic Opportunities	TRP International Value Equity	Emerging Markets Equity
The Investment Company of America	Series Real Estate Equity	TRP Emerging Markets Stock	International Small-Cap Equity
Washington Mutual Investors	<b>Non-U.S. Equity</b>	<b>Fixed Income</b>	<b>Fixed-Income</b>
<b>Equity-Income/Balanced</b>	Series International Value	TRP New Income	Bond
American Balanced	Series International Growth	TRP High Yield	Bond Plus
American Global Balanced	Series International Small Cap	TRP Emerging Markets Bond	Emerging Markets Debt
Capital Income Builder	Series Canada	TRP International Bond	International Bond
The Income of America	Series Emerging Markets	TRP Dynamic Global Bond *	High-Yield
<b>Bond</b>	<b>Investment Grade Debt</b>	TRP Floating Rate *	<b>Short-Term Fixed Income</b>
American Inflation Linked Bond	Series Investment Grade Bond	TRP Treasury Long-Term Bond *	Short-Term Bond
American Mortgage	Series Long-Term Treasury Bond Index*	TRP Inflation-Focused Bond	<b>Real Estate</b>
American High-Income Trust	<b>Short-Term Debt</b>	<b>Real Assets</b>	Real Property
The Bond of America	Fidelity Institutional Money Market	<b>Money Market</b>	<b>Inflation-Protected Assets</b>
Capital World Bond	Series Short Term Credit	Treasury Money *	Inflation-Linked Bond
Intermediate Bond of America	<b>Extended Asset Classes</b>		<b>Money Market</b>
Short-Term Bond of America	Series Commodity Strategy		Money Market
U.S. Government Securities	Series Emerging Markets Debt		
	Series High Income		
	Series Real Estate Income		
	Series Floating Rate High Income		
	Series International Credit*		
	Series Inflation-Protected Bond Index		

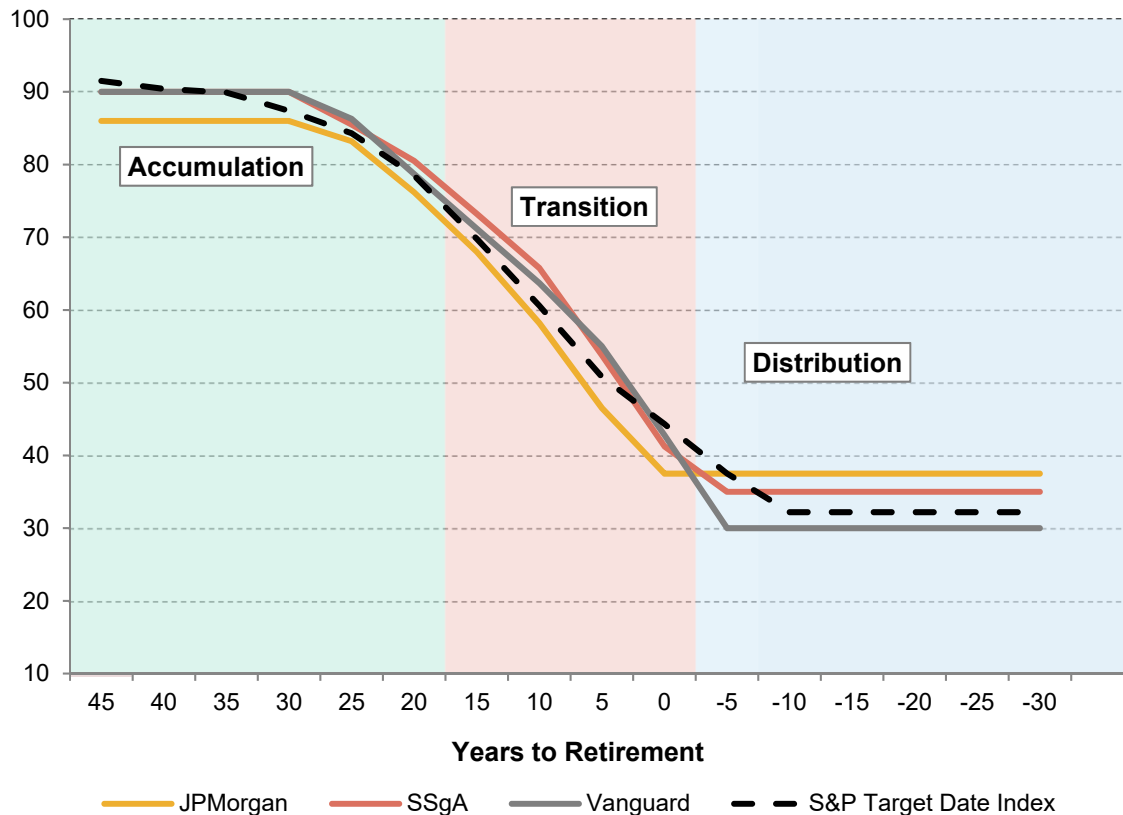
Source: Asset managers; 12/31/2017. \* Funds were added in the fourth quarter.

# Glidepath – Passive & Blend TDF Series

Equity Allocation %

	Accumulation		Transition			Retirement
	2060	2045	2030	2025	2020	Retirement
JPMorgan	86.0	86.0	68.0	58.2	46.5	37.5
SSgA	90.0	90.0	73.3	65.8	53.8	41.3
Vanguard	90.0	90.0	71.2	63.7	55.0	42.8
S&P Target Date Index	91.5	87.4	69.8	60.6	50.8	44.3

Equity Allocation %

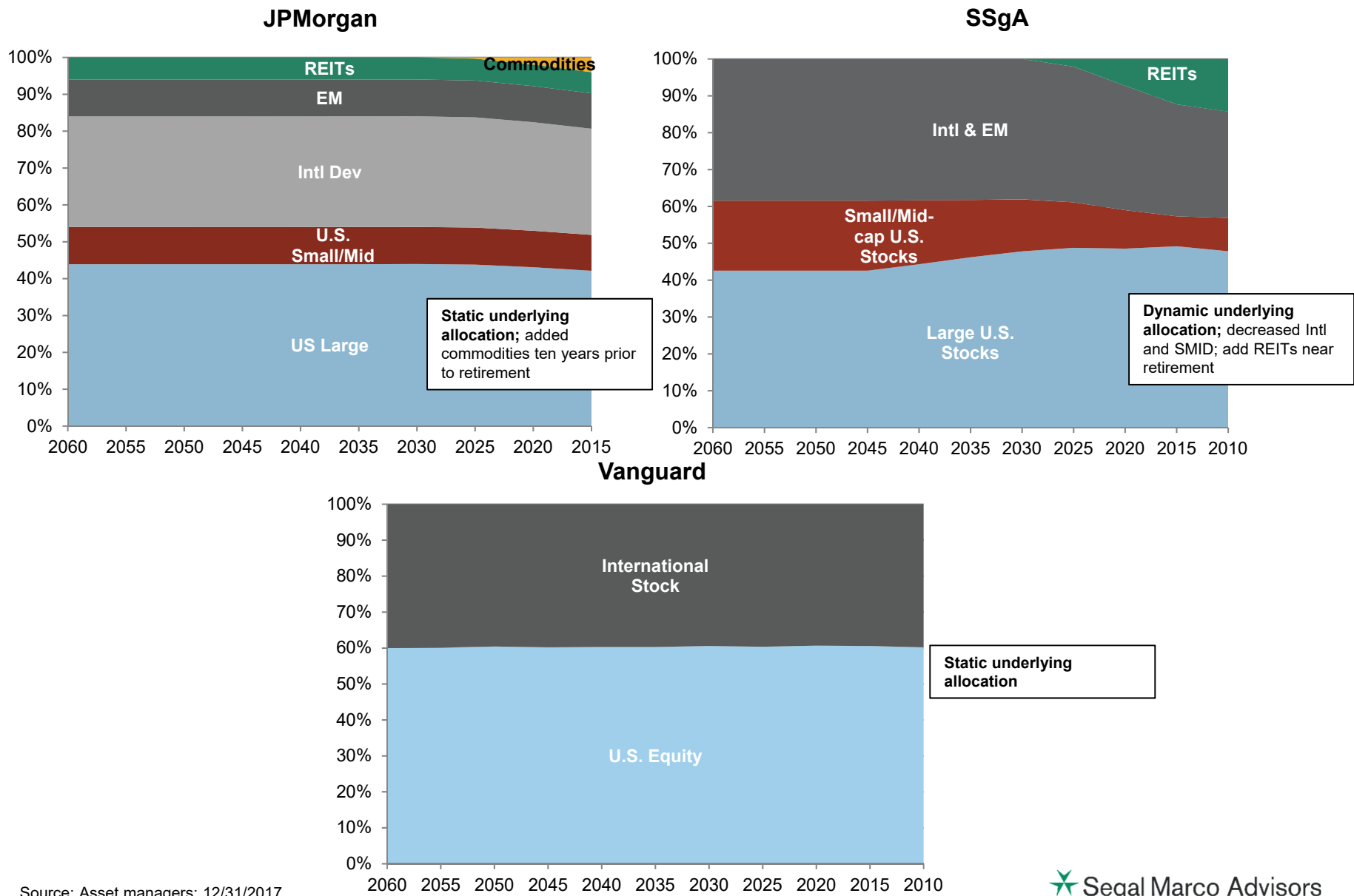


**Roll-down:** The steeper the roll-down, the greater the reduction in the equity allocation in the years leading to retirement.

	Accumulation (2045) to Transition (2030) %	Transition (2030) to Retirement (2015) %
JPMorgan	-6.0	-10.2
SSgA	-5.6	-10.7
Vanguard	-6.3	-9.5
S&P Target Date Index	-5.9	-8.5

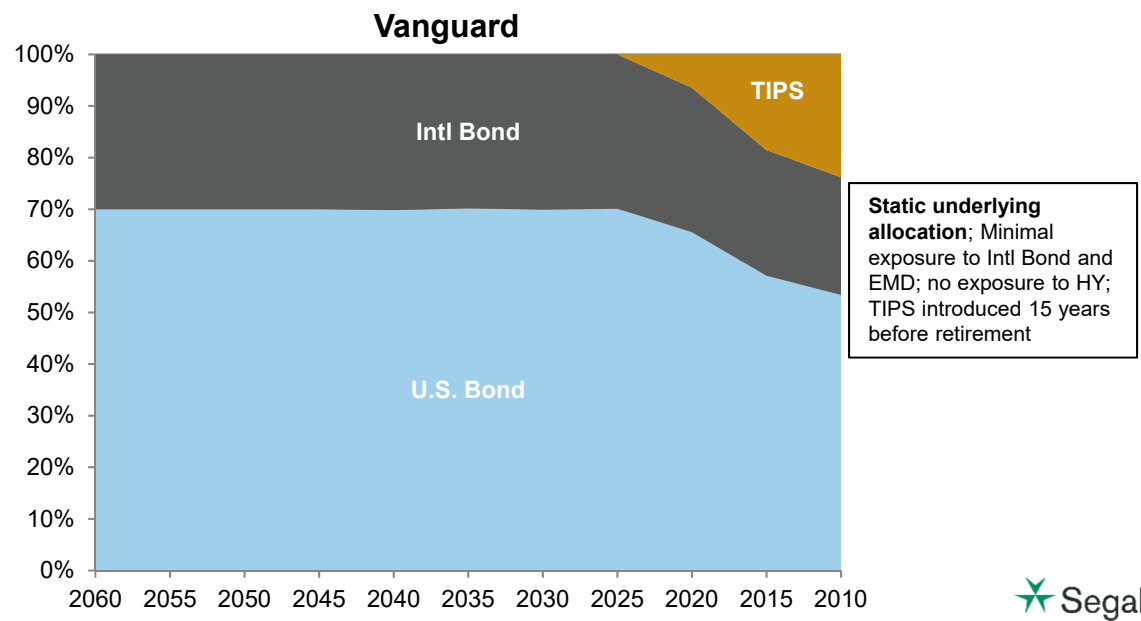
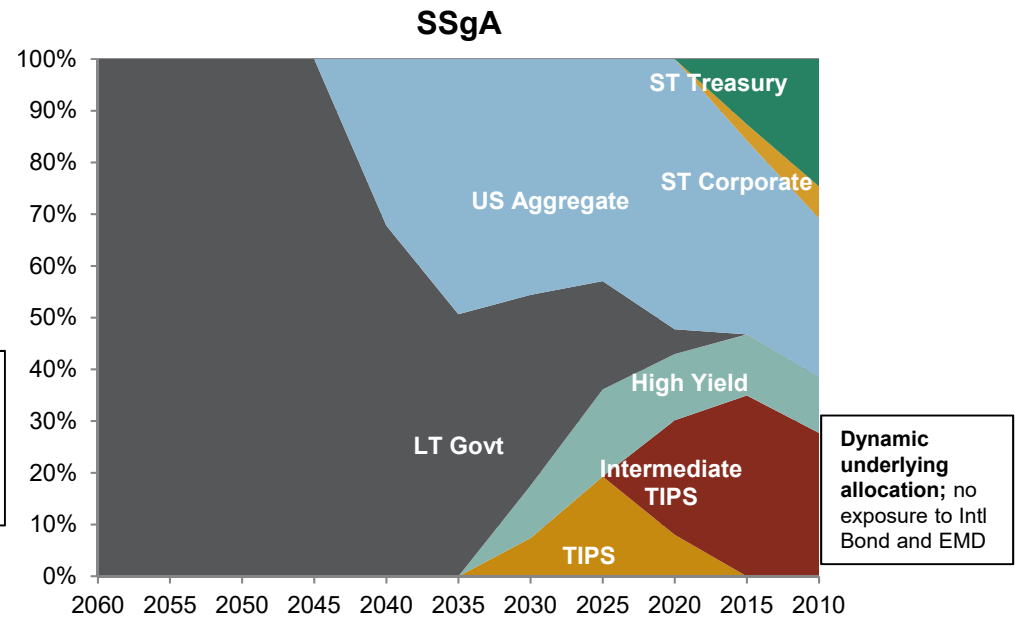
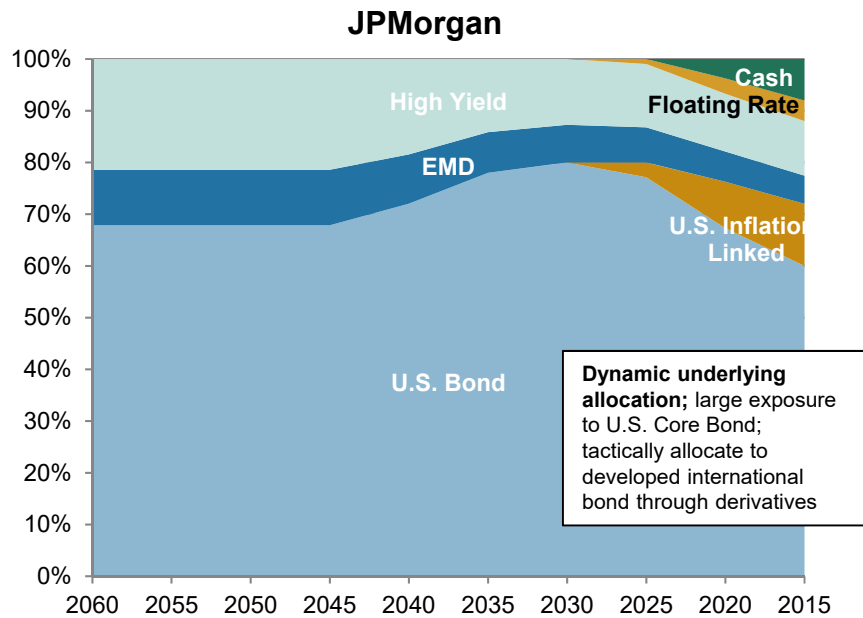
Source: Asset managers; 12/31/2017

# Equity Allocation – Passive & Blend TDF Series



Source: Asset managers; 12/31/2017

# Fixed Income Allocation – Passive & Blend TDF Series



Source: Asset managers; 12/31/2017

# Underlying Investments – Passive & Blend TDF Series

JPMorgan
<b>Asset Class / Fund</b>
<b>U.S. Equity</b>
Vanguard S&P 500 ETF
iShares Russell 2000
iShares Russell Midcap ETF
<b>Non-U.S. Equity</b>
iShares Core MSCI EAFE ETF
JPM Emerging Markets Equity
JPM Emerging Economies Equity
iShares Core MSCI Emerging Markets ETF
<b>Fixed-Income</b>
iShares Barclays TIPS
JPM Floating Rate Income
iShares Barclays Capital Aggregate
JPM Core Bond
JPM Emerging Markets Debt
JPM Emerging Markets Strategic Debt
JPM High Yield
<b>Alternatives</b>
JPM Realty Income
JPM Commodities Strategy
<b>Money Market</b>
JPM U.S. Government Money Market

SSgA
<b>Asset Class / Fund</b>
<b>U.S. Equity</b>
SSGA Equity 500 Index II Portfolio Master
SSGA Small/Mid-Cap Equity Index Portfolio
<b>Non-U.S. Equity</b>
SSGA Global Equity Ex-U.S. Index Portfolio Master
<b>U.S. Bond</b>
SSGA Aggregate Bond Index Portfolio Master
SPDR Barclays TIPS ETF
SPDR Barclays 1-10 Year TIPS ETF
SPDR Barclays High Yield Bond ETF
SPDR Barclays Long Term Treasury ETF
SPDR Barclays Short Term Treasury ETF
SPDR Barclays Short Term Corporate Bond ETF
<b>Specialty</b>
SPDR Dow Jones Global Real Estate ETF

Vanguard
<b>Asset Class / Fund</b>
<b>U.S. Equity</b>
Total Stock Market Index
<b>Non-U.S. Equity</b>
International Stock Index
<b>Fixed Income</b>
Total Bond Market II Index
Total International Bond Index
Short-Term TIPS

Source: Asset managers; 12/31/2017

# Asset Class Diversification Comparison

➤ Asset class exposure in look-through portfolio

	Asset Class	American Funds Target Date Retirement	Fidelity Freedom	T. Rowe Price Retirement	TIAA-CREF Lifecycle	JPMorgan SmartRetire-ment	SSgA Target Retirement	Vanguard Target Retirement
Equity	U.S. Large/Mid Cap	✓	✓	✓	✓	✓	✓	✓
	U.S. Small Cap	✓	✓	✓	✓	✓	✓	✓
	Non-U.S. Developed	✓	✓	✓	✓	✓	✓	✓
	Emerging Markets	✓	✓	✓	✓	✓	✓	✓
Fixed Income	U.S. Core	✓	✓	✓	✓	✓	✓	✓
	High Yield	✓	✓	✓	✓	✓	✓	
	Non-U.S. Developed	✓	✓	✓	✓	✓		✓
	Emerging Market Debt	✓	✓	✓	✓	✓		✓
Inflation Protection	Inflation-Linked Debt	✓	✓	✓	✓	✓	✓	✓
	REITs / Real Estate	✓	✓	✓	✓	✓	✓	✓
	Commodities		✓	✓		✓		

Source: Asset managers; 12/31/2017  
 JPM international bond exposure is tactically allocated to derivatives.

