

Imperial County Employees' Retirement System

Investment Performance Review

Period Ending: September 30, 2017



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SEATTLE 206-622-3700

LOS ANGELES 310-297-1777

SAN FRANCISCO 415-362-3484

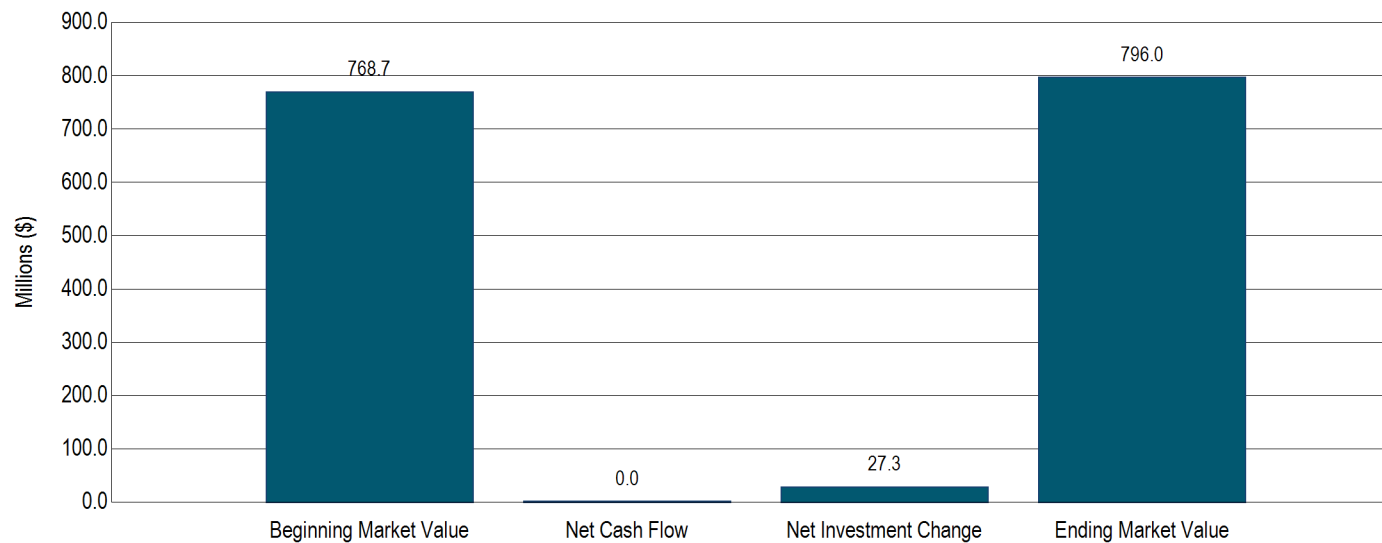
Total Fund
Portfolio Reconciliation

Period Ending: September 30, 2017

Portfolio Reconciliation

	Last Three Months	Fiscal Year-To-Date	One Year
Beginning Market Value	\$768,683,009	\$768,683,009	\$714,140,595
Net Cash Flow	\$33,147	\$33,147	-\$5,504,166
Net Investment Change	\$27,269,782	\$27,269,782	\$87,349,509
Ending Market Value	\$795,985,937	\$795,985,937	\$795,985,937

Change in Market Value
Last Three Months

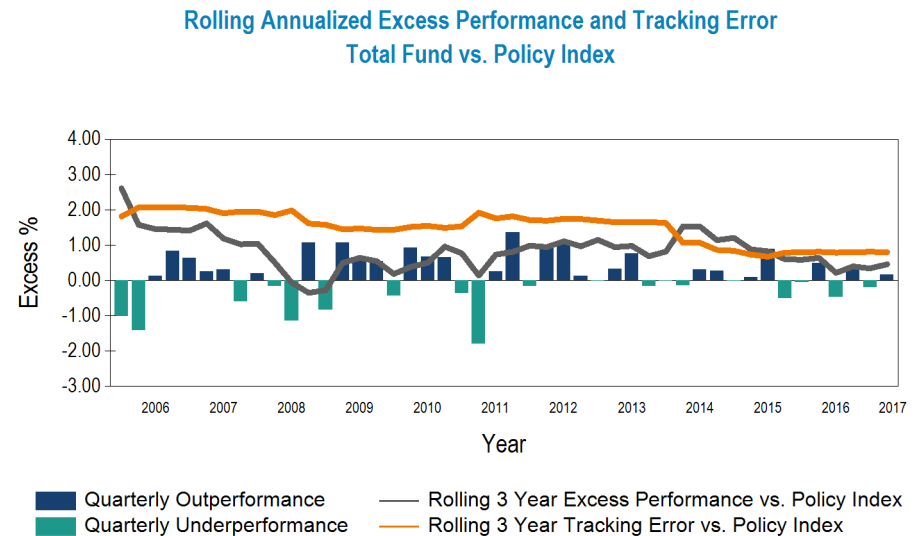
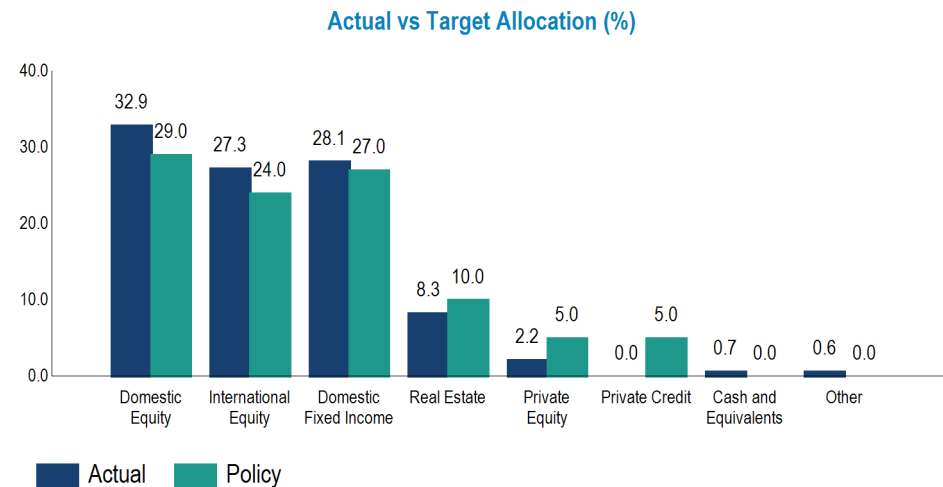


Contributions and withdrawals may include intra-account transfers between managers/funds. Fee transactions are excluded from Portfolio Reconciliation.

Total Fund Executive Summary (Gross of Fees)

Period Ending: September 30, 2017

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	3.6	11.9	3.6	12.4	6.8	8.2	5.6
Total Fund ex Parametric	3.6	11.9	3.6	12.4	6.8	8.2	5.6
Policy Index	3.4	11.5	3.4	12.5	6.3	7.5	5.0
InvestorForce Public DB Gross Rank	24	25	24	40	48	53	52
Total Domestic Equity	4.6	14.0	4.6	18.8	10.7	14.0	8.0
Russell 3000	4.6	13.9	4.6	18.7	10.7	14.2	7.6
InvestorForce Public DB US Eq Gross Rank	32	25	32	33	52	52	38
Total International Equity	5.8	22.1	5.8	20.5	5.8	7.6	1.6
MSCI ACWI ex USA Gross	6.3	21.6	6.3	20.2	5.2	7.5	1.7
InvestorForce Public DB ex-US Eq Gross Rank	80	73	80	38	63	71	62
Total Fixed Income	1.1	3.9	1.1	1.4	3.4	2.8	5.8
BBgBarc US Aggregate TR	0.8	3.1	0.8	0.1	2.7	2.1	4.3
InvestorForce Public DB Total Fix Inc Gross Rank	39	45	39	51	27	33	18
Total Real Estate	1.2	3.9	1.2	5.1	10.3	11.0	4.2
NCREIF Property Index	0.0	3.3	0.0	5.1	9.2	10.0	6.0
NCREIF-ODCE	1.9	5.4	1.9	7.6	10.8	11.6	5.0
Total Private Equity	4.0	12.9	4.0	17.2	15.7	18.0	--
Russell 3000 +3% Lagged	3.8	16.0	3.8	22.0	12.4	18.0	--
Total Opportunistic	1.5	3.8	1.5	4.2	6.0	13.6	13.1
Assumption Rate + 1%	2.0	6.2	2.0	8.4	8.5	8.7	8.9

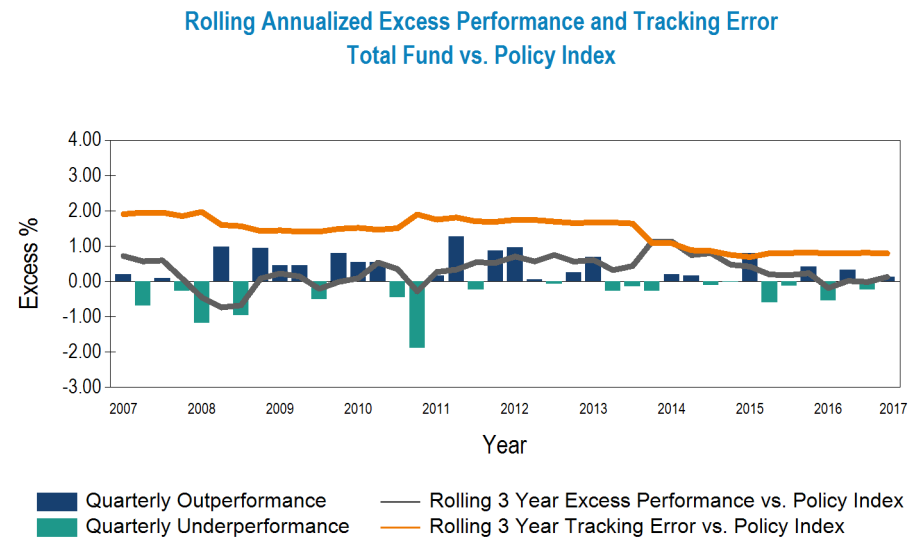
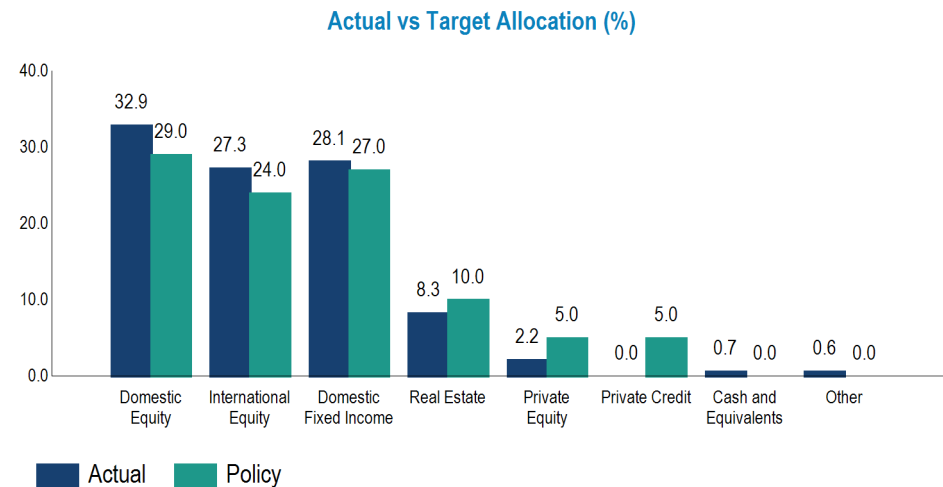


New Policy Index (as of 10/1/2016): 29% Russell 3000, 24% MSCI ACWI Free Ex US, 27% BBgBarc US Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 plus 300 bps (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior Policy Index (7/1/2014 to 9/30/2016): 29% Russell 3000, 25% MSCI ACWI Free Ex US, 30% BBgBarc Aggregate, 6% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 plus 300 bps (Lagged). Prior quarter Private Equity returns and index data are used. All returns are (G) gross of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. NCREIF Property Index unavailable at time of production.

Total Fund Executive Summary (Net of Fees)

Period Ending: September 30, 2017

	QTD	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
Total Fund	3.5	11.8	3.5	12.1	6.4	7.9	5.2
Total Fund ex Parametric	3.5	11.8	3.5	12.1	6.4	7.8	5.2
Policy Index	3.4	11.5	3.4	12.5	6.3	7.5	5.0
Total Domestic Equity	4.6	14.0	4.6	18.8	10.6	13.8	7.8
Russell 3000	4.6	13.9	4.6	18.7	10.7	14.2	7.6
Total International Equity	5.7	21.9	5.7	20.1	5.4	7.2	1.1
MSCI ACWI ex USA Gross	6.3	21.6	6.3	20.2	5.2	7.5	1.7
Total Fixed Income	1.1	3.7	1.1	1.1	3.1	2.4	5.5
BBgBarc US Aggregate TR	0.8	3.1	0.8	0.1	2.7	2.1	4.3
Total Real Estate	1.2	3.9	1.2	4.8	9.5	10.2	3.5
NCREIF Property Index	0.0	3.3	0.0	5.1	9.2	10.0	6.0
NCREIF-ODCE	1.9	5.4	1.9	7.6	10.8	11.6	5.0
Total Private Equity	4.0	12.9	4.0	16.8	14.0	14.8	--
Russell 3000 +3% Lagged	3.8	16.0	3.8	22.0	12.4	18.0	--
Total Opportunistic	1.5	3.8	1.5	3.7	4.6	12.0	11.5
Assumption Rate + 1%	2.0	6.2	2.0	8.4	8.5	8.7	8.9



New Policy Index (as of 10/1/2016): 29% Russell 3000, 24% MSCI ACWI Free Ex US, 27% BBgBarc US Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 plus 300 bps (Lagged), 5% BBgBarc High Yield +2% (Lagged). Prior Policy Index (7/1/2014 to 9/30/2016): 29% Russell 3000, 25% MSCI ACWI Free Ex US, 30% BBgBarc Aggregate, 6% NCREIF Property, 5% Bloomberg Commodity Index, 5% Russell 3000 plus 300 bps (Lagged). Prior quarter Private Equity returns and index data are used. All returns are (N) net of fees. Effective 1/01/2017, only traditional asset class (public equity, public fixed income, REITs) investment management fees will be included in the gross of fee return calculation. NCREIF Property Index unavailable at time of production.

Total Fund

Attribution Analysis - Asset Class Level (Gross of Fees)

Period Ending: September 30, 2017

Attribution Effects



Performance Attribution

	Quarter	YTD
Wtd. Actual Return	3.59%	11.98%
Wtd. Index Return *	3.37%	11.45%
Excess Return	0.22%	0.53%
Selection Effect	0.17%	0.51%
Allocation Effect	0.14%	0.10%
Interaction Effect	-0.09%	-0.08%

*Calculated from benchmark returns and weightings of each component.

Attribution Summary Last Three Months

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total Domestic Equity	4.6%	4.6%	0.0%	0.0%	0.0%	0.0%	0.0%
Total International Equity	5.8%	6.3%	-0.5%	-0.1%	0.1%	0.0%	0.0%
Total Fixed Income	1.1%	0.8%	0.3%	0.1%	0.0%	0.0%	0.0%
Total Real Estate	1.2%	0.0%	1.2%	0.1%	0.1%	0.0%	0.2%
Total Private Equity	4.0%	3.2%	0.7%	0.1%	0.0%	-0.1%	0.0%
Total Opportunistic	1.5%	2.0%	-0.5%	0.0%	0.0%	0.0%	0.0%
Total	3.6%	3.4%	0.2%	0.2%	0.1%	-0.1%	0.2%

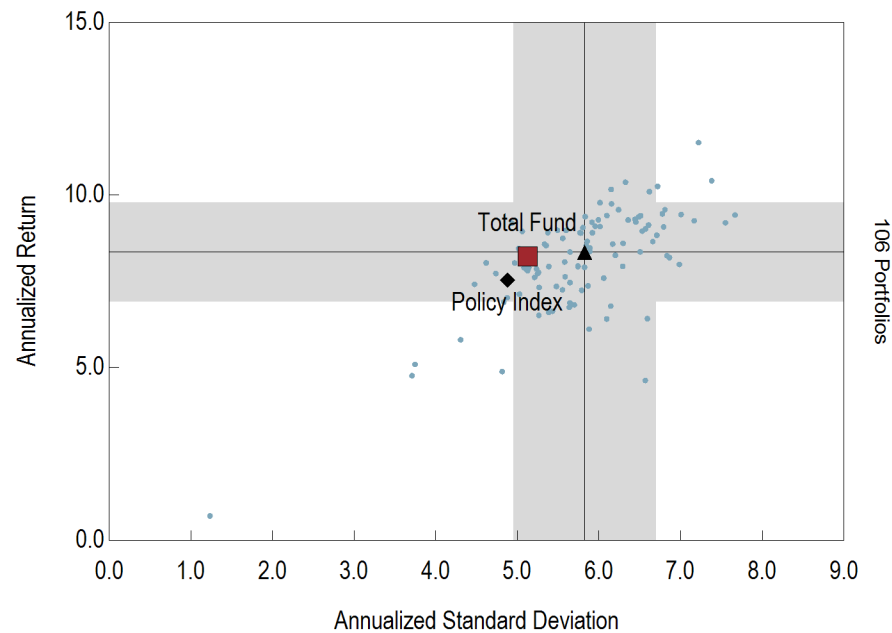
Weighted returns shown in attribution analysis may differ from actual returns.

Total Fund
Risk Analysis - 5 Years (Gross of Fees)

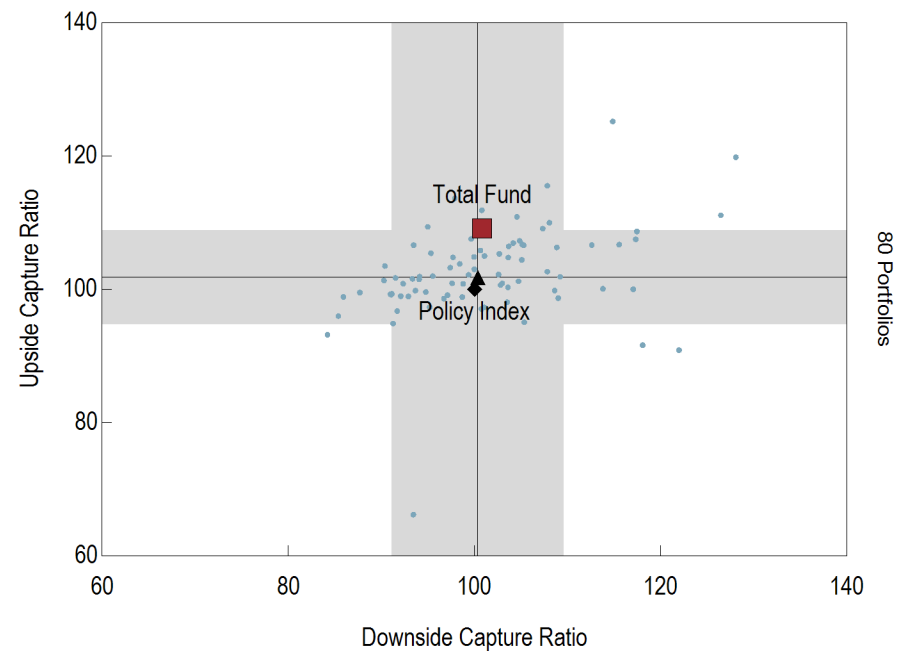
Period Ending: September 30, 2017

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
Total Fund	8.22%	0.68%	5.12%	0.40%	1.04	0.82%	0.98	1.57	0.82	109.12%	100.80%

Risk vs. Return



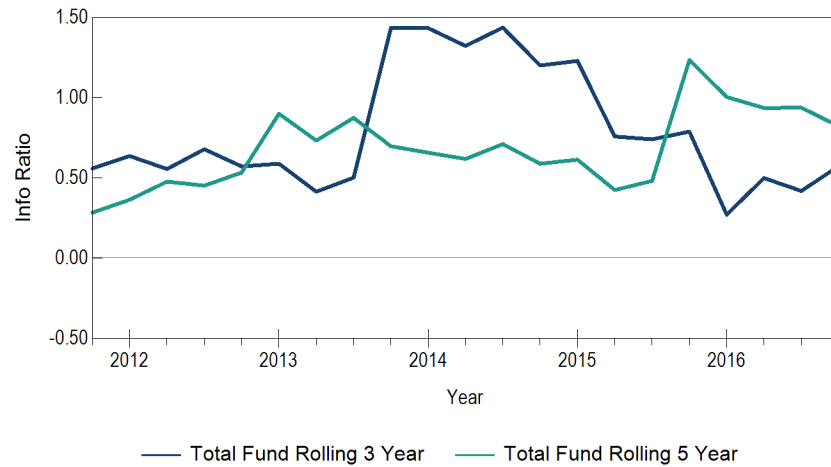
Up Markets vs. Down Markets



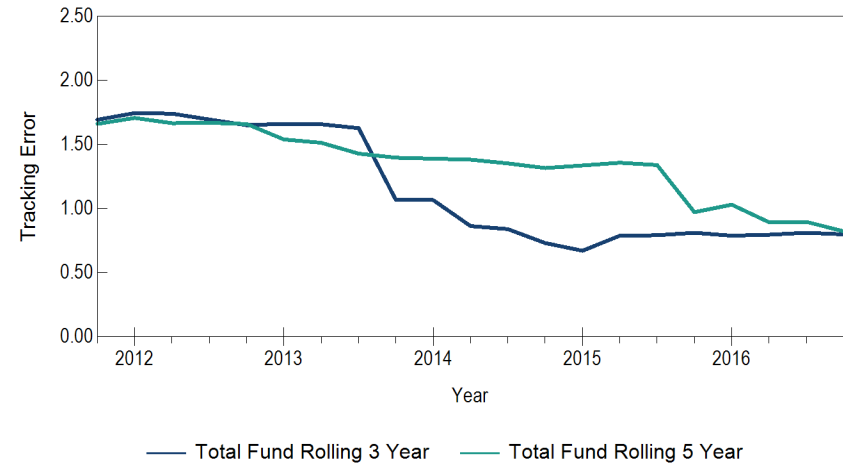
Total Fund Rolling Risk Statistics (Gross of Fees)

