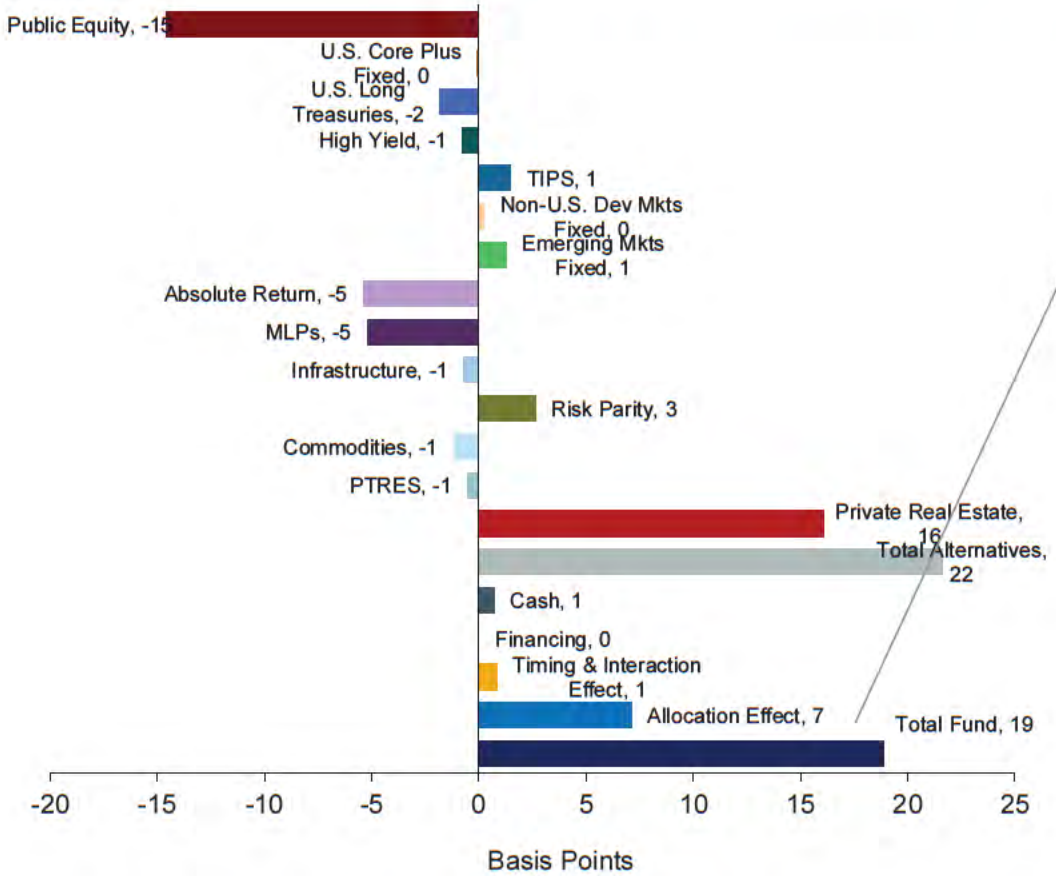
1 Quarter Ending September 30, 2018

Performance Attribution – Total Fund



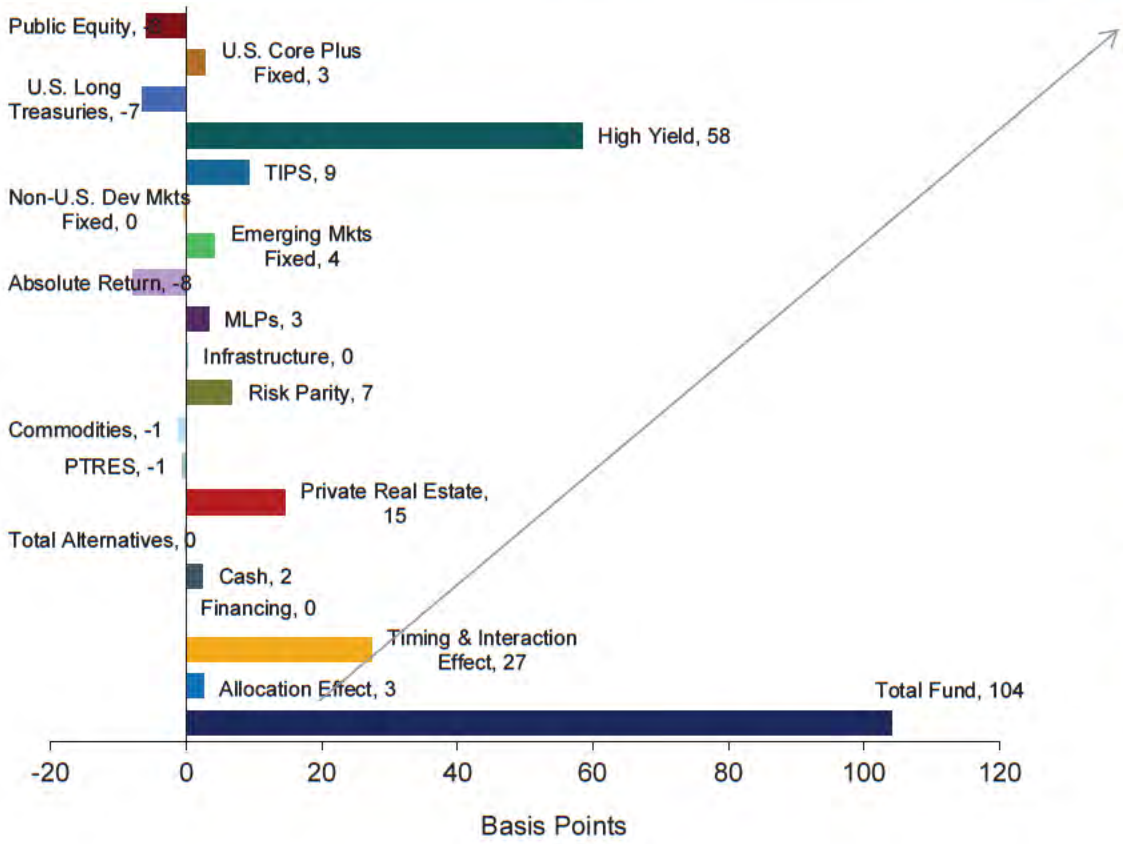
Asset Class	Allocation Effect (in bps)
Public Equity	1
U.S. Core Fixed	0
U.S. Long Treasuries	0
High Yield	-1
TIPS	2
Non-U.S. Fixed	0
Emerging Markets Fixed	1
Absolute Return	0
MLPs	4
Infrastructure	0
Risk Parity	0
Commodities	1
PTRES	1
Private Real Estate	0
Total Alternatives	0
Cash	-1
Financing	0

- The Selection Effect (shown by each composite bar above) represents the impact each composite had on Total Fund performance, based on its weight in the asset class and its performance relative to its blended asset class policy benchmark.
- The Allocation Effect represents the favorable or unfavorable impact of being over or under weight to each asset class relative to policy targets.
- The Timing & Interaction Effect captures the impact of intra-month cash flows on Total Fund return.

Past performance is not necessarily indicative of future results. Please refer to the Notes section for disclosures related to the performance calculation methodology within this performance report. Additionally, please refer to the Appendix for referenced benchmark index definitions. Indices cannot be invested in directly. Unmanaged index returns assume reinvestment of any and all distributions and do not reflect fees or expenses.

1 Year Ending September 30 , 2018

Performance Attribution – Total Fund



Asset Class	Allocation Effect (in bps)
Public Equity	-1
U.S. Core Fixed	2
U.S. Long Treasuries	1
High Yield	5
TIPS	3
Non-U.S. Fixed	1
Emerging Markets Fixed	4
Absolute Return	1
MLPs	-6
Infrastructure	0
Risk Parity	-1
Commodities	1
PTRES	0
Private Real Estate	0
Total Alternatives	-3
Cash	-4
Financing	-1

- The Selection Effect (shown by each composite bar above) represents the impact each composite had on Total Fund performance, based on its weight in the asset class and its performance relative to its blended asset class policy benchmark.
- The Allocation Effect represents the favorable or unfavorable impact of being over or under weight to each asset class relative to policy targets.
- The Timing & Interaction Effect captures the impact of intra-month cash flows on Total Fund return.

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Total Fund

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
PSERS Total Fund	1.40	3 52	3.66	1.40	3.66	7.37	8.78	7 31	6.41	7.46	6.92	9.71	07/01/1982
Blended Policy (Total Plan)	1.21	2 87	2 81	1.21	2.81	6.33	8 23	6 90	6.31	6.81	6.11	N/A	
Value Added	0.19	0.65	0 85	0.19	0.85	1.04	0 55	0.41	0.10	0.65	0.81	N/A	
Total Public Markets Composite	0.78	2.76	1.62	0.78	1.62	5.36	8.04	5.67	6.29	6.57	N/A	6 54	06/01/2002
Blended Policy (Public Market) (Hedged)	1.00	2 30	0.75	1.00	0.75	4.13	7 54	4.72	4.96	5.64	5.24	5 27	
Value Added	-0.22	0.46	0 87	-0.22	0.87	1.23	0 50	0 95	1.33	0.93	N/A	1 27	
Blended Policy (Public Market) (Unhedged)	0.94	1 23	0.17	0.94	0.17	3.63	7 34	4 32	4.76	5.50	5.14	5.15	
Value Added	-0.16	1 53	1.45	-0.16	1.45	1.73	0.70	1 35	1.53	1.07	N/A	1 39	
Total Public Markets Composite ex HY & Absolue Return	0.50	2.72	0.43	0.50	0.43	N/A	N/A	N/A	N/A	N/A	N/A	0.43	01/01/2018
Blended Policy (Public Market x HY & Abs Return) (Hedged)	0.68	2.04	-0 30	0.68	-0.30	N/A	N/A	N/A	N/A	N/A	N/A	-0 30	
Value Added	-0.18	0.68	0.73	-0.18	0.73	N/A	N/A	N/A	N/A	N/A	N/A	0.73	
Total Public Equity Composite	2.66	4 39	3 36	2.66	3.36	8.95	13.46	10 23	10.01	9.11	7.90	7.06	07/01/1998
Blended Policy (Public Equity) (Hedged)	3.37	4 85	3 36	3.37	3.36	9.24	13 33	9 80	9.27	8.70	7.01	6 20	
Value Added	-0.71	-0.46	0.00	-0.71	0.00	-0.29	0.13	0.43	0.74	0.41	0.89	0 86	
Blended Policy (Public Equity) (Unhedged)	3.96	4.78	3.92	3.96	3.92	9.94	13 83	9.02	8.89	8.44	6.82	6.01	
Value Added	-1.30	-0 39	-0 56	-1.30	-0.56	-0.99	-0 37	1 21	1.12	0.67	1.08	1.05	
Total US Equity Composite	6.83	11.44	10 30	6.83	10.30	16.92	17.69	13 59	12.30	9.80	N/A	6 96	01/01/2000
Blended Policy (Tot US Eq)	7.08	11 32	10.65	7.08	10.65	17.65	17.14	13 52	11.94	9.92	N/A	6.11	
Value Added	-0.25	0.12	-0 35	-0.25	-0.35	-0.73	0 55	0.07	0.36	-0.12	N/A	0 85	
PSERS-S&P 500 Index Composite	7.70	11 52	10.03	7.70	10.03	16.97	17 57	13 99	12.30	9.89	7.65	7.00	07/01/1998
S&P 500 Index	7.71	11.41	10 56	7.71	10.56	17.91	17 31	13 95	11.97	9.65	7.42	6.77	
Value Added	-0.01	0.11	-0 53	-0.01	-0.53	-0.94	0 26	0.04	0.33	0.24	0.23	0 23	
Total US Small Cap Composite	4.39	11 23	11.13	4.39	11.13	16.79	18.03	11 87	12.63	11.10	N/A	10.42	12/01/2001
MSCI USA Small Cap Index	4.22	11 36	10 83	4.22	10.83	16.20	17.15	11 94	13.01	10.99	N/A	10 30	
Value Added	0.17	-0.13	0 30	0.17	0.30	0.59	0 88	-0.07	-0.38	0.11	N/A	0.12	
PSERS Small Cap Index Composite	4.39	11 23	11.13	4.39	11.13	16.79	18.03	13.03	13.53	12.07	N/A	11 24	12/01/2001
PSERS-S&P 400 Index Composite	3.90	8 37	7 54	3.90	7.54	14.29	15 96	12.09	13.07	11.64	11.75	10.75	07/01/1998
S&P MidCap 400	3.86	8 32	7.49	3.86	7.49	14.21	15.68	11 91	12.49	11.20	11.39	10 38	
Value Added	0.04	0.05	0.05	0.04	0.05	0.08	0 28	0.18	0.58	0.44	0.36	0 37	
PSERS-S&P 600 Index Composite	4.87	14.08	14.77	4.87	14.77	19.27	20.14	13 98	13.98	12.66	12.06	10 58	06/01/1998
S&P SmallCap 600	4.71	13 90	14 54	4.71	14.54	19.08	19.41	13 32	12.86	11.86	11.45	9 99	
Value Added	0.16	0.18	0 23	0.16	0.23	0.19	0.73	0.66	1.12	0.80	0.61	0 59	
Total Non-U.S. Equity Composite (hedged)	0.79	1.61	0 27	0.79	0.27	5.52	11 54	8.41	8.59	9.66	N/A	5 87	01/01/2000
Blended Policy (Total Non-US Eq) (Hedged)	1.02	0 80	-1.15	1.02	-1.15	4.04	10 86	7 20	7.27	8.63	N/A	4 87	
Value Added	-0.23	0 81	1.42	-0.23	1.42	1.48	0.68	1 21	1.32	1.03	N/A	1.00	
Total Non-U.S. Equity Composite (unhedged)	0.09	-2.01	-2.13	0.09	-2.13	3.10	11.00	5.61	7.17	8.71	N/A	5.13	01/01/2000
Blended Policy (Total Non-US Eq) (Unhedged)	0.33	-2 51	-3.45	0.33	-3.45	1.69	10 24	4 34	5.82	7.65	N/A	4.11	
Value Added	-0.24	0 50	1 32	-0.24	1.32	1.41	0.76	1 27	1.35	1.06	N/A	1.02	
Emerging Markets Equity Composite	-6.01	-11.07	-10.72	-6.01	-10.72	-4.46	5 53	2.12	4.60	8.94	9.00	7.63	07/01/1998
Blended Policy (MSCI EM net)	-1.45	-9 35	-8 22	-1.45	-8.22	-1.18	12 22	3 54	5.36	9.73	9.96	8.49	
Value Added	-4.56	-1.72	-2 50	-4.56	-2.50	-3.28	-6.69	-1.42	-0.76	-0.79	-0.96	-0 86	
MSCI Emerging Markets MI (Net)	-1.45	-9 35	-8 22	-1.45	-8.22	-1.18	11.72	3 51	5.65	9.74	9.18	7 58	
Value Added	-4.56	-1.72	-2 50	-4.56	-2.50	-3.28	-6.19	-1 39	-1.05	-0.80	-0.18	0.05	
Wasatch EM Small Cap	-6.01	-11.07	-10.72	-6.01	-10.72	-4.46	5 53	2.02	9.89	N/A	N/A	6 86	07/01/2008
Blended Policy (Wasatch EM)	-3.35	-11 90	-11.39	-3.35	-11.39	-4.01	7 82	2.67	7.51	10.10	9.67	3 98	
Value Added	-2.66	0 83	0.67	-2.66	0.67	-0.45	-2 29	-0.65	2.38	N/A	N/A	2 88	
Total Non-U.S. Equity x Emerging Markets Composite (hedged)	1.11	2 25	0 81	1.11	0.81	6.01	11 82	N/A	N/A	N/A	N/A	8.64	04/01/2014
Blended Policy (Non-US Equity x EM) (Hedged)	1.12	1 25	-0.85	1.12	-0.85	4.25	10.79	7 54	7.43	8.74	N/A	7.17	

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Value Added	-0.01	1.00	1.66	-0.01	1.66	1.76	1.03	N/A	N/A	N/A	N/A	1.47	
Insight Everest - Int'l Eq (notional)	1.26	6 51	4.45	1.26	4.45	4.34	1.07	3 89	2.21	N/A	N/A	1.47	07/01/2006
Currency Hedge Benchmark - Int'l Eq	1.30	6 50	4.46	1.30	4.46	4.36	1.18	3 97	2.29	N/A	N/A	1 56	
Value Added	-0.04	0.01	-0.01	-0.04	-0.01	-0.02	-0.11	-0.08	-0.08	N/A	N/A	-0.09	
Total Non-U.S. Equity x Emerging Markets Composite (unhedged)	0.38	-1 56	-1.71	0.38	-1.71	3.47	11 26	5 83	7.03	8.41	7.23	6 35	07/01/1997
Blended Policy (Non-US Equity x EM) (Unhedged)	0.39	-2 23	-3 27	0.39	-3.27	1.79	10.14	4 39	5.85	7.67	N/A	N/A	
Value Added	-0.01	0.67	1 56	-0.01	1.56	1.68	1.12	1.44	1.18	0.74	N/A	N/A	
Non-US Large Cap Equity Composite	0.55	-1.44	-1 95	0.55	-1.95	3.05	11.01	5.46	6.40	8.07	7.02	6.04	07/01/1998
Blended Policy (MSCI World AC Word ex USA net)	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.34	5.86	4 99	
Value Added	-0.16	0.49	1.14	-0.16	1.14	1.29	1.04	1 34	1.22	0.73	1.16	1.05	
PSERS ACWI x US Index Fund	0.75	-1 58	-2 37	0.75	-2.37	2.83	10.76	4.79	5.94	7.79	6.05	5.19	07/01/1998
MSCI ACWI/EAFE Index Blend	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.16	5.47	4.60	
Value Added	0.04	0 35	0.72	0.04	0.72	1.07	0.79	0.67	0.76	0.63	0.58	0 59	
BlackRock EMAA	-1.67	-8 59	-6.08	-1.67	-6.08	1.67	14 27	N/A	N/A	N/A	N/A	6 97	07/01/2015
MSCI Emerging Markets Index (Net)	-1.09	-8 97	-7.68	-1.09	-7.68	-0.81	12 36	3.61	5.40	9.65	9.85	4 80	
Value Added	-0.58	0 38	1.60	-0.58	1.60	2.48	1 91	N/A	N/A	N/A	N/A	2.17	
ACWI ex US Large Cap Swap (Notional)	-0.80	1.74	2 38	-0.80	2.38	-2.59	N/A	N/A	N/A	N/A	N/A	-2 59	10/01/2017
MSCI ACWI ex US Index (Short)	-0.80	1.74	2 38	-0.80	2.38	-2.59	-10.18	-5.15	-7.92	-9.37	-8.21	-2 59	
Value Added	0.00	0.00	0.00	0.00	0.00	0.00	N/A	N/A	N/A	N/A	N/A	0.00	
Active Non-US Large Cap Composite	0.34	-1 36	-1.60	0.34	-1.60	3.39	11 34	6 26	7.46	8.69	7.53	6 53	07/01/1998
MSCI AC World ex USA Index (Net)	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.20	5.85	4 92	
Value Added	-0.37	0 57	1.49	-0.37	1.49	1.63	1 37	2.14	2.28	1.49	1.68	1.61	
Baillie Gifford	0.25	-2.07	-2.74	0.25	-2.74	3.15	13.66	7.04	7.97	10.48	N/A	9 56	07/01/2002
MSCI AC World ex USA Index (Net)	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.20	5.85	6 86	
Value Added	-0.46	-0.14	0 35	-0.46	0.35	1.39	3.69	2 92	2.79	3.28	N/A	2.70	
Marathon Asset Mgmt	0.79	-1 24	-1.67	0.79	-1.67	2.52	9.73	5 53	8.08	9.78	10.02	8 97	07/01/1998
Blended Benchmark (MSCI ACWI ex USA net)	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.31	5.99	5.06	
Value Added	0.08	0.69	1.42	0.08	1.42	0.76	-0 24	1.41	2.90	2.47	4.03	3 91	
The Children's Investment Fund, LP	1.21	N/A	N/A	1.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9 54	05/01/2018
MSCI World Index (Net)	4.98	6 80	5.43	4.98	5.43	11.24	13 54	9 28	8.56	8.15	6.15	5 59	
Value Added	-3.77	N/A	N/A	-3.77	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3 95	
BlackRock Global Composite	-4.05	-5 84	-4 95	-4.05	-4.95	-0.48	8.14	4.65	6.83	N/A	N/A	7 36	10/01/2004
MSCI AC World ex USA Index (Net)	0.71	-1 93	-3.09	0.71	-3.09	1.76	9 97	4.12	5.18	7.20	5.85	6.17	
Value Added	-4.76	-3 91	-1 86	-4.76	-1.86	-2.24	-1 83	0 53	1.65	N/A	N/A	1.19	
Non-US Small Cap Equity Composite	-0.72	-2 33	0.00	-0.72	0.00	6.47	13.09	8.71	11.15	N/A	N/A	9 25	07/01/2005
MSCI AC World ex USA Small Cap (Net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	9.44	8.67	7 24	
Value Added	0.79	1.74	4.41	0.79	4.41	4.61	1 85	2 57	2.42	N/A	N/A	2.01	
ACWI ex US Small Cap Swap (Notional)	-1.51	-3 97	-4 22	-1.51	-4.22	2.16	N/A	N/A	N/A	N/A	N/A	2.16	10/01/2017
MSCI AC World ex USA Small Cap (Net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	9.44	8.67	1 86	
Value Added	0.00	0.10	0.19	0.00	0.19	0.30	N/A	N/A	N/A	N/A	N/A	0 30	
Acadian Asset Mgmt	-1.09	-4.71	-2 93	-1.09	-2.93	1.62	15 36	9.74	10.91	N/A	N/A	10.60	07/01/2005
Blended Benchmark (MSCI AC World ex USA Small Cap net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	N/A	N/A	6.78	
Value Added	0.42	-0.64	1.48	0.42	1.48	-0.24	4.12	3.60	2.18	N/A	N/A	3 82	
Wasatch Int'l Small Cap	1.92	3.77	8 32	1.92	8.32	13.76	13 26	7 99	14.18	N/A	N/A	9 98	10/01/2005
Blended Benchmark (MSCI AC World ex USA Small Cap net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	N/A	N/A	6 26	
Value Added	3.43	7 84	12.73	3.43	12.73	11.90	2.02	1 85	5.45	N/A	N/A	3.72	
Oberweis Asset Mgmt	-2.69	-3 96	-2.09	-2.69	-2.09	5.45	12.44	11.02	13.19	N/A	N/A	9.08	07/01/2008
MSCI AC World ex USA Small Cap (Net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	9.44	8.67	5.47	

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	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Value Added	-1.18	0.11	2 32	-1.18	2.32	3.59	1 20	4 88	4.46	N/A	N/A	3.61	
QS Investors	-1.33	-4 98	-5 20	-1.33	-5.20	0.00	10 54	7.48	9.55	N/A	N/A	6.47	07/01/2008
MSCI AC World ex USA Small Cap (Net)	-1.51	-4.07	-4.41	-1.51	-4.41	1.86	11 24	6.14	8.73	9.44	8.67	5.47	
Value Added	0.18	-0 91	-0.79	0.18	-0.79	-1.86	-0.70	1 34	0.82	N/A	N/A	1.00	
Total Fixed Income Composite	-0.42	1.01	1 21	-0.42	1.21	4.35	6 25	5.64	7.68	6.45	6.41	6 59	07/01/1998
Blended Policy (Total FI)	0.05	0 24	-0 34	0.05	-0.34	1.20	4 33	3.17	5.76	5.07	5.38	5 57	
Value Added	-0.47	0.77	1 55	-0.47	1.55	3.15	1 92	2.47	1.92	1.38	1.03	1.02	
Global Fixed Income Composite	0.13	-0 90	-1 55	0.13	-1.55	-0.34	3.48	2 59	N/A	N/A	N/A	2 57	07/01/2012
Blended Policy (Global FI)	-0.14	-1.49	-1 93	-0.14	-1.93	-1.27	2.47	1 28	3.55	N/A	N/A	1 26	
Value Added	0.27	0 59	0 38	0.27	0.38	0.93	1.01	1 31	N/A	N/A	N/A	1 31	
Total US Fixed Income Composite	-0.47	1 22	1 36	-0.47	1.36	4.66	6 30	6 39	8.20	N/A	N/A	6 82	10/01/2004
Blended Policy (Total US FI)	0.08	0 55	-0.19	0.08	-0.19	1.36	4 28	3.72	6.30	5.36	5.68	5.47	
Value Added	-0.55	0.67	1 55	-0.55	1.55	3.30	2.02	2.67	1.90	N/A	N/A	1 35	
Total US Fixed Income ex TIPS Composite	0.78	2.49	2.49	0.78	2.49	4.94	6 54	6 96	8.41	6.75	6.76	6 89	07/01/1998
Investment Grade Composite	-2.02	-2.65	-5 39	-2.02	-5.39	-3.47	1 92	N/A	N/A	N/A	N/A	2 81	10/01/2014
Blended Policy (Investment Grade)	-0.97	-0 90	-2.70	-0.97	-2.70	-1.59	1 26	2.68	4.30	N/A	N/A	1 86	
Value Added	-1.05	-1.75	-2.69	-1.05	-2.69	-1.88	0.66	N/A	N/A	N/A	N/A	0 95	
US Core Plus Fixed Income Composite	0.00	-0 55	-1.77	0.00	-1.77	-0.69	2 80	3.49	5.56	N/A	N/A	4.79	10/01/2004
Blended Policy (Barclays Aggregate Index)	0.02	-0.14	-1.60	0.02	-1.60	-1.22	1 31	2.16	3.83	3.85	4.60	3 81	
Value Added	-0.02	-0.41	-0.17	-0.02	-0.17	0.53	1.49	1 33	1.73	N/A	N/A	0 98	
Pugh Capital Management	0.02	-0.19	-1 84	0.02	-1.84	-1.26	1 35	2 31	4.32	N/A	N/A	4 54	07/01/2006
Blmbg. Barc. U.S. Aggregate	0.02	-0.14	-1.60	0.02	-1.60	-1.22	1 31	2.16	3.77	3.78	4.48	4.11	
Value Added	0.00	-0.05	-0 24	0.00	-0.24	-0.04	0.04	0.15	0.55	N/A	N/A	0.43	
PSERS Active Core Plus Fixed Income	-0.07	0 20	-0 84	-0.07	-0.84	-0.22	2 26	3.06	5.27	4.96	5.56	5.70	07/01/1998
Blmbg. Barc. U.S. Aggregate	0.02	-0.14	-1.60	0.02	-1.60	-1.22	1 31	2.16	3.77	3.78	4.48	4.64	
Value Added	-0.09	0 34	0.76	-0.09	0.76	1.00	0 95	0 90	1.50	1.18	1.08	1.06	
BlackRock Global Alpha	-0.01	-1 87	-3 53	-0.01	-3.53	-1.85	3.40	4 23	7.40	N/A	N/A	6.63	07/01/2007
Blended Policy (Barclays Aggregate Index)	0.02	-0.14	-1.60	0.02	-1.60	-1.22	1 31	2.16	3.83	3.85	4.60	3 85	
Value Added	-0.03	-1.73	-1 93	-0.03	-1.93	-0.63	2.09	2.07	3.57	N/A	N/A	2.78	
SEI Investment Management	0.91	2.14	2 96	0.91	2.96	4.40	5 28	N/A	N/A	N/A	N/A	4 35	03/01/2014
ICE BofAML 1-3 Year U.S. Corporate	0.72	1.19	0 81	0.72	0.81	0.79	1.66	1 58	3.39	3.06	3.95	1.47	
Value Added	0.19	0 95	2.15	0.19	2.15	3.61	3.62	N/A	N/A	N/A	N/A	2 88	
Non-U.S. Developed Markets Fixed Income Composite	0.22	0.02	0 83	0.22	0.83	1.77	3.66	0.69	3.79	3.99	4.25	4 56	07/01/1998
Blended Policy (Barclays GlobalAgg GDP Weighted Dev xUS hedged)	-0.15	0 27	1.03	-0.15	1.03	2.24	3.04	0.07	2.82	N/A	N/A	N/A	
Value Added	0.37	-0 25	-0 20	0.37	-0.20	-0.47	0.62	0.62	0.97	N/A	N/A	N/A	
Alliance Bernstein Global Fixed	0.22	0.02	0 83	0.22	0.83	1.77	3.66	0 51	N/A	N/A	N/A	1.16	01/01/2012
Spliced Barclays GlobalAgg GDPWeighted Dev xUS	-0.15	0 27	1.03	-0.15	1.03	2.24	3.04	0.07	2.61	N/A	N/A	0 82	
Value Added	0.37	-0 25	-0 20	0.37	-0.20	-0.47	0.62	0.44	N/A	N/A	N/A	0 34	
U.S. Treasuries Total (levered)	-30.07	-31 53	-46.15	-30.07	-46.15	-38.99	-34 28	-4 87	N/A	N/A	N/A	-25.43	07/01/2012
U.S. Treasuries Total (unlevered)	-3.49	-3.72	-7 51	-3.49	-7.51	-5.68	-0.77	2 54	N/A	N/A	N/A	0.44	07/01/2012
Blmbg. Barc. U.S. Treasury: Long	-2.88	-2 58	-5.79	-2.88	-5.79	-3.56	0.72	4.41	5.45	5.56	5.80	1.71	
Value Added	-0.61	-1.14	-1.72	-0.61	-1.72	-2.12	-1.49	-1 87	N/A	N/A	N/A	-1 27	
PSERS U.S. Treasuries	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.04	09/01/2018
Blmbg. Barc. U.S. Treasury	-0.59	-0.49	-1.67	-0.59	-1.67	-1.62	0 23	1 34	2.68	3.27	4.01	-0 93	
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0 89	
PSERS U.S. Long Treasuries (unlevered)	-3.47	-3.71	-7.49	-3.47	-7.49	-5.66	-0.76	2 55	N/A	N/A	N/A	0.44	07/01/2012
Blmbg. Barc. U.S. Treasury: Long	-2.88	-2 58	-5.79	-2.88	-5.79	-3.56	0.72	4.41	5.45	5.56	5.80	1.71	
Value Added	-0.59	-1.13	-1.70	-0.59	-1.70	-2.10	-1.48	-1 86	N/A	N/A	N/A	-1 27	

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Credit-Related	2.25	4.70	6 56	2.25	6.56	9.26	9.05	N/A	N/A	N/A	N/A	6 32	10/01/2014
Blended Policy (Credit-Related)	2.10	2 20	1.72	2.10	1.72	2.29	8.03	N/A	N/A	N/A	N/A	4.10	
Value Added	0.15	2 50	4 84	0.15	4.84	6.97	1.02	N/A	N/A	N/A	N/A	2 22	
Emerging Markets Fixed Income Composite	0.97	-3.67	-1 20	0.97	-1.20	1.00	8 20	2 36	N/A	N/A	N/A	3 93	04/01/2010
Blended Policy (Barclays Emerging Mkt 10% Country Cap)	-1.02	-9 81	-6.73	-1.02	-6.73	-5.32	4 94	-0 53	3.56	6.58	N/A	1.78	
Value Added	1.99	6.14	5 53	1.99	5.53	6.32	3 26	2 89	N/A	N/A	N/A	2.15	
Franklin Templeton Emerging Fixed Income	0.97	-3.67	-1 20	0.97	-1.20	1.00	8 26	4.10	7.27	N/A	N/A	7 27	10/01/2008
Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)	-1.02	-9 81	-6.73	-1.02	-6.73	-5.32	4 94	-0 53	3.52	4.99	5.73	3 52	
Value Added	1.99	6.14	5 53	1.99	5.53	6.32	3 32	4.63	3.75	N/A	N/A	3.75	
High Yield Fixed Income Composite (hedged)	2.34	5 33	7.14	2.34	7.14	9.87	9.00	7 95	9.43	8.26	N/A	8.06	10/01/1999
Blended Policy (Barclays Corporate HY)	2.40	3.46	2.57	2.40	2.57	3.05	8.15	5 54	9.32	7.80	7.30	7.48	
Value Added	-0.06	1 87	4 57	-0.06	4.57	6.82	0 85	2.41	0.11	0.46	N/A	0 58	
High Yield Fixed Income x Internal Composite (hedged)	2.37	5.40	7.18	2.37	7.18	9.92	N/A	N/A	N/A	N/A	N/A	10 36	10/01/2016
Blended Policy (Barclays Corporate HY)	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.32	7.80	7.30	5 92	
Value Added	-0.03	1 94	4.61	-0.03	4.61	6.87	N/A	N/A	N/A	N/A	N/A	4.44	
Insight Oxygen - HY (notional)	1.19	7 31	5 38	1.19	5.38	4.32	0.41	N/A	N/A	N/A	N/A	0 36	07/01/2015
Currency Hedge Benchmark - HY	1.13	7.01	4.93	1.13	4.93	3.80	0.01	3.71	1.31	N/A	N/A	-0.02	
Value Added	0.06	0 30	0.45	0.06	0.45	0.52	0.40	N/A	N/A	N/A	N/A	0 38	
High Yield Fixed Income Composite (Unhedged)	2.24	4.69	6.66	2.24	6.66	9.49	8 90	7 89	9.39	8.24	N/A	8.04	10/01/1999
Blended Policy (Barclays Corporate HY)	2.40	3.46	2.57	2.40	2.57	3.05	8.15	5 54	9.32	7.80	7.30	7.48	
Value Added	-0.16	1 23	4.09	-0.16	4.09	6.44	0.75	2 35	0.07	0.44	N/A	0 56	
High Yield Fixed Income x Internal Composite (unhedged)	2.27	4.76	6.69	2.27	6.69	9.53	N/A	N/A	N/A	N/A	N/A	10 24	10/01/2016
Blended Policy (Barclays Corporate HY)	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.32	7.80	7.30	5 92	
Value Added	-0.13	1 30	4.12	-0.13	4.12	6.48	N/A	N/A	N/A	N/A	N/A	4 32	
Mezzanine High Yield Composite	1.41	0.13	3.42	1.41	3.42	7.90	2.49	N/A	N/A	N/A	N/A	1 87	06/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 24	
Value Added	-0.99	-3 33	0 85	-0.99	0.85	4.85	-5.66	N/A	N/A	N/A	N/A	-3 37	
Internally Managed Private Debt Co-Investment	0.00	-1 39	3 85	0.00	3.85	5.73	-16 83	-13.71	N/A	N/A	N/A	-12.65	08/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.43	
Value Added	-2.40	-4 85	1 28	-2.40	1.28	2.68	-24 98	-19 25	N/A	N/A	N/A	-18.08	
Mezzanine High Yield Composite x Internal	1.57	0 30	3.47	1.57	3.47	8.12	N/A	N/A	N/A	N/A	N/A	9 52	10/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 92	
Value Added	-0.83	-3.16	0 90	-0.83	0.90	5.07	N/A	N/A	N/A	N/A	N/A	3.60	
Carlyle Energy Mezz. Opp. Fund	-1.02	-1 80	-1 36	-1.02	-1.36	2.34	-20.62	-10 28	N/A	N/A	N/A	-6.08	10/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 80	
Value Added	-3.41	-5 26	-3 93	-3.41	-3.93	-0.71	-28.77	-15 82	N/A	N/A	N/A	-11 88	
Carlyle Energy Mezz. Opp. Fund II	0.66	4.74	5.70	0.66	5.70	6.14	N/A	N/A	N/A	N/A	N/A	-6.46	11/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	7 39	
Value Added	-1.74	1 28	3.13	-1.74	3.13	3.09	N/A	N/A	N/A	N/A	N/A	-13 85	
ICG Europe Fund V	4.56	1.68	6 36	4.56	6.36	11.14	12 83	13 96	N/A	N/A	N/A	9.63	01/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.47	
Value Added	2.16	-1.78	3.79	2.16	3.79	8.09	4.68	8.42	N/A	N/A	N/A	4.16	
ICG Europe Fund VI	2.37	-4.76	1 89	2.37	1.89	10.94	N/A	N/A	N/A	N/A	N/A	56 38	02/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	10.74	
Value Added	-0.03	-8 22	-0.68	-0.03	-0.68	7.89	N/A	N/A	N/A	N/A	N/A	45.64	
ICG Europe Fund VII	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00	08/01/2018
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	1 30	
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1 30	

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Bain Capital Middle Market Credit 2010, L P.	-1.79	-4 51	-5 92	-1.79	-5.92	-1.75	-1.74	1 58	N/A	N/A	N/A	5.45	06/01/2010
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	7.60	
Value Added	-4.19	-7 97	-8.49	-4.19	-8.49	-4.80	-9 89	-3 96	N/A	N/A	N/A	-2.15	
Bain Capital Middle Market Credit 2014, L P.	2.24	5.70	7 85	2.24	7.85	10.99	6.66	N/A	N/A	N/A	N/A	6.46	11/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.10	
Value Added	-0.16	2 24	5 28	-0.16	5.28	7.94	-1.49	N/A	N/A	N/A	N/A	1 36	
Opportunistic High Yield Composite	2.94	8 22	9.65	2.94	9.65	12.96	11.65	N/A	N/A	N/A	N/A	9.79	06/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 24	
Value Added	0.54	4.76	7.08	0.54	7.08	9.91	3 50	N/A	N/A	N/A	N/A	4 55	
Apollo European Principal Fund II	-5.23	-4 50	-2 29	-5.23	-2.29	1.42	8.44	10.19	N/A	N/A	N/A	6.62	10/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 80	
Value Added	-7.63	-7 96	-4 86	-7.63	-4.86	-1.63	0 29	4.65	N/A	N/A	N/A	0 82	
Apollo European Principal Fund III	1.40	0 85	-24.13	1.40	-24.13	N/A	N/A	N/A	N/A	N/A	N/A	-24.13	01/01/2018
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	2 57	
Value Added	-1.00	-2.61	-26.70	-1.00	-26.70	N/A	N/A	N/A	N/A	N/A	N/A	-26.70	
Bain Capital Credit Opp. Fund IV	-12.47	24 53	33.11	-12.47	33.11	42.85	17.68	10 24	11.02	N/A	N/A	11.02	10/01/2008
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	9.46	
Value Added	-14.87	21.07	30 54	-14.87	30.54	39.80	9 53	4.70	1.56	N/A	N/A	1 56	
Bain Capital Distressed and Special Situations 2013	3.81	9 80	11 21	3.81	11.21	17.83	9 58	8.40	N/A	N/A	N/A	7 85	10/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 80	
Value Added	1.41	6 34	8.64	1.41	8.64	14.78	1.43	2 86	N/A	N/A	N/A	2.05	
Bain Capital Distressed and Special Situations 2016 (A), L.P.	3.58	6 80	10.44	3.58	10.44	14.49	N/A	N/A	N/A	N/A	N/A	17 56	11/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	7 39	
Value Added	1.18	3 34	7 87	1.18	7.87	11.44	N/A	N/A	N/A	N/A	N/A	10.17	
TPG Opportunities Partners II, LP	0.91	16 51	18.68	0.91	18.68	18.91	11.47	15 39	N/A	N/A	N/A	13 32	04/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6 36	
Value Added	-1.49	13.05	16.11	-1.49	16.11	15.86	3 32	9 85	N/A	N/A	N/A	6 96	
TPG Opportunities Partners III, LP	3.81	9.19	14 52	3.81	14.52	20.15	14 89	N/A	N/A	N/A	N/A	7.06	02/01/2014
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	4 99	
Value Added	1.41	5.73	11.95	1.41	11.95	17.10	6.74	N/A	N/A	N/A	N/A	2.07	
TOP NPL (A)	-2.69	-1 37	-3.42	-2.69	-3.42	-3.49	0 59	9.70	N/A	N/A	N/A	10 89	04/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6 36	
Value Added	-5.09	-4 83	-5 99	-5.09	-5.99	-6.54	-7 56	4.16	N/A	N/A	N/A	4 53	
TPG TAO	2.22	5.70	10.68	2.22	10.68	11.58	9 20	N/A	N/A	N/A	N/A	10.01	01/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.76	
Value Added	-0.18	2 24	8.11	-0.18	8.11	8.53	1.05	N/A	N/A	N/A	N/A	4 25	
Brigade Distressed Value	4.50	9 87	11 85	4.50	11.85	13.71	14 97	8 37	N/A	N/A	N/A	8.61	10/01/2011
1-Month Libor + 5%	1.77	3 52	5 22	1.77	5.22	6.87	6.09	5.72	5.55	6.59	7.21	5 58	
Value Added	2.73	6 35	6.63	2.73	6.63	6.84	8 88	2.65	N/A	N/A	N/A	3.03	
Brigade Structured Credit Offshore Fund	6.30	8.47	9.15	6.30	9.15	10.82	14.62	N/A	N/A	N/A	N/A	9 29	11/01/2014
Barclays Corporate High Yield + 0.25%	2.47	3 58	2.76	2.47	2.76	3.31	8.42	5 80	9.74	8.01	7.18	5.19	
Value Added	3.83	4 89	6 39	3.83	6.39	7.51	6 20	N/A	N/A	N/A	N/A	4.10	
Avenue Energy Opportunities Fund	3.99	10.41	6 80	3.99	6.80	10.51	10.12	N/A	N/A	N/A	N/A	4.66	02/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.71	
Value Added	1.59	6 95	4 23	1.59	4.23	7.46	1 97	N/A	N/A	N/A	N/A	-1.05	
Avenue Energy Opportunities Fund II	7.30	17.42	10.60	7.30	10.60	12.32	N/A	N/A	N/A	N/A	N/A	11.66	09/01/2017
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	3.66	
Value Added	4.90	13 96	8.03	4.90	8.03	9.27	N/A	N/A	N/A	N/A	N/A	8.00	

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Avenue Europe SS III	2.73	5.76	6 52	2.73	6.52	9.92	N/A	N/A	N/A	N/A	N/A	8 39	01/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	9.75	
Value Added	0.33	2 30	3 95	0.33	3.95	6.87	N/A	N/A	N/A	N/A	N/A	-1 36	
Real Asset High Yield Composite	1.76	3 31	4.03	1.76	4.03	5.32	6 56	N/A	N/A	N/A	N/A	6.07	06/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 24	
Value Added	-0.64	-0.15	1.46	-0.64	1.46	2.27	-1 59	N/A	N/A	N/A	N/A	0 83	
Mariner/Galton RMBS	1.08	1.68	1.16	1.08	1.16	1.59	4 25	5.74	N/A	N/A	N/A	7.66	05/01/2010
Blended Benchmark (Barclays US MBS)	-0.12	0.12	-1.07	-0.12	-1.07	-0.92	0 98	2 53	N/A	N/A	N/A	4 52	
Value Added	1.20	1 56	2 23	1.20	2.23	2.51	3 27	3 21	N/A	N/A	N/A	3.14	
Galton Onshore Mortgage Recovery Fund III, LP	-0.32	1.14	2.62	-0.32	2.62	3.75	6 55	N/A	N/A	N/A	N/A	2.75	11/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.10	
Value Added	-2.72	-2 32	0.05	-2.72	0.05	0.70	-1.60	N/A	N/A	N/A	N/A	-2 35	
Galton Onshore Mortgage Recovery Fund IV, L.P.	-0.13	-1.71	-7.04	-0.13	-7.04	N/A	N/A	N/A	N/A	N/A	N/A	-10 90	11/01/2017
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	2.62	
Value Added	-2.53	-5.17	-9.61	-2.53	-9.61	N/A	N/A	N/A	N/A	N/A	N/A	-13 52	
Mariner International Infrastructure	4.50	5.60	7.46	4.50	7.46	6.84	8.72	N/A	N/A	N/A	N/A	4.44	12/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.09	
Value Added	2.10	2.14	4 89	2.10	4.89	3.79	0 57	N/A	N/A	N/A	N/A	-0.65	
P MCO BRAVO Fund III Onshore Feeder, L.P.	2.28	8.71	11 51	2.28	11.51	N/A	N/A	N/A	N/A	N/A	N/A	21 93	12/01/2017
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	2 88	
Value Added	-0.12	5 25	8 94	-0.12	8.94	N/A	N/A	N/A	N/A	N/A	N/A	19.05	
The Varde Scratch and Dent Fund, LP	1.98	3 28	4 59	1.98	4.59	7.04	7.07	N/A	N/A	N/A	N/A	8.05	12/01/2014
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 23	
Value Added	-0.42	-0.18	2.02	-0.42	2.02	3.99	-1.08	N/A	N/A	N/A	N/A	2 82	
The Varde Scratch and Dent Fund Feed I-A	2.31	4.18	6.13	2.31	6.13	7.70	N/A	N/A	N/A	N/A	N/A	N/A	08/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6 80	
Value Added	-0.09	0.72	3 56	-0.09	3.56	4.65	N/A	N/A	N/A	N/A	N/A	N/A	
Latitude Management Real Estate Capital IV	2.15	3.60	4.63	2.15	4.63	3.85	N/A	N/A	N/A	N/A	N/A	2 29	05/01/2017
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	4 30	
Value Added	-0.25	0.14	2.06	-0.25	2.06	0.80	N/A	N/A	N/A	N/A	N/A	-2.01	
Senior Loans High Yield Composite	1.85	2 80	5 27	1.85	5.27	7.34	9.17	N/A	N/A	N/A	N/A	8 34	06/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 24	
Value Added	-0.55	-0.66	2.70	-0.55	2.70	4.29	1.02	N/A	N/A	N/A	N/A	3.10	
Cerberus Levered Loan Fund I	2.25	3 38	4 82	2.25	4.82	6.63	5.47	4.15	N/A	N/A	N/A	6.02	01/01/2012
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6 94	
Value Added	-0.15	-0.08	2 25	-0.15	2.25	3.58	-2.68	-1 39	N/A	N/A	N/A	-0 92	
Cerberus Levered Loan Fund II	1.37	2 20	3.01	1.37	3.01	2.40	2 91	6 55	N/A	N/A	N/A	7.19	01/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.47	
Value Added	-1.03	-1 26	0.44	-1.03	0.44	-0.65	-5 24	1.01	N/A	N/A	N/A	1.72	
Cerberus PSERS Levered Loan Opportunities Fund	1.04	4.06	7 83	1.04	7.83	10.43	26.73	N/A	N/A	N/A	N/A	26.73	10/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	8.15	
Value Added	-1.36	0.60	5 26	-1.36	5.26	7.38	18 58	N/A	N/A	N/A	N/A	18 58	
LBC Credit Partners II	0.62	5 81	16 88	0.62	16.88	20.07	18 82	19.60	N/A	N/A	N/A	13.19	01/01/2009
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	11 96	
Value Added	-1.78	2 35	14 31	-1.78	14.31	17.02	10.67	14.06	N/A	N/A	N/A	1 23	
LBC Credit Partners III	2.71	0.76	3 82	2.71	3.82	3.85	7.13	9.63	N/A	N/A	N/A	11 56	04/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5.18	
Value Added	0.31	-2.70	1 25	0.31	1.25	0.80	-1.02	4.09	N/A	N/A	N/A	6 38	

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LBC-P Credit Fund LP	3.07	5.04	7 91	3.07	7.91	11.62	N/A	N/A	N/A	N/A	N/A	17 34	10/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 92	
Value Added	0.67	1 58	5 34	0.67	5.34	8.57	N/A	N/A	N/A	N/A	N/A	11.42	
Summit Partners Credit Fund II LP	1.86	4.05	4 83	1.86	4.83	8.17	10.47	N/A	N/A	N/A	N/A	6 81	11/01/2014
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	4 92	
Value Added	-0.54	0 59	2 26	-0.54	2.26	5.12	2 32	N/A	N/A	N/A	N/A	1 89	
Oaktree Loan Fund 2X, LP	0.33	0.40	2.03	0.33	2.03	1.27	-0.78	-3.17	3.60	N/A	N/A	2.74	01/01/2008
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	7.70	
Value Added	-2.07	-3.06	-0 54	-2.07	-0.54	-1.78	-8 93	-8.71	-5.86	N/A	N/A	-4 96	
Bain Capital Credit Managed Account (PSERS), L.P.	1.75	2 95	4 82	1.75	4.82	7.39	7 98	5.62	N/A	N/A	N/A	7.73	07/01/2009
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	9.45	
Value Added	-0.65	-0 51	2 25	-0.65	2.25	4.34	-0.17	0.08	N/A	N/A	N/A	-1.72	
Park Square Credit Opportunities	0.00	-0 98	0 99	0.00	0.99	1.29	N/A	N/A	N/A	N/A	N/A	9 35	11/01/2015
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	7 39	
Value Added	-2.40	-4.44	-1 58	-2.40	-1.58	-1.76	N/A	N/A	N/A	N/A	N/A	1 96	
Hayfin Special Opportunities Credit LP	5.77	3.43	6.74	5.77	6.74	10.62	11.49	5 88	N/A	N/A	N/A	6 92	03/01/2013
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	5 29	
Value Added	3.37	-0.03	4.17	3.37	4.17	7.57	3 34	0 34	N/A	N/A	N/A	1.63	
Hayfin SOF II USD Co-Invest	1.20	1 81	3 97	1.20	3.97	6.18	N/A	N/A	N/A	N/A	N/A	N/A	08/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6 80	
Value Added	-1.20	-1.65	1.40	-1.20	1.40	3.13	N/A	N/A	N/A	N/A	N/A	N/A	
Hayfin SOF II USD LP	1.73	3 22	4 86	1.73	4.86	5.75	N/A	N/A	N/A	N/A	N/A	N/A	09/01/2016
Blmbg. Barc. U.S. Corp: High Yield	2.40	3.46	2 57	2.40	2.57	3.05	8.15	5 54	9.46	7.74	6.92	6.02	
Value Added	-0.67	-0 24	2 29	-0.67	2.29	2.70	N/A	N/A	N/A	N/A	N/A	N/A	
Inflation Protected (levered)	-2.77	-1.13	-0.73	-2.77	-0.73	4.11	6.02	N/A	N/A	N/A	N/A	5.09	10/01/2014
Inflation Protected (unlevered)	-0.74	0.11	0 31	-0.74	0.31	2.71	3.44	N/A	N/A	N/A	N/A	4.03	10/01/2014
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	-0.84	-0 52	-0.44	-0.84	-0.44	2.06	3 93	2 50	3.89	4.32	5.50	2.72	
Value Added	0.10	0.63	0.75	0.10	0.75	0.65	-0.49	N/A	N/A	N/A	N/A	1 31	
TIPS Composite (levered)	-2.77	-1.13	-0.73	-2.77	-0.73	4.11	6.02	5.42	8.17	N/A	N/A	7.00	04/01/2004
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	-0.84	-0 52	-0.44	-0.84	-0.44	2.06	3 93	2 50	3.89	4.32	5.50	3 99	
Value Added	-1.93	-0.61	-0 29	-1.93	-0.29	2.05	2.09	2 92	4.28	N/A	N/A	3.01	
Blended Policy (Net Levered TIPS)	-2.27	-2 20	-2 56	-2.27	-2.56	2.00	6 50	3 94	6.76	N/A	N/A	N/A	
Value Added	-0.50	1.07	1 83	-0.50	1.83	2.11	-0.48	1.48	1.41	N/A	N/A	N/A	
TIPS Composite (unlevered)	-0.74	0.11	0 31	-0.74	0.31	2.71	3.44	4.68	8.03	N/A	N/A	6 95	04/01/2004
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	-0.84	-0 52	-0.44	-0.84	-0.44	2.06	3 93	2 50	3.89	4.32	5.50	3 99	
Value Added	0.10	0.63	0.75	0.10	0.75	0.65	-0.49	2.18	4.14	N/A	N/A	2 96	
Bridgewater TIPS (unlevered)	-0.51	0.69	1.63	-0.51	1.63	4.94	4.41	N/A	N/A	N/A	N/A	2.40	02/01/2015
BGI Custom IL Bond Index (unlevered)	-1.14	-0.04	0 26	-1.14	0.26	3.11	N/A	N/A	N/A	N/A	N/A	N/A	
Value Added	0.63	0.73	1.37	0.63	1.37	1.83	N/A	N/A	N/A	N/A	N/A	N/A	
Bridgewater TIPS (levered)	-3.21	-1.00	0 80	-3.21	0.80	7.40	7.74	7.71	11.71	N/A	N/A	9 89	07/01/2004
BGI Custom IL Bond Index (levered)	-2.13	-0.05	0 52	-2.13	0.52	6.22	7 54	6 95	N/A	N/A	N/A	N/A	
Value Added	-1.08	-0 95	0 28	-1.08	0.28	1.18	0 20	0.76	N/A	N/A	N/A	N/A	
Garda Inflation Opportunity Composite (levered)	-3.97	-3.40	-6.11	-3.97	-6.11	-2.91	5.12	N/A	N/A	N/A	N/A	1.47	08/01/2014
Blended Benchmark (Garda)	-3.52	-2.09	-7.51	-3.52	-7.51	-3.31	5.45	1.67	N/A	N/A	N/A	-0 98	
Value Added	-0.45	-1 31	1.40	-0.45	1.40	0.40	-0 33	N/A	N/A	N/A	N/A	2.45	
Garda Inflation Opportunity Composite (unlevered)	-1.21	-1.03	-1 91	-1.21	-1.91	-0.90	1.49	N/A	N/A	N/A	N/A	0 55	08/01/2014
Blmbg. Barc. Global Inflation-Linked: U.S. T PS	-0.82	-0.05	-0 84	-0.82	-0.84	0.41	2.04	1 37	3.32	3.93	5.20	0.75	
Value Added	-0.39	-0 98	-1.07	-0.39	-1.07	-1.31	-0 55	N/A	N/A	N/A	N/A	-0 20	

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Garda Inflation Opp. Fund Cl B (levered)	-6.48	-4 92	-10.07	-6.48	-10.07	-6.01	4.07	3 20	N/A	N/A	N/A	-2 35	03/01/2013
Blended Benchmark (Garda)	-3.52	-2.09	-7 51	-3.52	-7.51	-3.31	5.45	1.67	N/A	N/A	N/A	-3 94	
Value Added	-2.96	-2 83	-2 56	-2.96	-2.56	-2.70	-1 38	1 53	N/A	N/A	N/A	1 59	
Garda Inflation Opp. Fund Cl B (unlevered)	-1.32	-0 99	-2.14	-1.32	-2.14	-1.24	1 27	N/A	N/A	N/A	N/A	0.49	02/01/2015
Blmbg. Barc. Global Inflation-Linked: U.S. T PS	-0.82	-0.05	-0 84	-0.82	-0.84	0.41	2.04	1 37	3.32	3.93	5.20	0 59	
Value Added	-0.50	-0 94	-1 30	-0.50	-1.30	-1.65	-0.77	N/A	N/A	N/A	N/A	-0.10	
Garda Fixed Income Relative Value Opportunity Fund Ltd. (TIPS)	1.13	-0.42	2 36	1.13	2.36	3.50	5 53	N/A	N/A	N/A	N/A	4.46	08/01/2014
PSERS Total TIPS (levered)	-1.47	-0 52	-1 56	-1.47	-1.56	0.78	2.77	2.06	5.15	N/A	N/A	4 92	04/01/2004
PSERS Total TIPS (unlevered)	-0.92	-0 33	-0 97	-0.92	-0.97	0.49	2.61	1 96	3.93	N/A	N/A	4.07	04/01/2004
Blmbg. Barc. Global Inflation-Linked: U.S. T PS	-0.82	-0.05	-0 84	-0.82	-0.84	0.41	2.04	1 37	3.32	3.93	5.20	3.60	
Value Added	-0.10	-0 28	-0.13	-0.10	-0.13	0.08	0 57	0 59	0.61	N/A	N/A	0.47	
PSERS TIPS	-0.67	0.14	-0.64	-0.67	-0.64	1.17	2.71	2.02	5.13	N/A	N/A	4 90	04/01/2004
PSERS TIPS (unlevered)	-0.67	0.14	-0.64	-0.67	-0.64	1.17	2.71	2.02	3.96	N/A	N/A	4.10	04/01/2004
Blmbg. Barc. Global Inflation-Linked: U.S. T PS	-0.82	-0.05	-0 84	-0.82	-0.84	0.41	2.04	1 37	3.32	3.93	5.20	3.60	
Value Added	0.15	0.19	0 20	0.15	0.20	0.76	0.67	0.65	0.64	N/A	N/A	0 50	
P MCO Multi-Sector Strategy	-0.42	-0 26	-0 89	-0.42	-0.89	-0.11	3.61	2.62	N/A	N/A	N/A	2.75	07/01/2012
Blended Policy (PIMCO Multi-Sector)	-0.49	-0 32	-1.05	-0.49	-1.05	-0.01	3.08	2.62	4.39	4.19	4.79	2.67	
Value Added	0.07	0.06	0.16	0.07	0.16	-0.10	0 53	0.00	N/A	N/A	N/A	0.08	
Real Assets (levered/hedged)	1.01	6.02	4 37	1.01	4.37	8.18	9.10	N/A	N/A	N/A	N/A	4 91	10/01/2014
Real Assets (unlevered/hedged)	0.78	4.61	3 39	0.78	3.39	6.28	6 95	N/A	N/A	N/A	N/A	3 35	10/01/2014
Blended Policy (Real Assets) (Hedged)	0.21	3.75	2.90	0.21	2.90	5.69	5 89	N/A	N/A	N/A	N/A	2 86	
Value Added	0.57	0 86	0.49	0.57	0.49	0.59	1.06	N/A	N/A	N/A	N/A	0.49	
Real Assets (levered/unhedged)	0.95	5.66	4.08	0.95	4.08	7.89	9.09	N/A	N/A	N/A	N/A	4 90	10/01/2014
Real Assets (unlevered/unhedged)	0.73	4 34	3.17	0.73	3.17	6.06	6 94	N/A	N/A	N/A	N/A	3 35	10/01/2014
Blended Policy (Real Assets) (Unhedged)	0.14	3 37	2.58	0.14	2.58	5.37	5 86	N/A	N/A	N/A	N/A	2 83	
Value Added	0.59	0 97	0 59	0.59	0.59	0.69	1.08	N/A	N/A	N/A	N/A	0 52	
Real Assets x Private (levered/hedged)	-0.04	6.75	0.04	-0.04	0.04	3.82	7 27	N/A	N/A	N/A	N/A	-4.08	10/01/2014
Real Assets x Private (unlevered/hedged)	-0.03	4 20	0.03	-0.03	0.03	2.35	4.08	N/A	N/A	N/A	N/A	-6 23	10/01/2014
Blended Policy (Real Assets x Private RE) (Hedged)	0.06	3.78	-0.13	0.06	-0.13	2.26	3 56	N/A	N/A	N/A	N/A	-5 39	
Value Added	-0.09	0.42	0.16	-0.09	0.16	0.09	0 52	N/A	N/A	N/A	N/A	-0 84	
Real Assets x Private (levered/unhedged)	-0.17	6.06	-0.48	-0.17	-0.48	3.29	7 25	N/A	N/A	N/A	N/A	-4.09	10/01/2014
Real Assets x Private (unlevered/unhedged)	-0.11	3.77	-0 31	-0.11	-0.31	2.02	4.07	N/A	N/A	N/A	N/A	-6 23	10/01/2014
Blended Policy (Real Assets x Private RE) (Unhedged)	-0.03	3 27	-0 56	-0.03	-0.56	1.84	3 51	N/A	N/A	N/A	N/A	-5.43	
Value Added	-0.08	0 50	0 25	-0.08	0.25	0.18	0 56	N/A	N/A	N/A	N/A	-0 80	
Total Infrastructure Composite (levered/hedged)	4.17	18.09	6.78	4.17	6.78	7.35	N/A	N/A	N/A	N/A	N/A	14 39	11/01/2015
Total Infrastructure Composite (unlevered/hedged)	3.60	15 38	5 89	3.60	5.89	6.37	N/A	N/A	N/A	N/A	N/A	8 52	11/01/2015
Blended Policy (Infrastructure Hedged)	4.27	15 55	5.54	4.27	5.54	6.11	9.42	9.77	N/A	N/A	N/A	8.16	
Value Added	-0.67	-0.17	0 35	-0.67	0.35	0.26	N/A	N/A	N/A	N/A	N/A	0 36	
Insight Nevada - Infra (notional)	0.85	5 38	4 85	0.85	4.85	4.70	N/A	N/A	N/A	N/A	N/A	-0.41	12/01/2015
Currency Hedge Benchmark - Infra	0.85	5.43	4 92	0.85	4.92	4.70	N/A	N/A	N/A	N/A	N/A	-0 30	
Value Added	0.00	-0.05	-0.07	0.00	-0.07	0.00	N/A	N/A	N/A	N/A	N/A	-0.11	
Total Infrastructure Composite (levered/unhedged)	4.07	17 25	6.16	4.07	6.16	6.76	N/A	N/A	N/A	N/A	N/A	14.64	11/01/2015
Total Infrastructure Composite (unlevered/unhedged)	3.51	14.66	5 35	3.51	5.35	5.86	N/A	N/A	N/A	N/A	N/A	8.10	11/01/2015
Blended Policy (Infrastructure Unhedged)	4.15	14.64	4.75	4.15	4.75	5.34	9 38	7 84	N/A	N/A	N/A	8.01	
Value Added	-0.64	0.02	0.60	-0.64	0.60	0.52	N/A	N/A	N/A	N/A	N/A	0.09	
Private Infrastructure Composite	-1.13	5 57	10.40	-1.13	10.40	12.28	N/A	N/A	N/A	N/A	N/A	9 81	05/01/2017