# Returns

## > Performance as of December 31, 2017

<b>2010</b>	<b>QTD</b>	<b>%ile Rank</b>	<b>YTD</b>	<b>%ile Rank</b>	<b>1 Year</b>	<b>%ile Rank</b>	<b>3 Years</b>	<b>%ile Rank</b>	<b>5 Years</b>	<b>%ile Rank</b>	<b>7 Years</b>	<b>%ile Rank</b>
<b>American Funds</b>	2.18	61	10.41	44	10.41	44	5.56	15	7.17	1	7.14	1
<b>Fidelity</b>	2.70	9	12.52	3	12.52	3	6.09	3	6.82	11	6.28	30
<b>T. Rowe Price</b>	2.34	36	11.66	10	11.66	10	5.88	8	6.88	10	6.72	16
<b>JPMorgan</b>	2.56	21	10.70	33	10.70	33	5.18	44	5.52	75	—	—
<b>TIAA-CREF</b>	2.69	10	12.76	1	12.76	1	6.33	1	7.09	4	7.07	4
<b>State Street</b>	1.97	89	8.83	90	8.83	90	4.48	79	—	—	—	—
<i>S&amp;P Target Date Index</i>	2.53	24	9.95	66	9.95	66	5.10	49	5.94	53	5.88	53
<i>Morningstar Category</i>	2.33	38	10.20	57	10.20	57	4.79	66	5.34	79	5.27	78
<b>2015</b>												
<b>American Funds</b>	2.43	70	11.19	55	11.19	55	5.92	27	7.96	2	7.64	1
<b>Fidelity</b>	3.08	13	14.30	1	14.30	1	6.83	1	7.48	20	6.78	40
<b>T. Rowe Price</b>	2.70	39	13.34	11	13.34	11	6.54	8	7.97	1	7.55	5
<b>TIAA-CREF</b>	2.94	18	13.85	4	13.85	4	6.75	3	7.75	9	7.51	8
<b>State Street</b>	2.38	74	10.39	76	10.39	76	5.16	67	—	—	—	—
<b>Vanguard</b>	2.73	38	11.50	44	11.50	44	5.62	44	7.25	32	7.01	25
<i>S&amp;P Target Date Index</i>	2.85	29	11.39	51	11.39	51	5.82	32	6.99	43	6.66	43
<i>Morningstar Category</i>	2.63	47	11.29	52	11.29	52	5.21	66	5.93	81	5.72	83
<b>2020</b>												
<b>American Funds</b>	2.83	64	12.87	45	12.87	45	6.58	11	8.93	1	8.34	1
<b>Fidelity</b>	3.45	11	15.64	2	15.64	2	7.36	2	8.09	16	7.20	29
<b>T. Rowe Price</b>	3.11	40	15.74	1	15.74	1	7.41	1	9.09	1	8.38	1
<b>TIAA-CREF</b>	3.31	17	15.58	3	15.58	3	7.37	1	8.63	4	8.13	4
<b>JPMorgan</b>	3.22	27	13.40	32	13.40	32	6.35	20	7.64	32	—	—
<b>State Street</b>	3.23	23	13.38	34	13.38	34	6.23	27	—	—	—	—
<b>Vanguard</b>	3.36	15	14.08	15	14.08	15	6.61	10	8.50	7	7.87	9
<i>S&amp;P Target Date Index</i>	3.20	30	12.80	47	12.80	47	6.48	17	7.92	19	7.33	22
<i>Morningstar Category</i>	2.93	57	12.19	60	12.19	60	5.46	61	6.51	60	6.21	56

Source: Morningstar Direct; periods greater than 1 year annualized



# Returns

## ➤ Performance as of December 31, 2017

<b>2025</b>	<b>QTD</b>	<b>%ile Rank</b>	<b>YTD</b>	<b>%ile Rank</b>	<b>1 Year</b>	<b>%ile Rank</b>	<b>3 Years</b>	<b>%ile Rank</b>	<b>5 Years</b>	<b>%ile Rank</b>	<b>7 Years</b>	<b>%ile Rank</b>
<b>American Funds</b>	3.44	57	15.33	38	15.33	38	7.43	10	10.36	1	9.38	1
<b>Fidelity</b>	3.77	20	16.87	6	16.87	6	7.84	3	9.07	19	7.87	34
<b>T. Rowe Price</b>	3.47	55	17.68	1	17.68	1	8.11	1	10.06	4	9.06	4
<b>TIAA-CREF</b>	3.81	15	17.40	1	17.40	1	8.03	1	9.55	8	8.76	8
<b>JPMorgan</b>	3.66	31	15.56	32	15.56	32	7.17	21	8.71	31	—	—
<b>State Street</b>	4.04	3	16.52	10	16.52	10	7.33	15	—	—	—	—
<b>Vanguard</b>	3.87	11	15.94	22	15.94	22	7.31	16	9.36	13	8.46	15
<i>S&amp;P Target Date Index</i>	3.73	23	14.55	60	14.55	60	7.20	20	8.76	29	7.94	31
<i>Morningstar Category</i>	3.47	55	14.59	59	14.59	59	6.38	64	7.83	64	7.12	70
<b>2030</b>												
<b>American Funds</b>	4.12	39	18.40	12	18.40	12	8.61	3	11.50	1	10.18	1
<b>Fidelity</b>	4.38	20	19.86	1	19.86	1	8.97	1	10.06	16	8.54	28
<b>T. Rowe Price</b>	3.83	73	19.45	2	19.45	2	8.75	2	10.92	5	9.67	5
<b>TIAA-CREF</b>	4.28	25	19.21	3	19.21	3	8.70	2	10.42	7	9.34	8
<b>JPMorgan</b>	4.16	33	17.44	36	17.44	36	7.90	25	9.65	31	—	—
<b>State Street</b>	4.47	12	18.35	13	18.35	13	7.93	23	—	—	—	—
<b>Vanguard</b>	4.21	31	17.52	34	17.52	34	7.85	27	10.13	14	8.99	15
<i>S&amp;P Target Date Index</i>	4.24	30	16.19	65	16.19	65	7.87	27	9.57	33	8.50	31
<i>Morningstar Category</i>	3.99	57	16.38	62	16.38	62	7.04	61	8.49	64	7.55	64
<b>2035</b>												
<b>American Funds</b>	4.69	28	21.04	5	21.04	5	9.56	2	12.13	1	10.59	1
<b>Fidelity</b>	5.00	5	22.01	1	22.01	1	9.77	1	11.04	11	9.13	29
<b>T. Rowe Price</b>	4.07	80	20.88	8	20.88	8	9.22	7	11.53	5	10.08	7
<b>TIAA-CREF</b>	4.73	24	21.11	4	21.11	4	9.29	6	11.26	8	9.87	9
<b>JPMorgan</b>	4.60	37	18.90	45	18.90	45	8.45	29	10.36	34	—	—
<b>State Street</b>	4.86	14	19.73	26	19.73	26	8.46	28	—	—	—	—
<b>Vanguard</b>	4.62	36	19.12	40	19.12	40	8.39	31	10.90	19	9.51	17
<i>S&amp;P Target Date Index</i>	4.71	27	17.78	72	17.78	72	8.51	26	10.29	38	9.02	34
<i>Morningstar Category</i>	4.40	57	18.45	56	18.45	56	7.78	59	9.58	61	8.34	63

Source: Morningstar Direct; periods greater than 1 year annualized



# Returns

## > Performance as of December 31, 2017

<b>2040</b>	<b>QTD</b>	<b>%ile Rank</b>	<b>YTD</b>	<b>%ile Rank</b>	<b>1 Year</b>	<b>%ile Rank</b>	<b>3 Years</b>	<b>%ile Rank</b>	<b>5 Years</b>	<b>%ile Rank</b>	<b>7 Years</b>	<b>%ile Rank</b>
<b>American Funds</b>	4.97	32	21.98	4	21.98	4	9.89	1	12.45	1	10.80	1
<b>Fidelity</b>	5.16	13	22.38	3	22.38	3	9.88	1	11.17	22	9.22	31
<b>T. Rowe Price</b>	4.31	85	22.02	4	22.02	4	9.57	7	11.96	5	10.37	5
<b>TIAA-CREF</b>	5.15	14	22.91	1	22.91	1	9.86	2	11.88	5	10.30	7
<b>JPMorgan</b>	4.93	36	20.29	38	20.29	38	8.97	24	10.87	29	—	—
<b>State Street</b>	5.12	18	20.69	29	20.69	29	8.75	31	—	—	—	—
<b>Vanguard</b>	5.00	28	20.71	28	20.71	28	8.91	26	11.47	11	9.92	14
<i>S&amp;P Target Date Index</i>	5.03	27	18.87	72	18.87	72	8.95	26	10.78	31	9.37	26
<i>Morningstar Category</i>	4.71	57	19.30	60	19.30	60	8.08	56	9.78	64	8.40	64
<b>2045</b>												
<b>American Funds</b>	5.11	34	22.44	6	22.44	6	10.09	2	12.57	1	10.90	1
<b>Fidelity</b>	5.12	33	22.36	7	22.36	7	9.87	6	11.28	21	9.27	40
<b>T. Rowe Price</b>	4.37	87	22.41	6	22.41	6	9.71	9	12.03	7	10.44	8
<b>TIAA-CREF</b>	5.36	7	23.62	1	23.62	1	10.18	1	12.05	6	10.42	10
<b>JPMorgan</b>	4.98	43	20.49	54	20.49	54	9.05	31	10.91	36	—	—
<b>State Street</b>	5.29	15	21.45	24	21.45	24	9.02	33	—	—	—	—
<b>Vanguard</b>	5.22	25	21.42	26	21.42	26	9.17	26	11.64	14	10.04	17
<i>S&amp;P Target Date Index</i>	5.20	27	19.56	75	19.56	75	9.24	22	11.15	29	9.63	24
<i>Morningstar Category</i>	4.91	48	20.42	56	20.42	56	8.48	60	10.41	60	8.91	64
<b>2050</b>												
<b>American Funds</b>	5.20	34	22.61	6	22.61	6	10.16	2	12.62	1	10.93	1
<b>Fidelity</b>	5.10	40	22.33	9	22.33	9	9.85	5	11.31	23	9.24	43
<b>T. Rowe Price</b>	4.42	90	22.38	9	22.38	9	9.71	9	12.04	8	10.45	9
<b>TIAA-CREF</b>	5.42	14	24.04	2	24.04	2	10.34	1	12.14	6	10.49	8
<b>JPMorgan</b>	4.98	54	20.53	58	20.53	58	9.03	33	10.91	43	—	—
<b>State Street</b>	5.31	22	21.42	32	21.42	32	8.91	39	—	—	—	—
<b>Vanguard</b>	5.19	35	21.39	34	21.39	34	9.16	27	11.63	13	10.03	17
<i>S&amp;P Target Date Index</i>	5.34	21	20.18	67	20.18	67	9.49	14	11.48	15	9.86	21
<i>Morningstar Category</i>	5.01	51	20.40	61	20.40	61	8.51	54	10.26	73	8.74	67

Source: Morningstar Direct periods greater than 1 year annualized

# Returns

## ➤ Performance as of December 31, 2017

<b>2055</b>	<b>QTD</b>	<b>%ile Rank</b>	<b>YTD</b>	<b>%ile Rank</b>	<b>1 Year</b>	<b>%ile Rank</b>	<b>3 Years</b>	<b>%ile Rank</b>	<b>5 Years</b>	<b>%ile Rank</b>	<b>7 Years</b>	<b>%ile Rank</b>
<b>American Funds</b>	5.15	38	22.63	6	22.63	6	10.15	3	12.60	1	10.92	2
<b>Fidelity</b>	5.09	45	22.37	10	22.37	10	9.86	6	11.46	24	—	—
<b>T. Rowe Price</b>	4.41	93	22.33	11	22.33	11	9.70	12	12.02	13	10.45	14
<b>TIAA-CREF</b>	5.46	11	24.23	1	24.23	1	10.43	1	12.20	8	—	—
<b>JPMorgan</b>	4.99	50	20.41	68	20.41	68	9.06	36	10.84	53	—	—
<b>State Street</b>	5.29	26	21.53	35	21.53	35	8.92	44	—	—	—	—
<b>Vanguard</b>	5.18	35	21.38	42	21.38	42	9.11	34	11.60	19	10.05	24
<i>S&amp;P Target Date Index</i>	5.38	16	20.48	67	20.48	67	9.62	13	11.70	19	10.06	24
<i>Morningstar Category</i>	5.05	48	20.99	56	20.99	56	8.73	53	10.84	53	9.18	62
<b>2060</b>												
<b>American Funds</b>	5.17	44	22.49	12	22.49	12	—	—	—	—	—	—
<b>Fidelity</b>	5.11	54	22.21	18	22.21	18	9.82	24	—	—	—	—
<b>T. Rowe Price</b>	4.38	96	22.29	17	22.29	17	9.68	33	—	—	—	—
<b>TIAA-CREF</b>	5.49	15	24.40	1	24.40	1	10.55	3	—	—	—	—
<b>JPMorgan</b>	5.00	64	20.52	73	20.52	73	—	—	—	—	—	—
<b>State Street</b>	5.28	32	21.57	37	21.57	37	8.89	65	—	—	—	—
<b>Vanguard</b>	5.17	43	21.36	47	21.36	47	9.10	58	11.59	1	—	—
<i>S&amp;P Target Date Index</i>	5.47	17	20.75	67	20.75	67	9.71	30	11.75	1	10.10	1
<i>Morningstar Category</i>	5.13	50	21.21	56	21.21	56	8.97	61	11.34	100	—	—

Source: Morningstar Direct; periods greater than 1 year annualized

# Returns

## ➤ Calendar Year

<b>2010</b>	<b>2017 % Rank</b>		<b>2016 % Rank</b>		<b>2015 % Rank</b>		<b>2014 % Rank</b>		<b>2013 % Rank</b>		<b>2012 % Rank</b>		<b>2011 % Rank</b>		<b>2010 % Rank</b>		<b>2009 % Rank</b>		
<b>American Funds</b>	10.41	44	7.45	4	-0.84	33	6.79	1	12.55	1	10.51	47	3.71	6	9.98	74	23.79	52	
<b>Fidelity</b>	12.52	3	6.42	32	-0.28	8	4.84	32	11.08	34	10.43	53	-0.28	84	11.65	35	24.82	28	
<b>T. Rowe Price</b>	11.66	10	7.11	16	-0.76	30	4.99	30	11.93	14	12.44	7	0.54	60	12.70	10	27.95	12	
<b>TIAA-CREF</b>	12.76	1	6.20	45	0.38	1	4.59	42	12.00	12	12.67	5	1.69	28	11.84	32	19.52	81	
<b>JPMorgan</b>	10.70	33	5.80	60	-0.66	26	4.74	36	7.35	88	—	—	—	—	—	—	—	—	
<b>State Street</b>	8.83	90	5.24	79	-0.42	17	—	—	—	—	—	—	—	—	—	—	—	—	
<i>S&amp;P Target Date Index</i>	9.95	66	5.82	58	-0.21	8	5.07	30	9.42	73	8.94	77	2.61	26	10.56	69	14.61	92	
<i>Morningstar Category</i>	10.20	57	5.81	58	-1.31	65	4.09	74	8.28	78	9.65	69	0.75	56	10.55	69	22.05	73	
<b>2015</b>																			
<b>American Funds</b>	11.19	55	7.55	9	-0.62	19	6.64	5	15.72	1	11.58	42	2.31	10	10.21	77	25.04	45	
<b>Fidelity</b>	14.30	1	7.04	28	-0.34	10	5.17	40	11.88	66	10.68	74	-0.34	63	11.75	45	25.62	31	
<b>T. Rowe Price</b>	13.34	11	7.31	14	-0.58	17	5.37	38	15.18	10	13.81	1	-0.32	61	13.79	6	31.35	16	
<b>TIAA-CREF</b>	13.85	4	6.40	52	0.42	1	4.78	49	13.96	25	13.47	7	0.74	39	12.69	26	21.55	70	
<b>State Street</b>	10.39	76	6.22	61	-0.82	34	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Vanguard</b>	11.50	44	6.16	65	-0.46	12	6.56	7	13.00	47	11.37	50	1.71	28	12.47	34	21.30	77	
<i>S&amp;P Target Date Index</i>	11.39	51	6.56	47	-0.16	8	5.49	36	12.16	65	10.32	86	1.53	32	11.85	43	17.48	91	
<i>Morningstar Category</i>	11.29	52	6.12	67	-1.39	57	4.46	59	9.62	89	10.83	70	-0.11	53	11.62	49	23.19	69	
<b>2020</b>																			
<b>American Funds</b>	12.87	45	7.05	26	0.19	5	6.74	7	18.71	1	12.98	28	1.10	30	11.30	68	27.25	40	
<b>Fidelity</b>	15.64	2	7.26	20	-0.23	14	5.34	43	13.22	47	11.77	49	-1.36	76	12.93	40	28.86	27	
<b>T. Rowe Price</b>	15.74	1	7.41	16	-0.31	17	5.63	35	18.05	5	15.01	1	-1.20	73	14.74	4	34.19	7	
<b>TIAA-CREF</b>	15.58	3	6.66	37	0.42	3	4.86	57	16.50	16	14.62	2	-0.29	56	13.45	31	23.37	68	
<b>JPMorgan</b>	13.40	32	6.76	35	-0.65	30	6.34	16	13.00	50	—	—	—	—	—	—	—	—	
<b>State Street</b>	13.38	34	7.41	16	-1.56	62	—	—	—	—	—	—	—	—	—	—	—	—	
<b>Vanguard</b>	14.08	15	6.95	29	-0.68	31	7.11	1	15.85	24	12.35	38	0.60	43	13.12	38	23.10	72	
<i>S&amp;P Target Date Index</i>	12.80	47	7.22	23	-0.19	12	5.67	34	14.76	32	11.48	56	0.58	44	12.93	42	19.95	93	
<i>Morningstar Category</i>	12.19	60	6.24	53	-1.60	62	4.72	62	11.59	62	11.53	55	-0.23	56	12.45	48	24.18	63	