Period Ending: September 30, 2017

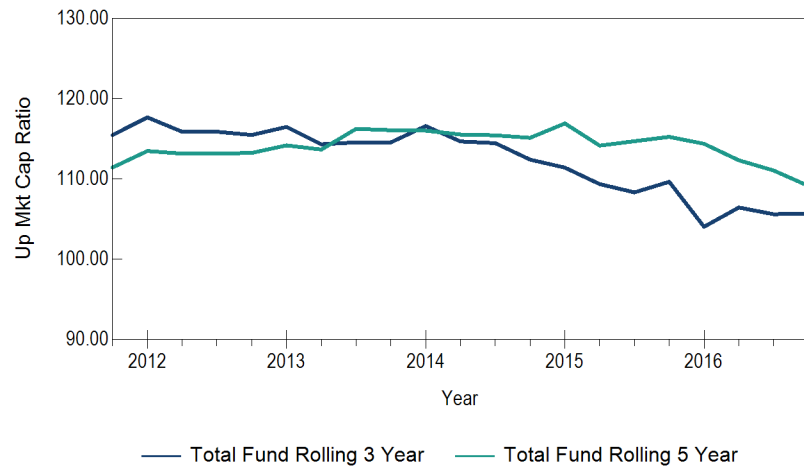
Rolling Information Ratio



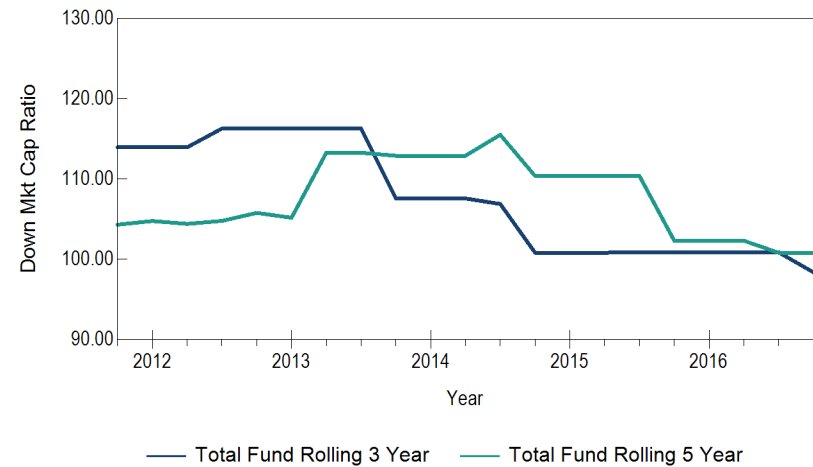
Rolling Tracking Error



Rolling Up Market Capture Ratio (%)



Rolling Down Market Capture Ratio (%)



Total Fund Performance Summary (Gross of Fees)

Period Ending: September 30, 2017

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012	Return	Since
Total Fund	795,985,937	100.0	3.6	11.9	3.6	12.4	6.8	8.2	5.6	7.7	0.0	4.8	14.8	14.6	9.4	Mar-89
Policy Index			3.4	11.5	3.4	12.5	6.3	7.5	5.0	8.3	-1.2	4.9	13.5	11.2	--	Mar-89
InvestorForce Public DB Gross Rank			24	25	24	40	48	53	52	50	53	74	59	6	3	Mar-89
Total Fund ex Parametric			3.6	11.9	3.6	12.4	6.8	8.2	5.6	7.7	0.0	4.9	14.7	14.2	9.4	Mar-89
Policy Index			3.4	11.5	3.4	12.5	6.3	7.5	5.0	8.3	-1.2	4.9	13.5	11.2	--	Mar-89
InvestorForce Public DB Gross Rank			24	25	24	40	48	54	54	50	53	72	59	11	3	Mar-89
Total Domestic Equity	261,630,285	32.9	4.6	14.0	4.6	18.8	10.7	14.0	8.0	12.9	0.3	10.2	33.9	17.1		
Russell 3000			4.6	13.9	4.6	18.7	10.7	14.2	7.6	12.7	0.5	12.6	33.6	16.4		
InvestorForce Public DB US Eq Gross Rank			32	25	32	33	52	52	38	51	44	73	64	18		
BlackRock Russell 3000	261,630,285	32.9	4.6	14.0	4.6	18.8	--	--	--	12.9	--	--	--	--	13.9	Dec-15
Russell 3000			4.6	13.9	4.6	18.7	--	--	--	12.7	--	--	--	--	13.3	Dec-15
eA US All Cap Core Equity Gross Rank			40	42	40	41	--	--	--	35	--	--	--	--	56	Dec-15
Total International Equity	216,936,667	27.3	5.8	22.1	5.8	20.5	5.8	7.6	1.6	4.7	-3.5	-4.4	14.0	19.3		
MSCI ACWI ex USA Gross			6.3	21.6	6.3	20.2	5.2	7.5	1.7	5.0	-5.3	-3.4	15.8	17.4		
InvestorForce Public DB ex-US Eq Gross Rank			80	73	80	38	63	71	62	40	57	74	83	37		
BlackRock International Equity	150,905,811	19.0	5.5	20.4	5.5	19.6	5.4	8.8	1.7	1.5	-0.5	-4.7	23.2	17.8	7.9	Jul-03
MSCI EAFE Gross			5.5	20.5	5.5	19.7	5.5	8.9	1.8	1.5	-0.4	-4.5	23.3	17.9	8.0	Jul-03
eA All EAFE Equity Gross Rank			67	70	67	60	75	74	84	47	67	64	61	74	74	Jul-03
DFA Emerging Markets Value	31,085,121	3.9	5.7	24.5	5.7	23.4	4.7	4.1	1.5	20.5	-18.3	-3.9	-3.2	20.1	4.9	Jan-07
MSCI Emerging Markets Gross			8.0	28.1	8.0	22.9	5.3	4.4	1.7	11.6	-14.6	-1.8	-2.3	18.6	4.4	Jan-07
eA Emg Mkts Equity Gross Rank			75	76	75	48	76	87	86	7	92	84	84	56	65	Jan-07
Harding Loevner Emerging Markets	34,945,735	4.4	7.3	28.0	7.3	21.9	--	--	--	--	--	--	--	--	22.2	Jul-16
MSCI Emerging Markets Gross			8.0	28.1	8.0	22.9	--	--	--	--	--	--	--	--	23.3	Jul-16
eA Emg Mkts Equity Gross Rank			59	58	59	63	--	--	--	--	--	--	--	--	61	Jul-16
Total Fixed Income	224,050,520	28.1	1.1	3.9	1.1	1.4	3.4	2.8	5.8	5.1	-0.3	5.9	-1.7	9.6		
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2		
InvestorForce Public DB Total Fix Inc Gross Rank			39	45	39	51	27	33	18	41	55	15	69	33		
Tortoise Capital	112,120,897	14.1	1.2	4.0	1.2	1.4	4.0	3.5	6.2	5.1	1.2	7.0	-0.4	8.8	6.7	Dec-92
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2	5.6	Dec-92
eA US Core Plus Fixed Inc Gross Rank			54	68	54	77	25	33	18	45	15	16	52	45	42	Dec-92
MackKay Shields Core Plus Opportunities	90,546,517	11.4	1.1	4.2	1.1	1.7	--	--	--	5.1	--	--	--	--	2.3	Mar-15
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	--	--	--	2.6	--	--	--	--	2.0	Mar-15
eA US Core Plus Fixed Inc Gross Rank			61	57	61	68	--	--	--	46	--	--	--	--	87	Mar-15

Since Inception ranking is from the beginning of the first complete month. Templeton Foreign Equity liquidated 10/27/2015. TimesSquare, BlackRock Russell 1000 and T. Rowe liquidated 12/10/2015. BlackRock Russell 3000 funded 12/10/2015. Harding Loevner funded 7/5/2016. Parametric liquidated 7/5/2016. Vontobel liquidated 7/13/2016. Gresham MTAP liquidated 8/22/2016. BlackRock Commodities liquidated 9/2/2016.

Total Fund Performance Summary (Gross of Fees)

Period Ending: September 30, 2017

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012	Return	Since
BlackRock US TIPS	21,383,106	2.7	0.9	1.9	0.9	-0.5	1.8	0.1	4.0	4.8	-1.2	3.6	-8.5	7.1	4.2	Apr-07
BBgBarc US TIPS TR			0.9	1.7	0.9	-0.7	1.6	0.0	3.9	4.7	-1.4	3.6	-8.6	7.0	4.1	Apr-07
eA TIPS / Infl Indexed Fixed Inc Gross Rank			56	51	56	57	42	59	56	37	43	45	62	59	59	Apr-07
Total Real Estate	66,047,276	8.3	1.2	3.9	1.2	5.1	10.3	11.0	4.2	7.1	16.1	13.0	12.6	10.6		
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5		
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9		
ASB Real Estate	32,116,706	4.0	0.6	2.1	0.6	2.9	9.4	--	--	5.6	17.3	13.5	13.7	--	10.9	Dec-12
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	--	--	8.0	13.3	11.8	11.0	--	9.9	Dec-12
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	--	--	8.8	15.0	12.5	13.9	--	11.7	Dec-12
Clarion Lion	32,473,254	4.1	1.9	6.0	1.9	7.6	11.8	11.9	3.9	9.1	15.7	13.2	12.8	10.9	5.0	Dec-06
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5	6.8	Dec-06
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9	5.9	Dec-06
1221 State St. Corp	1,457,316	0.2	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.1	-0.4	Sep-08
Total Cash	5,247,471	0.7														
Cash Account	5,247,471	0.7	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.4		
91 Day T-Bills			0.3	0.6	0.3	0.7	0.3	0.2	--	0.3	0.0	0.0	0.0	0.1		

Since Inception ranking is from the beginning of the first complete month. Templeton Foreign Equity liquidated 10/27/2015. TimesSquare, BlackRock Russell 1000 and T. Rowe liquidated 12/10/2015. BlackRock Russell 3000 funded on 12/10/2015. Harding Loevner funded 7/5/2016. Parametric liquidated 7/5/2016. Vontobel liquidated 7/13/2016. Gresham MTAP liquidated 8/22/2016. BlackRock Commodities liquidated 9/2/2016. NCREIF Property Index unavailable at time of production.

Total Fund Performance Summary (Net of Fees)

Period Ending: September 30, 2017

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012	Return	Since
Total Fund	795,985,937	100.0	3.5	11.8	3.5	12.1	6.4	7.9	5.2	7.4	-0.4	4.4	14.5	14.2	9.0	Mar-89
Policy Index			3.4	11.5	3.4	12.5	6.3	7.5	5.0	8.3	-1.2	4.9	13.5	11.2	--	Mar-89
Total Fund ex Parametric			3.5	11.8	3.5	12.1	6.4	7.8	5.2	7.4	-0.4	4.4	14.4	13.8	9.0	Mar-89
Policy Index			3.4	11.5	3.4	12.5	6.3	7.5	5.0	8.3	-1.2	4.9	13.5	11.2	--	Mar-89
Total Domestic Equity	261,630,285	32.9	4.6	14.0	4.6	18.8	10.6	13.8	7.8	12.8	0.1	10.0	33.6	16.9		
Russell 3000			4.6	13.9	4.6	18.7	10.7	14.2	7.6	12.7	0.5	12.6	33.6	16.4	--	
BlackRock Russell 3000	261,630,285	32.9	4.6	14.0	4.6	18.8	--	--	--	12.8	--	--	--	--	13.9	Dec-15
Russell 3000			4.6	13.9	4.6	18.7	--	--	--	12.7	--	--	--	--	13.3	Dec-15
Total International Equity	216,936,667	27.3	5.7	21.9	5.7	20.1	5.4	7.2	1.1	4.4	-4.0	-4.9	13.4	18.6		
MSCI ACWI ex USA Gross			6.3	21.6	6.3	20.2	5.2	7.5	1.7	5.0	-5.3	-3.4	15.8	17.4		
BlackRock International Equity	150,905,811	19.0	5.4	20.3	5.4	19.5	5.3	8.6	1.6	1.3	-0.6	-4.8	22.9	17.6	7.8	Jul-03
MSCI EAFE Gross			5.5	20.5	5.5	19.7	5.5	8.9	1.8	1.5	-0.4	-4.5	23.3	17.9	8.0	Jul-03
DFA Emerging Markets Value	31,085,121	3.9	5.6	24.0	5.6	22.8	4.2	3.5	0.9	19.8	-18.8	-4.4	-3.8	19.4	4.3	Jan-07
MSCI Emerging Markets Gross			8.0	28.1	8.0	22.9	5.3	4.4	1.7	11.6	-14.6	-1.8	-2.3	18.6	4.4	Jan-07
Harding Loevner Emerging Markets	34,945,735	4.4	7.0	27.0	7.0	20.6	--	--	--	--	--	--	--	--	21.0	Jul-16
MSCI Emerging Markets Gross			8.0	28.1	8.0	22.9	--	--	--	--	--	--	--	--	23.3	Jul-16
Total Fixed Income	224,050,520	28.1	1.1	3.7	1.1	1.1	3.1	2.4	5.5	4.8	-0.6	5.6	-2.0	9.3		
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2		
Tortoise Capital	112,120,897	14.1	1.1	3.8	1.1	1.1	3.7	3.2	5.9	4.8	0.9	6.7	-0.8	8.5	6.3	Dec-92
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2	5.6	Dec-92
MacKay Shields Core Plus Opportunities	90,546,517	11.4	1.0	4.0	1.0	1.4	--	--	--	4.7	--	--	--	--	2.0	Mar-15
BBgBarc US Aggregate TR			0.8	3.1	0.8	0.1	--	--	--	2.6	--	--	--	--	2.0	Mar-15
BlackRock US TIPS	21,383,106	2.7	0.9	1.8	0.9	-0.6	1.7	0.1	3.9	4.8	-1.3	3.6	-8.6	7.0	4.2	Apr-07
BBgBarc US TIPS TR			0.9	1.7	0.9	-0.7	1.6	0.0	3.9	4.7	-1.4	3.6	-8.6	7.0	4.1	Apr-07
Total Real Estate	66,047,276	8.3	1.2	3.9	1.2	4.8	9.5	10.2	3.5	6.1	15.0	11.6	12.1	10.3		
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5		
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9		
ASB Real Estate	32,116,706	4.0	0.6	2.1	0.6	2.7	8.7	--	--	4.6	16.2	12.5	12.5	--	10.0	Dec-12
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	--	--	8.0	13.3	11.8	11.0	--	9.9	Dec-12
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	--	--	8.8	15.0	12.5	13.9	--	11.7	Dec-12
Clarion Lion	32,473,254	4.1	1.9	6.0	1.9	7.3	10.9	11.0	3.0	8.0	14.6	12.2	11.8	9.9	4.1	Dec-06
NCREIF Property Index			0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5	6.8	Dec-06
NCREIF-ODCE			1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9	5.9	Dec-06
1221 State St. Corp	1,457,316	0.2	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.1	-0.4	Sep-08

Total Fund
Performance Summary (Net of Fees)

Period Ending: September 30, 2017

	Market Value	% of Portfolio	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012	Return	Since
Total Cash	5,247,471	0.7														
Cash Account	5,247,471	0.7	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.4		
91 Day T-Bills			0.3	0.6	0.3	0.7	0.3	0.2	--	0.3	0.0	0.0	0.0	0.1		

Investment Manager
Performance Analysis - 3 & 5 Years (Net of Fees)

Period Ending: September 30, 2017

3 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock International Equity	5.32%	-0.21%	10.72%	-0.21%	1.00	0.05%	1.00	0.47	-4.31	98.88%	101.21%
DFA Emerging Markets Value	4.16%	-1.12%	17.11%	-1.36%	1.04	4.72%	0.93	0.23	-0.24	92.42%	101.50%
Tortoise Capital	3.71%	1.00%	3.43%	1.05%	0.98	0.88%	0.93	1.00	1.13	118.99%	89.82%
BlackRock US TIPS	1.70%	0.08%	3.57%	0.08%	1.00	0.12%	1.00	0.40	0.71	102.52%	100.10%
ASB Real Estate	8.66%	-0.55%	3.38%	-2.52%	1.21	2.43%	0.50	2.48	-0.23	91.14%	--
Clarion Lion	10.91%	1.70%	2.04%	4.02%	0.75	1.49%	0.52	5.22	1.14	112.17%	--

5 Years

	Anlzd Ret	Ann Excess BM Return	Anlzd Std Dev	Anlzd Alpha	Beta	Tracking Error	R-Squared	Sharpe Ratio	Info Ratio	Up Mkt Cap Ratio	Down Mkt Cap Ratio
BlackRock International Equity	8.61%	-0.25%	10.57%	-0.25%	1.00	0.05%	1.00	0.80	-4.79	98.50%	101.42%
DFA Emerging Markets Value	3.50%	-0.86%	15.11%	-1.21%	1.08	3.92%	0.94	0.22	-0.22	99.34%	107.17%
Tortoise Capital	3.23%	1.16%	3.36%	1.06%	1.05	0.96%	0.92	0.90	1.22	126.11%	82.42%
BlackRock US TIPS	0.07%	0.05%	4.94%	0.05%	1.01	0.10%	1.00	-0.03	0.49	102.04%	100.42%
Clarion Lion	11.01%	1.03%	1.87%	3.95%	0.71	1.57%	0.35	5.78	0.66	107.60%	--

Private Equity Non Marketable Securities Overview

Period Ending: September 30, 2017

Vintage	Manager & Fund Name	Estimated 9/30 Market Value ³	Total Commitment	Capital Called	% Called	Remaining Commitment	Capital Returned	Market Value for IRR	Distrib./ Paid-In (DPI) ¹	Tot. Value/ Paid-In (TVPI) ²	Net IRR Since Inception ⁵	IRR Date	
2011	HarbourVest IX-Buyout	\$6,171,414	\$10,000,000	\$6,325,000	63%	\$3,675,000	\$2,784,800	\$6,513,632	44.0%	141.6%	16.6%	6/30/17	
2011	HarbourVest IX-Credit	\$1,078,741	\$2,000,000	\$1,250,000	63%	\$750,000	\$559,415	\$1,119,396	44.8%	131.1%	13.8%	6/30/17	
2008	HarbourVest Int'l VI ⁶	\$2,878,169	\$3,712,930	\$2,605,981	70%	\$1,106,949	\$1,175,637	\$2,996,644	45.1%	155.6%	14.7%	6/30/17	
2011	HarbourVest IX-Venture	\$3,580,519	\$4,000,000	\$3,400,000	85%	\$600,000	\$1,213,001	\$3,763,253	35.7%	141.0%	15.0%	6/30/17	
2017	HarbourVest 2017 Global	\$3,600,000	\$30,000,000	\$3,600,000	12%	\$26,400,000	\$0	\$0	0.0%	100.0%	N/A	N/A	
2010	KKR Mezzanine ⁷	\$4,141,468	\$10,000,000	\$10,000,000	100%	\$0	\$10,679,185	\$4,159,435	106.8%	148.2%	8.0%	3/31/17	
2011	PIMCO BRAVO ⁴	\$623,406	\$10,000,000	\$10,000,000	100%	\$0	\$17,604,048	\$763,020	176.0%	182.3%	22.2%	3/31/17	
Total Alternative Illiquids		\$22,073,718	\$69,712,930	\$37,180,981	53%	\$32,531,949	\$34,016,086	\$19,315,380	51.9%	143.4%			
% of Portfolio (Market Value)		2.9%							Management Fee	Admin Fee	Interest Expense	Other Expense	Total Expense ⁸
								HarbourVest IX-Buyout	\$24,897	\$0	\$0	\$4,647	\$29,544
								HarbourVest IX-Credit	\$4,974	\$0	\$0	\$1,703	\$6,677
								HarbourVest Int'l VI	\$7,678	\$0	\$0	\$176	\$7,854
								HarbourVest IX-Venture	\$9,975	\$0	\$0	\$1,459	\$11,434
								HarbourVest 2017 Global	\$0	\$0	\$0	\$0	\$0
								KKR Mezzanine	\$15,157	\$0	\$0	\$0	\$15,157
								PIMCO BRAVO	\$3,024	\$667	\$0	\$2,181	\$5,872
									\$65,705	\$667	\$0	\$10,166	\$76,538

¹(DPI) is equal to (capital returned / capital called)

¹(DPI) is equal to (capital returned / capital called)

²(TVPI) is equal to (market value + capital returned) / capital called

³Last known market value + capital calls - distributions (MV's as of 6/30/17)

⁴Investment period ended, no further capital to be called.