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
PSERS Infrastructure Private	-1.13	5 57	10.40	-1.13	10.40	12.28	N/A	N/A	N/A	N/A	N/A	9 81	05/01/2017
Publicly-Traded Infrastructure Composite (levered)	-1.00	6.45	-3.49	-1.00	-3.49	0.10	N/A	N/A	N/A	N/A	N/A	13.73	11/01/2015
Publicly-Traded Infrastructure Composite (unlevered)	-0.50	3.13	-1.77	-0.50	-1.77	0.04	N/A	N/A	N/A	N/A	N/A	7.03	11/01/2015
FTSE Developed Core Infrast 50/50 Index (Net)	-0.28	3 57	-1 24	-0.28	-1.24	0.74	8.76	7.47	N/A	N/A	N/A	7 38	
Value Added	-0.22	-0.44	-0 53	-0.22	-0.53	-0.70	N/A	N/A	N/A	N/A	N/A	-0 35	
PSERS Infrastructure Index (levered)	-1.00	6.45	-3.49	-1.00	-3.49	0.10	N/A	N/A	N/A	N/A	N/A	13.73	11/01/2015
PSERS Infrastructure Index (unlevered)	-0.50	3.13	-1.77	-0.50	-1.77	0.04	N/A	N/A	N/A	N/A	N/A	7.03	11/01/2015
FTSE Developed Core Infrast 50/50 Index (Net)	-0.28	3 57	-1 24	-0.28	-1.24	0.74	8.76	7.47	N/A	N/A	N/A	7 38	
Value Added	-0.22	-0.44	-0 53	-0.22	-0.53	-0.70	N/A	N/A	N/A	N/A	N/A	-0 35	
MLP Composite	5.31	19 98	8 23	5.31	8.23	8.06	6 34	1 56	13.61	N/A	N/A	13.61	10/01/2008
S&P MLP Index	6.39	20 38	7.46	6.39	7.46	7.15	4 90	-1.73	9.97	9.12	N/A	9 97	
Value Added	-1.08	-0.40	0.77	-1.08	0.77	0.91	1.44	3 29	3.64	N/A	N/A	3.64	
PSERS MLP	5.37	20.16	8.48	5.37	8.48	8.28	6 31	N/A	N/A	N/A	N/A	-1.11	08/01/2015
MLP Internal Blended Benchmark	5.29	19 92	8.15	5.29	8.15	7.98	5.19	-1 57	10.06	9.18	N/A	-2 52	
Value Added	0.08	0 24	0 33	0.08	0.33	0.30	1.12	N/A	N/A	N/A	N/A	1.41	
External MLP Composite	5.29	19 92	8.15	5.29	8.15	7.98	N/A	N/A	N/A	N/A	N/A	3 82	06/01/2017
S&P MLP Index	6.39	20 38	7.46	6.39	7.46	7.15	4 90	-1.73	9.97	9.12	N/A	3.18	
Value Added	-1.10	-0.46	0.69	-1.10	0.69	0.83	N/A	N/A	N/A	N/A	N/A	0.64	
Atlantic Trust	5.62	21.05	9 58	5.62	9.58	9.39	6.69	1.60	N/A	N/A	N/A	5 87	09/01/2012
S&P MLP Index	6.39	20 38	7.46	6.39	7.46	7.15	4 90	-1.73	9.97	9.12	N/A	1.67	
Value Added	-0.77	0.67	2.12	-0.77	2.12	2.24	1.79	3 33	N/A	N/A	N/A	4 20	
PSERS Harvest Funds MLP	6.12	20.66	9 33	6.12	9.33	8.99	6.11	1 83	13.73	N/A	N/A	13.73	10/01/2008
S&P MLP Index	6.39	20 38	7.46	6.39	7.46	7.15	4 90	-1.73	9.97	9.12	N/A	9 97	
Value Added	-0.27	0 28	1 87	-0.27	1.87	1.84	1 21	3 56	3.76	N/A	N/A	3.76	
Salient	3.91	17 90	5 32	3.91	5.32	5.39	6.44	0 93	N/A	N/A	N/A	5.40	08/01/2012
S&P MLP Index	6.39	20 38	7.46	6.39	7.46	7.15	4 90	-1.73	9.97	9.12	N/A	1 92	
Value Added	-2.48	-2.48	-2.14	-2.48	-2.14	-1.76	1 54	2.66	N/A	N/A	N/A	3.48	
Commodities Composite (levered)	-7.87	-12.09	-11.68	-7.87	-11.68	-4.40	5 54	-5.75	-4.22	N/A	N/A	-2.44	11/01/2006
Commodities Composite (unlevered)	-3.29	-5 23	-5.01	-3.29	-5.01	-1.50	2 86	-3 52	-2.83	N/A	N/A	-1 26	11/01/2006
Blended Policy (Commodities)	-3.14	-4 92	-4.82	-3.14	-4.82	-1.34	0.72	-5.43	-5.17	N/A	N/A	-3.77	
Value Added	-0.15	-0 31	-0.19	-0.15	-0.19	-0.16	2.14	1 91	2.34	N/A	N/A	2 51	
PSERS Commodity Beta + PCAF Composite	-2.23	-2.14	-2.03	-2.23	-2.03	2.51	3 33	N/A	N/A	N/A	N/A	-6 98	05/01/2014
Bloomberg Commodity Index Total Return	-2.02	-1.63	-2.03	-2.02	-2.03	2.59	-0.11	-7.18	-6.24	-1.07	1.55	-9.76	
Value Added	-0.21	-0 51	0.00	-0.21	0.00	-0.08	3.44	N/A	N/A	N/A	N/A	2.78	
PSERS Commodity Beta (levered)	-8.72	-9.08	-10 57	-8.72	-10.57	-0.92	1.67	N/A	N/A	N/A	N/A	-9.76	05/01/2014
PSERS Commodity Beta (unlevered)	-2.91	-3.03	-3.46	-2.91	-3.46	0.61	0 96	N/A	N/A	N/A	N/A	-8.47	05/01/2014
Bloomberg Commodity Index Total Return	-2.02	-1.63	-2.03	-2.02	-2.03	2.59	-0.11	-7.18	-6.24	-1.07	1.55	-9.76	
Value Added	-0.89	-1.40	-1.43	-0.89	-1.43	-1.98	1.07	N/A	N/A	N/A	N/A	1 29	
P MCO Commodity Alpha Fund	3.95	5 31	8 81	3.95	8.81	11.48	17 30	N/A	N/A	N/A	N/A	13.63	03/01/2015
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1.10	
Value Added	3.36	4.13	7.15	3.36	7.15	9.44	16.04	N/A	N/A	N/A	N/A	12 53	
Gresham	-0.40	1 55	1.72	-0.40	1.72	8.27	2 80	-5 34	-3.90	N/A	N/A	-3 56	10/01/2007
Bloomberg Commodity Index Total Return	-2.02	-1.63	-2.03	-2.02	-2.03	2.59	-0.11	-7.18	-6.24	-1.07	1.55	-6.01	
Value Added	1.62	3.18	3.75	1.62	3.75	5.68	2 91	1 84	2.34	N/A	N/A	2.45	
Wellington Management Company	-1.23	0.16	-0.42	-1.23	-0.42	5.81	7.44	-2.72	-1.27	N/A	N/A	-0.63	01/01/2007
Blended Benchmark (Wellington)	-0.23	4 27	2.70	-0.23	2.70	9.55	9 29	-2.04	-0.19	N/A	N/A	0.65	
Value Added	-1.00	-4.11	-3.12	-1.00	-3.12	-3.74	-1 85	-0.68	-1.08	N/A	N/A	-1 28	

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As of September 30, 2018

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PSERS Gold Fund (unlevered)	-5.48	-11.05	-10 52	-5.48	-10.52	-9.11	0.68	-2.73	N/A	N/A	N/A	-4.71	06/01/2012
Bloomberg Gold Subindex Total Return	-5.00	-10 22	-9 36	-5.00	-9.36	-7.66	1 53	-2.68	2.41	7.00	6.65	-4.76	
Value Added	-0.48	-0 83	-1.16	-0.48	-1.16	-1.45	-0 85	-0.05	N/A	N/A	N/A	0.05	
PTRES Composite (levered/hedged)	-0.24	13.60	2 57	-0.24	2.57	8.56	9 24	8.13	7.44	9.11	9.95	9 22	07/01/1998
PTRES Composite (unlevered/hedged)	-0.15	8.67	1 87	-0.15	1.87	5.31	6.45	6.47	6.61	8.55	9.53	8 80	07/01/1998
Blended Policy (PTRES) (Hedged)	0.30	7 56	2.03	0.30	2.03	5.66	6 57	5 53	6.20	7.82	8.93	8.14	
Value Added	-0.45	1.11	-0.16	-0.45	-0.16	-0.35	-0.12	0 94	0.41	0.73	0.60	0.66	
Insight Sierra - REIT (notional)	1.29	5.61	4.05	1.29	4.05	3.93	N/A	N/A	N/A	N/A	N/A	0.05	12/01/2015
Currency Hedge Benchmark - REIT	1.30	5.66	4.12	1.30	4.12	4.02	N/A	N/A	N/A	N/A	N/A	0.16	
Value Added	-0.01	-0.05	-0.07	-0.01	-0.07	-0.09	N/A	N/A	N/A	N/A	N/A	-0.11	
PTRES Composite (levered/unhedged)	-0.85	10 55	0.71	-0.85	0.71	6.73	9.09	8.04	7.40	9.08	9.93	9 20	07/01/1998
PTRES Composite (unlevered/unhedged)	-0.56	6.73	0.60	-0.56	0.60	4.09	6 35	6.40	6.58	8.52	9.51	8.78	07/01/1998
Blended Policy (PTRES) (Unhedged)	-0.30	4 81	0.06	-0.30	0.06	3.66	6.19	5 30	6.08	7.74	8.87	8.08	
Value Added	-0.26	1 92	0 54	-0.26	0.54	0.43	0.16	1.10	0.50	0.78	0.64	0.70	
PSERS REIT Index (levered)	-0.94	8 88	-0.79	-0.94	-0.79	7.19	N/A	N/A	N/A	N/A	N/A	8.19	11/01/2015
PSERS REIT Index (unlevered)	-0.49	4.42	-0.41	-0.49	-0.41	3.08	N/A	N/A	N/A	N/A	N/A	4.18	11/01/2015
FTSE EPRA/NAREIT Developed Index (Net)	-0.30	4 81	0.06	-0.30	0.06	3.66	6.19	5.43	6.04	N/A	N/A	4 37	
Value Added	-0.19	-0 39	-0.47	-0.19	-0.47	-0.58	N/A	N/A	N/A	N/A	N/A	-0.19	
Security Capital Preferred Growth	-0.73	12.69	2.65	-0.73	2.65	5.59	8.18	7 50	8.47	N/A	N/A	7 39	07/01/2008
Wilshire US Real Estate Securities Index	0.73	10 55	2 35	0.73	2.35	4.11	7 52	9 58	7.51	9.50	10.18	7.79	
Value Added	-1.46	2.14	0 30	-1.46	0.30	1.48	0.66	-2.08	0.96	N/A	N/A	-0.40	
Risk Parity Composite (vol adjusted)	0.34	1 54	-0 94	0.34	-0.94	3.40	7 37	5 27	N/A	N/A	N/A	3.64	10/01/2012
Blended Policy (Risk Parity)	0.07	-0.19	-1.89	0.07	-1.89	2.73	7 89	5 55	8.19	8.66	9.07	4.05	
Value Added	0.27	1.73	0 95	0.27	0.95	0.67	-0 52	-0 28	N/A	N/A	N/A	-0.41	
PSERS Risk Parity Composite (vol adjusted to 12%)	-0.47	0 25	-1.64	-0.47	-1.64	2.71	8 29	5 98	N/A	N/A	N/A	3.78	02/01/2013
Bridgewater All Weather @15% (vol adjusted)	-0.41	0 81	-0 88	-0.41	-0.88	4.06	7.62	5.09	N/A	N/A	N/A	3 54	10/01/2012
DE Shaw Orienteer HV (vol adjusted)	3.61	5.04	0.48	3.61	0.48	4.51	N/A	N/A	N/A	N/A	N/A	8.63	02/01/2016
BlackRock Market Advantage II (vol adjusted)	0.85	2.67	1 23	0.85	1.23	6.92	9 34	N/A	N/A	N/A	N/A	5.19	04/01/2015
Bridgewater Optimal (vol adjusted)	0.14	2 83	-1 90	0.14	-1.90	0.56	N/A	N/A	N/A	N/A	N/A	2.42	11/01/2015
Total Absolute Return	0.93	1 31	3.45	0.93	3.45	4.88	3 83	4.01	5.98	N/A	N/A	5 20	10/01/2005
Blended Policy (3-month Libor + 3.5%)	1.46	2 93	4.32	1.46	4.32	5.61	4 80	4 94	6.35	6.90	7.17	6.73	
Value Added	-0.53	-1.62	-0 87	-0.53	-0.87	-0.73	-0 97	-0 93	-0.37	N/A	N/A	-1 53	
Aeolus Property Catastrophe Keystone PF Fund, LP	5.32	4 50	5.03	5.32	5.03	-0.87	-0.75	6 30	N/A	N/A	N/A	9 50	06/01/2012
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 59	
Value Added	4.79	3.47	3 59	4.79	3.59	-2.65	-1.79	5.61	N/A	N/A	N/A	8 91	
Apollo Aviation/SASOF III LP	6.96	24 38	18.62	6.96	18.62	22.90	12 55	N/A	N/A	N/A	N/A	0 53	02/01/2015
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 88	
Value Added	6.43	23 35	17.18	6.43	17.18	21.12	11 51	N/A	N/A	N/A	N/A	-0 35	
Apollo Aviation/SASOF IV LP	2.04	6 96	N/A	2.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	6 96	04/01/2018
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	1.03	
Value Added	1.51	5 93	N/A	1.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5 93	
Bridgewater Pure Alpha Fund II, Ltd.	-3.44	-2.09	3.08	-3.44	3.08	6.81	2 89	4 55	12.59	N/A	N/A	11 21	01/01/2006
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 53	
Value Added	-4.03	-3 27	1.42	-4.03	1.42	4.77	1.63	3.69	11.89	N/A	N/A	9.68	
Brigade Leveraged Capital Structures Offshore Fund, Ltd.	5.04	7.06	9.78	5.04	9.78	9.79	10 55	5.75	7.18	N/A	N/A	6.13	10/01/2007
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0.78	
Value Added	4.51	6.03	8 34	4.51	8.34	8.01	9 51	5.06	6.66	N/A	N/A	5 35	

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Capital Structure Investments Offshore Fund, Ltd.	-0.63	-11.05	-8.66	-0.63	-8.66	-5.51	2 90	2.14	N/A	N/A	N/A	1.70	03/01/2009
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0.48	
Value Added	-1.16	-12.08	-10.10	-1.16	-10.10	-7.29	1 86	1.45	N/A	N/A	N/A	1 22	
Capula Global Relative Value Fund Limited	1.61	2.42	4 22	1.61	4.22	4.54	6 27	7.01	N/A	N/A	N/A	6 51	04/01/2011
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 53	
Value Added	1.08	1 39	2.78	1.08	2.78	2.76	5 23	6 32	N/A	N/A	N/A	5 98	
Capula Tail Risk Fund Limited	-0.70	-2.73	-2 28	-0.70	-2.28	-3.47	-4 35	-2 55	N/A	N/A	N/A	-2.02	07/01/2011
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 54	
Value Added	-1.23	-3.76	-3.72	-1.23	-3.72	-5.25	-5 39	-3 24	N/A	N/A	N/A	-2 56	
Caspian Keystone Focused Fund, Ltd.	0.00	0.00	-0.66	0.00	-0.66	1.46	N/A	N/A	N/A	N/A	N/A	7 56	06/01/2016
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	1 23	
Value Added	-0.53	-1.03	-2.10	-0.53	-2.10	-0.32	N/A	N/A	N/A	N/A	N/A	6 33	
Caspian Select Credit International, Ltd.	1.97	2.60	3 24	1.97	3.24	4.74	4 22	2.71	N/A	N/A	N/A	3 51	04/01/2011
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 53	
Value Added	1.44	1 57	1 80	1.44	1.80	2.96	3.18	2.02	N/A	N/A	N/A	2 98	
Garda Fixed Income Relative Value Opportunity Fund Ltd.	1.13	-0.42	2 36	1.13	2.36	3.50	5 53	5.14	N/A	N/A	N/A	5.41	01/01/2012
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 57	
Value Added	0.60	-1.45	0 92	0.60	0.92	1.72	4.49	4.45	N/A	N/A	N/A	4 84	
HS Group Sponsor Fund II, Ltd.	-3.11	N/A	N/A	-3.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-4 54	06/01/2018
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	0.78	
Value Added	-3.70	N/A	N/A	-3.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-5 32	
Independence Reinsurance Partners Composite	2.86	5 97	7.79	2.86	7.79	1.73	N/A	N/A	N/A	N/A	N/A	-0 56	02/01/2016
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	1.13	
Value Added	2.33	4 94	6 35	2.33	6.35	-0.05	N/A	N/A	N/A	N/A	N/A	-1.69	
DaVinci Reinsurance Ltd.	0.37	5 25	7 38	0.37	7.38	6.18	N/A	N/A	N/A	N/A	N/A	-0 86	02/01/2016
RenaissanceRe Medici Fund Ltd.	1.38	3 50	5 22	1.38	5.22	8.81	N/A	N/A	N/A	N/A	N/A	4.61	02/01/2016
Upsilon Diversified Fund Ltd.	5.33	8.43	10.14	5.33	10.14	-38.20	N/A	N/A	N/A	N/A	N/A	-35 90	01/01/2017
Nephila/Nimbus Weather Fund	4.22	6.09	4.07	4.22	4.07	N/A	N/A	N/A	N/A	N/A	N/A	4.07	01/01/2018
3-Month TBills+ 5.00%	1.73	3.43	5.07	1.73	5.07	6.65	5 84	5 51	5.33	6.30	6.93	5.07	
Value Added	2.49	2.66	-1.00	2.49	-1.00	N/A	N/A	N/A	N/A	N/A	N/A	-1.00	
Nephila/Palmetto Fund Ltd.	1.16	2.12	1 22	1.16	1.22	-0.50	-0 38	2 37	N/A	N/A	N/A	4.16	07/01/2011
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 54	
Value Added	0.63	1.09	-0 22	0.63	-0.22	-2.28	-1.42	1.68	N/A	N/A	N/A	3.62	
Oceanwood Investments SPC Co-Invest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10/01/2018
3-Month Libor+ 6.50%	2.19	4.41	6 58	2.19	6.58	8.67	7 84	7.41	7.24	8.27	8.87	N/A	
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Oceanwood Opportunities Fund	2.10	4 56	1 92	2.10	1.92	4.89	5 82	N/A	N/A	N/A	N/A	5 31	09/01/2014
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0 81	
Value Added	1.57	3 53	0.48	1.57	0.48	3.11	4.78	N/A	N/A	N/A	N/A	4 50	
OWS Credit Opportunity Offshore Fund III, Ltd.	2.49	4 88	9.48	2.49	9.48	12.81	N/A	N/A	N/A	N/A	N/A	12.02	12/01/2015
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 31	
Value Added	1.90	3.70	7 82	1.90	7.82	10.77	N/A	N/A	N/A	N/A	N/A	10.71	
Perry Partners LP	-9.11	-9.13	-18 23	-9.11	-18.23	-13.96	-5.47	N/A	N/A	N/A	N/A	-5.73	12/01/2013
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0.71	
Value Added	-9.64	-10.16	-19.67	-9.64	-19.67	-15.74	-6 51	N/A	N/A	N/A	N/A	-6.44	
P MCO PARS/GCOF/MAV Composite	0.51	0 86	0 28	0.51	0.28	0.34	1.16	3.15	8.16	N/A	N/A	6.03	03/01/2008
ICE Libor (1 month)	0.53	1.03	1.44	0.53	1.44	1.78	1.04	0.69	0.52	1.51	2.10	0.64	

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Value Added	-0.02	-0.17	-1.16	-0.02	-1.16	-1.44	0.12	2.46	7.64	N/A	N/A	5 39	
P MCO Absolute Return Strategy V Offshore Fund, Ltd.	1.70	1 50	-1 30	1.70	-1.30	-0.81	1 81	5.40	N/A	N/A	N/A	5.04	10/01/2012
P MCO Global Credit Opportunity Offshore Fund, Ltd.	-1.34	-1.41	3.68	-1.34	3.68	2.95	3 98	6.19	N/A	N/A	N/A	7.47	10/01/2012
P MCO Multi-Asset Volatility Onshore Fund, LLC	1.50	3.06	-1 89	1.50	-1.89	-1.45	1.41	3 28	N/A	N/A	N/A	1.72	10/01/2012
Two Sigma Risk Premia Enhanced Fund, LP	2.54	4.74	5.68	2.54	5.68	8.27	N/A	N/A	N/A	N/A	N/A	N/A	04/01/2017
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1.78	
Value Added	1.95	3 56	4.02	1.95	4.02	6.23	N/A	N/A	N/A	N/A	N/A	N/A	
Venor Capital Offshore, Ltd.	2.73	7 23	8.65	2.73	8.65	15.24	N/A	N/A	N/A	N/A	N/A	8.66	09/01/2016
FTSE 1 Month T-Bill	0.48	0 90	1 25	0.48	1.25	1.51	0.76	0.46	0.26	1.17	1.73	1.03	
Value Added	2.25	6 33	7.40	2.25	7.40	13.73	N/A	N/A	N/A	N/A	N/A	7.63	
Unallocated Cash & Cash Equivalents	0.56	1.07	1.44	0.56	1.44	2.06	0 96	0.72	1.00	0.64	0.41	0 50	07/01/1998
ICE BofAML 3 Month U.S. T-Bill	0.49	0 95	1 30	0.49	1.30	1.59	0 84	0 52	0.34	1.30	1.93	1 98	
Value Added	0.07	0.12	0.14	0.07	0.14	0.47	0.12	0 20	0.66	-0.66	-1.52	-1.48	
PSERS Cash Management	0.56	1.09	1.49	0.56	1.49	2.11	0 94	0.63	0.34	0.18	0.04	2.42	07/01/1985
RE Conversions	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	09/01/2015
PSERS Derivatives Collateral	1.13	1 59	1.79	1.13	1.79	N/A	N/A	N/A	N/A	N/A	N/A	1.79	01/01/2018
PSERS Ultra Short Duration	0.57	1.09	1 50	0.57	1.50	1.81	1.06	0.72	N/A	N/A	N/A	0 59	01/01/2009
ICE BofAML US Treasury Bills 0-3M	0.49	0 93	1.27	0.49	1.27	1.54	0.78	0.48	0.30	1.23	1.84	0 29	
Value Added	0.08	0.16	0 23	0.08	0.23	0.27	0 28	0 24	N/A	N/A	N/A	0 30	
LIBOR Composite	0.71	1 28	1.77	0.71	1.77	2.12	1 81	1 39	1.48	N/A	N/A	1 93	01/01/2007
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 22	
Value Added	0.12	0.10	0.11	0.12	0.11	0.08	0 55	0 53	0.78	N/A	N/A	0.71	
PSERS LIBOR Plus	0.68	1 31	1.79	0.68	1.79	2.20	1.66	1 21	1.30	N/A	N/A	1.79	01/01/2007
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 22	
Value Added	0.09	0.13	0.13	0.09	0.13	0.16	0.40	0 35	0.60	N/A	N/A	0 57	
Capula L BOR Tail Risk	-0.70	-2.73	-2 28	-0.70	-2.28	-3.46	-3 59	N/A	N/A	N/A	N/A	-3 59	10/01/2015
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 26	
Value Added	-1.29	-3 91	-3 94	-1.29	-3.94	-5.50	-4 85	N/A	N/A	N/A	N/A	-4 85	
Radcliffe Ultra Short Duration	1.00	1.71	2 27	1.00	2.27	2.61	3 32	2.68	N/A	N/A	N/A	2.76	06/01/2012
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	0.74	
Value Added	0.41	0 53	0.61	0.41	0.61	0.57	2.06	1 82	N/A	N/A	N/A	2.02	
Penn Mutual Asset Management	0.92	1.67	2.16	0.92	2.16	2.75	N/A	N/A	N/A	N/A	N/A	2.75	06/01/2017
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	1 85	
Value Added	0.33	0.49	0 50	0.33	0.50	0.71	N/A	N/A	N/A	N/A	N/A	0 90	
PSERS Healthcare & HOP													
PSERS Healthcare - Premium Assist	0.62	1 22	1 59	0.62	1.59	1.93	1 25	0 87	1.12	2.04	2.72	2 84	01/01/1998
ICE BofAML 3 Month U.S. T-Bill	0.49	0 95	1 30	0.49	1.30	1.59	0 84	0 52	0.34	1.30	1.93	2.06	
Value Added	0.13	0 27	0 29	0.13	0.29	0.34	0.41	0 35	0.78	0.74	0.79	0.78	
PSERS Healthcare - HOP	0.57	1.12	1 53	0.57	1.53	1.86	1.07	0.73	0.62	1.78	N/A	1.64	02/01/2002
ICE BofAML 3 Month U.S. T-Bill	0.49	0 95	1 30	0.49	1.30	1.59	0 84	0 52	0.34	1.30	1.93	1 32	
Value Added	0.08	0.17	0 23	0.08	0.23	0.27	0 23	0 21	0.28	0.48	N/A	0 32	
Defined Contribution													
PSERS Defined Contribution	0.58	1.08	1 36	0.58	1.36	N/A	N/A	N/A	N/A	N/A	N/A	1 36	01/01/2018

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
E/M Total Program Composite	0.98	1 36	1 37	0.98	1.37	2.05	3.16	3 29	5.48	5.47	N/A	3 25	01/01/2000
E/M US Core Plus FI Composite	0.02	-0.19	-1 85	0.02	-1.85	-1.26	1 35	2 22	0.60	N/A	N/A	1 39	11/01/2004
Pugh Capital Management	0.02	-0.19	-1 84	0.02	-1.84	-1.26	1 35	2 31	4.32	N/A	N/A	4 54	07/01/2006
Blmbg. Barc. U.S. Aggregate	0.02	-0.14	-1.60	0.02	-1.60	-1.22	1 31	2.16	3.77	3.78	4.48	4.11	
Value Added	0.00	-0.05	-0 24	0.00	-0.24	-0.04	0.04	0.15	0.55	N/A	N/A	0.43	
E/M Short Duration Cash	1.14	1.62	1 90	1.14	1.90	2.55	3 87	N/A	N/A	N/A	N/A	3.67	10/01/2014
Radcliffe Ultra Short Duration	1.00	1.71	2 27	1.00	2.27	2.61	3 32	2.68	N/A	N/A	N/A	2.76	06/01/2012
ICE Libor (3 month)	0.59	1.18	1.66	0.59	1.66	2.04	1 26	0 86	0.70	1.66	2.23	0.74	
Value Added	0.41	0 53	0.61	0.41	0.61	0.57	2.06	1 82	N/A	N/A	N/A	2.02	
Radcliffe Specialty Finance Debt	1.25	1 54	1.62	1.25	1.62	2.50	4 31	N/A	N/A	N/A	N/A	4.12	10/01/2014
3-Month Libor + 0.60%	0.74	1.48	2.12	0.74	2.12	2.65	1 87	1.46	1.30	2.27	2.84	1.62	
Value Added	0.51	0.06	-0 50	0.51	-0.50	-0.15	2.44	N/A	N/A	N/A	N/A	2 50	

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As of September 30, 2018

Trailing Period Performance

	Performance (%)												
	1 Quarter	2 Quarters Ending Sep-2018	3 Quarters Ending Sep-2018	FYTD	YTD	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	Since Inception	Inception Date
Total Private Market Composites (hedged)	3.43	5 97	10.49	3.43	10.49	14.15	11 32	11.47	6.10	11.24	9.60	10.18	10/01/1992
Blended Policy (Private Market)	1.81	4.62	9 34	1.81	9.34	13.29	10.43	12.07	8.68	9.43	7.97	N/A	
Value Added	1.62	1 35	1.15	1.62	1.15	0.86	0 89	-0.60	-2.58	1.81	1.63	N/A	
Total Private Market Composites (unhedged)	3.42	5 98	10.49	3.42	10.49	14.12	11 30	11.46	6.10	11.24	9.59	10.18	10/01/1992
Blended Policy (Private Market)	1.81	4.62	9 34	1.81	9.34	13.29	10.43	12.07	8.68	9.43	7.97	N/A	
Value Added	1.61	1 36	1.15	1.61	1.15	0.83	0 87	-0.61	-2.58	1.81	1.62	N/A	
Total Alternative Investments (hedged)	4.20	6 26	11 36	4.20	11.36	14.90	11 51	10.64	7.86	12.84	10.51	10.40	07/01/1998
Burgiss All Private Markets ex Real Estate (1Q Lag)	2.70	5.46	10 50	2.70	10.50	14.80	11.06	12.61	9.11	9.04	6.31	6 27	
Value Added	1.50	0 80	0 86	1.50	0.86	0.10	0.45	-1 97	-1.25	3.80	4.20	4.13	
Total Alternative Investments (unhedged)	4.19	6 29	11 38	4.19	11.38	14.84	11.49	10.62	7.85	12.83	10.51	10 39	07/01/1998
Burgiss All Private Markets ex Real Estate (1Q Lag)	2.70	5.46	10 50	2.70	10.50	14.80	11.06	12.61	9.11	9.04	6.31	6 27	
Value Added	1.49	0 83	0 88	1.49	0.88	0.04	0.43	-1 99	-1.26	3.79	4.20	4.12	
Priv. Eq/ Venture Cap/ Priv. Debt/Co-Invest	4.19	6 29	11 38	4.19	11.38	14.85	11 51	10.64	N/A	N/A	N/A	10 92	04/01/2012
Insight Wilson - PE (notional)	6.33	4.09	3.15	6.33	3.15	0.20	1.45	N/A	N/A	N/A	N/A	1.45	10/01/2015
Currency Hedge Benchmark - PE (1Q Lag)	6.26	4.06	3.10	6.26	3.10	0.15	1 53	N/A	N/A	N/A	N/A	1 53	
Value Added	0.07	0.03	0.05	0.07	0.05	0.05	-0.08	N/A	N/A	N/A	N/A	-0.08	
Private Equity Co-Investment Composite	2.66	6 80	4 85	2.66	4.85	8.88	19 80	25 27	N/A	N/A	N/A	29.13	04/01/2012
PA Penn Investment Fund - PE Composite	5.08	14.72	13.15	5.08	13.15	28.25	N/A	N/A	N/A	N/A	N/A	23.41	12/01/2015
PA Penn Investment Fund - PE Internal	-16.11	-22.14	-36.08	-16.11	-36.08	-36.08	N/A	N/A	N/A	N/A	N/A	-12.18	12/01/2015
PA Penn Investment Fund - PE External	6.14	17.15	17.15	6.14	17.15	34.28	N/A	N/A	N/A	N/A	N/A	26 26	12/01/2015
Woodstream	29.97	52.45	52.45	29.97	52.45	60.56	N/A	N/A	N/A	N/A	N/A	43 34	12/01/2015
ERT	5.88	6.65	6.65	5.88	6.65	34.70	N/A	N/A	N/A	N/A	N/A	34.67	07/01/2016
Lasko	3.62	20.74	20.74	3.62	20.74	18.04	N/A	N/A	N/A	N/A	N/A	31 34	01/01/2017
Evans Network	-7.77	6 31	6 31	-7.77	6.31	32.02	N/A	N/A	N/A	N/A	N/A	21.43	05/01/2017
Redzone Robotics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-0.06	08/01/2018
Internally Managed PE Composite	2.31	5.76	3.76	2.31	3.76	6.63	19.00	24.77	N/A	N/A	N/A	28.73	04/01/2012
Private Eq/ Venture Cap/ Priv. Debt	4.31	6 27	11 86	4.31	11.86	15.29	11.16	10 27	7.69	12.71	10.49	10 32	07/01/1998
Private Debt Composite	1.98	0.69	7.04	1.98	7.04	12.79	4 85	6 23	6.95	9.27	N/A	7 59	04/01/2001
Private Equity/ Venture Capital Composite	4.72	7 29	12.72	4.72	12.72	15.74	12 29	10 99	7.54	13.32	10.48	10 31	07/01/1998
Private Equity	4.61	6.64	12.14	4.61	12.14	14.85	12.61	10 93	7.66	13.89	N/A	11.19	04/01/2001
Private Equity x Tobacco Composite	4.61	6.64	12.14	4.61	12.14	14.85	12.68	11.03	7.71	13.92	N/A	11 22	04/01/2001
Venture Capital	5.28	10.73	15.78	5.28	15.78	20.54	10.46	11.71	6.54	8.83	N/A	4.62	04/01/2001
Total Real Estate (levered/hedged)	2.09	6.02	8.65	2.09	8.65	12.70	10 80	12 38	3.26	8.25	8.54	8 27	04/01/1981
Total Real Estate (unlevered/hedged)	2.00	5.77	8 38	2.00	8.38	12.20	10 31	12.07	3.12	8.16	8.47	8 23	04/01/1981
Blended Policy (Total Real Estate) (Hedged)	0.43	3 91	6.87	0.43	6.87	10.36	8 94	10.76	6.44	9.13	9.29	8 57	
Value Added	1.57	1 86	1 51	1.57	1.51	1.84	1 37	1 31	-3.32	-0.97	-0.82	-0 34	
Total Real Estate (levered/unhedged)	2.03	5.79	8.48	2.03	8.48	12.51	10.78	12 36	3.26	8.25	8.54	8 27	04/01/1981
Total Real Estate (unlevered/unhedged)	2.00	5.77	8 38	2.00	8.38	12.20	10 31	12.07	3.12	8.16	8.47	8 23	04/01/1981
Blended Policy (Total Real Estate) (Unhedged)	0.32	3 51	6.54	0.32	6.54	10.03	8 89	10.74	6.42	9.12	9.29	8 57	
Value Added	1.68	2 26	1 84	1.68	1.84	2.17	1.42	1 33	-3.30	-0.96	-0.82	-0 34	
Private Real Estate Composite	2.29	5.45	9.11	2.29	9.11	12.99	10 99	12 59	2.18	8.69	8.65	9.46	07/01/1996
Blended Policy (Private Real Estate)	0.46	3 35	7 59	0.46	7.59	11.04	9.43	11.07	6.58	9.23	9.37	9.79	
Value Added	1.83	2.10	1 52	1.83	1.52	1.95	1 56	1 52	-4.40	-0.54	-0.72	-0 33	
Private Real Estate x Internal	2.22	5 37	8 97	2.22	8.97	12.87	10 91	12 50	2.13	7.99	8.16	9.01	07/01/1996
Internally Managed Private Real Estate	5.08	8 50	14.67	5.08	14.67	18.25	15.01	19 39	N/A	N/A	N/A	22.79	07/01/2013

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
PSERS Total Fund	12.19	10.81	-1.80	8.75	8.66	11.35	4.31	14.22	12.06	-29.70
Blended Policy (Total Plan)	11.98	10.29	-1.59	8.81	7.70	10.19	3.70	11.98	14.34	-25.96
Value Added	0.21	0.52	-0.21	-0.06	0.96	1.16	0.61	2.24	-2.28	-3.74
Total Public Markets Composite	11.40	11.18	-4.70	6.58	6.64	10.98	1.01	15.33	28.30	-34.67
Blended Policy (Public Market) (Hedged)	11.27	11.05	-5.66	5.19	4.76	9.81	-0.36	11.76	24.17	-32.01
Value Added	0.13	0.13	0.96	1.39	1.88	1.17	1.37	3.57	4.13	-2.66
Blended Policy (Public Market) (Unhedged)	13.08	9.70	-6.28	4.16	4.69	9.81	-0.36	11.76	24.17	-32.01
Value Added	-1.68	1.48	1.58	2.42	1.95	1.17	1.37	3.57	4.13	-2.66
Total Public Markets Composite ex HY & Absolue Return	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Public Market x HY & Abs Return) (Hedged)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Public Equity Composite	22.26	9.23	0.92	8.15	24.43	17.07	-6.96	16.95	41.00	-42.75
Blended Policy (Public Equity) (Hedged)	22.74	8.89	-0.51	7.93	24.18	16.73	-7.83	14.34	37.59	-41.03
Value Added	-0.48	0.34	1.43	0.22	0.25	0.34	0.87	2.61	3.41	-1.72
Blended Policy (Public Equity) (Unhedged)	24.32	8.72	-1.88	4.14	23.89	16.73	-7.83	14.34	37.59	-41.03
Value Added	-2.06	0.51	2.80	4.01	0.54	0.34	0.87	2.61	3.41	-1.72
Total US Equity Composite	19.21	16.49	0.40	11.71	34.04	15.65	1.65	18.37	33.94	-41.49
Blended Policy (Tot US Eq)	21.28	12.66	0.64	12.51	33.39	16.42	0.80	16.52	28.22	-37.23
Value Added	-2.07	3.83	-0.24	-0.80	0.65	-0.77	0.85	1.85	5.72	-4.26
PSERS-S&P 500 Index Composite	20.69	13.90	1.43	13.66	32.85	16.09	2.03	16.03	28.52	-37.07
S&P 500 Index	21.83	11.96	1.38	13.69	32.39	16.00	2.11	15.06	26.46	-37.00
Value Added	-1.14	1.94	0.05	-0.03	0.46	0.09	-0.08	0.97	2.06	-0.07
Total US Small Cap Composite	15.00	24.56	-2.31	3.57	37.99	15.08	-1.14	26.20	38.03	-35.83
MSCI USA Small Cap Index	17.30	19.80	-3.65	7.55	38.26	18.22	-3.03	27.96	39.74	-35.88
Value Added	-2.30	4.76	1.34	-3.98	-0.27	-3.14	1.89	-1.76	-1.71	0.05
PSERS Small Cap Index Composite	15.00	24.56	-1.79	8.00	38.32	18.36	-0.14	27.43	35.33	-33.93
PSERS-S&P 400 Index Composite	16.49	21.34	-2.20	9.87	33.45	18.78	-1.60	27.42	41.12	-35.91
S&P MidCap 400	16.24	20.74	-2.18	9.77	33.50	17.88	-1.73	26.64	37.38	-36.23
Value Added	0.25	0.60	-0.02	0.10	-0.05	0.90	0.13	0.78	3.74	0.32
PSERS-S&P 600 Index Composite	13.53	28.05	-1.47	6.23	43.13	17.70	1.64	27.47	29.62	-30.67
S&P SmallCap 600	13.23	26.56	-1.97	5.76	41.31	16.33	1.02	26.31	25.57	-31.07
Value Added	0.30	1.49	0.50	0.47	1.82	1.37	0.62	1.16	4.05	0.40
Total Non-U.S. Equity Composite (hedged)	24.79	5.15	2.68	5.09	15.95	18.39	-13.34	16.00	45.88	-43.80
Blended Policy (Total Non-US Eq) (Hedged)	23.62	6.43	-0.50	3.97	16.36	17.03	-14.30	12.73	45.38	-44.31
Value Added	1.17	-1.28	3.18	1.12	-0.41	1.36	0.96	3.27	0.50	0.51
Total Non-U.S. Equity Composite (unhedged)	30.36	2.96	-1.98	-3.27	15.95	18.39	-13.34	16.00	45.88	-43.80
Blended Policy (Total Non-US Eq) (Unhedged)	28.21	4.67	-5.11	-3.99	15.82	17.03	-14.30	12.73	45.38	-44.31
Value Added	2.15	-1.71	3.13	0.72	0.13	1.36	0.96	3.27	0.50	0.51
Emerging Markets Equity Composite	35.73	-3.95	-8.21	1.48	-0.24	21.03	-17.81	17.04	71.83	-52.69

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Blended Policy (MSCI EM net)	37.58	11.19	-14.92	-2.19	-2.60	18.23	-18.42	18.87	78.48	-53.27
Value Added	-1.85	-15.14	6.71	3.67	2.36	2.80	0.61	-1.83	-6.65	0.58
MSCI Emerging Markets IMI (Net)	36.83	9.90	-13.86	-1.79	-2.20	18.69	-19.49	19.90	82.36	-53.78
Value Added	-1.10	-13.85	5.65	3.27	1.96	2.34	1.68	-2.86	-10.53	1.09
Wasatch EM Small Cap	35.73	-3.95	-10.36	2.13	1.87	28.06	-12.98	42.87	119.09	N/A
Blended Policy (Wasatch EM)	33.33	4.03	-9.81	1.49	1.01	22.60	-26.96	27.47	114.32	-58.10
Value Added	2.40	-7.98	-0.55	0.64	0.86	5.46	13.98	15.40	4.77	N/A
Total Non-U.S. Equity x Emerging Markets Composite (hedged)	24.31	5.60	3.70	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Non-US Equity x EM) (Hedged)	23.03	6.25	0.66	4.75	16.36	17.03	-14.30	12.73	45.38	-44.31
Value Added	1.28	-0.65	3.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Insight Everest - Int'l Eq (notional)	-6.57	4.02	7.13	10.98	-0.37	-1.46	0.00	1.39	1.84	3.15
Currency Hedge Benchmark - Int'l Eq	-6.46	4.18	7.24	11.05	-1.39	0.00	0.00	0.00	3.39	3.81
Value Added	-0.11	-0.16	-0.11	-0.07	1.02	-1.46	0.00	1.39	-1.55	-0.66
Total Non-U.S. Equity x Emerging Markets Composite (unhedged)	30.12	3.29	-1.46	-3.43	19.23	18.82	-12.39	14.77	42.06	-45.82
Blended Policy (Non-US Equity x EM) (Unhedged)	27.81	4.41	-4.60	-3.89	15.82	17.03	-14.30	12.73	45.38	-44.31
Value Added	2.31	-1.12	3.14	0.46	3.41	1.79	1.91	2.04	-3.32	-1.51
Non-US Large Cap Equity Composite	29.19	3.99	-2.76	-3.41	17.33	17.78	-11.96	12.69	40.38	-44.76
Blended Policy (MSCI World AC Word ex USA net)	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.33
Value Added	2.00	-0.51	2.90	0.46	2.04	0.95	1.75	1.54	-1.07	0.57
PSERS ACWI x US Index Fund	28.03	5.35	-5.24	-3.41	16.07	17.57	-13.06	11.85	42.86	-44.91
MSCI ACWI/EAFE Index Blend	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.53
Value Added	0.84	0.85	0.42	0.46	0.78	0.74	0.65	0.70	1.41	0.62
BlackRock EMAA	40.71	13.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Emerging Markets Index (Net)	37.28	11.19	-14.92	-2.19	-2.60	18.23	-18.42	18.88	78.51	-53.33
Value Added	3.43	2.18	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Active Non-US Large Cap Composite	30.80	2.28	0.72	-3.88	19.34	18.60	-8.26	15.23	37.57	-44.60
MSCI AC World ex USA Index (Net)	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.53
Value Added	3.61	-2.22	6.38	-0.01	4.05	1.77	5.45	4.08	-3.88	0.93
Baillie Gifford	35.09	5.65	-1.91	-2.19	17.46	21.25	-11.41	15.75	49.51	-46.12
MSCI AC World ex USA Index (Net)	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.53
Value Added	7.90	1.15	3.75	1.68	2.17	4.42	2.30	4.60	8.06	-0.59
Marathon Asset Mgmt	26.05	1.25	3.53	-5.35	25.79	18.82	-9.23	17.59	35.96	-40.50
Blended Benchmark (MSCI ACWI ex USA net)	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.53
Value Added	-1.14	-3.25	9.19	-1.48	10.50	1.99	4.48	6.44	-5.49	5.03
The Children's Investment Fund, LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI World Index (Net)	22.40	7.51	-0.87	4.94	26.68	15.83	-5.54	11.76	29.99	-40.71
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BlackRock Global Composite	31.84	-1.59	-0.93	-3.52	13.89	18.71	-4.14	21.12	35.38	-45.67
MSCI AC World ex USA Index (Net)	27.19	4.50	-5.66	-3.87	15.29	16.83	-13.71	11.15	41.45	-45.53

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
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Value Added	4.65	-6.09	4.73	0.35	-1.40	1.88	9.57	9.97	-6.07	-0.14
Non-US Small Cap Equity Composite	36.26	-0.91	9.41	-3.47	30.37	25.17	-15.55	29.62	52.97	-52.32
MSCI AC World ex USA Small Cap (Net)	31.65	3.91	2.60	-4.03	19.73	18.52	-18.50	25.21	62.91	-50.23
Value Added	4.61	-4.82	6.81	0.56	10.64	6.65	2.95	4.41	-9.94	-2.09
Acadian Asset Mgmt	37.99	8.76	3.08	-0.19	24.86	25.11	-16.94	26.02	59.84	-55.59
Blended Benchmark (MSCI AC World ex USA Small Cap net)	31.65	3.91	2.60	-4.03	19.73	18.52	-18.50	25.21	62.91	-48.38
Value Added	6.34	4.85	0.48	3.84	5.13	6.59	1.56	0.81	-3.07	-7.21
Wasatch Int'l Small Cap	33.33	-7.75	14.73	-7.31	28.25	33.41	-13.75	34.70	69.89	-52.34
Blended Benchmark (MSCI AC World ex USA Small Cap net)	31.65	3.91	2.60	-4.03	19.73	18.52	-18.50	25.21	62.91	-48.38
Value Added	1.68	-11.66	12.13	-3.28	8.52	14.89	4.75	9.49	6.98	-3.96
Oberweis Asset Mgmt	41.55	-4.84	16.17	-2.82	59.12	31.95	-14.60	31.03	62.42	N/A
MSCI AC World ex USA Small Cap (Net)	31.65	3.91	2.60	-4.03	19.73	18.52	-18.50	25.21	62.91	-50.23
Value Added	9.90	-8.75	13.57	1.21	39.39	13.43	3.90	5.82	-0.49	N/A
QS Investors	31.70	3.28	4.60	-0.18	26.34	21.71	-12.22	26.52	41.36	N/A
MSCI AC World ex USA Small Cap (Net)	31.65	3.91	2.60	-4.03	19.73	18.52	-18.50	25.21	62.91	-50.23
Value Added	0.05	-0.63	2.00	3.85	6.61	3.19	6.28	1.31	-21.55	N/A
Total Fixed Income Composite	7.94	10.94	-1.40	10.29	-2.52	11.76	9.54	14.11	22.14	-7.24
Blended Policy (Total FI)	5.10	9.49	-2.62	5.19	-4.69	9.86	7.27	10.27	24.60	-4.55
Value Added	2.84	1.45	1.22	5.10	2.17	1.90	2.27	3.84	-2.46	-2.69
Global Fixed Income Composite	7.11	4.64	-0.92	3.69	-1.89	N/A	N/A	N/A	N/A	N/A
Blended Policy (Global FI)	5.01	4.55	-3.35	2.65	-2.76	7.49	5.36	8.07	9.49	N/A
Value Added	2.10	0.09	2.43	1.04	0.87	N/A	N/A	N/A	N/A	N/A
Total US Fixed Income Composite	7.90	11.27	-0.54	12.94	-2.35	11.42	10.83	14.58	22.49	-7.78
Blended Policy (Total US FI)	4.87	9.61	-1.72	5.60	-2.92	9.48	8.46	10.45	27.91	-6.09
Value Added	3.03	1.66	1.18	7.34	0.57	1.94	2.37	4.13	-5.42	-1.69
Total US Fixed Income ex TIPS Composite	10.00	8.21	-0.14	13.46	3.53	13.15	4.98	13.50	24.35	-10.83
Investment Grade Composite	9.46	2.62	-0.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Investment Grade)	5.11	2.23	-0.58	11.06	-5.59	4.39	14.57	7.30	-0.22	11.04
Value Added	4.35	0.39	0.36	N/A	N/A	N/A	N/A	N/A	N/A	N/A
US Core Plus Fixed Income Composite	6.25	3.95	1.70	7.12	-0.86	8.06	9.31	10.25	14.84	-5.70
Blended Policy (Barclays Aggregate Index)	3.54	2.65	0.55	5.97	-2.02	4.21	7.06	7.16	8.60	2.38
Value Added	2.71	1.30	1.15	1.15	1.16	3.85	2.25	3.09	6.24	-8.08
Pugh Capital Management	3.98	2.63	0.56	6.22	-1.89	5.52	8.02	7.24	8.65	5.43
Blmbg. Barc. U.S. Aggregate	3.54	2.65	0.55	5.97	-2.02	4.21	7.84	6.54	5.93	5.24
Value Added	0.44	-0.02	0.01	0.25	0.13	1.31	0.18	0.70	2.72	0.19
PSERS Active Core Plus Fixed Income	4.26	3.50	1.59	7.27	-2.01	5.78	9.34	8.54	15.38	1.57
Blmbg. Barc. U.S. Aggregate	3.54	2.65	0.55	5.97	-2.02	4.21	7.84	6.54	5.93	5.24
Value Added	0.72	0.85	1.04	1.30	0.01	1.57	1.50	2.00	9.45	-3.67
BlackRock Global Alpha	8.99	4.31	2.25	7.79	1.52	12.05	11.18	13.67	19.95	-5.12

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Blended Policy (Barclays Aggregate Index)	3.54	2.65	0.55	5.97	-2.02	4.21	7.06	7.16	8.60	2.38
Value Added	5.45	1.66	1.70	1.82	3.54	7.84	4.12	6.51	11.35	-7.50
SEI Investment Management	7.83	7.34	0.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE BofAML 1-3 Year U.S. Corporate	1.91	2.39	1.01	1.19	1.78	4.49	1.76	4.86	14.69	-2.68
Value Added	5.92	4.95	-0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Non-U.S. Developed Markets Fixed Income Composite	3.43	6.23	-5.57	-1.09	-2.49	7.16	3.79	8.63	19.43	-3.08
Blended Policy (Barclays GlobalAgg GDP Weighted Dev xUS hedged)	2.79	4.90	-5.56	-2.28	-1.49	6.70	4.48	5.84	8.04	3.76
Value Added	0.64	1.33	-0.01	1.19	-1.00	0.46	-0.69	2.79	11.39	-6.84
Alliance Bernstein Global Fixed	3.43	6.23	-5.71	-1.80	-1.82	7.30	N/A	N/A	N/A	N/A
Spliced Barclays GlobalAgg GDPWeighted Dev xUS	2.79	4.90	-5.56	-2.28	-1.49	6.70	3.95	3.47	9.49	2.77
Value Added	0.64	1.33	-0.15	0.48	-0.33	0.60	N/A	N/A	N/A	N/A
U.S. Treasuries Total (unlevered)	7.12	-0.04	-1.84	19.66	-12.10	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Treasury: Long	8.53	1.33	-1.21	25.07	-12.66	3.56	29.93	9.38	-12.92	24.03
Value Added	-1.41	-1.37	-0.63	-5.41	0.56	N/A	N/A	N/A	N/A	N/A
PSERS U.S. Long Treasuries (unlevered)	7.12	-0.04	-1.84	19.66	-12.10	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Treasury: Long	8.53	1.33	-1.21	25.07	-12.66	3.56	29.93	9.38	-12.92	24.03
Value Added	-1.41	-1.37	-0.63	-5.41	0.56	N/A	N/A	N/A	N/A	N/A
Credit-Related	10.42	11.05	-1.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Credit-Related)	8.30	15.99	-6.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	2.12	-4.94	4.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Emerging Markets Fixed Income Composite	15.68	9.28	-6.50	-3.52	-4.08	16.81	0.82	N/A	N/A	N/A
Blended Policy (Barclays Emerging Mkt 10% Country Cap)	14.94	6.85	-11.72	-3.14	-5.39	16.00	-1.49	15.68	21.98	-5.22
Value Added	0.74	2.43	5.22	-0.38	1.31	0.81	2.31	N/A	N/A	N/A
Franklin Templeton Emerging Fixed Income	15.68	9.04	-1.75	-1.66	0.87	18.99	1.96	14.19	56.43	N/A
Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)	14.94	6.85	-11.72	-3.14	-5.39	19.47	4.47	10.95	8.00	8.00
Value Added	0.74	2.19	9.97	1.48	6.26	-0.48	-2.51	3.24	48.43	N/A
High Yield Fixed Income Composite (hedged)	10.04	11.11	-0.29	8.54	10.17	17.31	1.64	15.95	34.90	-20.97
Blended Policy (Barclays Corporate HY)	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	57.95	-26.17
Value Added	2.54	-6.02	4.18	6.09	2.73	1.50	-3.34	0.83	-23.05	5.20
High Yield Fixed Income x Internal Composite (hedged)	10.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Barclays Corporate HY)	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	57.95	-26.17
Value Added	2.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Insight Oxygen - HY (notional)	-10.54	4.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currency Hedge Benchmark - HY	-10.74	4.01	10.55	13.41	-4.63	-2.06	1.12	4.49	-4.83	1.53
Value Added	0.20	0.28	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
High Yield Fixed Income Composite (Unhedged)	11.07	10.71	-0.69	8.54	10.17	17.31	1.64	15.95	34.90	-20.97
Blended Policy (Barclays Corporate HY)	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	57.95	-26.17
Value Added	3.57	-6.42	3.78	6.09	2.73	1.50	-3.34	0.83	-23.05	5.20
High Yield Fixed Income x Internal Composite (unhedged)	11.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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As of September 30, 2018

Calendar Year Performance

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Blended Policy (Barclays Corporate HY)	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	57.95	-26.17
Value Added	3.69	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mezzanine High Yield Composite	14.73	-7.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	7.23	-24.64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Internally Managed Private Debt Co-Investment	-13.32	-32.79	-33.14	15.79	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-20.82	-49.92	-28.67	13.34	N/A	N/A	N/A	N/A	N/A	N/A
Mezzanine High Yield Composite x Internal	15.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	8.46	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carlyle Energy Mezz. Opp. Fund	-11.38	-41.34	-9.01	19.08	20.66	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-18.88	-58.47	-4.54	16.63	13.22	N/A	N/A	N/A	N/A	N/A
Carlyle Energy Mezz. Opp. Fund II	-1.36	-10.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-8.86	-28.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICG Europe Fund V	27.83	6.38	-2.00	4.03	15.07	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	20.33	-10.75	2.47	1.58	7.63	N/A	N/A	N/A	N/A	N/A
ICG Europe Fund VI	63.62	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	56.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICG Europe Fund VII	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bain Capital Middle Market Credit 2010, L.P.	7.34	-6.05	4.81	6.37	11.04	19.37	8.64	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-0.16	-23.18	9.28	3.92	3.60	3.56	3.66	N/A	N/A	N/A
Bain Capital Middle Market Credit 2014, L.P.	10.41	5.91	0.81	7.00	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	2.91	-11.22	5.28	4.55	N/A	N/A	N/A	N/A	N/A	N/A
Opportunistic High Yield Composite	9.77	18.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	2.27	0.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apollo European Principal Fund II	12.25	14.56	6.31	8.80	-0.83	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	4.75	-2.57	10.78	6.35	-8.27	N/A	N/A	N/A	N/A	N/A
Apollo European Principal Fund III	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bain Capital Credit Opp. Fund IV	25.20	2.05	-7.15	1.69	9.20	6.47	0.81	13.76	39.72	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	17.70	-15.08	-2.68	-0.76	1.76	-9.34	-4.17	-1.36	-18.49	N/A
Bain Capital Distressed and Special Situations 2013	12.88	7.00	-3.02	10.46	10.06	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	5.38	-10.13	1.45	8.01	2.62	N/A	N/A	N/A	N/A	N/A
Bain Capital Distressed and Special Situations 2016 (A), L.P.	12.41	29.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	4.91	12.19	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TPG Opportunities Partners II, LP	4.07	6.52	21.82	25.75	13.76	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-3.43	-10.61	26.29	23.30	6.32	N/A	N/A	N/A	N/A	N/A
TPG Opportunities Partners III, LP	13.79	17.10	3.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	6.29	-0.03	7.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TOP NPL (A)	2.02	-3.30	27.19	30.38	12.18	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-5.48	-20.43	31.66	27.93	4.74	N/A	N/A	N/A	N/A	N/A
TPG TAO	6.56	10.10	10.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-0.94	-7.03	14.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Brigade Distressed Value	11.34	34.96	-17.17	3.66	11.12	10.71	N/A	N/A	N/A	N/A
1-Month Libor + 5%	6.18	5.52	5.21	5.16	5.20	5.25	5.24	5.29	5.35	7.80
Value Added	5.16	29.44	-22.38	-1.50	5.92	5.46	N/A	N/A	N/A	N/A
Brigade Structured Credit Offshore Fund	8.52	26.20	-5.62	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barclays Corporate High Yield + 0.25%	7.77	17.42	-4.23	2.71	7.71	16.10	5.24	15.41	58.60	-25.97
Value Added	0.75	8.78	-1.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Avenue Energy Opportunities Fund	4.50	41.63	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-3.00	24.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Avenue Energy Opportunities Fund II	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Avenue Europe SS III	10.73	5.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	3.23	-11.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Asset High Yield Composite	9.91	4.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	2.41	-12.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mariner/Galton RMBS	7.78	3.87	4.38	8.61	8.55	21.64	1.67	N/A	N/A	N/A
Blended Benchmark (Barclays US MBS)	2.47	1.67	1.51	6.33	7.50	7.50	7.50	N/A	N/A	N/A
Value Added	5.31	2.20	2.87	2.28	1.05	14.14	-5.83	N/A	N/A	N/A
Galton Onshore Mortgage Recovery Fund III, LP	15.62	1.83	-1.33	-4.44	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	8.12	-15.30	3.14	-6.89	N/A	N/A	N/A	N/A	N/A	N/A
Galton Onshore Mortgage Recovery Fund IV, L.P.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Mariner International Infrastructure	8.44	8.67	5.82	-5.53	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	0.94	-8.46	10.29	-7.98	N/A	N/A	N/A	N/A	N/A	N/A
PIMCO BRAVO Fund III Onshore Feeder, L.P.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Varde Scratch and Dent Fund, LP	8.25	6.67	7.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	0.75	-10.46	11.95	N/A	N/A	N/A	N/A	N/A	N/A	N/A
The Varde Scratch and Dent Fund Feed I-A	6.39	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-1.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Latitude Management Real Estate Capital IV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Senior Loans High Yield Composite	11.64	12.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	4.14	-4.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cerberus Levered Loan Fund I	6.89	6.04	-1.29	3.38	9.09	12.20	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-0.61	-11.09	3.18	0.93	1.65	-3.61	N/A	N/A	N/A	N/A
Cerberus Levered Loan Fund II	1.52	3.25	8.03	13.92	12.21	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-5.98	-13.88	12.50	11.47	4.77	N/A	N/A	N/A	N/A	N/A
Cerberus PSERS Levered Loan Opportunities Fund	18.25	36.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	10.75	19.01	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
LBC Credit Partners II	30.45	14.28	12.35	17.02	19.02	29.31	21.09	-15.87	-6.79	N/A

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AON Empower Results®

As of September 30, 2018

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Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	22.95	-2.85	16.82	14.57	11.58	13.50	16.11	-30.99	-65.00	N/A
LBC Credit Partners III	2.33	13.28	14.46	11.66	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-5.17	-3.85	18.93	9.21	N/A	N/A	N/A	N/A	N/A	N/A
LBC-P Credit Fund LP	25.65	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	18.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Summit Partners Credit Fund II LP	12.18	13.37	-0.21	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	4.68	-3.76	4.26	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Oaktree Loan Fund 2X, LP	0.04	5.35	-23.74	-0.78	6.26	12.69	7.08	12.94	39.95	-18.94
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-7.46	-11.78	-19.27	-3.23	-1.18	-3.12	2.10	-2.18	-18.26	7.22
Bain Capital Credit Managed Account (PSERS), L.P.	9.28	17.80	-8.51	4.28	7.79	10.67	2.10	14.16	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	1.78	0.67	-4.04	1.83	0.35	-5.14	-2.88	-0.96	N/A	N/A
Park Square Credit Opportunities	4.29	20.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-3.21	3.53	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hayfin Special Opportunities Credit LP	25.60	5.14	-2.76	-6.95	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	18.10	-11.99	1.71	-9.40	N/A	N/A	N/A	N/A	N/A	N/A
Hayfin SOF II USD Co-Invest	6.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	-0.78	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Hayfin SOF II USD LP	20.95	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. U.S. Corp: High Yield	7.50	17.13	-4.47	2.45	7.44	15.81	4.98	15.12	58.21	-26.16
Value Added	13.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Inflation Protected (levered)	4.18	17.80	-2.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Inflation Protected (unlevered)	2.11	9.25	2.47	12.49	-10.76	9.15	23.56	18.13	18.74	0.47
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	3.32	10.22	-1.76	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	-1.21	-0.97	4.23	8.85	-2.15	2.17	10.00	11.82	7.33	2.82
TIPS Composite (levered)	4.18	17.80	-2.00	12.06	-11.23	8.59	23.01	17.55	18.42	0.20
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	3.32	10.22	-1.76	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	0.86	7.58	-0.24	8.42	-2.62	1.61	9.45	11.24	7.01	2.55
Blended Policy (Net Levered TIPS)	5.40	20.11	-3.97	6.76	-17.07	13.75	28.18	12.34	22.50	-8.81
Value Added	-1.22	-2.31	1.97	5.30	5.84	-5.16	-5.17	5.21	-4.08	9.01
TIPS Composite (unlevered)	2.11	9.25	2.47	12.49	-10.76	9.15	23.56	18.13	18.74	0.47