# Returns

## > Calendar Year

2025	2017 % Rank		2016 % Rank		2015 % Rank		2014 % Rank		2013 % Rank		2012 % Rank		2011 % Rank		2010 % Rank		2009 % Rank	
<b>American Funds</b>	15.33	38	7.36	31	0.13	4	6.66	13	23.76	3	15.58	7	-0.97	29	12.68	65	29.71	47
<b>Fidelity</b>	16.87	6	7.47	27	-0.16	7	5.63	40	16.50	53	13.15	52	-2.65	71	13.82	41	30.03	39
<b>T. Rowe Price</b>	17.68	1	7.55	24	-0.17	9	5.84	35	20.78	8	16.00	3	-2.06	54	15.37	6	36.29	1
<b>TIAA-CREF</b>	17.40	1	7.00	47	0.36	1	4.87	66	19.33	21	15.60	6	-1.29	38	13.99	35	25.40	71
<b>JPMorgan</b>	15.56	32	7.22	38	-0.67	26	6.71	12	15.59	65	—	—	—	—	—	—	—	—
<b>State Street</b>	16.52	10	8.03	11	-1.78	70	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	15.94	22	7.48	27	-0.85	31	7.17	6	18.14	31	13.29	47	-0.37	23	13.84	40	24.81	76
<i>S&amp;P Target Date Index</i>	14.55	60	7.82	17	-0.25	14	5.56	43	17.03	44	12.51	64	-0.28	23	13.82	44	22.03	89
<i>Morningstar Category</i>	14.59	59	6.75	58	-1.59	62	5.06	60	15.26	69	13.09	54	-1.84	49	13.40	54	28.16	56
<b>2030</b>																		
<b>American Funds</b>	18.40	12	7.71	37	0.47	2	7.06	12	25.64	1	16.49	8	-1.82	38	13.15	62	31.19	36
<b>Fidelity</b>	19.86	1	8.13	24	-0.16	11	5.67	45	18.13	54	13.47	57	-3.15	73	14.04	41	30.57	43
<b>T. Rowe Price</b>	19.45	2	7.69	37	-0.02	8	6.05	36	23.09	7	16.82	4	-2.70	61	16.01	10	37.99	1
<b>TIAA-CREF</b>	19.21	3	7.33	49	0.38	4	4.71	76	22.07	10	16.53	6	-2.32	50	14.74	30	27.01	73
<b>JPMorgan</b>	17.44	36	7.87	30	-0.85	31	6.90	15	18.05	56	—	—	—	—	—	—	—	—
<b>State Street</b>	18.35	13	8.21	21	-1.83	67	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	17.52	34	7.85	31	-1.03	38	7.17	10	20.49	30	14.24	43	-1.27	30	14.43	36	26.72	77
<i>S&amp;P Target Date Index</i>	16.19	65	8.35	19	-0.30	16	5.64	47	19.14	44	13.43	58	-1.17	30	14.52	35	23.70	95
<i>Morningstar Category</i>	16.38	62	7.34	49	-1.81	65	5.06	68	16.62	66	13.36	60	-2.28	48	13.42	57	28.65	57
<b>2035</b>																		
<b>American Funds</b>	21.04	5	8.00	44	0.59	1	7.02	13	25.97	1	16.64	11	-2.13	18	13.06	79	31.81	38
<b>Fidelity</b>	22.01	1	8.63	18	-0.21	13	5.75	45	20.68	59	14.45	61	-4.59	79	14.46	52	31.26	48
<b>T. Rowe Price</b>	20.88	8	7.64	56	0.13	5	6.07	35	24.86	7	17.35	5	-3.26	48	16.34	6	39.04	1
<b>TIAA-CREF</b>	21.11	4	7.52	60	0.24	3	4.67	75	24.76	7	17.32	6	-3.37	51	15.26	30	28.65	62
<b>JPMorgan</b>	18.90	45	8.32	32	-0.97	32	6.94	15	19.99	68	—	—	—	—	—	—	—	—
<b>State Street</b>	19.73	26	8.59	21	-1.88	67	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	19.12	40	8.26	34	-1.26	44	7.24	11	22.82	29	15.16	45	-2.24	22	15.14	32	28.17	70
<i>S&amp;P Target Date Index</i>	17.78	72	8.85	14	-0.35	17	5.69	47	20.84	57	14.12	69	-1.71	15	15.02	40	24.99	89
<i>Morningstar Category</i>	18.45	56	7.58	59	-1.74	61	5.20	66	19.97	70	14.69	57	-3.31	50	14.42	55	29.98	61

# Returns

## ➤ Calendar Year

2040	2017 % Rank	2016 % Rank	2015 % Rank	2014 % Rank	2013 % Rank	2012 % Rank	2011 % Rank	2010 % Rank	2009 % Rank									
<b>American Funds</b>	21.98	4	8.17	41	0.58	1	6.96	19	26.66	1	16.71	14	-2.28	23	13.01	78	31.89	42
<b>Fidelity</b>	22.38	3	8.60	30	-0.18	13	5.71	54	21.05	59	14.53	64	-4.63	76	14.62	50	31.65	46
<b>T. Rowe Price</b>	22.02	4	7.63	59	0.17	5	6.18	40	25.93	6	17.55	4	-3.49	47	16.51	12	39.07	1
<b>TIAA-CREF</b>	22.91	1	7.78	55	0.09	6	4.63	78	26.33	3	17.52	5	-3.58	48	15.45	31	28.64	69
<b>JPMorgan</b>	20.29	38	8.78	21	-1.13	37	7.00	18	21.01	62	—	—	—	—	—	—	—	—
<b>State Street</b>	20.69	29	8.93	20	-2.18	71	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	20.71	28	8.73	24	-1.59	52	7.15	16	24.37	21	15.56	38	-2.55	29	15.17	42	28.32	78
<i>S&amp;P Target Date Index</i>	18.87	72	9.23	15	-0.40	18	5.69	55	22.10	52	14.69	61	-2.17	23	15.38	34	25.97	97
<i>Morningstar Category</i>	19.30	60	7.96	50	-1.98	66	5.29	67	19.92	70	14.35	69	-3.51	47	14.28	57	30.66	59
<b>2045</b>																		
<b>American Funds</b>	22.44	6	8.27	47	0.64	1	7.09	14	26.51	3	16.80	13	-2.29	13	12.98	85	32.03	39
<b>Fidelity</b>	22.36	7	8.57	37	-0.16	12	5.79	48	21.60	72	14.79	75	-5.02	80	14.72	59	32.04	36
<b>T. Rowe Price</b>	22.41	6	7.69	63	0.17	6	6.14	36	25.93	8	17.62	5	-3.47	36	16.44	9	39.10	1
<b>TIAA-CREF</b>	23.62	1	8.06	52	0.13	6	4.61	76	26.25	4	17.56	6	-3.63	39	15.40	38	28.57	74
<b>JPMorgan</b>	20.49	54	8.78	30	-1.05	34	6.97	18	20.99	77	—	—	—	—	—	—	—	—
<b>State Street</b>	21.45	24	9.37	14	-2.45	81	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	21.42	26	8.87	27	-1.57	51	7.16	13	24.37	31	15.58	49	-2.51	19	15.19	47	28.15	83
<i>S&amp;P Target Date Index</i>	19.56	75	9.54	12	-0.46	19	5.67	53	23.14	53	15.15	66	-2.56	21	15.62	33	26.40	92
<i>Morningstar Category</i>	20.42	56	7.96	56	-1.81	60	5.34	64	22.01	69	15.52	52	-4.10	55	14.83	57	30.93	52
<b>2050</b>																		
<b>American Funds</b>	22.61	6	8.33	45	0.65	1	7.02	23	26.65	1	16.72	19	-2.28	15	13.07	79	31.86	42
<b>Fidelity</b>	22.33	9	8.63	37	-0.24	15	5.78	54	21.87	68	15.06	65	-5.57	90	14.90	50	32.47	35
<b>T. Rowe Price</b>	22.38	9	7.71	63	0.19	5	6.19	40	25.90	12	17.55	5	-3.36	29	16.41	17	38.92	1
<b>TIAA-CREF</b>	24.04	2	8.10	51	0.18	5	4.59	78	26.25	5	17.53	6	-3.56	34	15.32	37	28.35	81
<b>JPMorgan</b>	20.53	58	8.77	33	-1.13	37	6.97	24	21.06	75	—	—	—	—	—	—	—	—
<b>State Street</b>	21.42	32	9.30	20	-2.66	83	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	21.39	34	8.85	30	-1.58	53	7.18	20	24.34	33	15.58	47	-2.54	19	15.20	42	28.31	85
<i>S&amp;P Target Date Index</i>	20.18	67	9.74	13	-0.47	19	5.69	59	24.13	35	15.49	51	-2.87	23	15.62	34	26.40	97
<i>Morningstar Category</i>	20.40	61	8.24	48	-1.97	63	5.42	67	20.98	75	14.76	74	-3.85	44	14.48	52	31.95	41

# Returns

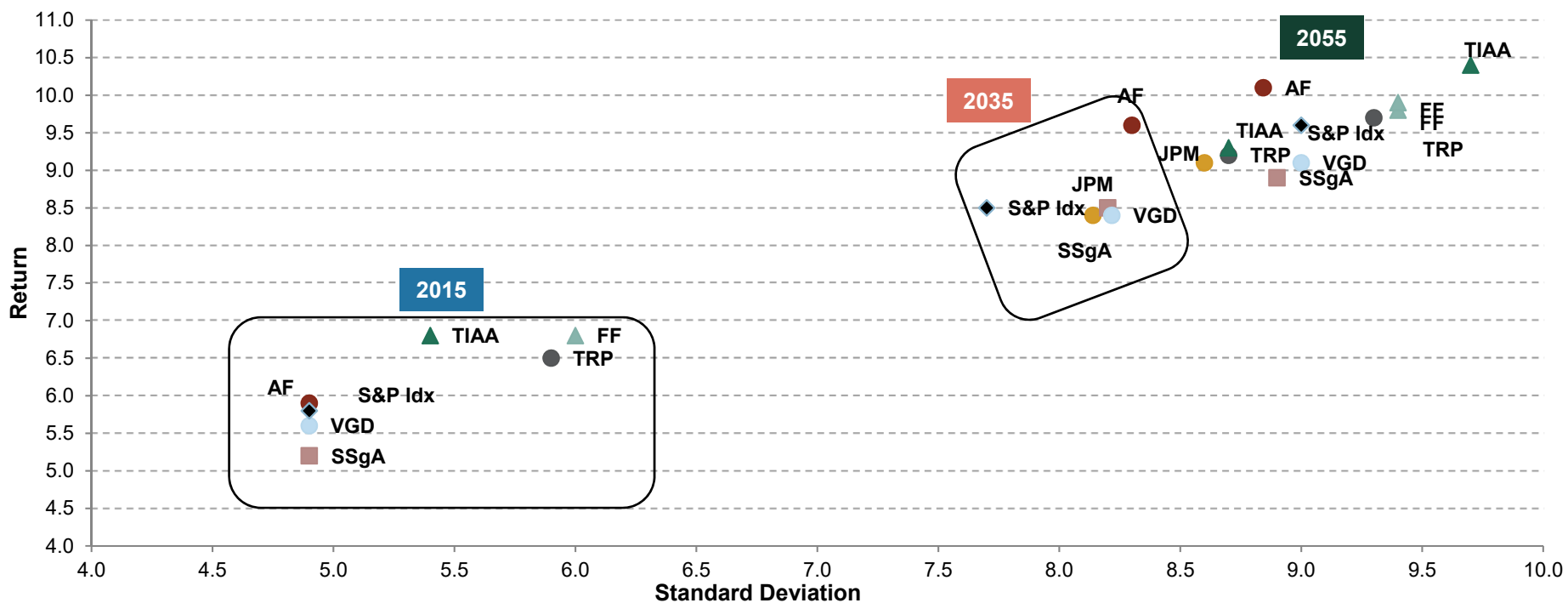
## ➤ Calendar Year

2055	2017 % Rank		2016 % Rank		2015 % Rank		2014 % Rank		2013 % Rank		2012 % Rank		2011 % Rank		2010 % Rank		2009 % Rank	
<b>American Funds</b>	22.63	6	8.30	46	0.63	1	7.01	21	26.59	2	16.76	17	-2.29	2	—	—	—	—
<b>Fidelity</b>	22.37	10	8.56	37	-0.20	13	5.75	53	22.71	69	15.32	66	—	—	—	—	—	—
<b>T. Rowe Price</b>	22.33	11	7.73	63	0.18	6	6.18	41	25.86	15	17.60	3	-3.35	22	16.41	1	38.97	1
<b>TIAA-CREF</b>	24.23	1	8.27	48	0.13	6	4.58	74	26.24	8	17.65	1	—	—	—	—	—	—
<b>JPMorgan</b>	20.41	68	8.84	28	-1.02	34	7.15	17	20.37	87	—	—	—	—	—	—	—	—
<b>State Street</b>	21.53	35	9.28	21	-2.70	88	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	21.38	42	8.88	28	-1.72	56	7.19	17	24.33	35	15.58	58	-2.27	1	—	—	—	—
<i>S&amp;P Target Date Index</i>	20.48	67	9.94	7	-0.54	21	5.64	56	24.96	28	15.81	43	-2.87	15	15.62	21	26.40	100
<i>Morningstar Category</i>	20.99	56	8.00	56	-1.62	52	5.52	58	23.34	50	15.25	74	-4.08	40	14.43	79	31.87	34
<b>2060</b>																		
<b>American Funds</b>	22.49	12	8.41	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>Fidelity</b>	22.21	18	8.61	24	-0.22	26	—	—	—	—	—	—	—	—	—	—	—	—
<b>T. Rowe Price</b>	22.29	17	7.63	57	0.24	1	—	—	—	—	—	—	—	—	—	—	—	—
<b>TIAA-CREF</b>	24.40	1	8.39	32	0.19	3	—	—	—	—	—	—	—	—	—	—	—	—
<b>JPMorgan</b>	20.52	73	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
<b>State Street</b>	21.57	37	9.03	19	-2.59	97	—	—	—	—	—	—	—	—	—	—	—	—
<b>Vanguard</b>	21.36	47	8.84	21	-1.68	81	7.16	1	24.35	1	—	—	—	—	—	—	—	—
<i>S&amp;P Target Date Index</i>	20.75	67	10.08	4	-0.66	41	5.64	56	24.96	1	15.81	1	-2.87	1	—	—	—	—
<i>Morningstar Category</i>	21.21	56	7.90	49	-1.06	59	5.57	67	25.27	1	—	—	—	—	—	—	—	—

# Risk versus Reward

> 3 Years ending December 31, 2017

	2015					2035					2055				
	% Eq	Std Dev	Return	Sharpe Ratio	Downside Capture	% Eq	Std Dev	Return	Sharpe Ratio	Downside Capture	% Eq	Std Dev	Return	Sharpe Ratio	Downside Capture
AF	45.2	4.9	5.9	1.1	44.9	82.2	8.3	9.6	1.1	86.9	84.6	8.8	10.1	1.1	91.6
FF	53.5	6.0	6.8	1.1	60.6	90.6	9.4	9.8	1.0	101.0	92.5	9.4	9.9	1.0	100.5
TRP	48.4	5.9	6.5	1.0	58.0	80.5	8.7	9.2	1.0	88.0	88.0	9.3	9.7	1.0	93.4
TIAA	47.0	5.4	6.8	1.2	52.4	80.6	8.7	9.3	1.0	92.2	98.0	9.7	10.4	1.0	102.4
JPM	37.5	—	—	—	—	76.2	8.1	8.4	1.0	84.5	86.0	8.6	9.1	1.0	90.8
SSgA	41.2	4.9	5.2	1.0	44.7	80.5	8.2	8.5	1.0	86.1	90.0	8.9	8.9	1.0	96.8
VGD	42.8	4.9	5.6	1.1	47.1	78.7	8.2	8.4	1.0	86.7	90.0	9.0	9.1	1.0	96.6
S&P Idx	44.3	4.9	5.8	1.1	47.4	78.5	7.7	8.5	1.0	79.6	90.4	9.0	9.6	1.0	94.9



Source: Morningstar Direct; periods greater than 1 year annualized.  
Calculation benchmark: S&P 500

# Fee Comparison

	Share Class	2010	%	2015	%	2020	%	2025	%	2030	%	2035	%	2040	%	2045	%	2050	%	2055	%	2060	%
<b>American Funds</b>	R6	0.34	16	0.33	15	0.35	20	0.37	21	0.39	20	0.40	24	0.41	25	0.41	26	0.42	25	0.42	25	0.45	29
<b>Fidelity</b>	K	0.47	40	0.50	45	0.54	46	0.57	53	0.61	58	0.64	59	0.64	58	0.64	59	0.64	59	0.64	61	0.64	58
<b>T. Rowe Price</b>	-	0.57	76	0.59	74	0.63	67	0.67	76	0.69	73	0.72	83	0.74	82	0.74	83	0.74	79	0.74	82	0.74	79
<b>TIAA-CREF</b>	Instl	0.38	21	0.39	23	0.40	27	0.41	29	0.42	25	0.43	27	0.44	25	0.45	27	0.45	26	0.45	28	0.45	30
<b>JPMorgan</b>	R6	0.29	15	0.29	15	0.29	13	0.29	14	0.29	16	0.29	17	0.29	16	0.29	15	0.29	14	0.29	14	0.29	16
<b>SSgA</b>	K	0.13	6	0.13	12	0.13	7	0.13	7	0.13	7	0.13	8	0.13	7	0.13	8	0.13	7	0.13	7	0.13	11
<b>Vanguard</b>	Inv	0.13	8	0.14	12	0.13	7	0.14	7	0.14	7	0.14	8	0.15	7	0.15	8	0.15	7	0.15	7	0.15	11
<b>Morningstar Peer Group</b>																							
<i>25th Percentile</i>		0.38		0.39		0.39		0.40		0.42		0.41		0.44		0.41		0.44		0.42		0.39	
<i>50th Percentile</i>		0.49		0.52		0.57		0.56		0.57		0.58		0.59		0.59		0.60		0.59		0.56	
<i>75th Percentile</i>		0.53		0.60		0.66		0.66		0.69		0.70		0.70		0.70		0.71		0.70		0.72	

Source: Morningstar Direct. Morningstar peer group presents Institutional shares within US Fund Target Date Series.



**XGPFQT'UWXG[**

## State Retirement Agency of Maryland Optional Retirement Plan Vendor Survey

As part of the bi-ennial ORP review, Segal Marco Advisors conducted a survey of the two recordkeepers, Fidelity and TIAA. The survey was distributed to thirty four (34) Plan Administrators of the Maryland Optional Retirement Plan. The survey was constructed to gather feedback on the Plan's design and current vendors. Survey respondents were mainly asked whether they were 'Unsatisfied', 'Satisfied' or 'Very Satisfied' with certain aspects of the Plan and were given space to provide commentary.