⁵Net IRR is calculated on the cash flows of all the limited partners of the fund and is net of all fees. Each IRR figure is provided by its respective manager.

⁶HarbourVest International Private Equity Partners VI-Partnership Fund L.P. values are originally presented in euros and are calculated to dollars using XE™.

⁷KKR: Total capital called is \$11,796,786, which includes recycled distributions. Unused capital commitment is \$976,501 after including distribution proceeds available for reinvestment

⁸All fees and expenses are for 2Q 2017

HarbourVest 2017 Global Fund first capital call issued 9/21/2017.

Total Fund
Financial Reconciliation (Last Three Months)

Period Ending: September 30, 2017

Manager	Beginning Market Value	Contributions	Disbursements	Fees ²	Net Cash Flow	Investment Income	Capital Gain/ Loss	Total Gains/Earnings/ Losses	Ending Market Value
Blackrock Russell 3000 Index	\$253,648,928	\$0	(\$3,600,000)	\$0	(\$3,600,000)	\$0	\$11,581,358	\$11,581,358	\$261,630,285
DFA Emerging Markets	\$29,447,561	\$0	\$0	\$0	\$0	\$0	\$1,637,560	\$1,637,560	\$31,085,121
Harding Loevner Emerging Markets	\$32,561,136	\$0	\$0	\$0	\$0	\$0	\$2,384,599	\$2,384,599	\$34,945,735
Blackrock International Equity	\$143,080,266	\$0	\$0	\$0	\$0	\$0	\$7,825,544	\$7,825,544	\$150,905,811
Tortoise Capital	\$110,803,179	\$0	\$0	\$0	\$0	\$945,600	\$372,118	\$1,317,718	\$112,120,897
MacKay Shields Core Plus Opp.	\$89,610,949	\$0	\$0	\$0	\$0	\$0	\$935,568	\$935,568	\$90,546,517
Blackrock US TIPS	\$21,191,139	\$0	\$0	\$0	\$0	\$0	\$191,967	\$191,967	\$21,383,106
Clarion Lion Properties	\$31,879,497	\$315,766	(\$320,207)	(\$81,011)	(\$85,452)	\$346,205	\$333,004	\$679,209	\$32,473,254
ICERS State Street Real Estate	\$1,434,205	\$35,107	(\$12,004)	\$0	\$23,103	\$8	\$0	\$8	\$1,457,316
ASB Allegiance Real Estate	\$31,865,705	\$72,719	\$0	(\$72,719)	\$0	\$279,776	(\$28,775)	\$251,001	\$32,116,706
PIMCO BRAVO ¹	\$763,020	\$0	(\$133,089)	(\$3,024)	(\$136,113)	\$3,882	(\$7,383)	(\$3,501)	\$623,406
KKR Mezzanine I ¹	\$4,055,564	\$78,217	(\$70,417)	\$15,157	\$22,957	\$0	\$62,947	\$62,947	\$4,141,468
HarbourVest International VI ¹	\$2,792,190	\$47,750	(\$166,226)	(\$7,678)	(\$126,154)	(\$19)	\$212,153	\$212,134	\$2,878,169
HarbourVest Buyout IX ¹	\$6,283,803	\$0	(\$342,218)	(\$24,897)	(\$367,115)	\$91	\$254,635	\$254,726	\$6,171,414
HarbourVest Credit Opportunities IX ¹	\$1,061,926	\$0	(\$40,655)	(\$4,974)	(\$45,629)	\$1,522	\$60,922	\$62,444	\$1,078,741
HarbourVest Venture IX ¹	\$3,707,608	\$0	(\$182,734)	(\$9,975)	(\$192,709)	\$34	\$65,586	\$65,620	\$3,580,519
HarbourVest 2017 Global ¹	\$0	\$3,600,000	\$0	\$0	\$3,600,000	\$0	\$0	\$0	\$3,600,000
Cash	\$4,496,333	\$751,138	\$0	\$0	\$751,138	\$0	\$0	\$0	\$5,247,471
Totals	\$768,683,009	\$4,900,697	(\$4,867,550)	(\$189,121)	(\$155,974)	\$1,577,099	\$25,881,804	\$27,458,902	\$795,985,937

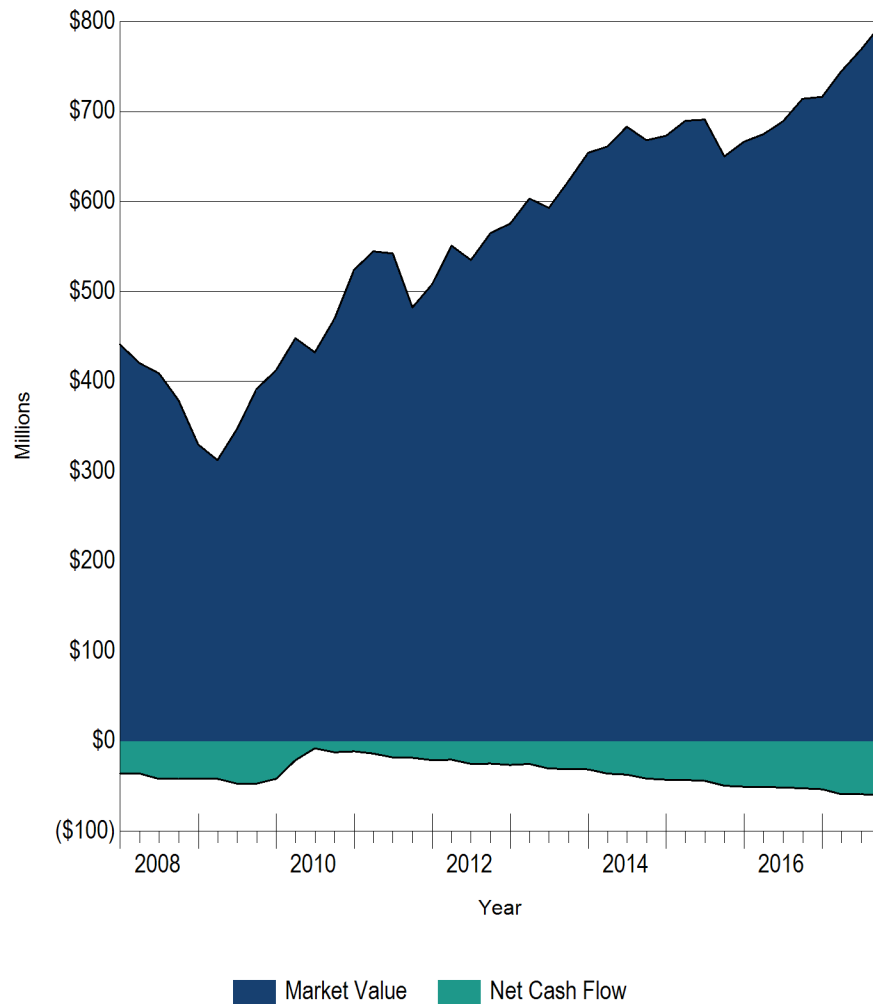
¹Market value as of 6/30/2017 +/- 3Q calls and distributions

²Fee transactions not included in the Portfolio Reconciliation page at beginning of report

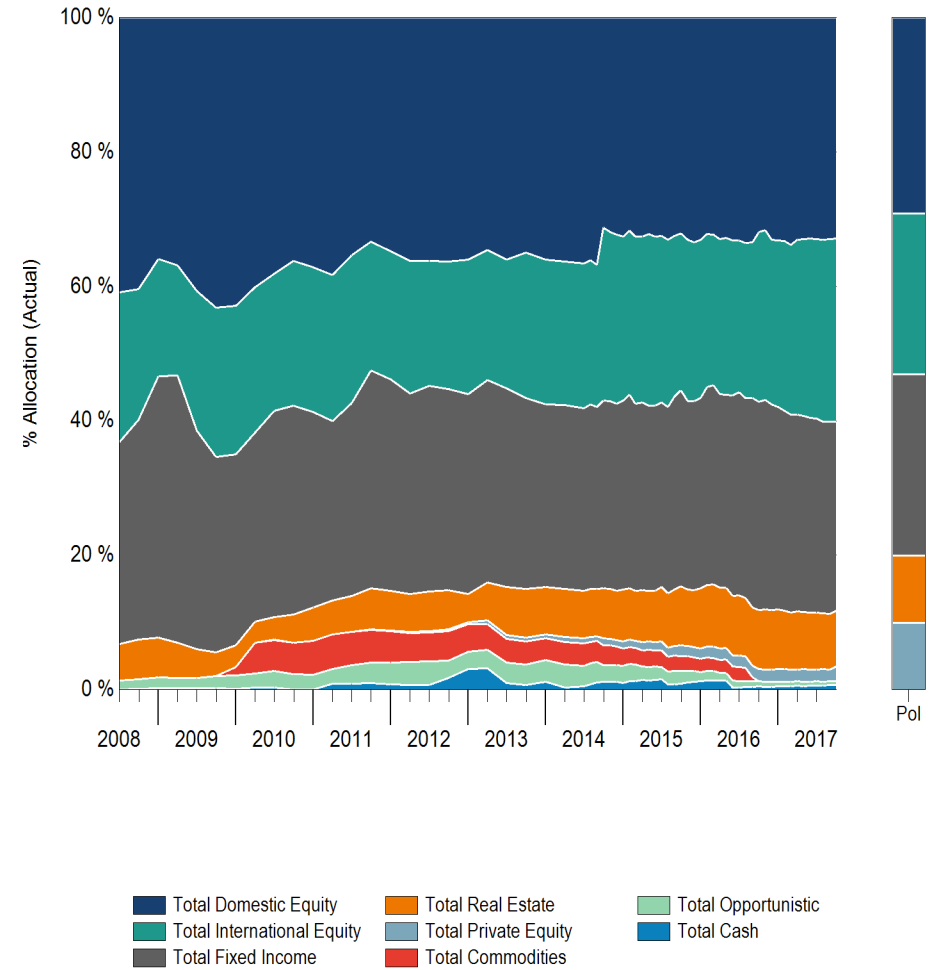
Total Fund Asset Allocation History

Period Ending: September 30, 2017

Market Value History

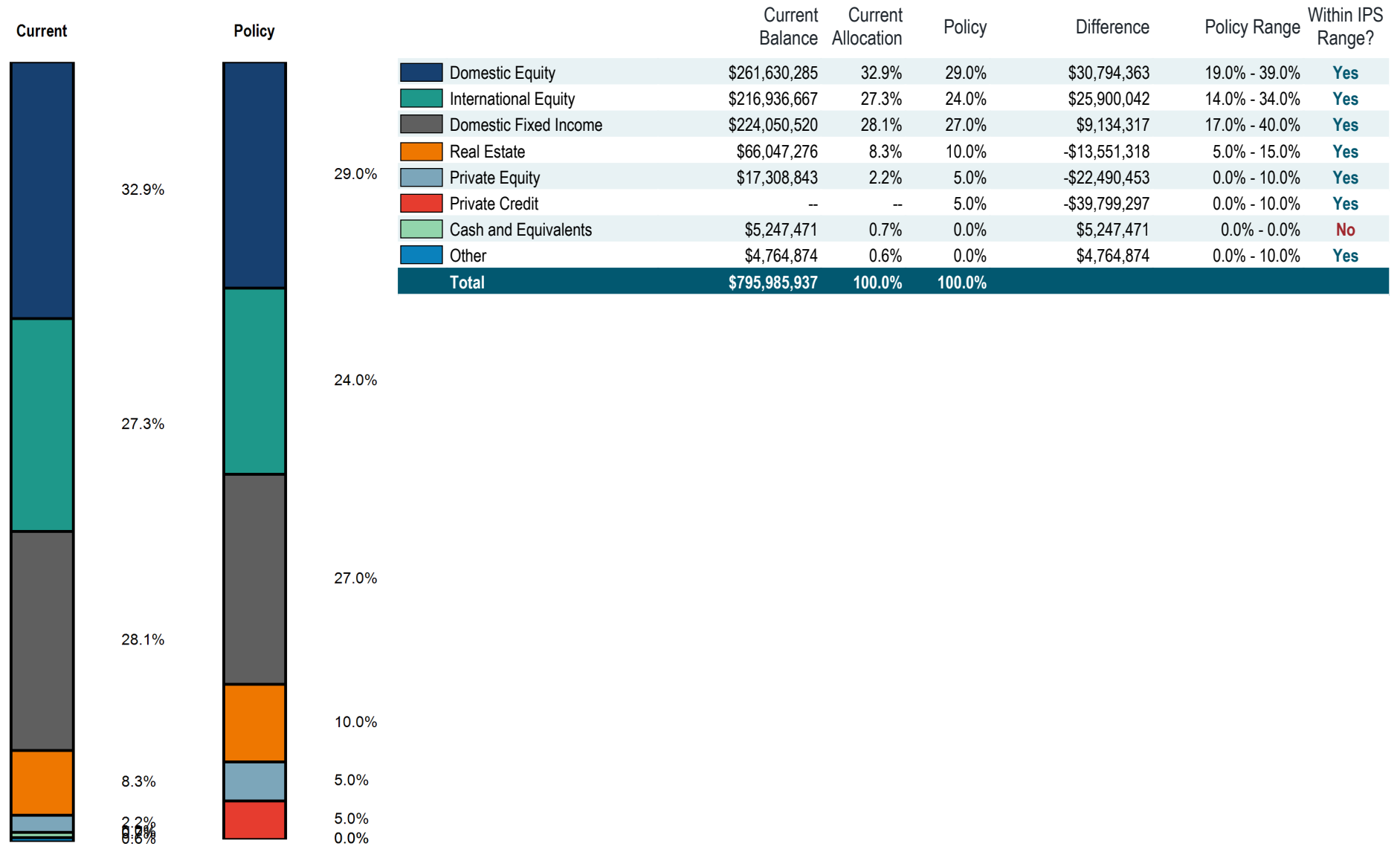


Asset Allocation History



Total Fund Asset Allocation vs. Policy

Period Ending: September 30, 2017



Total Fund Manager Report Card

Period Ending: September 30, 2017

Objective 1: Exceed passive benchmark on a net-of-fee basis

Objective 2: Exceed median manager return in comparable universe on a gross-of-fee basis

Asset Class / Manager	Benchmark	3-Year					5-Year				
		Manager Return	Benchmark Return	Meets Expectations	Universe Ranking	Meets Expectations	Manager Return	Benchmark Return	Meets Expectations	Universe Ranking	Meets Expectations
<u>Domestic Equity</u>											
BlackRock	Russell 3000 Index										
<u>International Equity</u>											
BlackRock	MSCI EAFE Index	5.3%	5.5%	No			8.6%	8.9%	No		
Dimensional Fund Advisors	MSCI Emerging Markets Index + 150 basis points	4.2%	6.8%	No	76	No	3.5%	5.9%	No	87	No
Harding Loevner	MSCI Emerging Markets Index + 150 basis points										
<u>Fixed Income</u>											
Tortoise Capital	Barclays Credit Aggregate Bond Index + 50 basis points	3.7%	3.2%	Yes	25	Yes	3.2%	2.7%	Yes	33	Yes
MacKay Shields	Barclays Credit Aggregate Bond Index + 50 basis points										
BlackRock	Barclays Credit US TIPS Index	1.7%	1.6%	Yes			0.1%	0.0%	Yes		
<u>Alternatives</u>											
Clarion	NCREIF Property Index	10.9%	9.2%	Yes			11.0%	10.0%	Yes		
ASB Allegiance	NCREIF Property Index	8.7%	9.2%	No							
PIMCO	Actuarial Assumption Rate + 100 basis points										
KKR	Actuarial Assumption Rate + 100 basis points										
HarbourVest Partners	Russell 3000 + 250 basis points										

Asset Class / Manager	Benchmark	10-Year					15-Year				
		Manager Return	Benchmark Return	Meets Expectations	Universe Ranking	Meets Expectations	Manager Return	Benchmark Return	Meets Expectations	Universe Ranking	Meets Expectations
<u>Domestic Equity</u>											
BlackRock	Russell 3000 Index										
<u>International Equity</u>											
BlackRock	MSCI EAFE Index	1.6%	1.8%	No							
Dimensional Fund Advisors	MSCI Emerging Markets Index + 150 basis points	0.9%	3.2%	No	86	No					
Harding Loevner	MSCI Emerging Markets Index + 150 basis points										
<u>Fixed Income</u>											
Tortoise Capital	Barclays Credit Aggregate Bond Index + 50 basis points	5.9%	4.8%	Yes	18	Yes	5.4%	4.7%	Yes		
MacKay Shields	Barclays Credit Aggregate Bond Index + 50 basis points										
BlackRock	Barclays Credit US TIPS Index	3.9%	3.9%	No							
<u>Alternatives</u>											
Clarion	NCREIF Property Index	3.0%	6.0%	No							
ASB Allegiance	NCREIF Property Index										
PIMCO	Actuarial Assumption Rate + 100 basis points										
KKR	Actuarial Assumption Rate + 100 basis points										
HarbourVest Partners	Russell 3000 + 250 basis points										

Total Fund Investment Fee Analysis

Period Ending: September 30, 2017

Account	Fee Schedule	Market Value As of 9/30/2017	% of Portfolio	Estimated Annual Fee (\$)	Estimated Annual Fee (%)
1221 State St. Corp	No Fee	\$1,457,316	0.2%	--	--
ASB Real Estate	1.25% of First \$5.0 Mil, 1.00% of Next \$10.0 Mil, 0.75% Thereafter	\$32,116,706	4.0%	\$290,875	0.91%
BlackRock International Equity	0.15% of First \$50.0 Mil, 0.10% of Next \$50.0 Mil	\$150,905,811	19.0%	\$125,000	0.08%
BlackRock Russell 3000	0.03% of Assets	\$261,630,285	32.9%	\$78,489	0.03%
BlackRock US TIPS	0.07% of Assets	\$21,383,106	2.7%	\$14,968	0.07%
Cash Account	No Fee	\$5,247,471	0.7%	--	--
Clarion Lion	1.25% of First \$10.0 Mil, 1.00% of Next \$15.0 Mil, 0.85% Thereafter	\$32,473,254	4.1%	\$338,523	1.04%
DFA Emerging Markets Value	0.56% of Assets	\$31,085,121	3.9%	\$174,077	0.56%
Harbourvest 2017 Global Fund	No Fee	\$3,600,000	0.5%	--	--
Harbourvest Buyout IX	\$100,000 Annually	\$6,171,414	0.8%	\$100,000	1.62%
Harbourvest Credit Ops IX	\$20,000 Annually	\$1,078,741	0.1%	\$20,000	1.85%
Harbourvest International PE VI	\$35,000 Annually	\$2,878,169	0.4%	\$35,000	1.22%
Harbourvest Venture IX	\$40,000 Annually	\$3,580,519	0.4%	\$40,000	1.12%
Harding Loevner Emerging Markets	1.05% of Assets	\$34,945,735	4.4%	\$366,930	1.05%
KKR Mezzanine Partners	\$150,000 Annually	\$4,141,468	0.5%	\$150,000	3.62%
MacKay Shields Core Plus Opportunities	0.35% of Assets	\$90,546,517	11.4%	\$316,913	0.35%
PIMCO BRAVO	1.90% of Assets	\$623,406	0.1%	\$11,845	1.90%
Tortoise Capital	0.29% of First \$100.0 Mil, 0.25% of Next \$100.0 Mil	\$112,120,897	14.1%	\$315,302	0.28%
Verus Advisory Fee	\$175,000 Annually				
Investment Management Fee		\$795,985,937	100.0%	\$2,377,922	0.30%

*HarbourVest, KKR and PIMCO BRAVO fees are estimated gross management fees only and do not include incentive allocations or offsetting cash flows received by the fund.

*HarbourVest International Private Equity VI fees are based on committed Euros, actual US Dollar amount will fluctuate based on exchange rates.