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	3.32	10.22	-1.76	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	-1.21	-0.97	4.23	8.85	-2.15	2.17	10.00	11.82	7.33	2.82
Bridgewater TIPS (unlevered)	1.55	11.69	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BGI Custom IL Bond Index (unlevered)	1.67	11.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.12	0.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bridgewater TIPS (levered)	2.96	23.93	-2.06	18.34	-11.80	10.04	29.14	27.46	20.64	5.45
BGI Custom IL Bond Index (levered)	2.94	23.14	-3.03	16.76	-12.92	N/A	N/A	N/A	N/A	N/A
Value Added	0.02	0.79	0.97	1.58	1.12	N/A	N/A	N/A	N/A	N/A
Garda Inflation Opportunity Composite (levered)	8.81	18.39	-0.97	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Benchmark (Garda)	9.17	19.85	-1.74	2.07	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.36	-1.46	0.77	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garda Inflation Opportunity Composite (unlevered)	2.53	5.13	-0.85	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	3.01	4.68	-1.44	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	-0.48	0.45	0.59	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garda Inflation Opp. Fund Cl B (levered)	8.78	21.35	-1.47	10.60	N/A	N/A	N/A	N/A	N/A	N/A
Blended Benchmark (Garda)	9.17	19.85	-1.74	2.07	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.39	1.50	0.27	8.53	N/A	N/A	N/A	N/A	N/A	N/A
Garda Inflation Opp. Fund Cl B (unlevered)	2.11	5.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	3.01	4.68	-1.44	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	-0.90	0.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garda Fixed Income Relative Value Opportunity Fund Ltd. (TIPS)	7.09	6.82	2.17	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Total TIPS (levered)	4.35	5.98	-1.46	5.03	-7.97	7.10	18.25	11.31	17.12	-2.23
PSERS Total TIPS (unlevered)	3.03	6.20	-1.46	5.03	-7.97	7.03	13.96	7.12	12.95	-2.23
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	3.01	4.68	-1.44	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	0.02	1.52	-0.02	1.39	0.64	0.05	0.40	0.81	1.54	0.12
PSERS TIPS	3.94	5.23	-1.46	5.03	-7.97	7.10	18.25	11.31	17.12	-2.23
PSERS TIPS (unlevered)	3.94	5.23	-1.46	5.03	-7.97	7.03	13.96	7.12	12.95	-2.23
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	3.01	4.68	-1.44	3.64	-8.61	6.98	13.56	6.31	11.41	-2.35
Value Added	0.93	0.55	-0.02	1.39	0.64	0.05	0.40	0.81	1.54	0.12
PIMCO Multi-Sector Strategy	4.78	7.11	-3.32	5.22	-1.24	N/A	N/A	N/A	N/A	N/A
Blended Policy (PIMCO Multi-Sector)	3.95	6.36	-2.70	6.32	-0.73	7.46	7.84	6.54	5.93	5.24
Value Added	0.83	0.75	-0.62	-1.10	-0.51	N/A	N/A	N/A	N/A	N/A
Real Assets (levered/hedged)	9.44	17.88	-8.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets (unlevered/hedged)	7.25	14.01	-8.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Real Assets) (Hedged)	7.09	11.24	-6.62	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	0.16	2.77	-1.42	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets (levered/unhedged)	9.98	17.58	-8.32	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
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Real Assets (unlevered/unhedged)	7.66	13.79	-8.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Real Assets) (Unhedged)	7.60	10.98	-6.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	0.06	2.81	-1.38	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets x Private (levered/hedged)	6.54	27.77	-30.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets x Private (unlevered/hedged)	4.06	17.17	-29.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Real Assets x Private RE) (Hedged)	4.12	14.10	-24.87	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.06	3.07	-4.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets x Private (levered/unhedged)	7.58	27.12	-30.79	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Real Assets x Private (unlevered/unhedged)	4.72	16.81	-29.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Real Assets x Private RE) (Unhedged)	4.91	13.64	-24.92	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.19	3.17	-4.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Infrastructure Composite (levered/hedged)	23.11	24.58	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Infrastructure Composite (unlevered/hedged)	10.63	11.66	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Infrastructure Hedged)	10.85	11.81	-3.56	21.17	18.21	10.80	7.40	8.22	N/A	N/A
Value Added	-0.22	-0.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Insight Nevada - Infra (notional)	-7.14	1.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currency Hedge Benchmark - Infra	-7.04	1.99	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.10	-0.15	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Infrastructure Composite (levered/unhedged)	27.85	21.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Infrastructure Composite (unlevered/unhedged)	13.07	10.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blended Policy (Infrastructure Unhedged)	13.36	10.63	-7.56	16.02	15.48	11.49	8.00	10.34	N/A	N/A
Value Added	-0.29	-0.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Infrastructure Composite	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Infrastructure Private	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Publicly-Traded Infrastructure Composite (levered)	37.41	21.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Publicly-Traded Infrastructure Composite (unlevered)	17.79	10.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE Developed Core Infrast 50/50 Index (Net)	18.18	10.63	-7.56	16.02	15.48	11.49	8.00	10.34	N/A	N/A
Value Added	-0.39	-0.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Infrastructure Index (levered)	37.41	21.40	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Infrastructure Index (unlevered)	17.79	10.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE Developed Core Infrast 50/50 Index (Net)	18.18	10.63	-7.56	16.02	15.48	11.49	8.00	10.34	N/A	N/A
Value Added	-0.39	-0.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MLP Composite	-5.68	24.62	-32.63	16.30	37.44	12.77	18.88	39.82	72.22	N/A
S&P MLP Index	-5.58	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	-0.10	2.67	2.44	8.64	7.69	7.82	4.41	4.65	-6.57	N/A
PSERS MLP	-4.92	22.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MLP Internal Blended Benchmark	-5.41	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	0.49	0.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
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External MLP Composite	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S&P MLP Index	-5.58	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Atlantic Trust	-7.28	28.14	-33.34	15.38	38.77	N/A	N/A	N/A	N/A	N/A
S&P MLP Index	-5.58	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	-1.70	6.19	1.73	7.72	9.02	N/A	N/A	N/A	N/A	N/A
PSERS Harvest Funds MLP	-5.34	19.96	-30.25	17.87	35.60	12.80	18.88	39.82	72.22	N/A
S&P MLP Index	-5.58	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	0.24	-1.99	4.82	10.21	5.85	7.85	4.41	4.65	-6.57	N/A
Salient	-5.19	29.46	-36.06	15.15	38.62	N/A	N/A	N/A	N/A	N/A
S&P MLP Index	-5.58	21.95	-35.07	7.66	29.75	4.95	14.47	35.17	78.79	-37.46
Value Added	0.39	7.51	-0.99	7.49	8.87	N/A	N/A	N/A	N/A	N/A
Commodities Composite (levered)	17.10	35.48	-33.05	-18.05	-14.29	2.41	-10.00	18.13	33.40	-42.37
Commodities Composite (unlevered)	7.48	14.75	-18.59	-10.18	-11.16	2.41	-10.00	18.13	33.40	-42.37
Blended Policy (Commodities)	5.83	10.81	-19.85	-12.05	-10.34	-1.05	-13.32	16.82	18.90	-35.65
Value Added	1.65	3.94	1.26	1.87	-0.82	3.46	3.32	1.31	14.50	-6.72
PSERS Commodity Beta + PCAF Composite	4.95	17.31	-22.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bloomberg Commodity Index Total Return	1.70	11.77	-24.66	-17.01	-9.52	-1.06	-13.32	16.83	18.91	-35.65
Value Added	3.25	5.54	2.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Commodity Beta (levered)	7.55	45.52	-41.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Commodity Beta (unlevered)	2.99	14.25	-23.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bloomberg Commodity Index Total Return	1.70	11.77	-24.66	-17.01	-9.52	-1.06	-13.32	16.83	18.91	-35.65
Value Added	1.29	2.48	1.17	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PIMCO Commodity Alpha Fund	12.44	20.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	11.17	20.07	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gresham	6.13	12.90	-24.91	-16.31	-7.06	0.66	-6.15	20.92	25.47	-37.17
Bloomberg Commodity Index Total Return	1.70	11.77	-24.66	-17.01	-9.52	-1.06	-13.32	16.83	18.91	-35.65
Value Added	4.43	1.13	-0.25	0.70	2.46	1.72	7.17	4.09	6.56	-1.52
Wellington Management Company	6.28	25.32	-24.58	-15.09	-5.05	2.92	-11.05	19.62	50.65	-46.97
Blended Benchmark (Wellington)	8.43	23.33	-24.75	-14.23	-2.79	4.39	-7.71	19.25	33.80	-36.65
Value Added	-2.15	1.99	0.17	-0.86	-2.26	-1.47	-3.34	0.37	16.85	-10.32
PSERS Gold Fund (unlevered)	11.82	7.38	-10.78	0.40	-28.17	N/A	N/A	N/A	N/A	N/A
Bloomberg Gold Subindex Total Return	12.79	7.73	-10.88	-1.75	-28.66	6.08	9.63	28.72	22.86	3.91
Value Added	-0.97	-0.35	0.10	2.15	0.49	N/A	N/A	N/A	N/A	N/A
PTRES Composite (levered/hedged)	10.55	11.66	-2.15	20.09	4.10	13.75	4.71	16.82	45.64	-49.52
PTRES Composite (unlevered/hedged)	6.31	7.91	-1.89	20.09	4.10	13.75	4.71	16.82	45.64	-49.52
Blended Policy (PTRES) (Hedged)	7.64	5.36	-0.32	14.73	2.24	29.85	-8.13	20.03	39.30	-47.73
Value Added	-1.33	2.55	-1.57	5.36	1.86	-16.10	12.84	-3.21	6.34	-1.79

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Insight Sierra - REIT (notional)	-5.51	2.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currency Hedge Benchmark - REIT	-5.40	2.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.11	-0.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PTRES Composite (levered/unhedged)	14.20	9.65	-2.16	20.09	4.10	13.75	4.71	16.82	45.64	-49.52
PTRES Composite (unlevered/unhedged)	8.49	6.75	-1.89	20.09	4.10	13.75	4.71	16.82	45.64	-49.52
Blended Policy (PTRES) (Unhedged)	10.36	4.06	-0.72	14.73	2.24	29.85	-8.13	20.03	39.30	-47.73
Value Added	-1.87	2.69	-1.17	5.36	1.86	-16.10	12.84	-3.21	6.34	-1.79
PSERS REIT Index (levered)	21.70	7.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS REIT Index (unlevered)	10.19	4.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE EPRA/NAREIT Developed Index (Net)	10.36	4.06	-0.79	15.02	3.67	27.73	-6.46	19.63	37.13	-48.16
Value Added	-0.17	0.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Security Capital Preferred Growth	2.25	12.23	2.15	20.09	4.10	13.75	4.71	24.71	64.34	N/A
Wilshire US Real Estate Securities Index	4.84	7.62	4.81	31.53	2.15	17.55	8.56	29.12	29.20	-39.83
Value Added	-2.59	4.61	-2.66	-11.44	1.95	-3.80	-3.85	-4.41	35.14	N/A
Risk Parity Composite (vol adjusted)	12.94	11.14	-6.54	10.17	-4.74	N/A	N/A	N/A	N/A	N/A
Blended Policy (Risk Parity)	14.91	12.20	-5.66	10.41	-5.28	14.00	16.70	20.34	22.70	-17.74
Value Added	-1.97	-1.06	-0.88	-0.24	0.54	N/A	N/A	N/A	N/A	N/A
PSERS Risk Parity Composite (vol adjusted to 12%)	13.75	14.17	-6.14	10.21	N/A	N/A	N/A	N/A	N/A	N/A
Bridgewater All Weather @15% (vol adjusted)	14.19	11.60	-8.35	9.49	-4.57	N/A	N/A	N/A	N/A	N/A
DE Shaw Orienteer HV (vol adjusted)	13.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
BlackRock Market Advantage II (vol adjusted)	16.06	11.69	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bridgewater Optimal (vol adjusted)	3.00	7.72	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Absolute Return	4.15	3.98	3.70	3.06	4.77	3.54	7.72	17.25	15.25	-8.71
Blended Policy (3-month Libor + 3.5%)	4.82	4.27	3.83	5.61	7.50	7.50	7.75	8.00	8.00	8.00
Value Added	-0.67	-0.29	-0.13	-2.55	-2.73	-3.96	-0.03	9.25	7.25	-16.71
Aeolus Property Catastrophe Keystone PF Fund, LP	-18.14	10.24	14.72	19.41	22.65	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	-19.26	9.75	14.52	19.25	22.46	N/A	N/A	N/A	N/A	N/A
Apollo Aviation/SASOF III LP	10.10	15.42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	8.98	14.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Apollo Aviation/SASOF IV LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bridgewater Pure Alpha Fund II, Ltd.	1.78	2.94	7.58	5.93	6.99	1.56	32.86	56.55	2.44	14.31
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	0.51	2.20	7.26	5.70	6.72	1.14	32.52	56.21	1.75	11.39
Brigade Leveraged Capital Structures Offshore Fund, Ltd.	7.10	22.88	-11.10	0.51	6.12	7.05	2.90	7.84	39.90	-16.69

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	5.98	22.39	-11.30	0.35	5.93	6.81	2.67	7.57	39.57	-19.36
Capital Structure Investments Offshore Fund, Ltd.	22.47	-10.67	12.60	-5.14	7.52	4.07	23.18	0.61	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	21.35	-11.16	12.40	-5.30	7.33	3.83	22.95	0.34	N/A	N/A
Capula Global Relative Value Fund Limited	4.30	9.01	8.09	8.62	8.18	0.83	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	3.18	8.52	7.89	8.46	7.99	0.59	N/A	N/A	N/A	N/A
Capula Tail Risk Fund Limited	-7.90	-0.57	3.32	-1.04	-3.41	-14.28	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	-9.02	-1.06	3.12	-1.20	-3.60	-14.52	N/A	N/A	N/A	N/A
Caspian Select Credit International, Ltd.	6.71	8.92	-10.40	3.11	9.82	11.83	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	5.59	8.43	-10.60	2.95	9.63	11.59	N/A	N/A	N/A	N/A
Caspian Keystone Focused Fund, Ltd.	9.93	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	8.81	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Garda Fixed Income Relative Value Opportunity Fund Ltd.	7.09	6.83	2.18	6.39	5.06	6.70	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	5.97	6.34	1.98	6.23	4.87	6.46	N/A	N/A	N/A	N/A
HS Group Sponsor Fund II, Ltd.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Independence Reinsurance Partners Composite	-15.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	-16.64	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DaVinci Reinsurance Ltd.	-17.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
RenaissanceRe Medici Fund Ltd.	1.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Upsilon Diversified Fund Ltd.	-58.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nephila/Nimbus Weather Fund	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-Month TBills+ 5.00%	5.88	5.28	5.03	5.02	5.06	5.09	5.06	5.11	5.17	6.89
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nephila/Palmetto Fund Ltd.	-5.84	2.83	5.37	6.92	6.96	10.04	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	-6.96	2.34	5.17	6.76	6.77	9.80	N/A	N/A	N/A	N/A
Oceanwood Investments SPC Co-Invest	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-Month Libor+ 6.50%	7.85	7.29	6.84	6.75	6.79	6.95	6.86	6.87	7.23	9.61
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Oceanwood Opportunities Fund	17.40	-5.12	9.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	16.28	-5.61	8.90	N/A	N/A	N/A	N/A	N/A	N/A	N/A
OWS Credit Opportunity Offshore Fund III, Ltd.	15.28	10.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	14.01	9.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Perry Partners LP	0.98	8.03	-13.32	-4.25	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	-0.14	7.54	-13.52	-4.41	N/A	N/A	N/A	N/A	N/A	N/A
PIMCO PARS/GCOF/MAV Composite	2.68	0.54	7.08	4.70	2.16	14.21	5.85	2.03	60.77	N/A
ICE Libor (1 month)	1.12	0.49	0.20	0.16	0.19	0.24	0.23	0.27	0.33	2.67
Value Added	1.56	0.05	6.88	4.54	1.97	13.97	5.62	1.76	60.44	N/A
PIMCO Absolute Return Strategy V Offshore Fund, Ltd.	5.77	-0.14	8.20	14.38	0.90	N/A	N/A	N/A	N/A	N/A
PIMCO Global Credit Opportunity Offshore Fund, Ltd.	0.42	10.19	10.03	7.34	11.11	N/A	N/A	N/A	N/A	N/A
PIMCO Multi-Asset Volatility Onshore Fund, LLC	1.97	1.88	10.07	2.97	-4.71	N/A	N/A	N/A	N/A	N/A
Two Sigma Risk Premia Enhanced Fund, LP	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Venor Capital Offshore, Ltd.	3.60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE 1 Month T-Bill	0.80	0.21	0.02	0.02	0.01	0.04	0.04	0.10	0.10	1.35
Value Added	2.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Unallocated Cash & Cash Equivalents	1.03	0.40	0.33	0.29	0.28	3.84	3.06	0.47	0.06	-8.91
ICE BofAML 3 Month U.S. T-Bill	0.86	0.33	0.05	0.04	0.07	0.11	0.10	0.13	0.21	2.06
Value Added	0.17	0.07	0.28	0.25	0.21	3.73	2.96	0.34	-0.15	-10.97
PSERS Cash Management	0.93	0.40	-0.05	0.30	0.29	0.55	0.77	0.46	0.25	-9.42
RE Conversions	N/A	0.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Derivatives Collateral	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Ultra Short Duration	1.09	0.56	0.20	0.19	0.24	0.29	0.22	0.31	1.14	N/A
ICE BofAML US Treasury Bills 0-3M	0.82	0.25	0.02	0.03	0.05	0.08	0.07	0.13	0.14	1.75
Value Added	0.27	0.31	0.18	0.16	0.19	0.21	0.15	0.18	1.00	N/A
LIBOR Composite	1.48	1.90	0.76	0.76	1.39	1.35	0.62	0.97	3.35	N/A
PSERS LIBOR Plus	1.58	1.43	0.46	0.59	0.86	0.76	0.63	1.04	3.42	3.01
US Cash Indices LIBOR Total Return 3 Month	1.18	0.71	0.28	0.24	0.28	0.46	0.32	0.34	0.80	3.48
Value Added	0.40	0.72	0.18	0.35	0.58	0.30	0.31	0.70	2.62	-0.47
Capula LIBOR Tail Risk	-7.88	-0.57	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Value Added	-9.15	-1.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Radcliffe Ultra Short Duration	2.66	4.26	2.19	1.38	3.25	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	1.39	3.52	1.87	1.15	2.98	N/A	N/A	N/A	N/A	N/A
Penn Mutual Asset Management	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PSERS Healthcare & HOP										
PSERS Healthcare - Premium Assist	1.12	0.97	0.31	0.19	0.50	0.79	0.83	1.28	2.67	3.76
ICE BofAML 3 Month U.S. T-Bill	0.86	0.33	0.05	0.04	0.07	0.11	0.10	0.13	0.21	2.06
Value Added	0.26	0.64	0.26	0.15	0.43	0.68	0.73	1.15	2.46	1.70
PSERS Healthcare - HOP	1.08	0.53	0.24	0.20	0.24	0.29	0.24	0.47	0.95	2.80
ICE BofAML 3 Month U.S. T-Bill	0.86	0.33	0.05	0.04	0.07	0.11	0.10	0.13	0.21	2.06
Value Added	0.22	0.20	0.19	0.16	0.17	0.18	0.14	0.34	0.74	0.74
Defined Contribution										
PSERS Defined Contribution	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
E/M Total Program Composite	4.20	4.09	2.07	-0.74	19.28	8.37	-5.72	16.52	29.46	-34.32
E/M US Core Plus FI Composite	3.98	2.63	0.38	5.92	-1.85	5.72	7.63	1.26	-17.81	2.87
Pugh Capital Management	3.98	2.63	0.56	6.22	-1.89	5.52	8.02	7.24	8.65	5.43
Blmbg. Barc. U.S. Aggregate	3.54	2.65	0.55	5.97	-2.02	4.21	7.84	6.54	5.93	5.24
Value Added	0.44	-0.02	0.01	0.25	0.13	1.31	0.18	0.70	2.72	0.19
E/M Short Duration Cash	4.22	5.20	2.74	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Radcliffe Ultra Short Duration	2.66	4.26	2.19	1.38	3.25	N/A	N/A	N/A	N/A	N/A
ICE Libor (3 month)	1.27	0.74	0.32	0.23	0.27	0.42	0.34	0.34	0.69	2.92
Value Added	1.39	3.52	1.87	1.15	2.98	N/A	N/A	N/A	N/A	N/A
Radcliffe Specialty Finance Debt	5.47	5.97	3.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-Month Libor + 0.60%	1.88	1.35	0.92	0.84	0.87	1.03	0.94	0.95	1.29	3.54
Value Added	3.59	4.62	2.30	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

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Total Private Market Composites (hedged)	14.64	9.85	5.39	12.85	12.52	12.00	11.14	11.59	-23.40	-9.29
Blended Policy (Private Market)	14.14	8.22	8.71	15.79	13.30	10.94	13.82	12.80	-13.64	-0.23
Value Added	0.50	1.63	-3.32	-2.94	-0.78	1.06	-2.68	-1.21	-9.76	-9.06
Total Private Market Composites (unhedged)	14.60	9.82	5.39	12.85	12.52	12.00	11.14	11.59	-23.40	-9.29
Blended Policy (Private Market)	14.14	8.22	8.71	15.79	13.30	10.94	13.82	12.80	-13.64	-0.23
Value Added	0.46	1.60	-3.32	-2.94	-0.78	1.06	-2.68	-1.21	-9.76	-9.06
Total Alternative Investments (hedged)	16.09	9.63	2.39	10.03	12.73	13.27	9.96	15.58	-9.62	-3.23
Burgiss All Private Markets ex Real Estate (1Q Lag)	15.65	8.43	6.93	16.26	15.05	12.02	12.77	16.00	-9.84	-7.73
Value Added	0.44	1.20	-4.54	-6.23	-2.32	1.25	-2.81	-0.42	0.22	4.50
Total Alternative Investments (unhedged)	16.03	9.59	2.39	10.03	12.73	13.27	9.96	15.58	-9.62	-3.23
Burgiss All Private Markets ex Real Estate (1Q Lag)	15.65	8.43	6.93	16.26	15.05	12.02	12.77	16.00	-9.84	-7.73
Value Added	0.38	1.16	-4.54	-6.23	-2.32	1.25	-2.81	-0.42	0.22	4.50
Priv. Eq/ Venture Cap/ Priv. Debt/Co-Invest	16.11	9.59	2.39	10.03	12.72	N/A	N/A	N/A	N/A	N/A
Insight Wilson - PE (notional)	-2.90	3.31	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Currency Hedge Benchmark - PE (1Q Lag)	-2.78	3.51	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Value Added	-0.12	-0.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Private Equity Co-Investment Composite	23.34	27.85	26.47	37.82	39.75	N/A	N/A	N/A	N/A	N/A
PA Penn Investment Fund - PE Composite	43.44	12.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PA Penn Investment Fund - PE Internal	0.00	8.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PA Penn Investment Fund - PE External	49.01	11.06	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Woodstream	42.48	27.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ERT	85.50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lasko	33.47	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Evans Network	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Redzone Robotics	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Internally Managed PE Composite	21.35	28.67	26.48	37.82	39.75	N/A	N/A	N/A	N/A	N/A
Private Eq/ Venture Cap/ Priv. Debt	15.59	8.81	1.76	9.71	12.55	13.23	10.29	15.57	-9.63	-3.22
Private Debt Composite	8.28	1.58	0.50	12.79	12.21	13.49	2.43	19.36	3.32	-9.96
Private Equity/ Venture Capital Composite	16.92	10.08	1.97	9.30	12.53	13.20	12.00	14.24	-13.60	-1.67
Private Equity	18.02	10.41	1.29	8.82	13.12	12.89	13.13	15.04	-14.11	-2.74
Private Equity x Tobacco Composite	18.02	10.41	1.75	8.82	13.12	12.89	13.13	15.04	-14.11	-2.74
Venture Capital	11.23	8.19	6.92	13.50	7.10	15.97	2.26	7.84	-9.66	6.36
Total Real Estate (levered/hedged)	12.28	10.20	9.17	17.23	11.70	9.16	13.21	3.52	-35.90	-23.17
Total Real Estate (unlevered/hedged)	11.59	9.83	9.01	17.23	11.70	9.16	13.21	3.52	-35.90	-23.17
Blended Policy (Total Real Estate) (Hedged)	11.18	7.37	11.19	14.95	10.56	9.05	15.56	5.63	-22.11	5.27
Value Added	0.41	2.46	-2.18	2.28	1.14	0.11	-2.35	-2.11	-13.79	-28.44
Total Real Estate (levered/unhedged)	12.60	10.01	9.17	17.23	11.70	9.16	13.21	3.52	-35.90	-23.17

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AON Empower Results®

As of September 30, 2018

Calendar Year Performance

	Performance (%)									
	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total Real Estate (unlevered/unhedged)	11.59	9.83	9.01	17.23	11.70	9.16	13.21	3.52	-35.90	-23.17
Blended Policy (Total Real Estate) (Unhedged)	11.64	7.15	11.15	14.95	10.56	9.05	15.56	5.63	-22.11	5.27
Value Added	-0.05	2.68	-2.14	2.28	1.14	0.11	-2.35	-2.11	-13.79	-28.44
Private Real Estate Composite	12.53	10.10	9.54	17.15	11.92	9.79	13.48	1.04	-44.59	-16.12
Blended Policy (Private Real Estate)	11.90	7.76	10.86	14.95	10.56	9.05	15.56	5.63	-22.11	5.27
Value Added	0.63	2.34	-1.32	2.20	1.36	0.74	-2.08	-4.59	-22.48	-21.39
Private Real Estate x Internal	12.51	9.97	9.46	17.07	11.85	9.79	13.48	1.04	-44.61	-17.15
Internally Managed Private Real Estate	13.70	18.13	18.51	28.93	N/A	N/A	N/A	N/A	N/A	N/A

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AON Empower Results®

As of September 30, 2018

Trailing Period Performance - Currency Hedge

	Performance (%)									Allocation
	1 Month	Prior Month	Quarter To Date	FYTD	Year To Date	1 Year	3 Years	Since Inception	Inception Date	Market Value ($000)
Currency Hedge Aggregate Portfolio (notional)	0.51	0.51	1.22	1.22	4.57	4.36	0.98	3.53	10/01/2014	4,487,022
Currency Hedge Benchmark - Aggregate	0.52	0.52	1.25	1.25	4.57	4.37	1.08	3.48		
Value Added	-0.01	-0.01	-0.03	-0.03	0.00	-0.01	-0.10	0.05		
Insight Everest - Int'l Eq (notional)	0.57	0.43	1.26	1.26	4.45	4.34	1.07	1.47	07/01/2006	3,254,262
Currency Hedge Benchmark - Int'l Eq	0.59	0.44	1.30	1.30	4.46	4.36	1.18	1.56		
Value Added	-0.02	-0.01	-0.04	-0.04	-0.01	-0.02	-0.11	-0.09		
Insight Oxygen - HY (notional)	0.38	0.80	1.19	1.19	5.38	4.32	0.41	0.36	07/01/2015	418,140
Currency Hedge Benchmark - HY	0.33	0.79	1.13	1.13	4.93	3.80	0.01	-0.02		
Value Added	0.05	0.01	0.06	0.06	0.45	0.52	0.40	0.38		
Insight Nevada - Infra (notional)	0.22	0.75	0.85	0.85	4.85	4.70	N/A	-0.41	12/01/2015	446,647
Currency Hedge Benchmark - Infra	0.21	0.73	0.85	0.85	4.92	4.70	N/A	-0.30		
Value Added	0.01	0.02	0.00	0.00	-0.07	0.00	N/A	-0.11		
Insight Sierra - REIT (notional)	0.48	0.58	1.29	1.29	4.05	3.93	N/A	0.05	12/01/2015	214,597
Currency Hedge Benchmark - REIT	0.48	0.58	1.30	1.30	4.12	4.02	N/A	0.16		
Value Added	0.00	0.00	-0.01	-0.01	-0.07	-0.09	N/A	-0.11		
Insight Wilson - PE (notional) Unlagged	0.21	0.87	1.32	1.32	5.47	4.51	N/A	2.18	04/01/2016	153,376
PE Currency Hedge Benchmark (unlagged)	0.21	0.88	1.34	1.34	5.46	4.48	1.68	2.23		
Value Added	0.00	-0.01	-0.02	-0.02	0.01	0.03	N/A	-0.05		

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AON Empower Results®

As of September 30, 2018

Supplemental Reporting - Notional Internal Portfolios

	Performance (%)								Allocation
	1 Month	Prior Month	Quarter To Date	FYTD	Year To Date	1 Year	3 Years	5 Years	Market Value ($000)
PSERS U.S. Long Treasuries (unlevered)	-3.25	1.51	-3.47	-3.47	-7.49	-5.66	-0.76	2.55	1,565,610
Bloomberg Barclays Long Treasury Index (Adjusted)[1]	-3.11	1.43	-3.31	-3.31	-6.89	-4.94	-0.11	N/A	
Value Added	-0.14	0.08	-0.16	-0.16	-0.60	-0.72	-0.65	N/A	
PSERS Total TIPS (unlevered)	-1.05	0.63	-0.92	-0.92	-0.97	0.49	2.61	1.96	1,924,781
Bloomberg Barclays Global Inflation-Linked: U.S. TIPS (Adjusted)[2]	-1.13	0.64	-1.05	-1.05	-1.52	-0.42	1.52	1.02	
Value Added	0.08	-0.01	0.13	0.13	0.55	0.91	1.09	0.94	
PSERS Infrastructure Index (unlevered)	-0.75	-1.47	-0.50	-0.50	-1.77	0.04	N/A	N/A	1,040,115
FTSE Developed Core Infrastructure 50/50 Net Tax Index (Adjusted)[3]	-0.79	-1.49	-0.57	-0.57	-2.04	-0.26	8.08	7.01	
Value Added	0.04	0.02	0.07	0.07	0.27	0.30	N/A	N/A	
PSERS Commodity Beta (unlevered)	1.23	-2.16	-2.91	-2.91	-3.46	0.61	0.96	N/A	1,703,240
Bloomberg Commodity Index Total Return (Adjusted)[3]	1.82	-1.87	-2.31	-2.31	-2.83	1.56	-0.74	-7.58	
Value Added	-0.59	-0.29	-0.60	-0.60	-0.63	-0.95	1.70	N/A	
PSERS Gold Fund (unlevered)	-0.86	-2.18	-5.48	-5.48	-10.52	-9.11	0.68	-2.73	1,700,000
Bloomberg Gold Subindex Total Return (Adjusted)*	-0.85	-2.16	-5.42	-5.42	-10.39	-8.92	0.84	-3.08	
Value Added	-0.01	-0.02	-0.06	-0.06	-0.13	-0.19	-0.16	0.35	
PSERS REIT Index (unlevered)	-2.13	0.89	-0.49	-0.49	-0.41	3.08	N/A	N/A	459,196
FTSE EPRA/NAREIT Developed Index (Net) (Adjusted)[3]	-2.16	0.85	-0.59	-0.59	-0.76	2.62	5.53	4.99	
Value Added	0.03	0.04	0.10	0.10	0.35	0.46	N/A	N/A	

[1]Long Treasury: benchmark adjusted to estimate cost of financing using DTCC GCF O/N Repo Index and target leverage ratio of 8:1
[2]TIPS: benchmark adjusted to estimate cost of financing using 3-month LIBOR and target leverage ratio of 1.65:1
[3]Infrastructure, Commodities & REITS: benchmark adjusted to estimate cost of financing using 3-month LIBOR and target leverage ratio of 2:1
*Gold: benchmark adjusted to estimate cost of financing using FTSE 1 Month T-Bill and target leverage ratio of 10:1

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AON Empower Results®

Asset Allocation

	Total Fund ($)	Total Fund %
PSERS Total Fund Composite	55,485,899	100.0
Total Public Market Composite	42,287,949	76.2
Total Private Market Composites	13,197,950	23.8
Total Public Equity Composite	10,017,583	18.1
Equity Rebalance Account	9,126	0.0
Total US Equity Composite	3,587,947	6.5
Total US Large Cap Composite	2,695,951	4.9
PSERS-S&P 500 Index Composite	2,695,951	4.9
Radcliffe Specialty Finance Debt	351,422	0.6
Total US Small Cap Composite	890,662	1.6
PSERS-S&P 600 Index Composite	444,200	0.8
PSERS-S&P 400 Index Composite	446,463	0.8
PSERS Misc. Equity	1,333	0.0
Total Non-U.S. Equity Composite (hedged)	6,420,511	11.6
Emerging Markets Equity Composite	303,324	0.5
Wasatch EM Small Cap	303,324	0.5
Total Non-U.S. Equity x Emerging Markets Composite	6,117,187	11.0
Insight Everest - Int'l Eq	38,136	0.1
Non-US Large Cap Equity Composite	5,189,927	9.4
PSERS ACWI x US Index Fund	2,477,724	4.5
BlackRock EMAA	462,623	0.8
Baillie Gifford	1,170,292	2.1
Marathon Asset Mgmt	1,125,654	2.0
The Children's Investment Fund, LP	260,765	0.5
BlackRock Global Composite	155,492	0.3
Non-US Small Cap Equity Composite	889,124	1.6
Acadian Asset Mgmt	267,192	0.5
Wasatch Int'l Small Cap	311,464	0.6
Oberweis Asset Mgmt	213,370	0.4
QS Investors	96,939	0.2
Fidelity Institutional Int'l Small Cap	159	0.0
Total Alternative Investments (hedged)	8,145,057	14.7

Alternative investment and real estate investments are valued on a quarter lag.

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Asset Allocation

	Total Fund ($)	Total Fund %
Private Equity	5,378,566	9.7
Insight Wilson - PE	1,448	0.0
Managed Stock Distribution	10,189	0.0
PA Penn Investment Fund - PE Composite	75,870	0.1
PA Penn Investment Fund - PE Internal	2,941	0.0
PA Penn Investment Fund - PE External	72,929	0.1
Woodstream	15,238	0.0
ERT	20,795	0.0
Lasko	9,727	0.0
Evans Network	13,184	0.0
Redzone Robotics	13,985	0.0
Private Debt Composite	1,109,349	2.0
Venture Capital	1,058,030	1.9
Internally Managed PE Composite	511,604	0.9
Total Fixed Income Composite	13,270,144	23.9
Investment Grade Composite	3,513,909	6.3
US Core Plus Fixed Income Composite	2,400,408	4.3
Pugh Capital Management	100,455	0.2
PSERS Active Core Plus Fixed Income	1,242,991	2.2
BlackRock Global Alpha	938,737	1.7
SEI Investment Management	118,225	0.2
Non-U.S. Developed Markets Fixed Income Composite	182,016	0.3
Alliance Bernstein Global Fixed	182,016	0.3
U.S. Treasuries Total Composite	931,484	1.7
PSERS U.S. Treasuries	799,688	1.4
PSERS U.S. Long Treasuries	131,797	0.2
Credit-Related	5,376,784	9.7
Emerging Markets Fixed Income Composite	352,097	0.6
Franklin Templeton Emerging Fixed Income	352,097	0.6
High Yield Fixed Income Composite (hedged)	5,024,687	9.1
Insight Oxygen - HY	-777	0.0

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Asset Allocation

	Total Fund ($)	Total Fund %
Mezzanine High Yield Composite	665,441	1.2
Internally Managed Private Debt Co-Investment	66,854	0.1
Mezzanine High Yield Composite x Internal	598,587	1.1
Carlyle Energy Mezz. Opp. Fund	89,640	0.2
Carlyle Energy Mezz. Opp. Fund II	89,836	0.2
ICG Europe Fund V	81,709	0.1
ICG Europe Fund VI	175,596	0.3
ICG Europe Fund VII	11,548	0.0
Bain Capital Middle Market Credit 2010, L.P.	30,653	0.1
Bain Capital Middle Market Credit 2014, L.P.	119,605	0.2
Opportunistic High Yield Composite	2,177,238	3.9
Apollo European Principal Fund II	75,443	0.1
Apollo European Principal Fund III	37,503	0.1
Bain Capital Credit Opp. Fund IV	58,121	0.1
Bain Capital Distressed and Special Situations 2013	264,286	0.5
Bain Capital Distressed and Special Situations 2016 (A), L.P.	253,951	0.5
TPG Opportunities Partners II, LP	15,843	0.0
TPG Opportunities Partners III, LP	88,941	0.2
TOP NPL (A)	8,975	0.0
TPG TAO	349,813	0.6
Brigade Distressed Value	178,284	0.3
Brigade Structured Credit Offshore Fund	283,186	0.5
Avenue Energy Opportunities Fund	269,329	0.5
Avenue Energy Opportunities Fund II	69,091	0.1
Avenue Europe SS III	224,473	0.4
Real Asset High Yield Composite	650,006	1.2
Mariner/Galton RMBS	189,968	0.3
Galton Onshore Mortgage Recovery Fund III, LP	53,389	0.1
Galton Onshore Mortgage Recovery Fund IV, L.P.	50,061	0.1
Mariner International Infrastructure	86,034	0.2
PIMCO BRAVO Fund III Onshore Feeder, L.P.	92,052	0.2
The Varde Scratch and Dent Fund, LP	86,317	0.2
The Varde Scratch and Dent Fund Feed I-A	62,400	0.1

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Asset Allocation

	Total Fund ($)	Total Fund %
Latitude Management Real Estate Capital IV	29,786	0.1
Senior Loans High Yield Composite	1,532,780	2.8
Cerberus Levered Loan Fund I	5,095	0.0
Cerberus Levered Loan Fund II	117,647	0.2
Cerberus PSERS Levered Loan Opportunities Fund	228,963	0.4
LBC Credit Partners II	12,223	0.0
LBC Credit Partners III	91,005	0.2
LBC-P Credit Fund LP	191,530	0.3
Summit Partners Credit Fund II LP	123,342	0.2
Oaktree Loan Fund 2X, LP	11,441	0.0
Bain Capital Credit Managed Account (PSERS), L.P.	394,672	0.7
Park Square Credit Opportunities	174,442	0.3
Hayfin Special Opportunities Credit LP	99,546	0.2
Hayfin SOF II USD Co-Invest	14,516	0.0
Hayfin SOF II USD LP	68,357	0.1
Inflation Protected	3,963,885	7.1
TIPS Composite (levered)	3,963,885	7.1
Garda Inflation Opportunity Composite (levered)	437,869	0.8
Garda Inflation Opp. Fund Cl B (levered)	285,724	0.5
Garda FIRVO Fund Ltd. (TIPS)	152,145	0.3
Bridgewater TIPS (levered)	2,326,235	4.2
PSERS Total TIPS (levered)	1,199,781	2.2
PIMCO Multi-Sector Strategy	413,648	0.7
PSERS Fixed Liquidation	1,918	0.0
Real Assets (levered/hedged)	10,598,578	19.1
Total Infrastructure Composite (levered/hedged)	3,414,580	6.2
Insight Nevada - Infra	-466	0.0
Private Infrastructure Composite	117,031	0.2
PSERS Infrastructure Private	117,031	0.2
Publicly-Traded Infrastructure Composite (levered)	518,631	0.9

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Asset Allocation

	Total Fund ($)	Total Fund %
PSERS Infrastructure Index (levered)	518,631	0.9
MLP Composite	2,779,384	5.0
PSERS MLP	757,095	1.4
External MLP Composite	2,022,288	3.6
Atlantic Trust	602,134	1.1
Harvest MLP Alpha	801,705	1.4
Salient	618,449	1.1
Commodities Composite (levered)	1,821,082	3.3
PSERS Commodities Composite	846,322	1.5
PSERS Commodity Beta (levered)	532,967	1.0
PIMCO Commodity Alpha Fund	313,355	0.6
Gresham	354,885	0.6
Wellington Management Company	463,524	0.8
Gold Composite	156,350	0.3
PSERS Gold Fund (levered)	156,350	0.3
Total Real Estate (levered/hedged)	5,362,916	9.7
PTRES Composite (levered/hedged)	427,054	0.8
Insight Sierra - REIT	299	0.0
PSERS REIT Index (levered)	237,384	0.4
Security Capital Preferred Growth	189,372	0.3
Private Real Estate	4,935,862	8.9
Private Real Estate x Internal	4,813,441	8.7
Internally Managed Private Real Estate	122,421	0.2
Risk Parity Composite	4,501,309	8.1
PSERS Risk Parity Composite	1,987,714	3.6
PSERS Risk Parity	1,690,088	3.0
PSERS Risk Parity LIBOR	297,626	0.5
Bridgewater All Weather @15%	689,891	1.2
DE Shaw Orienteer HV	684,420	1.2
BlackRock Market Advantage II	500,156	0.9
Bridgewater Optimal	639,128	1.2

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Asset Allocation

	Total Fund ($)	Total Fund %
Total Absolute Return	5,740,133	10.3
Aeolus Property Catastrophe Keystone PF Fund, LP	348,263	0.6
Apollo Aviation/SASOF II LP	6,494	0.0
Apollo Aviation/SASOF III LP	63,844	0.1
Apollo Aviation/SASOF IV LP	43,459	0.1
Bridgewater Pure Alpha Fund II, Ltd.	928,290	1.7
Brigade Leveraged Capital Structures Offshore Fund, Ltd.	330,488	0.6
Capital Structure Investments Offshore Fund, Ltd.	298,065	0.5
Capula Global Relative Value Fund Limited	445,549	0.8
Capula Tail Risk Fund Limited	311,912	0.6
Caspian Keystone Focused Fund, Ltd.	108	0.0
Caspian Select Credit International, Ltd.	258,908	0.5
Garda Fixed Income Relative Value Opportunity Fund Ltd.	417,376	0.8
HS Group Sponsor Fund II, Ltd.	29,066	0.1
Independence Reinsurance Partners Composite	170,586	0.3
Independence Reinsurance Partners Cash	-88	0.0
DaVinci Reinsurance Ltd.	33,883	0.1
Renaissance Medici Fund Ltd.	62,041	0.1
Upsilon Diversified Fund	74,749	0.1
Nephila/Nimbus Weather Fund	109,024	0.2
Nephila/Palmetto Fund Ltd.	215,816	0.4
Oceanwood Investments SPC Co-Invest	24,969	0.0
Oceanwood Opportunities Fund	247,071	0.4
OWS Credit Opportunity Offshore Fund III, Ltd.	275,870	0.5
Perry Partners LP	21,419	0.0
PIMCO PARS/GCOF/MAV Composite	797,033	1.4
PIMCO PARS	270,217	0.5
PIMCO GCOF	291,551	0.5
PIMCO MAV	235,264	0.4
Two Sigma Risk Premia Enhanced Fund, LP	218,203	0.4
Venor Capital Offshore, Ltd.	178,319	0.3
Unallocated Cash & Cash Equivalents	3,212,983	5.8

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Asset Allocation

	Total Fund	
	($)	%
PSERS Cash Management	2,603,010	4.7
PSERS Derivatives Collateral	609,973	1.1
RE Conversions	-	0.0

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Schedule of Investable Assets

PSERS Total Fund Composite vs. Blended Policy (Total Plan)

Periods Ending	Beginning Market Value ($000)	Contributions ($000)	Withdrawals ($000)	Net Cash Flow ($000)	Gain/Loss ($000)	Ending Market Value ($000)	%Return
Jun-2013	-	-	-	-	-	49,016,578.10	-
Sep-2013	49,016,578.10	4,636,922.82	6,172,104.01	-1,535,181.19	1,389,685.21	48,871,082.12	2.9
Dec-2013	48,871,082.12	5,867,242.37	6,252,435.21	-385,192.84	1,653,594.99	50,139,484.27	3.4
Mar-2014	50,139,484.27	4,406,958.92	5,416,004.58	-1,009,045.66	1,795,946.40	50,926,385.02	3.6
Jun-2014	50,926,385.02	7,554,255.99	8,049,348.85	-495,092.86	2,129,620.59	52,560,912.74	4.2
Sep-2014	52,560,912.74	5,613,796.98	6,298,432.85	-684,635.87	305,731.96	52,182,008.83	0.6
Dec-2014	52,182,008.83	9,486,756.02	10,202,396.23	-715,640.21	73,636.67	51,540,005.29	0.1
Mar-2015	51,540,005.29	10,008,587.78	10,707,898.63	-699,310.86	1,458,105.84	52,298,800.27	2.8
Jun-2015	52,298,800.27	5,787,431.23	6,620,947.13	-833,515.90	-71,189.47	51,394,094.90	-0.5
Sep-2015	51,394,094.90	8,230,771.92	9,673,052.94	-1,442,281.03	-1,975,325.66	47,976,488.21	-3.9
Dec-2015	47,976,488.21	7,625,267.24	8,688,588.51	-1,063,321.26	-34,282.61	46,878,884.34	-0.1
Mar-2016	46,878,884.34	5,942,062.19	6,052,023.77	-109,961.58	686,046.88	47,454,969.63	1.5
Jun-2016	47,454,969.63	5,626,818.39	6,000,209.13	-373,390.75	1,890,250.48	48,971,829.36	4.0
Sep-2016	48,971,829.36	5,501,625.43	6,080,823.79	-579,198.36	1,805,042.28	50,197,673.28	3.7
Dec-2016	50,197,673.28	6,462,818.85	6,783,275.18	-320,456.32	613,829.27	50,491,046.22	1.3
Mar-2017	50,491,046.22	4,304,959.51	4,961,133.73	-656,174.21	1,624,051.18	51,458,923.19	3.3
Jun-2017	51,458,923.19	4,192,658.62	4,236,025.27	-43,366.65	848,662.44	52,264,218.98	1.7
Sep-2017	52,264,218.98	4,525,861.55	5,015,428.95	-489,567.40	1,650,241.65	53,424,893.24	3.2
Dec-2017	53,424,893.24	5,197,997.67	5,324,115.82	-126,118.15	1,904,946.52	55,203,721.61	3.6
Mar-2018	55,203,721.61	5,951,560.62	7,081,966.94	-1,130,406.32	77,227.31	54,150,542.60	0.1
Jun-2018	54,150,542.60	4,621,763.51	4,487,735.72	134,027.79	1,126,934.56	55,411,504.95	2.1
Sep-2018	55,411,504.95	6,963,615.22	7,659,714.49	-696,099.27	770,493.30	55,485,898.98	1.4
	49,016,578.10	128,509,732.85	141,763,661.75	-13,253,928.90	19,723,249.78	55,485,898.98	7.5

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Total Public Markets

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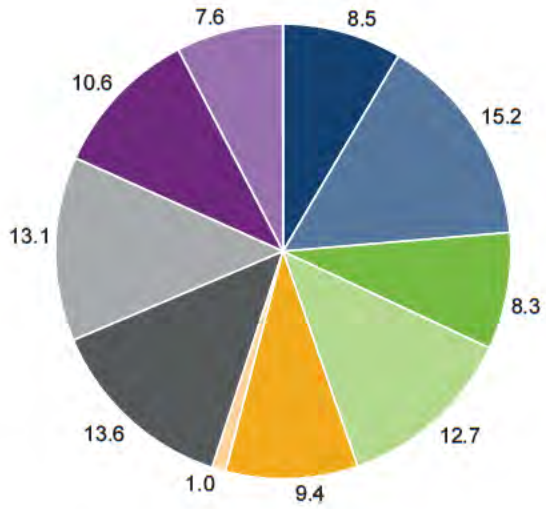
AON Empower Results®

Asset Allocation by Asset Class

September 30, 2018 : $42,287,949



	Market Value ($000)	Allocation (%)
US Equity	3,587,946.7	8.5
Non-US Equity	6,420,511.1	15.2
Investment Grade	3,513,908.5	8.3
Credit-Related	5,376,783.8	12.7
Inflation Protected	3,963,885.2	9.4
PIMCO Multi-Sector Strategy	413,648.3	1.0
Absolute Return	5,740,132.8	13.6
Real Assets x Private Real Estate	5,545,684.6	13.1
Risk Parity	4,501,309.3	10.6
Unallocated Cash & Cash Equivalents	3,212,982.7	7.6
Equity Rebalance Account	9,125.7	0.0
PSERS Fixed Liquidation	1,917.8	0.0
Global Tax Reclaim	82.3	0.0
Income Receivable-Term Managers	-	0.0
PSERS - Misc. Collections	30.4	0.0

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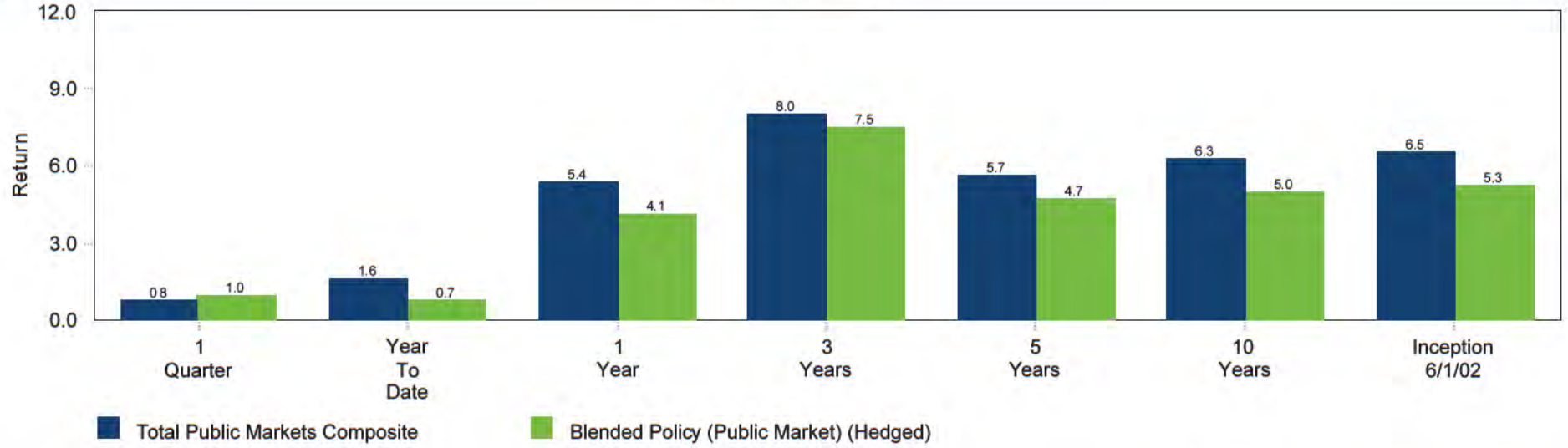
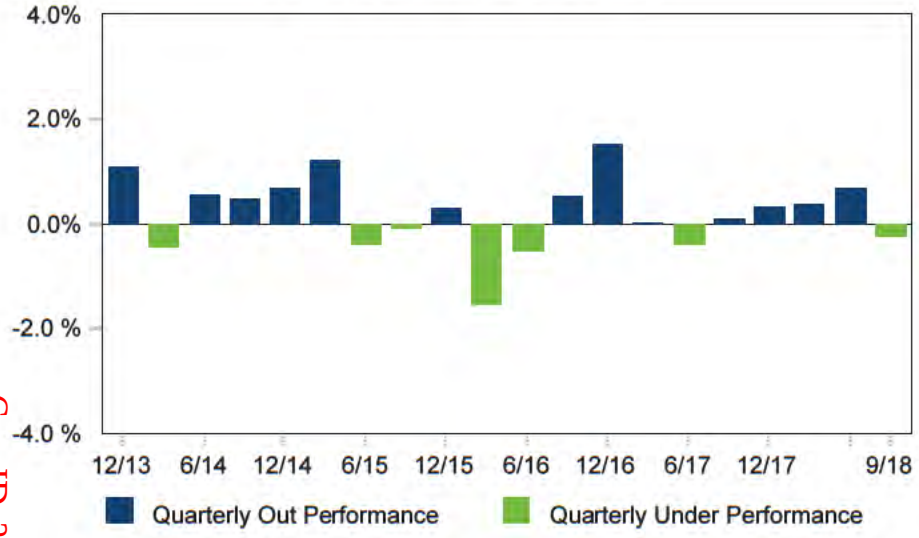
AON Empower Results®

Performance Summary

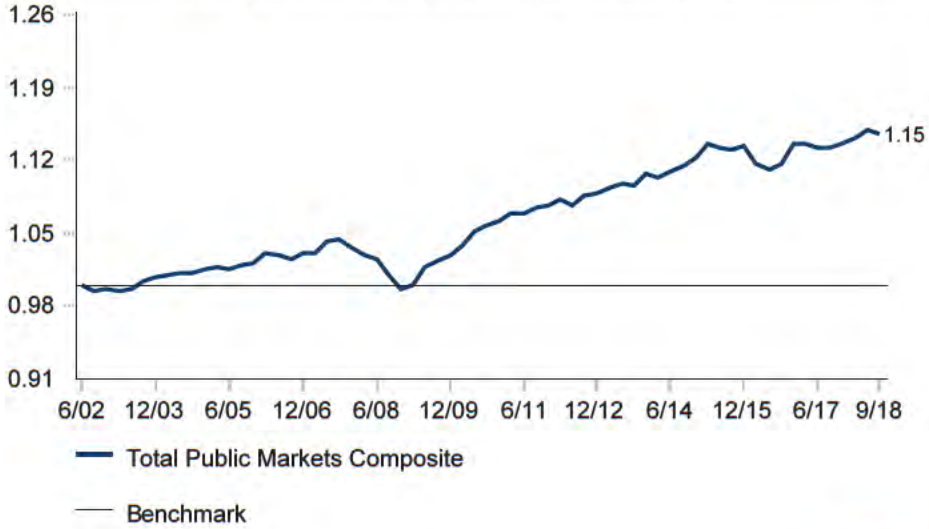
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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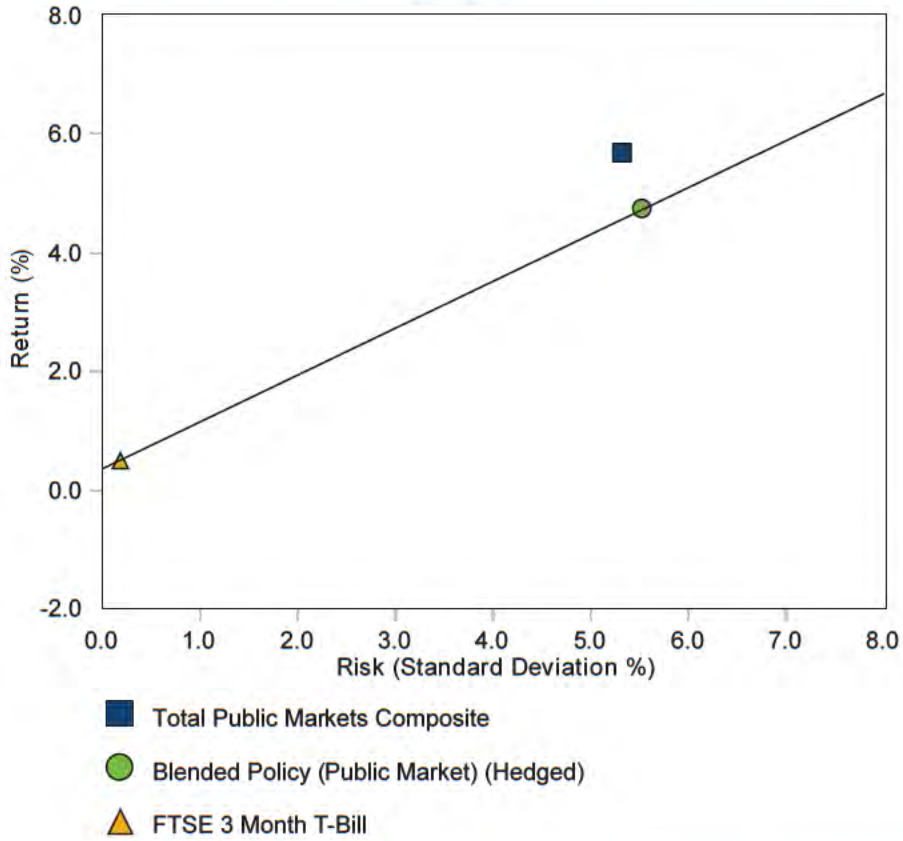
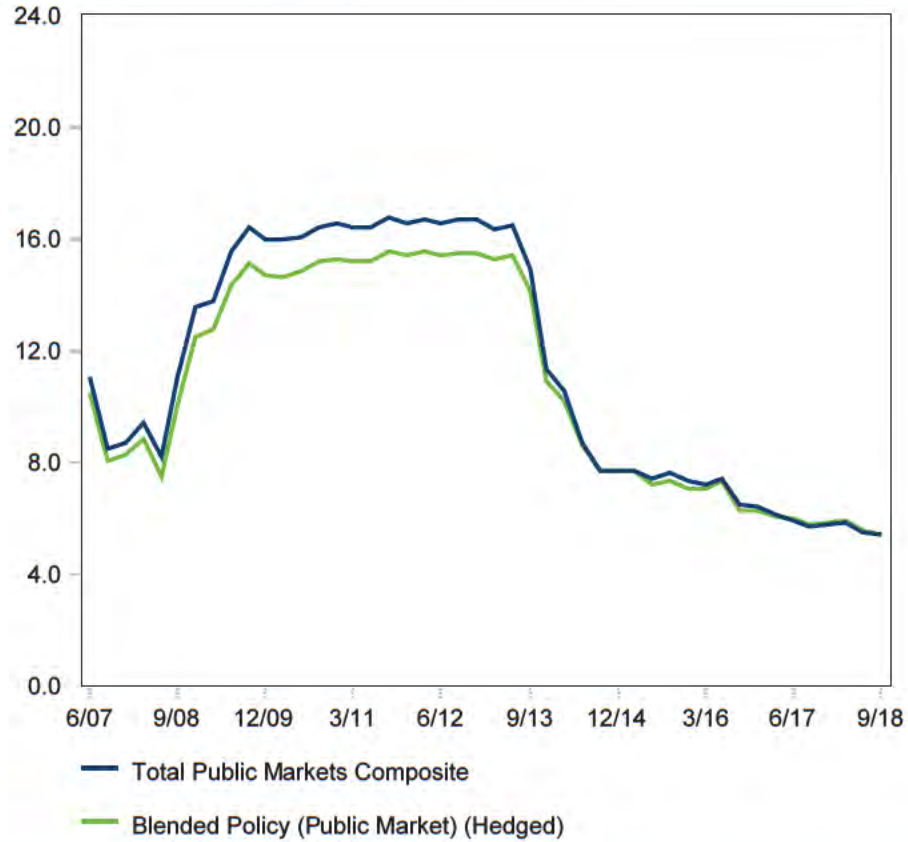
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Public Markets Composite	0.89	1.21	0.74	0.95	0.97	1.19	0.94	5.67	5.32	0.98
Blended Policy (Public Market) (Hedged)	0.00	0.00	N/A	1.00	0.78	0.00	1.00	4.72	5.53	1.00
FTSE 3 Month T-Bill	-4.28	5.52	-0.78	0.00	N/A	0.48	0.00	0.49	0.18	0.04

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AON Empower Results®

Risk Statistics

Total Public Markets Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	5.36	8.04	5.67	6.29	6.58	07/01/2002
Standard Deviation	4.04	3.61	5.40	11.08	11.60	
Downside Risk	1.28	0.67	3.17	7.15	7.43	
Downside Semi Deviation	N/A	N/A	7.98	14.89	14.01	
Max Drawdown Recovery Period	2.00	2.00	6.00	3.00	18.00	
Maximum Drawdown	-1.11	-1.11	-7.86	-23.22	-39.18	
Maximum Loss Exposure	N/A	N/A	N/A	-23.22	-11.76	
Upside Semi Deviation	3.01	5.70	5.92	10.59	11.45	
Blended Policy (Public Market) (Hedged)						
Return	4.13	7.54	4.72	4.96	5.69	
Standard Deviation	3.99	4.08	5.43	10.57	10.97	
Downside Risk	1.75	1.08	3.23	7.02	7.10	
Downside Semi Deviation	N/A	1.27	5.75	12.66	12.40	
Max Drawdown Recovery Period	3.00	3.00	8.00	4.00	20.00	
Maximum Drawdown	-1.51	-1.51	-7.63	-22.45	-36.57	
Maximum Loss Exposure	N/A	-0.09	N/A	-22.45	-11.23	
Upside Semi Deviation	2.64	6.47	6.30	10.24	11.02	
vs. Blended Policy (Public Market) (Hedged)						
Active Return	1.19	0.45	0.91	1.33	0.92	
Tracking Error	0.75	1.48	1.39	1.31	1.25	
Actual Correlation	0.98	0.93	0.97	0.99	1.00	
Beta	0.99	0.83	0.96	1.04	1.05	
Consistency	75.00	66.67	65.00	75.00	70.77	
Down Market Capture	73.56	13.28	75.89	92.62	99.73	
Down Market Outperformance	0.40	2.20	1.58	0.98	-0.03	
Information Ratio	1.58	0.31	0.66	1.02	0.74	
Jensen Alpha	1.20	1.58	1.08	1.12	0.66	
Up Market Capture	114.00	96.53	104.50	108.80	107.83	
Up Market Outperformance	0.82	-0.42	0.54	1.54	1.54	
vs. FTSE 3 Month T-Bill						
Excess Return	3.76	7.06	5.20	6.45	5.86	
Excess Risk	4.10	3.71	5.39	11.13	11.62	
Sharpe Ratio	0.91	1.90	0.96	0.58	0.50	

Calculation based on quarterly periodicity.