Survey topics included:

- General issues
- Investment options
- Administrative services
- Communication and education services
- Technology and customer service

A total of ten (10) Plan Administrators responded to the survey.

### **General Issues**

The Survey found that the Plan Administrators were generally happy with the overall structure of the ORP as 90% responded that they were satisfied or very satisfied.

Plan Sponsor and participant responsiveness to issue resolution is a key component of general satisfaction with each recordkeeper:

- **TIAA**
  - Respondents were satisfied with TIAA's issue resolution, noting TIAA is very responsive to all questions from employees and timely in providing answers.
  - Issue resolution for plan sponsors was also satisfactory, with comments stating that emails are answered quickly and there is always a representative available that is very knowledgeable on the ORP program.
- **Fidelity**
  - While 80% of responses showed satisfaction with Fidelity's participant issue resolution, 20% felt it was unsatisfactory. Areas for improvement were Fidelity's slow response time, which makes it difficult to get information back to participants, and the cumbersome nature of PlanFocus, which causes challenges in updating participant records.
  - Similar to participant issue resolution, 70% of responses found Fidelity's plan sponsor issue resolution to be satisfactory. However, 30% found it unsatisfactory commenting that Fidelity's response time is slow, and that when calling customer service, certain representatives are not knowledgeable about the Maryland.

Fidelity and TIAA use different models to service the Plan and participants. Fidelity relies heavily on technical support and use of its internet website. Although Fidelity has representatives to conduct seminars and attend new enrollment meetings, it does not offer a significant number of field representatives to support the colleges and universities. TIAA relies more on people on the ground and offers a dedicated group of field representatives available to meet with participants in all the colleges and universities. In addition, Fidelity has \$398.2 million in Plan assets compared to TIAA, which has over \$3.2 billion in assets.

### **Investment options**

All of the respondents were satisfied or very satisfied with the number and quality of the Plan's investment options for both TIAA and Fidelity. While not directly commented on, the responses suggest there are few participants asking for more investment options. With the introduction of the self-directed brokerage window in 2018, participants now have the flexibility to purchase any mutual fund available in the window.

### **Administrative services**

As a whole, respondents were satisfied with the administrative services provided.

- **TIAA**
  - Feedback showed satisfactory performance:
    - One respondent specifically commented that they have never had a problem obtaining an answer.
    - There was also positive feedback on the website being administrator-friendly.
    - One comment did request additional training.
- **Fidelity**
  - Feedback was positive but less favorable than TIAA, which appears to be due to Fidelity's lower level of field support and more cumbersome processes
    - 20% of respondents were not satisfied with Fidelity's responsiveness.
      - A representative was replaced and not appropriately communicated
    - 30% of the respondents were unsatisfied with the administrative services and indicated processes were burdensome.
      - One respondent commented that it is difficult to use Fidelity's PlanFocus System.
    - 20% stated that they were not satisfied with the timeliness of services and reports.
      - An example was the inflexibility in restructuring a 402g excess deferral report to show only those still participating.

The majority of responses suggest that both providers do good work for Plan administration; however, Fidelity received more negative responses than TIAA.

### **Communication and education**

Respondents were largely satisfied with the communication and education services provided by both record-keepers.

- **TIAA**
  - 90% of respondents were satisfied with the level of education that Plan participants are receiving.
    - A respondent indicated they would like e-mail blasts to all participants to encourage retirement savings.

- Another respondent would like to see online assistance for enrollment and account changes.
    - Would prefer if new employees had the ability to enroll online and select funds instead of having to wait for a welcome packet.
  - 90% of the respondents were satisfied with the level of field representative support available.
    - Respondents stated that even when they lose a long time field representative, the new representative is well-versed with the Plan and picks up where the other representative left off.
- **Fidelity**
  - 70% of the Plan Administrators stated that they are satisfied with the program. However, respondents expressed some issues:
    - Respondents mentioned that representatives need more training on the ORP system.
    - One respondent said that turnover lately has been high, and there always seems to be a high learning curve when a new representative is added.
  - 70% of the Plan Administrators stated that they are satisfied with new employee education program.
    - Would prefer if new employees had the ability to enroll online and select funds instead of having to wait for a welcome packet.

### **Technology**

All respondents said they are satisfied with the TIAA website, and all said that it is user friendly. 70% of respondents said they are satisfied with the Fidelity website, and that it is user friendly. This is a significant drop from survey results two years ago when respondents were 96% satisfied with TIAA's website and 88% satisfied with Fidelity's.

### **Conclusion**

The respondents were generally satisfied with the Plan's service providers. Several respondents listed items they felt would enhance the program such as online enrollment, which was the most consistent.

For TIAA, respondents stated that participation rates for eligible employees range from as little as 15% to as much as 85%. Respondents were happy with the plan and had no suggestions for improvement.

For Fidelity, respondents stated participation rates among eligible employees as low as 5% and as high as 45%. Consistent with prior surveys, respondents had several issues they would like to see addressed: less cumbersome plan sponsor website and transaction processing and better responsiveness. Onsite education has improved, but respondents would like even more outreach for education programs. Updating the PlanFocus system as well as better communication through email was mentioned as a suggested improvement for efficiency for the plan administrators.

**UWTXG[ 'CRRGPF KZ**

<b>General</b>				
<b>How satisfied are you with the overall structure of the Optional Retirement Program?</b>		<b>10% Unsatisfied</b>	<b>50% Satisfied</b>	<b>40% Very Satisfied</b>
<b>How satisfied are you with TIAA-CREF's issue resolution for participants?</b>		<b>0% Unsatisfied</b>	<b>40% Satisfied</b>	<b>60% Very Satisfied</b>
<b>Comments:</b>				
8) TIAA is very responsive to all questions posed, and provides timely answers to our employees.				
<b>How satisfied are you with Fidelity's issue resolution for participants?</b>		<b>30% Unsatisfied</b>	<b>40% Satisfied</b>	<b>30% Very Satisfied</b>
<b>Comments:</b>				
8) Fidelity takes more time to respond, and makes it difficult for Plan Administrators to provide information back to them. Their PlanFocus system is cumbersome (this is the method we use to update records when employees depart).				
<b>How satisfied are you with TIAA-CREF's issue resolution for you, as a plan sponsor?</b>		<b>0% Unsatisfied</b>	<b>50% Satisfied</b>	<b>50% Very Satisfied</b>
<b>Comments:</b>				
8) Emails are answered quickly. We can always find a representative who is knowledgeable of the ORP Program for the University System of Maryland.				
<b>How satisfied are you with Fidelity's issue resolution for you, as a plan sponsor?</b>		<b>30% Unsatisfied</b>	<b>40% Satisfied</b>	<b>30% Very Satisfied</b>
<b>Comments:</b>				
8) Their response is slow and at times when we call the customer service number, certain representatives are not knowledgeable about the specific ORP plan available to the University System of Maryland.				

**Communication and Education: TIAA-CREF**

**How satisfied are you with the communication/education services and programs?** **10% Unsatisfied** **80% Satisfied** **10% Very Satisfied**

**How satisfied are you with the level of education participants are receiving?** **10% Unsatisfied** **80% Satisfied** **10% Very Satisfied**

**What would you like to see added or changed?**

2) Email blast to employees to encourage retirement savings.	5) More education on financial wellness overall.	6) Online assistance for enrollment and changes to accounts.	8) Would like the ability for our employees to enroll online and select their funds at the time of hire instead of waiting a month or more for them to receive their welcome packets.	
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**How satisfied are you with the number of field representative support available?** **10% Unsatisfied** **50% Satisfied** **40% Very Satisfied**

**Comments:**

8) Even when we lose a long time field rep, the new rep is well-versed with the plans and picks up where the other rep left off.				
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**How satisfied are you with the new employee education on the Program?** **20% Unsatisfied** **60% Satisfied** **20% Very Satisfied**

<b>Communication and Education: Fidelity</b>				
<b>How satisfied are you with the communication/education services and programs?</b>		<b>30% Unsatisfied</b>	<b>60% Satisfied</b>	<b>10% Very Satisfied</b>
<b>How satisfied are you with the level of education participants are receiving?</b>		<b>40% Unsatisfied</b>	<b>40% Satisfied</b>	<b>20% Very Satisfied</b>
<b>What would you like to see added or changed?</b>				
2) Email blast to employees to encourage retirement savings.	8) Fidelity representatives need to understand the ORP system for the University System of Maryland better. As with TIAA, it would be great if new employees would have the ability to enroll online and select their funds instead of having to wait for a welcome packet.			
<b>How satisfied are you with the number of field representative support available?</b>		<b>33% Unsatisfied</b>	<b>44% Satisfied</b>	<b>20% Very Satisfied</b>
<b>Comments :</b>				
3) Have not met the new field representative, cannot answer this question.	8) Turnover lately has been high, and there always seems to be a high learning curve when a new representative is available.			
<b>How satisfied are you with new employee education on the Program?</b>		<b>30% Unsatisfied</b>	<b>50% Satisfied</b>	<b>20% Very Satisfied</b>
<b>Comments :</b>				
3) Do not know what this question refers to, cannot answer.	8) None. The education provided to administrators is OK.			



**Administrative Services: TIAA-CREF**

**How satisfied are you with the provider's responsiveness? 0% Unsatisfied 60% Satisfied 40% Very Satisfied**

**Comments:**

8) Never a problem obtaining an answer.

**How satisfied are you with the ease of use of the administrative services (i.e. transaction processing)? 0% Unsatisfied 60% Satisfied 40% Very Satisfied**

**Comments:**

8) Their website is very administrator-friendly.

**How satisfied are you with the timeliness of the services? 0% Unsatisfied 60% Satisfied 40% Very Satisfied**

**Comments:**

8) When we have an emergency (a plan member dies before their retirement paperwork has actually been processed), TIAA will work closely with us and the beneficiaries to set up everything as quickly as possible.

**How satisfied are you with the timeliness of reports? 0% Unsatisfied 80% Satisfied 20% Very Satisfied**

**How satisfied are you with the usefulness and ease of understanding the reports? 0% Unsatisfied 80% Satisfied 20% Very Satisfied**

**Comments:**

6) Need additional training.

<b>Administrative Services: Fidelity</b>				
<b>How satisfied are you with the provider's responsiveness?</b>		<b>20% Unsatisfied</b>	<b>70% Satisfied</b>	<b>10% Very Satisfied</b>
<b>Comments:</b>				
6) The replacement of the representative within the last year was untimely. The notification of the representative leaving was received after scheduling sessions at the University.				
<b>How satisfied are you with the ease of use of the administrative services (i.e. transaction processing)?</b>		<b>30% Unsatisfied</b>	<b>50% Satisfied</b>	<b>20% Very Satisfied</b>
<b>Comments:</b>				
8) Difficult to use their Plan Focus system.				
<b>How satisfied are you with the timeliness of the services?</b>		<b>22% Unsatisfied</b>	<b>56% Satisfied</b>	<b>23% Very Satisfied</b>
<b>How satisfied are you with the timeliness of reports?</b>		<b>20% Unsatisfied</b>	<b>70% Satisfied</b>	<b>10% Very Satisfied</b>
<b>How satisfied are you with the usefulness and ease of understanding the reports?</b>		<b>20% Unsatisfied</b>	<b>70% Satisfied</b>	<b>10% Very Satisfied</b>
<b>Comments:</b>				
10) For the 402g report, Fidelity sends every employee who has ever been enrolled in their supplemental plan(s) whether they are still participating or not. The 402g report should show the employees who are going over.				

**Investment Options: TIAA-CREF**

How satisfied are you with the breadth of investment options offered?	0% Unsatisfied	90% Satisfied	10% Very Satisfied
Are participants requesting more options?		25% Yes	75% No

**Investment Options: Fidelity**

How satisfied are you with the breadth of investment options offered?	0% Unsatisfied	90% Satisfied	10% Very Satisfied
Are participants requesting more options?		20% Yes	80% No

**Technology Customer Service: TIAA-CREF**

How satisfied are you with the website?	0% Unsatisfied	60% Satisfied	40% Very Satisfied
Is it user friendly and easy to navigate?		100% Yes	0% No
Do you receive participant feedback on the Customer Service Center?		30% Yes	70% No
Does it appear to be meeting participant expectations?		100% Yes	0% No

**Technology Customer Service: Fidelity**

How satisfied are you with the website?	30% Unsatisfied	60% Satisfied	10% Very Satisfied
Is it user friendly and easy to navigate?		70% Yes	30% No
Do you receive participant feedback on the Customer Service Center?		30% Yes	70% No
Does it appear to be meeting participant expectations?		50% Yes	50% No

**Miscellaneous: TIAA-CREF**

**What percentage of eligible employees participate in the Plan?**

1) 80% 2) 35% 3) 15% 4) 75% 5) 80% 6) 70% 7) 25% 8) 85% 9) 60% 10) -

**Are there any changes you would like to see in the Plan?** **0% Yes** **100% No**

**Are there any capabilities or enhancements that you would like to see added?** **0% Yes** **100% No**

**Miscellaneous: Fidelity**

**What percentage of eligible employees participate in the Plan?**

1) 20% 2) 25% 3) 5% 4) 25% 5) 20% 6) 30% 7) 25% 8) 15% 9) 45% 10) -

**Are there any changes you would like to see in the Plan?** **11% Yes** **89% No**

8) Their Plan Focus system should be revamped so that we can pull up an employee's record, update it and send it. We have to actually create a service request with Fidelity. It's timely and unnecessary.				
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**Are there any capabilities or enhancements that you would like to see added?** **11% Yes** **89% No**

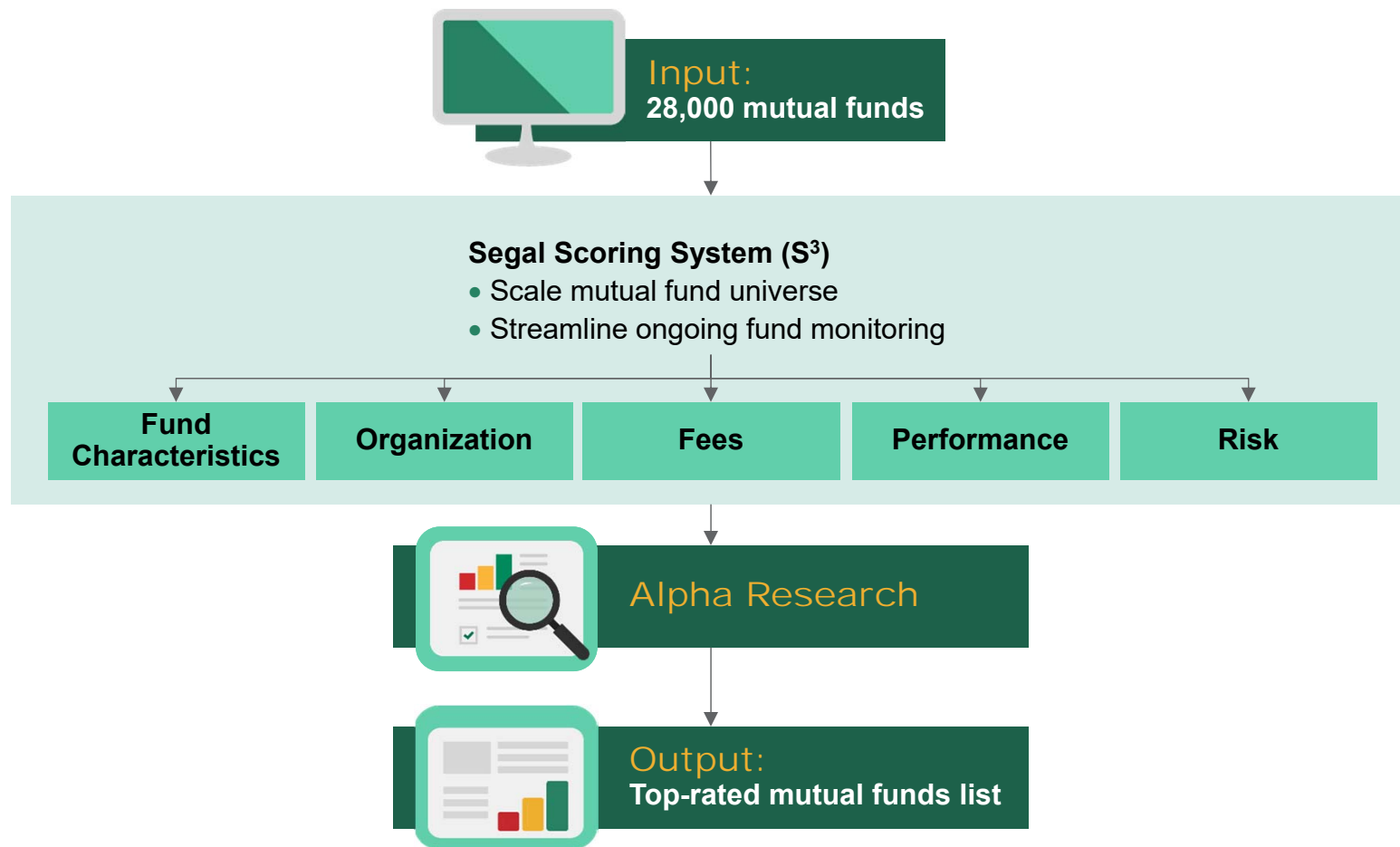
8) Update the system and send emails to Administrators so we can update an employee's record easily by simply opening up that record.				
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**Are there any additional issues you would like to communicate to the Committee?** **0% Yes** **100% No**

# **ORP RECOMMENDATION DETAILS**

# Mutual Fund Evaluation Customized for DC Plan Sponsors

- Each fund is carefully vetted and chosen to fit your unique needs.
- Our proprietary mutual fund grading system, **S<sup>3</sup>**, is designed to select investment options to meet the criteria for each search by evaluating both qualitative and quantitative data.