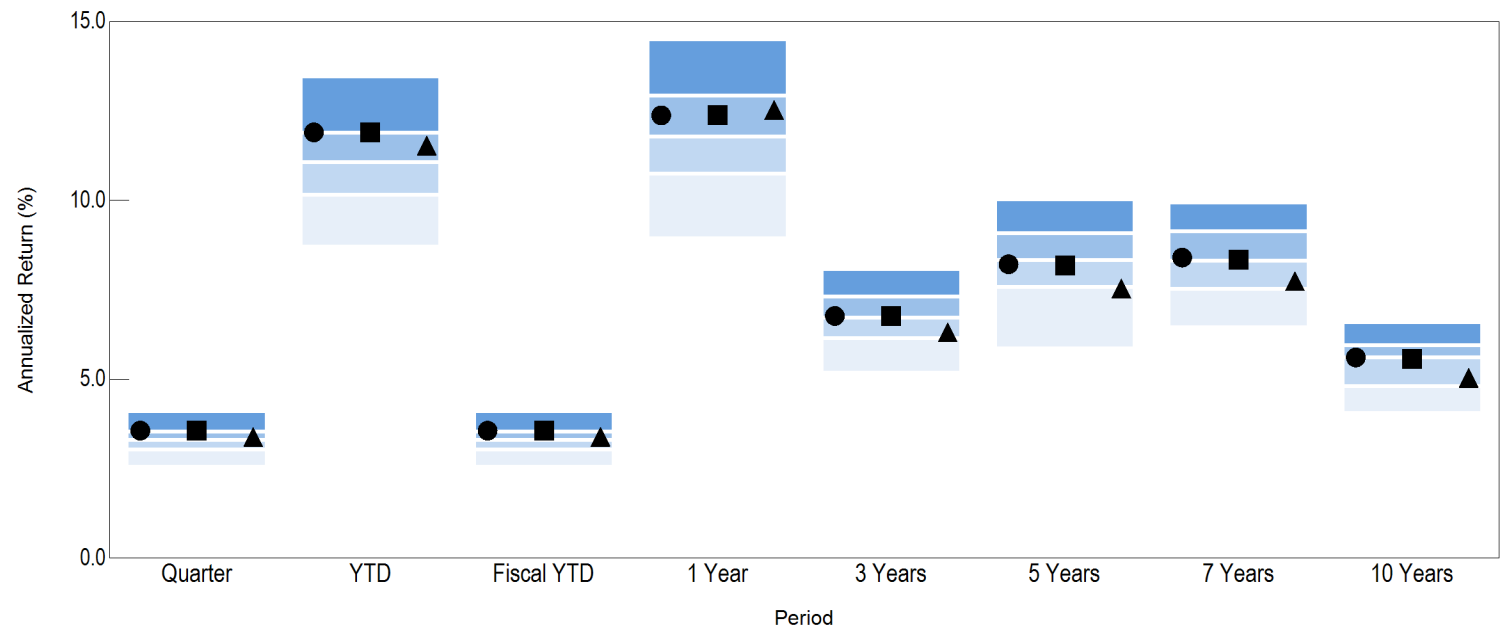
*Verus advisory fee shown for disclosure purposes only and is not included in total investment management fee calculations.

Total Fund

Peer Universe Comparison: Cumulative Performance (Gross of Fees)

Period Ending: September 30, 2017

Total Fund Cumulative Performance vs. InvestorForce Public DB Gross

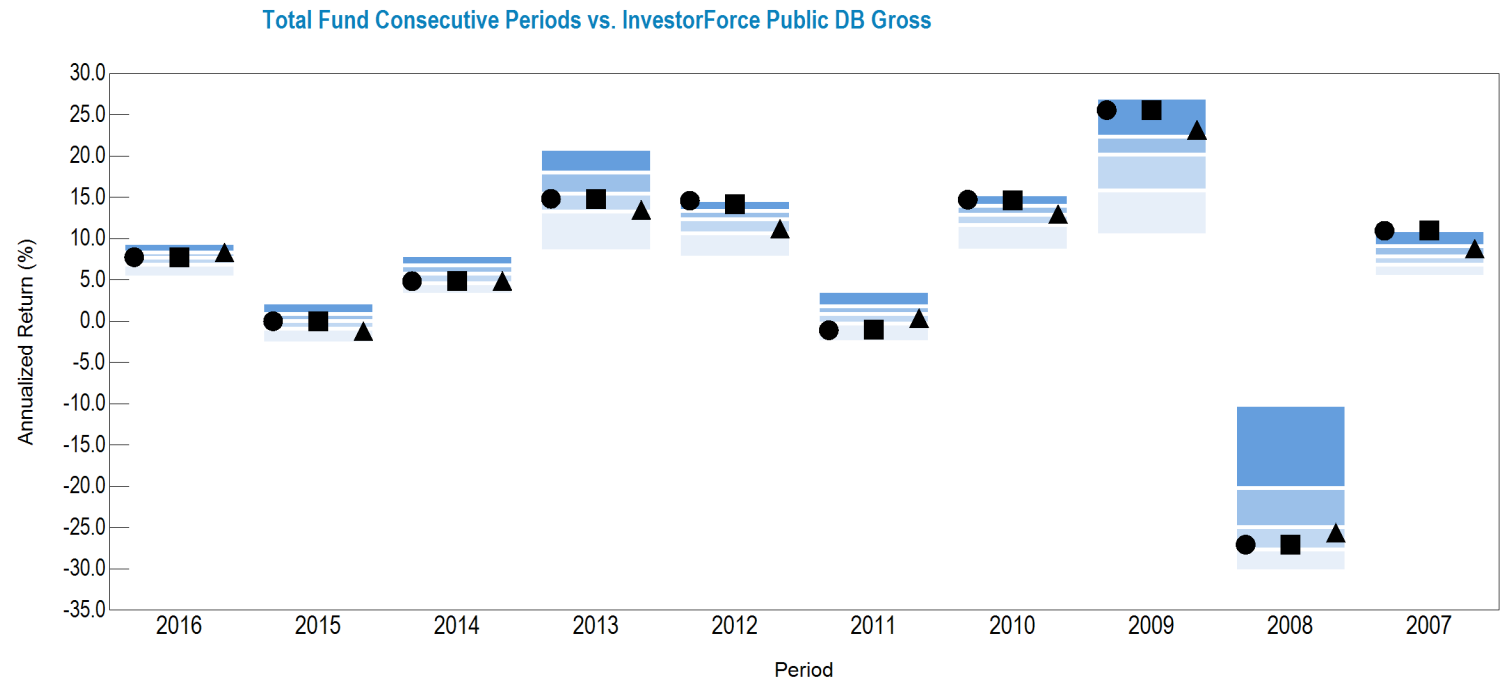


	Return (Rank)							
5th Percentile	4.1	13.5	4.1	14.5	8.1	10.0	9.9	6.6
25th Percentile	3.6	11.9	3.6	12.9	7.3	9.1	9.1	6.0
Median	3.3	11.1	3.3	11.8	6.7	8.3	8.3	5.6
75th Percentile	3.0	10.2	3.0	10.7	6.2	7.6	7.5	4.8
95th Percentile	2.6	8.7	2.6	8.9	5.2	5.9	6.5	4.1
# of Portfolios	117	117	117	117	115	106	94	83
● Total Fund	3.6 (24)	11.9 (25)	3.6 (24)	12.4 (40)	6.8 (48)	8.2 (53)	8.4 (50)	5.6 (52)
■ Total Fund ex Parametric	3.6 (24)	11.9 (25)	3.6 (24)	12.4 (40)	6.8 (48)	8.2 (54)	8.3 (50)	5.6 (54)
▲ Policy Index	3.4 (41)	11.5 (32)	3.4 (41)	12.5 (37)	6.3 (72)	7.5 (76)	7.7 (67)	5.0 (70)

Total Fund

Peer Universe Comparison: Consecutive Periods (Gross of Fees)

Period Ending: September 30, 2017



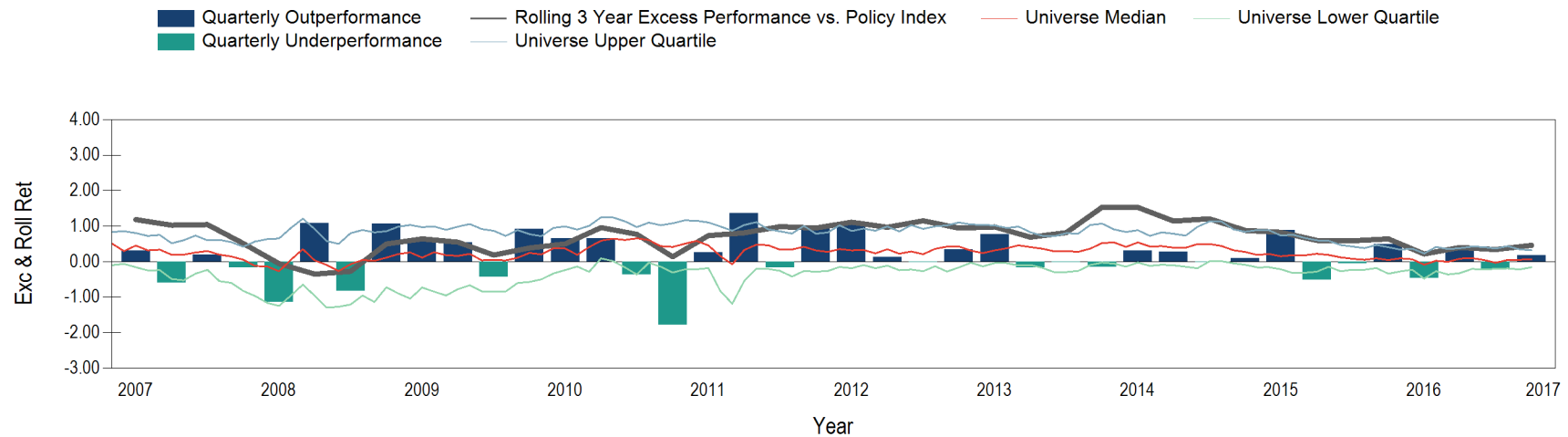
	Return (Rank)									
5th Percentile	9.4	2.2	8.0	20.8	14.6	3.6	15.4	27.0	-10.1	11.0
25th Percentile	8.4	0.9	6.8	18.0	13.4	1.9	14.0	22.4	-20.1	9.1
Median	7.7	0.1	5.8	15.5	12.4	0.9	12.9	20.2	-24.9	7.9
75th Percentile	6.9	-0.9	4.6	13.3	10.7	-0.3	11.7	15.9	-27.6	6.9
95th Percentile	5.3	-2.6	3.2	8.5	7.8	-2.5	8.6	10.5	-30.3	5.4
# of Portfolios	305	316	248	231	236	206	188	184	181	177
● Total Fund	7.7 (50)	0.0 (53)	4.8 (74)	14.8 (59)	14.6 (6)	-1.1 (89)	14.7 (13)	25.6 (11)	-27.1 (68)	10.9 (6)
■ Total Fund ex Parametric	7.7 (50)	0.0 (53)	4.9 (72)	14.7 (59)	14.2 (11)	-1.0 (88)	14.7 (15)	25.6 (11)	-27.1 (68)	10.9 (6)
▲ Policy Index	8.3 (26)	-1.2 (81)	4.9 (72)	13.5 (74)	11.2 (72)	0.4 (63)	13.0 (49)	23.2 (23)	-25.6 (58)	8.8 (31)

Total Fund

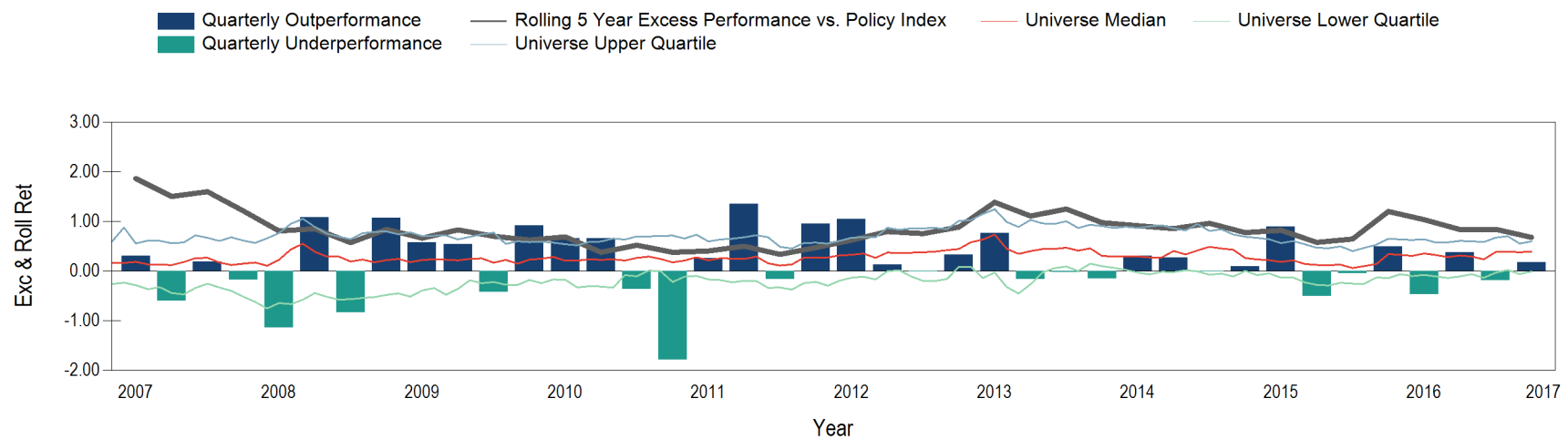
Rolling Return Analysis (Gross of Fees)

Period Ending: September 30, 2017

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



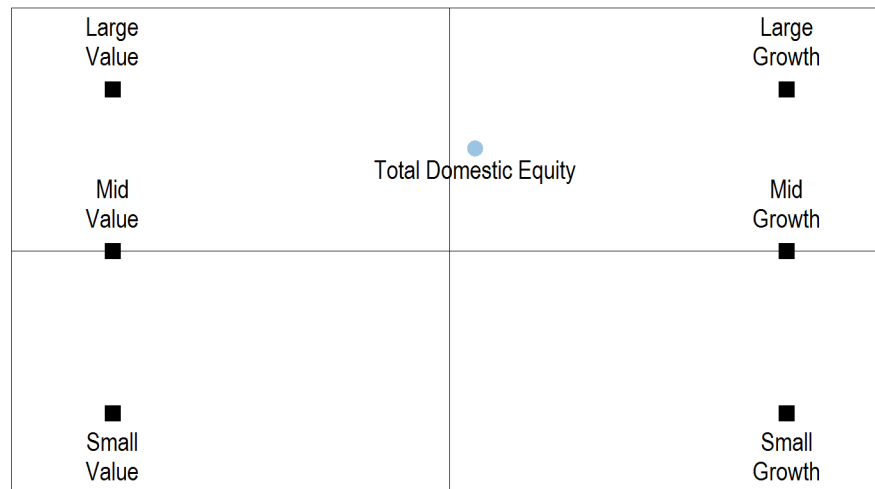
Total Domestic Equity

Asset Class Overview (Gross of Fees)

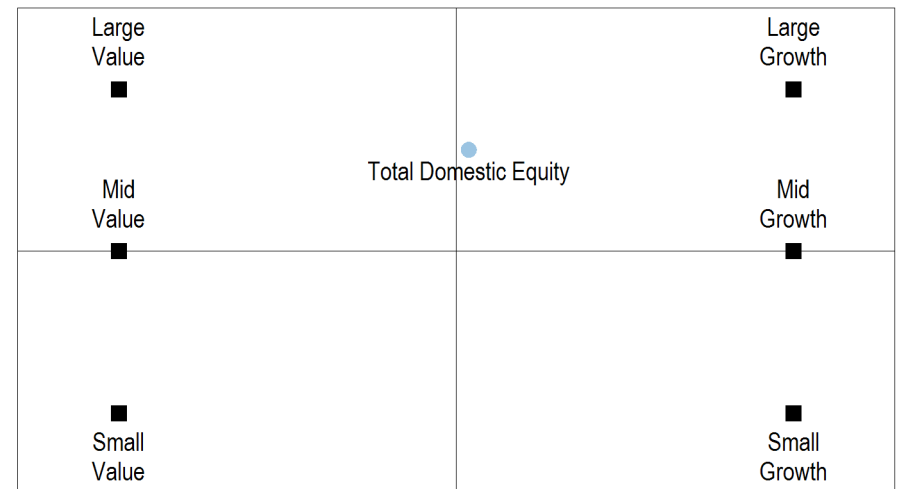
Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Domestic Equity	261,630,285	4.6	14.0	4.6	18.8	10.7	14.0	8.0	12.9	0.3	10.2	33.9	17.1
<i>Russell 3000</i>		4.6	13.9	4.6	18.7	10.7	14.2	7.6	12.7	0.5	12.6	33.6	16.4
<i>InvestorForce Public DB US Eq Gross Rank</i>		32	25	32	33	52	52	38	51	44	73	64	18
BlackRock Russell 3000	261,630,285	4.6	14.0	4.6	18.8	--	--	--	12.9	--	--	--	--
<i>Russell 3000</i>		4.6	13.9	4.6	18.7	--	--	--	12.7	--	--	--	--
<i>eA US All Cap Core Equity Gross Rank</i>		40	42	40	41	--	--	--	35	--	--	--	--

U.S. Effective Style Map
3 Years Ending September 30, 2017



U.S. Effective Style Map
5 Years Ending September 30, 2017



Total Domestic Equity
Asset Class Overview (Net of Fees)

Period Ending: September 30, 2017

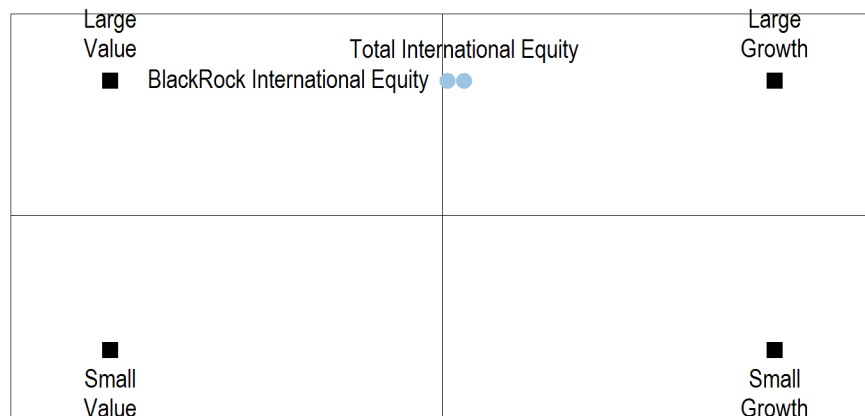
	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Domestic Equity	261,630,285	4.6	14.0	4.6	18.8	10.6	13.8	7.8	12.8	0.1	10.0	33.6	16.9
<i>Russell 3000</i>		4.6	13.9	4.6	18.7	10.7	14.2	7.6	12.7	0.5	12.6	33.6	16.4
BlackRock Russell 3000	261,630,285	4.6	14.0	4.6	18.8	--	--	--	12.8	--	--	--	--
<i>Russell 3000</i>		4.6	13.9	4.6	18.7	--	--	--	12.7	--	--	--	--

Total International Equity Asset Class Overview (Gross of Fees)

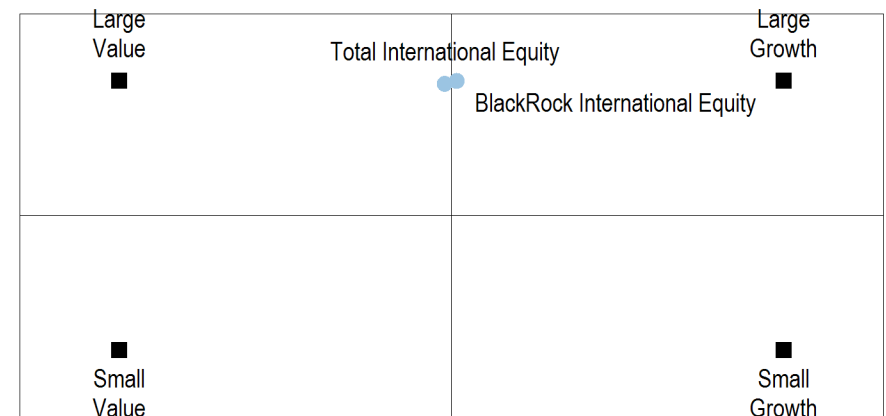
Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total International Equity	216,936,667	5.8	22.1	5.8	20.5	5.8	7.6	1.6	4.7	-3.5	-4.4	14.0	19.3
MSCI ACWI ex USA Gross		6.3	21.6	6.3	20.2	5.2	7.5	1.7	5.0	-5.3	-3.4	15.8	17.4
InvestorForce Public DB ex-US Eq Gross Rank		80	73	80	38	63	71	62	40	57	74	83	37
BlackRock International Equity	150,905,811	5.5	20.4	5.5	19.6	5.4	8.8	1.7	1.5	-0.5	-4.7	23.2	17.8
MSCI EAFE Gross		5.5	20.5	5.5	19.7	5.5	8.9	1.8	1.5	-0.4	-4.5	23.3	17.9
eA All EAFE Equity Gross Rank		67	70	67	60	75	74	84	47	67	64	61	74
DFA Emerging Markets Value	31,085,121	5.7	24.5	5.7	23.4	4.7	4.1	1.5	20.5	-18.3	-3.9	-3.2	20.1
MSCI Emerging Markets Gross		8.0	28.1	8.0	22.9	5.3	4.4	1.7	11.6	-14.6	-1.8	-2.3	18.6
eA Emg Mkts Equity Gross Rank		75	76	75	48	76	87	86	7	92	84	84	56
Harding Loevner Emerging Markets	34,945,735	7.3	28.0	7.3	21.9	--	--	--	--	--	--	--	--
MSCI Emerging Markets Gross		8.0	28.1	8.0	22.9	--	--	--	--	--	--	--	--
eA Emg Mkts Equity Gross Rank		59	58	59	63	--	--	--	--	--	--	--	--

EAFE Effective Style Map
3 Years Ending September 30, 2017



EAFE Effective Style Map
5 Years Ending September 30, 2017



Total International Equity Asset Class Overview (Net of Fees)

Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total International Equity	216,936,667	5.7	21.9	5.7	20.1	5.4	7.2	1.1	4.4	-4.0	-4.9	13.4	18.6
MSCI ACWI ex USA Gross		6.3	21.6	6.3	20.2	5.2	7.5	1.7	5.0	-5.3	-3.4	15.8	17.4
BlackRock International Equity	150,905,811	5.4	20.3	5.4	19.5	5.3	8.6	1.6	1.3	-0.6	-4.8	22.9	17.6
MSCI EAFE Gross		5.5	20.5	5.5	19.7	5.5	8.9	1.8	1.5	-0.4	-4.5	23.3	17.9
DFA Emerging Markets Value	31,085,121	5.6	24.0	5.6	22.8	4.2	3.5	0.9	19.8	-18.8	-4.4	-3.8	19.4
MSCI Emerging Markets Gross		8.0	28.1	8.0	22.9	5.3	4.4	1.7	11.6	-14.6	-1.8	-2.3	18.6
Harding Loevner Emerging Markets	34,945,735	7.0	27.0	7.0	20.6	--	--	--	--	--	--	--	--
MSCI Emerging Markets Gross		8.0	28.1	8.0	22.9	--	--	--	--	--	--	--	--

EM Effective Style Map
3 Years Ending September 30, 2017

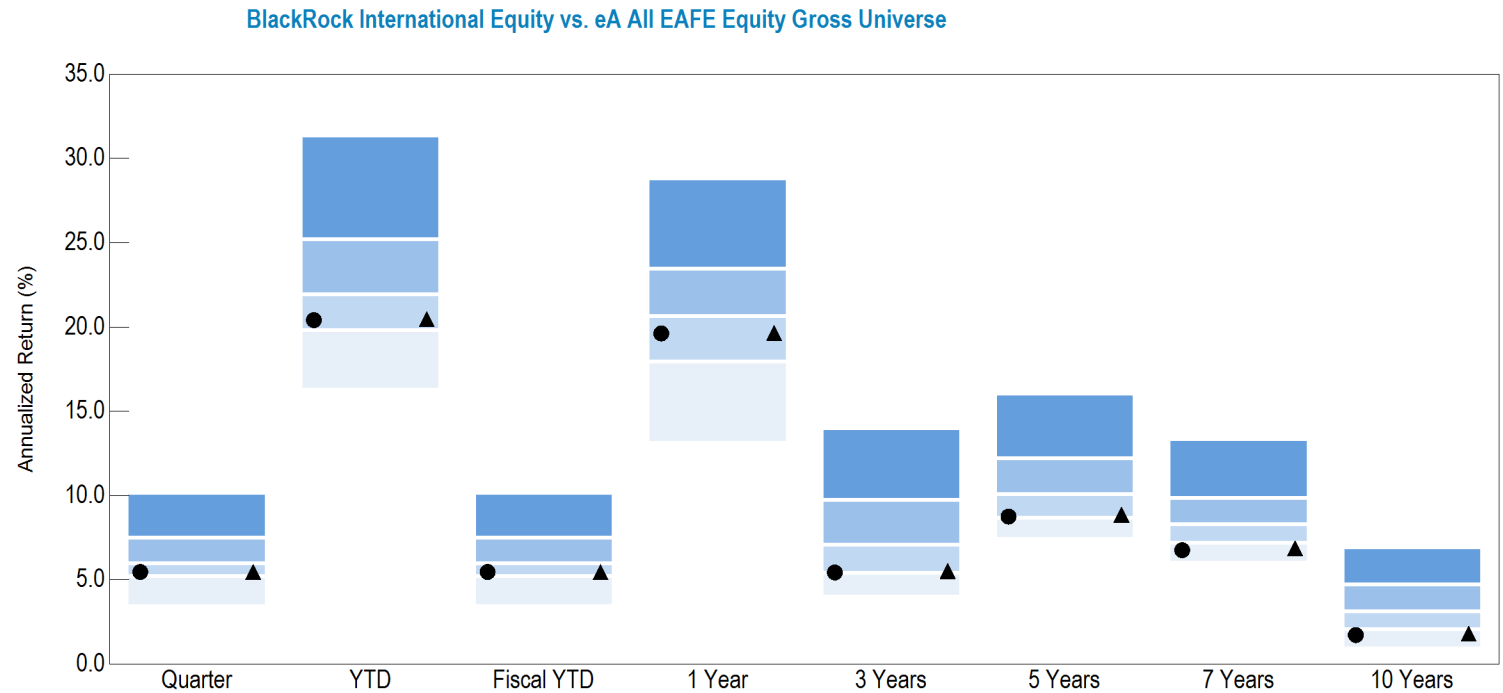


EM Effective Style Map
5 Years Ending September 30, 2017



BlackRock International Equity Cumulative Performance Comparison (Gross of Fees)

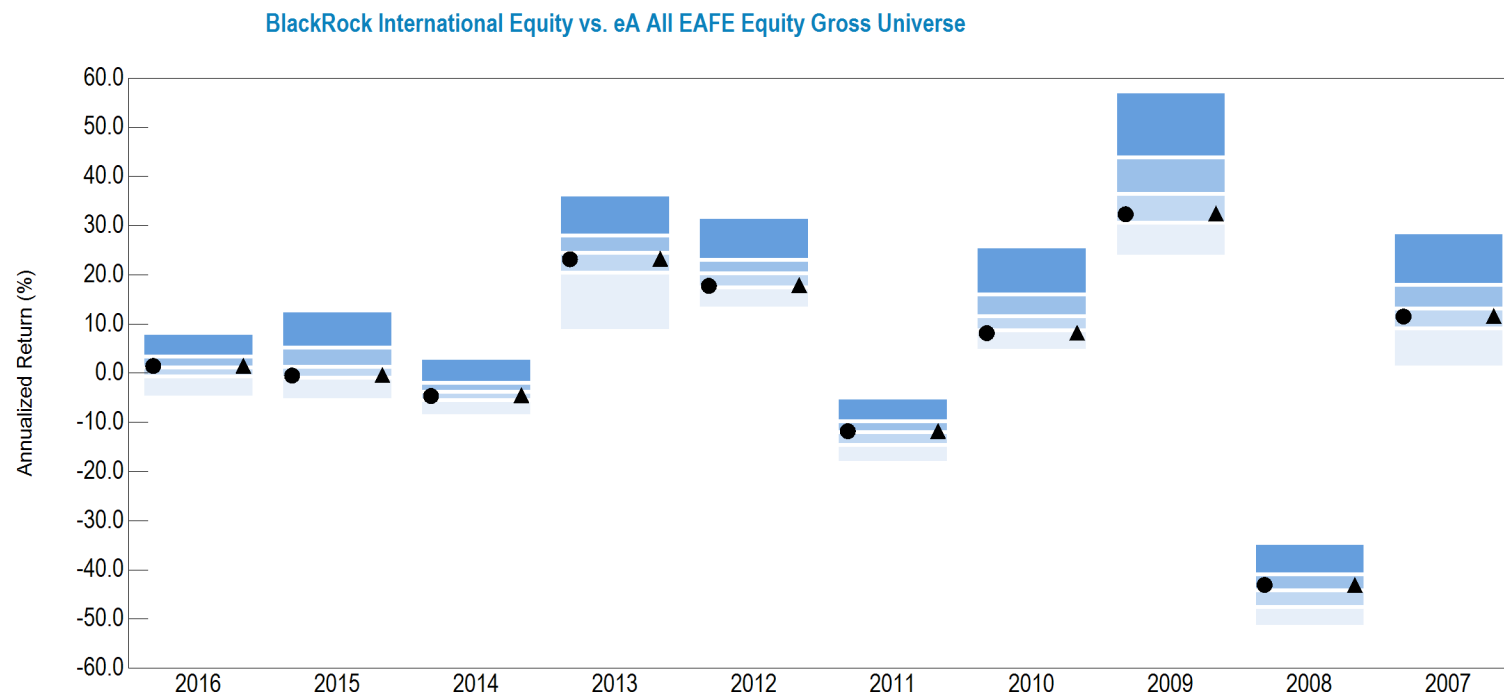
Period Ending: September 30, 2017



	Return (Rank)															
5th Percentile	10.1		31.3		10.1		28.8		14.0		16.0		13.3		6.9	
25th Percentile	7.5		25.2		7.5		23.5		9.8		12.2		9.9		4.8	
Median	6.0		22.0		6.0		20.7		7.1		10.1		8.3		3.2	
75th Percentile	5.3		19.8		5.3		18.0		5.4		8.7		7.2		2.1	
95th Percentile	3.5		16.3		3.5		13.1		4.0		7.5		6.0		0.9	
# of Portfolios	342		342		342		342		317		288		265		221	
● BlackRock International Equity	5.5	(67)	20.4	(70)	5.5	(67)	19.6	(60)	5.4	(75)	8.8	(74)	6.8	(83)	1.7	(84)
▲ MSCI EAFE Gross	5.5	(67)	20.5	(69)	5.5	(67)	19.7	(59)	5.5	(75)	8.9	(72)	6.9	(81)	1.8	(83)

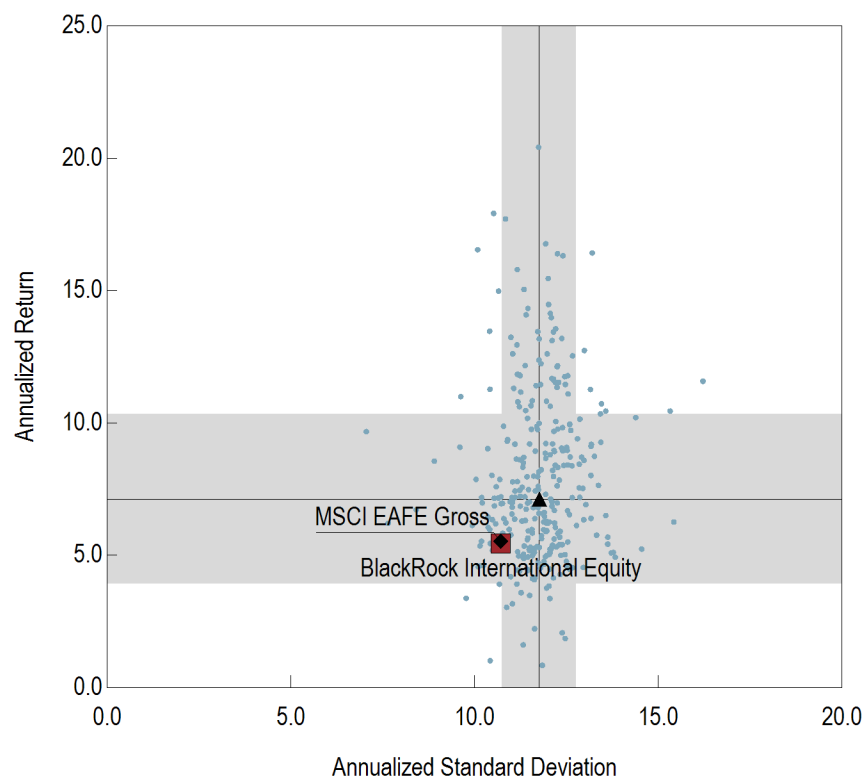
BlackRock International Equity Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2017



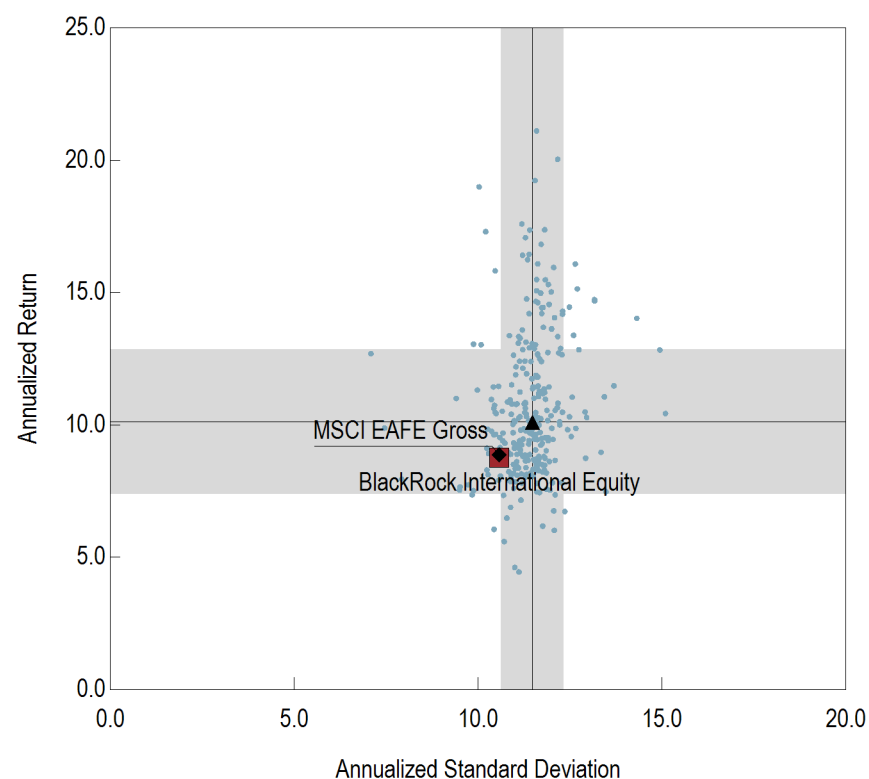
	Return (Rank)									
5th Percentile	8.1	12.6	3.0	36.3	31.7	-5.1	25.7	57.3	-34.5	28.5
25th Percentile	3.4	5.2	-1.9	28.1	23.1	-9.7	16.1	44.0	-40.8	18.0
Median	1.3	1.4	-3.7	24.6	20.4	-12.0	11.7	36.5	-44.1	13.2
75th Percentile	-0.6	-0.9	-5.4	20.5	17.5	-14.5	8.7	30.7	-47.5	9.1
95th Percentile	-4.9	-5.4	-8.6	8.6	13.3	-18.2	4.6	23.7	-51.5	1.2
# of Portfolios	350	325	314	284	263	278	352	455	477	466
● BlackRock International Equity	1.5 (47)	-0.5 (67)	-4.7 (64)	23.2 (61)	17.8 (74)	-11.8 (48)	8.1 (79)	32.3 (68)	-43.1 (41)	11.5 (60)
▲ MSCI EAFE Gross	1.5 (47)	-0.4 (66)	-4.5 (60)	23.3 (60)	17.9 (72)	-11.7 (47)	8.2 (78)	32.5 (67)	-43.1 (41)	11.6 (59)

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2017



- BlackRock International Equity
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eA All EAFE Equity Gross

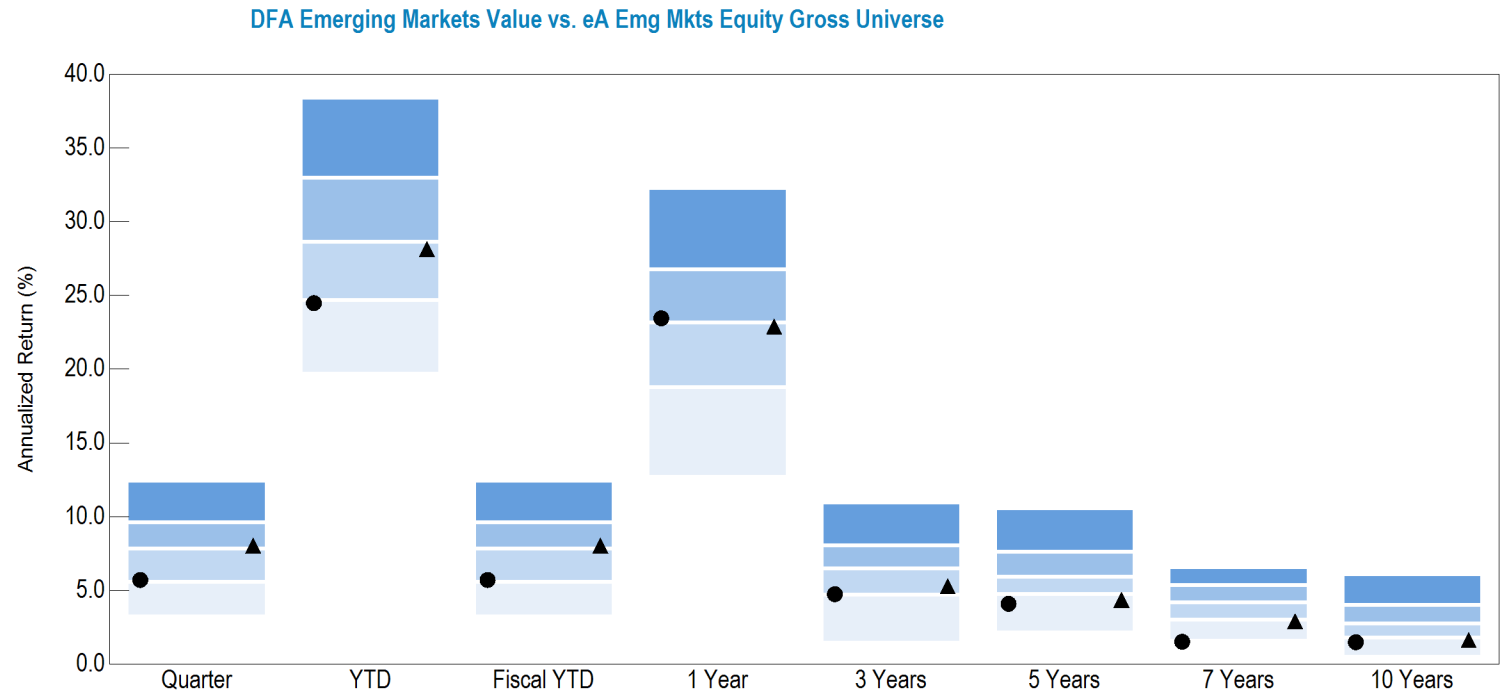
Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2017



- BlackRock International Equity
- ◆ MSCI EAFE Gross
- ▲ Universe Median
- 68% Confidence Interval
- eA All EAFE Equity Gross

DFA Emerging Markets Value Cumulative Performance Comparison (Gross of Fees)

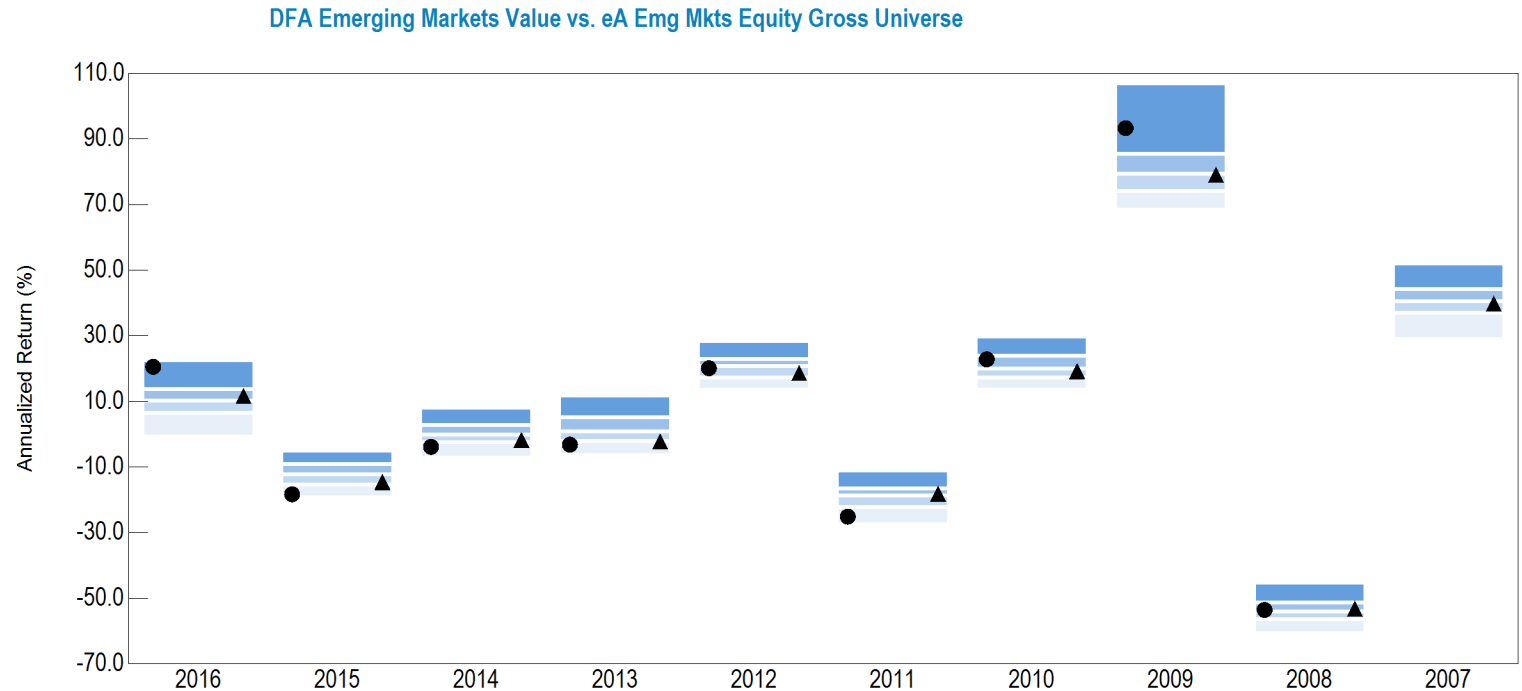
Period Ending: September 30, 2017



	Return (Rank)													
5th Percentile	12.4		38.4		12.4		32.3		11.0		10.6		6.6	
25th Percentile	9.6		33.0		9.6		26.8		8.1		7.6		5.4	
Median	7.9		28.6		7.9		23.2		6.5		6.0		4.2	
75th Percentile	5.6		24.7		5.6		18.8		4.8		4.8		3.0	
95th Percentile	3.3		19.7		3.3		12.7		1.5		2.2		1.6	
# of Portfolios	305		305		305		305		282		228		163	
● DFA Emerging Markets Value	5.7	(75)	24.5	(76)	5.7	(75)	23.4	(48)	4.7	(76)	4.1	(87)	1.5	(97)
▲ MSCI Emerging Markets Gross	8.0	(47)	28.1	(56)	8.0	(47)	22.9	(53)	5.3	(67)	4.4	(82)	2.9	(78)
													1.7	(80)