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Total Public Equity

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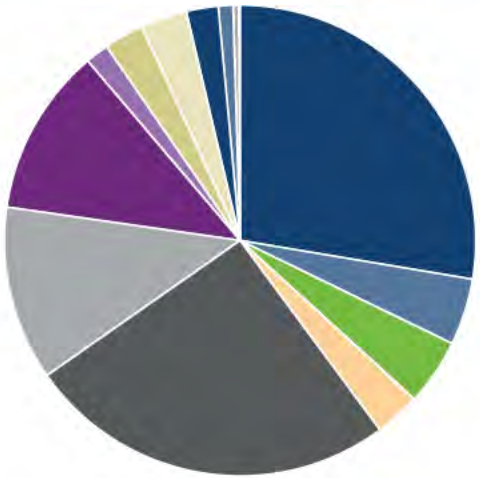
AON Empower Results®

Asset Allocation by Manager

September 30, 2018 : $9,756,818



	Market Value ($000)	Allocation (%)
PSERS-S&P 500 Index Composite	2,695,951.3	27.6
PSERS-S&P 400 Index Composite	446,462.9	4.6
PSERS-S&P 600 Index Composite	444,199.5	4.6
PSERS Equity Liquidation	1,333.0	0.0
PSERS - Trading Error	-	0.0
Wasatch EM Small Cap	303,324.3	3.1
PSERS ACWI x US Index Fund	2,477,724.1	25.4
Baillie Gifford	1,170,291.7	12.0
Marathon Asset Mgmt	1,125,654.2	11.5
BlackRock Global Composite	155,491.8	1.6
Acadian Asset Mgmt	267,192.1	2.7
Wasatch Int'l Small Cap	311,463.9	3.2
Oberweis Asset Mgmt	213,370.0	2.2
QS Investors	96,939.2	1.0
Fidelity Institutional Int'l Small Cap	158.9	0.0
Insight Everest - Int'l Eq	38,136.0	0.4
Equity Rebalance Account	9,125.7	0.1

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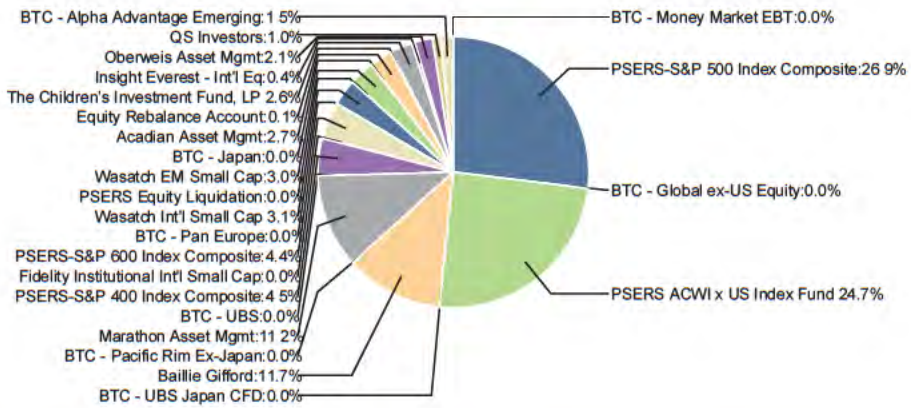
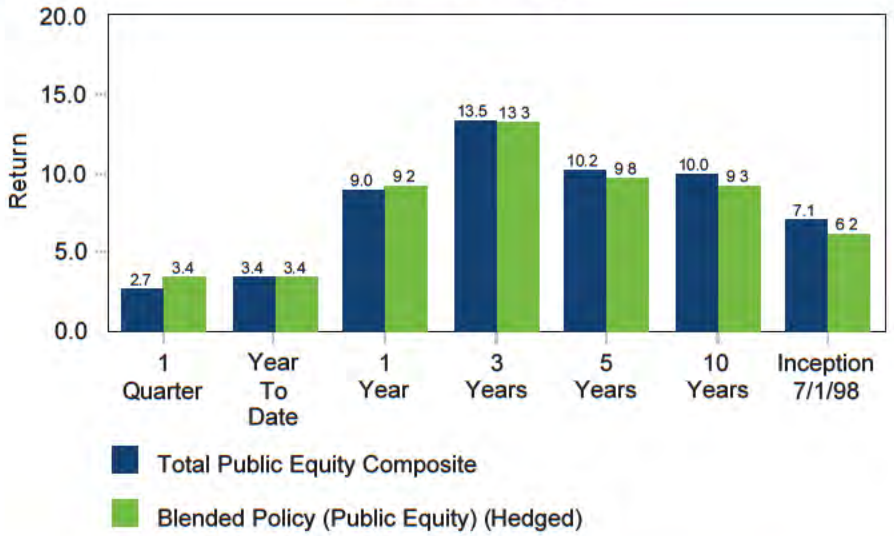
Portfolio Overview

Current Allocation

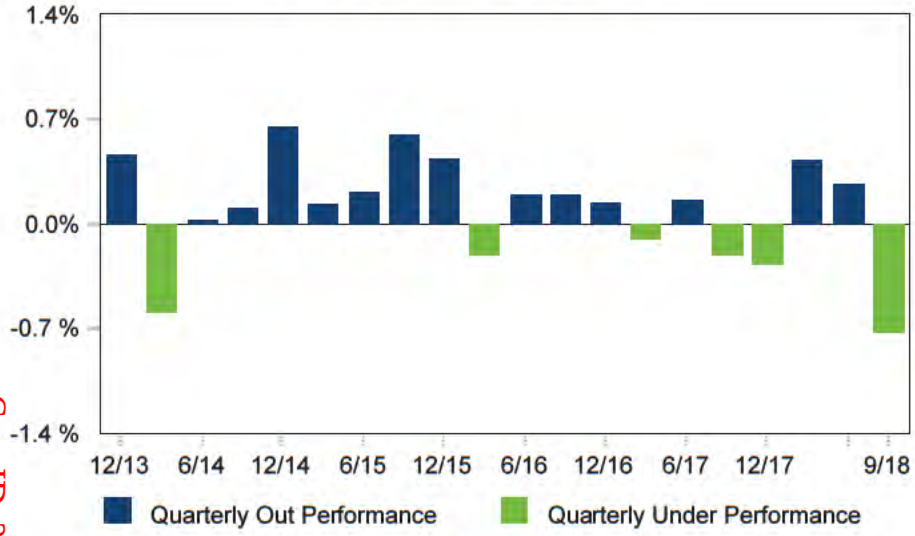
September 30, 2018 : $10,018M



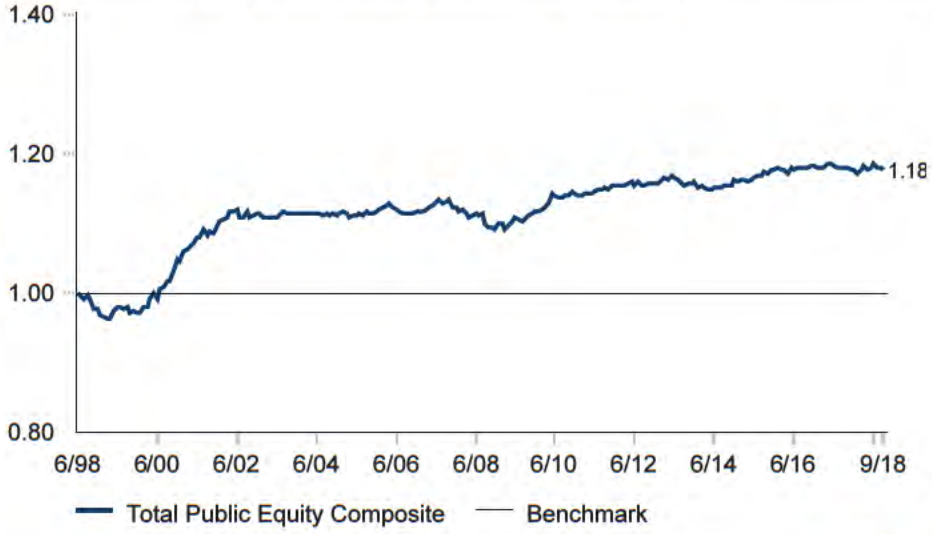
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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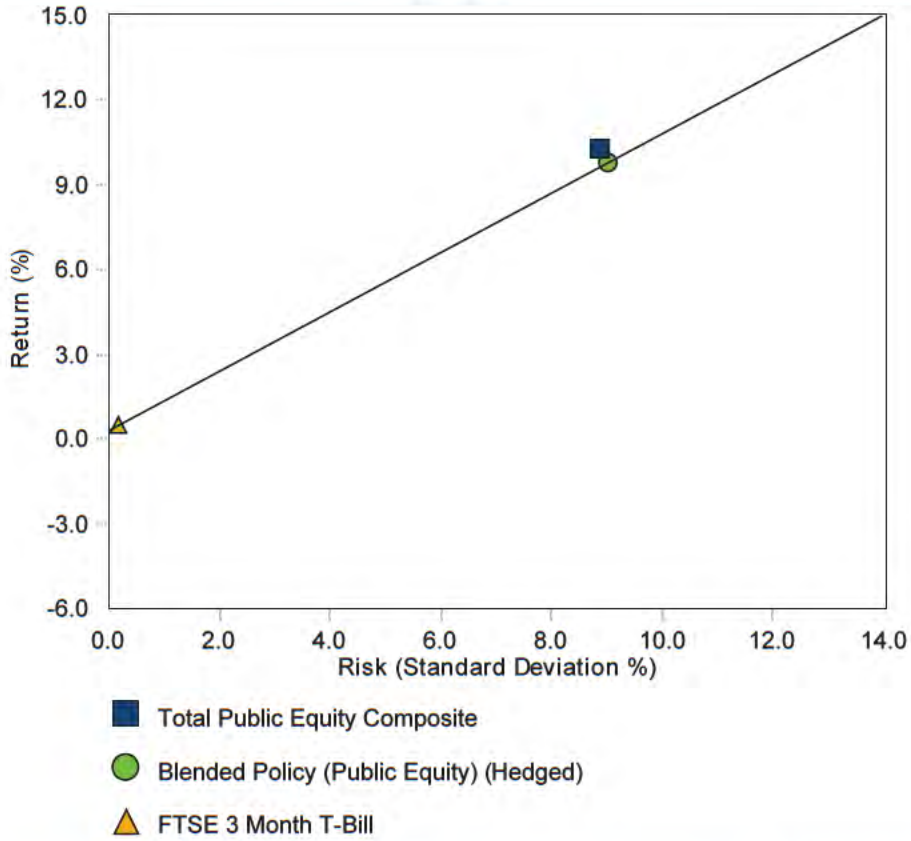
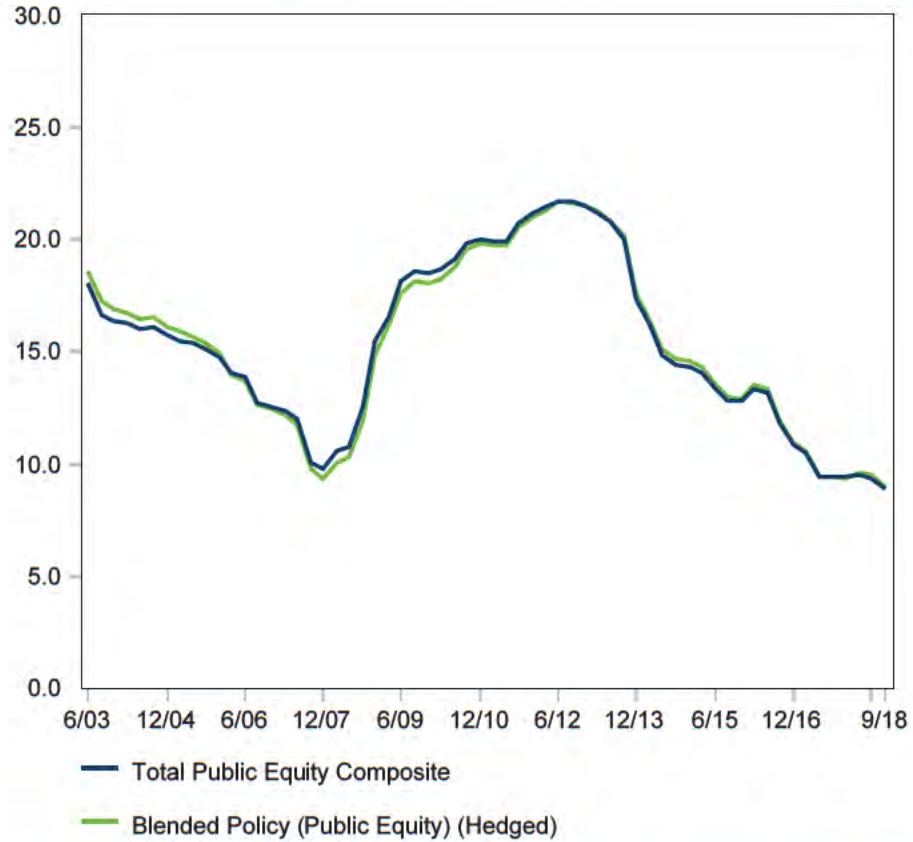
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Public Equity Composite	0.39	0.91	0.42	0.99	1.09	0.58	0.98	10.23	8.90	0.99
Blended Policy (Public Equity) (Hedged)	0.00	0.00	N/A	1.00	1.03	0.00	1.00	9.80	9.03	1.00
FTSE 3 Month T-Bill	-9.29	9.02	-1.03	0.00	N/A	0.48	0.00	0.49	0.18	0.04

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AON Empower Results®

Risk Statistics

Total Public Equity Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	8.95	13.46	10.23	10.01	7.06	07/01/1998
Standard Deviation	6.54	8.29	8.90	15.44	15.40	
Downside Risk	3.80	4.28	5.34	10.45	10.83	
Downside Semi Deviation	2.57	2.59	9.94	18.26	17.67	
Max Drawdown Recovery Period	N/A	8.00	19.00	11.00	63.00	
Maximum Drawdown	-4.64	-9.12	-13.14	-34.96	-54.73	
Maximum Loss Exposure	N/A	-1.84	N/A	-34.96	-16.79	
Upside Semi Deviation	2.01	9.35	9.25	14.46	14.21	
Blended Policy (Public Equity) (Hedged)						
Return	9.24	13.33	9.80	9.27	6.20	
Standard Deviation	7.48	8.59	9.03	15.59	15.51	
Downside Risk	4.39	4.49	5.46	10.60	10.95	
Downside Semi Deviation	2.97	2.90	10.48	18.28	17.66	
Max Drawdown Recovery Period	N/A	8.00	19.00	11.00	65.00	
Maximum Drawdown	-5.50	-9.17	-14.06	-34.90	-53.33	
Maximum Loss Exposure	N/A	-2.12	N/A	-34.90	-23.94	
Upside Semi Deviation	2.25	9.38	9.17	14.57	14.29	
vs. Blended Policy (Public Equity) (Hedged)						
Active Return	-0.32	0.09	0.39	0.66	0.80	
Tracking Error	1.25	0.96	0.91	1.07	1.46	
Actual Correlation	0.99	0.99	0.99	1.00	1.00	
Beta	0.87	0.96	0.98	0.99	0.99	
Consistency	41.67	50.00	56.67	60.83	58.85	
Down Market Capture	80.10	93.22	95.24	95.82	96.26	
Down Market Outperformance	1.19	1.01	1.01	1.19	1.07	
Information Ratio	-0.26	0.10	0.42	0.62	0.55	
Jensen Alpha	0.68	0.57	0.57	0.78	0.86	
Up Market Capture	89.84	98.40	100.10	100.16	100.67	
Up Market Outperformance	-1.75	-0.47	0.03	0.09	0.39	
vs. FTSE 3 Month T-Bill						
Excess Return	7.24	12.22	9.68	10.47	6.18	
Excess Risk	6.55	8.31	8.89	15.45	15.44	
Sharpe Ratio	1.10	1.47	1.09	0.68	0.40	

Calculation based on monthly periodicity.

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US Equity

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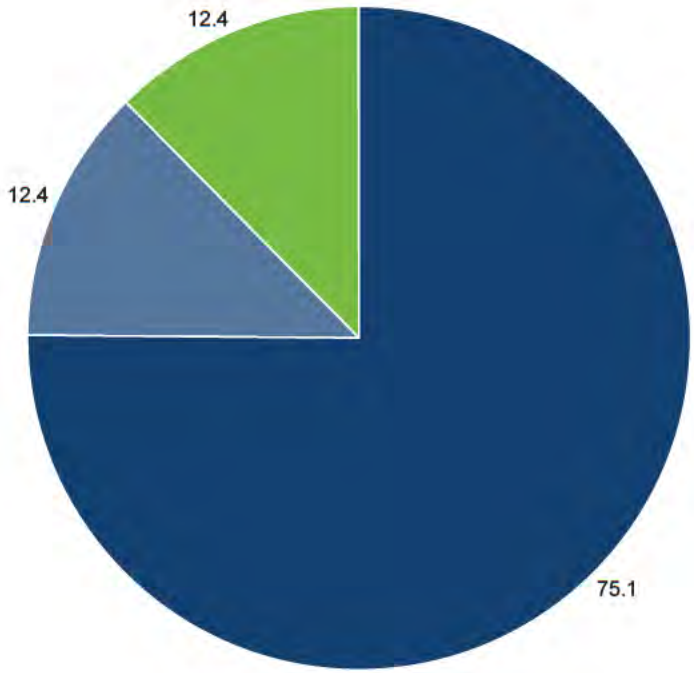
Total US Equity Composite

As of September 30, 2018

Asset Allocation by Manager

September 30, 2018 : $3,587,947



	Market Value ($000)	Allocation (%)
PSERS-S&P 500 Index Composite	2,695,951.3	75.1
PSERS-S&P 400 Index Composite	446,462.9	12.4
PSERS-S&P 600 Index Composite	444,199.5	12.4
PSERS Equity Liquidation	1,333.0	0.0
PSERS - Trading Error	-	0.0

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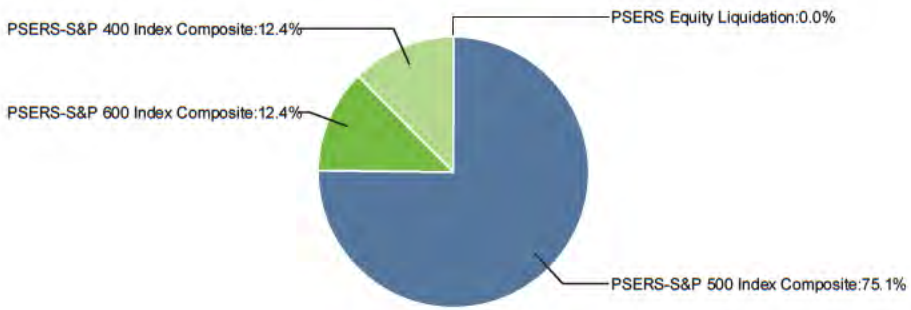
AON Empower Results®

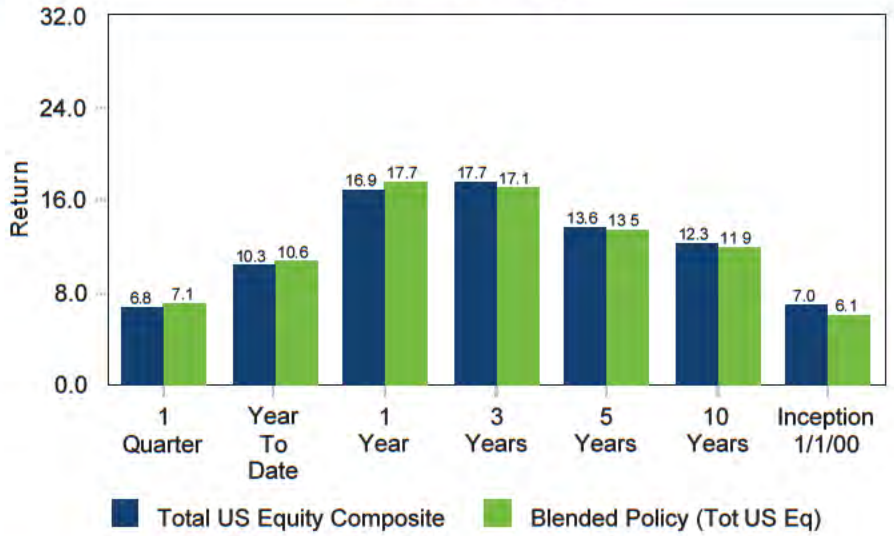
Portfolio Overview

Current Allocation

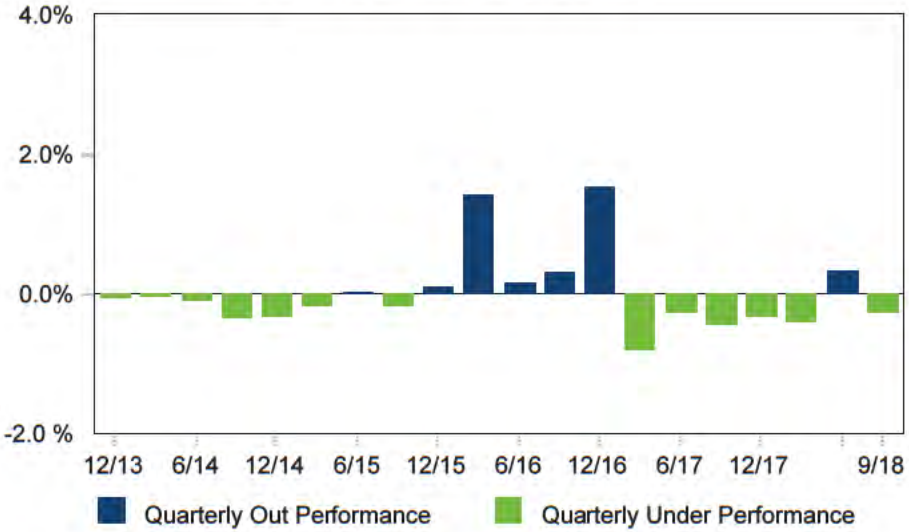
September 30, 2018 : $3,588M



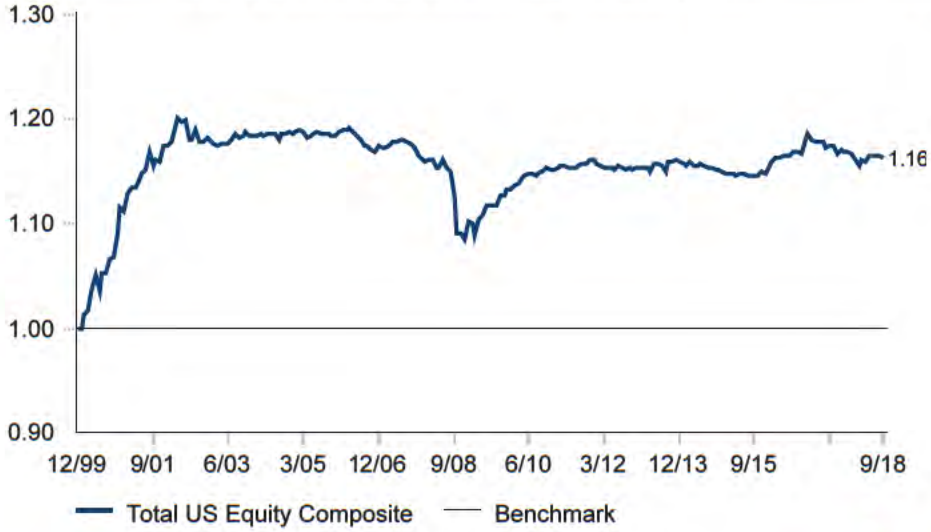
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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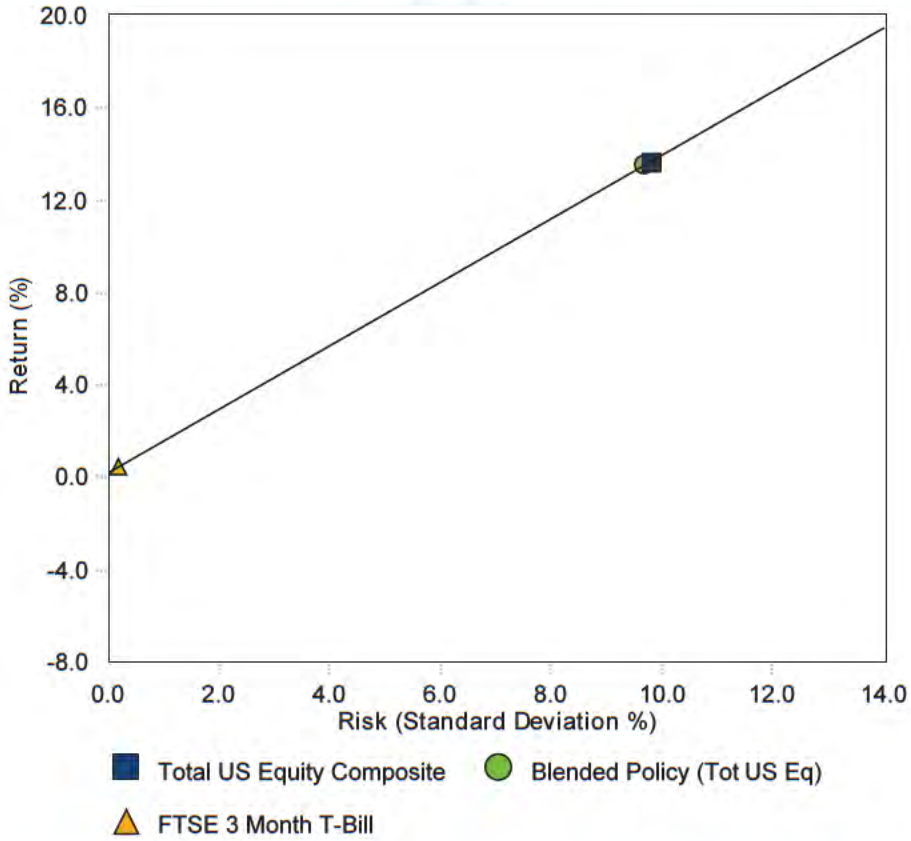
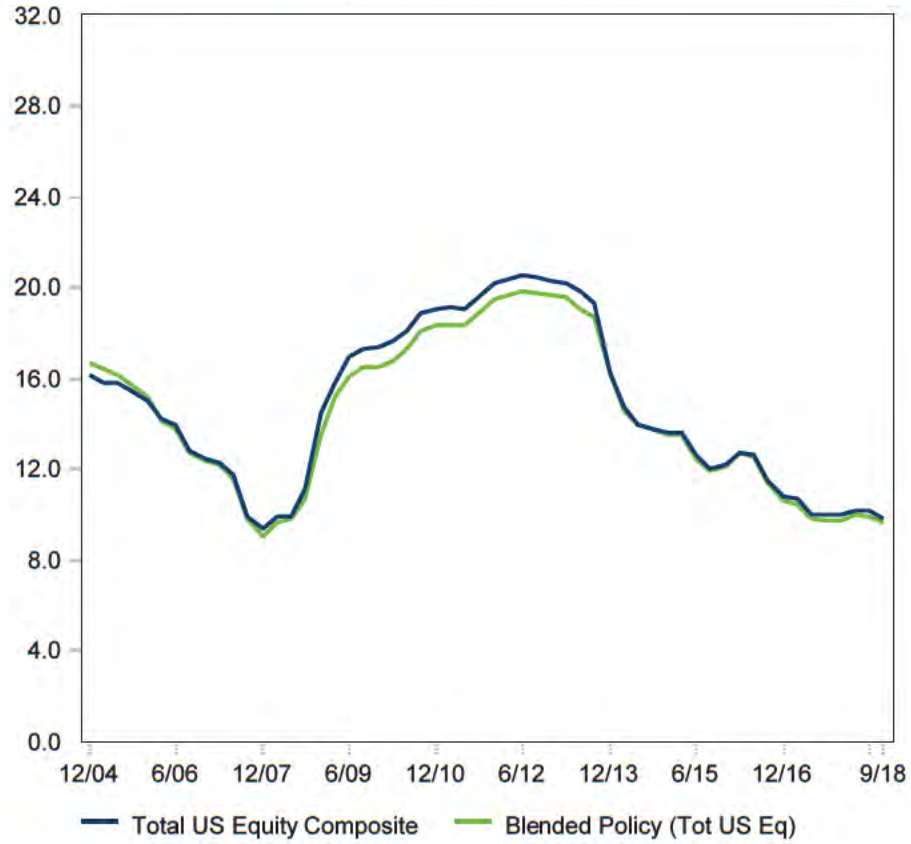
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total US Equity Composite	0.07	1.02	0.07	0.99	1.30	-0.05	1.01	13.59	9.81	0.99
Blended Policy (Tot US Eq)	0.00	0.00	N/A	1.00	1.32	0.00	1.00	13.52	9.67	1.00
FTSE 3 Month T-Bill	-12.71	9.66	-1.32	0.01	N/A	0.47	0.00	0.49	0.18	0.08

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AON Empower Results®

Risk Statistics

Total US Equity Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	16.92	17.69	13.59	12.30	6.96	01/01/2000
Standard Deviation	8.71	9.46	9.81	15.26	14.87	
Downside Risk	4.57	4.33	5.19	10.29	10.39	
Downside Semi Deviation	3.09	3.02	9.98	18.98	17.17	
Max Drawdown Recovery Period	6.00	4.00	12.00	17.00	59.00	
Maximum Drawdown	-5.58	-7.06	-8.96	-38.00	-54.02	
Maximum Loss Exposure	N/A	N/A	N/A	-38.00	-31.32	
Upside Semi Deviation	3.00	10.90	10.88	14.20	13.72	
Blended Policy (Tot US Eq)						
Return	17.65	17.14	13.52	11.94	6.11	
Standard Deviation	8.73	9.31	9.67	14.86	14.75	
Downside Risk	4.41	4.49	5.21	9.93	10.34	
Downside Semi Deviation	4.23	3.43	10.70	18.59	17.30	
Max Drawdown Recovery Period	6.00	6.00	12.00	17.00	53.00	
Maximum Drawdown	-5.65	-7.64	-8.87	-36.52	-50.95	
Maximum Loss Exposure	N/A	N/A	N/A	-36.52	-22.86	
Upside Semi Deviation	2.89	10.39	10.43	13.84	13.40	
vs. Blended Policy (Tot US Eq)						
Active Return	-0.63	0.49	0.07	0.39	0.83	
Tracking Error	1.00	1.26	1.02	1.52	1.90	
Actual Correlation	0.99	0.99	0.99	1.00	0.99	
Beta	0.99	1.01	1.01	1.02	1.00	
Consistency	33.33	47.22	41.67	50.00	52.00	
Down Market Capture	98.63	95.26	99.41	99.94	97.58	
Down Market Outperformance	0.07	0.65	0.14	-0.08	0.68	
Information Ratio	-0.63	0.39	0.07	0.26	0.44	
Jensen Alpha	-0.49	0.36	-0.05	0.13	0.84	
Up Market Capture	96.85	101.11	100.15	101.46	101.84	
Up Market Outperformance	-0.86	0.33	0.03	0.73	0.93	
vs. FTSE 3 Month T-Bill						
Excess Return	14.52	16.03	12.79	12.52	6.23	
Excess Risk	8.70	9.47	9.80	15.27	14.94	
Sharpe Ratio	1.67	1.69	1.30	0.82	0.42	

Calculation based on monthly periodicity.

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As of September 30, 2018

Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Total US Equity Composite	6.83 (32)	10.30 (37)	6.83 (32)	16.92 (35)	17.69 (21)	13.59 (23)	12.30 (27)	6.96 (72)	01/01/2000	3,587,947	100.0
Blended Policy (Tot US Eq)	7.08 (30)	10.65 (35)	7.08 (30)	17.65 (34)	17.14 (27)	13.52 (24)	11.94 (38)	6.11 (85)			
Value Added	-0.25	-0.35	-0.25	-0.73	0.55	0.07	0.36	0.85			
IM U.S. All Cap Equity (SA+CF) Median	5.74	7.70	5.74	14.54	14.50	11.47	11.25	7.92			
PSERS-S&P 500 Index Composite	7.70 (30)	10.03 (44)	7.70 (30)	16.97 (44)	17.57 (23)	13.99 (27)	12.30 (28)	7.00 (57)	07/01/1998	2,695,951	75.1
S&P 500 Index	7.71 (30)	10.56 (36)	7.71 (30)	17.91 (34)	17.31 (26)	13.95 (28)	11.97 (34)	6.77 (64)			
Value Added	-0.01	-0.53	-0.01	-0.94	0.26	0.04	0.33	0.23			
IM U.S. Large Cap Equity (SA+CF) Median	6.96	9.32	6.96	16.42	15.67	12.79	11.39	7.16			
PSERS-S&P 400 Index Composite	3.90 (62)	7.54 (52)	3.90 (62)	14.29 (50)	15.96 (26)	12.09 (35)	13.07 (24)	10.75 (16)	07/01/1998	446,463	12.4
S&P MidCap 400	3.86 (62)	7.49 (52)	3.86 (62)	14.21 (50)	15.68 (29)	11.91 (39)	12.49 (37)	10.38 (23)			
Value Added	0.04	0.05	0.04	0.08	0.28	0.18	0.58	0.37			
IM U.S. Mid Cap Equity (SA+CF) Median	4.76	7.84	4.76	14.19	14.45	11.29	12.04	9.62			
PSERS-S&P 600 Index Composite	4.87 (36)	14.77 (29)	4.87 (36)	19.27 (31)	20.14 (15)	13.98 (11)	13.98 (17)	10.54 (23)	05/01/1998	444,200	12.4
S&P SmallCap 600	4.71 (37)	14.54 (30)	4.71 (37)	19.08 (31)	19.41 (19)	13.32 (15)	12.86 (29)	9.65 (39)			
Value Added	0.16	0.23	0.16	0.19	0.73	0.66	1.12	0.89			
IM U.S. Small Cap Equity (SA+CF) Median	3.63	9.49	3.63	13.46	16.07	10.79	11.63	9.09			

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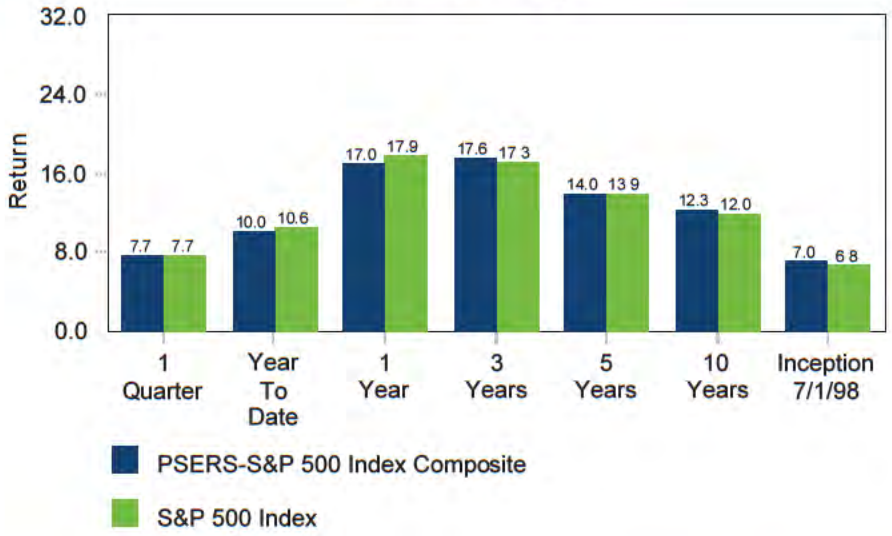
AON Empower Results®

Performance Summary

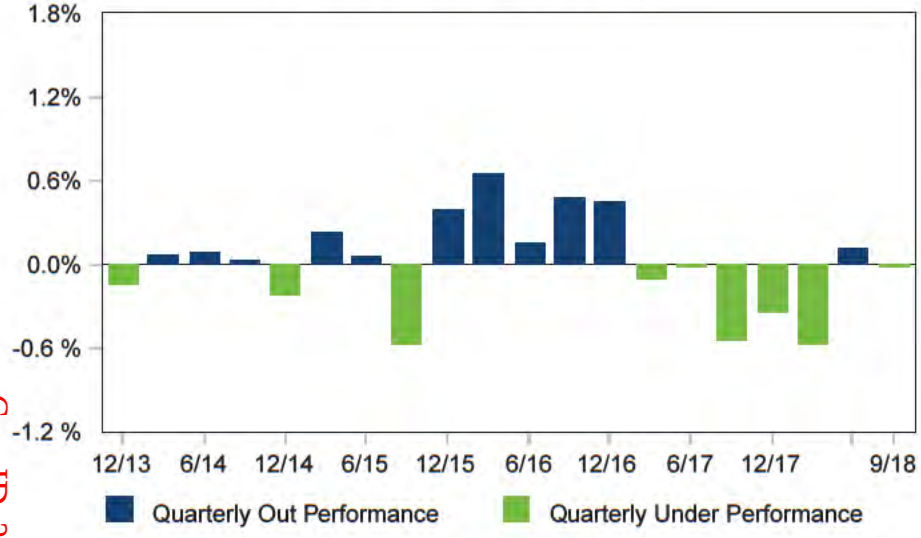
Account Information

Account Name:	PSERS-S&P 500 Index Composite
Inception Date:	06/01/1998
Account Structure:	Separate Account
Asset Class:	US Equity
Benchmark:	S&P 500 Index
Peer Group:	IM U.S. Large Cap Equity (SA+CF)

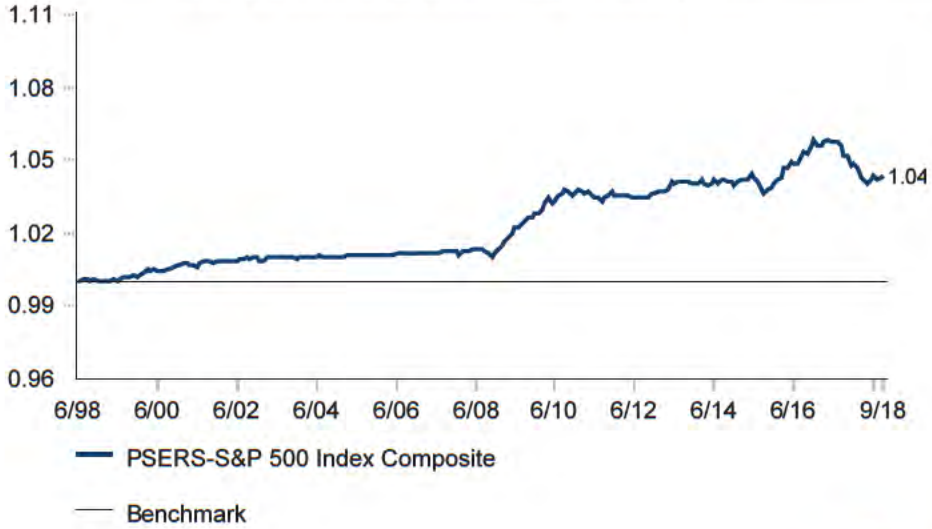
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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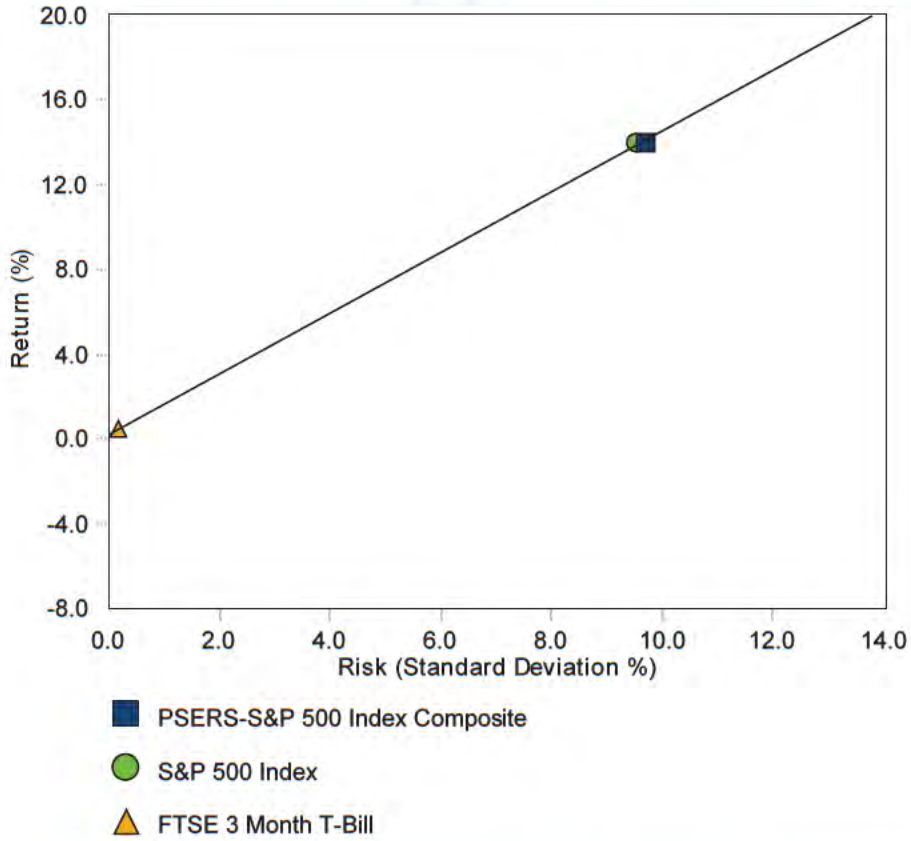
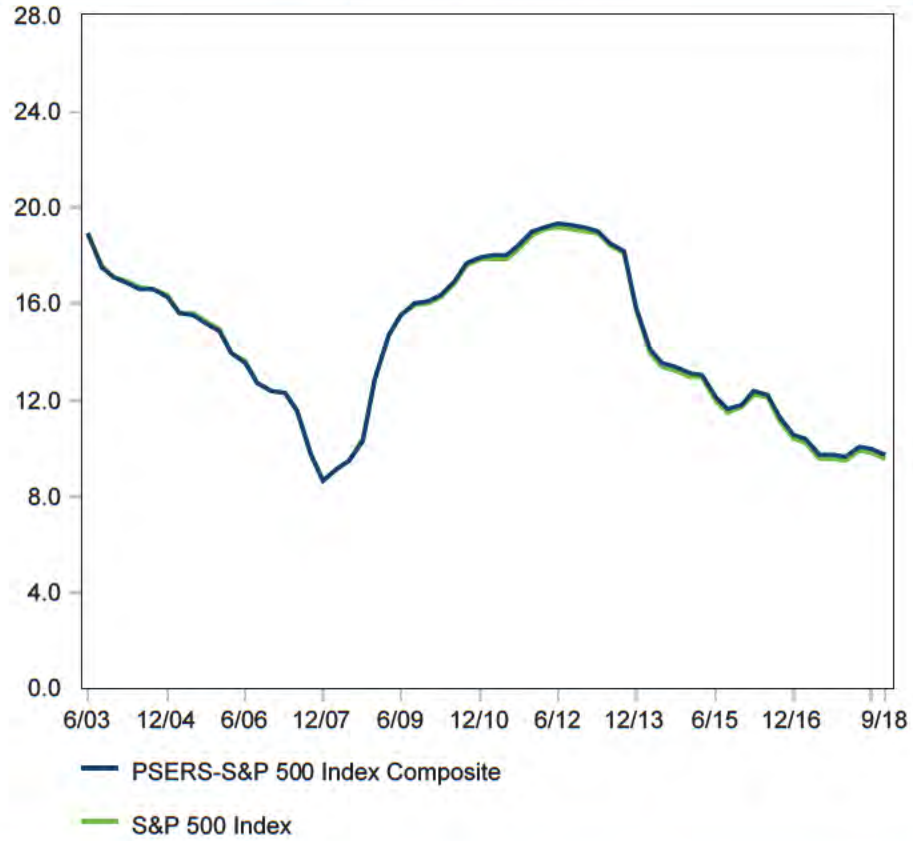
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS-S&P 500 Index Composite	0.05	0.59	0.09	1.00	1.35	-0.16	1.02	13.99	9.72	1.00
S&P 500 Index	0.00	0.00	N/A	1.00	1.37	0.00	1.00	13.95	9.55	1.00
FTSE 3 Month T-Bill	-13.08	9.54	-1.37	0.01	N/A	0.47	0.00	0.49	0.18	0.08

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Risk Statistics

PSERS-S&P 500 Index Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	16.97	17.57	13.99	12.30	7.00	07/01/1998
Standard Deviation	9.22	9.30	9.72	14.54	14.82	
Downside Risk	5.02	4.21	5.14	9.59	10.22	
Downside Semi Deviation	4.81	3.21	10.54	17.69	17.04	
Max Drawdown Recovery Period	6.00	6.00	11.00	14.00	53.00	
Maximum Drawdown	-6.53	-6.53	-8.93	-36.00	-50.84	
Maximum Loss Exposure	N/A	N/A	N/A	-36.00	-23.19	
Upside Semi Deviation	2.92	10.58	10.60	13.80	13.76	
S&P 500 Index						
Return	17.91	17.31	13.95	11.97	6.77	
Standard Deviation	9.11	9.18	9.55	14.40	14.77	
Downside Risk	4.68	4.16	5.03	9.57	10.23	
Downside Semi Deviation	4.48	3.18	10.32	17.90	17.16	
Max Drawdown Recovery Period	6.00	5.00	10.00	17.00	53.00	
Maximum Drawdown	-6.13	-6.59	-8.36	-36.13	-50.95	
Maximum Loss Exposure	N/A	N/A	N/A	-36.13	-23.93	
Upside Semi Deviation	2.98	10.44	10.46	13.51	13.60	
vs. S&P 500 Index						
Active Return	-0.80	0.24	0.05	0.32	0.22	
Tracking Error	0.61	0.67	0.59	0.50	0.38	
Actual Correlation	1.00	1.00	1.00	1.00	1.00	
Beta	1.01	1.01	1.02	1.01	1.00	
Consistency	41.67	58.33	51.67	59.17	60.91	
Down Market Capture	106.54	100.70	102.31	100.55	99.91	
Down Market Outperformance	-0.40	-0.09	-0.51	-0.16	0.03	
Information Ratio	-1.30	0.36	0.09	0.64	0.58	
Jensen Alpha	-0.95	0.07	-0.16	0.22	0.20	
Up Market Capture	98.32	101.28	101.06	101.54	100.86	
Up Market Outperformance	-0.47	0.41	0.37	0.76	0.44	
vs. FTSE 3 Month T-Bill						
Excess Return	14.61	15.91	13.14	12.41	6.03	
Excess Risk	9.22	9.31	9.71	14.55	14.88	
Sharpe Ratio	1.59	1.71	1.35	0.85	0.41	

Calculation based on monthly periodicity.

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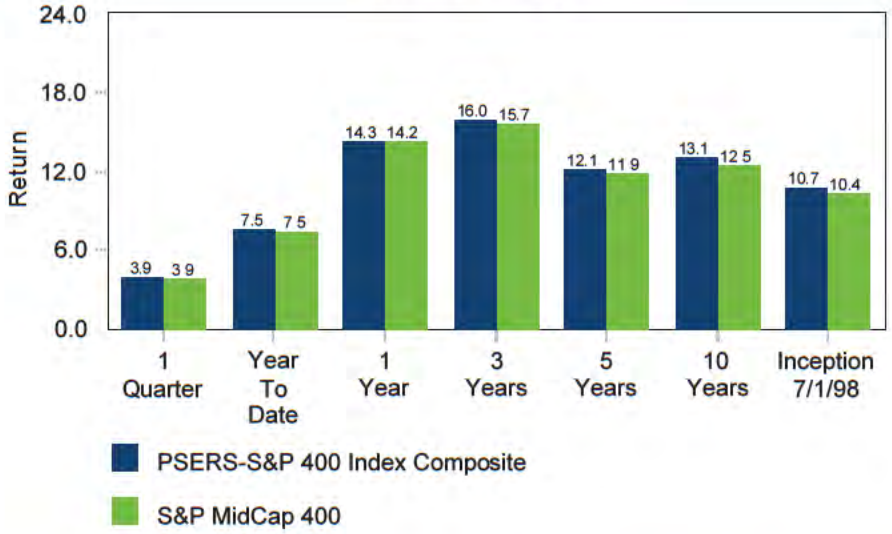
Performance Summary

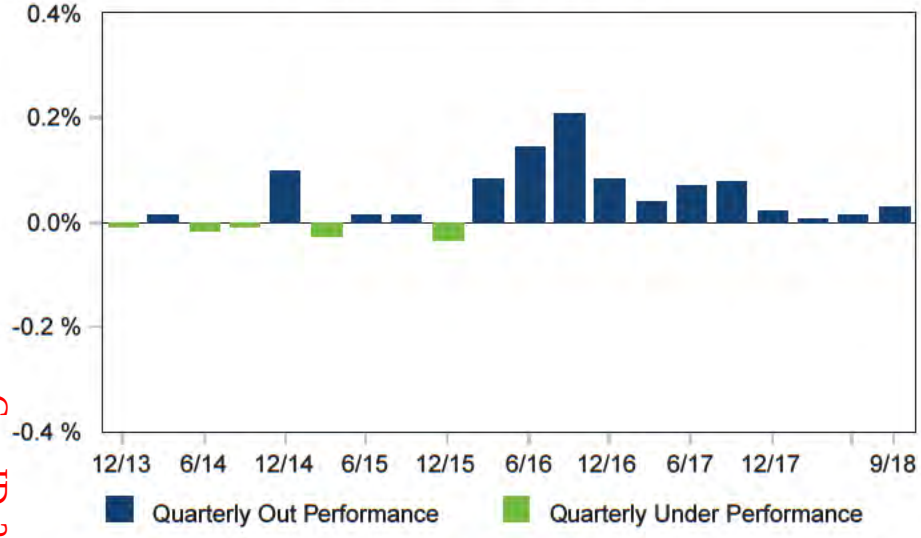
Account Information

Account Name:	PSERS-S&P 400 Index Composite
Inception Date:	06/01/1998
Account Structure:	Separate Account
Asset Class:	US Equity
Benchmark:	S&P MidCap 400
Peer Group:	IM U.S. Mid Cap Core Equity (SA+CF)

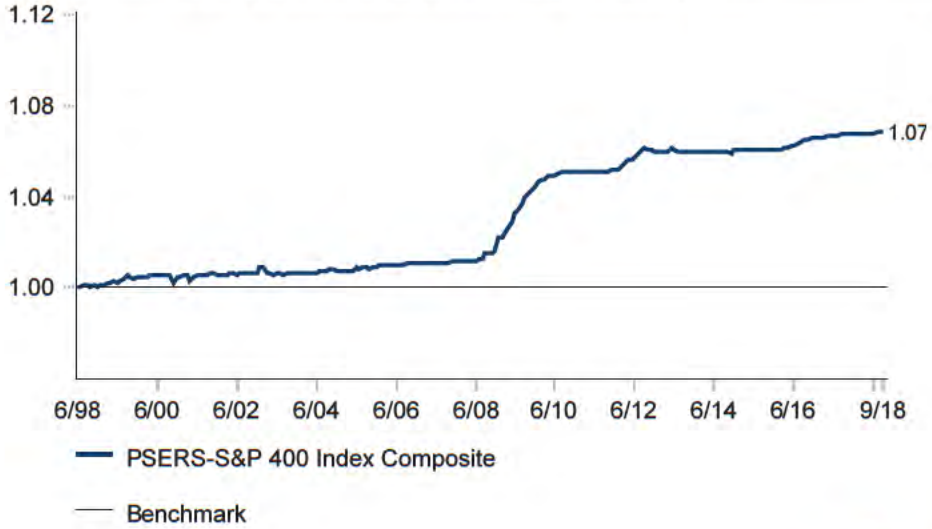
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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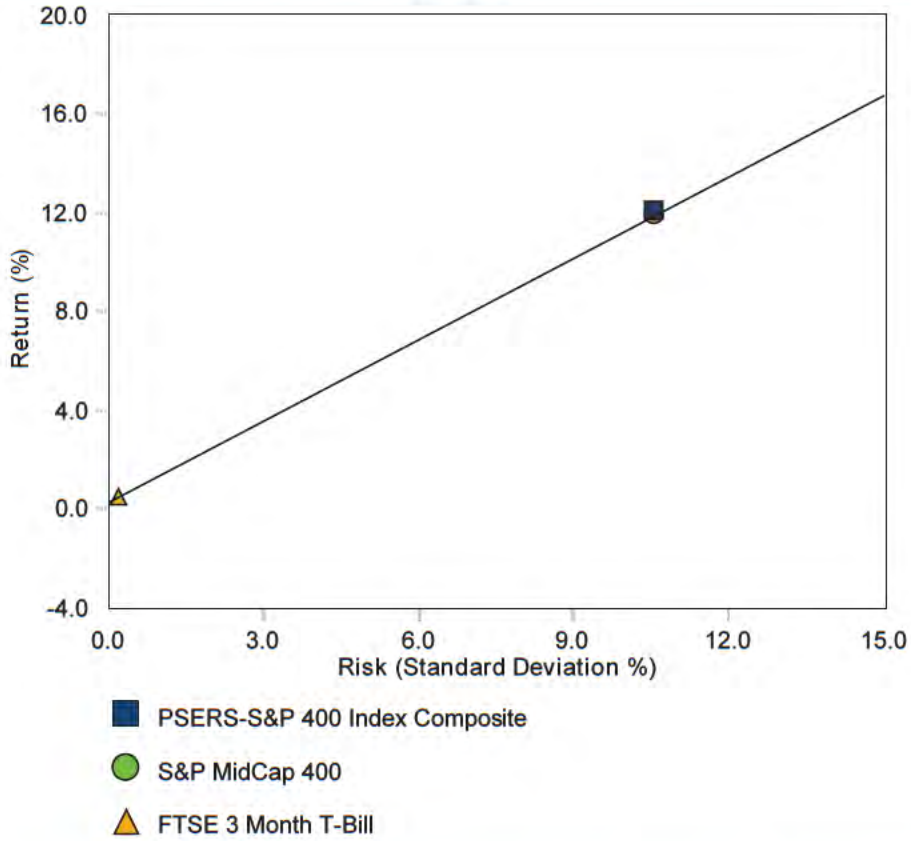
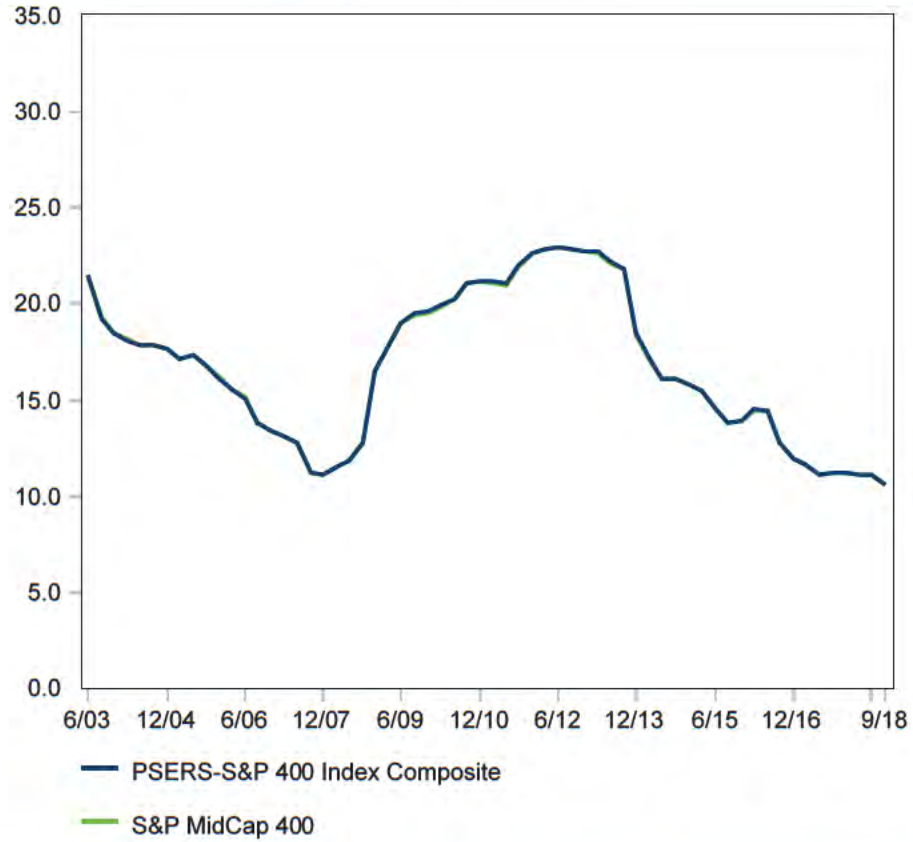
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS-S&P 400 Index Composite	0.17	0.10	1.68	1.00	1.09	0.16	1.00	12.09	10.57	1.00
S&P MidCap 400	0.00	0.00	N/A	1.00	1.08	0.00	1.00	11.91	10.56	1.00
FTSE 3 Month T-Bill	-11.36	10.55	-1.08	0.00	N/A	0.48	0.00	0.49	0.18	0.05

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Risk Statistics

PSERS-S&P 400 Index Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	14.29	15.96	12.09	13.07	10.75	07/01/1998
Standard Deviation	8.34	10.39	10.57	17.09	17.25	
Downside Risk	4.77	5.26	5.93	11.26	11.40	
Downside Semi Deviation	3.23	2.99	10.73	19.67	18.59	
Max Drawdown Recovery Period	4.00	5.00	13.00	14.00	42.00	
Maximum Drawdown	-4.43	-9.61	-12.62	-37.22	-49.07	
Maximum Loss Exposure	N/A	-3.25	N/A	-37.22	-21.65	
Upside Semi Deviation	2.71	11.87	11.44	16.52	17.00	
S&P MidCap 400						
Return	14.21	15.68	11.91	12.49	10.38	
Standard Deviation	8.33	10.37	10.56	17.05	17.25	
Downside Risk	4.78	5.27	5.94	11.32	11.45	
Downside Semi Deviation	3.23	3.00	10.76	19.52	18.68	
Max Drawdown Recovery Period	4.00	5.00	14.00	14.00	43.00	
Maximum Drawdown	-4.43	-9.62	-12.62	-37.64	-49.62	
Maximum Loss Exposure	N/A	-3.24	N/A	-37.64	-21.77	
Upside Semi Deviation	2.70	11.80	11.40	16.45	16.91	
vs. S&P MidCap 400						
Active Return	0.08	0.25	0.17	0.52	0.33	
Tracking Error	0.03	0.10	0.10	0.32	0.30	
Actual Correlation	1.00	1.00	1.00	1.00	1.00	
Beta	1.00	1.00	1.00	1.00	1.00	
Consistency	83.33	75.00	61.67	68.33	63.79	
Down Market Capture	99.69	99.55	99.68	99.19	99.30	
Down Market Outperformance	0.02	0.08	0.07	0.24	0.21	
Information Ratio	2.43	2.52	1.68	1.64	1.11	
Jensen Alpha	0.07	0.22	0.16	0.50	0.33	
Up Market Capture	100.30	100.97	100.64	101.35	100.71	
Up Market Outperformance	0.07	0.39	0.26	0.89	0.50	
vs. FTSE 3 Month T-Bill						
Excess Return	12.19	14.61	11.52	13.51	9.89	
Excess Risk	8.33	10.39	10.56	17.10	17.28	
Sharpe Ratio	1.46	1.41	1.09	0.79	0.57	

Calculation based on monthly periodicity.