## S<sup>3</sup> – Segal Scoring System

### ➤ What it is: S<sup>3</sup> is a proprietary and dynamic mutual fund grading system

- Designed for defined contribution plan sponsors in the evaluation of traditional mutual funds
- Utilizes qualitative and quantitative information to measure the performance of investment products
- Based on the firm’s philosophical views on the critical factors required to analyze and evaluate investments

### ➤ Methodology:

- Conducted external research and reviewed case studies on evaluating investments
- Identified five main categories for measuring success:
  - Fund Style/Characteristics
  - Manager Tenure
  - Investment Performance
  - Risk
  - Fees
- Within each category, underlying metrics were applied to calculate the score
- Back-tested data to confirm the methodology

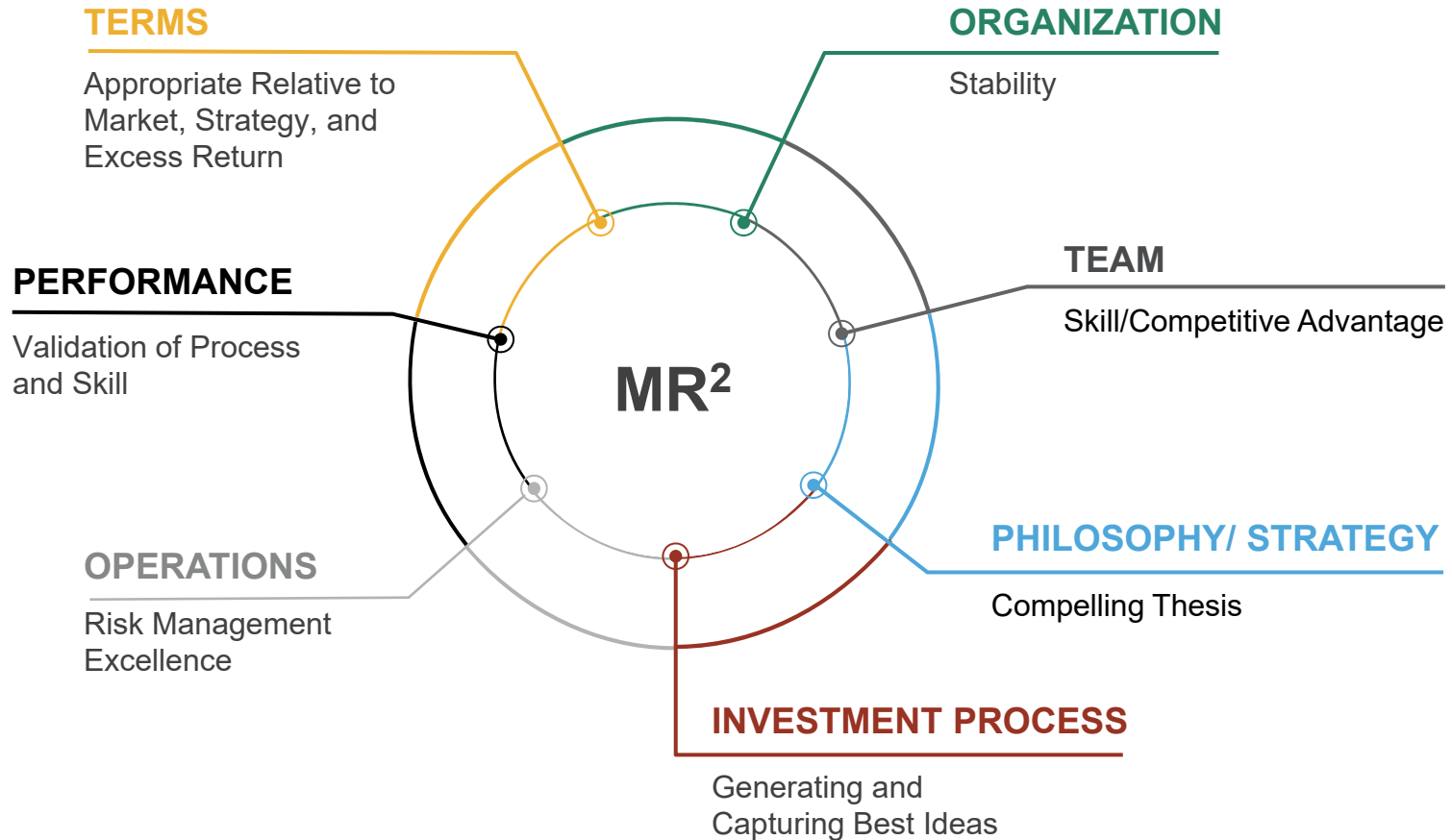
### ➤ What the scores mean:

For Active Funds:		
Grade		Action
A	Above Average	No Action
B	Above Average	No Action
C	Average	Closely Monitor
D	Watch list	Fund Alert
F	Immediate Action	Terminate
NA	< than 3 years of history	Check share class and inception date

For Index Funds:		
Grade		Action
A	Satisfactory	No Action
B	Satisfactory	No Action
C	Satisfactory	No Action
D	Immediate Action	Terminate
F	Immediate Action	Terminate
NA	< than 3 years of history	Check share class and inception date

# Our MR<sup>2</sup> Process Identifies the Best Managers for Your Plan

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# **SOCIALLY RESPONSIBLE ANALYSIS**

## Fund Facts

	Ticker	Morningstar Institutional Category	Fund Inception Date	Primary Prospectus Benchmark	Prospectus Net Exp Ratio	Prospectus Date
Vanguard FTSE Social Index Inv	VFTSX	Large Core	5/31/2000	FTSE4Good US Select TR USD	0.20	12/21/2017
Calvert US Large Cap Core Rspnb Idx I	CISIX	Large Core	6/30/2000	Calvert US LC Core Responsible TR USD	0.19	4/5/2018
Fidelity® U.S. Sustainability IndexInstl	FITLX	Large Core	5/9/2017	MSCI USA ESG Leaders GR USD	0.11	12/30/2017

## Characteristics

	Fund Size	# of Stocks	% Asset in Top 10	Avg Market Cap (mil)	P/E Ratio (TTM)	P/B Ratio (TTM)	Turnover Ratio %
Vanguard FTSE Social Index Inv	4,065	447	24	84,468	22.02	3.15	11
Calvert US Large Cap Core Rspnb Idx I	1,067	746	22	67,478	21.86	3.41	31
Fidelity® U.S. Sustainability IndexInstl	39	342	22	64,345	22.74	3.55	3
S&P 500 TR USD	—	505	20	92,743	20.84	3.10	—
US Fund Large Blend	—	270	34	125,115	21.49	3.09	52

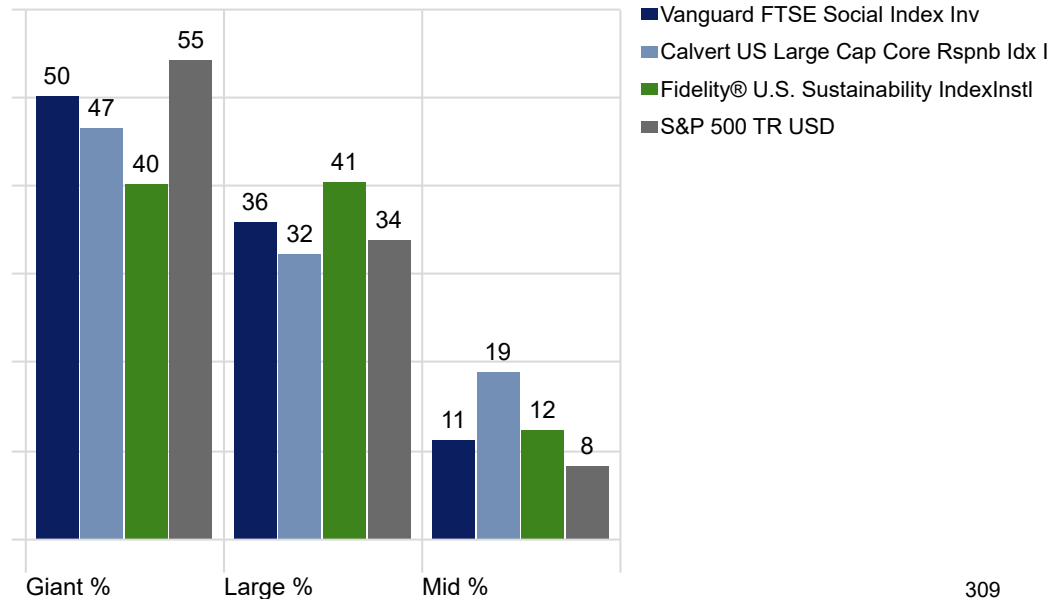
## Asset Allocation

Portfolio Date: 12/31/2017

	Equity %	Bond %	Other %	Cash %
Vanguard FTSE Social Index Inv	100	0	0	0
Calvert US Large Cap Core Rspnb Idx I	100	0	0	0
Fidelity® U.S. Sustainability IndexInstl	99	0	0	1
S&P 500 TR USD	100	0	0	0

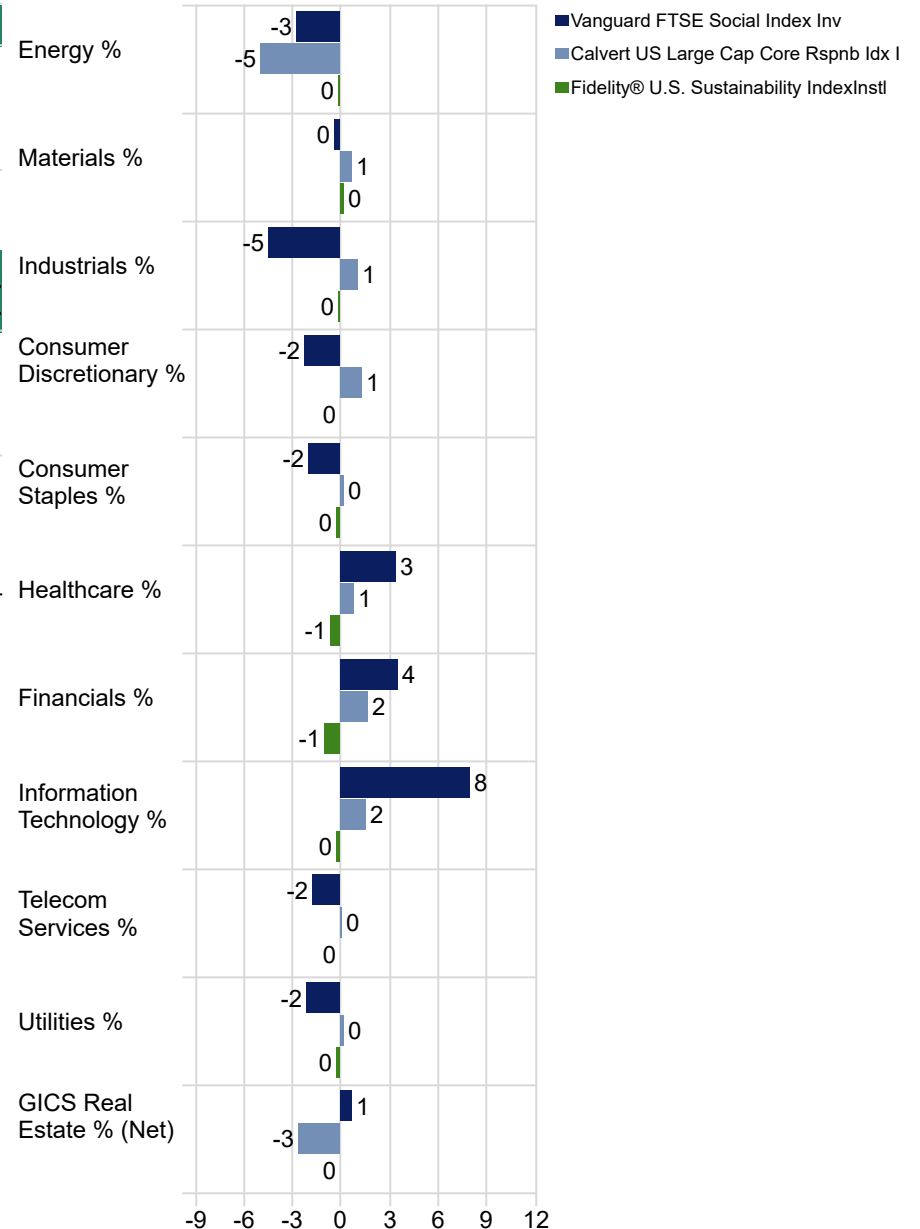
	US Equity %	Non-US Equity %
Vanguard FTSE Social Index Inv	98	2
Calvert US Large Cap Core Rspnb Idx I	99	1
Fidelity® U.S. Sustainability IndexInstl	98	1
S&P 500 TR USD	99	1

## Market Capitalization Exposure

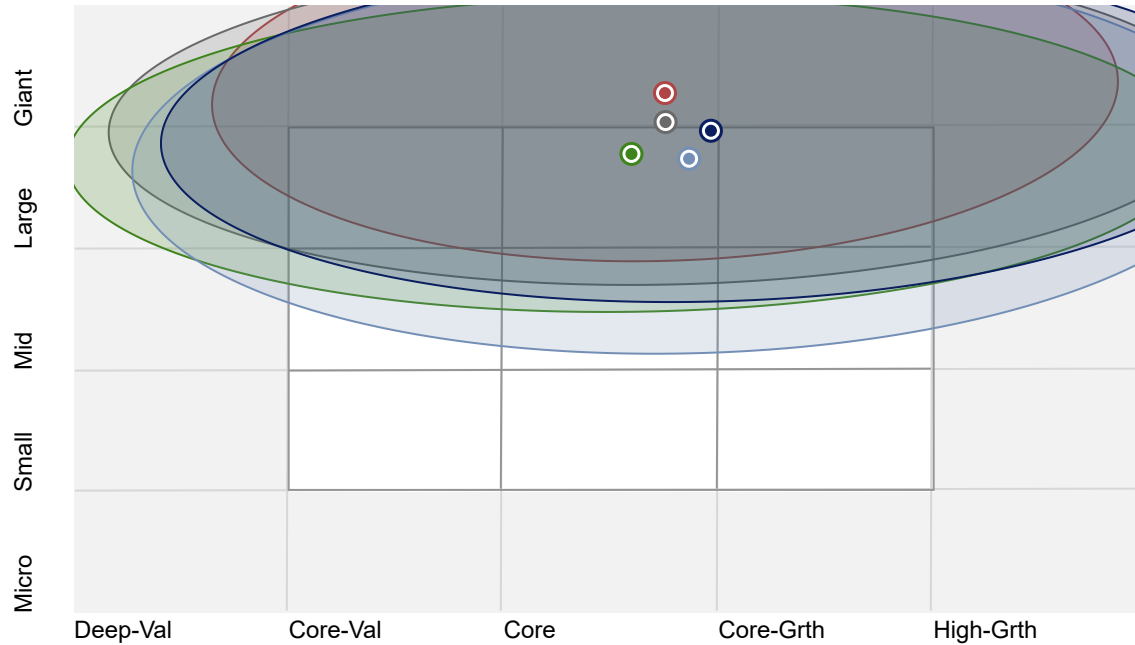


## Relative Sector Exposure

Calculation Benchmark: S&P 500 TR USD



## Holdings-Based Style



- Vanguard FTSE Social Index Inv 12/31/2017
- Calvert US Large Cap Core Rspnb Idx I 12/31/2017
- Fidelity® U.S. Sustainability IndexInstl 12/31/2017
- S&P 500 TR USD 12/31/2017
- US Fund Large Blend 12/31/2017

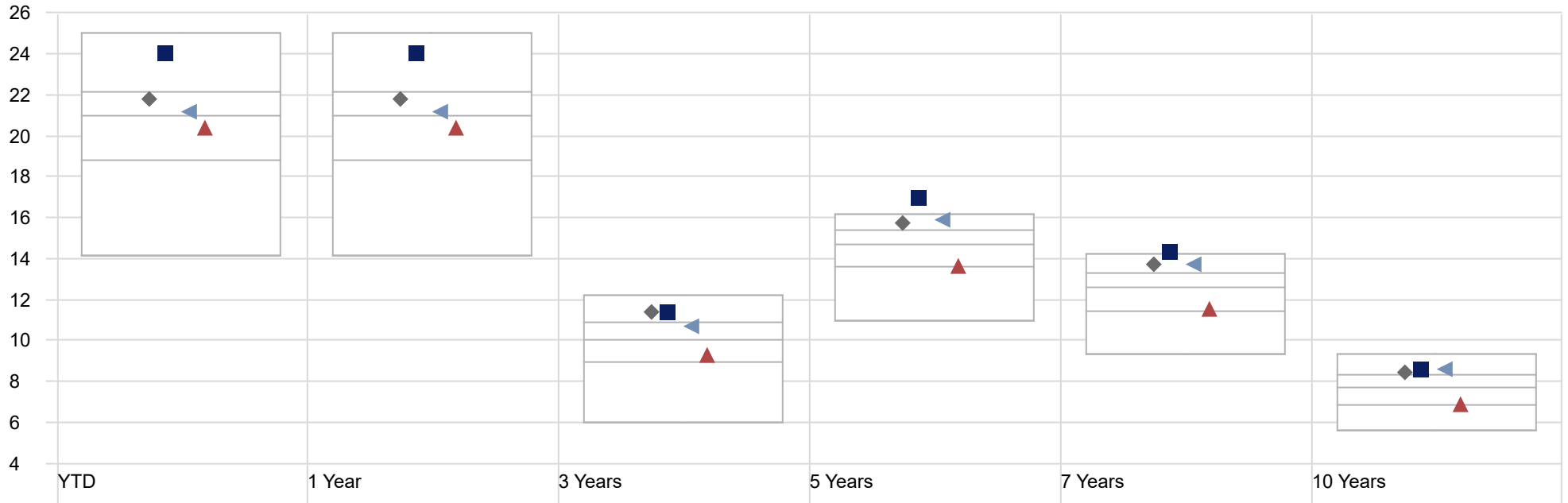
## Equity Sector Exposure

Portfolio Date: 12/31/2017

	Energy %	Materials %	Industrials %	Consumer Discretionary %	Consumer Staples %	Healthcare %	Financials %	Information Technology %	Telecom Services %	Utilities %	Real Estate %
Vanguard FTSE Social Index Inv	3.17	2.51	5.82	10.73	6.12	17.41	18.40	31.31	0.13	0.79	3.62
Calvert US Large Cap Core Rspnb Idx I	0.91	3.70	11.62	13.58	8.45	14.50	16.18	25.42	2.13	3.41	0.11
Fidelity® U.S. Sustainability IndexInstl	6.18	3.23	10.64	12.80	8.26	13.49	13.88	23.45	2.08	2.91	3.08
S&P 500 TR USD	6.07	3.00	10.26	12.20	8.20	13.84	14.78	23.76	2.06	2.94	2.89
US Fund Large Blend	5.76	2.97	12.01	12.58	8.50	13.87	13.90	23.65	1.50	2.43	2.83