DFA Emerging Markets Value Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2017

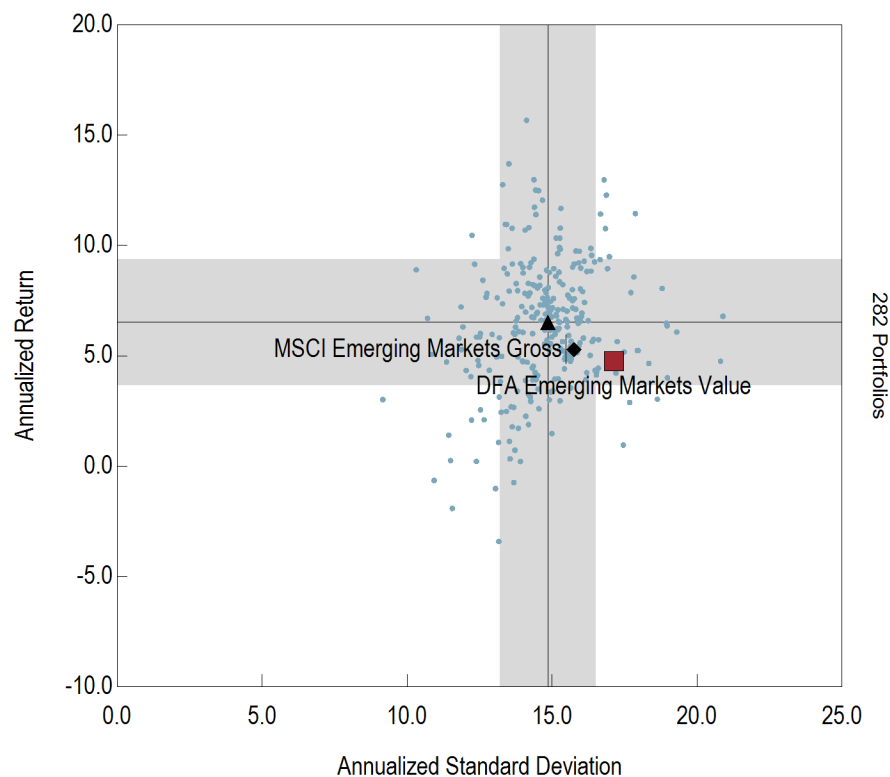


	Return (Rank)									
5th Percentile	22.4	-5.0	8.0	11.7	28.4	-11.1	29.6	106.8	-45.4	51.9
25th Percentile	13.7	-9.0	2.9	5.2	23.0	-16.4	23.9	85.5	-51.3	44.3
Median	10.4	-12.2	-0.1	1.0	20.9	-18.6	20.1	79.5	-54.0	40.5
75th Percentile	6.6	-15.3	-2.4	-2.0	17.3	-22.2	17.3	74.3	-56.3	37.1
95th Percentile	-0.6	-19.2	-7.0	-6.3	13.7	-27.3	13.7	68.5	-60.7	29.1
# of Portfolios	337	273	251	198	155	139	113	113	118	115
● DFA Emerging Markets Value	20.5 (7)	-18.3 (92)	-3.9 (84)	-3.2 (84)	20.1 (56)	-25.2 (92)	22.8 (33)	93.3 (12)	-53.6 (44)	-- (--)
▲ MSCI Emerging Markets Gross	11.6 (40)	-14.6 (67)	-1.8 (69)	-2.3 (78)	18.6 (68)	-18.2 (45)	19.2 (62)	79.0 (54)	-53.2 (37)	39.8 (58)

DFA Emerging Markets Value Risk vs Return Three & Five Year (Gross of Fees)

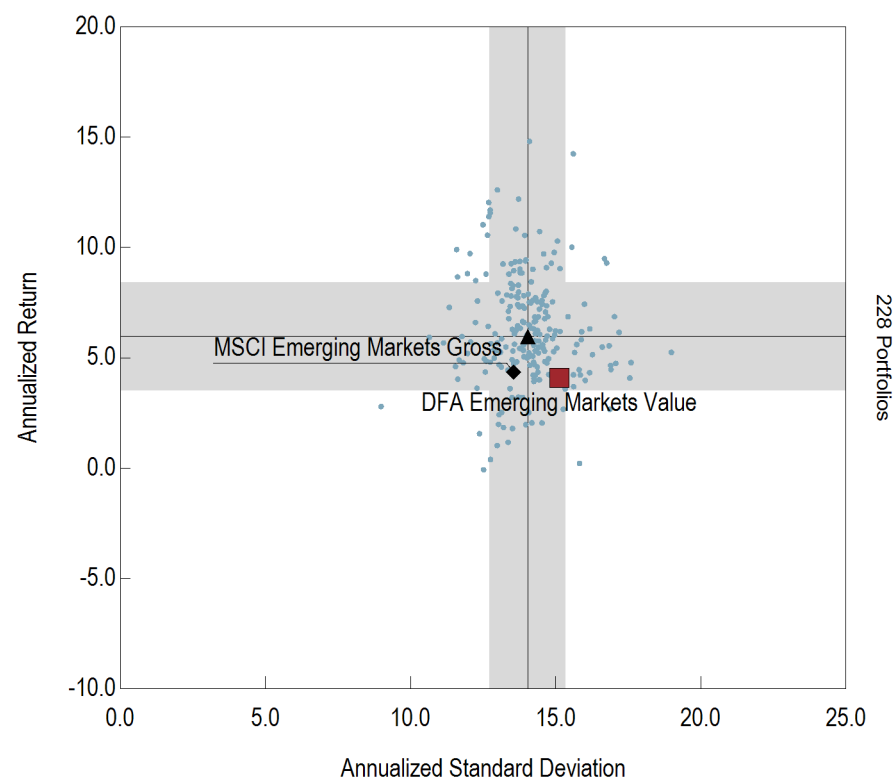
Period Ending: September 30, 2017

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2017



- DFA Emerging Markets Value
- ◆ MSCI Emerging Markets Gross
- ▲ Universe Median
- 68% Confidence Interval
- eA Emg Mkts Equity Gross

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2017

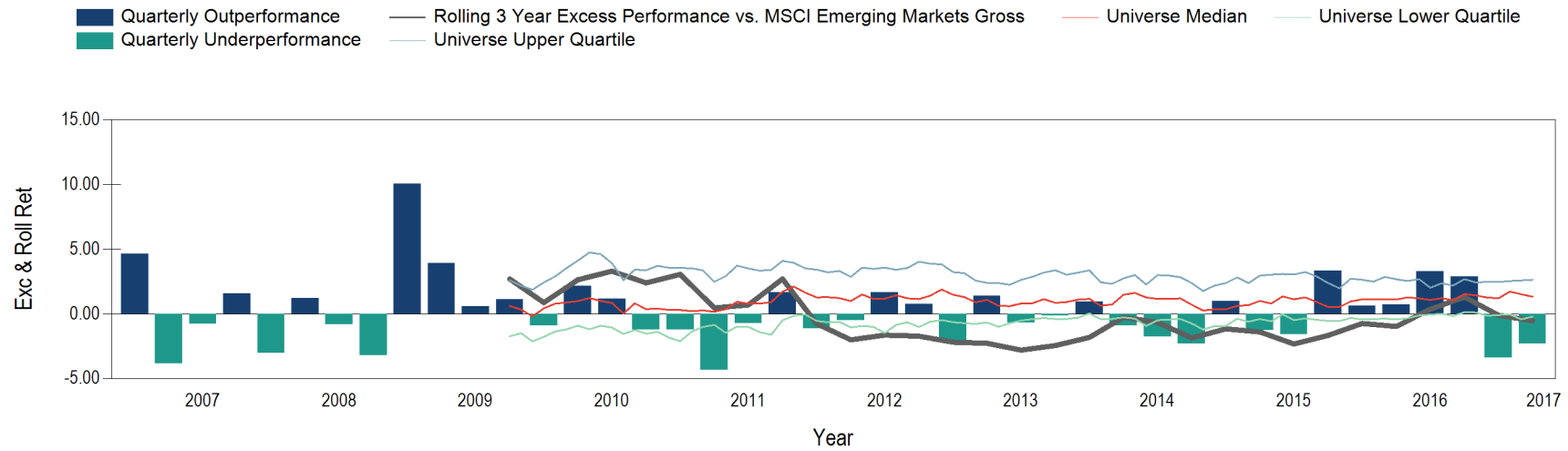


- DFA Emerging Markets Value
- ◆ MSCI Emerging Markets Gross
- ▲ Universe Median
- 68% Confidence Interval
- eA Emg Mkts Equity Gross

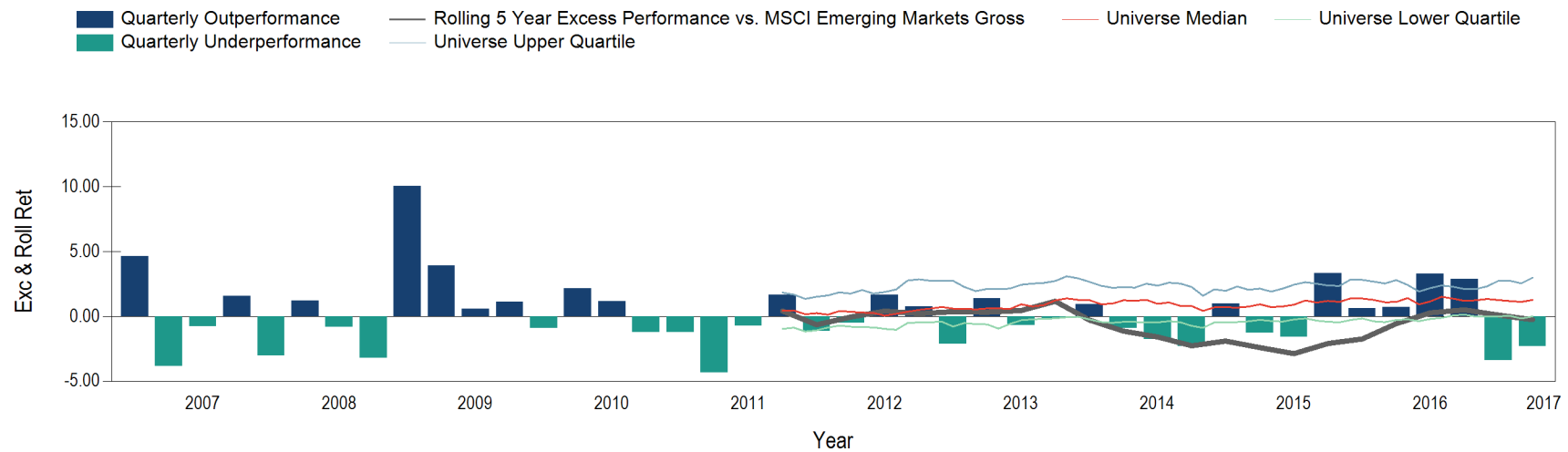
DFA Emerging Markets Value Rolling Return Analysis (Gross of Fees)

Period Ending: September 30, 2017

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance



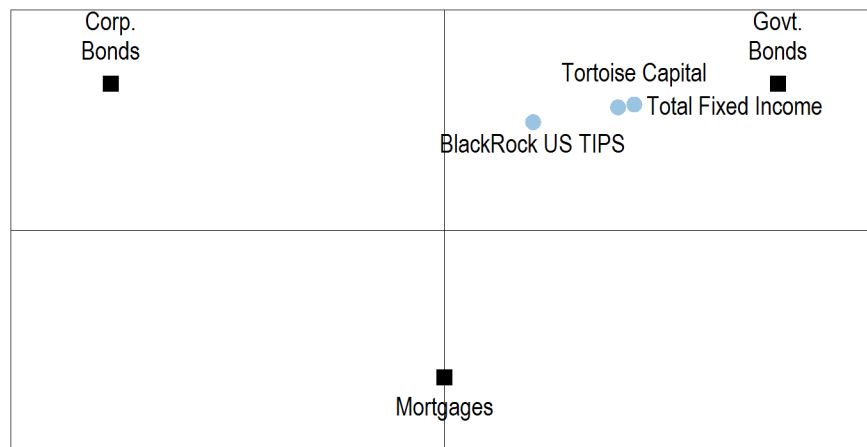
Total Fixed Income

Asset Class Overview (Gross of Fees)

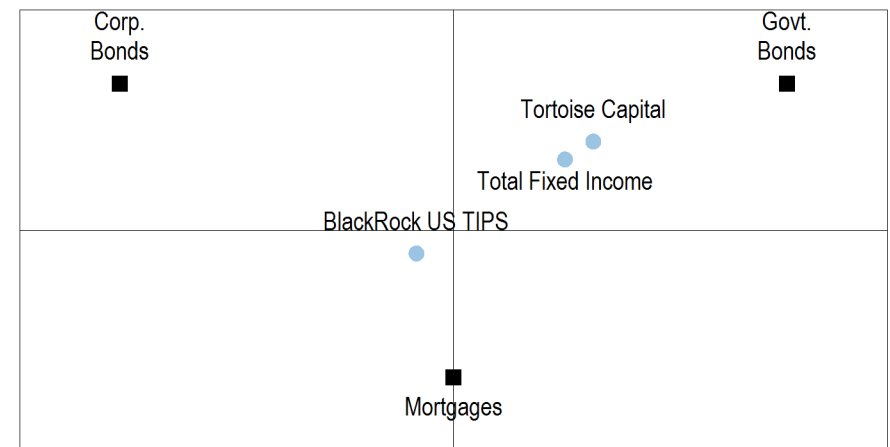
Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Fixed Income	224,050,520	1.1	3.9	1.1	1.4	3.4	2.8	5.8	5.1	-0.3	5.9	-1.7	9.6
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2
InvestorForce Public DB Total Fix Inc Gross Rank		39	45	39	51	27	33	18	41	55	15	69	33
Tortoise Capital	112,120,897	1.2	4.0	1.2	1.4	4.0	3.5	6.2	5.1	1.2	7.0	-0.4	8.8
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2
eA US Core Plus Fixed Inc Gross Rank		54	68	54	77	25	33	18	45	15	16	52	45
MacKay Shields Core Plus Opportunities	90,546,517	1.1	4.2	1.1	1.7	--	--	--	5.1	--	--	--	--
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	--	--	--	2.6	--	--	--	--
eA US Core Plus Fixed Inc Gross Rank		61	57	61	68	--	--	--	46	--	--	--	--
BlackRock US TIPS	21,383,106	0.9	1.9	0.9	-0.5	1.8	0.1	4.0	4.8	-1.2	3.6	-8.5	7.1
BBgBarc US TIPS TR		0.9	1.7	0.9	-0.7	1.6	0.0	3.9	4.7	-1.4	3.6	-8.6	7.0
eA TIPS / Infl Indexed Fixed Inc Gross Rank		56	51	56	57	42	59	56	37	43	45	62	59

Fixed Income Style Map
3 Years Ending September 30, 2017



Fixed Income Style Map
5 Years Ending September 30, 2017



Total Fixed Income Asset Class Overview (Net of Fees)

Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Fixed Income	224,050,520	1.1	3.7	1.1	1.1	3.1	2.4	5.5	4.8	-0.6	5.6	-2.0	9.3
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2
Tortoise Capital	112,120,897	1.1	3.8	1.1	1.1	3.7	3.2	5.9	4.8	0.9	6.7	-0.8	8.5
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	2.7	2.1	4.3	2.6	0.6	6.0	-2.0	4.2
Mackay Shields Core Plus Opportunities	90,546,517	1.0	4.0	1.0	1.4	--	--	--	4.7	--	--	--	--
BBgBarc US Aggregate TR		0.8	3.1	0.8	0.1	--	--	--	2.6	--	--	--	--
BlackRock US TIPS	21,383,106	0.9	1.8	0.9	-0.6	1.7	0.1	3.9	4.8	-1.3	3.6	-8.6	7.0
BBgBarc US TIPS TR		0.9	1.7	0.9	-0.7	1.6	0.0	3.9	4.7	-1.4	3.6	-8.6	7.0

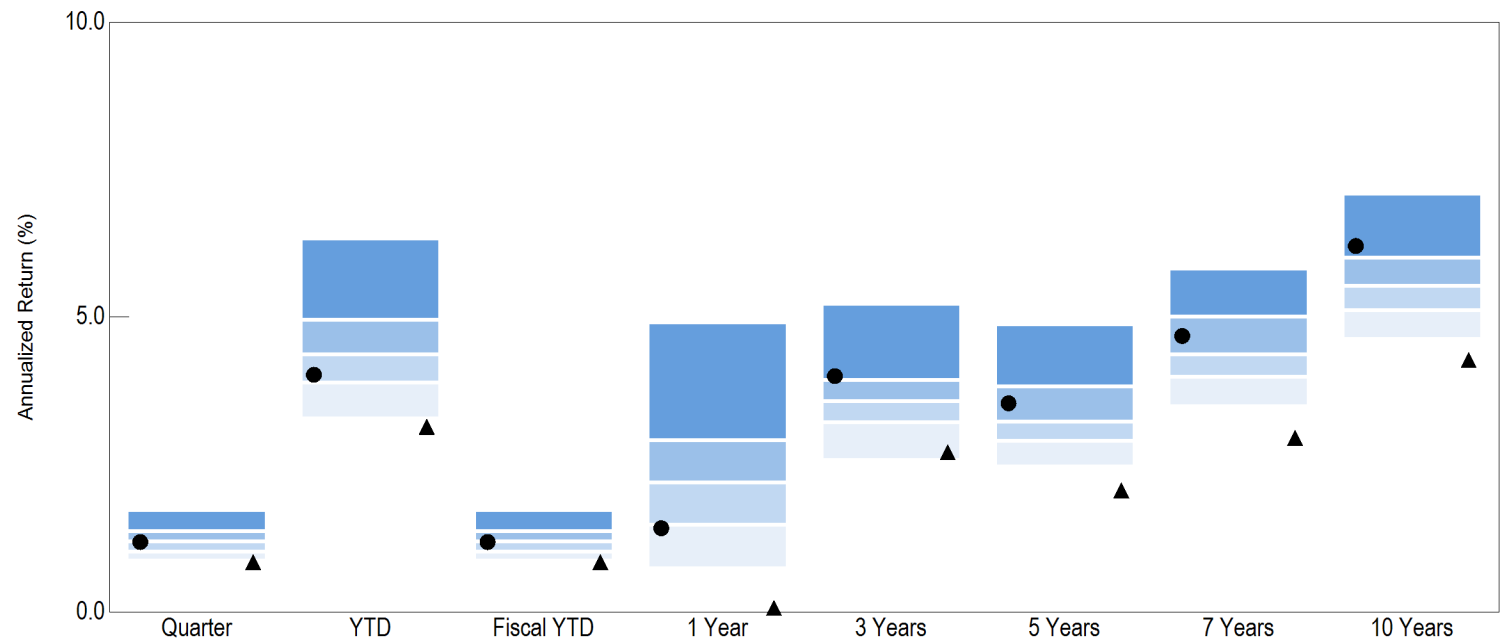
Correlation Matrix Last 5 Years

	Total Fixed Income	Tortoise Capital	Mackay Shields Core Plus Opportunities	BlackRock US TIPS	BBgBarc US Aggregate TR
Total Fixed Income	1.00	--	--	--	--
Tortoise Capital	0.98	1.00	--	--	--
Mackay Shields Core Plus Opportunities	--	--	--	--	--
BlackRock US TIPS	0.90	0.85	--	1.00	--
BBgBarc US Aggregate TR	0.94	0.96	--	0.79	1.00

Tortoise Capital
Cumulative Performance Comparison (Gross of Fees)