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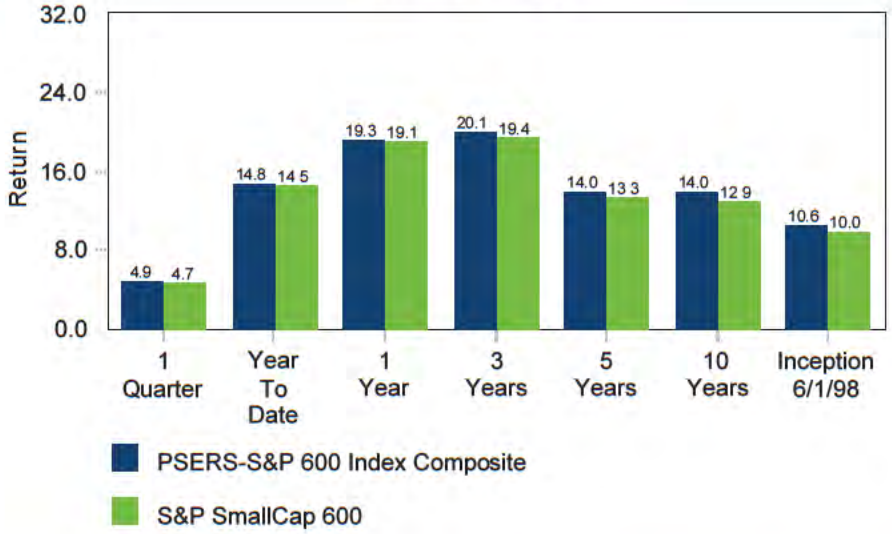
Performance Summary

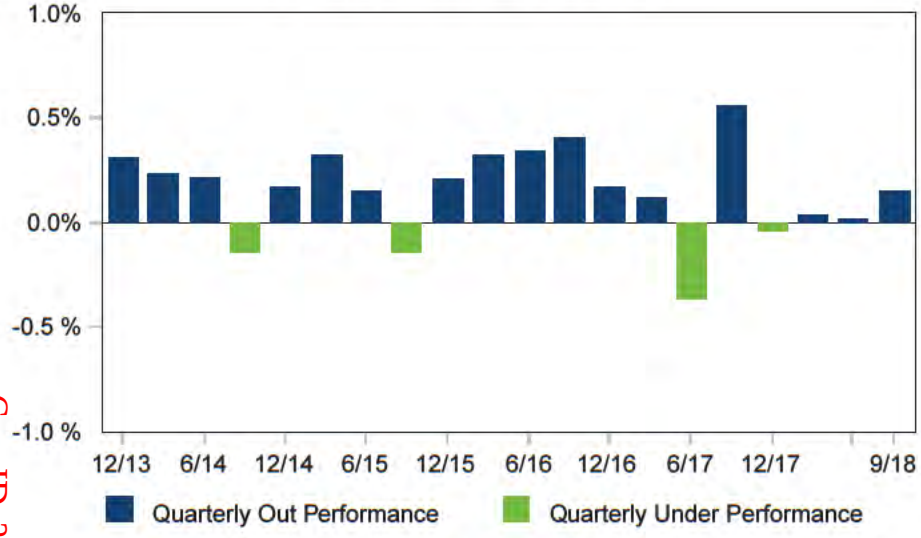
Account Information

Account Name:	PSERS-S&P 600 Index Composite
Inception Date:	06/30/1998
Account Structure:	Separate Account
Asset Class:	US Equity
Benchmark:	S&P SmallCap 600
Peer Group:	IM U.S. Small Cap Equity (SA+CF)

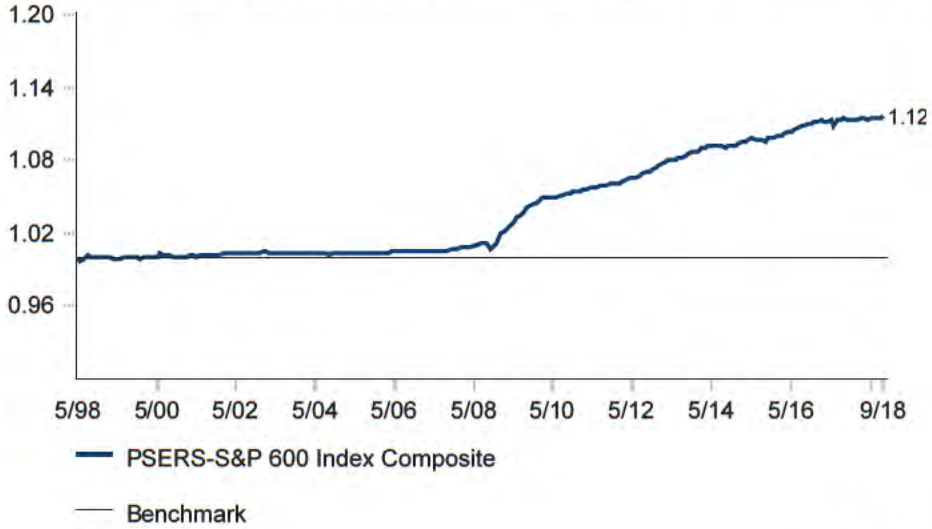
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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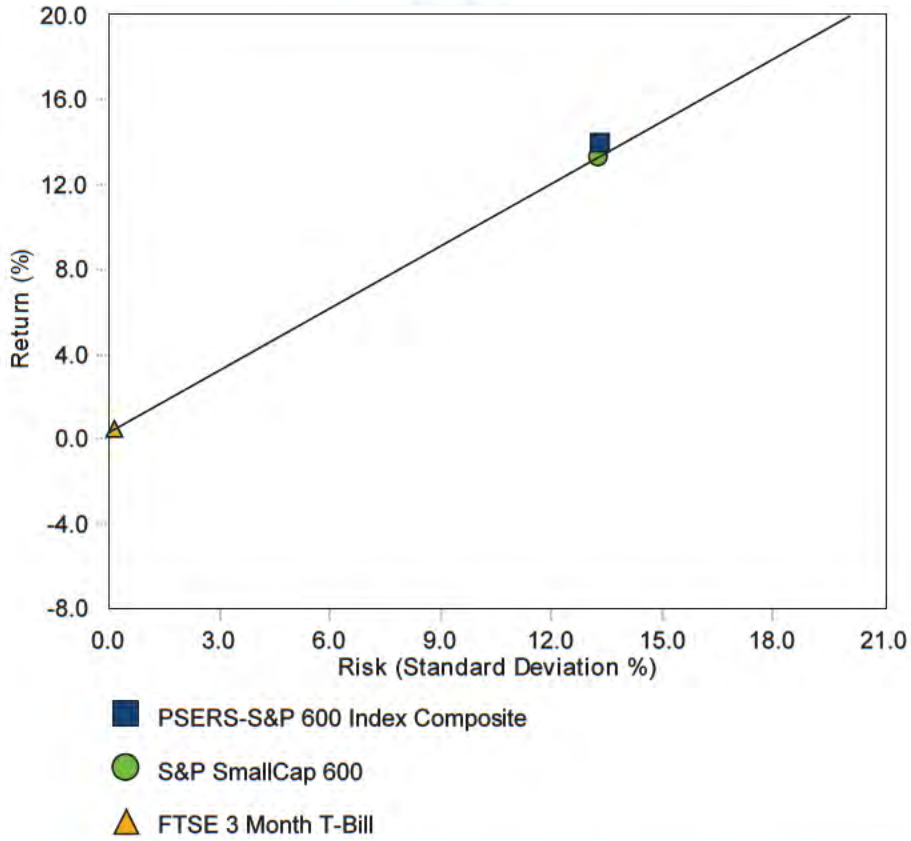
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation

5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS-S&P 600 Index Composite	0.59	0.37	1.59	1.00	1.01	0.52	1.01	13.98	13.35	1.00
S&P SmallCap 600	0.00	0.00	N/A	1.00	0.98	0.00	1.00	13.32	13.28	1.00
FTSE 3 Month T-Bill	-12.94	13.26	-0.98	0.01	N/A	0.47	0.00	0.49	0.18	0.10

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Risk Statistics

PSERS-S&P 600 Index Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	19.27	20.14	13.98	13.98	10.58	06/01/1998
Standard Deviation	10.41	13.34	13.35	19.11	18.63	
Downside Risk	5.18	6.25	7.18	12.37	12.40	
Downside Semi Deviation	3.51	3.56	12.66	21.33	20.37	
Max Drawdown Recovery Period	4.00	6.00	12.00	17.00	43.00	
Maximum Drawdown	-3.80	-10.47	-11.46	-41.95	-51.37	
Maximum Loss Exposure	N/A	-2.26	N/A	-41.95	-25.14	
Upside Semi Deviation	3.58	15.47	14.72	18.79	18.12	
S&P SmallCap 600						
Return	19.08	19.41	13.32	12.86	9.99	
Standard Deviation	10.41	13.33	13.28	19.03	18.62	
Downside Risk	5.26	6.35	7.23	12.45	12.48	
Downside Semi Deviation	3.56	3.61	12.73	21.47	20.39	
Max Drawdown Recovery Period	4.00	6.00	13.00	17.00	45.00	
Maximum Drawdown	-3.87	-10.66	-11.70	-42.50	-52.15	
Maximum Loss Exposure	N/A	-2.67	N/A	-42.50	-25.26	
Upside Semi Deviation	3.56	15.31	14.52	18.47	18.01	
vs. S&P SmallCap 600						
Active Return	0.16	0.62	0.59	1.01	0.55	
Tracking Error	0.13	0.42	0.37	0.44	0.38	
Actual Correlation	1.00	1.00	1.00	1.00	1.00	
Beta	1.00	1.00	1.01	1.00	1.00	
Consistency	66.67	77.78	71.67	79.17	66.80	
Down Market Capture	98.70	98.63	99.27	98.91	99.12	
Down Market Outperformance	0.09	0.31	0.19	0.35	0.28	
Information Ratio	1.26	1.49	1.59	2.27	1.42	
Jensen Alpha	0.17	0.62	0.53	0.95	0.54	
Up Market Capture	100.25	101.75	101.95	102.48	101.20	
Up Market Outperformance	0.08	0.97	1.06	1.90	0.93	
vs. FTSE 3 Month T-Bill						
Excess Return	16.68	18.53	13.53	14.67	9.98	
Excess Risk	10.39	13.34	13.34	19.13	18.68	
Sharpe Ratio	1.61	1.39	1.01	0.77	0.53	

Calculation based on monthly periodicity.

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Non-US Equity

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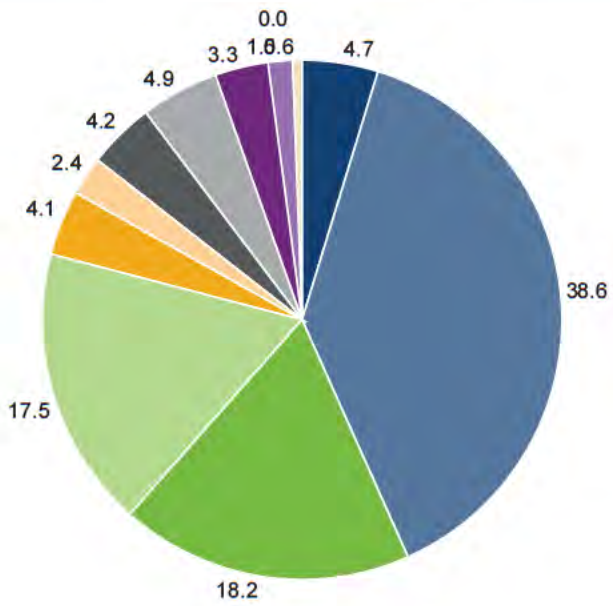
AON Empower Results®

Asset Allocation by Manager

September 30, 2018 : $6,420,511



	Market Value ($000)	Allocation (%)
Wasatch EM Small Cap	303,324.3	4.7
PSERS ACWI x US Index Fund	2,477,724.1	38.6
Baillie Gifford	1,170,291.7	18.2
Marathon Asset Mgmt	1,125,654.2	17.5
The Children's Investment Fund, LP	260,765.0	4.1
BlackRock Global Composite	155,491.8	2.4
Acadian Asset Mgmt	267,192.1	4.2
Wasatch Int'l Small Cap	311,463.9	4.9
Oberweis Asset Mgmt	213,370.0	3.3
QS Investors	96,939.2	1.5
Fidelity Institutional Int'l Small Cap	158.9	0.0
Insight Everest - Int'l Eq	38,136.0	0.6

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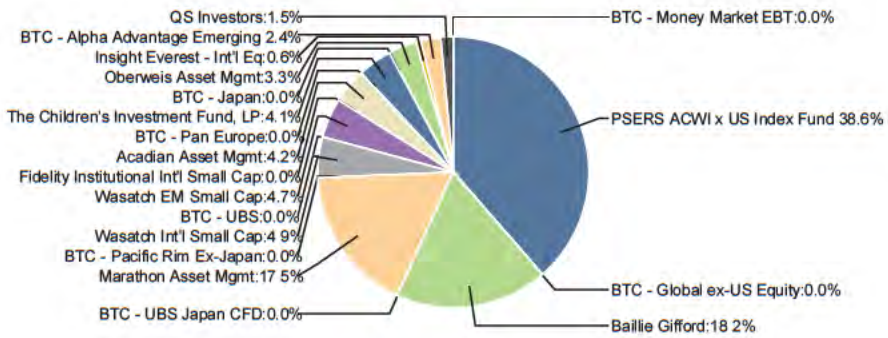
AON Empower Results®

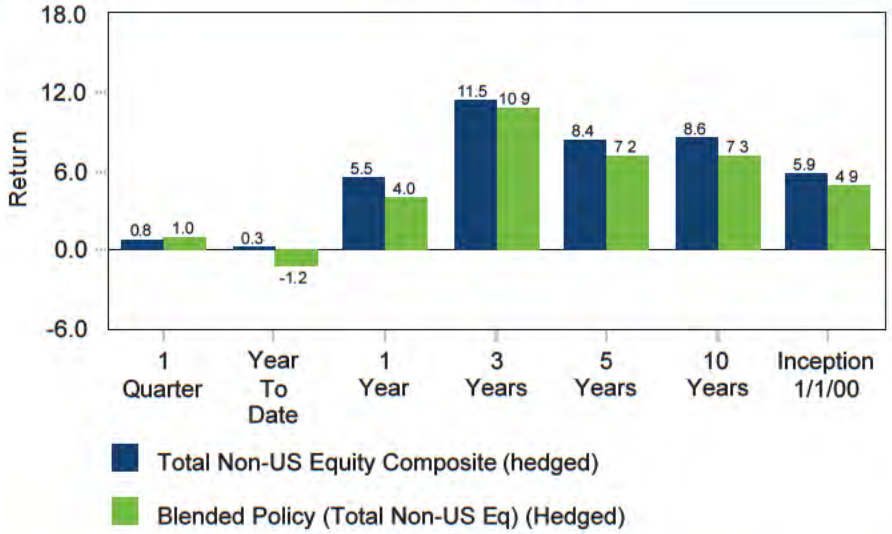
Portfolio Overview

Current Allocation

September 30, 2018 : $6,421M



Return Summary



Quarterly Excess Performance

Ratio of Cumulative Wealth - Since Inception

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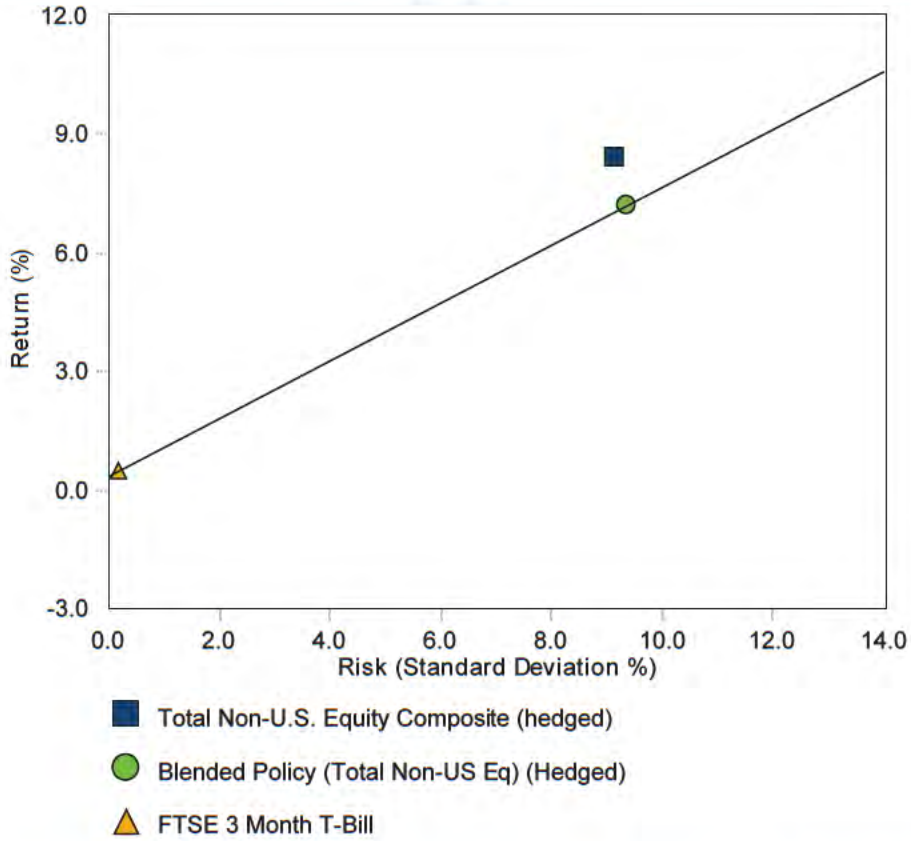
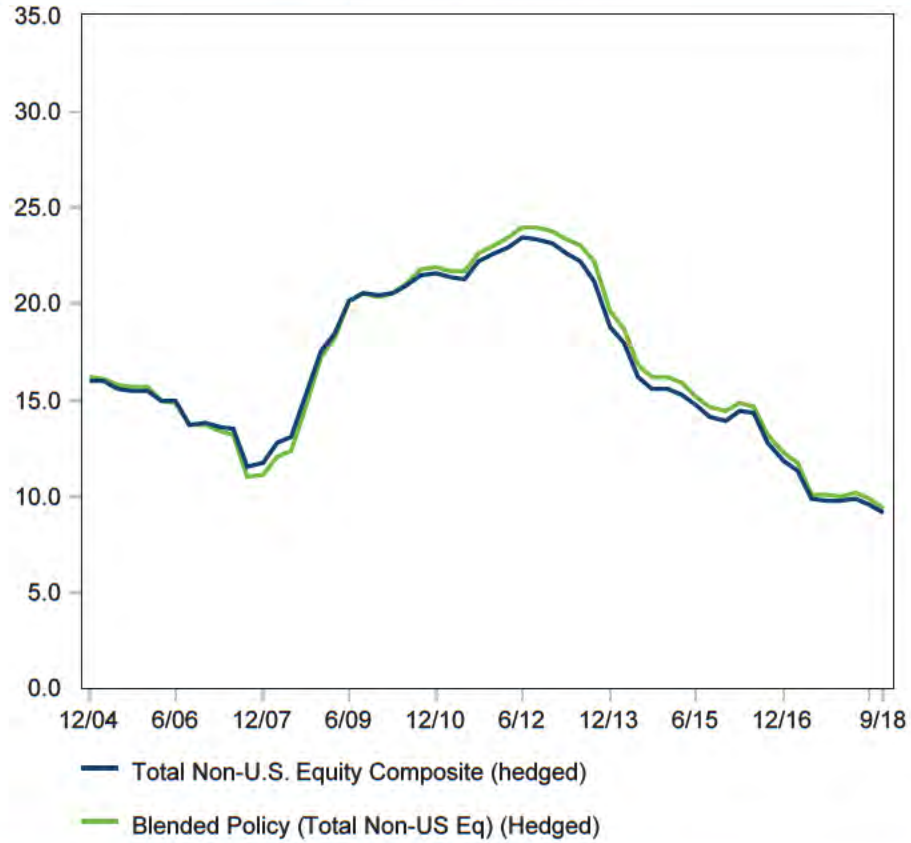
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Non-U.S. Equity Composite (hedged)	1.11	1.29	0.86	0.98	0.88	1.36	0.97	8.41	9.15	0.99
Blended Policy (Total Non-US Eq) (Hedged)	0.00	0.00	N/A	1.00	0.74	0.00	1.00	7.20	9.37	1.00
FTSE 3 Month T-Bill	-6.92	9.37	-0.74	0.00	N/A	0.49	0.00	0.49	0.18	0.01

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AON Empower Results®

Risk Statistics

Total Non-U.S. Equity Composite (hedged)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	5.52	11.54	8.41	8.59	5.87	01/01/2000
Standard Deviation	7.02	8.78	9.15	16.28	16.15	
Downside Risk	4.06	4.81	5.83	10.96	11.35	
Downside Semi Deviation	1.94	2.60	10.86	18.45	18.42	
Max Drawdown Recovery Period	N/A	9.00	21.00	9.00	71.00	
Maximum Drawdown	-4.50	-10.40	-16.05	-32.08	-55.34	
Maximum Loss Exposure	N/A	-3.60	N/A	-32.08	-17.59	
Upside Semi Deviation	2.34	9.73	8.96	15.46	14.87	
Blended Policy (Total Non-US Eq) (Hedged)						
Return	4.04	10.86	7.20	7.27	4.87	
Standard Deviation	8.13	9.06	9.37	16.96	16.37	
Downside Risk	5.08	4.97	6.06	11.59	11.61	
Downside Semi Deviation	2.43	2.68	11.28	18.85	18.73	
Max Drawdown Recovery Period	N/A	9.00	22.00	9.00	74.00	
Maximum Drawdown	-5.62	-10.15	-17.38	-33.63	-55.52	
Maximum Loss Exposure	N/A	-3.62	N/A	-33.63	-18.53	
Upside Semi Deviation	2.53	9.90	8.96	16.11	14.93	
vs. Blended Policy (Total Non-US Eq) (Hedged)						
Active Return	1.34	0.59	1.11	1.11	0.92	
Tracking Error	1.46	1.34	1.29	1.54	1.61	
Actual Correlation	0.99	0.99	0.99	1.00	1.00	
Beta	0.86	0.96	0.97	0.96	0.98	
Consistency	58.33	52.78	60.00	62.50	59.11	
Down Market Capture	73.19	92.45	92.05	92.02	96.79	
Down Market Outperformance	2.48	1.41	1.84	2.39	1.00	
Information Ratio	0.92	0.44	0.86	0.72	0.57	
Jensen Alpha	1.74	1.01	1.34	1.48	1.00	
Up Market Capture	90.67	100.03	102.28	99.09	101.30	
Up Market Outperformance	-1.48	0.03	0.68	-0.48	0.77	
vs. FTSE 3 Month T-Bill						
Excess Return	4.05	10.54	8.03	9.29	5.40	
Excess Risk	7.05	8.80	9.15	16.29	16.21	
Sharpe Ratio	0.57	1.20	0.88	0.57	0.33	

Calculation based on monthly periodicity.

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As of September 30, 2018

Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Total Non-US Equity Composite (hedged)	0.79 (33)	0.27 (16)	0.79 (33)	5.52 (17)	11.54 (37)	8.41 (13)	8.59 (22)	5 87 (44)	01/01/2000	6,420,511	100.0
Blended Policy (Total Non-US Eq) (Hedged)	1.02 (29)	-1.15 (24)	1.02 (29)	4.04 (25)	10.86 (43)	7.20 (21)	7.27 (37)	4.87 (59)			
Value Added	-0.23	1.42	-0.23	1.48	0.68	1.21	1.32	1.00			
M International Equity (SA+CF) Median	-0.06	-3.63	-0.06	0.68	10.19	4.80	6.46	5.53			
Emerging Markets Equity Composite	-6.01 (87)	-10.72 (67)	-6.01 (87)	-4.46 (62)	5.53 (94)	2.12 (81)	4.60 (71)	7.63 (88)	07/01/1998	303,324	4.7
Blended Policy (MSCI EM net)	-1.45 (40)	-8.22 (30)	-1.45 (40)	-1.18 (23)	12.22 (32)	3.54 (44)	5.36 (55)	8.49 (69)			
Value Added	-4.56	-2.50	-4.56	-3.28	-6.69	-1.42	-0.76	-0.86			
M Emerging Markets Equity (SA+CF) Median	-2.46	-9.23	-2.46	-3.50	10.93	3.30	5.67	8.71			
Wasatch EM Small Cap	-6.01 (87)	-10.72 (67)	-6.01 (87)	-4.46 (62)	5.53 (94)	2.02 (82)	9.89 (5)	6 86 (4)	07/01/2008	303,324	4.7
Blended Policy (Wasatch EM)	-3.35 (61)	-11.39 (76)	-3.35 (61)	-4.01 (58)	7.82 (82)	2.67 (66)	7.51 (17)	3.98 (22)			
Value Added	-2.66	0.67	-2.66	-0.45	-2.29	-0.65	2.38	2.88			
M Emerging Markets Equity (SA+CF) Median	-2.46	-9.23	-2.46	-3.50	10.93	3.30	5.67	2.23			
Total Non-U.S. Equity x Emerging Markets Composite (hedged)	1.11 (28)	0.81 (14)	1.11 (28)	6.01 (15)	11.82 (33)	N/A	N/A	8.64 (9)	04/01/2014	6,117,187	95.3
Blended Policy (Non-US Equity x EM) (Hedged)	1.12 (28)	-0.85 (22)	1.12 (28)	4.25 (24)	10.79 (44)	N/A	N/A	7.17 (16)			
Value Added	-0.01	1.66	-0.01	1.76	1.03	N/A	N/A	1.47			
M International Equity (SA+CF) Median	-0.06	-3.63	-0.06	0.68	10.19	N/A	N/A	3.99			
PSERS ACWI x US Index Fund	0.75 (34)	-2.37 (37)	0.75 (34)	2.83 (32)	10.76 (44)	4.79 (51)	5.94 (62)	5.19 (74)	07/01/1998	2,477,724	38.6
MSCI ACWI/EAFE Index Blend	0.71 (35)	-3.09 (44)	0.71 (35)	1.76 (41)	9.97 (53)	4.12 (61)	5.18 (73)	4.60 (88)			
Value Added	0.04	0.72	0.04	1.07	0.79	0.67	0.76	0.59			
M International Equity (SA+CF) Median	-0.06	-3.63	-0.06	0.68	10.19	4.80	6.46	6.74			
Baillie Gifford	0.25 (45)	-2.74 (41)	0.25 (45)	3.15 (30)	13.66 (15)	7.04 (22)	7.97 (28)	9 56 (36)	07/01/2002	1,170,292	18.2
MSCI AC World ex USA Index (Net)	0.71 (35)	-3.09 (44)	0.71 (35)	1.76 (41)	9.97 (53)	4.12 (61)	5.18 (73)	6.86 (72)			
Value Added	-0.46	0.35	-0.46	1.39	3.69	2.92	2.79	2.70			
M International Equity (SA+CF) Median	-0.06	-3.63	-0.06	0.68	10.19	4.80	6.46	8.10			
Marathon Asset Mgmt	0.79 (33)	-1.67 (29)	0.79 (33)	2.52 (34)	9.73 (56)	5.53 (39)	8.08 (26)	8 97 (22)	07/01/1998	1,125,654	17.5
Blended Benchmark (MSCI ACWI ex USA net)	0.71 (35)	-3.09 (44)	0.71 (35)	1.76 (41)	9.97 (53)	4.12 (61)	5.18 (73)	5.06 (79)			
Value Added	0.08	1.42	0.08	0.76	-0.24	1.41	2.90	3.91			
M International Equity (SA+CF) Median	-0.06	-3.63	-0.06	0.68	10.19	4.80	6.46	6.74			
The Children's Investment Fund, LP	1.21 (25)	N/A	1.21 (25)	N/A	N/A	N/A	N/A	9 54 (1)	05/01/2018	260,765	4.1
MSCI World Index (Net)	4.98 (3)	N/A	4.98 (3)	N/A	N/A	N/A	N/A	5.59 (2)			
Value Added	-3.77	N/A	-3.77	N/A	N/A	N/A	N/A	3.95			
M International Equity (SA+CF) Median	-0 06	N/A	-0.06	N/A	N/A	N/A	N/A	-4.12			

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AON Empower Results®

As of September 30, 2018

Asset Allocation & Peer Rankings

	Performance(%)																						Allocation	
	1 Quarter		Year To Date		FYTD		1 Year		3 Years		5 Years		10 Years		Since Inception		Inception Date	Market Value ($000)	%
BlackRock Global Composite	-4.05	(89)	-4.95	(62)	-4.05	(89)	-0.48	(61)	8.14	(76)	4.65	(52)	6.83	(44)	7.36	(51)	10/01/2004	155,492	2.4
MSCI AC World ex USA Index (Net)	0.71	(35)	-3.09	(44)	0.71	(35)	1.76	(41)	9.97	(53)	4.12	(61)	5.18	(73)	6.17	(71)			
Value Added	-4.76		-1.86		-4.76		-2.24		-1.83		0.53		1.65		1.19				
M International Equity (SA+CF) Median	-0.06		-3.63		-0.06		0.68		10.19		4.80		6.46		7.37				
Acadian Asset Mgmt	-1.09	(41)	-2.93	(50)	-1.09	(41)	1.62	(54)	15.36	(10)	9.74	(18)	10.91	(23)	10.60	(5)	07/01/2005	267,192	4.2
Blended Benchmark (MSCI AC World ex USA Small Cap net)	-1.51	(49)	-4.41	(59)	-1.51	(49)	1.86	(53)	11.24	(57)	6.14	(73)	8.73	(77)	6.78	(84)			
Value Added	0.42		1.48		0.42		-0.24		4.12		3.60		2.18		3.82				
M International Small Cap Equity (SA+CF) Median	-1.58		-3.11		-1.58		2.67		11.99		7.37		9.88		8.25				
Wasatch Int'l Small Cap	1.92	(5)	8.32	(3)	1.92	(5)	13.76	(3)	13.26	(21)	7.99	(36)	14.18	(2)	9.98	(5)	10/01/2005	311,464	4.9
Blended Benchmark (MSCI AC World ex USA Small Cap net)	-1.51	(49)	-4.41	(59)	-1.51	(49)	1.86	(53)	11.24	(57)	6.14	(73)	8.73	(77)	6.26	(83)			
Value Added	3.43		12.73		3.43		11.90		2.02		1.85		5.45		3.72				
M International Small Cap Equity (SA+CF) Median	-1.58		-3.11		-1.58		2.67		11.99		7.37		9.88		6.94				
Oberweis Asset Mgmt	-2.69	(80)	-2.09	(41)	-2.69	(80)	5.45	(31)	12.44	(34)	11.02	(7)	13.19	(6)	9.08	(11)	07/01/2008	213,370	3.3
MSCI AC World ex USA Small Cap (Net)	-1.51	(49)	-4.41	(59)	-1.51	(49)	1.86	(53)	11.24	(57)	6.14	(73)	8.73	(77)	5.47	(83)			
Value Added	-1.18		2.32		-1.18		3.59		1.20		4.88		4.46		3.61				
M International Small Cap Equity (SA+CF) Median	-1.58		-3.11		-1.58		2.67		11.99		7.37		9.88		6.92				
QS Investors	-1.33	(44)	-5.20	(67)	-1.33	(44)	0.00	(68)	10.54	(63)	7.48	(49)	9.55	(61)	6.47	(62)	07/01/2008	96,939	1.5
MSCI AC World ex USA Small Cap (Net)	-1.51	(49)	-4.41	(59)	-1.51	(49)	1.86	(53)	11.24	(57)	6.14	(73)	8.73	(77)	5.47	(83)			
Value Added	0.18		-0.79		0.18		-1.86		-0.70		1.34		0.82		1.00				
M International Small Cap Equity (SA+CF) Median	-1.58		-3.11		-1.58		2.67		11.99		7.37		9.88		6.92				
Insight Everest - Int'l Eq																		38,136	0.6

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Emerging Markets Equity

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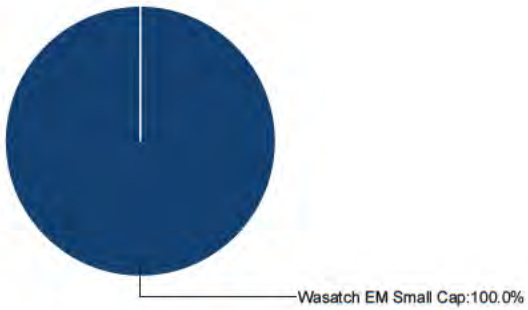
AON Empower Results®

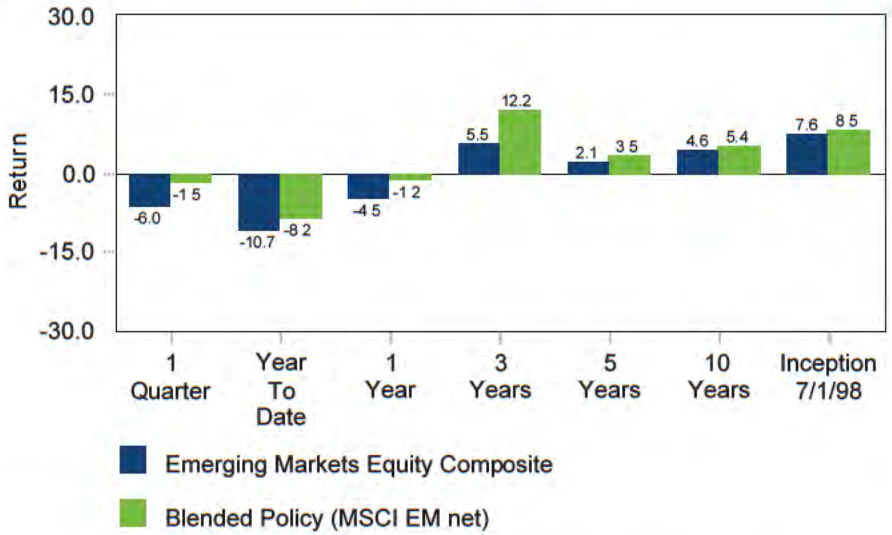
Portfolio Overview

Current Allocation

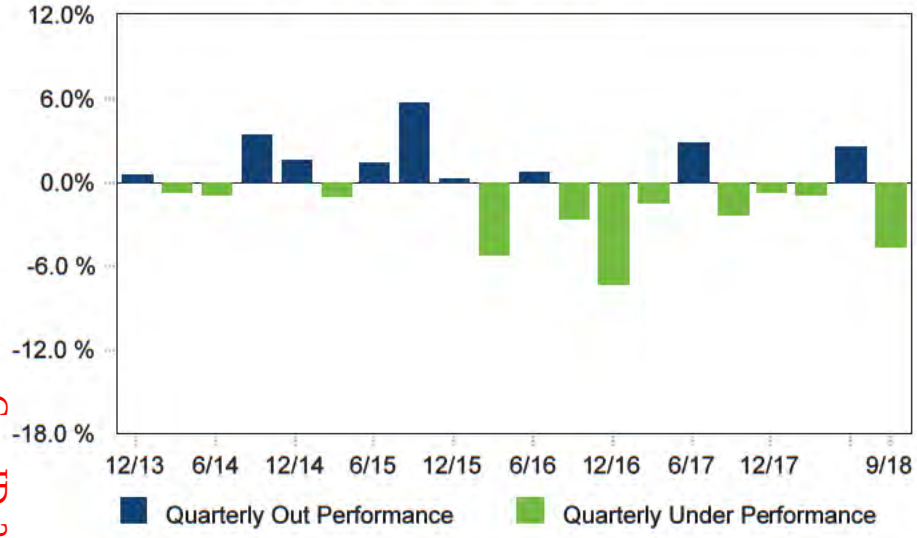
September 30, 2018 : $303M



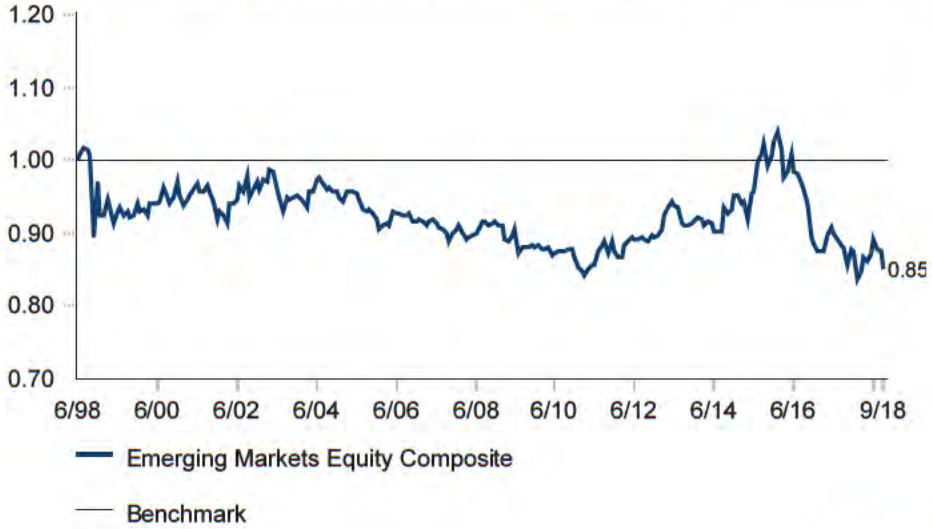
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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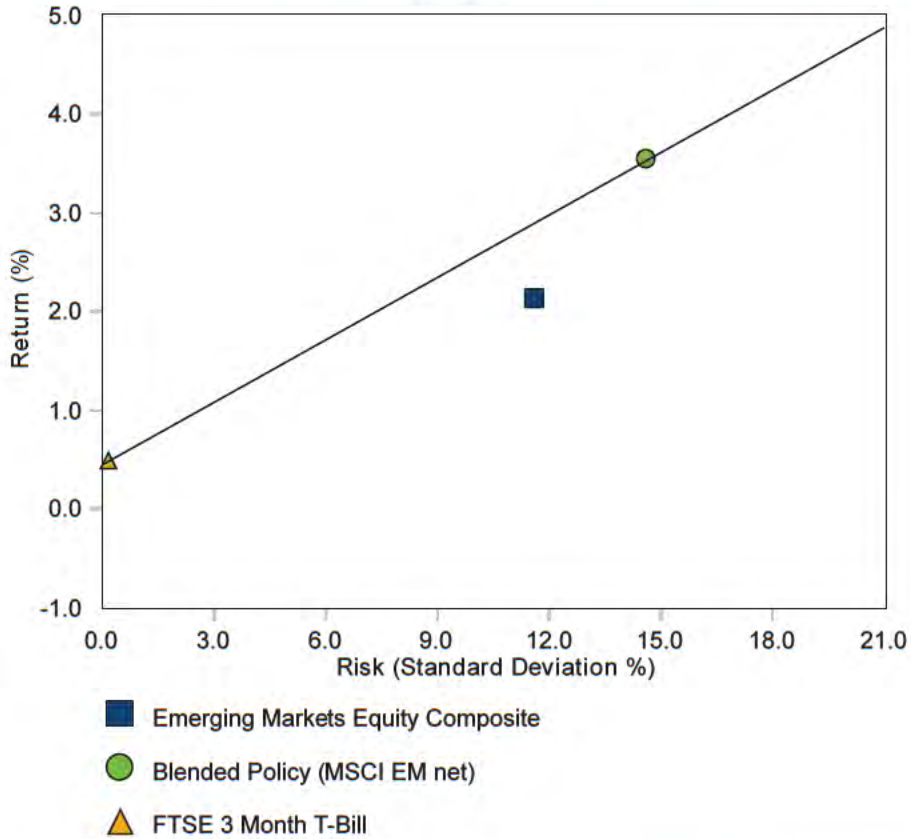
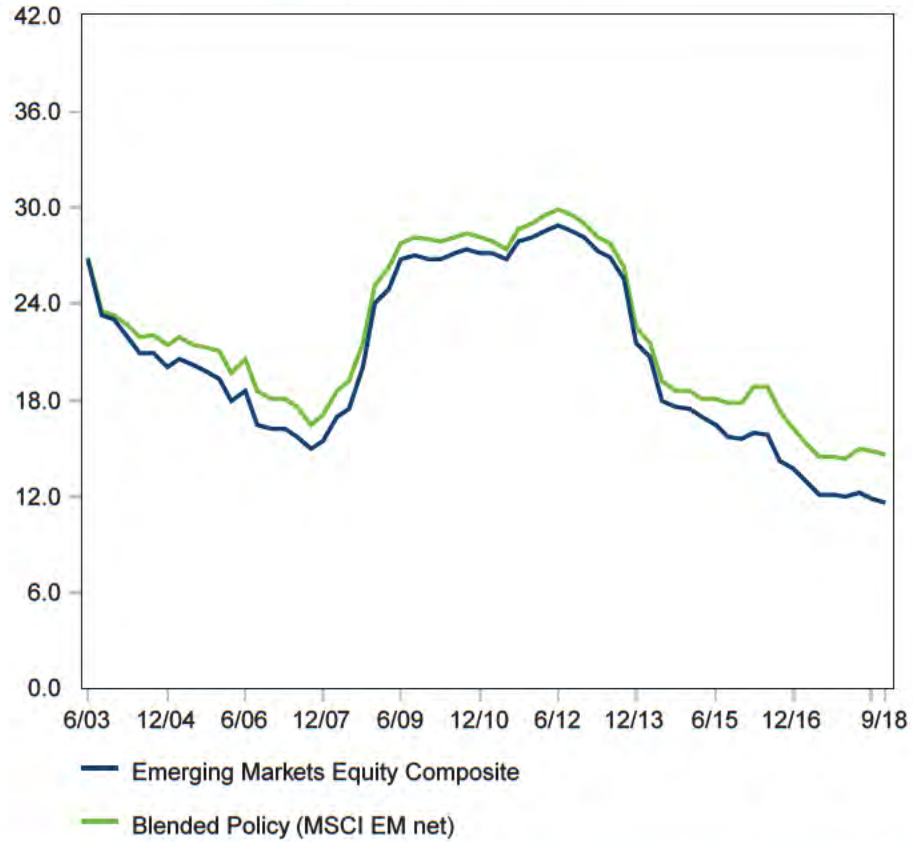
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Emerging Markets Equity Composite	-1.76	6.59	-0.27	0.81	0.20	-0.46	0.71	2.12	11.61	0.90
Blended Policy (MSCI EM net)	0.00	0.00	N/A	1.00	0.28	0.00	1.00	3.54	14.63	1.00
FTSE 3 Month T-Bill	-4.04	14.62	-0.28	0.00	N/A	0.49	0.00	0.49	0.18	0.02

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AON Empower Results®

Risk Statistics

Emerging Markets Equity Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-4.46	5.53	2.12	4.60	7.63	07/01/1998
Standard Deviation	9.11	12.03	11.61	19.78	21.66	
Downside Risk	7.05	7.79	8.10	13.72	15.07	
Downside Semi Deviation	3.02	12.31	12.21	20.55	23.21	
Max Drawdown Recovery Period	N/A	N/A	35.00	9.00	117.00	
Maximum Drawdown	-13.70	-13.70	-20.99	-36.33	-60.52	
Maximum Loss Exposure	-4.46	-6.80	-11.92	-36.33	-25.47	
Upside Semi Deviation	2.52	12.35	11.35	19.46	20.86	
Blended Policy (MSCI EM net)						
Return	-1.18	12.22	3.54	5.36	8.49	
Standard Deviation	13.06	14.23	14.63	21.24	22.74	
Downside Risk	8.27	7.41	9.54	14.19	15.58	
Downside Semi Deviation	3.23	12.16	14.66	20.88	24.24	
Max Drawdown Recovery Period	N/A	N/A	35.00	9.00	117.00	
Maximum Drawdown	-15.02	-15.02	-29.77	-36.10	-61.54	
Maximum Loss Exposure	-1.18	-6.02	-20.88	-36.10	-26.66	
Upside Semi Deviation	4.84	16.39	14.93	21.91	22.09	
vs. Blended Policy (MSCI EM net)						
Active Return	-3.76	-6.45	-1.76	-1.01	-1.04	
Tracking Error	7.92	7.06	6.59	5.35	5.83	
Actual Correlation	0.80	0.87	0.90	0.97	0.97	
Beta	0.56	0.73	0.71	0.90	0.92	
Consistency	41.67	36.11	45.00	49.17	48.15	
Down Market Capture	83.59	93.14	77.65	87.95	90.92	
Down Market Outperformance	2.57	1.61	6.53	3.72	3.05	
Information Ratio	-0.48	-0.91	-0.27	-0.19	-0.18	
Jensen Alpha	-4.53	-3.28	-0.60	-0.30	-0.33	
Up Market Capture	61.82	71.42	74.31	87.62	90.76	
Up Market Outperformance	-7.39	-16.34	-13.55	-11.04	-9.22	
vs. FTSE 3 Month T-Bill						
Excess Return	-5.74	5.30	2.28	6.20	7.93	
Excess Risk	9.17	12.06	11.62	19.80	21.67	
Sharpe Ratio	-0.63	0.44	0.20	0.31	0.37	

Calculation based on monthly periodicity.

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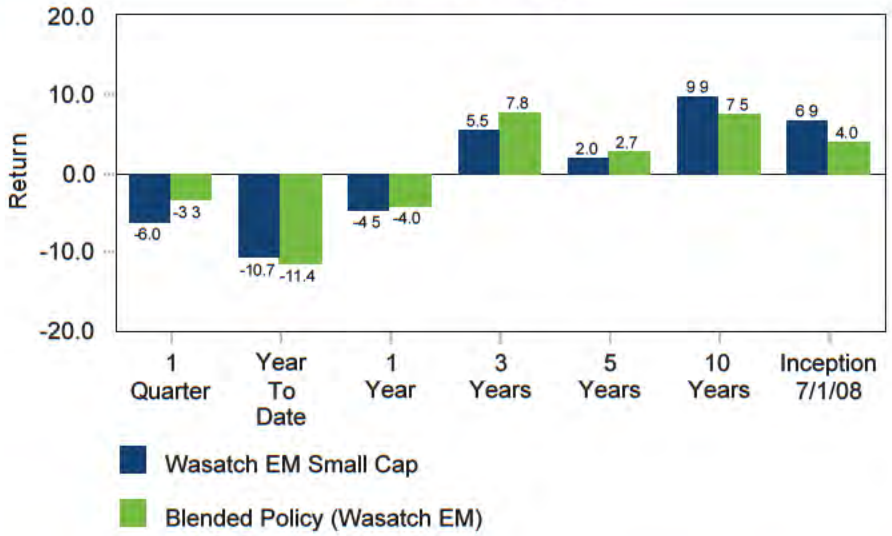
Performance Summary

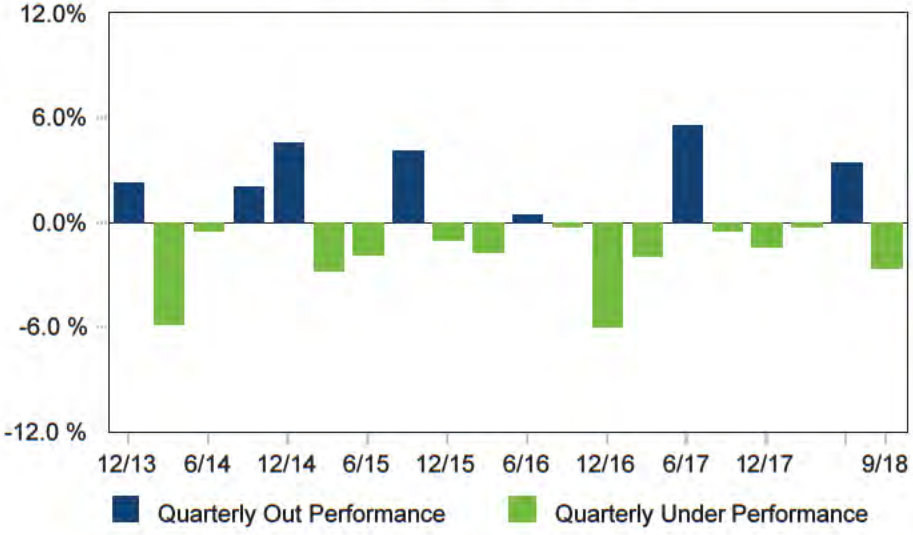
Account Information

Account Name:	Wasatch EM Small Cap
Inception Date:	06/30/2008
Account Structure:	Separate Account
Asset Class:	International-Emerging Equity
Benchmark:	Blended Policy (Wasatch EM)
Peer Group:	IM Emerging Markets Equity (SA+CF)

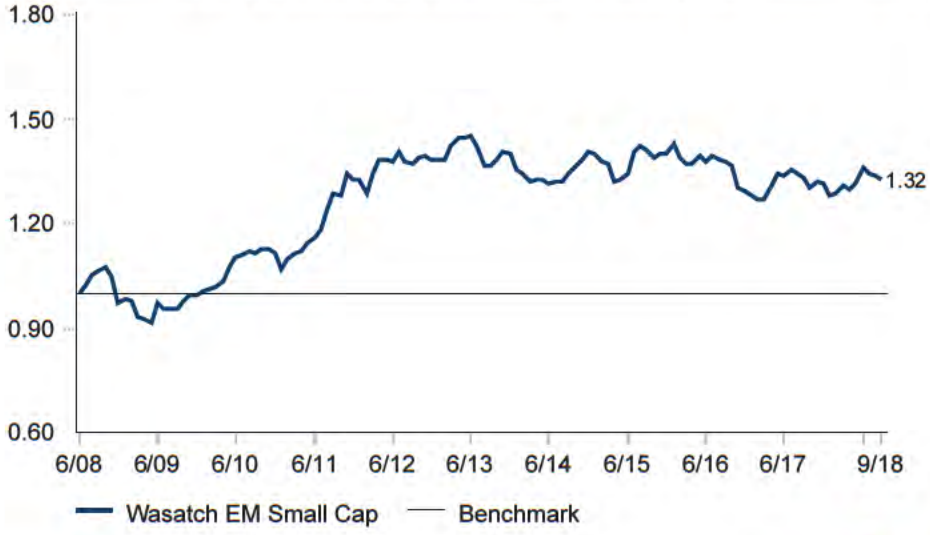
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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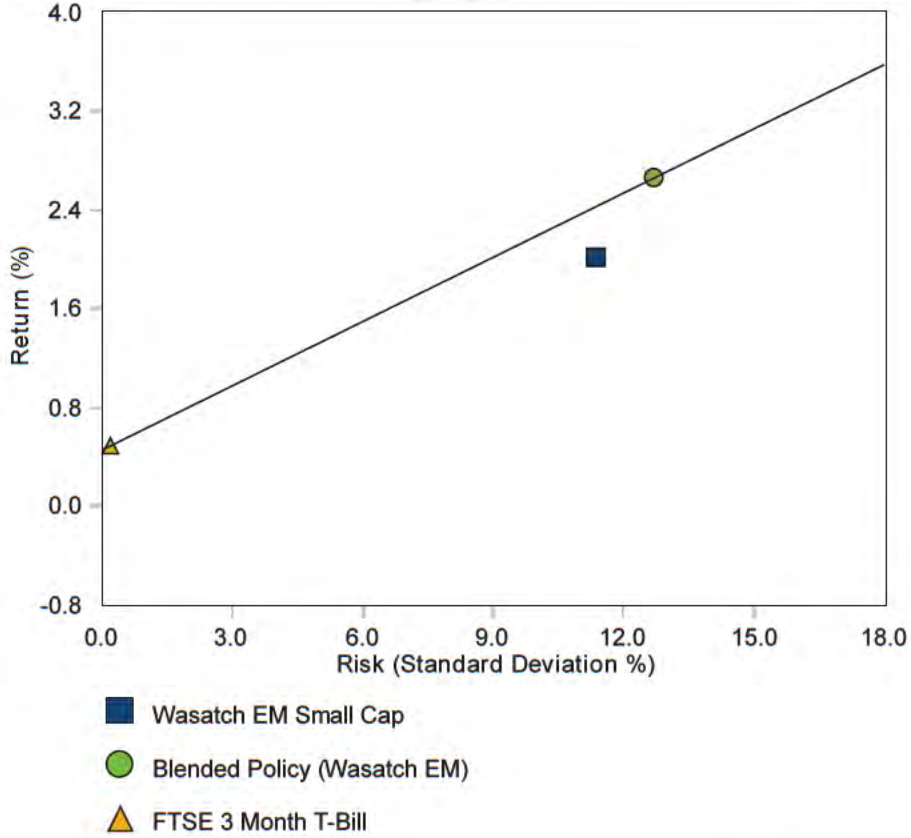
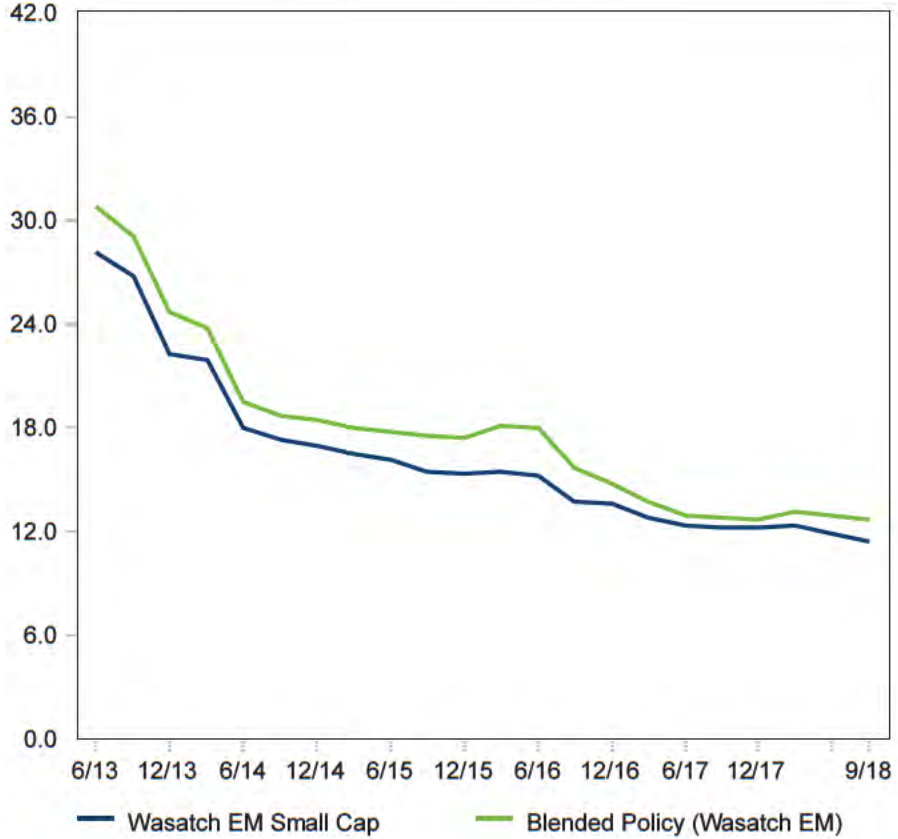
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Wasatch EM Small Cap	-0.79	5.83	-0.14	0.79	0.19	-0.08	0.79	2.02	11.37	0.89
Blended Policy (Wasatch EM)	0.00	0.00	N/A	1.00	0.23	0.00	1.00	2.67	12.71	1.00
FTSE 3 Month T-Bill	-2.94	12.72	-0.23	0.00	N/A	0.49	0.00	0.49	0.18	-0.04

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Risk Statistics

Wasatch EM Small Cap

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-4.46	5.53	2.02	9.89	6.86	07/01/2008
Standard Deviation	9.11	12.03	11.37	20.63	21.43	
Downside Risk	7.05	7.79	7.91	13.59	14.83	
Downside Semi Deviation	3.02	12.31	11.70	21.39	23.16	
Max Drawdown Recovery Period	N/A	N/A	35.00	8.00	15.00	
Maximum Drawdown	-13.70	-13.70	-21.18	-38.39	-52.85	
Maximum Loss Exposure	-4.46	-6.80	-12.36	-38.39	-52.66	
Upside Semi Deviation	2.52	12.35	11.32	20.71	20.56	
Blended Policy (Wasatch EM)						
Return	-4.01	7.82	2.67	7.51	3.98	
Standard Deviation	12.13	12.48	12.71	22.46	23.30	
Downside Risk	8.87	7.66	8.68	14.74	16.08	
Downside Semi Deviation	3.47	13.08	13.33	22.73	24.39	
Max Drawdown Recovery Period	N/A	N/A	35.00	7.00	14.00	
Maximum Drawdown	-16.41	-16.41	-25.28	-34.26	-52.45	
Maximum Loss Exposure	-4.01	-5.50	-14.01	-34.26	-52.45	
Upside Semi Deviation	3.99	12.80	12.49	22.73	22.73	
vs. Blended Policy (Wasatch EM)						
Active Return	-0.76	-2.20	-0.79	1.83	2.33	
Tracking Error	6.01	5.83	5.83	7.15	7.13	
Actual Correlation	0.88	0.89	0.89	0.95	0.95	
Beta	0.66	0.86	0.79	0.87	0.88	
Consistency	41.67	36.11	45.00	49.17	50.41	
Down Market Capture	78.19	90.35	82.62	79.30	79.50	
Down Market Outperformance	3.64	2.45	4.58	6.75	6.93	
Information Ratio	-0.13	-0.38	-0.14	0.26	0.33	
Jensen Alpha	-2.42	-1.11	-0.19	3.09	3.16	
Up Market Capture	68.69	83.79	81.61	91.55	91.55	
Up Market Outperformance	-5.48	-7.20	-8.11	-7.07	-7.07	
vs. FTSE 3 Month T-Bill						
Excess Return	-5.74	5.30	2.15	11.33	8.67	
Excess Risk	9.17	12.06	11.38	20.65	21.47	
Sharpe Ratio	-0.63	0.44	0.19	0.55	0.40	

Calculation based on monthly periodicity.