## Performance Relative to Peer Group

As of Date: 12/31/2017 Peer Group (5-95%): Open End Funds - U.S. - Large Blend



■ Vanguard FTSE Social Index Inv  
◆ S&P 500 TR USD

◀ Calvert US Large Cap Core Rspnb Idx I  
▲ US Fund Large Blend

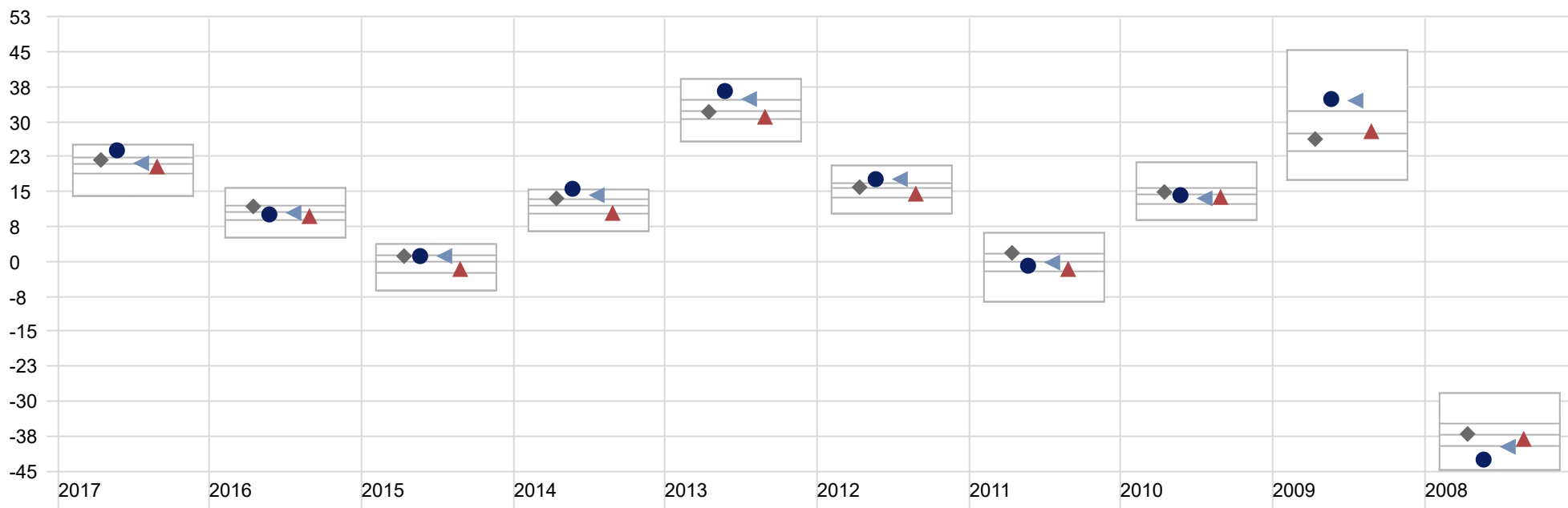
✖ Fidelity® U.S. Sustainability IndexInstl

## Trailing Returns

Return & Peer Group Percentile	QTD	%	YTD	%	1 Year	%	3 Years	%	5 Years	%	7 Years	%	10 Years	%
Vanguard FTSE Social Index Inv	6.8	29	24.1	10	24.1	10	11.4	11	17.0	2	14.4	4	8.6	14
Calvert US Large Cap Core Rspnb Idx I	6.2	64	21.2	44	21.2	44	10.7	31	16.0	8	13.8	10	8.6	14
Fidelity® U.S. Sustainability IndexInstl	6.3	59	—	—	—	—	—	—	—	—	—	—	—	—
S&P 500 TR USD	6.6	36	21.8	29	21.8	29	11.4	11	15.8	12	13.8	11	8.5	18
US Fund Large Blend	6.4	52	20.4	58	20.4	58	9.3	67	13.7	73	11.6	72	6.9	73
25th Percentile	7.0		22.1		22.1		10.9		15.4		13.3		8.3	
50th Percentile	6.5		21.0		21.0		10.0		14.7		12.6		7.7	
75th Percentile	5.7		18.8		18.8		8.9		13.6		11.4		6.9	

## Performance Relative to Peer Group

Peer Group (5-95%): Open End Funds - U.S. - Large Blend



● Vanguard FTSE Social Index Inv  
◆ S&P 500 TR USD

◀ Calvert US Large Cap Core Rspnb Idx I  
▲ US Fund Large Blend

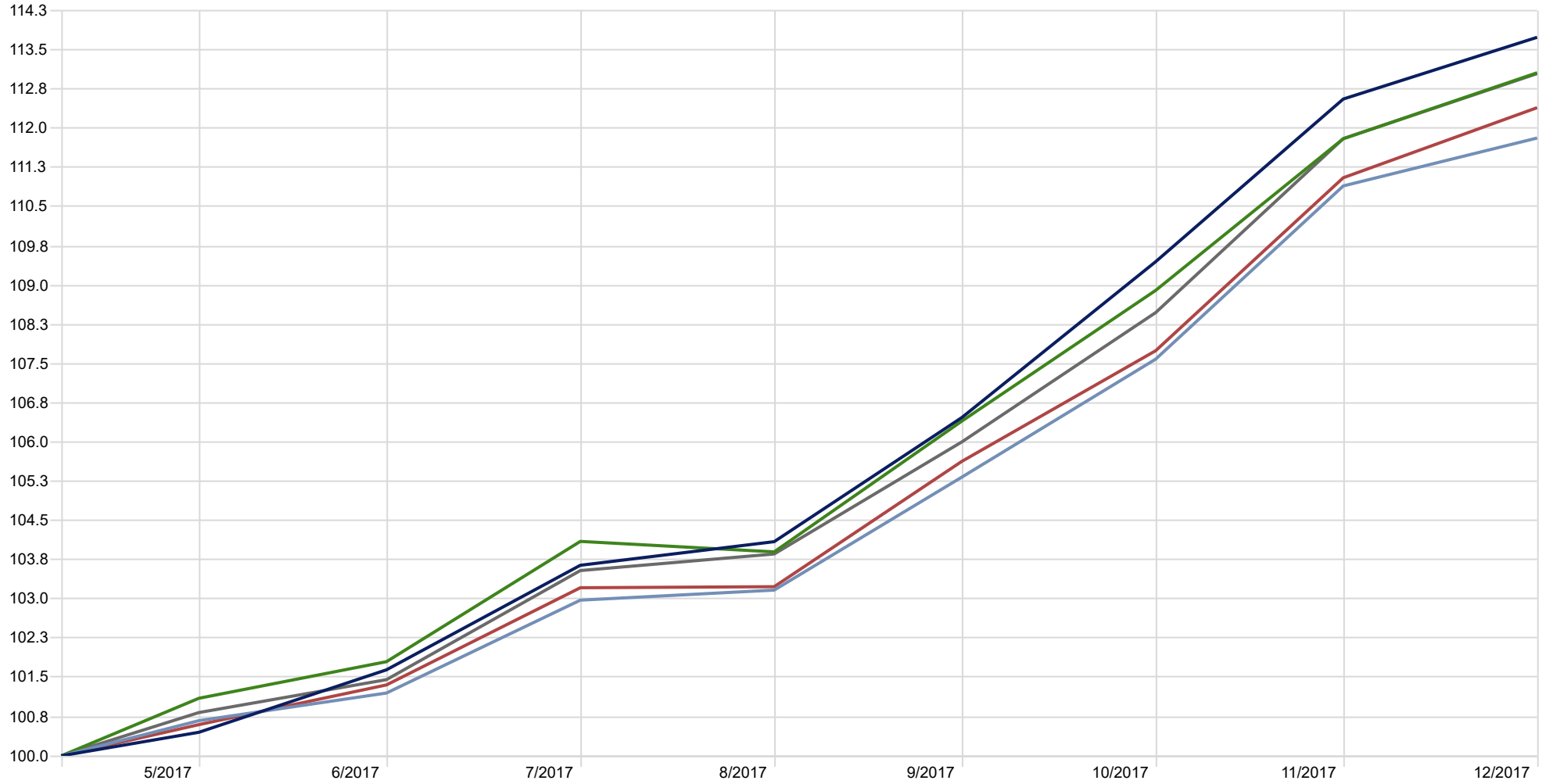
✖ Fidelity® U.S. Sustainability IndexInstl

## Calendar Year Returns

Return & Peer Group Percentile	2017	%	2016	%	2015	%	2014	%	2013	%	2012	%	2011	%	2010	%	2009	%	2008	%
Vanguard FTSE Social Index Inv	24.1	10	10.2	54	1.2	26	15.8	4	36.8	14	17.8	17	-0.8	61	14.4	47	35.1	17	-42.4	88
Calvert US Large Cap Core Rspnb Idx I	21.2	44	10.7	48	1.1	26	14.4	12	35.0	23	17.7	17	0.1	50	13.7	59	34.8	17	-39.7	75
Fidelity® U.S. Sustainability IndexInstl	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
S&P 500 TR USD	21.8	29	12.0	26	1.4	21	13.7	19	32.4	45	16.0	40	2.1	19	15.1	32	26.5	56	-37.0	45
US Fund Large Blend	20.4	58	10.1	57	-1.5	64	10.7	67	31.3	66	14.9	66	-1.4	68	14.2	53	28.1	46	-37.9	64
25th Percentile	22.1		12.1		1.2		13.3		34.6		16.9		1.8		15.7		32.3		-34.9	
50th Percentile	21.0		10.5		-0.1		11.9		32.2		15.7		0.1		14.3		27.6		-37.2	
75th Percentile	18.8		8.7		-2.5		10.2		30.5		13.7		-2.0		12.5		23.8		-39.7	

# Investment Growth

Time Period: 5/10/2017 to 12/31/2017



— Vanguard FTSE Social Index Inv

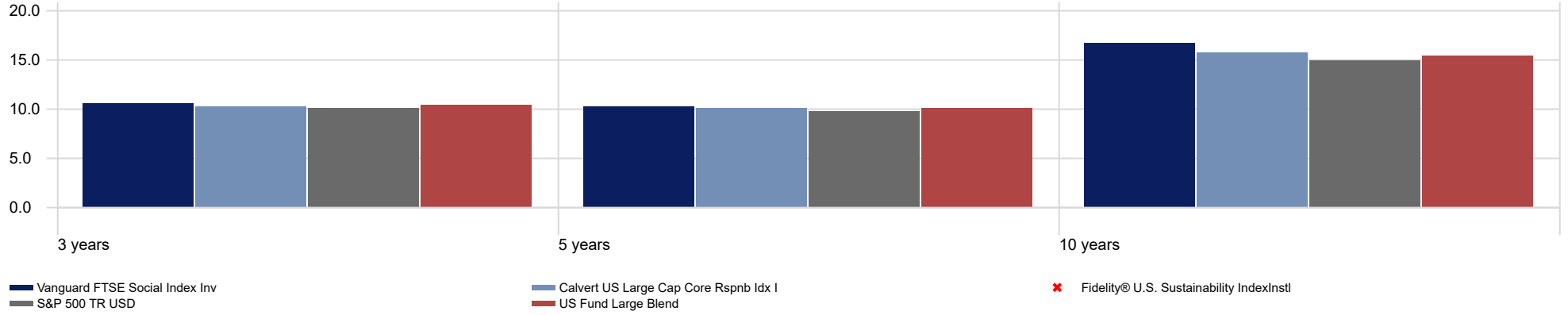
— Calvert US Large Cap Core Rspnb Idx I

— Fidelity U.S. Sustainability IndexInstl

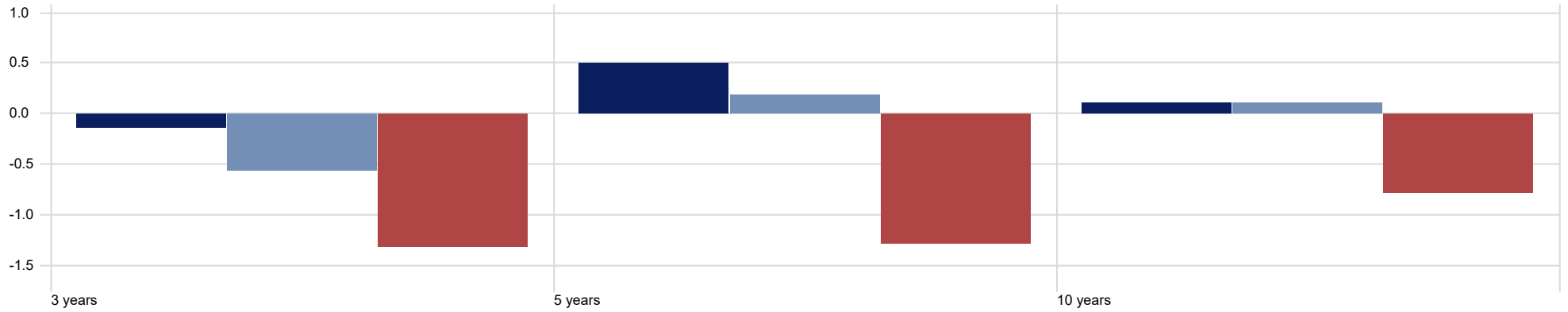
— S&P 500 TR USD

— US Fund Large Blend

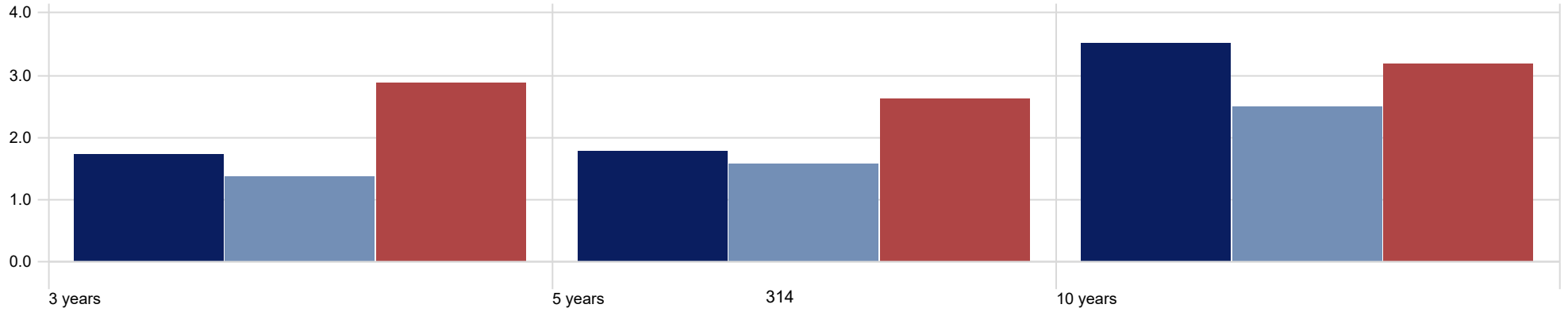
### Standard Deviation



### Information Ratio



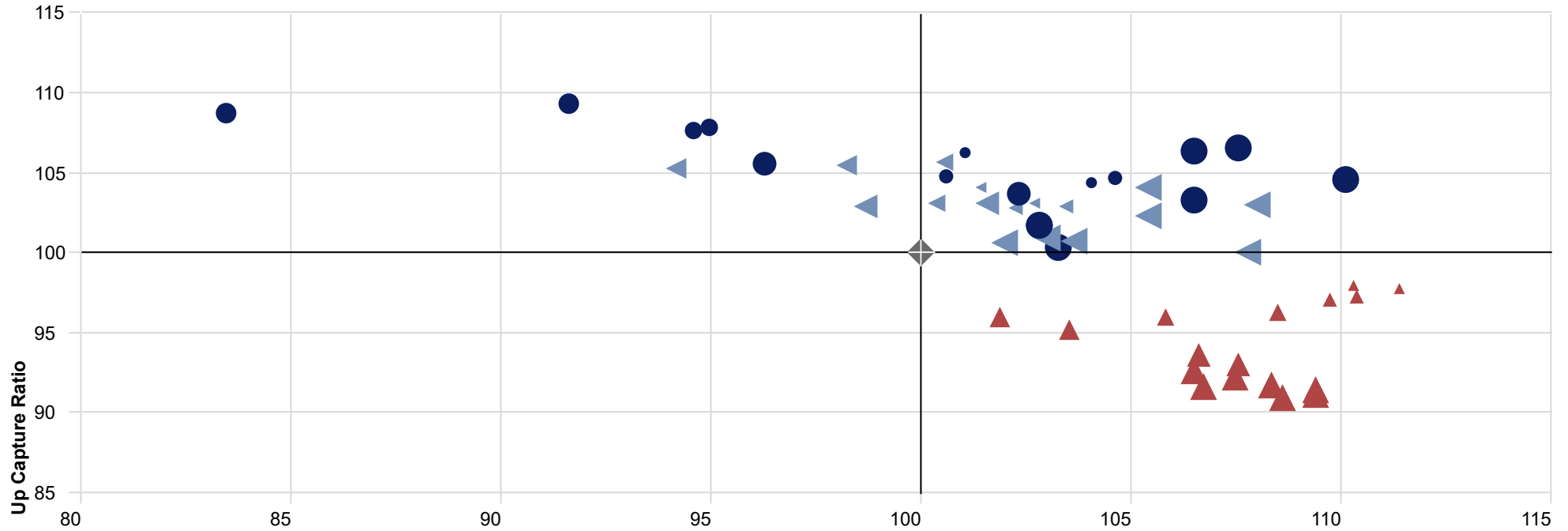
### Tracking Error





### 3-Yr Rolling

Time Period: 1/1/2011 to 12/31/2017



#### Down Capture Ratio

- Vanguard FTSE Social Index Inv
- ◆ S&P 500 TR USD

- ◀ Calvert US Large Cap Core Rspnb Idx I
- ▲ US Fund Large Blend

- ✖ Fidelity@ U.S. Sustainability IndexInstl

As of Date: 12/31/2017

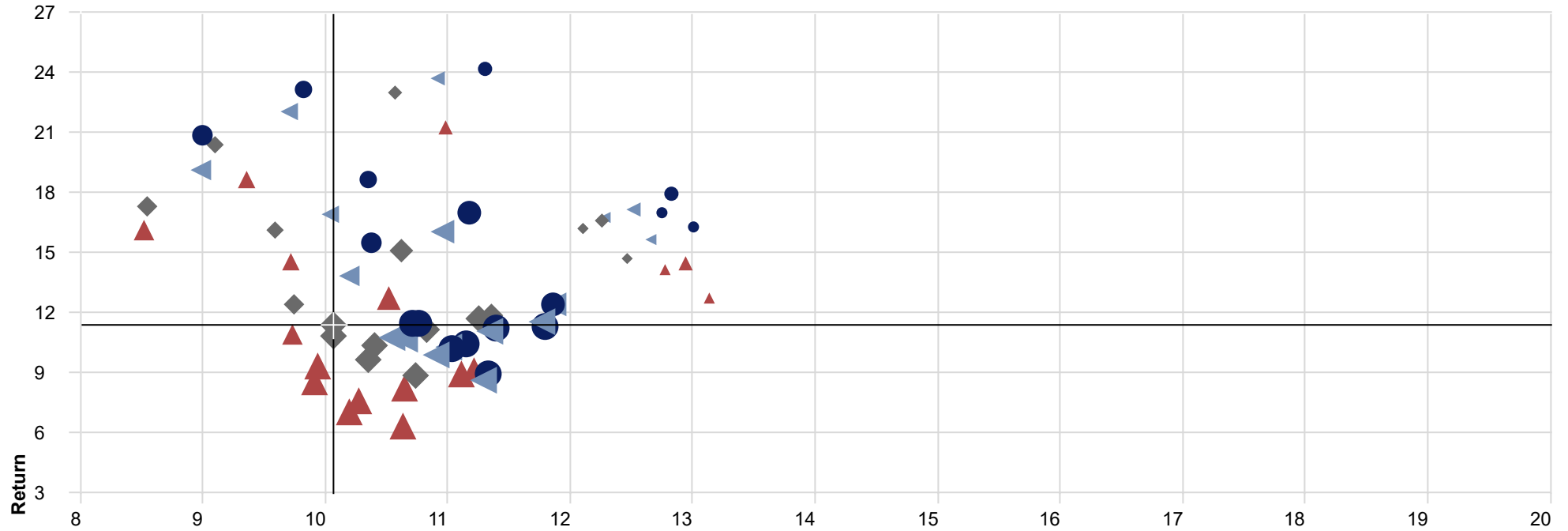
<u>Down Capture Ratio</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>
Vanguard FTSE Social Index Inv	110.1	102.4	111.4
Calvert US Large Cap Core Rspnb Idx I	107.8	102.2	105.1
Fidelity@ U.S. Sustainability IndexInstl	—	—	—
S&P 500 TR USD	100.0	100.0	100.0
US Fund Large Blend	106.5	107.4	104.5