Period Ending: September 30, 2017

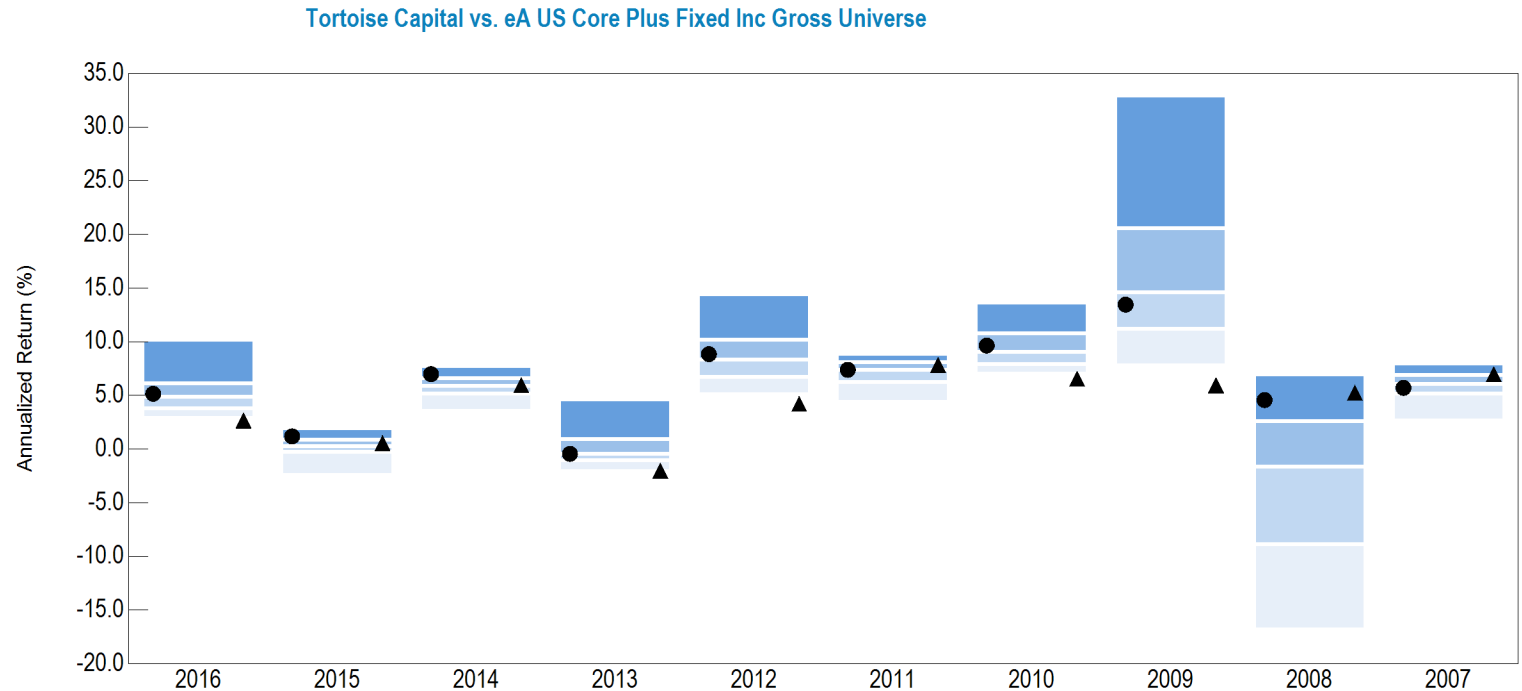
Tortoise Capital vs. eA US Core Plus Fixed Inc Gross Universe



	Return (Rank)													
5th Percentile	1.7		6.3		1.7		4.9		5.2		4.9		5.8	
25th Percentile	1.4		5.0		1.4		2.9		3.9		3.8		5.0	
Median	1.2		4.4		1.2		2.2		3.6		3.2		4.4	
75th Percentile	1.0		3.9		1.0		1.5		3.2		2.9		4.0	
95th Percentile	0.9		3.3		0.9		0.7		2.6		2.5		3.5	
# of Portfolios	118		118		118		118		114		112		108	
● Tortoise Capital	1.2	(54)	4.0	(68)	1.2	(54)	1.4	(77)	4.0	(25)	3.5	(33)	4.7	(33)
▲ BBgBarc US Aggregate TR	0.8	(98)	3.1	(98)	0.8	(98)	0.1	(99)	2.7	(94)	2.1	(99)	3.0	(99)

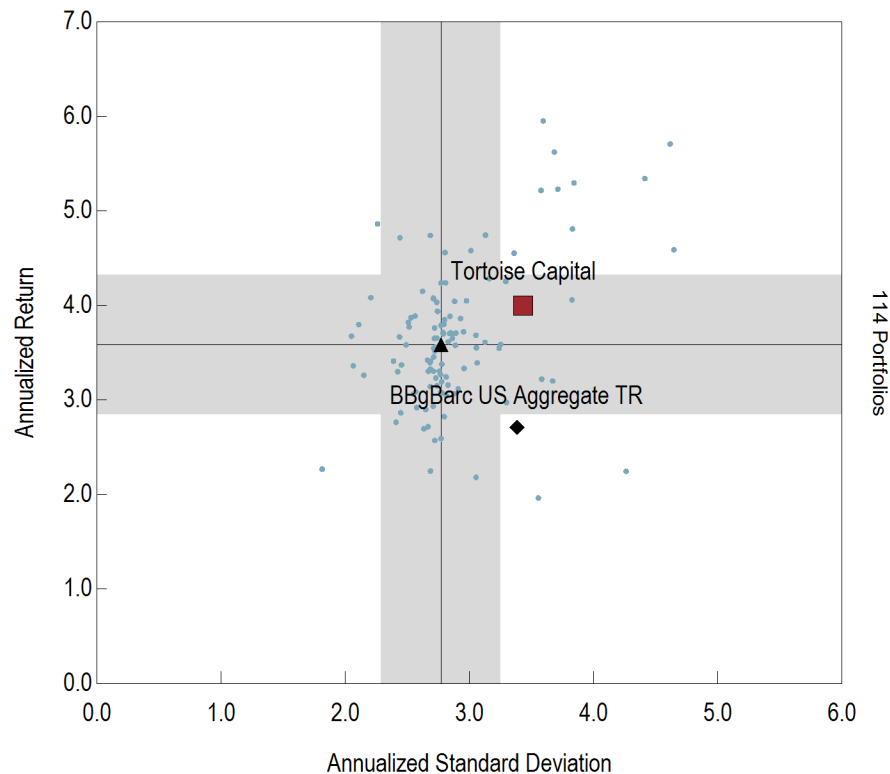
Tortoise Capital
Consecutive Performance Comparison (Gross of Fees)

Period Ending: September 30, 2017



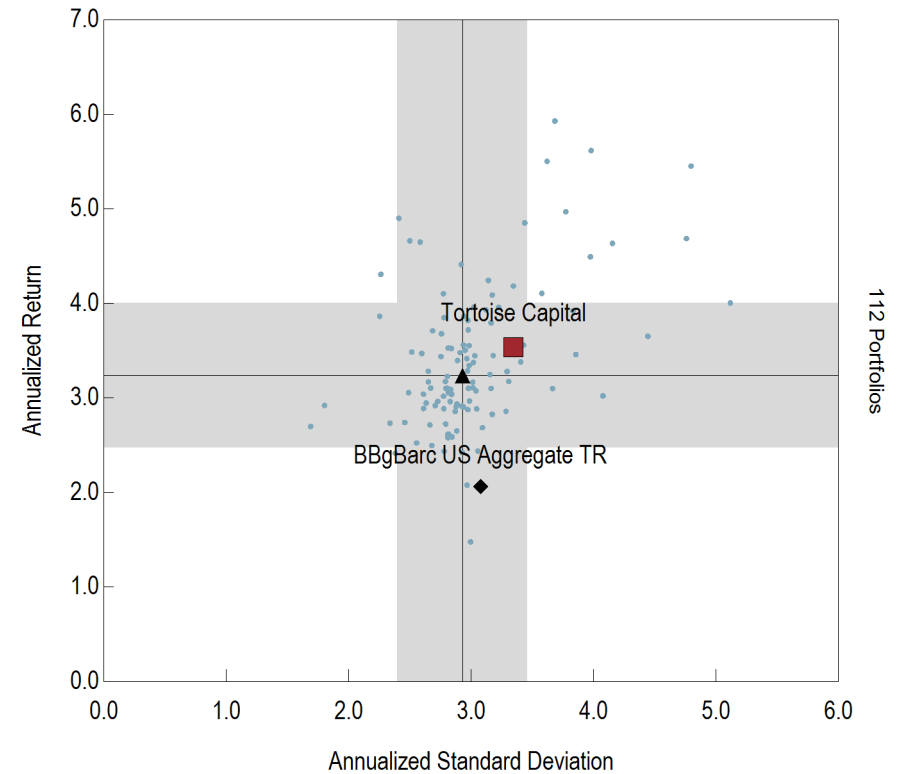
	Return (Rank)									
5th Percentile	10.1	1.9	7.7	4.6	14.4	8.8	13.6	32.9	6.9	7.9
25th Percentile	6.1	0.9	6.7	1.0	10.2	8.1	10.8	20.6	2.7	6.9
Median	4.9	0.3	5.9	-0.4	8.3	7.4	9.1	14.6	-1.6	6.1
75th Percentile	3.9	-0.2	5.2	-1.0	6.7	6.3	8.0	11.2	-8.9	5.2
95th Percentile	2.9	-2.4	3.6	-2.0	5.1	4.4	7.0	7.8	-16.8	2.7
# of Portfolios	134	115	118	116	124	118	123	128	136	144
● Tortoise Capital	5.1 (45)	1.2 (15)	7.0 (16)	-0.4 (52)	8.8 (45)	7.4 (51)	9.6 (40)	13.5 (55)	4.6 (17)	5.7 (66)
▲ BBgBarc US Aggregate TR	2.6 (97)	0.6 (42)	6.0 (50)	-2.0 (96)	4.2 (97)	7.8 (37)	6.5 (97)	5.9 (99)	5.2 (13)	7.0 (25)

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2017



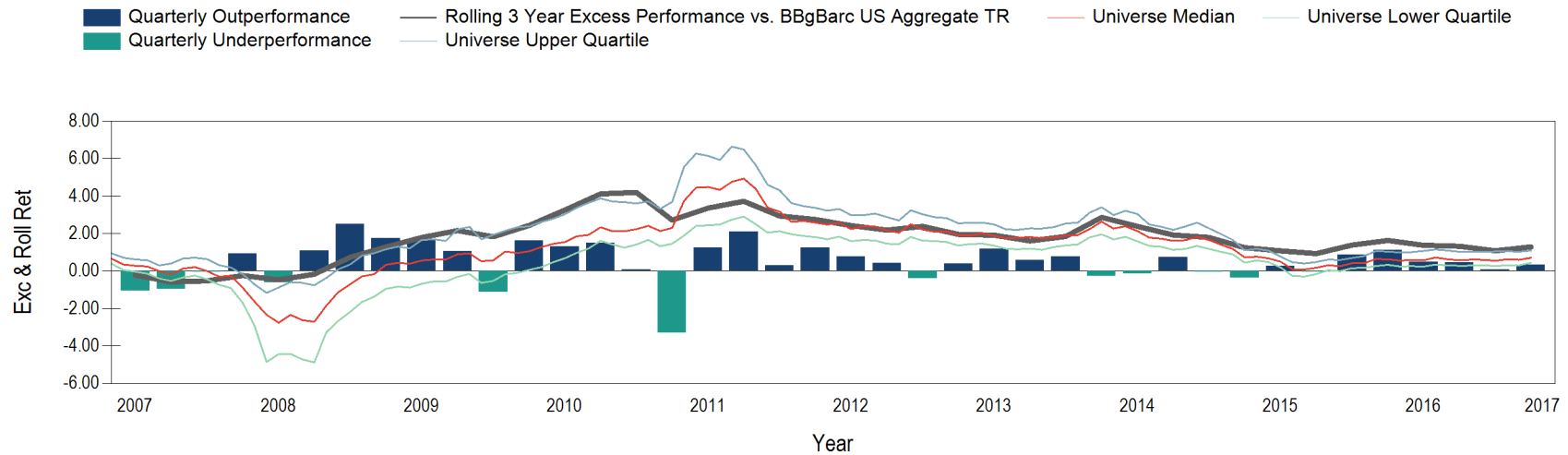
- Tortoise Capital
- ◆ BBgBarc US Aggregate TR
- ▲ Universe Median
- 68% Confidence Interval
- eA US Core Plus Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2017

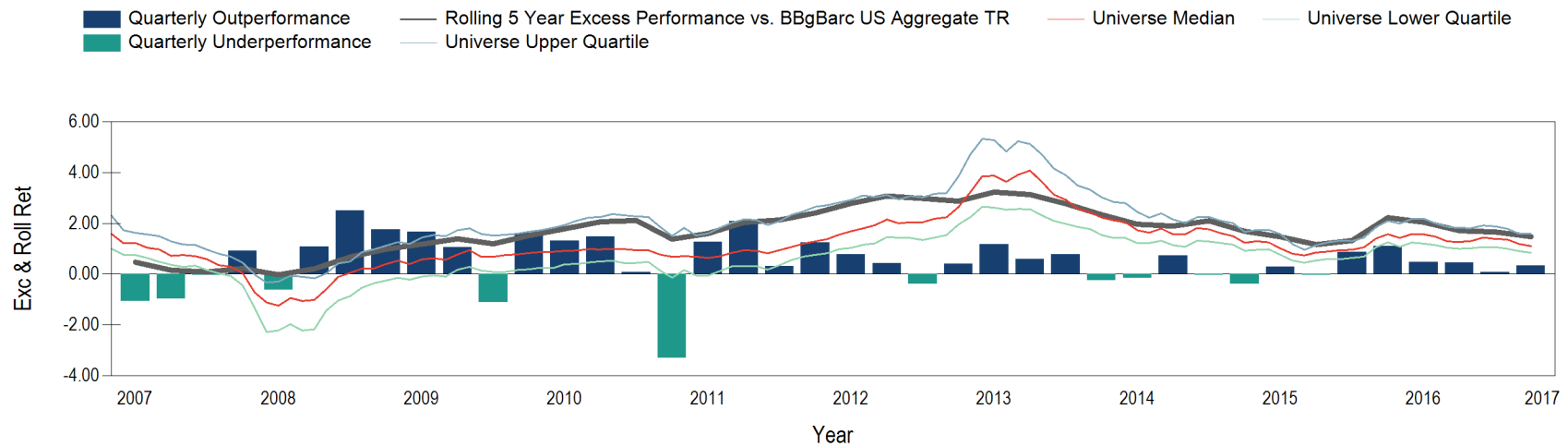


- Tortoise Capital
- ◆ BBgBarc US Aggregate TR
- ▲ Universe Median
- 68% Confidence Interval
- eA US Core Plus Fixed Inc Gross

Rolling 3 Year Annualized Excess Performance



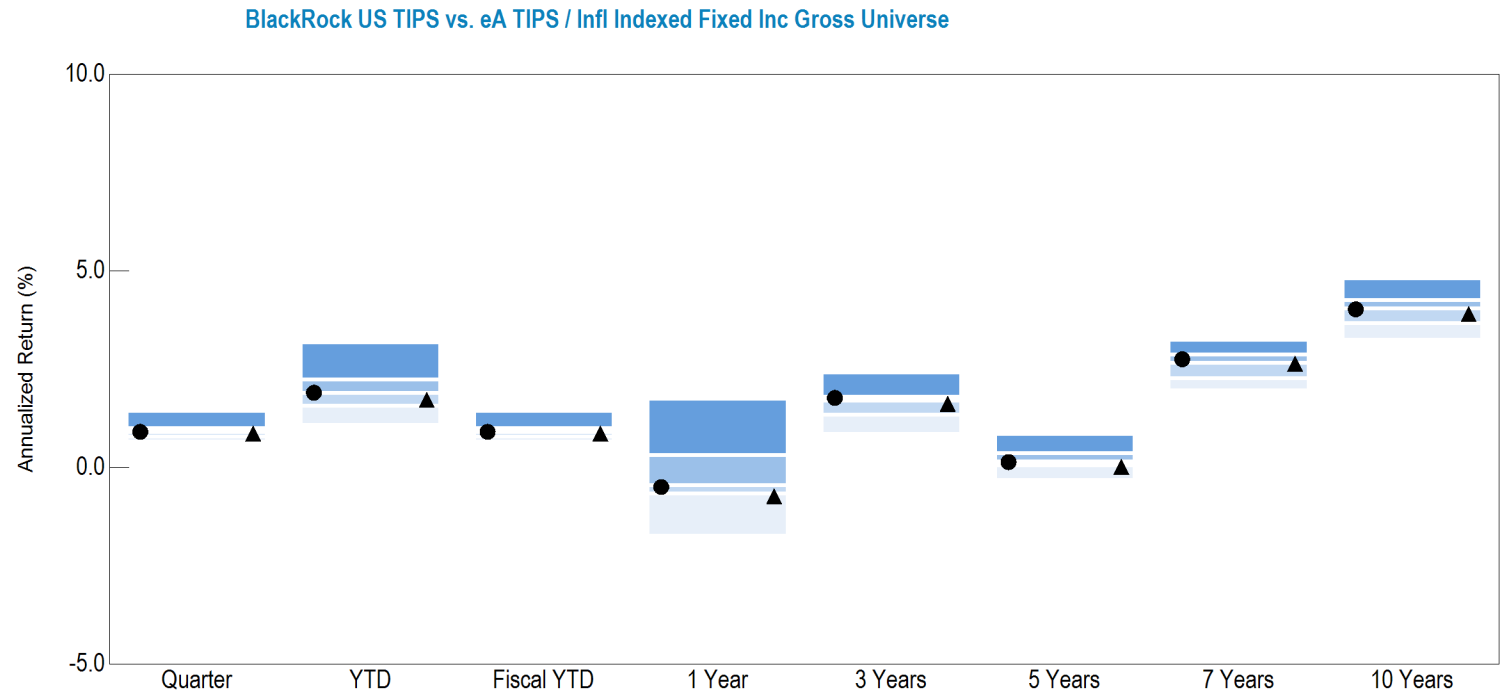
Rolling 5 Year Annualized Excess Performance



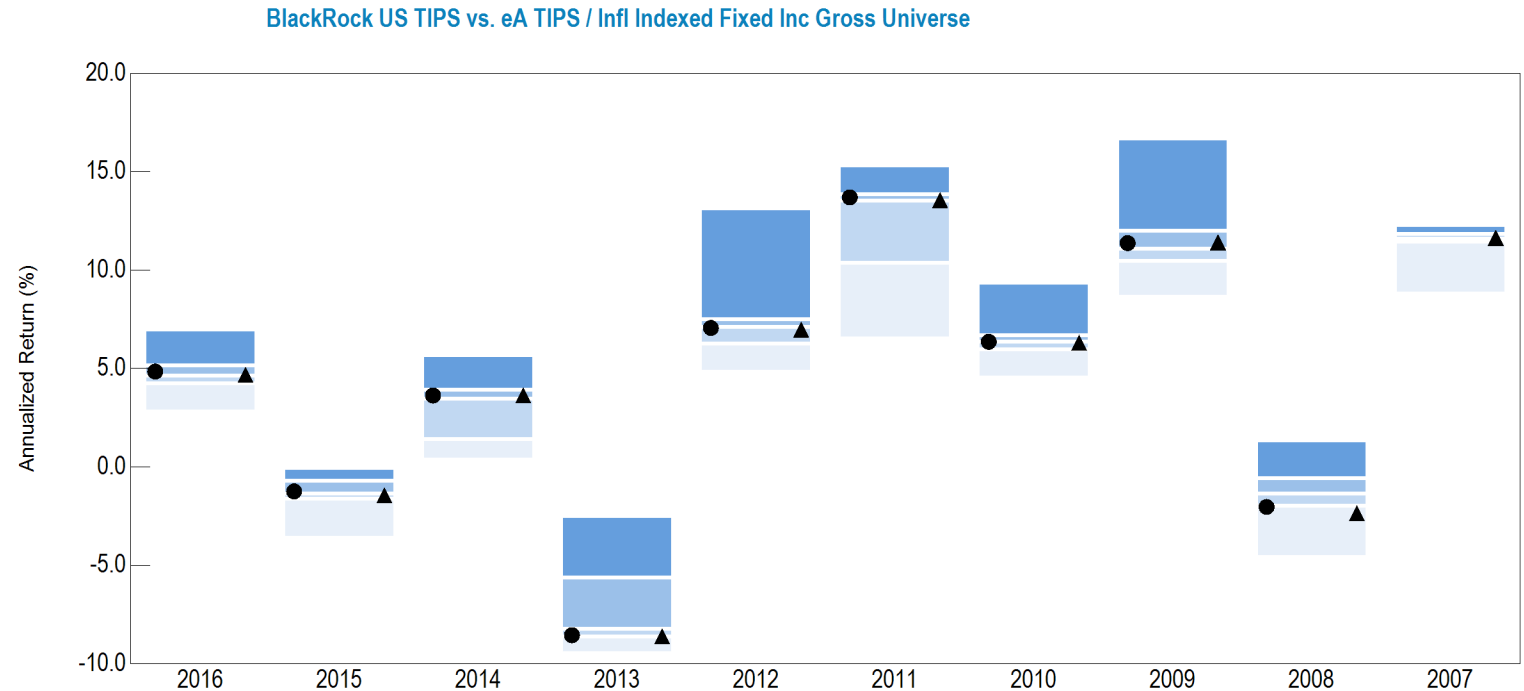
BlackRock US TIPS

Cumulative Performance Comparison (Gross of Fees)