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Non-US Equity ex Emerging Markets

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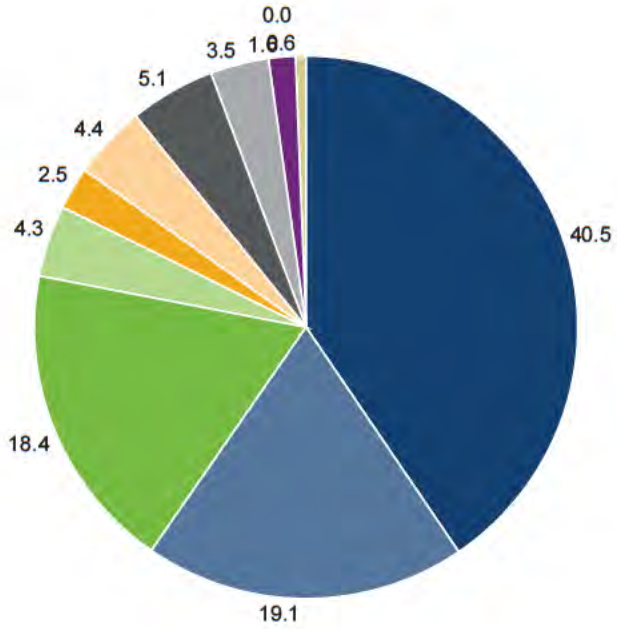
Asset Allocation by Manager

September 30, 2018 : $6,117,187



	Market Value ($000)	Allocation (%)
PSERS ACWI x US Index Fund	2,477,724.1	40.5
Baillie Gifford	1,170,291.7	19.1
Marathon Asset Mgmt	1,125,654.2	18.4
The Children's Investment Fund, LP	260,765.0	4.3
BlackRock Global Composite	155,491.8	2.5
Acadian Asset Mgmt	267,192.1	4.4
Wasatch Int'l Small Cap	311,463.9	5.1
Oberweis Asset Mgmt	213,370.0	3.5
QS Investors	96,939.2	1.6
Fidelity Institutional Int'l Small Cap	158.9	0.0
Insight Everest - Int'l Eq	38,136.0	0.6

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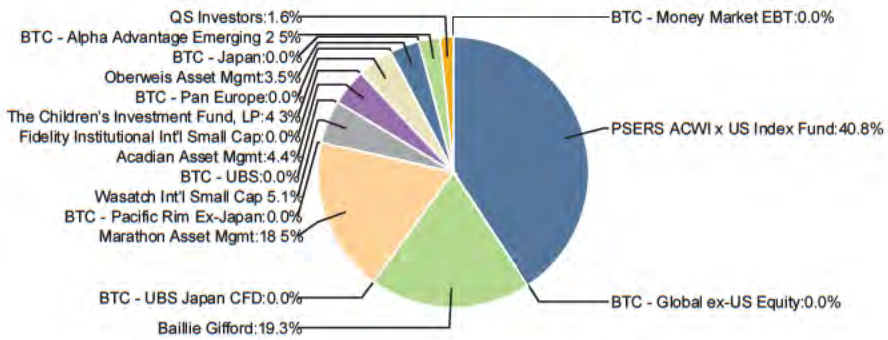
AON Empower Results®

Total Non-U.S. Equity x EM Composite (Unhedged) As of September 30, 2018

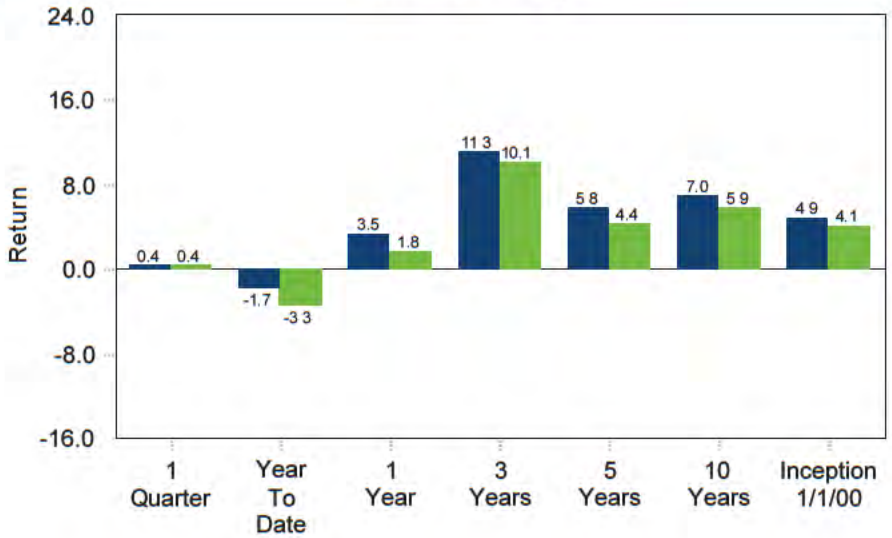
Portfolio Overview

Current Allocation

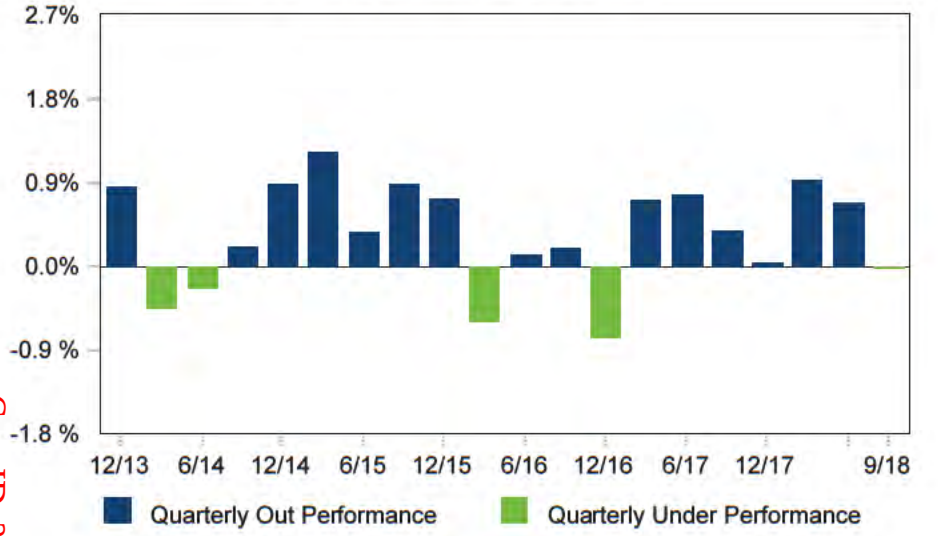
September 30, 2018 : $6,079M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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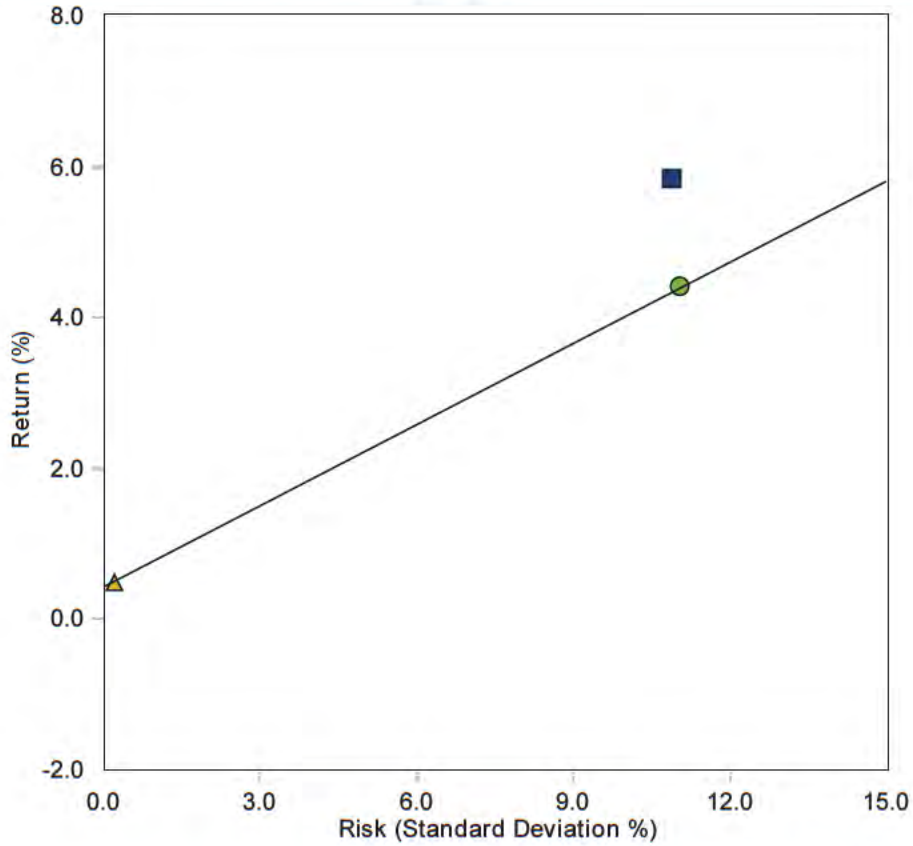
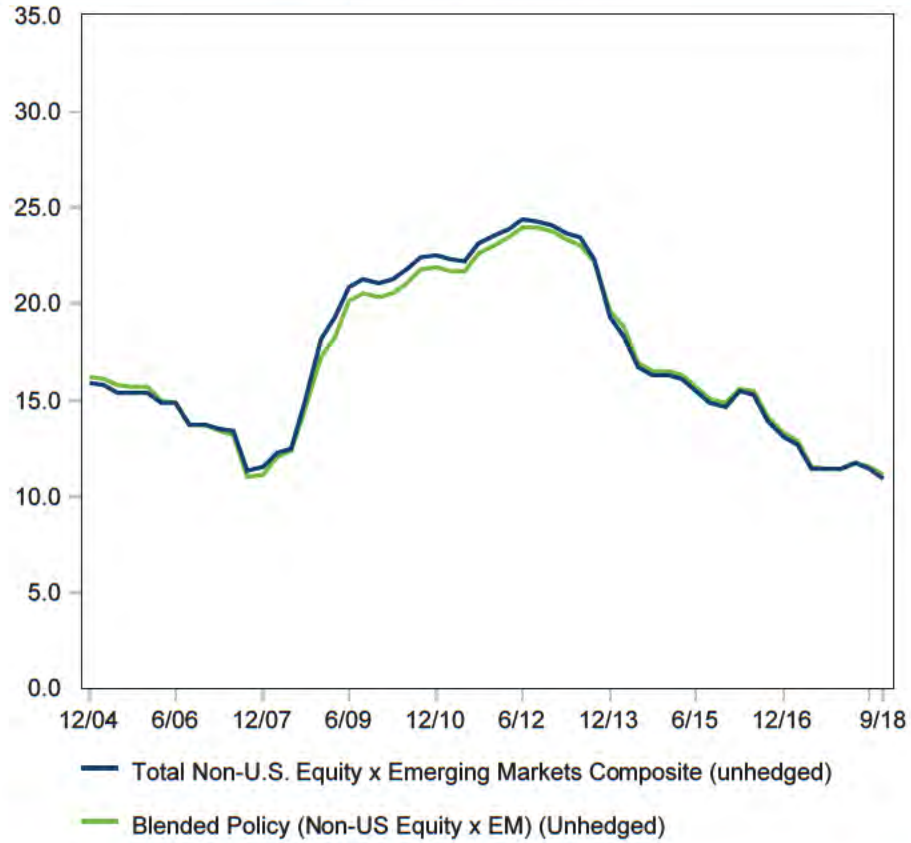
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlati
Total Non-U.S. Equity x Emerging Markets Composite (unhedged)	1.35	1.08	1.25	0.99	0.53	1.46	0.98	5.83	10.90	1.00
Blended Policy (Non-US Equity x EM) (Unhedged)	0.00	0.00	N/A	1.00	0.40	0.00	1.00	4.39	11.06	1.00
FTSE 3 Month T-Bill	-4.42	11.06	-0.40	0.00	N/A	0.49	0.00	0.49	0.18	0.04

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AON Empower Results®

Risk Statistics

Total Non-U.S. Equity x Emerging Markets Composite (unhedged)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	3.47	11.26	5.83	7.03	6.35	07/01/1997
Standard Deviation	8.82	10.72	10.90	17.52	16.36	
Downside Risk	5.34	5.75	6.74	12.02	11.39	
Downside Semi Deviation	2.55	9.82	10.56	18.36	18.25	
Max Drawdown Recovery Period	N/A	9.00	23.00	10.00	72.00	
Maximum Drawdown	-7.29	-10.87	-17.79	-35.33	-57.82	
Maximum Loss Exposure	N/A	-4.38	-7.83	-35.33	-15.09	
Upside Semi Deviation	2.78	12.15	11.53	17.29	15.33	
Blended Policy (Non-US Equity x EM) (Unhedged)						
Return	1.79	10.14	4.39	5.85	N/A	
Standard Deviation	9.50	10.81	11.06	17.47	N/A	
Downside Risk	6.29	6.00	7.08	11.87	N/A	
Downside Semi Deviation	3.01	10.24	11.09	17.96	N/A	
Max Drawdown Recovery Period	N/A	9.00	35.00	9.00	N/A	
Maximum Drawdown	-8.65	-11.00	-20.07	-33.63	N/A	
Maximum Loss Exposure	N/A	-4.55	-11.44	-33.63	N/A	
Upside Semi Deviation	2.80	11.96	11.36	17.43	N/A	
vs. Blended Policy (Non-US Equity x EM) (Unhedged)						
Active Return	1.59	1.01	1.35	1.13	N/A	
Tracking Error	1.24	1.17	1.08	1.26	N/A	
Actual Correlation	0.99	0.99	1.00	1.00	N/A	
Beta	0.92	0.99	0.98	1.00	N/A	
Consistency	66.67	58.33	65.00	69.17	N/A	
Down Market Capture	81.53	91.33	90.20	95.41	N/A	
Down Market Outperformance	2.08	1.91	2.27	1.22	N/A	
Information Ratio	1.28	0.86	1.25	0.90	N/A	
Jensen Alpha	1.65	1.14	1.45	1.13	N/A	
Up Market Capture	95.24	100.54	100.60	101.07	N/A	
Up Market Outperformance	-0.79	0.21	0.22	0.77	N/A	
vs. FTSE 3 Month T-Bill						
Excess Return	2.21	10.47	5.77	8.06	5.51	
Excess Risk	8.85	10.74	10.89	17.54	16.39	
Sharpe Ratio	0.25	0.97	0.53	0.46	0.34	

Calculation based on monthly periodicity.

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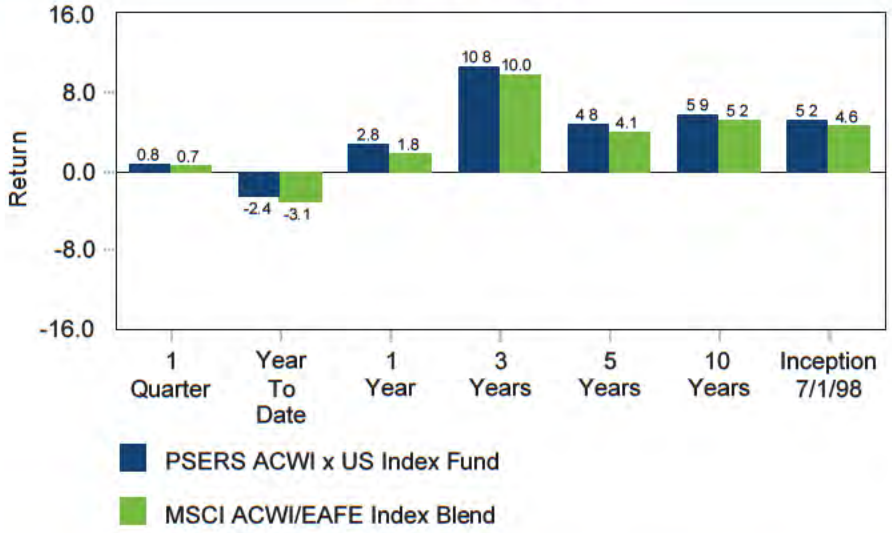
Performance Summary

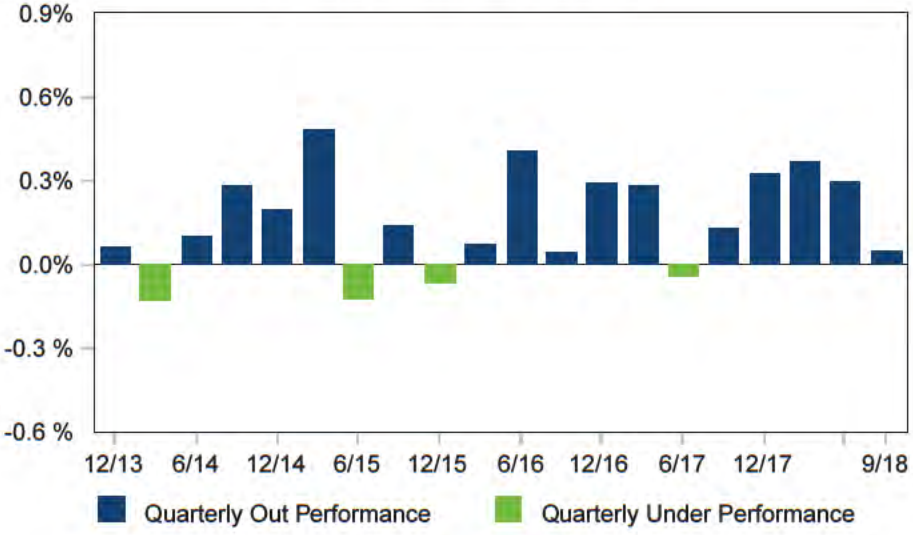
Account Information

Account Name:	PSERS ACWI x US Index Fund
Inception Date:	06/30/1998
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	MSCI ACWI/EAFE Index Blend
Peer Group:	IM International Equity (SA+CF)

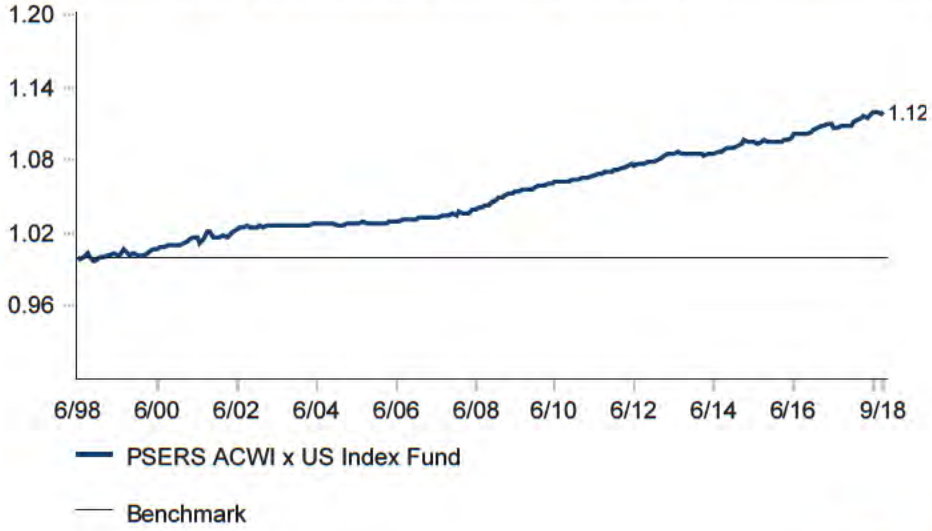
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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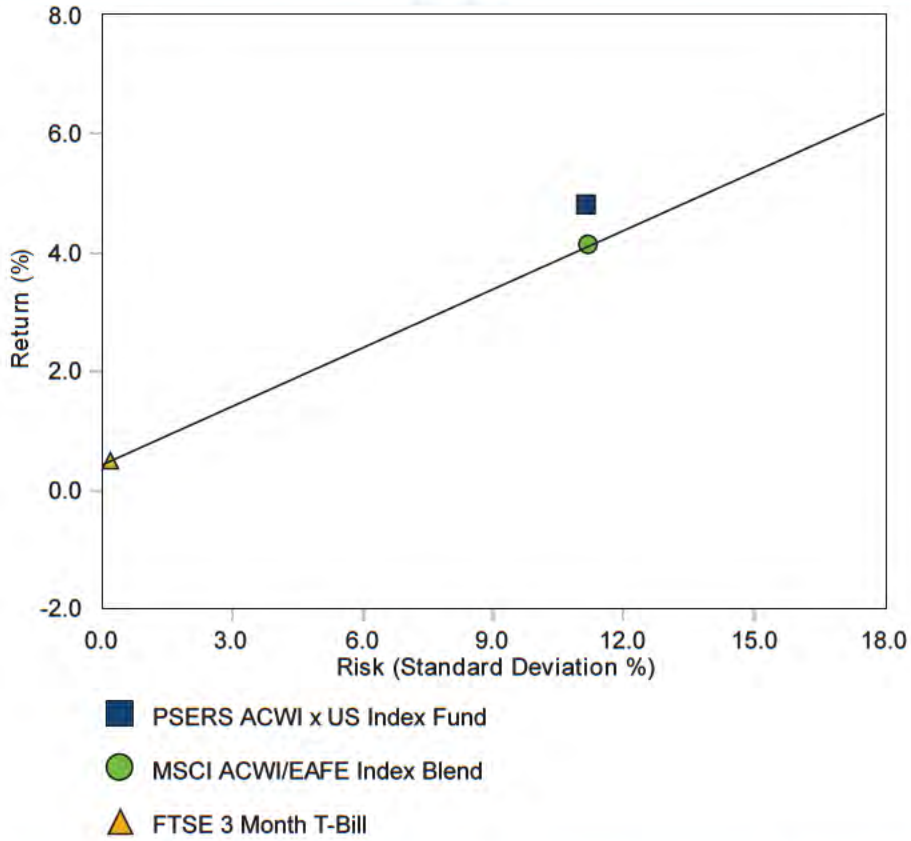
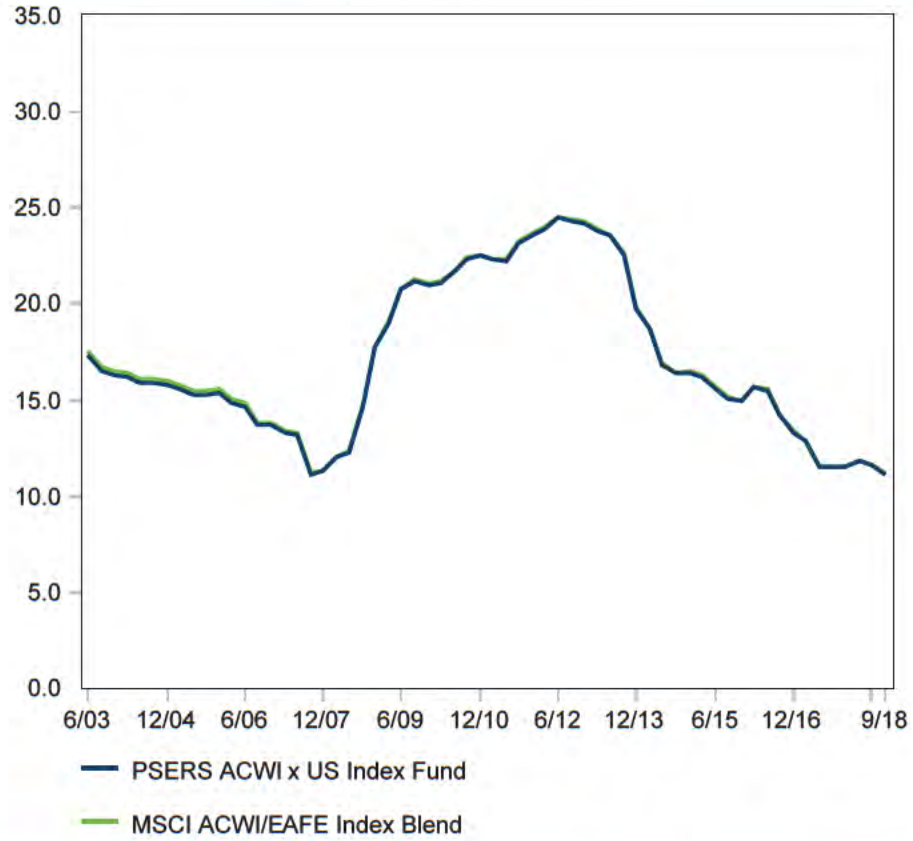
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS ACWI x US Index Fund	0.64	0.39	1.63	1.00	0.43	0.66	1.00	4.79	11.16	1.00
MSCI ACWI/EAFE Index Blend	0.00	0.00	N/A	1.00	0.37	0.00	1.00	4.12	11.20	1.00
FTSE 3 Month T-Bill	-4.17	11.19	-0.37	0.00	N/A	0.49	0.00	0.49	0.18	0.04

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AON Empower Results®

Risk Statistics

PSERS ACWI x US Index Fund

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	2.83	10.76	4.79	5.94	5.19	07/01/1998
Standard Deviation	9.66	10.86	11.16	17.74	16.82	
Downside Risk	6.25	5.94	7.14	12.19	11.81	
Downside Semi Deviation	2.99	10.14	11.20	18.63	18.56	
Max Drawdown Recovery Period	N/A	9.00	34.00	10.00	79.00	
Maximum Drawdown	-8.26	-11.48	-20.17	-35.39	-57.01	
Maximum Loss Exposure	N/A	-5.03	-11.68	-35.39	-17.59	
Upside Semi Deviation	2.90	12.14	11.48	17.41	15.77	
MSCI ACWI/EAFE Index Blend						
Return	1.76	9.97	4.12	5.18	4.60	
Standard Deviation	9.74	10.88	11.20	17.78	16.92	
Downside Risk	6.49	6.05	7.25	12.31	11.97	
Downside Semi Deviation	3.11	10.32	11.37	18.80	18.71	
Max Drawdown Recovery Period	N/A	10.00	35.00	10.00	115.00	
Maximum Drawdown	-8.84	-11.47	-20.85	-35.81	-57.63	
Maximum Loss Exposure	N/A	-4.88	-12.46	-35.81	-18.73	
Upside Semi Deviation	2.85	12.00	11.38	17.29	15.78	
vs. MSCI ACWI/EAFE Index Blend						
Active Return	1.04	0.72	0.64	0.71	0.54	
Tracking Error	0.51	0.44	0.39	0.32	0.40	
Actual Correlation	1.00	1.00	1.00	1.00	1.00	
Beta	0.99	1.00	1.00	1.00	0.99	
Consistency	75.00	63.89	63.33	76.67	71.60	
Down Market Capture	95.82	96.71	97.10	97.93	98.07	
Down Market Outperformance	0.48	0.73	0.68	0.60	0.59	
Information Ratio	2.02	1.63	1.63	2.21	1.37	
Jensen Alpha	1.05	0.75	0.66	0.73	0.57	
Up Market Capture	103.37	101.80	101.47	101.21	100.65	
Up Market Outperformance	0.58	0.78	0.59	0.84	0.42	
vs. FTSE 3 Month T-Bill						
Excess Return	1.66	10.03	4.81	7.07	4.64	
Excess Risk	9.69	10.88	11.15	17.76	16.85	
Sharpe Ratio	0.17	0.92	0.43	0.40	0.28	

Calculation based on monthly periodicity.

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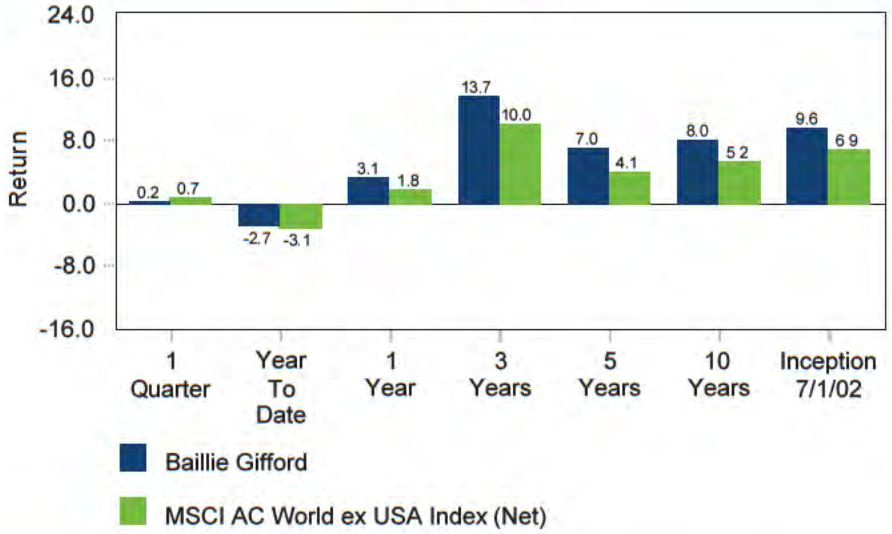
Performance Summary

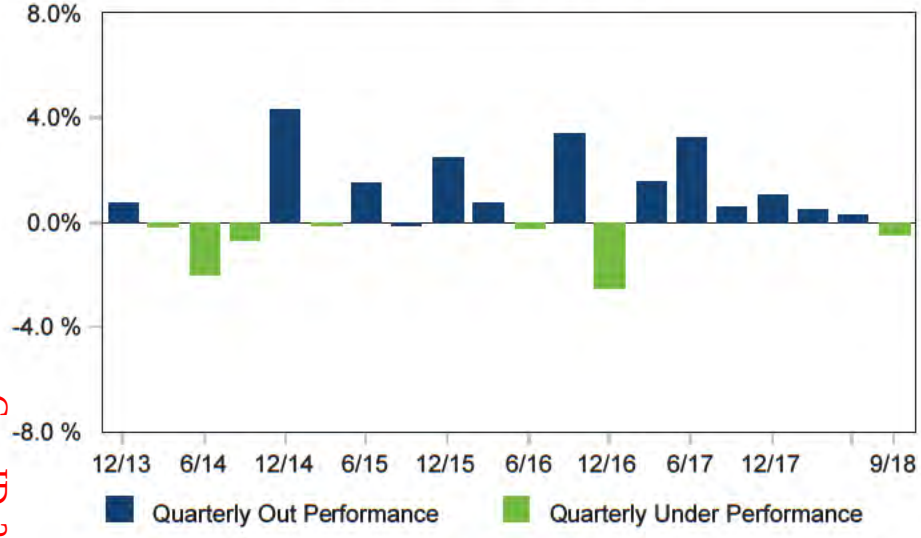
Account Information

Account Name:	Baillie Gifford
Inception Date:	06/01/2002
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	MSCI AC World ex USA Index (Net)
Peer Group:	IM International Equity (SA+CF)

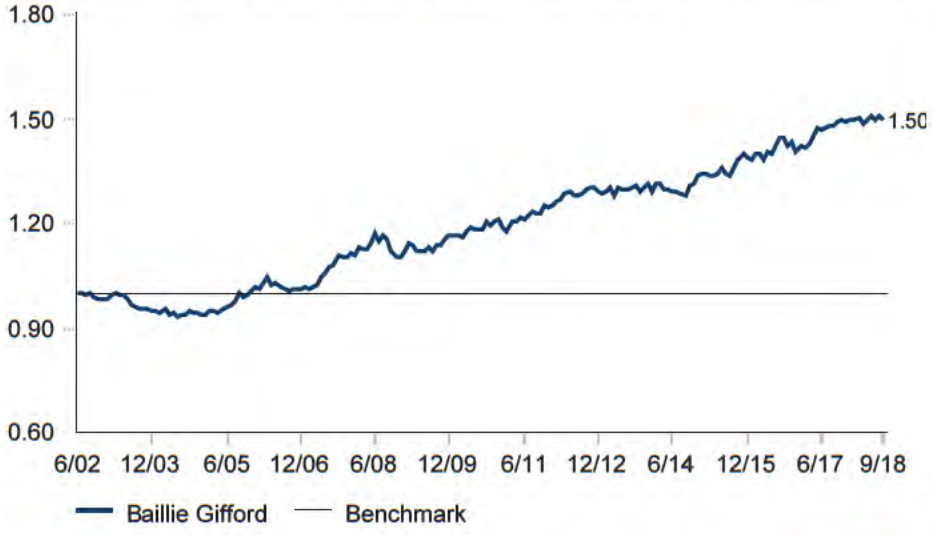
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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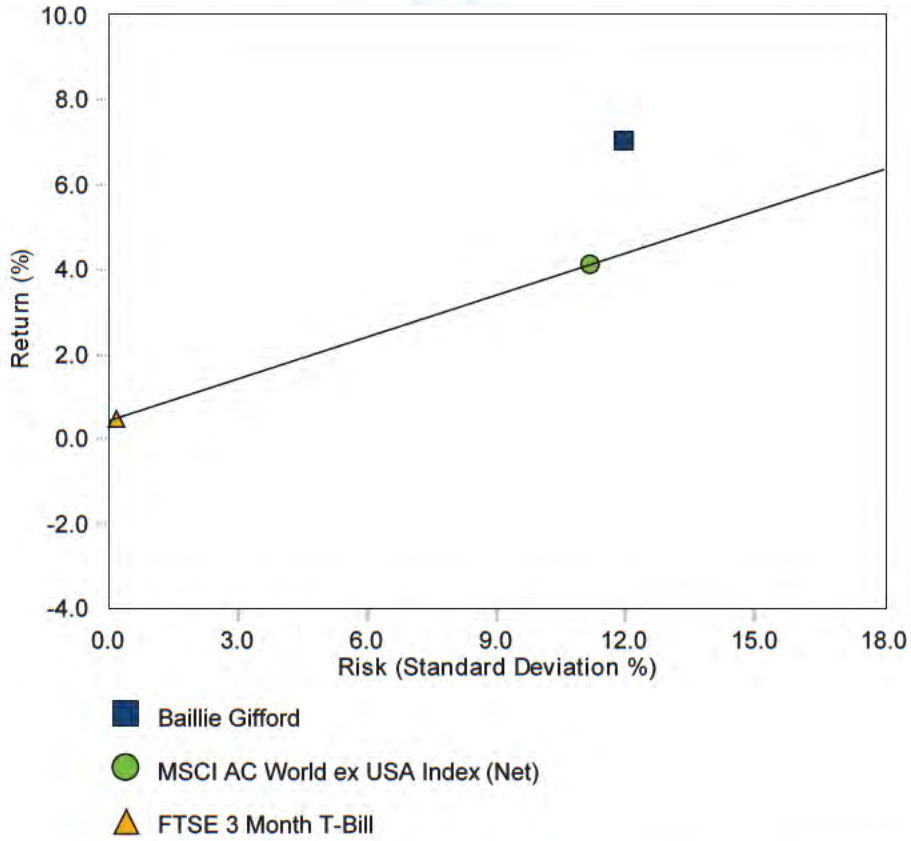
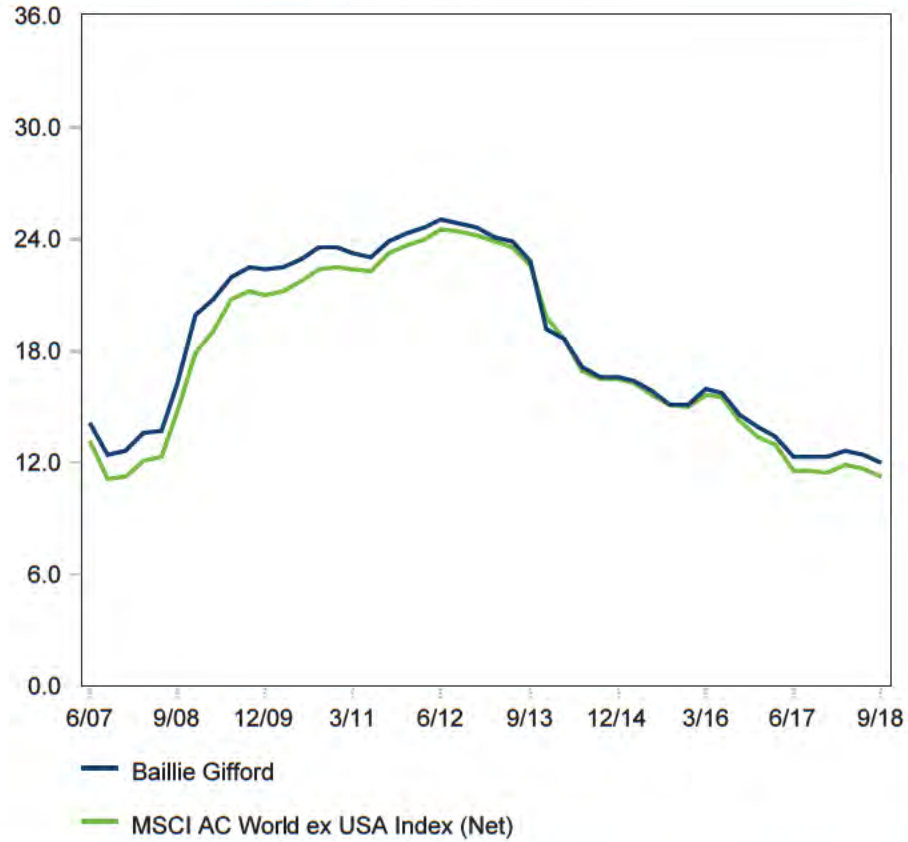
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Baillie Gifford	2.87	3.38	0.85	0.92	0.59	2.76	1.03	7.04	12.00	0.96
MSCI AC World ex USA Index (Net)	0.00	0.00	N/A	1.00	0.37	0.00	1.00	4.12	11.20	1.00
FTSE 3 Month T-Bill	-4.17	11.19	-0.37	0.00	N/A	0.49	0.00	0.49	0.18	0.04

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Risk Statistics

Baillie Gifford

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	3.15	13.66	7.04	7.97	9.56	07/01/2002
Standard Deviation	9.09	11.86	12.00	18.14	17.56	
Downside Risk	5.56	6.03	7.32	12.37	11.99	
Downside Semi Deviation	2.38	10.76	12.27	19.68	19.55	
Max Drawdown Recovery Period	N/A	9.00	22.00	11.00	66.00	
Maximum Drawdown	-8.26	-10.45	-16.63	-36.48	-56.18	
Maximum Loss Exposure	N/A	-2.13	-6.33	-36.48	-20.25	
Upside Semi Deviation	3.11	13.51	12.33	17.53	16.78	
MSCI AC World ex USA Index (Net)						
Return	1.76	9.97	4.12	5.18	6.86	
Standard Deviation	9.74	10.88	11.20	17.78	16.98	
Downside Risk	6.49	6.05	7.25	12.31	11.83	
Downside Semi Deviation	3.11	10.32	11.37	18.80	18.78	
Max Drawdown Recovery Period	N/A	10.00	35.00	10.00	115.00	
Maximum Drawdown	-8.84	-11.47	-20.85	-35.81	-57.63	
Maximum Loss Exposure	N/A	-4.88	-12.46	-35.81	-20.22	
Upside Semi Deviation	2.85	12.00	11.38	17.29	16.04	
vs. MSCI AC World ex USA Index (Net)						
Active Return	1.30	3.43	2.87	2.70	2.62	
Tracking Error	2.49	3.39	3.38	3.48	3.56	
Actual Correlation	0.97	0.96	0.96	0.98	0.98	
Beta	0.90	1.05	1.03	1.00	1.01	
Consistency	66.67	66.67	65.00	63.33	59.49	
Down Market Capture	77.96	86.08	88.72	90.01	93.74	
Down Market Outperformance	2.55	3.08	2.60	2.83	1.76	
Information Ratio	0.52	1.01	0.85	0.78	0.73	
Jensen Alpha	1.37	3.04	2.78	2.72	2.56	
Up Market Capture	89.87	109.52	107.87	102.97	105.56	
Up Market Outperformance	-1.74	3.99	3.03	1.95	3.56	
vs. FTSE 3 Month T-Bill						
Excess Return	1.92	12.74	7.04	9.05	9.50	
Excess Risk	9.13	11.89	12.00	18.16	17.54	
Sharpe Ratio	0.21	1.07	0.59	0.50	0.54	

Calculation based on monthly periodicity.

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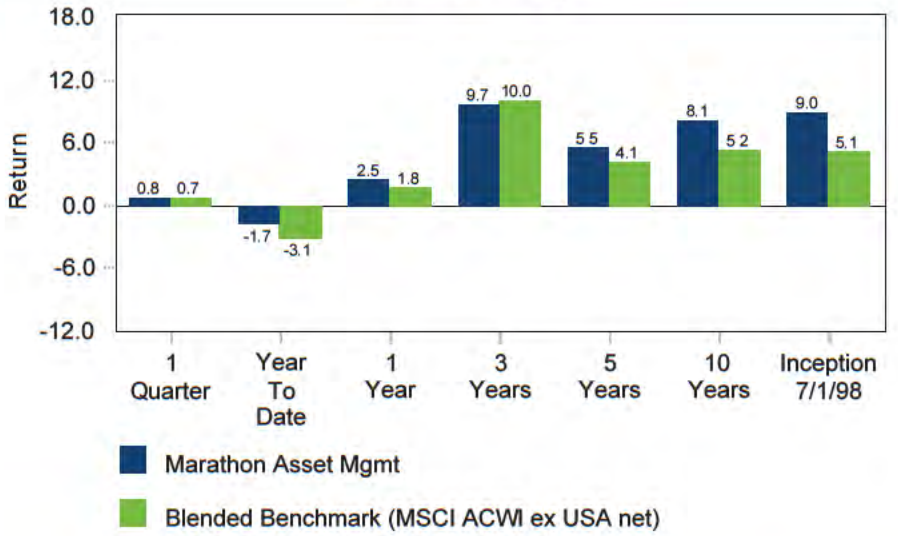
Performance Summary

Account Information

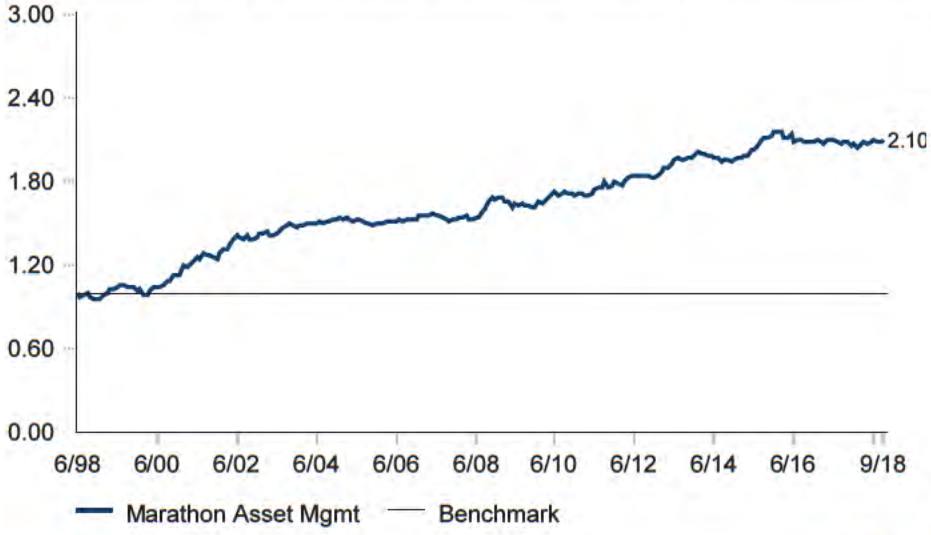
Account Name:	Marathon Asset Mgmt
Inception Date:	06/30/1998
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	Blended Benchmark (MSCI ACWI ex USA net)
Peer Group:	IM International Equity (SA+CF)

Return Summary



Quarterly Excess Performance

Ratio of Cumulative Wealth - Since Inception



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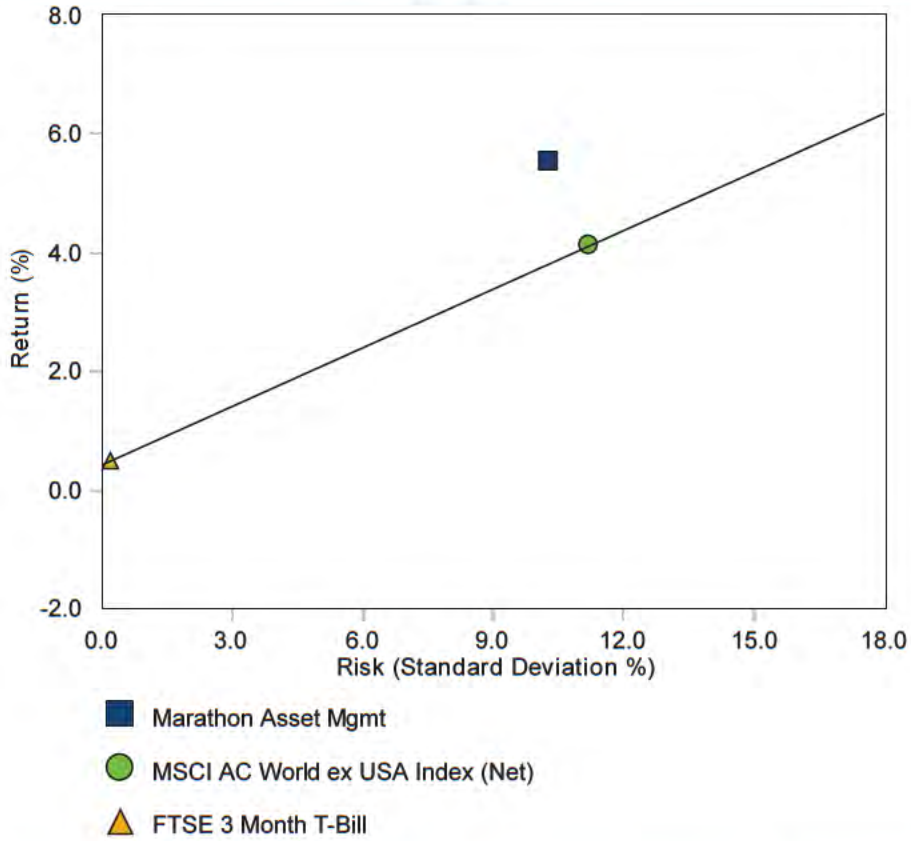
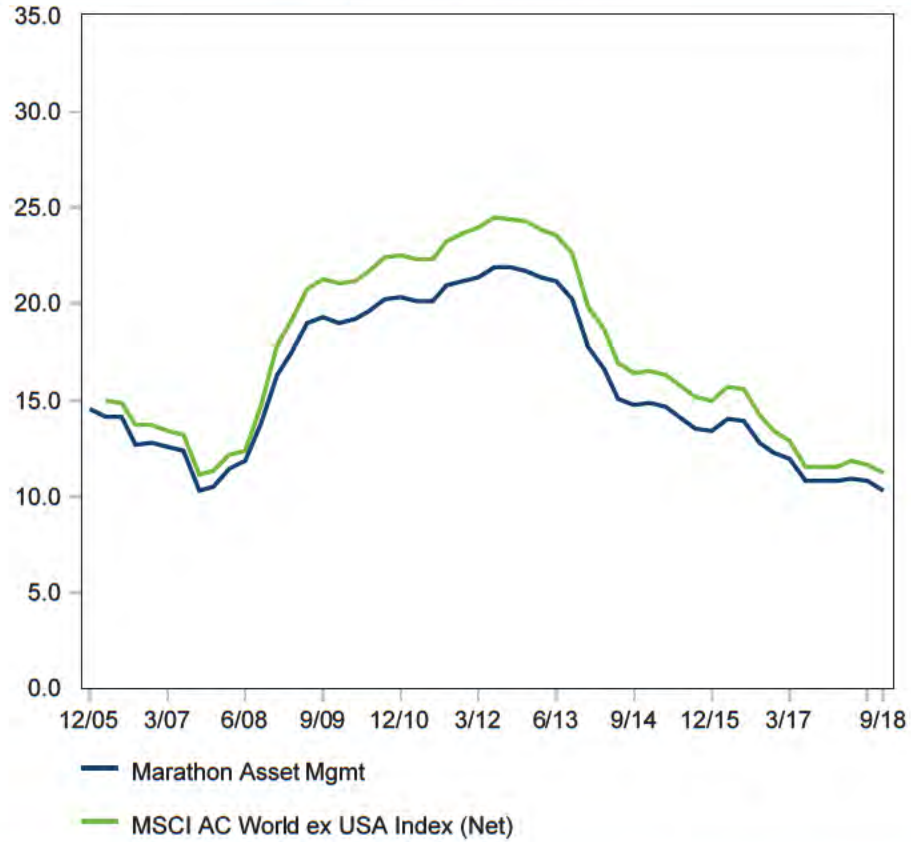
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Marathon Asset Mgmt	1.25	2.74	0.46	0.94	0.53	1.77	0.89	5.53	10.27	0.97
MSCI AC World ex USA Index (Net)	0.00	0.00	N/A	1.00	0.37	0.00	1.00	4.12	11.20	1.00
FTSE 3 Month T-Bill	-4.17	11.19	-0.37	0.00	N/A	0.49	0.00	0.49	0.18	0.04

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Risk Statistics

Marathon Asset Mgmt

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	2.52	9.73	5.53	8.08	8.97	07/01/1998
Standard Deviation	8.09	10.21	10.27	15.98	15.49	
Downside Risk	4.97	5.60	6.24	10.72	10.58	
Downside Semi Deviation	2.13	8.86	9.58	16.88	16.71	
Max Drawdown Recovery Period	N/A	11.00	33.00	10.00	63.00	
Maximum Drawdown	-6.65	-9.76	-13.87	-32.10	-52.72	
Maximum Loss Exposure	N/A	-2.95	-3.89	-32.10	-15.61	
Upside Semi Deviation	2.76	11.91	11.15	15.84	15.12	
Blended Benchmark (MSCI ACWI ex USA net)						
Return	1.76	9.97	4.12	5.18	5.06	
Standard Deviation	9.74	10.88	11.20	17.78	17.06	
Downside Risk	6.49	6.05	7.25	12.31	12.05	
Downside Semi Deviation	3.11	10.32	11.37	18.80	19.04	
Max Drawdown Recovery Period	N/A	10.00	35.00	10.00	115.00	
Maximum Drawdown	-8.84	-11.47	-20.85	-35.81	-57.62	
Maximum Loss Exposure	N/A	-4.88	-12.46	-35.81	-16.17	
Upside Semi Deviation	2.85	12.00	11.38	17.29	15.83	
vs. Blended Benchmark (MSCI ACWI ex USA net)						
Active Return	0.61	-0.28	1.25	2.42	3.41	
Tracking Error	2.59	2.66	2.74	3.34	4.14	
Actual Correlation	0.97	0.97	0.97	0.99	0.97	
Beta	0.81	0.91	0.89	0.89	0.88	
Consistency	66.67	52.78	56.67	55.83	59.26	
Down Market Capture	76.04	89.11	81.39	79.01	77.99	
Down Market Outperformance	2.80	2.46	4.49	6.48	7.11	
Information Ratio	0.23	-0.11	0.46	0.73	0.82	
Jensen Alpha	0.73	0.55	1.71	3.19	4.02	
Up Market Capture	83.62	93.07	93.31	93.72	96.55	
Up Market Outperformance	-2.75	-2.95	-2.65	-4.17	-2.13	
vs. FTSE 3 Month T-Bill						
Excess Return	1.23	9.02	5.42	8.77	7.97	
Excess Risk	8.11	10.23	10.27	16.00	15.51	
Sharpe Ratio	0.15	0.88	0.53	0.55	0.51	

Calculation based on monthly periodicity.

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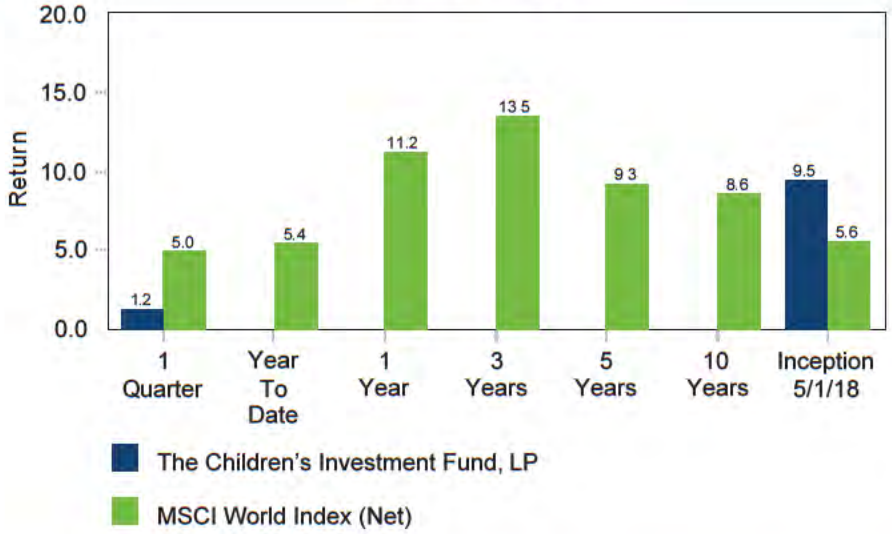
Performance Summary

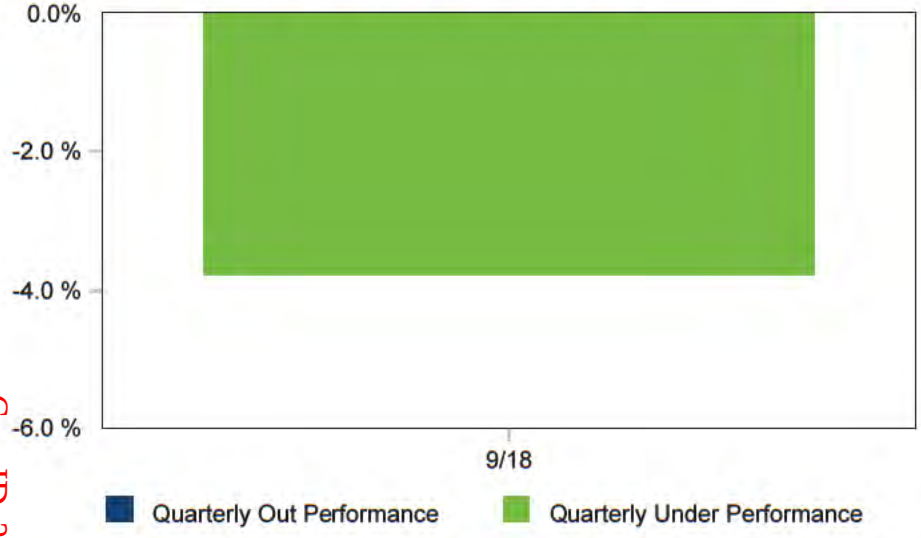
Account Information

Account Name:	The Children's Investment Fund, LP
Inception Date:	05/01/2018
Account Structure:	Commingled Fund
Asset Class:	International Equity
Benchmark:	MSCI World Index (Net)
Peer Group:	

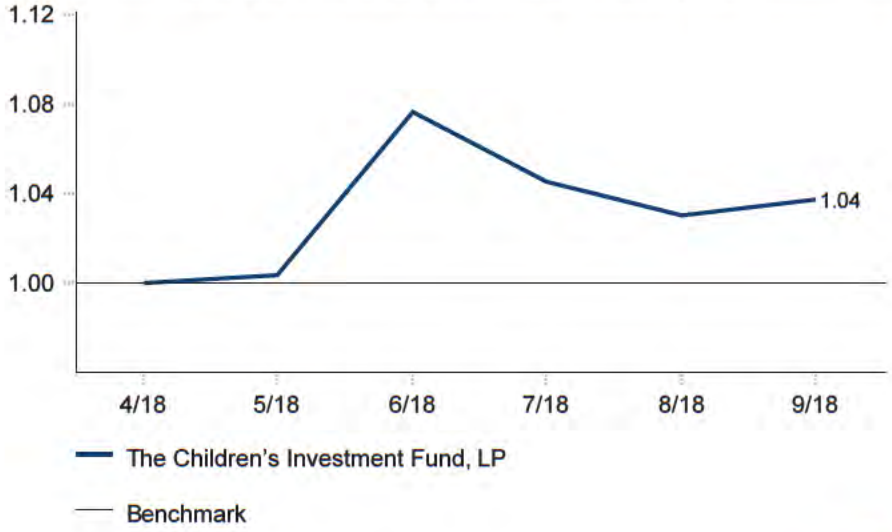
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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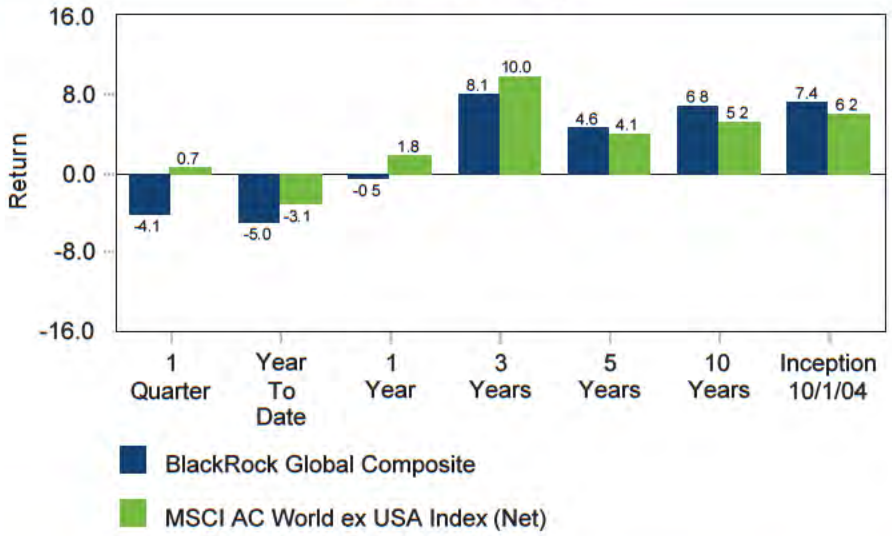
AON Empower Results®

Performance Summary

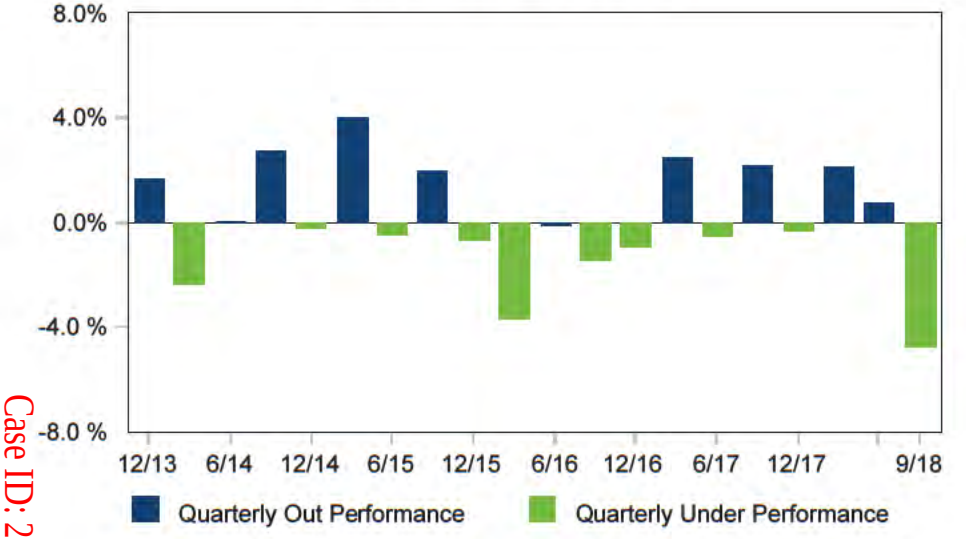
Account Information

Account Name:	BlackRock Global Composite
Inception Date:	10/01/2004
Account Structure:	
Asset Class:	Equity
Benchmark:	MSCI AC World ex USA Index (Net)
Peer Group:	IM International Equity (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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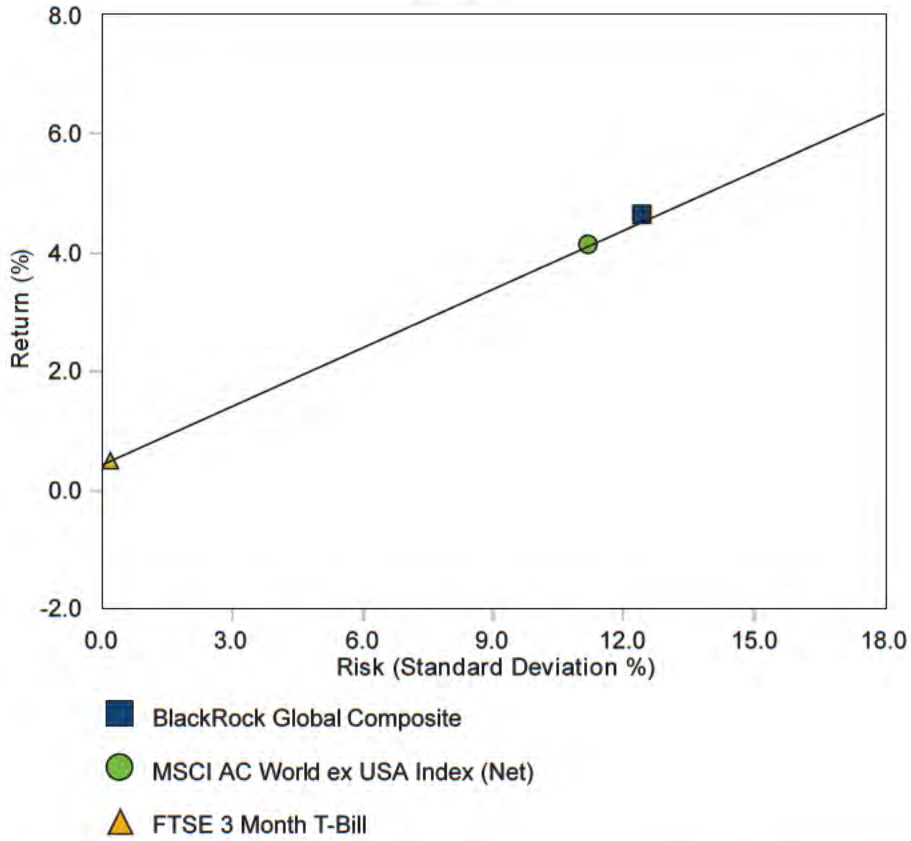
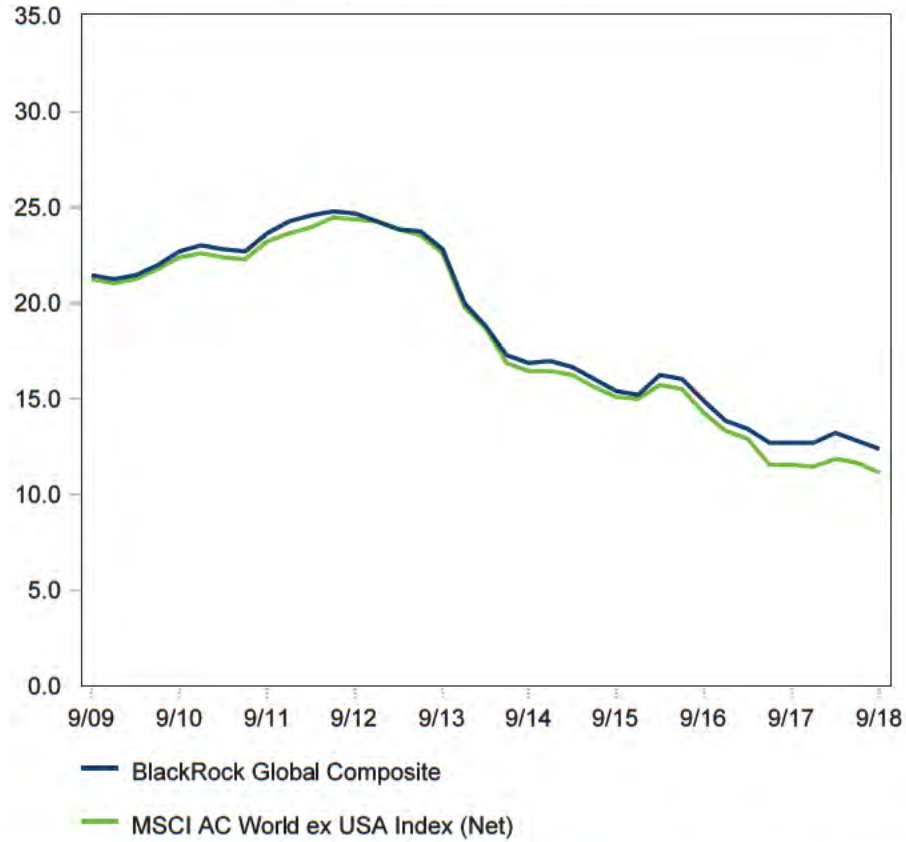
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock Global Composite	0.65	3.78	0.17	0.91	0.39	0.38	1.06	4.65	12.42	0.95
MSCI AC World ex USA Index (Net)	0.00	0.00	N/A	1.00	0.37	0.00	1.00	4.12	11.20	1.00
FTSE 3 Month T-Bill	-4.17	11.19	-0.37	0.00	N/A	0.49	0.00	0.49	0.18	0.04

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Risk Statistics

BlackRock Global Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.48	8.14	4.65	6.83	7.36	10/01/2004
Standard Deviation	11.93	12.88	12.42	18.30	17.67	
Downside Risk	8.56	7.95	8.20	12.49	12.25	
Downside Semi Deviation	3.67	12.14	12.35	18.90	19.06	
Max Drawdown Recovery Period	N/A	16.00	25.00	13.00	72.00	
Maximum Drawdown	-11.13	-15.62	-22.97	-37.37	-59.94	
Maximum Loss Exposure	-0.48	-10.11	-10.81	-37.37	-12.62	
Upside Semi Deviation	3.56	14.17	12.85	18.24	17.02	
MSCI AC World ex USA Index (Net)						
Return	1.76	9.97	4.12	5.18	6.17	
Standard Deviation	9.74	10.88	11.20	17.78	17.13	
Downside Risk	6.49	6.05	7.25	12.31	12.01	
Downside Semi Deviation	3.11	10.32	11.37	18.80	18.82	
Max Drawdown Recovery Period	N/A	10.00	35.00	10.00	115.00	
Maximum Drawdown	-8.84	-11.47	-20.85	-35.81	-57.63	
Maximum Loss Exposure	N/A	-4.88	-12.46	-35.81	-10.50	
Upside Semi Deviation	2.85	12.00	11.38	17.29	16.21	
vs. MSCI AC World ex USA Index (Net)						
Active Return	-2.01	-1.45	0.65	1.65	1.21	
Tracking Error	4.77	4.00	3.78	3.63	3.28	
Actual Correlation	0.92	0.96	0.95	0.98	0.98	
Beta	1.13	1.13	1.06	1.01	1.01	
Consistency	33.33	44.44	48.33	54.17	55.36	
Down Market Capture	112.30	119.57	98.74	96.53	99.46	
Down Market Outperformance	-1.50	-4.38	0.15	0.94	0.10	
Information Ratio	-0.42	-0.36	0.17	0.46	0.37	
Jensen Alpha	-2.07	-2.65	0.40	1.61	1.13	
Up Market Capture	97.03	102.96	102.74	103.79	104.27	
Up Market Outperformance	-0.59	1.13	0.97	2.52	2.76	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.39	7.86	4.82	8.01	7.47	
Excess Risk	11.97	12.89	12.42	18.31	17.66	
Sharpe Ratio	-0.12	0.61	0.39	0.44	0.42	

Calculation based on monthly periodicity.