As of Date: 12/31/2017

<u>Up Capture Ratio</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>
Vanguard FTSE Social Index Inv	104.6	105.7	108.3
Calvert US Large Cap Core Rspnb Idx I	100.0	101.4	103.9
Fidelity@ U.S. Sustainability IndexInstl	—	—	—
S&P 500 TR USD	100.0	100.0	100.0
US Fund Large Blend	92.6	93.9	97.0

### 3-Yr Rolling

Time Period: 1/1/2011 to 12/31/2017



#### Std Dev

- Vanguard FTSE Social Index Inv
- ◆ S&P 500 TR USD

- ◀ Calvert US Large Cap Core Rspnb Idx I
- ▲ US Fund Large Blend

- ✖ Fidelity@ U.S. Sustainability IndexInstl

As of Date: 12/31/2017

Standard Deviation	3 Years	5 Years	10 Years
Vanguard FTSE Social Index Inv	10.7	10.2	17.0
Calvert US Large Cap Core Rspnb Idx I	10.6	9.9	16.0
Fidelity@ U.S. Sustainability IndexInstl	—	—	—
S&P 500 TR USD	10.1	9.5	15.1
US Fund Large Blend	9.9	9.5	15.2

As of Date: 12/31/2017

Return	3 Years	5 Years	10 Years
Vanguard FTSE Social Index Inv	11.4	17.0	8.6
Calvert US Large Cap Core Rspnb Idx I	10.7	16.0	8.6
Fidelity@ U.S. Sustainability IndexInstl	—	—	—
S&P 500 TR USD	11.4	15.8	8.5
US Fund Large Blend	9.3	13.7	6.9

# **GLOBAL EQUITY ANALYSIS**

## Fund Facts

	Ticker	Morningstar Institutional Category	Fund Inception Date	Primary Prospectus Benchmark	Prospectus Net Exp Ratio	Prospectus Date
Lazard Global Equity Select Port Instl	GESIX	World All-Cap	12/31/2013	MSCI ACWI NR USD	1.06	9/11/2017
Harding Loevner Global Equity Inst	HLMVX	World Large Growth	11/29/1996	MSCI ACWI NR USD	0.93	2/28/2018
AQR Global Equity I	AQGIX	World Large Value	12/31/2009	MSCI World NR USD	0.81	1/29/2018

## Characteristics

	Fund Size	# of Stocks	% Asset in Top 10	Avg Market Cap (mil)	P/E Ratio (TTM)	P/B Ratio (TTM)	Turnover Ratio %
Lazard Global Equity Select Port Instl	61	78	20	43,663	22.19	3.60	40
Harding Loevner Global Equity Inst	844	74	25	40,898	26.04	3.87	33
AQR Global Equity I	366	538	16	45,913	16.57	2.26	88
MSCI World NR USD	—	1,647	12	62,260	19.25	2.34	—
US Fund World Large Stock	—	530	24	77,183	21.74	2.59	51

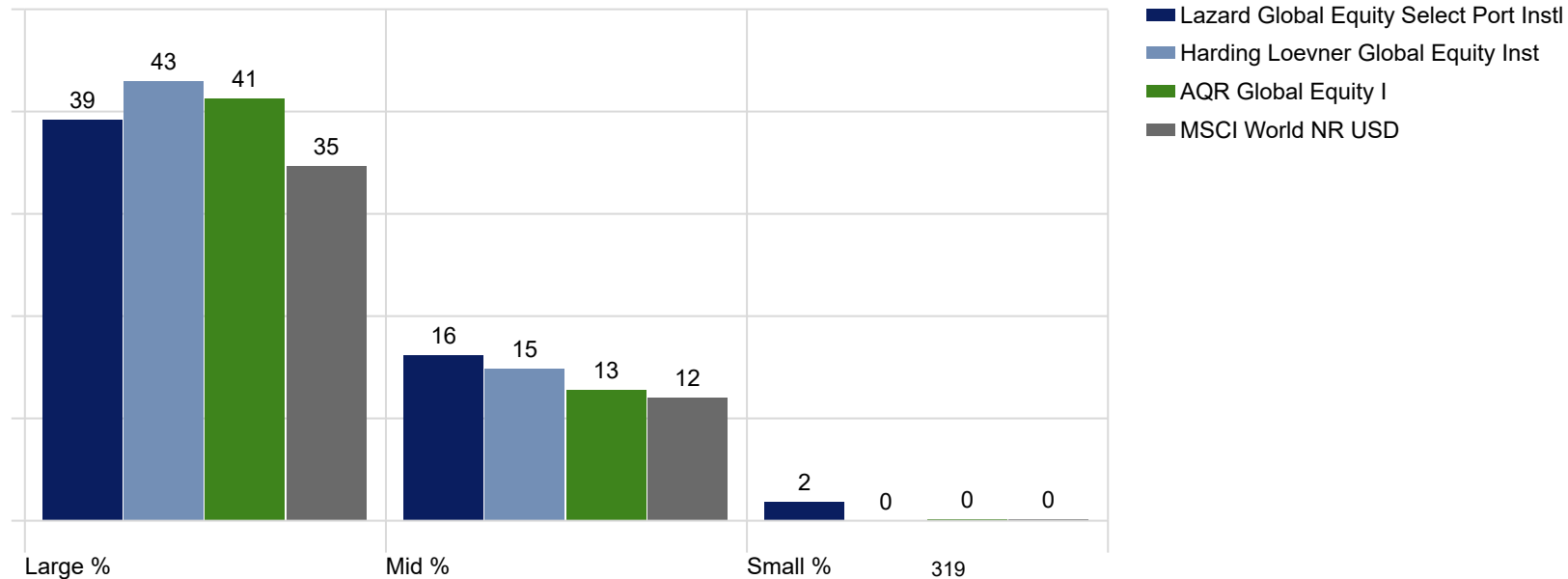
## Asset Allocation

Portfolio Date: 12/31/2017

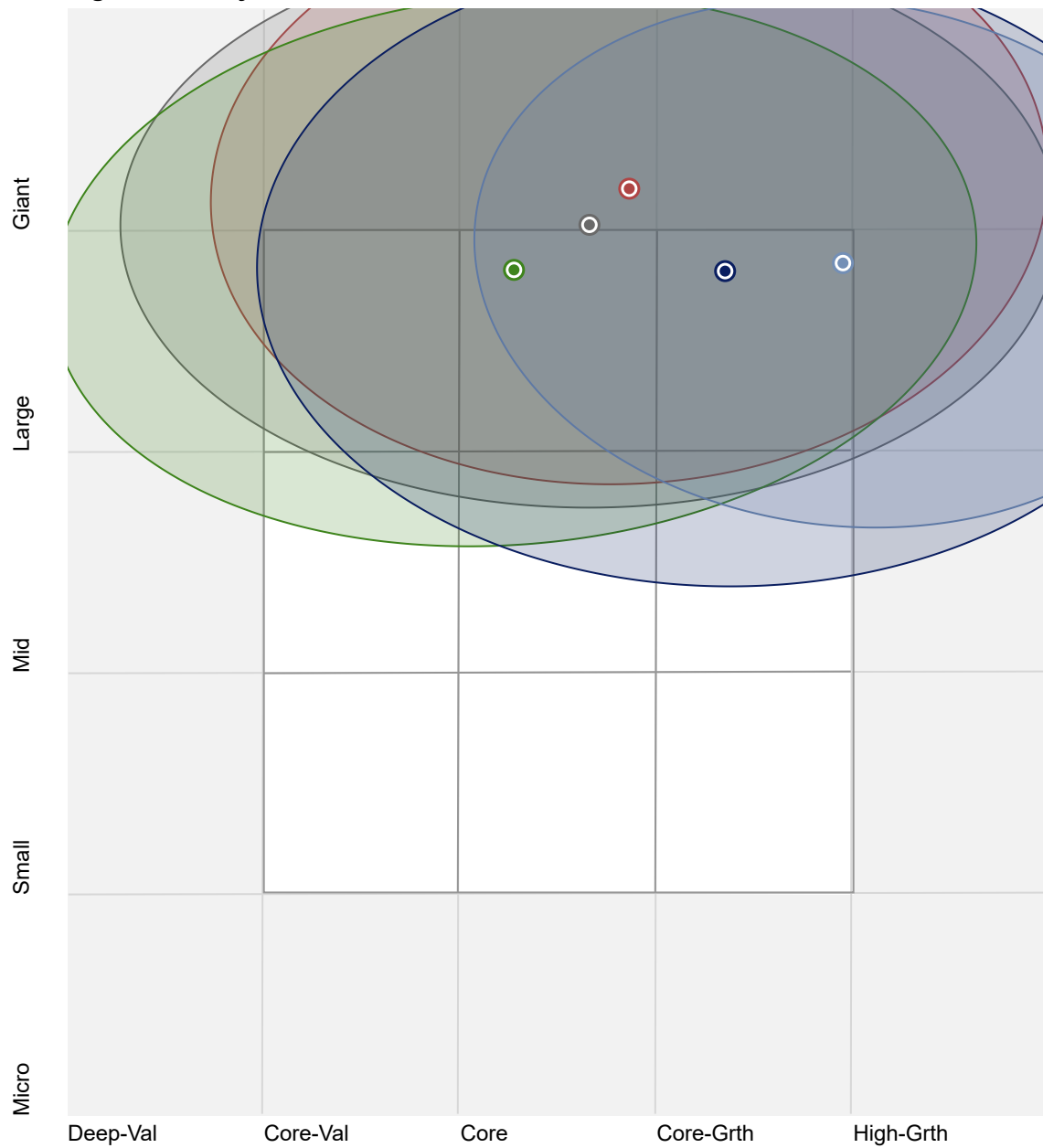
	<u>Equity %</u>	<u>Bond %</u>	<u>Other %</u>	<u>Cash %</u>
Lazard Global Equity Select Port Instl	96	0	1	3
Harding Loevner Global Equity Inst	96	0	0	4
AQR Global Equity I	90	2	9	-2
MSCI World NR USD	100	0	0	0

	<u>US Equity %</u>	<u>Non-US Equity %</u>	<u>Bond %</u>	<u>Preferred Equity %</u>
Lazard Global Equity Select Port Instl	53	43	0.00	0.00
Harding Loevner Global Equity Inst	42	54	0.00	0.00
AQR Global Equity I	63	43	2.17	0.20
MSCI World NR USD	—	—	0.00	0.01

## Market Capitalization Exposure



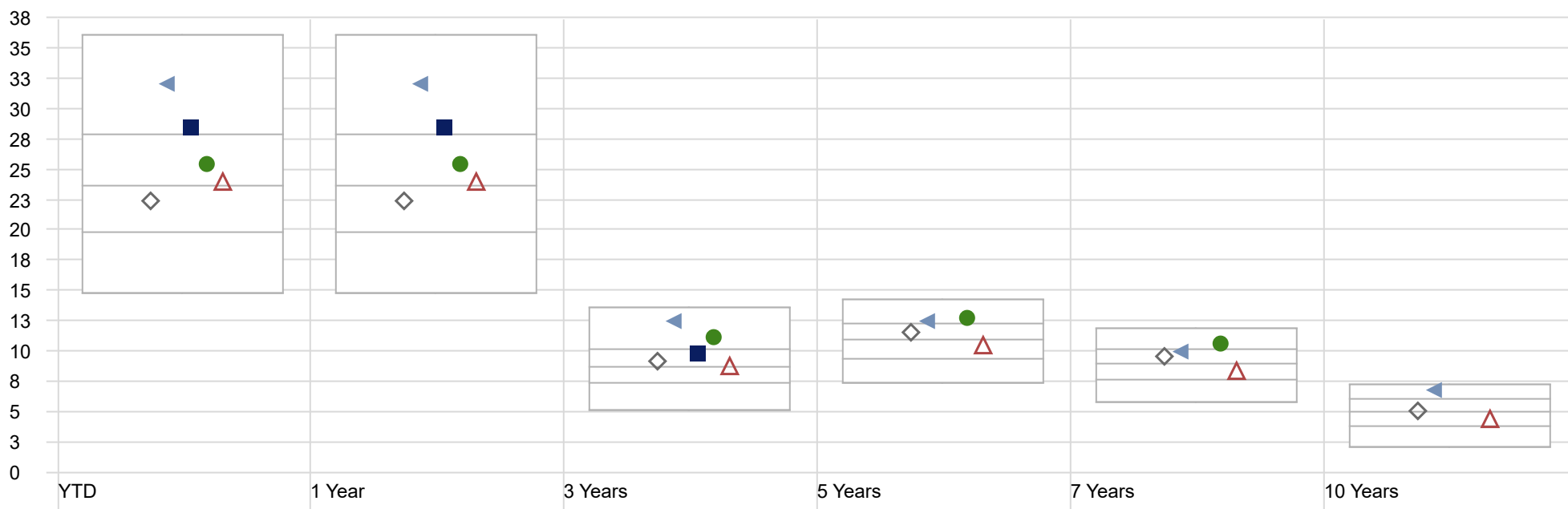
## Holdings-Based Style



- Lazard Global Equity Select Port Inst 12/31/2017
- Harding Loevner Global Equity Inst 12/31/2017
- AQR Global Equity I 12/31/2017
- MSCI World NR USD 12/31/2017
- US Fund World Large Stock 12/31/2017

## Performance Relative to Peer Group

As of Date: 12/31/2017 Peer Group (5-95%): Open End Funds - U.S. - World Large Stock



■ Lazard Global Equity Select Port Instl

◀ Harding Loevner Global Equity Inst

● AQR Global Equity I

◇ MSCI World NR USD

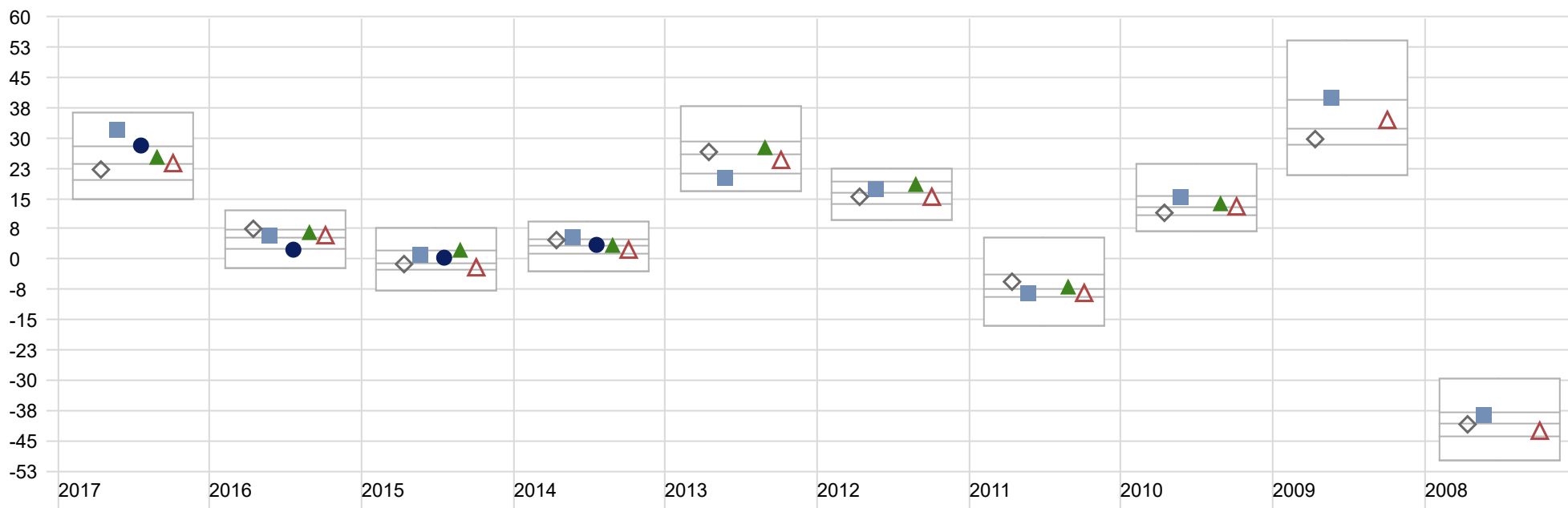
△ US Fund World Large Stock

## Trailing Returns

Return & Peer Group Percentile	QTD	%	1 Year	%	3 Years	%	5 Years	%	7 Years	%	10 Years	%
Lazard Global Equity Select Port Instl	6.5	11	28.5	22	9.8	29	—	—	—	—	—	—
Harding Loevner Global Equity Inst	6.7	10	32.1	12	12.5	9	12.6	19	10.0	27	6.9	10
AQR Global Equity I	5.4	35	25.4	36	11.2	17	12.8	15	10.6	16	—	—
MSCI World NR USD	5.5	32	22.4	58	9.3	39	11.6	35	9.6	35	5.0	47
US Fund World Large Stock	5.0	52	24.0	48	8.9	47	10.6	58	8.4	64	4.5	63
25th Percentile	5.7		27.8		10.2		12.2		10.1		6.0	
50th Percentile	5.0		23.7		8.7		11.0		9.0		5.0	
75th Percentile	4.0		19.8		7.4		9.3		7.6		3.8	