Period Ending: September 30, 2017

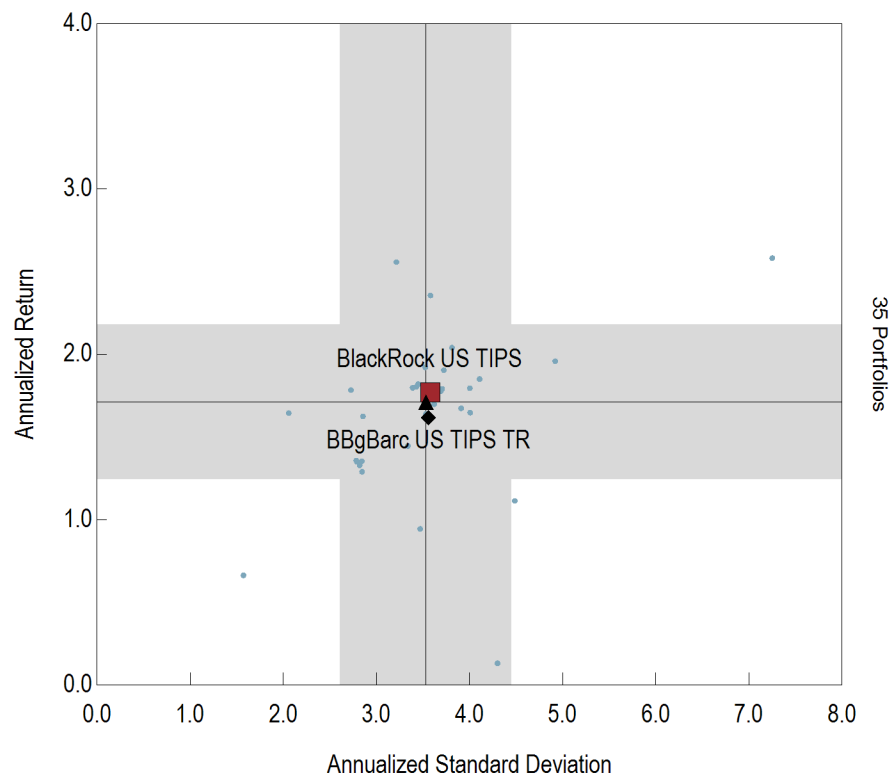


	Return (Rank)							
5th Percentile	1.4	3.2	1.4	1.8	2.4	0.8	3.2	4.8
25th Percentile	1.0	2.2	1.0	0.3	1.8	0.4	2.9	4.3
Median	0.9	1.9	0.9	-0.4	1.7	0.2	2.7	4.1
75th Percentile	0.8	1.6	0.8	-0.6	1.4	0.1	2.3	3.7
95th Percentile	0.7	1.1	0.7	-1.7	0.9	-0.3	2.0	3.3
# of Portfolios	35	35	35	35	35	35	33	29
● BlackRock US TIPS	0.9 (56)	1.9 (51)	0.9 (56)	-0.5 (57)	1.8 (42)	0.1 (59)	2.8 (46)	4.0 (56)
▲ BBgBarc US TIPS TR	0.9 (72)	1.7 (70)	0.9 (72)	-0.7 (84)	1.6 (68)	0.0 (86)	2.6 (56)	3.9 (63)



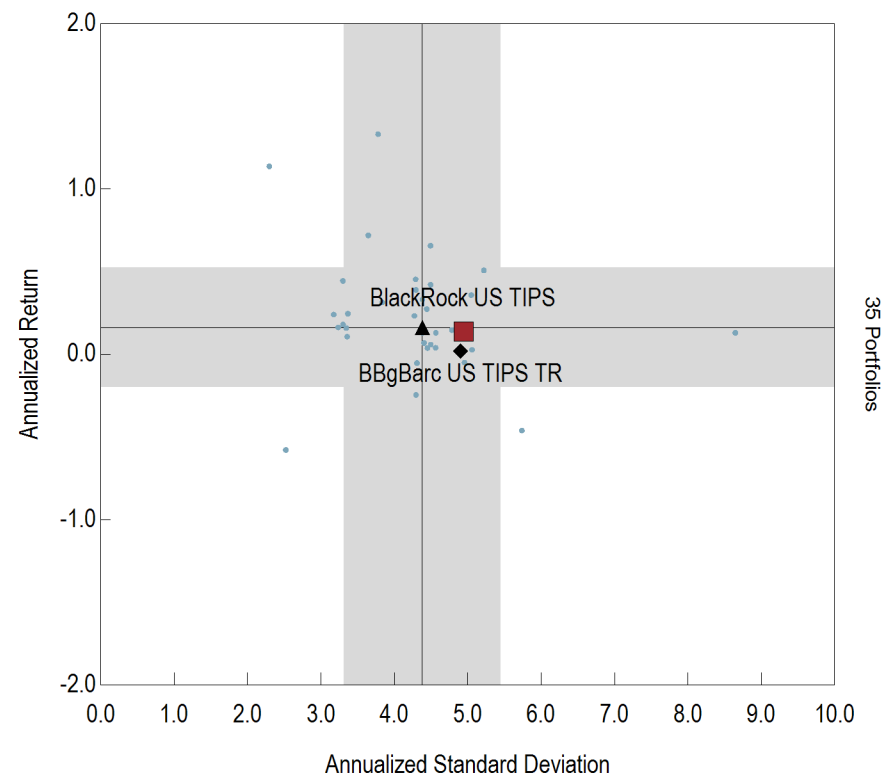
	Return (Rank)									
5th Percentile	7.0	-0.1	5.7	-2.5	13.1	15.3	9.4	16.7	1.3	12.3
25th Percentile	5.2	-0.7	4.0	-5.6	7.5	13.9	6.7	12.0	-0.5	11.8
Median	4.7	-1.3	3.5	-8.2	7.1	13.5	6.4	11.1	-1.4	11.6
75th Percentile	4.3	-1.6	1.4	-8.6	6.3	10.4	6.0	10.5	-1.9	11.5
95th Percentile	2.8	-3.6	0.4	-9.4	4.9	6.6	4.6	8.7	-4.6	8.8
# of Portfolios	42	44	50	43	43	47	39	37	40	37
● BlackRock US TIPS	4.8 (37)	-1.2 (43)	3.6 (45)	-8.5 (62)	7.1 (59)	13.7 (37)	6.4 (52)	11.4 (36)	-2.0 (78)	-- (--)
▲ BBgBarc US TIPS TR	4.7 (47)	-1.4 (59)	3.6 (44)	-8.6 (76)	7.0 (66)	13.6 (49)	6.3 (57)	11.4 (35)	-2.4 (85)	11.6 (49)

Annualized Return vs. Annualized Standard Deviation
3 Years Ending September 30, 2017



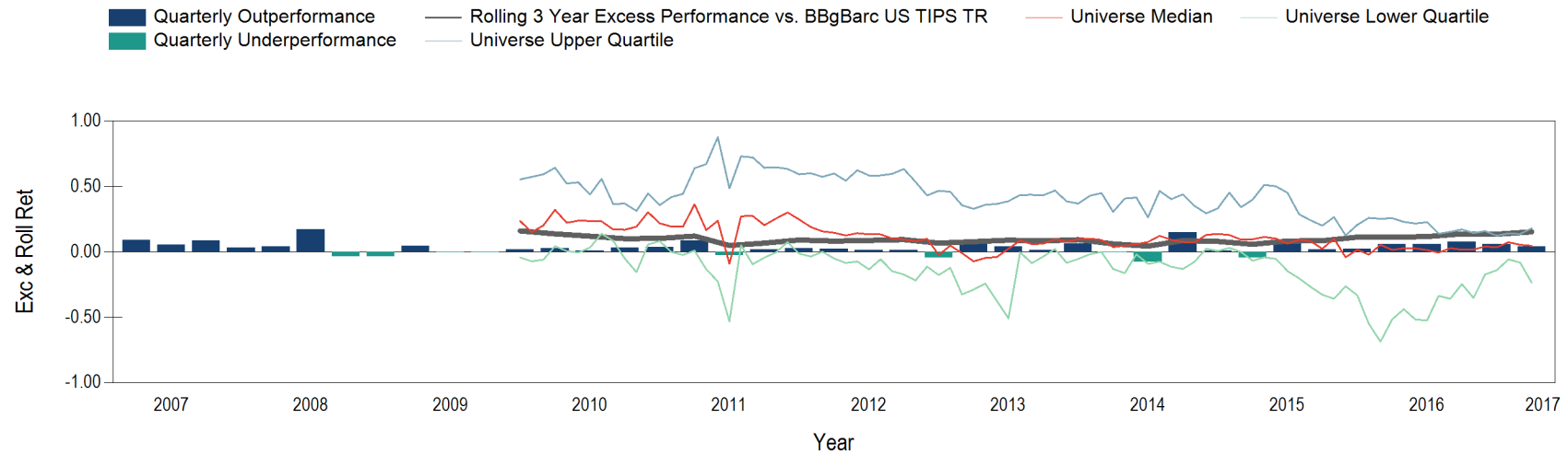
- BlackRock US TIPS
- ◆ BBgBarc US TIPS TR
- ▲ Universe Median
- 68% Confidence Interval
- eA TIPS / Infl Indexed Fixed Inc Gross

Annualized Return vs. Annualized Standard Deviation
5 Years Ending September 30, 2017

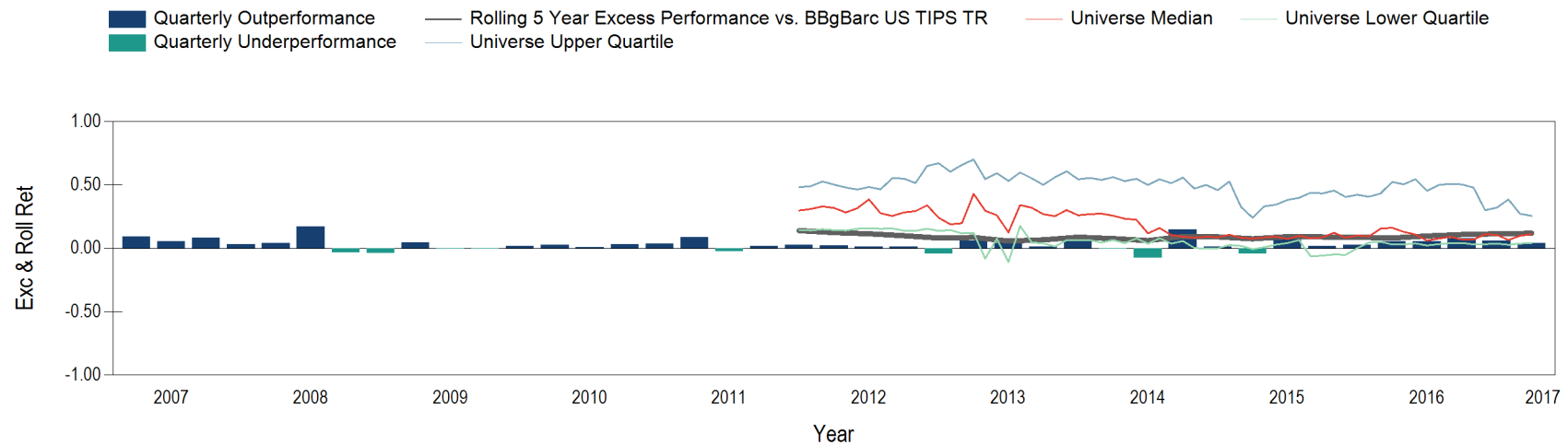


- BlackRock US TIPS
- ◆ BBgBarc US TIPS TR
- ▲ Universe Median
- 68% Confidence Interval
- eA TIPS / Infl Indexed Fixed Inc Gross

Rolling 3 Year Annualized Excess Performance



Rolling 5 Year Annualized Excess Performance

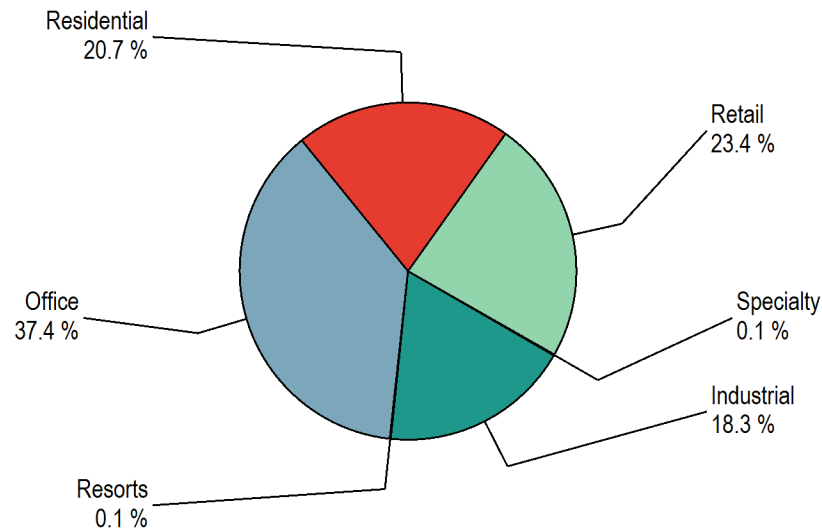


Total Real Estate Asset Class Overview (Gross of Fees)

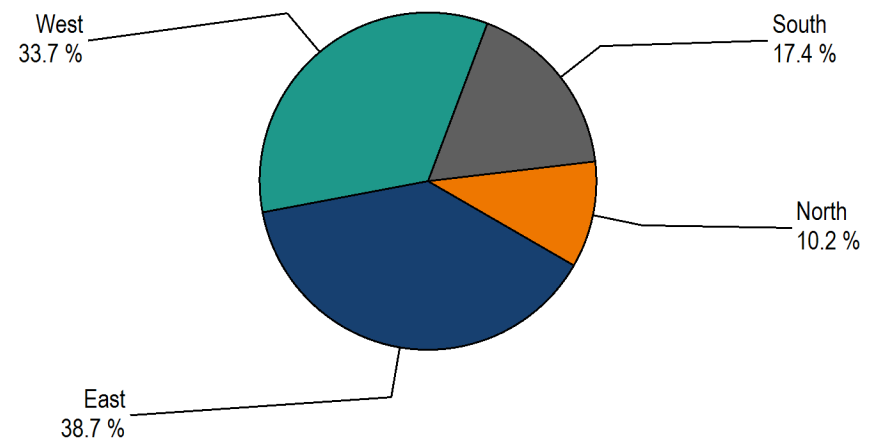
Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Real Estate	66,047,276	1.2	3.9	1.2	5.1	10.3	11.0	4.2	7.1	16.1	13.0	12.6	10.6
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9
ASB Real Estate	32,116,706	0.6	2.1	0.6	2.9	9.4	--	--	5.6	17.3	13.5	13.7	--
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	--	--	8.0	13.3	11.8	11.0	--
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	--	--	8.8	15.0	12.5	13.9	--
Clarion Lion	32,473,254	1.9	6.0	1.9	7.6	11.8	11.9	3.9	9.1	15.7	13.2	12.8	10.9
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9
1221 State St. Corp	1,457,316	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.1

Property Type Allocation
Allocation as of September 30, 2017



Geographic Diversification
Allocation as of September 30, 2017



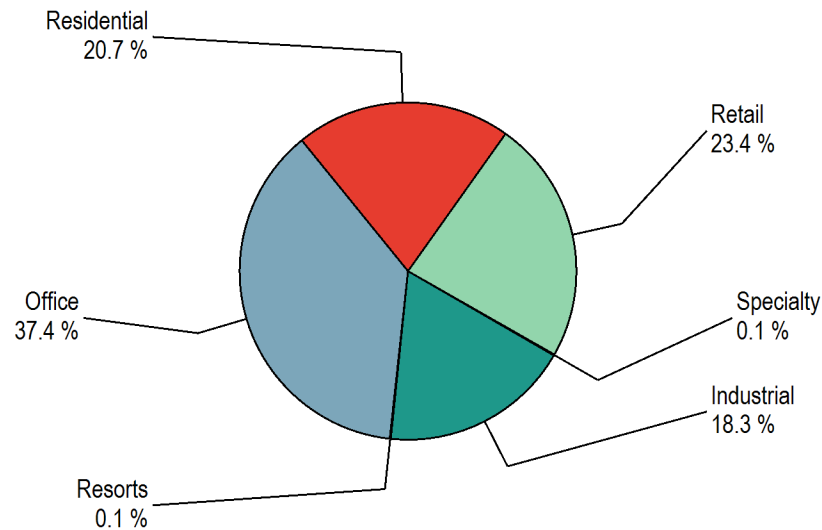
NCREIF Property Index unavailable at time of production.

Total Real Estate Asset Class Overview (Net of Fees)

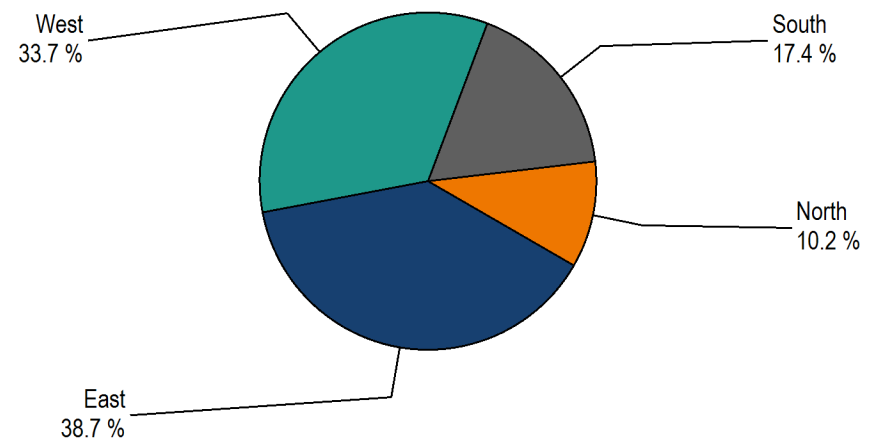
Period Ending: September 30, 2017

	Market Value	3 Mo	YTD	Fiscal YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	2016	2015	2014	2013	2012
Total Real Estate	66,047,276	1.2	3.9	1.2	4.8	9.5	10.2	3.5	6.1	15.0	11.6	12.1	10.3
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9
ASB Real Estate	32,116,706	0.6	2.1	0.6	2.7	8.7	--	--	4.6	16.2	12.5	12.5	--
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	--	--	8.0	13.3	11.8	11.0	--
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	--	--	8.8	15.0	12.5	13.9	--
Clarion Lion	32,473,254	1.9	6.0	1.9	7.3	10.9	11.0	3.0	8.0	14.6	12.2	11.8	9.9
NCREIF Property Index		0.0	3.3	0.0	5.1	9.2	10.0	6.0	8.0	13.3	11.8	11.0	10.5
NCREIF-ODCE		1.9	5.4	1.9	7.6	10.8	11.6	5.0	8.8	15.0	12.5	13.9	10.9
1221 State St. Corp	1,457,316	0.0	0.0	0.0	0.0	0.0	0.0	--	0.0	0.0	0.0	0.0	0.1

Property Type Allocation
Allocation as of September 30, 2017



Geographic Diversification
Allocation as of September 30, 2017



NCREIF Property Index unavailable at time of production.

Performance Return Calculations

Performance is calculated using Modified Dietz and for time periods with large cash flow (generally greater than 10% of portfolio value), Time Weighted Rates of Return (TWRR) methodologies. Monthly returns are geometrically linked and annualized for periods longer than one year.

Data Source

Verus is an independent third party consulting firm and calculates returns from best source book of record data. Returns calculated by Verus may deviate from those shown by the manager in part, but not limited to, differences in prices and market values reported by the custodian and manager, as well as significant cash flows into or out of an account. It is the responsibility of the manager and custodian to provide insight into the pricing methodologies and any difference in valuation.

Illiquid Alternatives

Due to the inability to receive final valuation prior to report production, closed end funds (including but are not limited to Real Estate, Hedge Funds, Private Equity, and Private Credit) performance is typically reported at a one-quarter lag. Valuation is reported at a one-quarter lag, adjusted for current quarter flow (cash flows are captured real time). Closed end fund performance is calculated using a time-weighted return methodology consistent with all portfolio and total fund performance calculations. For Private Markets, performance reports also include Verus-calculated multiples based on flows and valuations (e.g. DPI and TVPI) and manager-provided IRRs.

Manager Line Up

Manager	Inception Date	Data Source	Manager	Inception Date	Data Source
BlackRock Russell 3000	12/10/2015	J.P. Morgan	1221 State Street Corp	9/30/2008	ICERS/Union Bank
BlackRock International Equity	7/3/2003	J.P. Morgan	Cash	-	J.P. Morgan
DFA Emerging Markets Value	1/11/2007	J.P. Morgan	HarbourVest IX-Buyout	2011 ¹	HarbourVest
Harding Loevner	7/5/2016	Harding Loevner	HarbourVest IX-Credit	2011 ¹	HarbourVest
Bradford & Marzec Fixed	12/1/1992	J.P. Morgan	HarbourVest International VI	2008 ¹	HarbourVest
MacKay Shields Core Plus Ops	3/2/2015	CITCO	Harbourvest IX-Venture	2011 ¹	HarbourVest
BlackRock US TIPS	4/11/2007	J.P. Morgan	Harbourvest 2017 Global	2017 ¹	HarbourVest
ASB Real Estate	12/31/2012	ASB Real Estate	KKR Mezzanine	2010 ¹	KKR
Clarion Lion	12/31/2006	Clarion Lion	PIMCO BRAVO	2011 ¹	PIMCO

¹Represents fund vintage year.

Policy & Custom Index Composition

Policy Index (10/1/2016-Current)	29% Russell 3000, 24% MSCI ACWI Free Ex US, 27% BBgBarc Aggregate, 5% NCREIF Property, 5% NCREIF Property +2%, 5% Russell 3000 plus 300 bps (Lagged), 5% BBgBarc High Yield +2% lagged.
Policy Index (7/1/2014-9/30/2016)	29% Russell 3000, 25% MSCI ACWI ex-US (Gross), 30% Barclays U.S. Aggregate, 6% NCREIF Property Index, 5% Bloomberg Commodity Index, 5% Russell 3000 plus 300 bps (Lagged).

Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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