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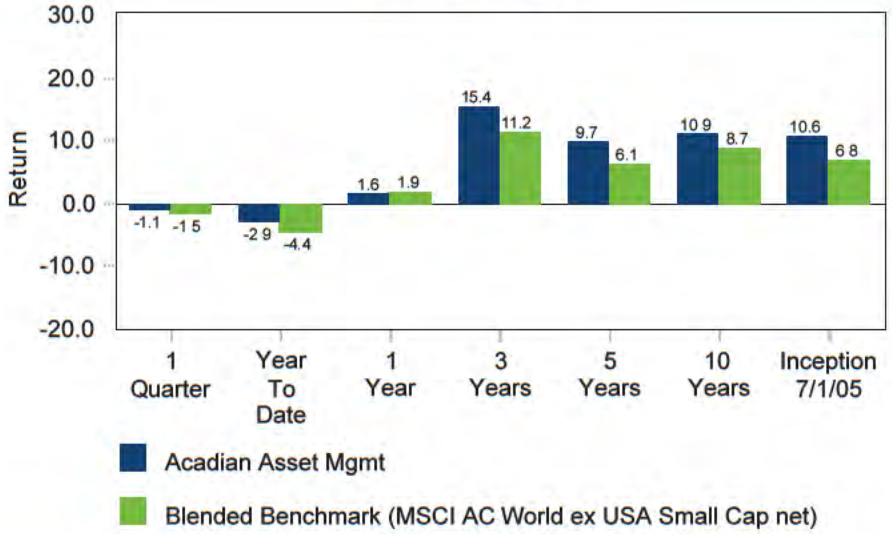
Performance Summary

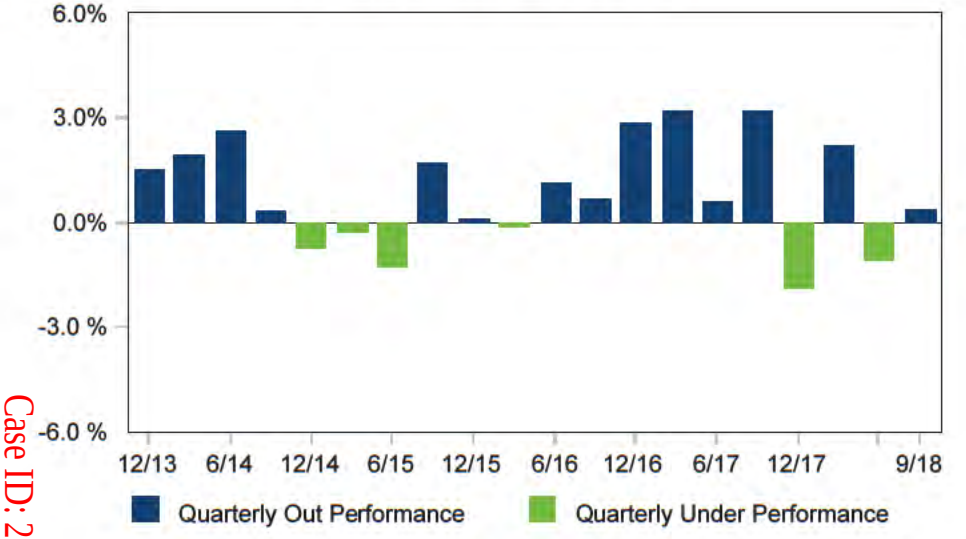
Account Information

Account Name:	Acadian Asset Mgmt
Inception Date:	06/01/2005
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	Blended Benchmark (MSCI AC World ex USA Small Cap net)
Peer Group:	IM International Small Cap Equity (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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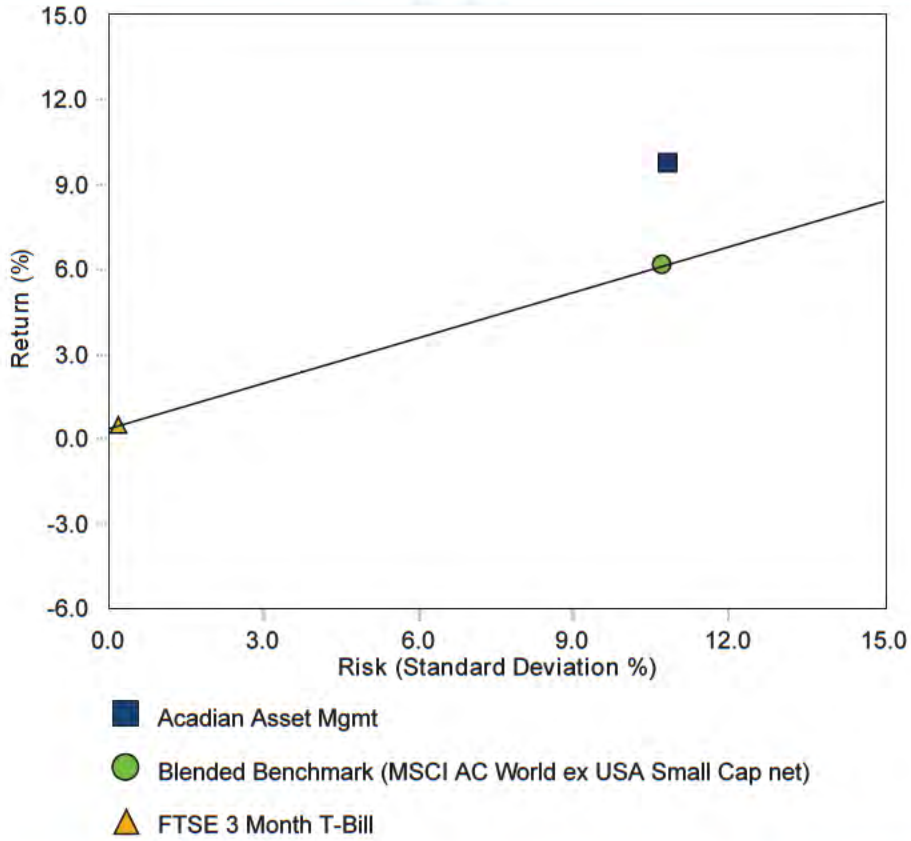
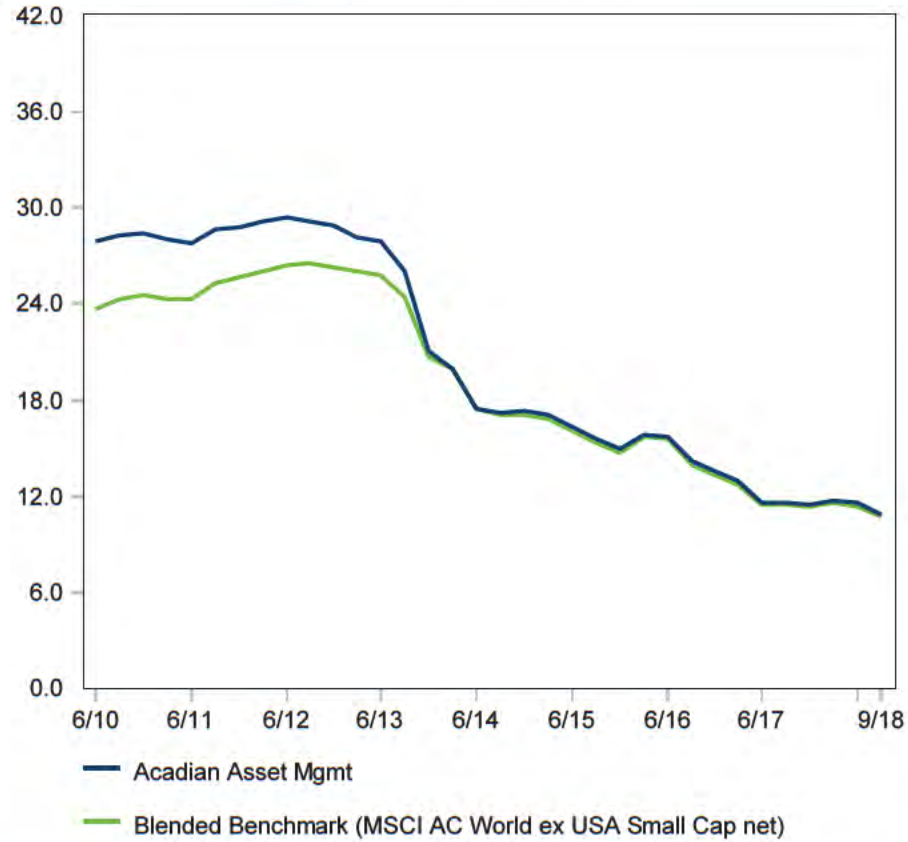
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Acadian Asset Mgmt	3.36	3.12	1.08	0.92	0.87	3.64	0.97	9.74	10.84	0.96
Blended Benchmark (MSCI AC World ex USA Small Cap net)	0.00	0.00	N/A	1.00	0.56	0.00	1.00	6.14	10.74	1.00
FTSE 3 Month T-Bill	-6.05	10.74	-0.56	0.00	N/A	0.49	0.00	0.49	0.18	0.00

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AON Empower Results®

Risk Statistics

Acadian Asset Mgmt

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.62	15.36	9.74	10.91	10.60	07/01/2005
Standard Deviation	9.68	11.20	10.84	19.89	20.56	
Downside Risk	5.85	5.80	6.11	13.74	14.63	
Downside Semi Deviation	2.80	10.34	9.58	21.86	23.74	
Max Drawdown Recovery Period	N/A	N/A	27.00	10.00	72.00	
Maximum Drawdown	-8.95	-8.95	-15.15	-39.72	-67.05	
Maximum Loss Exposure	N/A	-2.65	N/A	-39.72	-18.61	
Upside Semi Deviation	3.03	13.00	12.39	19.20	18.99	
Blended Benchmark (MSCI AC World ex USA Small Cap net)						
Return	1.86	11.24	6.14	8.73	6.78	
Standard Deviation	8.64	10.83	10.74	18.81	18.34	
Downside Risk	5.50	6.19	6.50	12.64	12.89	
Downside Semi Deviation	2.35	10.57	9.79	19.50	19.94	
Max Drawdown Recovery Period	N/A	N/A	32.00	9.00	42.00	
Maximum Drawdown	-8.89	-8.89	-15.22	-34.25	-59.06	
Maximum Loss Exposure	N/A	-2.80	-4.88	-34.25	-32.08	
Upside Semi Deviation	2.87	11.95	11.89	18.84	17.49	
vs. Blended Benchmark (MSCI AC World ex USA Small Cap net)						
Active Return	-0.16	3.71	3.36	2.26	4.03	
Tracking Error	4.11	3.41	3.12	3.42	5.03	
Actual Correlation	0.91	0.95	0.96	0.99	0.97	
Beta	1.02	0.99	0.97	1.04	1.09	
Consistency	41.67	61.11	63.33	61.67	61.01	
Down Market Capture	83.98	81.33	82.87	98.05	102.94	
Down Market Outperformance	1.57	3.93	3.46	0.22	-1.27	
Information Ratio	-0.04	1.09	1.08	0.66	0.80	
Jensen Alpha	-0.17	3.93	3.62	1.86	3.45	
Up Market Capture	85.43	109.18	107.94	106.89	117.06	
Up Market Outperformance	-2.24	3.98	3.46	5.19	12.30	
vs. FTSE 3 Month T-Bill						
Excess Return	0.47	14.18	9.41	12.15	11.15	
Excess Risk	9.72	11.23	10.84	19.91	20.54	
Sharpe Ratio	0.05	1.26	0.87	0.61	0.54	

Calculation based on monthly periodicity.

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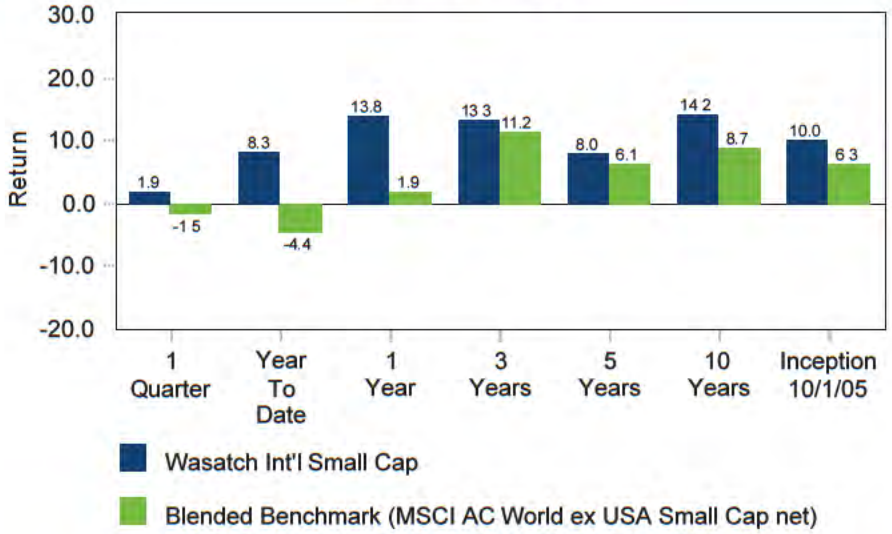
Performance Summary

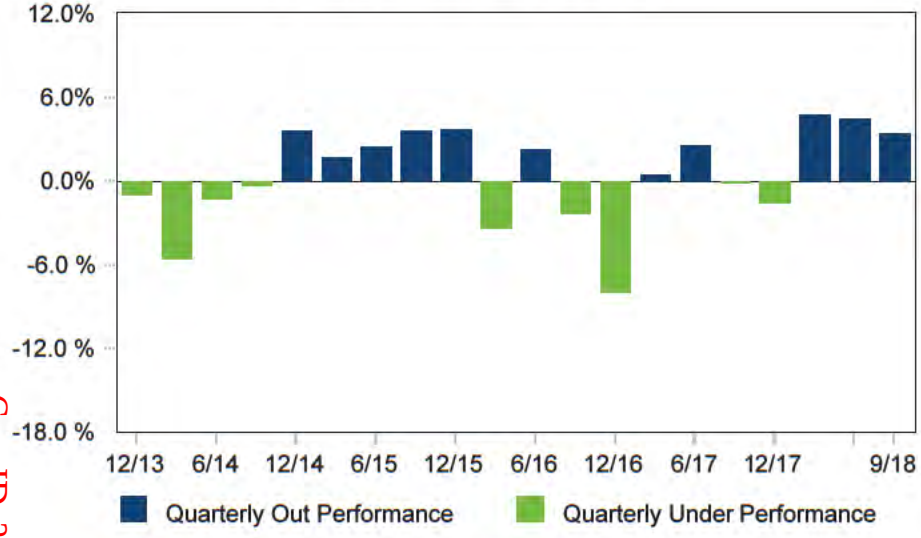
Account Information

Account Name:	Wasatch Int'l Small Cap
Inception Date:	09/01/2005
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	Blended Benchmark (MSCI AC World ex USA Small Cap net)
Peer Group:	IM International Small Cap Equity (SA+CF)

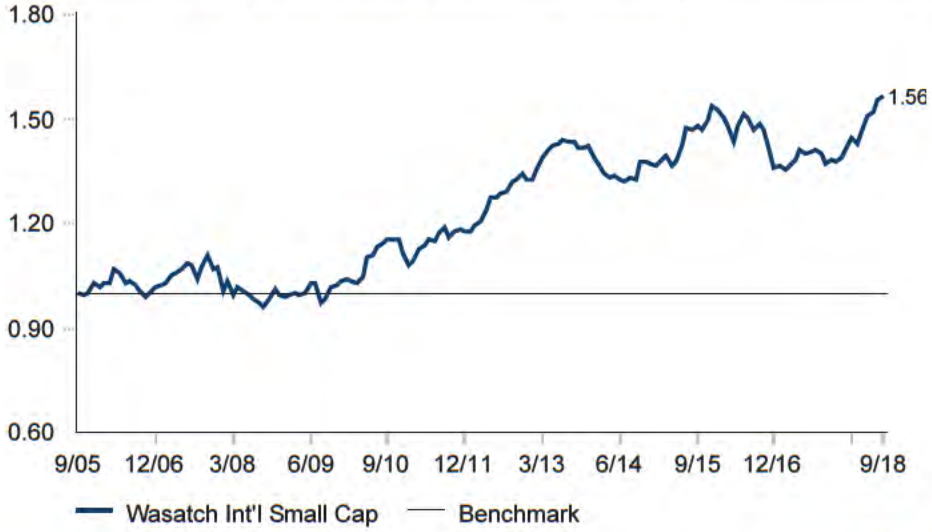
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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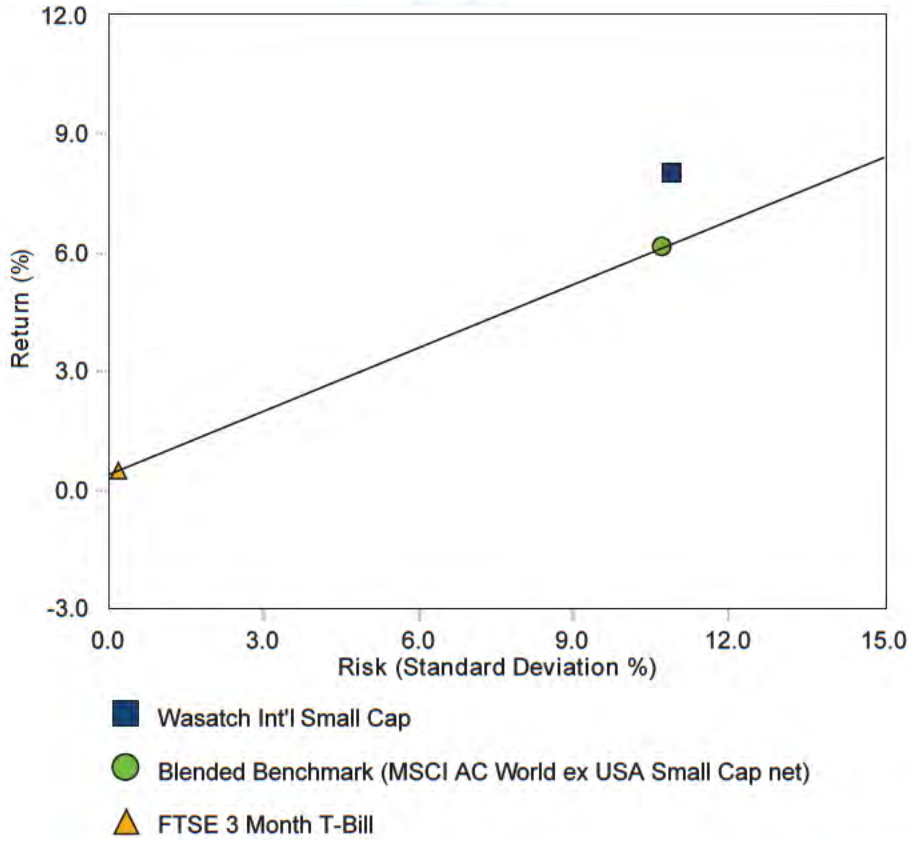
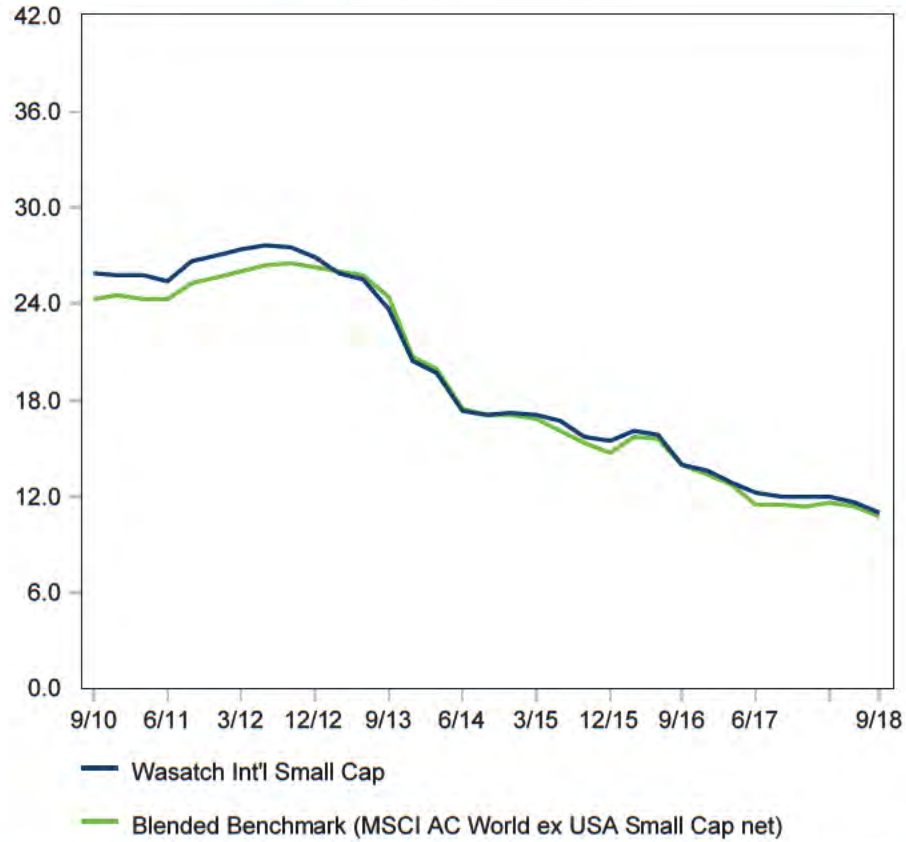
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Wasatch Int'l Small Cap	1.77	6.13	0.29	0.71	0.72	2.75	0.85	7.99	10.92	0.84
Blended Benchmark (MSCI AC World ex USA Small Cap net)	0.00	0.00	N/A	1.00	0.56	0.00	1.00	6.14	10.74	1.00
FTSE 3 Month T-Bill	-6.05	10.74	-0.56	0.00	N/A	0.49	0.00	0.49	0.18	0.00

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AON Empower Results®

Risk Statistics

Wasatch Int'l Small Cap

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	13.76	13.26	7.99	14.18	9.98	10/01/2005
Standard Deviation	6.45	11.19	10.92	18.45	19.41	
Downside Risk	1.83	7.10	7.21	11.92	13.53	
Downside Semi Deviation	1.01	12.12	11.30	19.38	21.75	
Max Drawdown Recovery Period	4.00	7.00	7.00	7.00	41.00	
Maximum Drawdown	-1.57	-11.48	-11.48	-31.85	-63.25	
Maximum Loss Exposure	-0.30	-0.90	-4.55	-31.85	-37.68	
Upside Semi Deviation	2.66	11.94	11.26	18.84	18.37	
Blended Benchmark (MSCI AC World ex USA Small Cap net)						
Return	1.86	11.24	6.14	8.73	6.26	
Standard Deviation	8.64	10.83	10.74	18.81	18.48	
Downside Risk	5.50	6.19	6.50	12.64	13.01	
Downside Semi Deviation	2.35	10.57	9.79	19.50	19.94	
Max Drawdown Recovery Period	N/A	N/A	32.00	9.00	42.00	
Maximum Drawdown	-8.89	-8.89	-15.22	-34.25	-59.06	
Maximum Loss Exposure	N/A	-2.80	-4.88	-34.25	-37.29	
Upside Semi Deviation	2.87	11.95	11.89	18.84	17.67	
vs. Blended Benchmark (MSCI AC World ex USA Small Cap net)						
Active Return	10.96	1.86	1.77	4.85	3.64	
Tracking Error	5.50	6.49	6.13	6.05	6.48	
Actual Correlation	0.77	0.83	0.84	0.95	0.94	
Beta	0.58	0.85	0.85	0.93	0.99	
Consistency	75.00	55.56	53.33	63.33	60.26	
Down Market Capture	-13.04	60.33	67.27	78.66	93.55	
Down Market Outperformance	11.96	8.30	6.54	6.15	1.69	
Information Ratio	1.99	0.29	0.29	0.80	0.56	
Jensen Alpha	11.82	3.47	2.69	5.69	3.76	
Up Market Capture	88.74	90.67	89.10	103.90	109.06	
Up Market Outperformance	-1.70	-4.11	-4.73	2.88	6.47	
vs. FTSE 3 Month T-Bill						
Excess Return	11.59	12.33	7.81	14.74	10.33	
Excess Risk	6.47	11.18	10.90	18.47	19.43	
Sharpe Ratio	1.79	1.10	0.72	0.80	0.53	

Calculation based on monthly periodicity.

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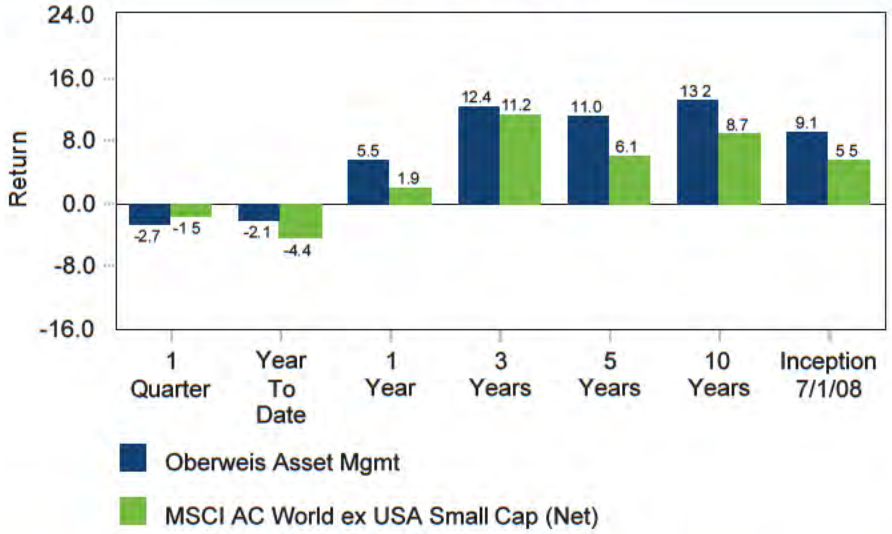
Performance Summary

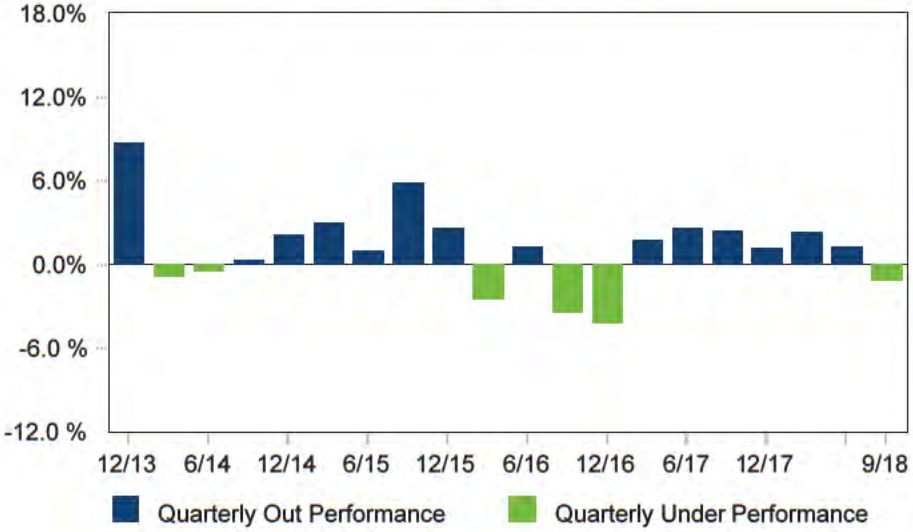
Account Information

Account Name:	Oberweis Asset Mgmt
Inception Date:	06/30/2008
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	MSCI AC World ex USA Small Cap (Net)
Peer Group:	IM International Small Cap Equity (SA+CF)

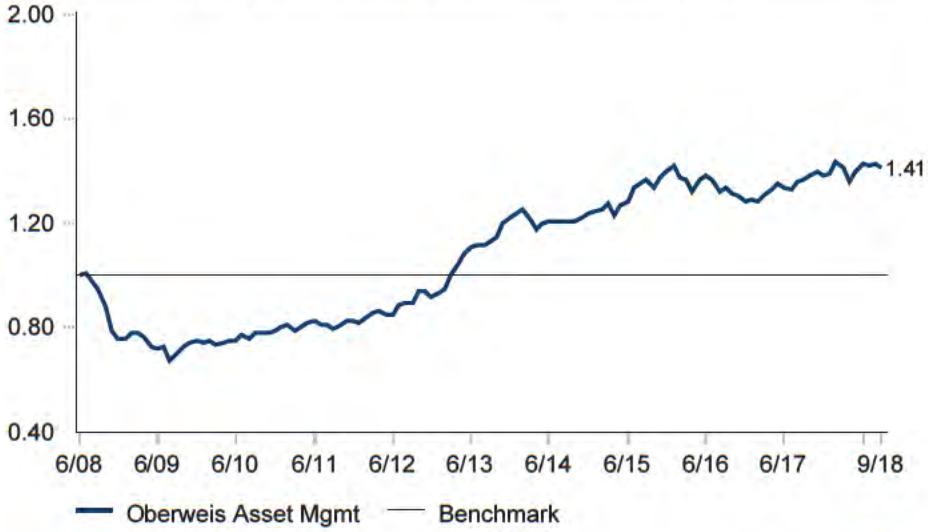
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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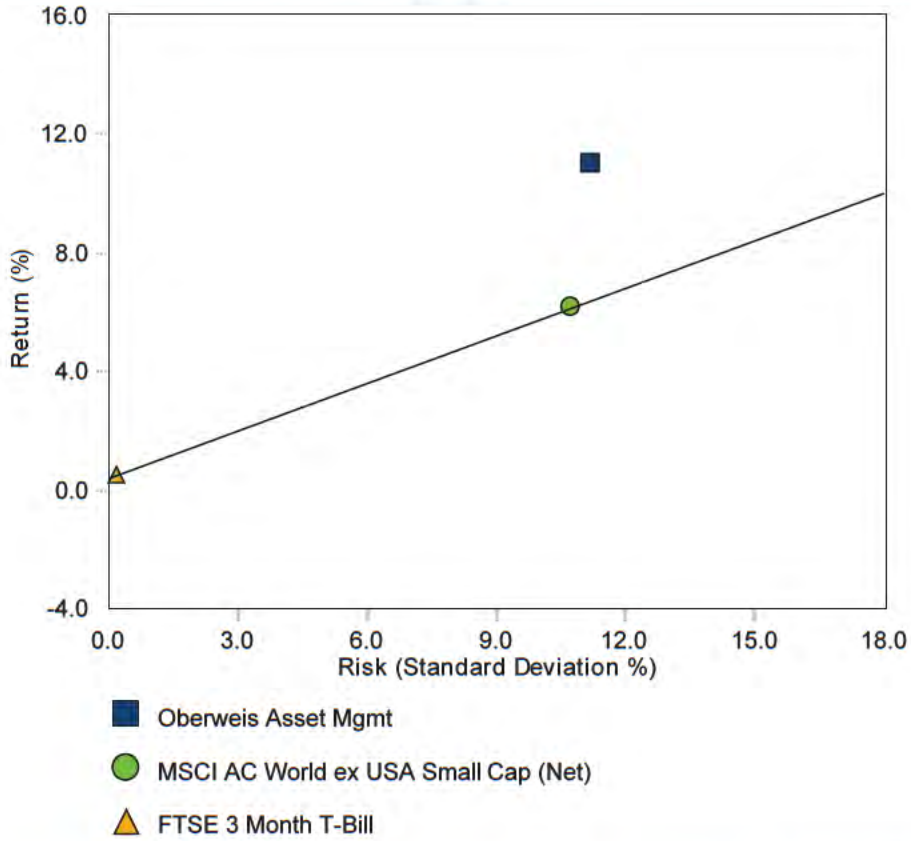
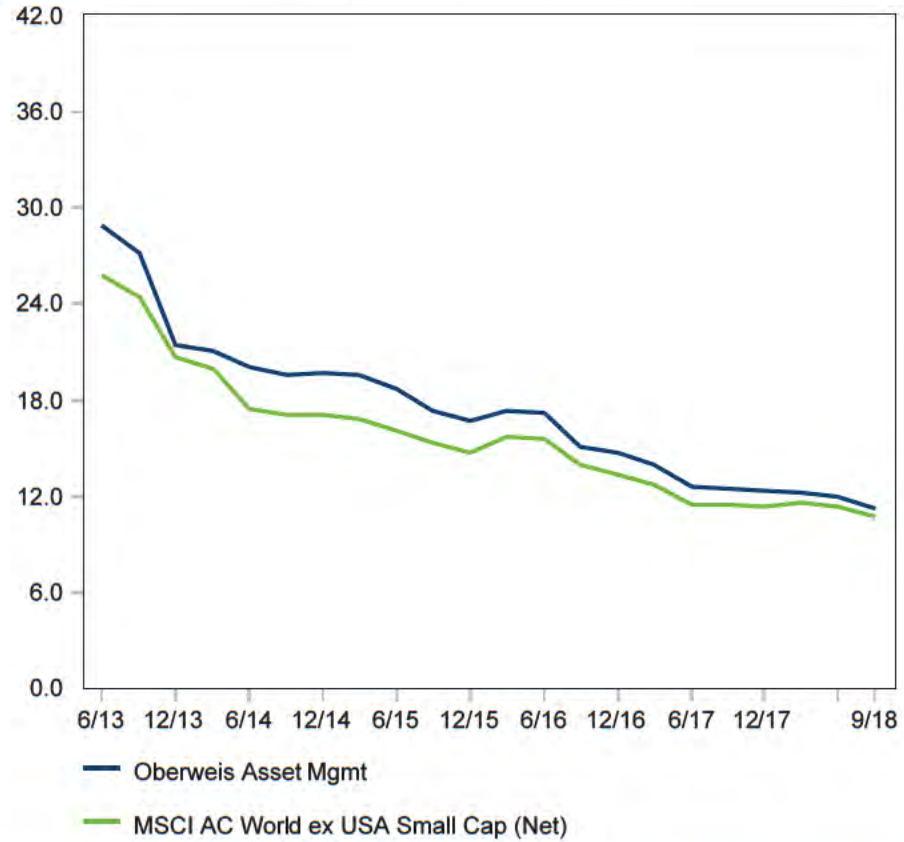
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Oberweis Asset Mgmt	4.57	6.88	0.66	0.65	0.95	5.79	0.84	11.02	11.18	0.80
MSCI AC World ex USA Small Cap (Net)	0.00	0.00	N/A	1.00	0.56	0.00	1.00	6.14	10.74	1.00
FTSE 3 Month T-Bill	-6.05	10.74	-0.56	0.00	N/A	0.49	0.00	0.49	0.18	0.00

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Risk Statistics

Oberweis Asset Mgmt

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	5.45	12.44	11.02	13.19	9.08	07/01/2008
Standard Deviation	9.13	11.24	11.18	20.68	21.77	
Downside Risk	4.86	6.29	6.30	14.37	15.85	
Downside Semi Deviation	1.90	9.95	10.09	23.12	25.02	
Max Drawdown Recovery Period	N/A	5.00	5.00	17.00	51.00	
Maximum Drawdown	-7.37	-8.90	-8.90	-45.53	-61.54	
Maximum Loss Exposure	N/A	-1.80	N/A	-45.53	-61.54	
Upside Semi Deviation	3.79	13.22	12.71	19.89	19.89	
MSCI AC World ex USA Small Cap (Net)						
Return	1.86	11.24	6.14	8.73	5.47	
Standard Deviation	8.64	10.83	10.74	18.81	19.63	
Downside Risk	5.50	6.19	6.50	12.64	13.86	
Downside Semi Deviation	2.35	10.57	9.79	19.50	21.03	
Max Drawdown Recovery Period	N/A	N/A	32.00	9.00	26.00	
Maximum Drawdown	-8.89	-8.89	-15.22	-34.25	-50.87	
Maximum Loss Exposure	N/A	-2.80	-4.88	-34.25	-50.87	
Upside Semi Deviation	2.87	11.95	11.89	18.84	18.84	
vs. MSCI AC World ex USA Small Cap (Net)						
Active Return	3.51	1.13	4.57	4.50	3.92	
Tracking Error	7.37	6.97	6.88	8.56	8.57	
Actual Correlation	0.66	0.80	0.80	0.91	0.92	
Beta	0.69	0.83	0.84	1.00	1.02	
Consistency	58.33	52.78	63.33	62.50	61.79	
Down Market Capture	43.03	67.08	56.17	85.39	89.70	
Down Market Outperformance	5.84	6.98	9.05	3.55	2.40	
Information Ratio	0.48	0.16	0.66	0.53	0.46	
Jensen Alpha	3.76	2.93	5.70	4.58	3.84	
Up Market Capture	79.07	90.24	97.74	106.89	106.89	
Up Market Outperformance	-3.21	-4.44	-1.21	4.93	4.93	
vs. FTSE 3 Month T-Bill						
Excess Return	4.14	11.59	10.62	14.38	10.88	
Excess Risk	9.18	11.26	11.19	20.71	21.82	
Sharpe Ratio	0.45	1.03	0.95	0.69	0.50	

Calculation based on monthly periodicity.

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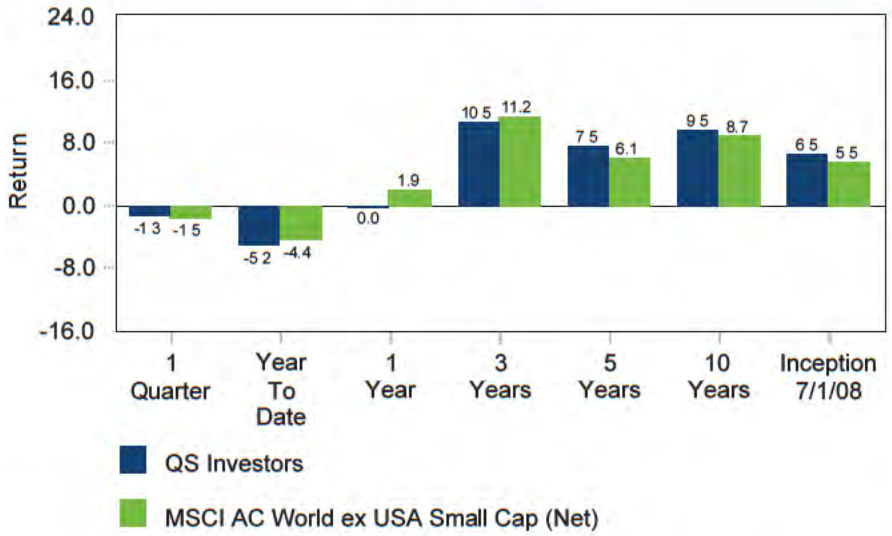
Performance Summary

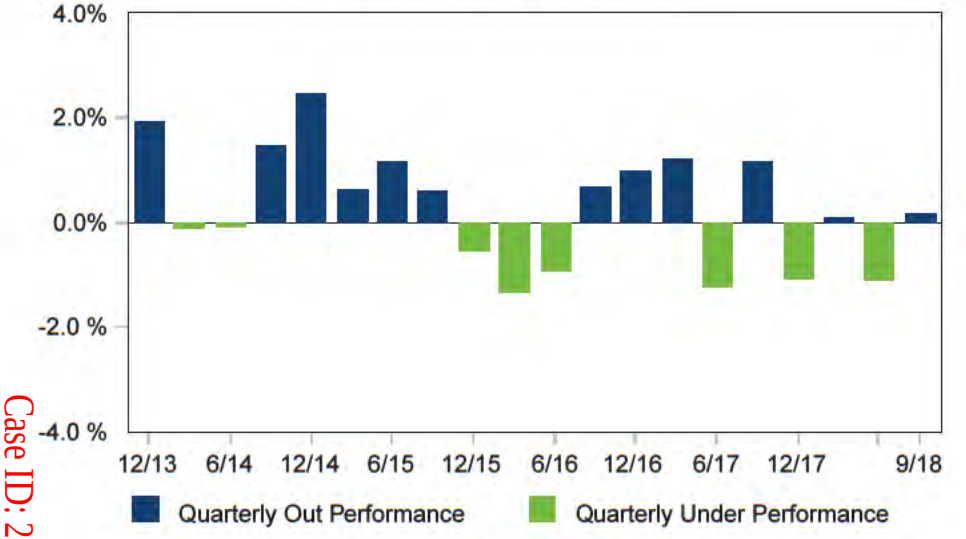
Account Information

Account Name:	QS Investors
Inception Date:	06/30/2008
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	MSCI AC World ex USA Small Cap (Net)
Peer Group:	IM International Small Cap Equity (SA+CF)

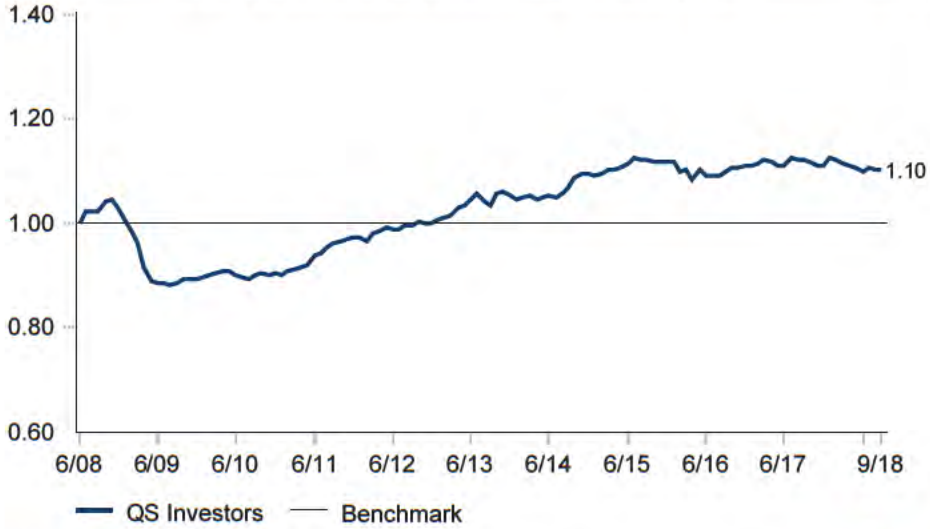
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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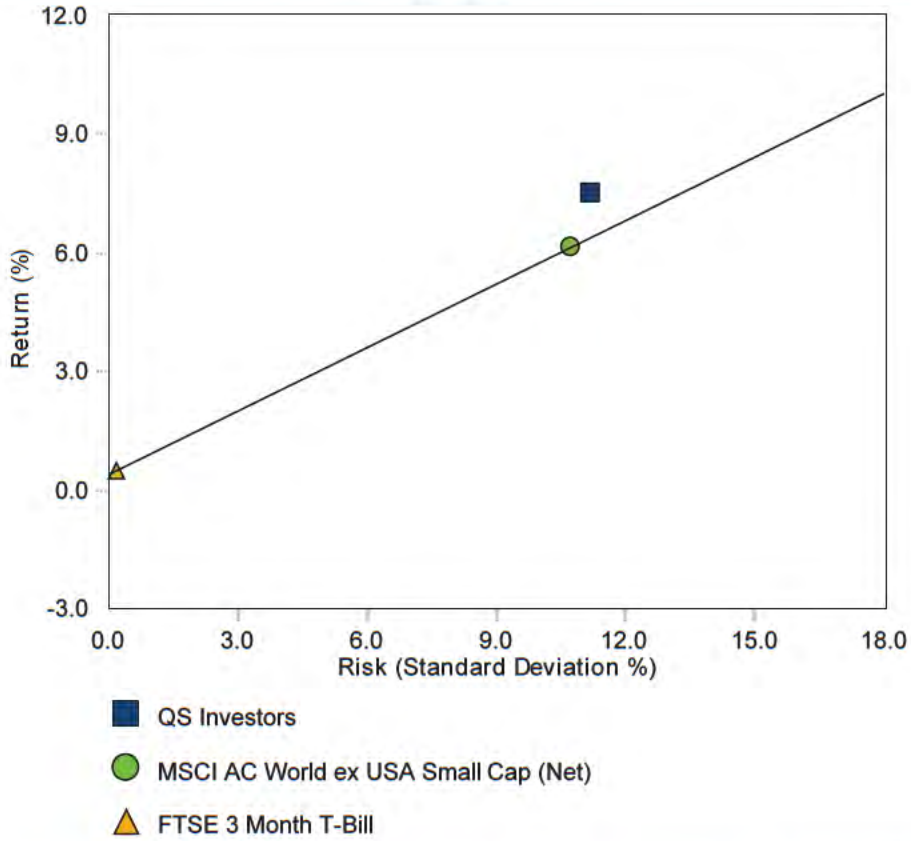
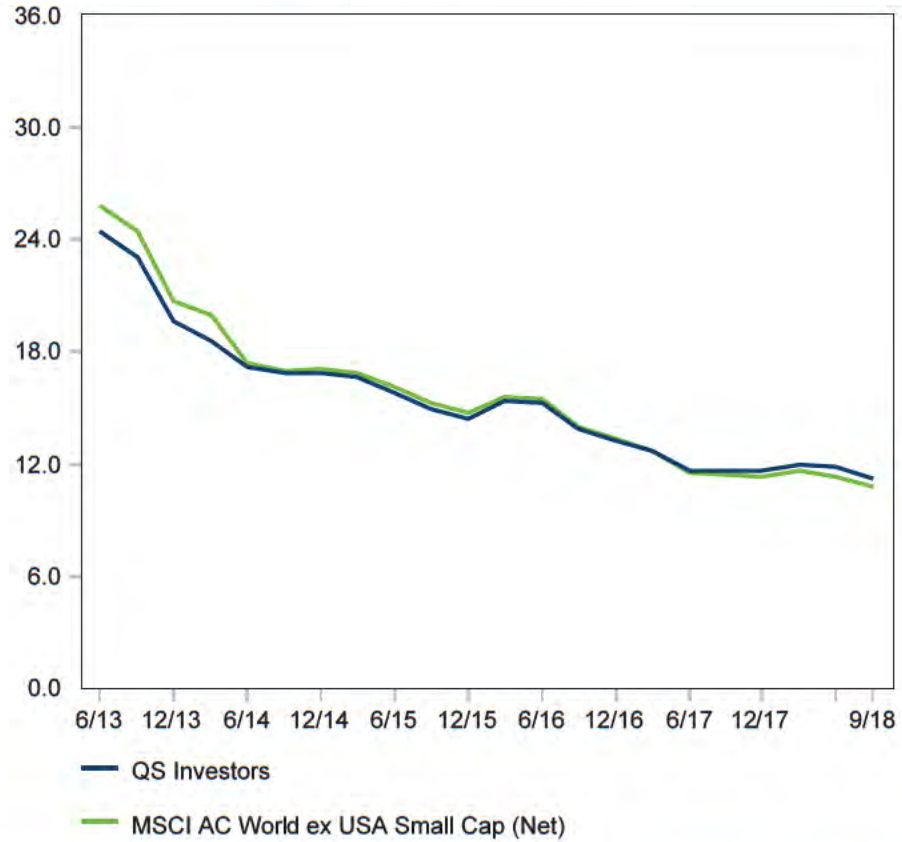
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
QS Investors	1.31	2.51	0.52	0.95	0.66	1.22	1.02	7.48	11.19	0.97
MSCI AC World ex USA Small Cap (Net)	0.00	0.00	N/A	1.00	0.56	0.00	1.00	6.14	10.74	1.00
FTSE 3 Month T-Bill	-6.05	10.74	-0.56	0.00	N/A	0.49	0.00	0.49	0.18	0.00

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Risk Statistics

QS Investors

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	0.00	10.54	7.48	9.55	6.47	07/01/2008
Standard Deviation	10.21	11.56	11.19	18.07	18.92	
Downside Risk	6.60	6.68	6.55	12.33	13.55	
Downside Semi Deviation	2.82	11.40	10.27	19.63	21.17	
Max Drawdown Recovery Period	N/A	N/A	20.00	11.00	29.00	
Maximum Drawdown	-10.82	-10.82	-14.75	-36.70	-51.66	
Maximum Loss Exposure	0.00	-4.65	N/A	-36.70	-51.66	
Upside Semi Deviation	3.34	12.55	12.32	17.58	17.58	
MSCI AC World ex USA Small Cap (Net)						
Return	1.86	11.24	6.14	8.73	5.47	
Standard Deviation	8.64	10.83	10.74	18.81	19.63	
Downside Risk	5.50	6.19	6.50	12.64	13.86	
Downside Semi Deviation	2.35	10.57	9.79	19.50	21.03	
Max Drawdown Recovery Period	N/A	N/A	32.00	9.00	26.00	
Maximum Drawdown	-8.89	-8.89	-15.22	-34.25	-50.87	
Maximum Loss Exposure	N/A	-2.80	-4.88	-34.25	-50.87	
Upside Semi Deviation	2.87	11.95	11.89	18.84	18.84	
vs. MSCI AC World ex USA Small Cap (Net)						
Active Return	-1.72	-0.56	1.31	0.63	0.82	
Tracking Error	2.20	2.45	2.51	3.43	3.46	
Actual Correlation	0.99	0.98	0.97	0.98	0.98	
Beta	1.17	1.04	1.02	0.94	0.95	
Consistency	33.33	38.89	53.33	60.00	60.16	
Down Market Capture	124.25	104.80	94.11	95.59	95.13	
Down Market Outperformance	-2.41	-1.03	1.15	1.27	1.46	
Information Ratio	-0.78	-0.23	0.52	0.18	0.24	
Jensen Alpha	-1.80	-1.02	1.22	1.17	1.18	
Up Market Capture	107.23	99.54	103.60	99.46	99.46	
Up Market Outperformance	1.01	-0.30	1.49	-0.21	-0.21	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.09	9.91	7.36	10.51	7.78	
Excess Risk	10.25	11.59	11.20	18.09	18.96	
Sharpe Ratio	-0.11	0.85	0.66	0.58	0.41	

Calculation based on monthly periodicity.

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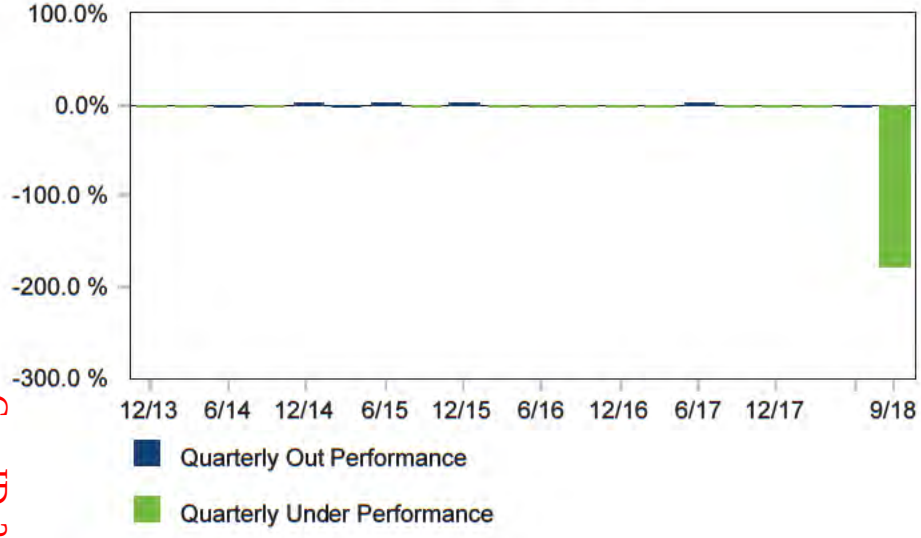
Performance Summary

Account Information

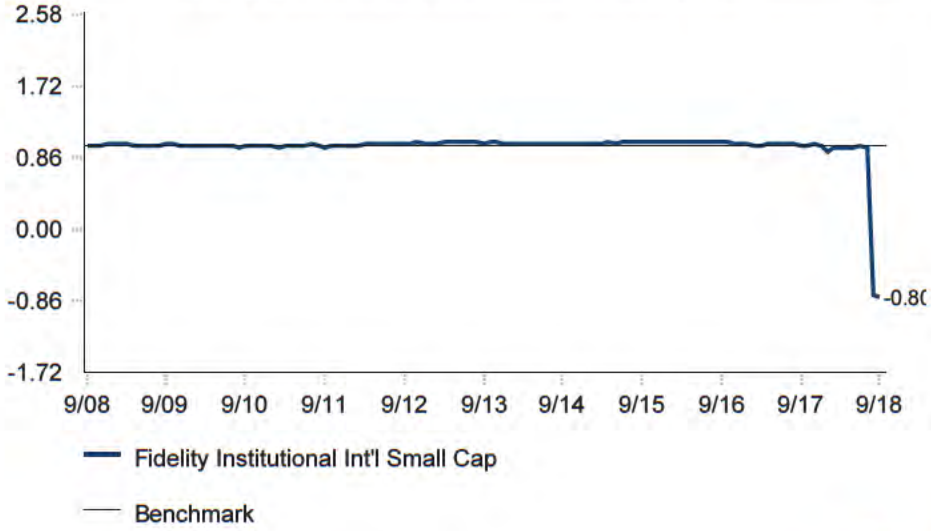
Account Name:	Fidelity Institutional Int'l Small Cap
Inception Date:	09/01/2008
Account Structure:	Separate Account
Asset Class:	International Equity
Benchmark:	MSCI AC World ex USA Small Cap (Net)
Peer Group:	IM International Small Cap Equity (SA+CF)

Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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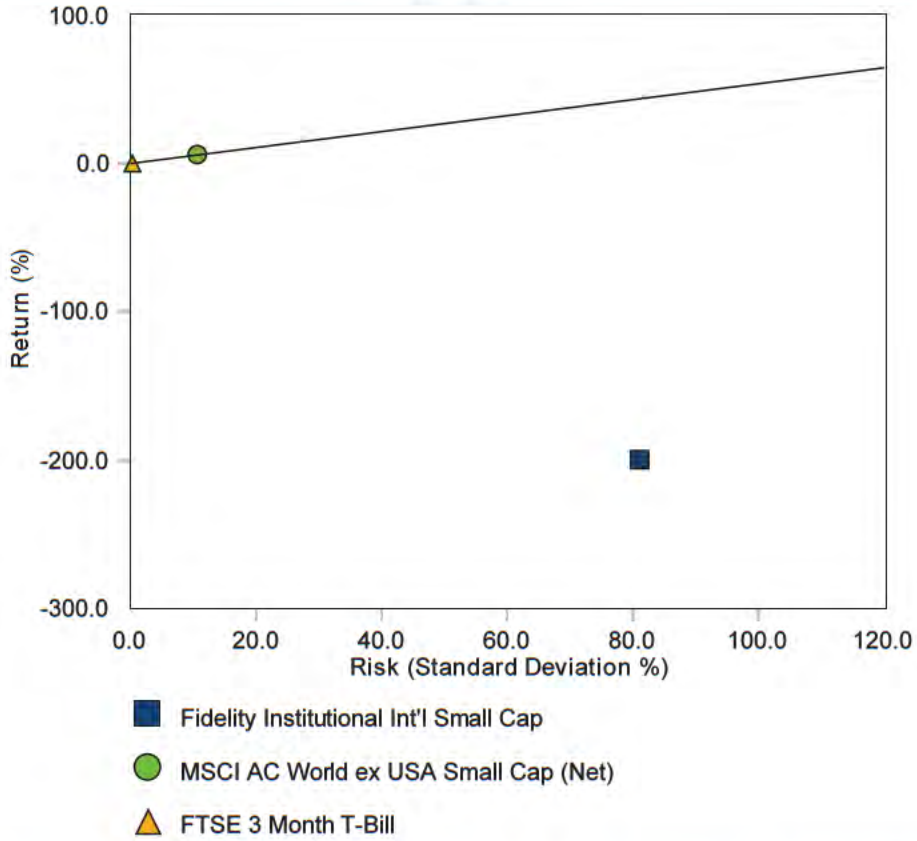
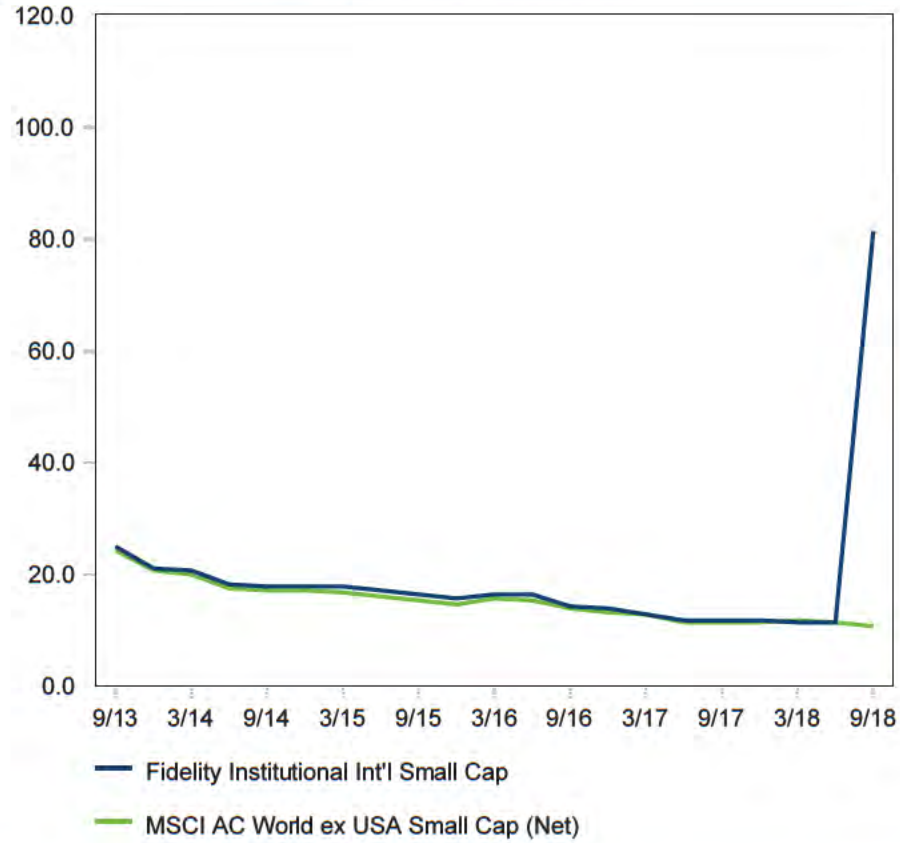
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Fidelity Institutional Int'l Small Cap	-36.56	80.06	-0.46	0.03	-0.37	-32.79	1.39	-200.86	81.32	0.18
MSCI AC World ex USA Small Cap (Net)	0.00	0.00	N/A	1.00	0.56	0.00	1.00	6.14	10.74	1.00
FTSE 3 Month T-Bill	-6.05	10.74	-0.56	0.00	N/A	0.49	0.00	0.49	0.18	0.00

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Risk Statistics

Fidelity Institutional Int'l Small Cap

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-181.12	-201.85	-200.86	-206.36	-206.36	10/01/2008
Standard Deviation	180.02	104.79	81.32	60.23	60.23	
Downside Risk	187.78	105.43	81.33	58.52	58.52	
Downside Semi Deviation	67.95	172.99	120.23	91.19	91.19	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-177.27	-177.27	-177.27	-177.27	-177.27	
Maximum Loss Exposure	-181.39	-206.01	-204.70	-285.86	-285.86	
Upside Semi Deviation	2.68	11.58	11.94	18.96	18.96	
MSCI AC World ex USA Small Cap (Net)						
Return	1.86	11.24	6.14	8.73	8.73	
Standard Deviation	8.64	10.83	10.74	18.81	18.81	
Downside Risk	5.50	6.19	6.50	12.64	12.64	
Downside Semi Deviation	2.35	10.57	9.79	19.50	19.50	
Max Drawdown Recovery Period	N/A	N/A	32.00	9.00	9.00	
Maximum Drawdown	-8.89	-8.89	-15.22	-34.25	-34.25	
Maximum Loss Exposure	N/A	-2.80	-4.88	-34.25	-34.25	
Upside Semi Deviation	2.87	11.95	11.89	18.84	18.84	
vs. MSCI AC World ex USA Small Cap (Net)						
Active Return	-180.18	-61.28	-36.56	-17.86	-17.86	
Tracking Error	178.91	103.29	80.06	56.67	56.67	
Actual Correlation	0.15	0.19	0.18	0.34	0.34	
Beta	3.15	1.83	1.39	1.09	1.09	
Consistency	41.67	36.11	38.33	46.67	46.67	
Down Market Capture	1,654.97	698.79	403.25	198.33	198.33	
Down Market Outperformance	-167.27	-142.38	-149.70	-126.84	-126.84	
Information Ratio	-1.01	-0.59	-0.46	-0.32	-0.32	
Jensen Alpha	-86.04	-51.62	-32.83	-17.27	-17.27	
Up Market Capture	32.24	82.06	88.09	98.15	98.15	
Up Market Outperformance	-9.65	-7.76	-5.21	-1.50	-1.50	
vs. FTSE 3 Month T-Bill						
Excess Return	-179.55	-50.82	-30.51	-7.97	-7.97	
Excess Risk	180.06	104.85	81.38	60.28	60.28	
Sharpe Ratio	-1.00	-0.48	-0.37	-0.13	-0.13	

Calculation based on monthly periodicity.