## Performance Relative to Peer Group

Peer Group (5-95%): Open End Funds - U.S. - World Large Stock



● Lazard Global Equity Select Port Instl

■ Harding Loevner Global Equity Inst

▲ AQR Global Equity I

◇ MSCI World NR USD

▲ US Fund World Large Stock

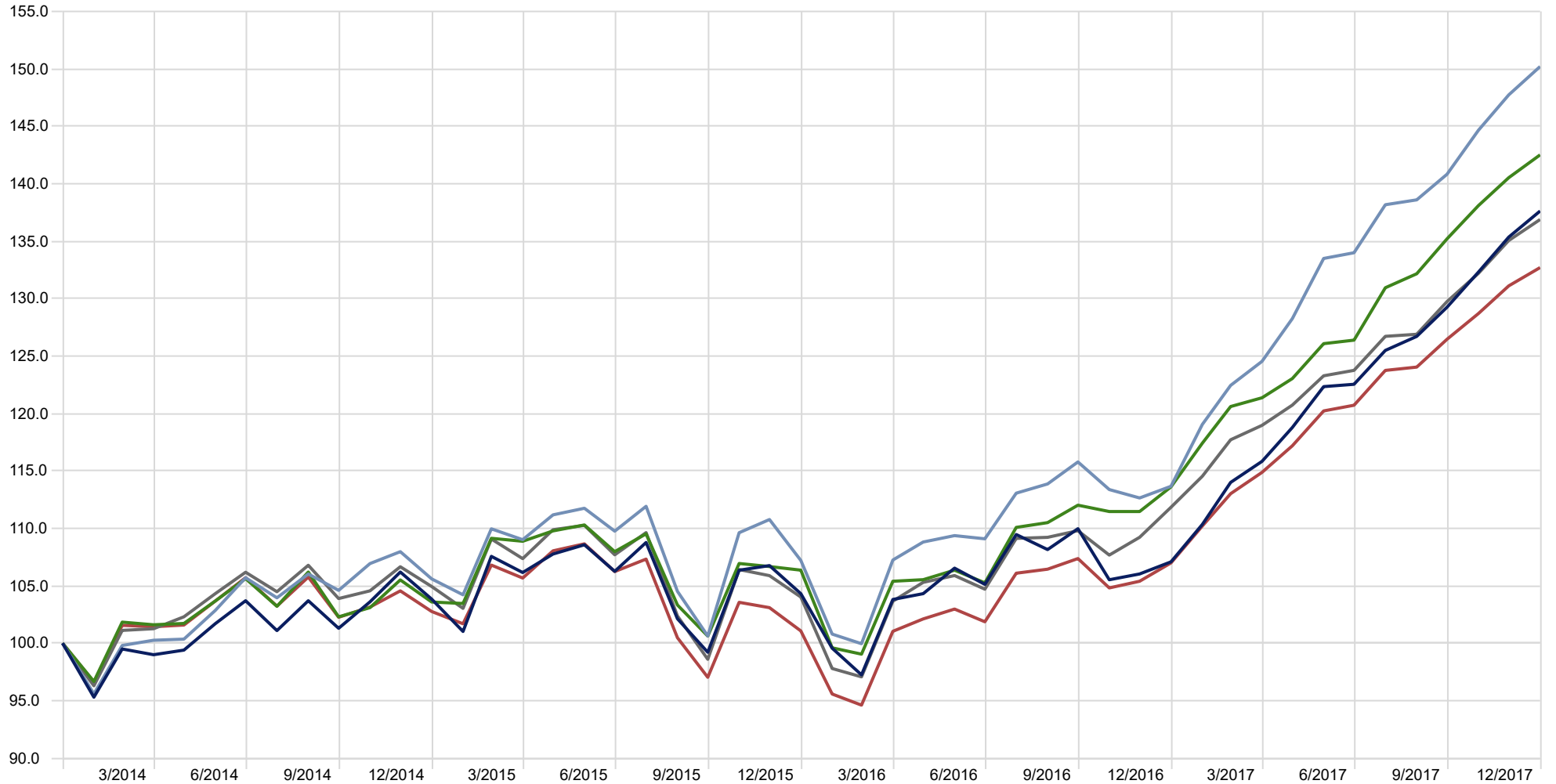
## Calendar Year Returns

Return & Peer Group Percentile	2017	%	2016	%	2015	%	2014	%	2013	%	2012	%	2011	%	2010	%	2009	%	2008	%
Lazard Global Equity Select Port Instl	28.5	22	2.7	74	0.5	37	3.8	40	—	—	—	—	—	—	—	—	—	—	—	—
Harding Loevner Global Equity Inst	32.1	12	6.0	39	1.5	29	5.6	21	20.3	81	17.4	41	-8.2	62	15.6	28	40.2	21	-38.3	28
AQR Global Equity I	25.4	36	6.8	30	2.7	21	3.6	44	28.1	32	18.9	28	-6.7	45	14.0	42	—	—	—	—
MSCI World NR USD	22.4	58	7.5	22	-0.9	49	4.9	25	26.7	43	15.8	56	-5.5	35	11.8	64	30.0	65	-40.7	51
US Fund World Large Stock	24.0	48	5.9	41	-1.8	60	2.7	56	24.7	57	15.7	57	-8.1	61	13.3	46	34.5	41	-42.2	63
25th Percentile	27.8		7.2		2.0		5.0		29.0		19.2		-3.9		15.8		39.6		-38.0	
50th Percentile	23.7		5.2		-1.0		3.2		25.8		16.5		-7.4		12.9		32.3		-40.7	
75th Percentile	19.8		2.6		-2.7		1.2		21.2		13.5		-9.5		10.7		28.5		-43.8	



# Investment Growth

Time Period: 1/1/2014 to 12/31/2017



— Lazard Global Equity Select Port Instl

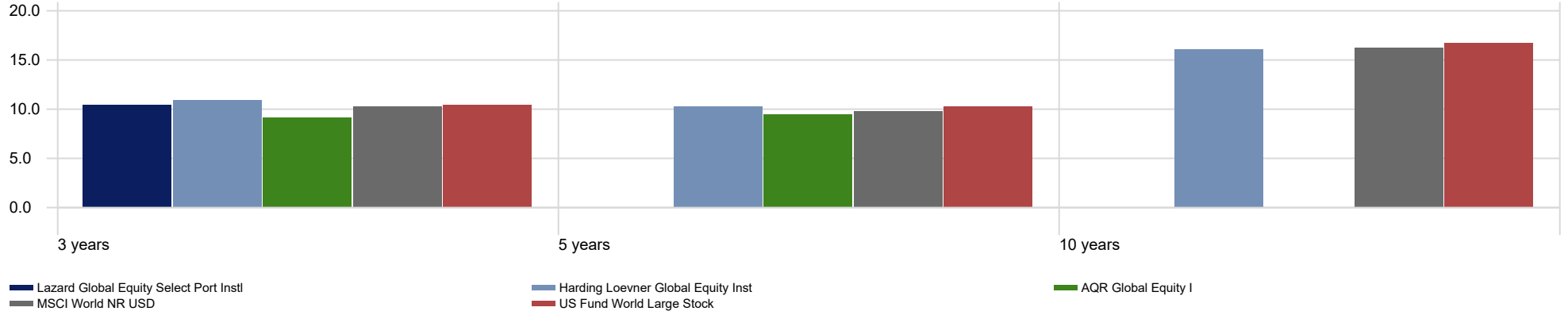
— Harding Loevner Global Equity Inst

— AQR Global Equity I

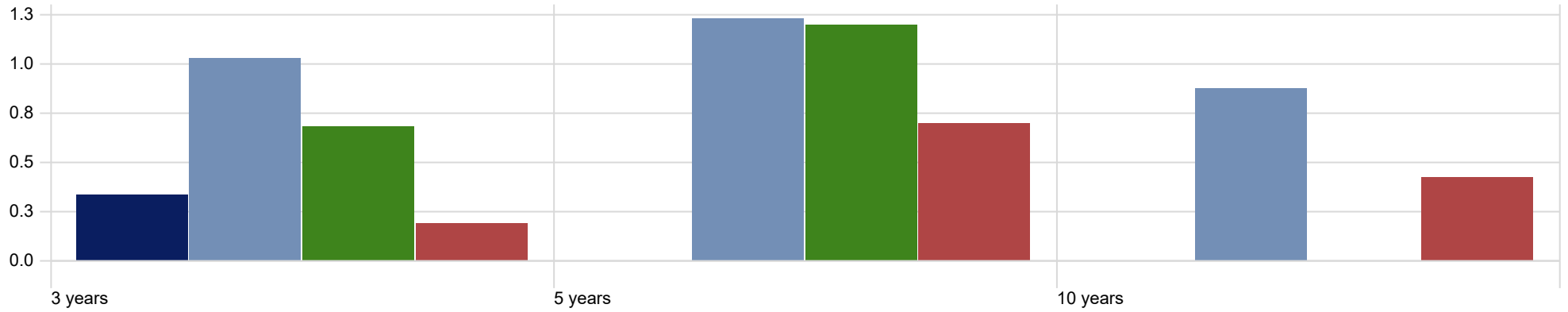
— MSCI World NR USD

— US Fund World Large Stock

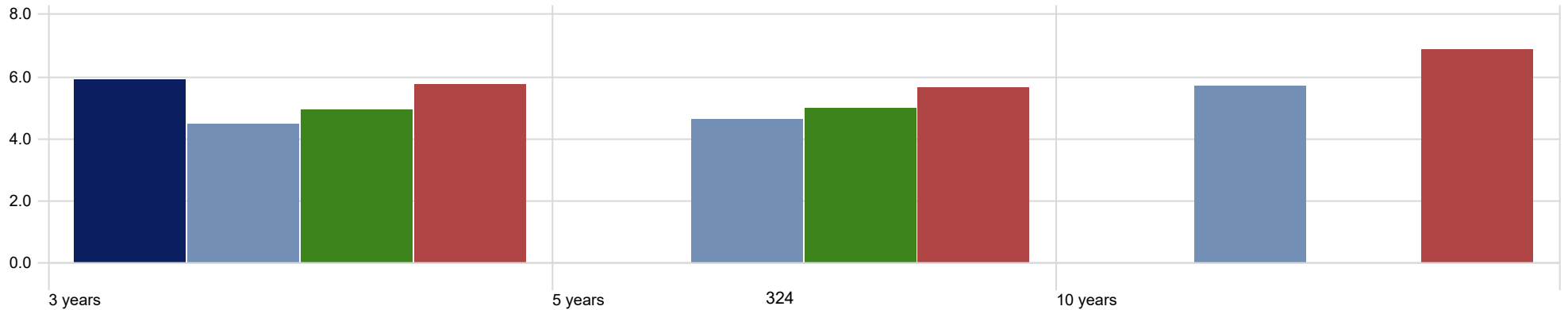
### Standard Deviation



### Information Ratio

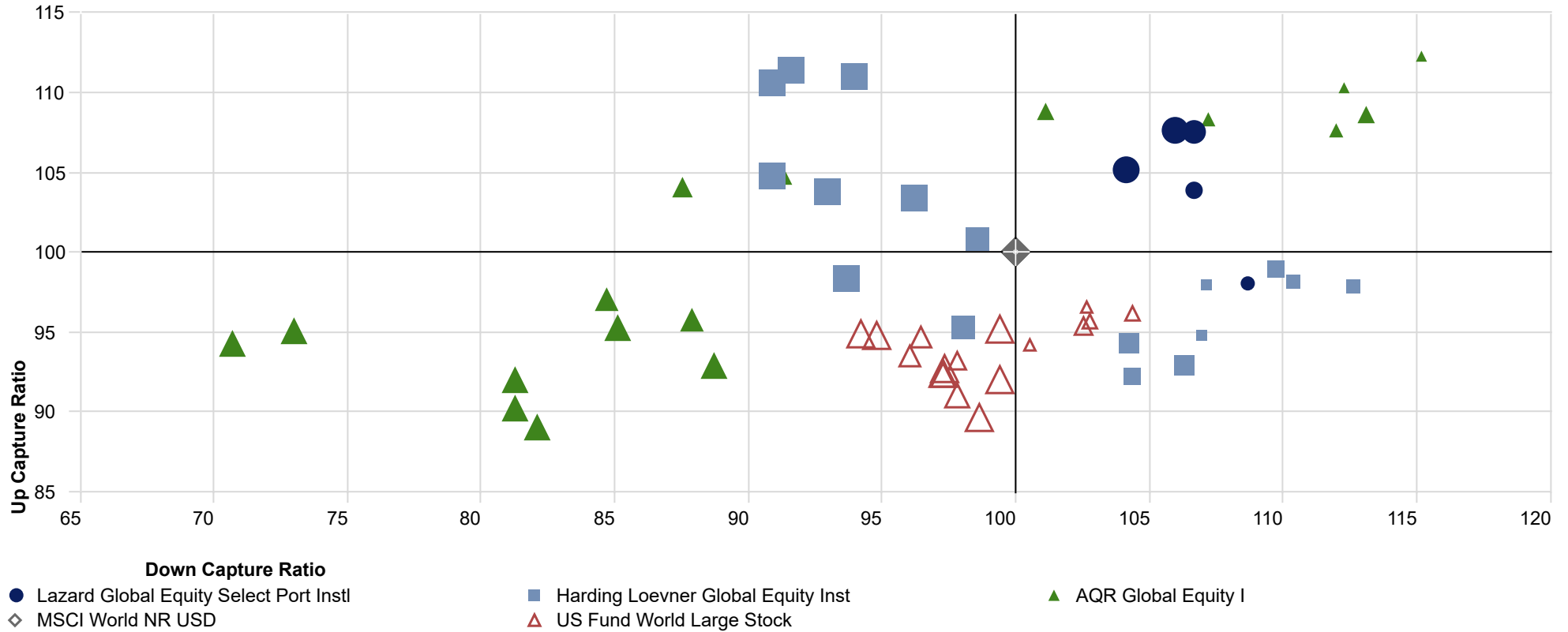


### Tracking Error



### 3-Yr Rolling

Time Period: 1/1/2011 to 12/31/2017



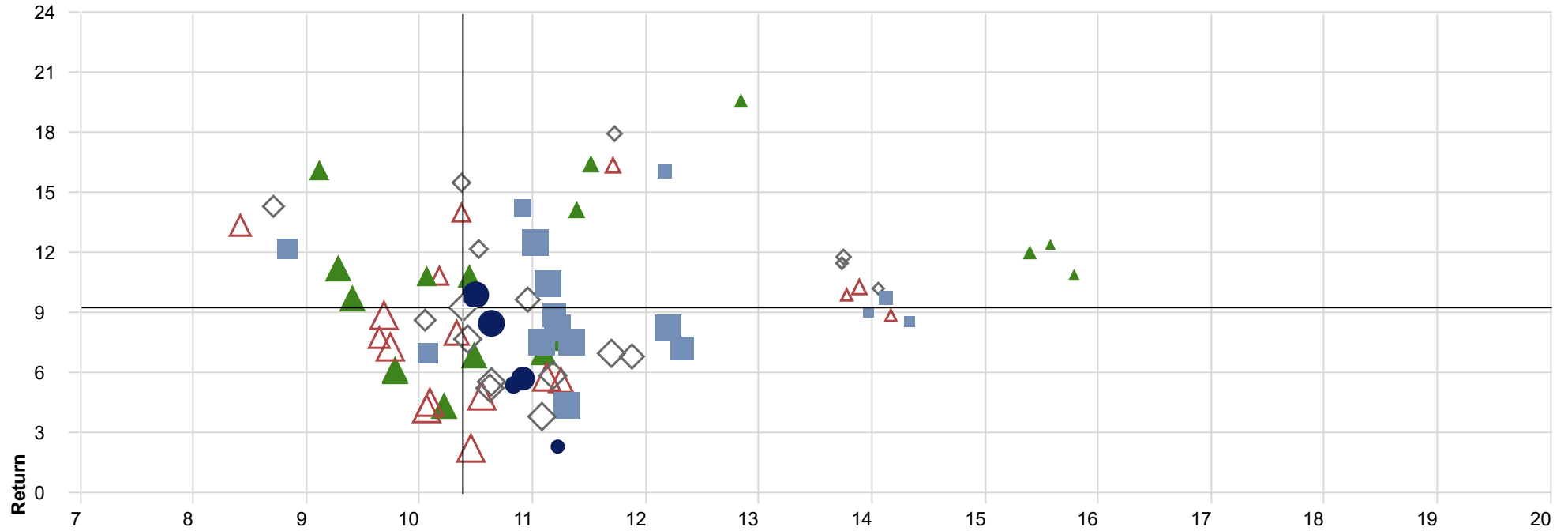
As of Date: 12/31/2017

As of Date: 12/31/2017

<u>Down Capture Ratio</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>Up Capture Ratio</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>
Lazard Global Equity Select Port Instl	104.2	—	—	Lazard Global Equity Select Port Instl	105.1	—	—
Harding Loevner Global Equity Inst	91.6	97.0	92.5	Harding Loevner Global Equity Inst	111.4	102.9	101.4
AQR Global Equity I	70.7	85.2	—	AQR Global Equity I	94.3	98.6	—
MSCI World NR USD	100.0	100.0	100.0	MSCI World NR USD	100.0	100.0	100.0
US Fund World Large Stock	94.2	98.4	99.7	US Fund World Large Stock	94.9	94.3	97.4

### 3-Yr Rolling

Time Period: 1/1/2011 to 12/31/2017



#### Std Dev

- Lazard Global Equity Select Port Instl
- ◇ MSCI World NR USD
- Harding Loevner Global Equity Inst
- △ US Fund World Large Stock
- ▲ AQR Global Equity I

As of Date: 12/31/2017

As of Date: 12/31/2017

<u>Standard Deviation</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>	<u>Return</u>	<u>3 Years</u>	<u>5 Years</u>	<u>10 Years</u>
Lazard Global Equity Select Port Instl	10.5	—	—	Lazard Global Equity Select Port Instl	9.8	—	—
Harding Loevner Global Equity Inst	11.0	10.3	16.1	Harding Loevner Global Equity Inst	12.5	12.6	6.9
AQR Global Equity I	9.3	9.5	—	AQR Global Equity I	11.2	12.8	—
MSCI World NR USD	10.4	9.9	16.3	MSCI World NR USD	9.3	11.6	5.0
US Fund World Large Stock	9.7	9.4	16.2	US Fund World Large Stock	8.9	10.6	4.5