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Total Alternatives

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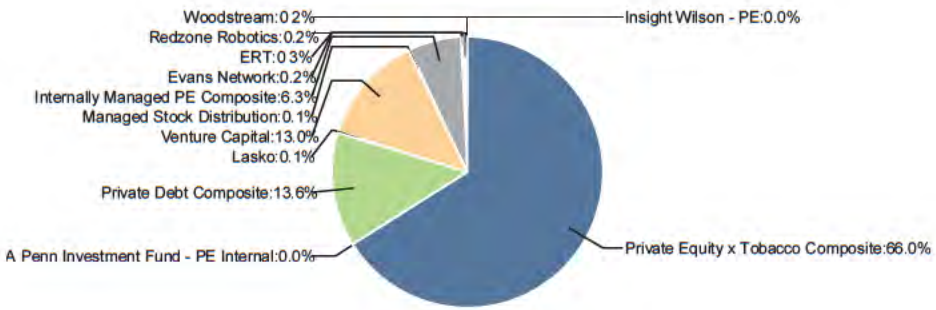
AON Empower Results®

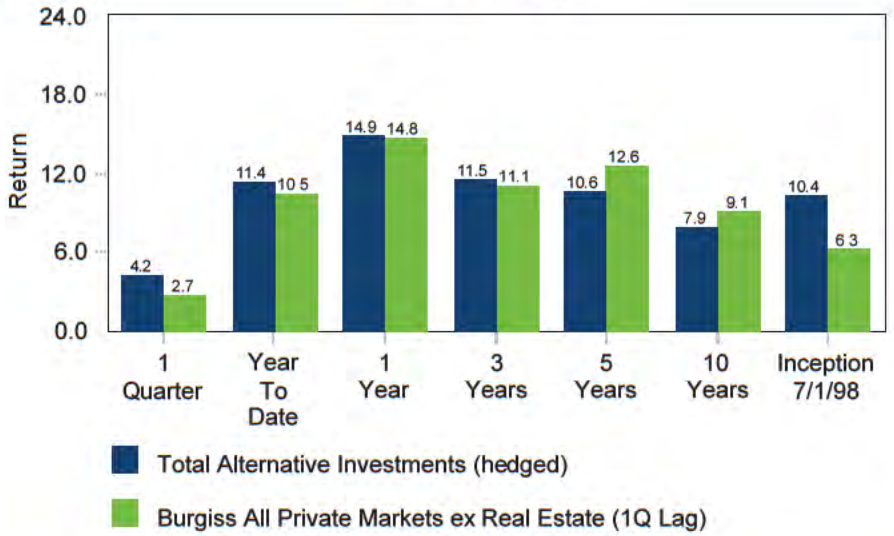
Portfolio Overview

Current Allocation

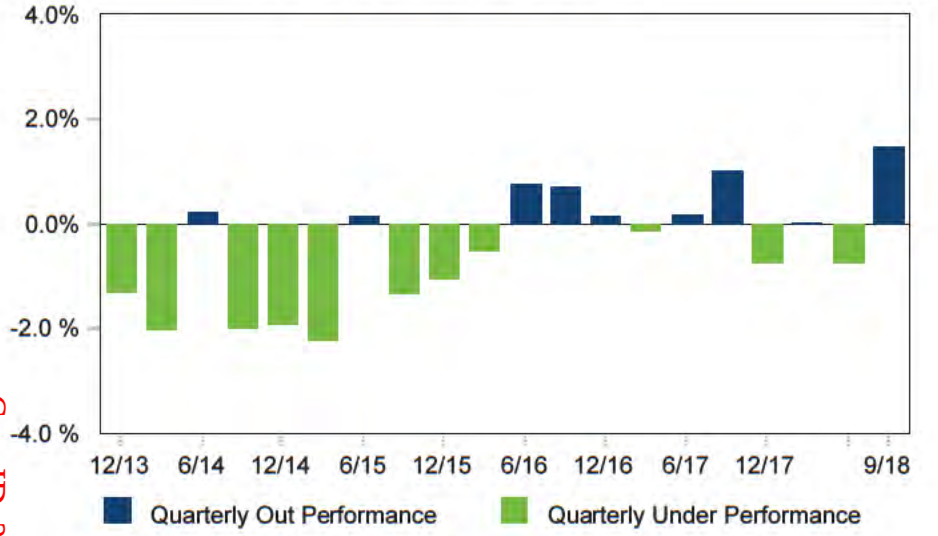
September 30, 2018 : $8,145M



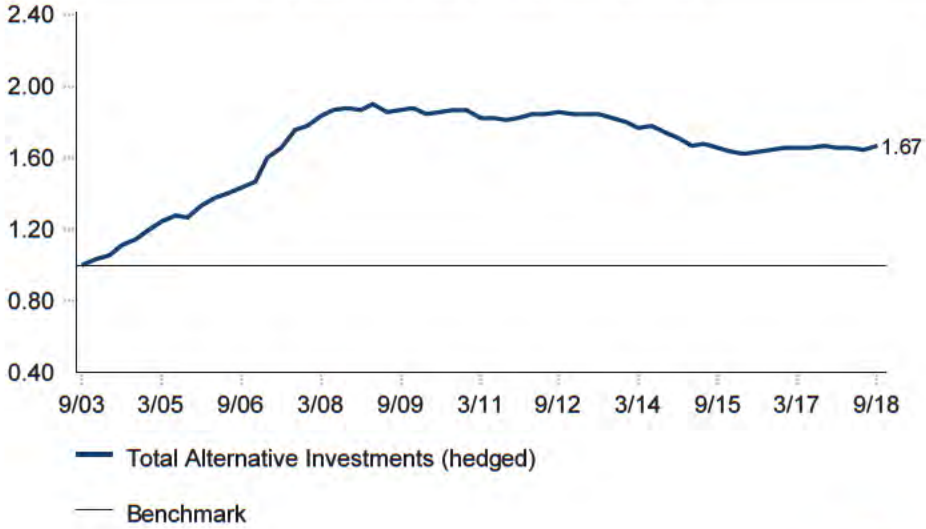
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 15 Years



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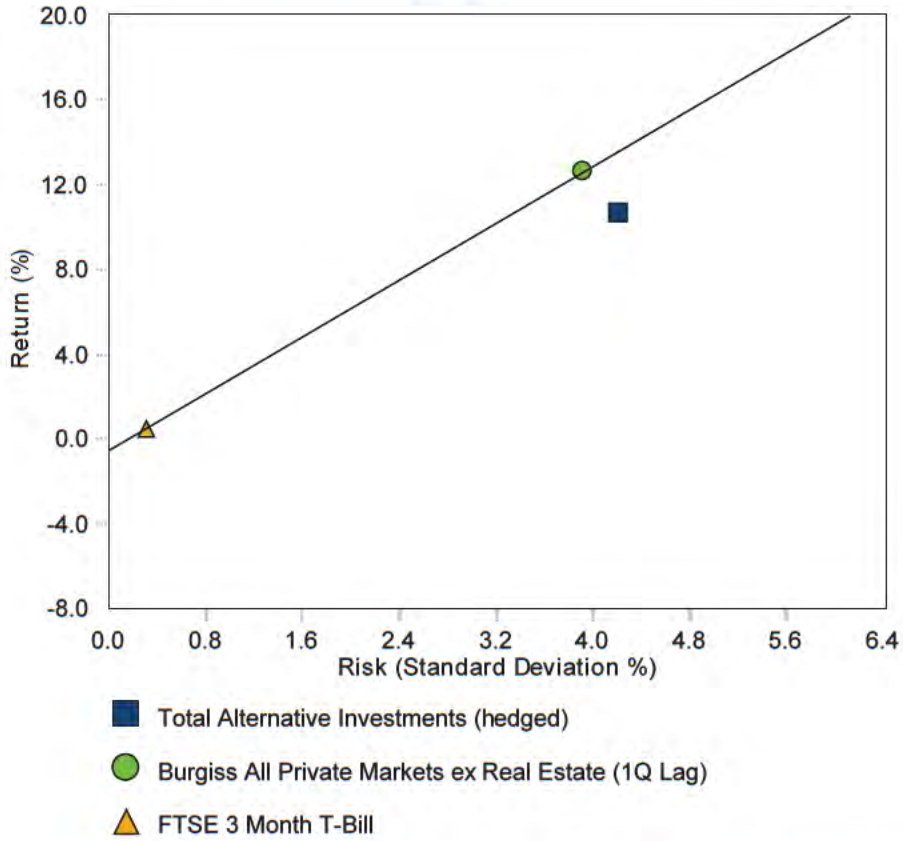
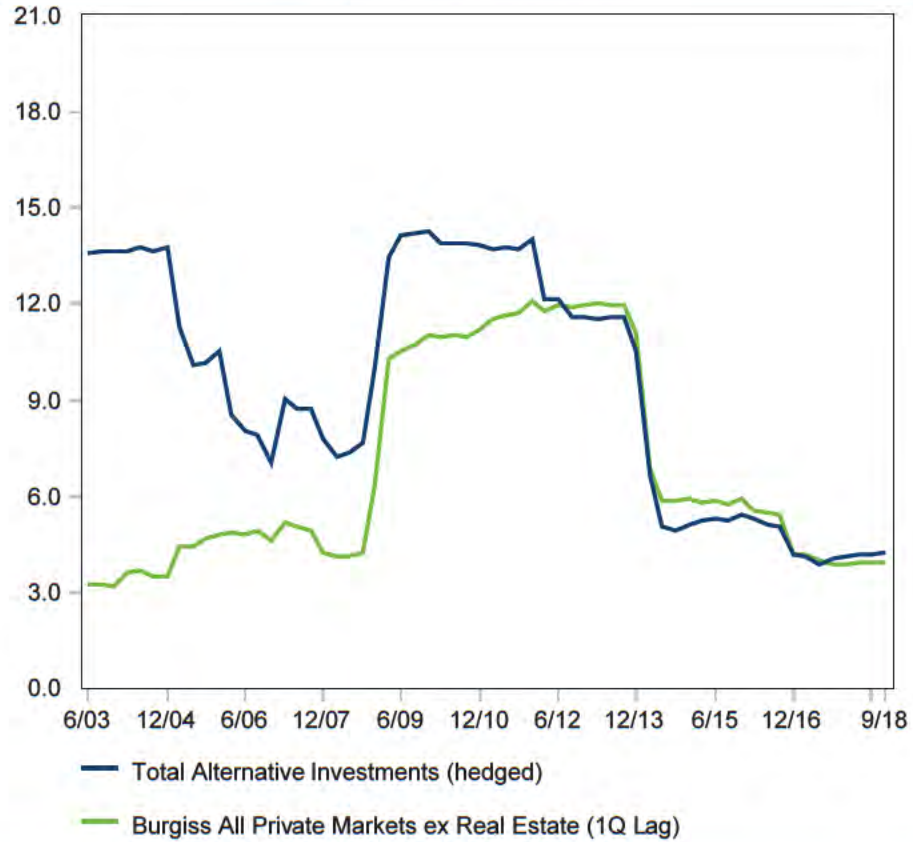
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Total Alternative Investments (hedged)	-1.80	2.19	-0.82	0.74	2.40	-0.84	0.92	10.64	4.21	0.86
Burgiss All Private Markets ex Real Estate (1Q Lag)	0.00	0.00	N/A	1.00	2.99	0.00	1.00	12.61	3.92	1.00
FTSE 3 Month T-Bill	-11.64	3.90	-2.99	0.01	N/A	0.37	0.01	0.49	0.32	0.12

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Risk Statistics

Total Alternative Investments (hedged)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	14.90	11.51	10.64	7.86	10.40	07/01/1998
Standard Deviation	2.48	4.13	4.21	8.68	10.31	
Downside Risk	0.00	1.30	1.27	6.24	5.50	
Downside Semi Deviation	N/A	N/A	1.96	15.91	12.31	
Max Drawdown Recovery Period	N/A	2.00	3.00	10.00	18.00	
Maximum Drawdown	0.00	-2.16	-2.16	-27.66	-28.00	
Maximum Loss Exposure	N/A	-2.16	N/A	-27.66	-0.37	
Upside Semi Deviation	8.54	7.35	7.24	8.03	11.50	
vs. Burgiss All Private Markets ex Real Estate (1Q Lag)						
Active Return	0.10	0.45	-1.80	-1.20	4.15	
Tracking Error	2.09	1.55	2.19	2.15	6.78	
Actual Correlation	0.59	0.93	0.86	0.97	0.76	
Beta	0.72	1.13	0.92	0.94	1.10	
Consistency	50.00	58.33	45.00	50.00	61.73	
Down Market Capture	N/A	187.91	187.91	102.27	120.35	
Down Market Outperformance	N/A	-1.01	-1.01	-0.37	-2.04	
Information Ratio	0.05	0.29	-0.82	-0.56	0.61	
Jensen Alpha	3.97	-0.90	-0.59	-0.69	4.00	
Up Market Capture	100.68	107.09	87.05	91.19	152.24	
Up Market Outperformance	0.10	0.93	-1.85	-1.47	6.73	
vs. FTSE 3 Month T-Bill						
Excess Return	12.59	10.32	9.83	7.71	8.66	
Excess Risk	2.49	3.97	4.10	8.68	10.19	
Sharpe Ratio	5.06	2.60	2.40	0.89	0.85	

Calculation based on quarterly periodicity.

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Total Fixed Income

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AON Empower Results®

Investment Grade Fixed Income

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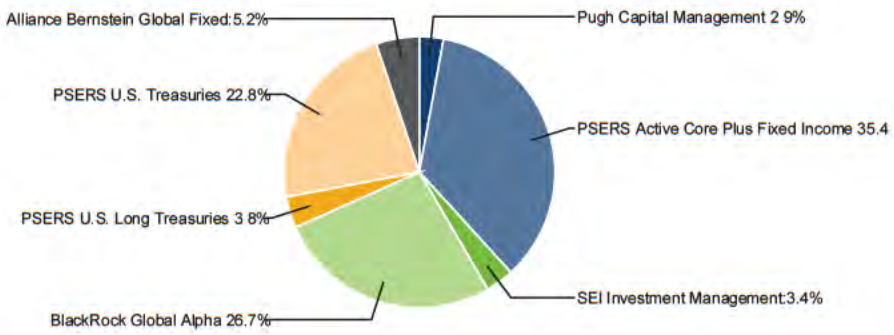
AON Empower Results®

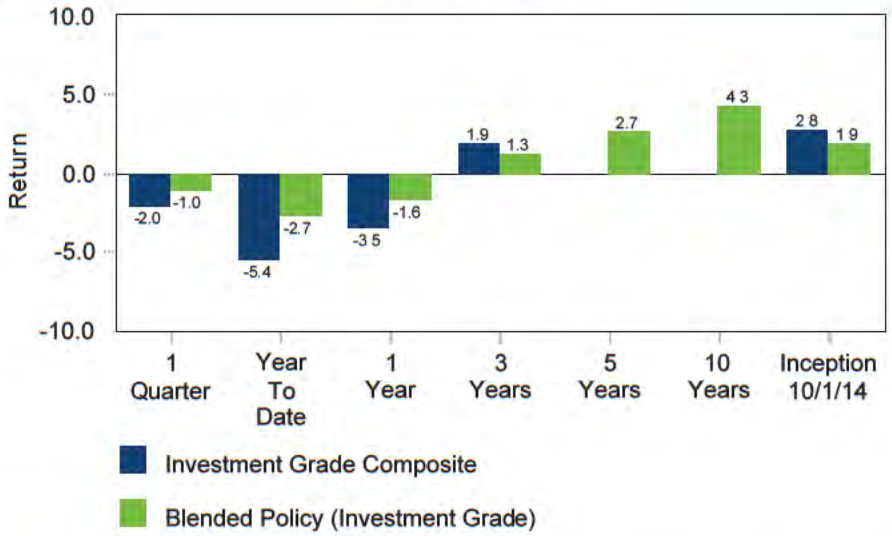
Portfolio Overview

Current Allocation

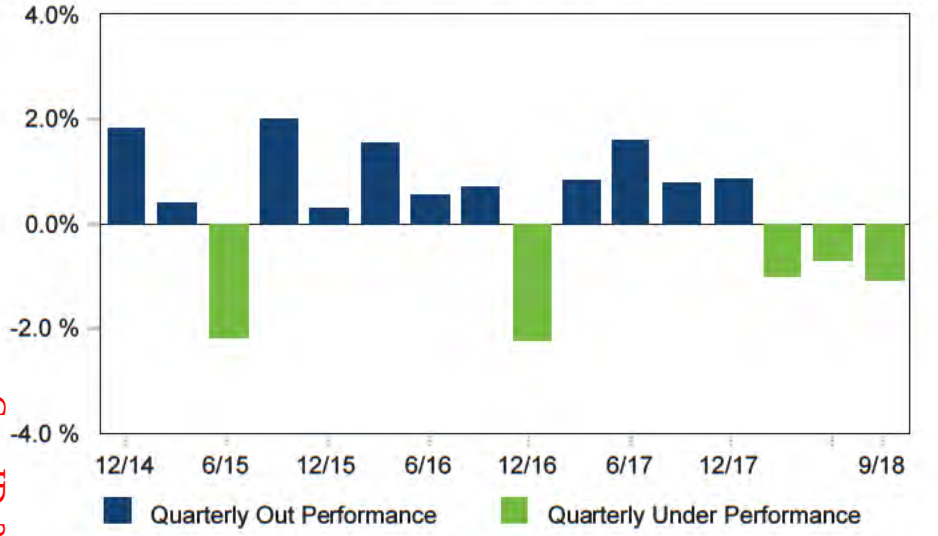
September 30, 2018 : $3,514M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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AON Empower Results®

US Core Plus Fixed Income

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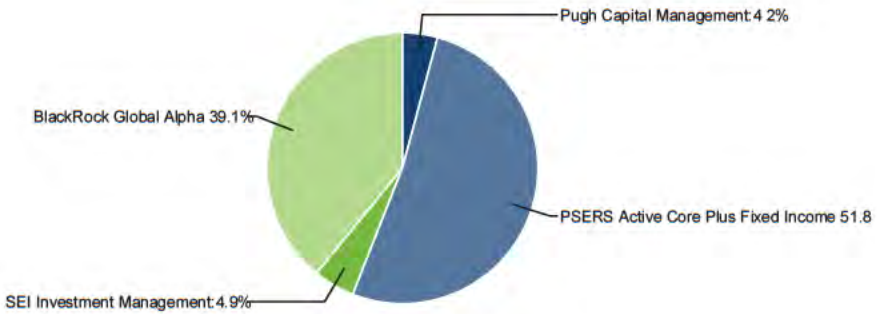
AON Empower Results®

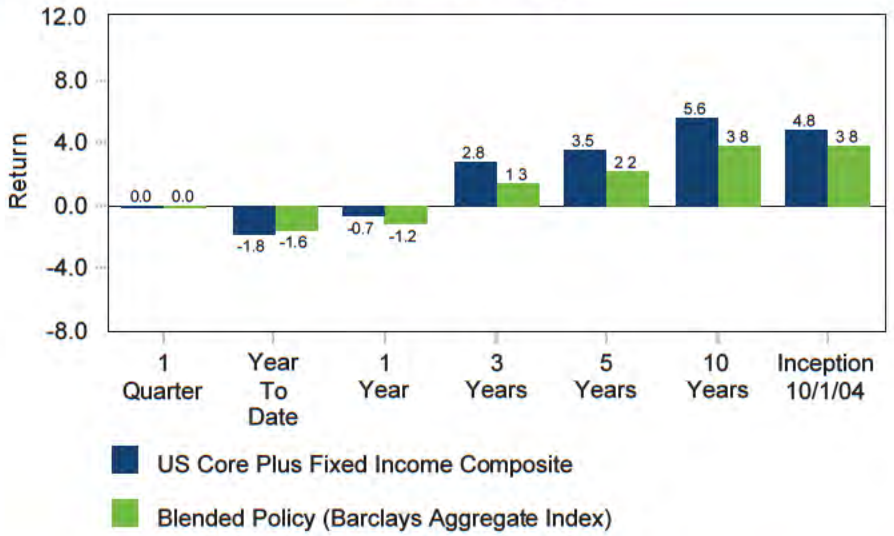
Portfolio Overview

Current Allocation

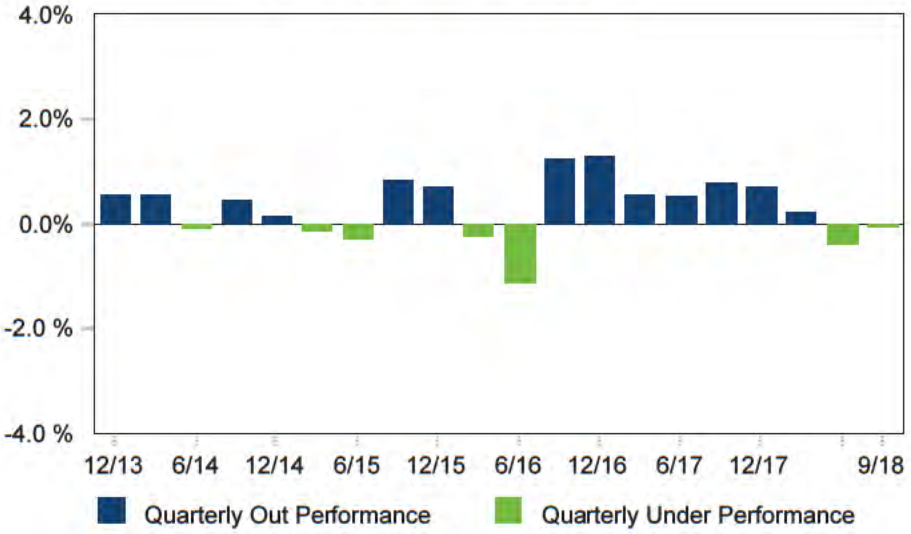
September 30, 2018 : $2,400M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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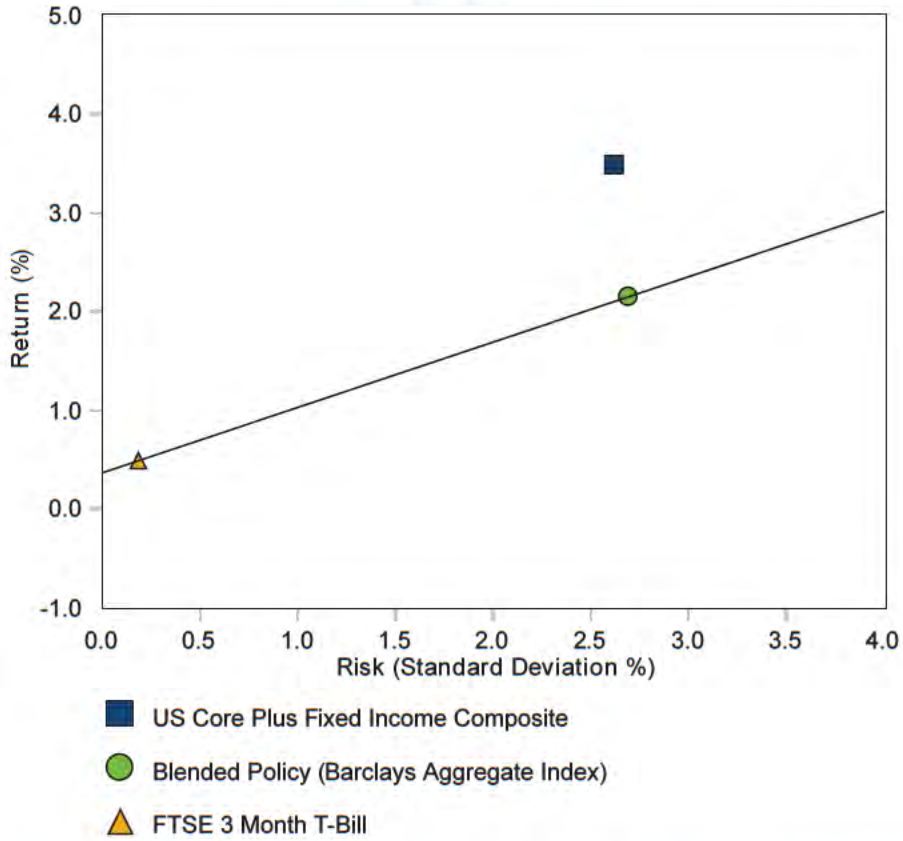
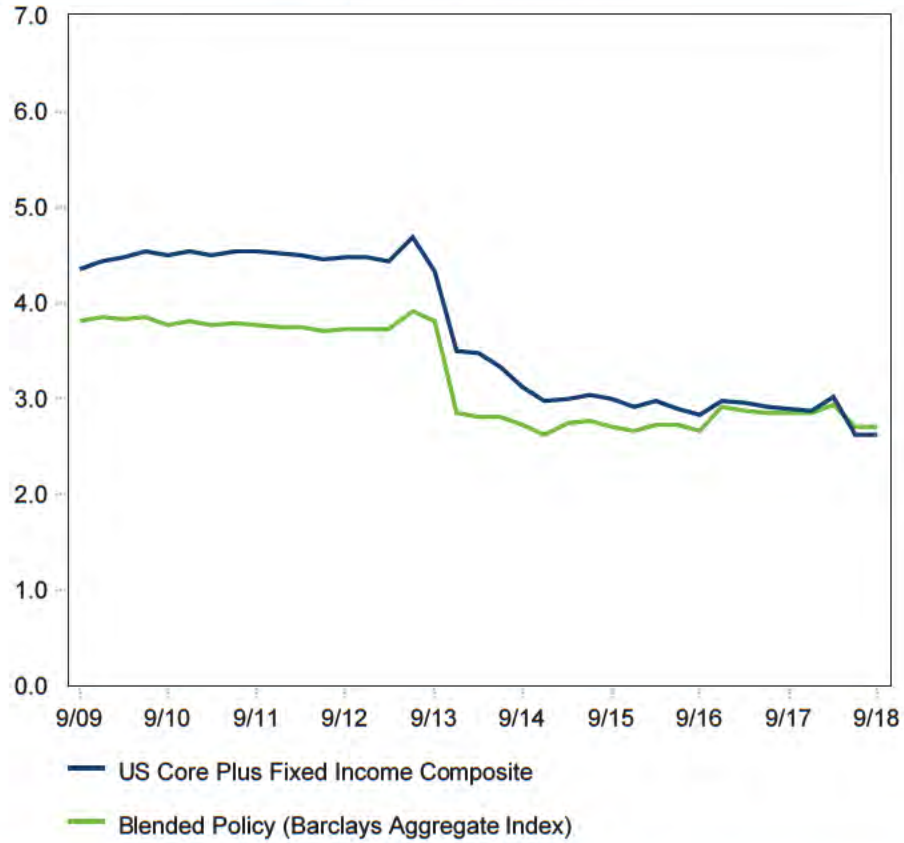
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
US Core Plus Fixed Income Composite	1.29	1.00	1.29	0.86	1.12	1.51	0.90	3.49	2.62	0.93
Blended Policy (Barclays Aggregate Index)	0.00	0.00	N/A	1.00	0.62	0.00	1.00	2.16	2.70	1.00
FTSE 3 Month T-Bill	-1.69	2.73	-0.62	0.02	N/A	0.51	-0.01	0.49	0.18	-0.14

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Risk Statistics

US Core Plus Fixed Income Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.69	2.80	3.49	5.56	4.79	10/01/2004
Standard Deviation	2.35	2.51	2.62	3.62	3.52	
Downside Risk	1.85	1.45	1.38	2.08	2.08	
Downside Semi Deviation	0.79	2.48	2.31	3.95	3.73	
Max Drawdown Recovery Period	N/A	7.00	12.00	6.00	18.00	
Maximum Drawdown	-2.11	-2.22	-2.46	-4.83	-9.76	
Maximum Loss Exposure	-1.03	-0.02	N/A	-4.83	N/A	
Upside Semi Deviation	0.62	2.79	3.09	3.97	3.82	
Blended Policy (Barclays Aggregate Index)						
Return	-1.22	1.31	2.16	3.83	3.81	
Standard Deviation	2.25	2.66	2.70	3.32	3.17	
Downside Risk	1.88	1.84	1.63	1.91	1.80	
Downside Semi Deviation	0.80	2.90	2.56	3.34	3.10	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	8.00	
Maximum Drawdown	-2.19	-3.28	-3.28	-3.67	-5.58	
Maximum Loss Exposure	-1.81	-0.57	-0.14	-3.59	N/A	
Upside Semi Deviation	0.56	2.60	2.95	3.59	3.49	
vs. Blended Policy (Barclays Aggregate Index)						
Active Return	0.53	1.46	1.29	1.67	0.95	
Tracking Error	0.97	1.19	1.00	1.56	1.45	
Actual Correlation	0.91	0.90	0.93	0.90	0.91	
Beta	0.95	0.85	0.90	0.98	1.01	
Consistency	66.67	72.22	70.00	71.67	63.69	
Down Market Capture	91.41	69.06	73.75	85.46	94.45	
Down Market Outperformance	0.31	1.95	1.57	1.05	0.38	
Information Ratio	0.55	1.23	1.29	1.07	0.65	
Jensen Alpha	0.41	1.55	1.46	1.72	0.89	
Up Market Capture	108.38	114.85	112.64	119.96	112.69	
Up Market Outperformance	0.22	1.11	1.12	2.12	1.34	
vs. FTSE 3 Month T-Bill						
Excess Return	-2.23	2.00	2.98	5.17	3.50	
Excess Risk	2.35	2.56	2.66	3.65	3.59	
Sharpe Ratio	-0.95	0.78	1.12	1.42	0.98	

Calculation based on monthly periodicity.

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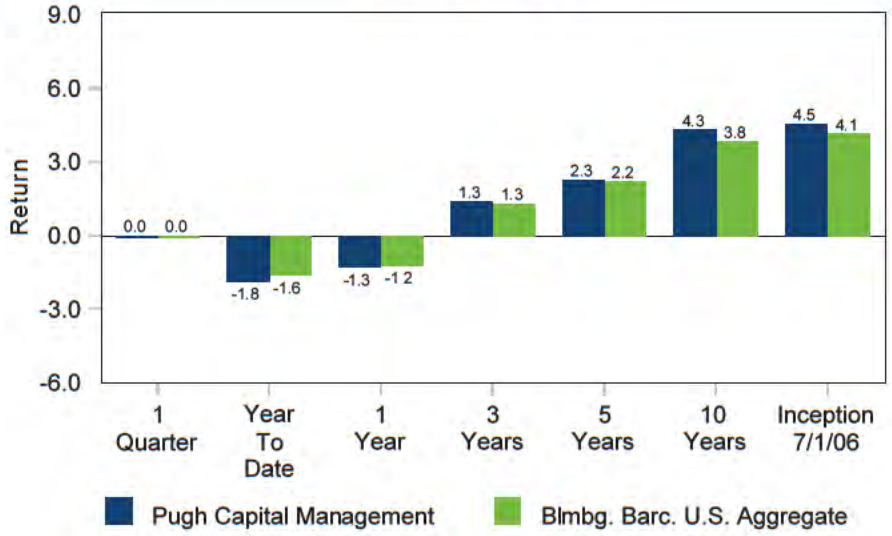
Performance Summary

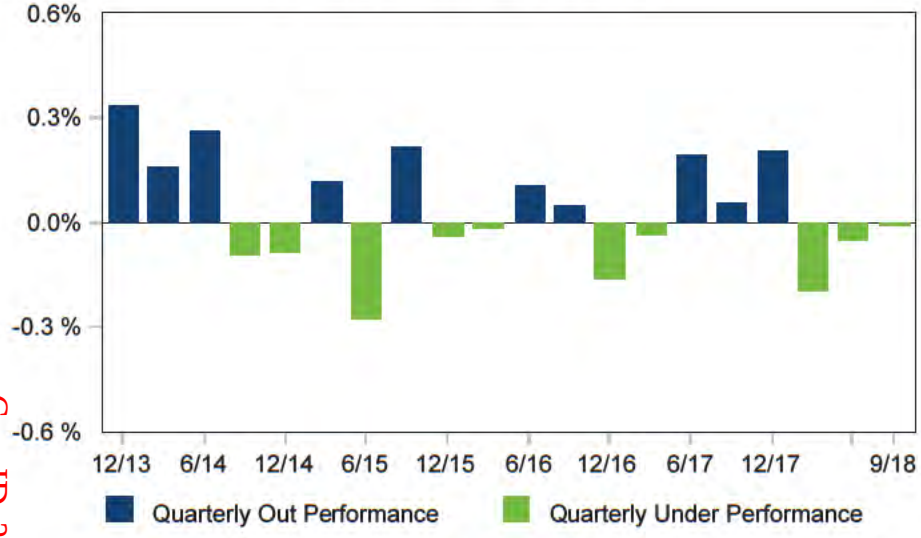
Account Information

Account Name:	Pugh Capital Management
Inception Date:	06/30/2006
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Aggregate
Peer Group:	IM U.S. Broad Market Core+ Fixed Income (SA+CF)

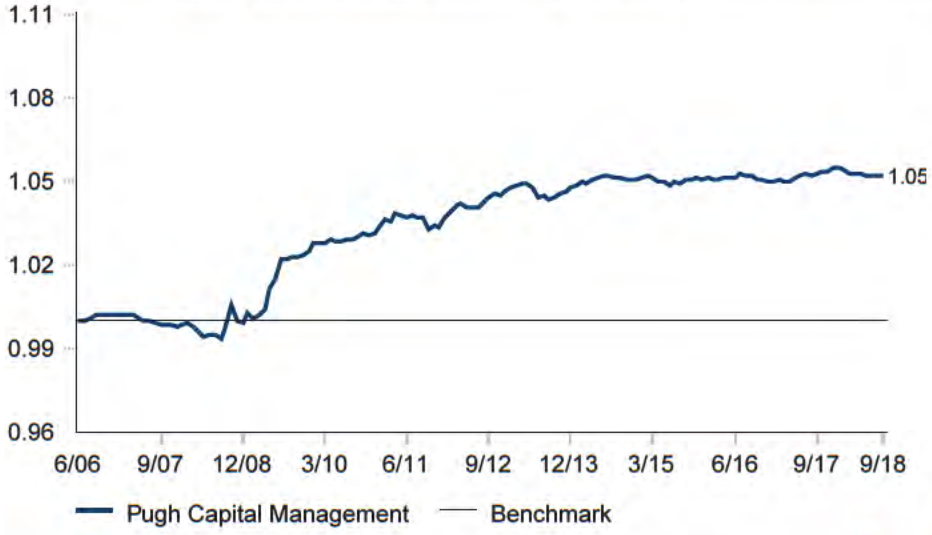
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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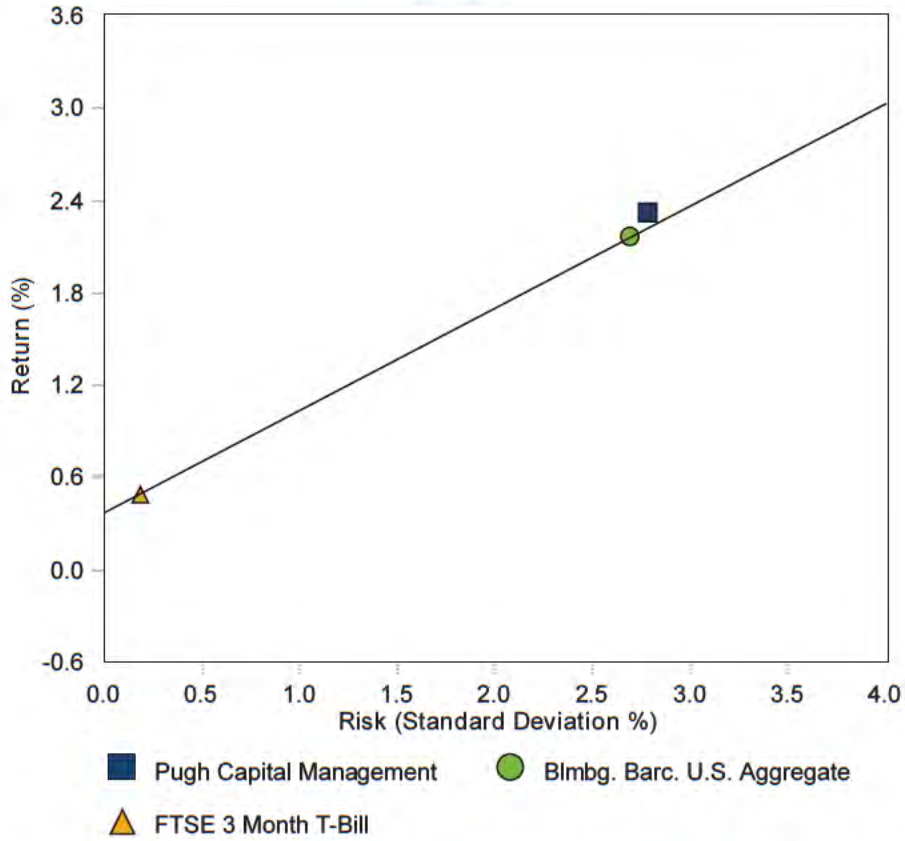
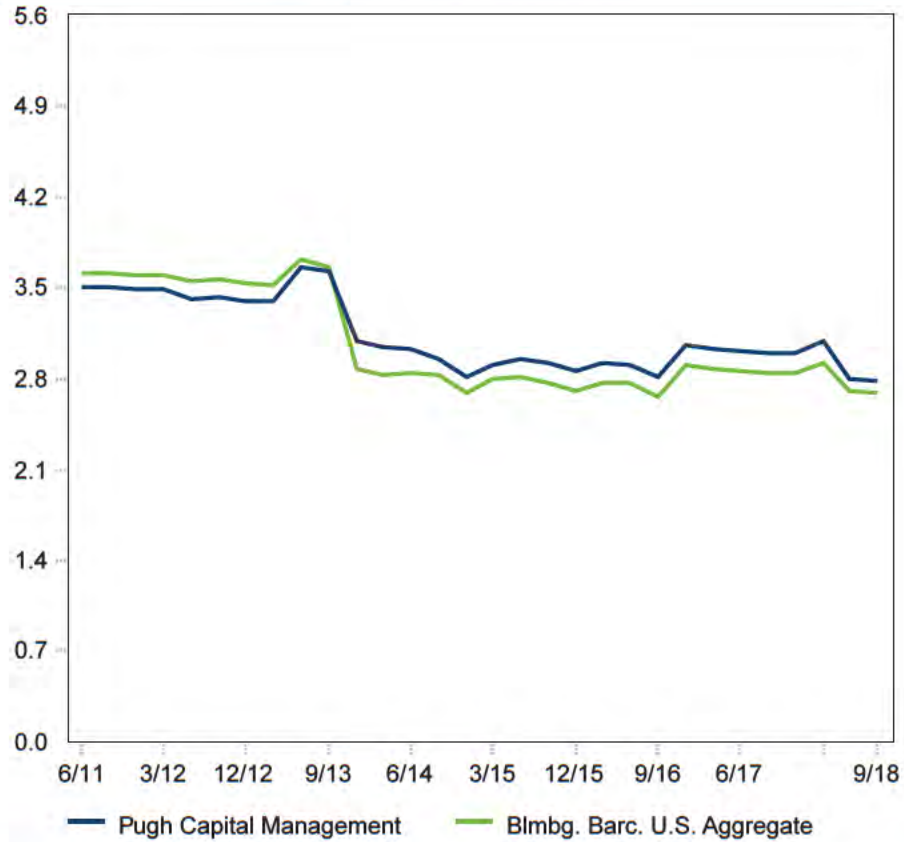
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Pugh Capital Management	0.15	0.26	0.57	0.99	0.65	0.09	1.03	2.31	2.79	1.00
Blmbg. Barc. U.S. Aggregate	0.00	0.00	N/A	1.00	0.62	0.00	1.00	2.16	2.70	1.00
FTSE 3 Month T-Bill	-1.69	2.73	-0.62	0.02	N/A	0.51	-0.01	0.49	0.18	-0.14

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Risk Statistics

Pugh Capital Management

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-1.26	1.35	2.31	4.32	4.54	07/01/2006
Standard Deviation	2.27	2.71	2.79	3.28	3.19	
Downside Risk	1.90	1.87	1.67	1.71	1.62	
Downside Semi Deviation	0.82	2.96	2.62	2.98	2.79	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	13.00	
Maximum Drawdown	-2.38	-3.45	-3.45	-4.16	-4.16	
Maximum Loss Exposure	-1.80	-0.61	N/A	-1.62	N/A	
Upside Semi Deviation	0.55	2.66	3.07	3.76	3.76	
Blmbg. Barc. U.S. Aggregate						
Return	-1.22	1.31	2.16	3.77	4.11	
Standard Deviation	2.25	2.66	2.70	3.24	3.17	
Downside Risk	1.88	1.84	1.63	1.75	1.66	
Downside Semi Deviation	0.80	2.90	2.56	3.02	2.87	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	9.00	
Maximum Drawdown	-2.19	-3.28	-3.28	-3.67	-3.83	
Maximum Loss Exposure	-1.81	-0.57	-0.14	-2.36	N/A	
Upside Semi Deviation	0.56	2.60	2.95	3.62	3.63	
vs. Blmbg. Barc. U.S. Aggregate						
Active Return	-0.04	0.04	0.15	0.53	0.42	
Tracking Error	0.26	0.23	0.26	0.60	0.57	
Actual Correlation	0.99	1.00	1.00	0.98	0.98	
Beta	1.00	1.02	1.03	1.00	0.99	
Consistency	50.00	47.22	51.67	58.33	55.10	
Down Market Capture	103.31	103.46	103.43	97.40	97.63	
Down Market Outperformance	-0.12	-0.21	-0.20	0.18	0.16	
Information Ratio	-0.17	0.17	0.57	0.89	0.73	
Jensen Alpha	-0.04	0.03	0.10	0.55	0.43	
Up Market Capture	103.12	103.25	104.98	107.32	105.51	
Up Market Outperformance	0.08	0.24	0.44	0.77	0.60	
vs. FTSE 3 Month T-Bill						
Excess Return	-2.81	0.58	1.84	3.98	3.54	
Excess Risk	2.25	2.74	2.82	3.30	3.20	
Sharpe Ratio	-1.25	0.21	0.65	1.21	1.11	

Calculation based on monthly periodicity.

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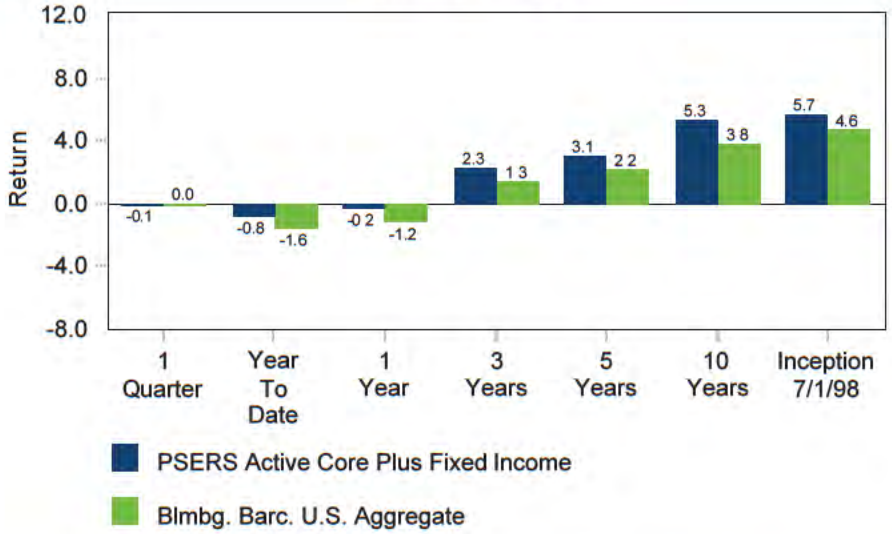
Performance Summary

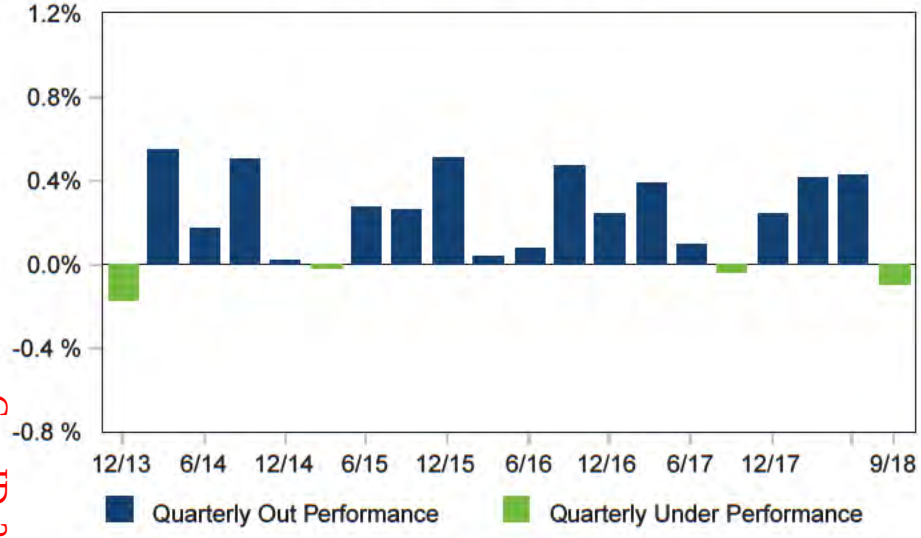
Account Information

Account Name:	PSERS Active Core Plus Fixed Income
Inception Date:	06/30/1998
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Aggregate
Peer Group:	IM U.S. Broad Market Core+ Fixed Income (SA+CF)

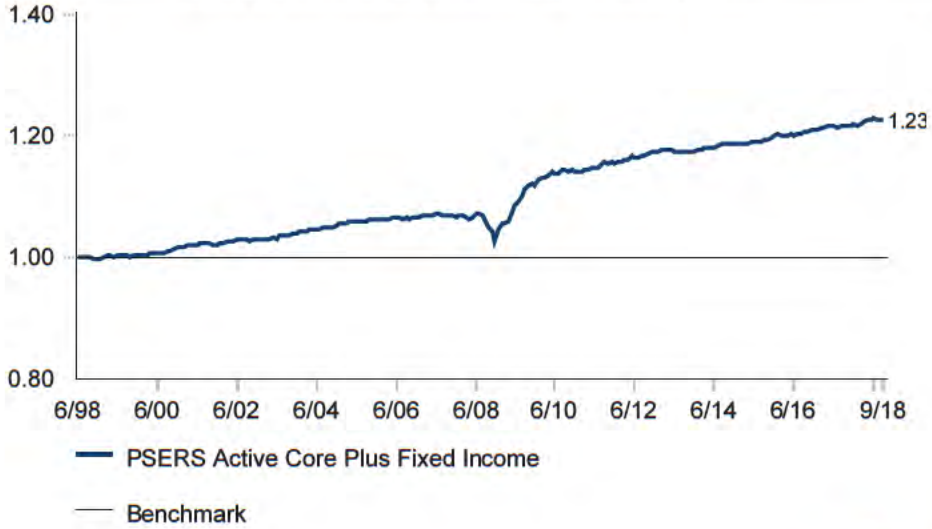
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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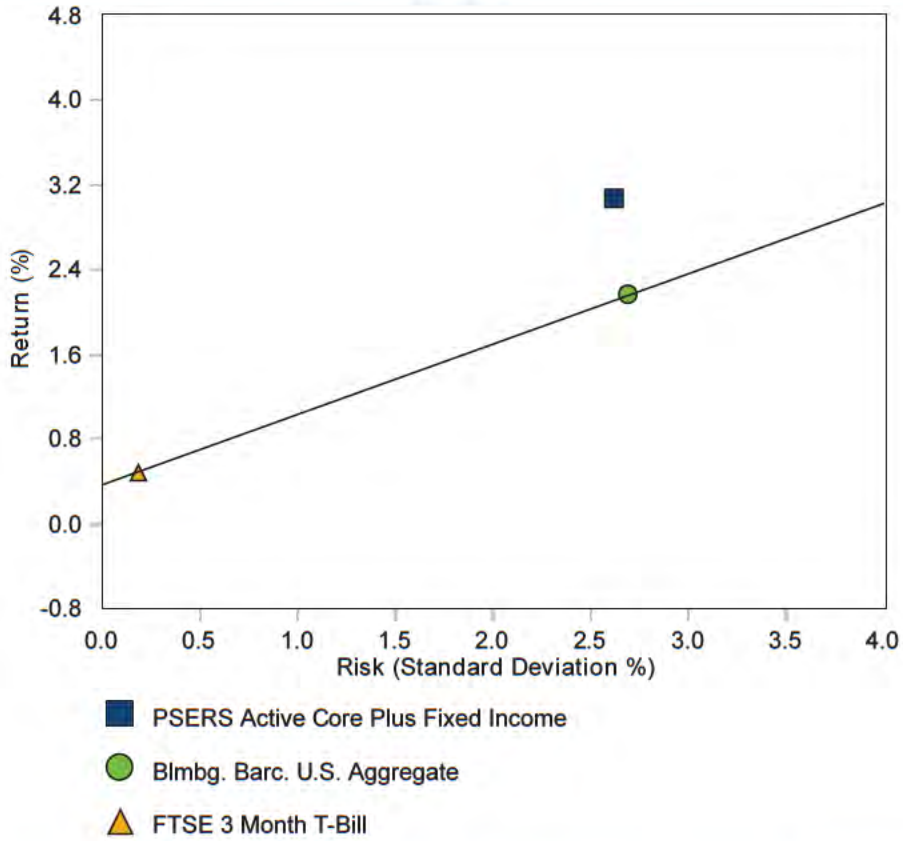
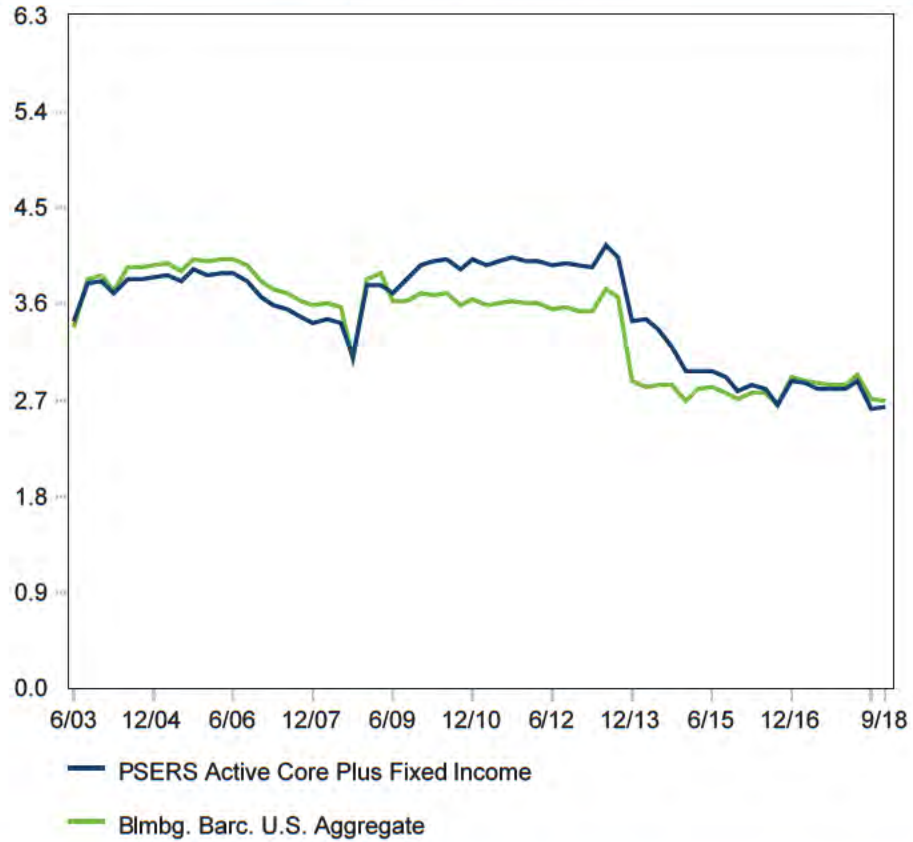
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS Active Core Plus Fixed Income	0.87	0.44	1.97	0.97	0.96	0.96	0.96	3.06	2.63	0.99
Blmbg. Barc. U.S. Aggregate	0.00	0.00	N/A	1.00	0.62	0.00	1.00	2.16	2.70	1.00
FTSE 3 Month T-Bill	-1.69	2.73	-0.62	0.02	N/A	0.51	-0.01	0.49	0.18	-0.14

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AON Empower Results®

Risk Statistics

PSERS Active Core Plus Fixed Income

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.22	2.26	3.06	5.27	5.70	07/01/1998
Standard Deviation	2.41	2.59	2.63	3.45	3.47	
Downside Risk	1.76	1.69	1.50	1.92	1.86	
Downside Semi Deviation	0.84	0.91	2.64	3.65	3.43	
Max Drawdown Recovery Period	N/A	8.00	8.00	13.00	6.00	
Maximum Drawdown	-1.91	-2.85	-2.85	-3.91	-5.48	
Maximum Loss Exposure	-1.29	-0.05	-0.30	-3.65	N/A	
Upside Semi Deviation	0.65	2.51	2.87	3.83	3.99	
Blmbg. Barc. U.S. Aggregate						
Return	-1.22	1.31	2.16	3.77	4.64	
Standard Deviation	2.25	2.66	2.70	3.24	3.38	
Downside Risk	1.88	1.84	1.63	1.75	1.83	
Downside Semi Deviation	0.80	2.90	2.56	3.02	3.17	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	9.00	
Maximum Drawdown	-2.19	-3.28	-3.28	-3.67	-3.83	
Maximum Loss Exposure	-1.81	-0.57	-0.14	-2.36	N/A	
Upside Semi Deviation	0.56	2.60	2.95	3.62	3.86	
vs. Blmbg. Barc. U.S. Aggregate						
Active Return	1.01	0.93	0.87	1.44	1.02	
Tracking Error	0.50	0.45	0.44	1.31	1.01	
Actual Correlation	0.98	0.99	0.99	0.93	0.96	
Beta	1.05	0.96	0.96	0.99	0.98	
Consistency	66.67	66.67	68.33	70.00	68.72	
Down Market Capture	83.38	76.65	77.76	83.28	85.85	
Down Market Outperformance	0.60	1.46	1.32	1.16	1.02	
Information Ratio	2.02	2.07	1.97	1.10	1.01	
Jensen Alpha	1.16	0.96	0.94	1.49	1.06	
Up Market Capture	115.32	107.07	106.09	116.03	109.00	
Up Market Outperformance	0.39	0.53	0.54	1.69	1.09	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.75	1.47	2.56	4.89	3.75	
Excess Risk	2.40	2.63	2.66	3.48	3.48	
Sharpe Ratio	-0.73	0.56	0.96	1.41	1.08	

Calculation based on monthly periodicity.

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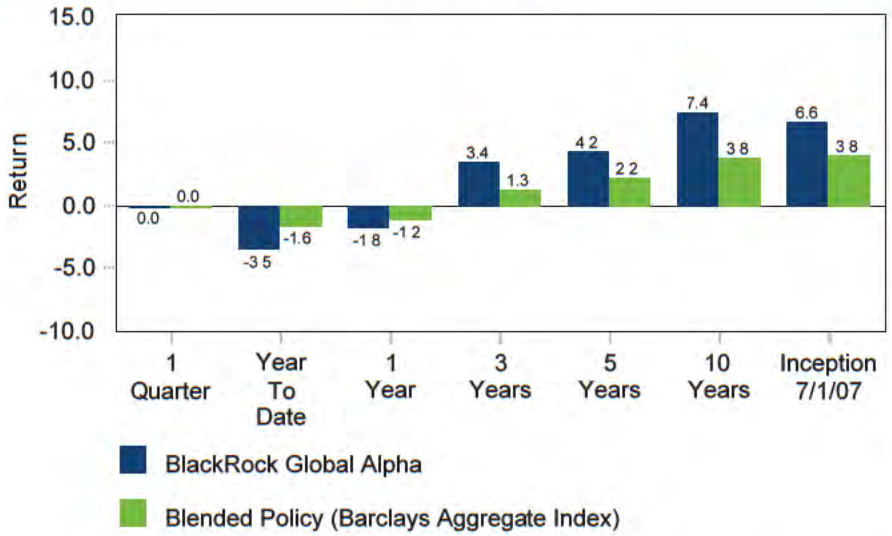
Performance Summary

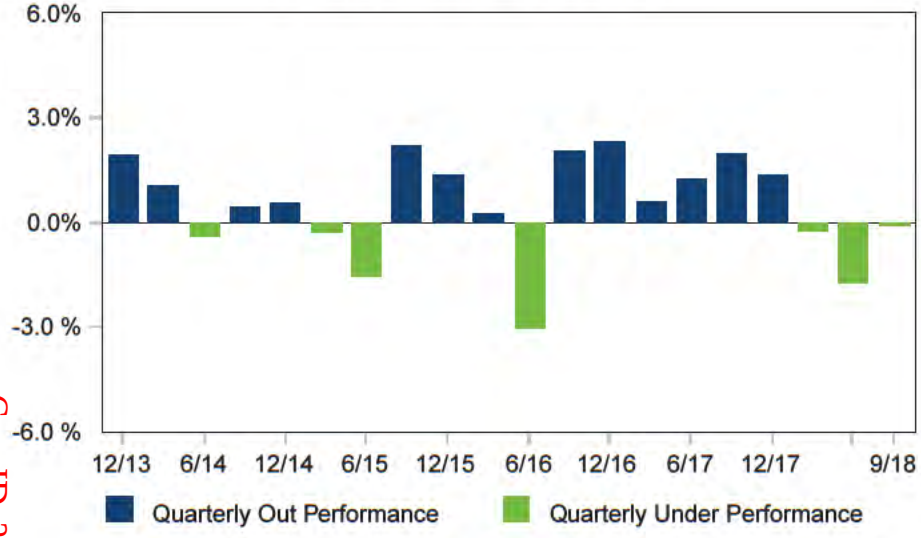
Account Information

Account Name:	BlackRock Global Alpha
Inception Date:	06/30/2007
Account Structure:	Hedge Fund
Asset Class:	Global Fixed Income
Benchmark:	Blended Policy (Barclays Aggregate Index)
Peer Group:	IM Global Fixed Income (SA+CF)

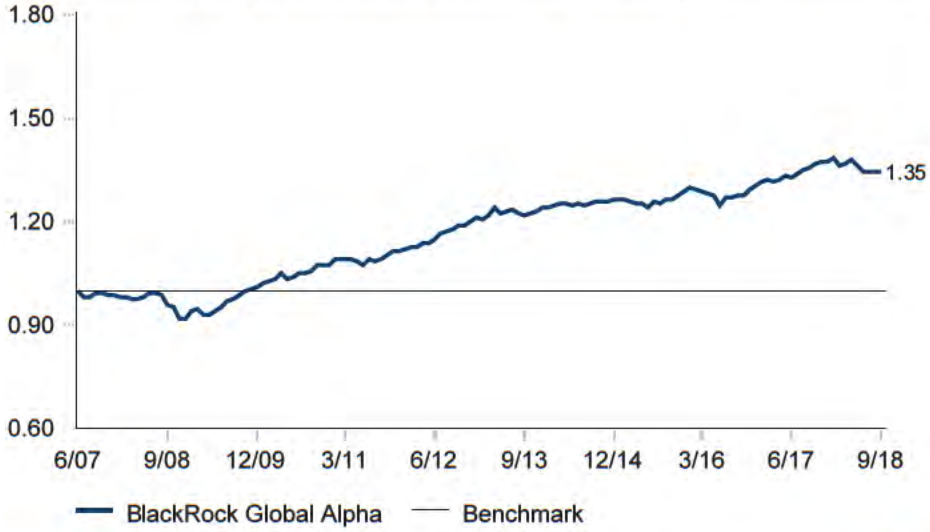
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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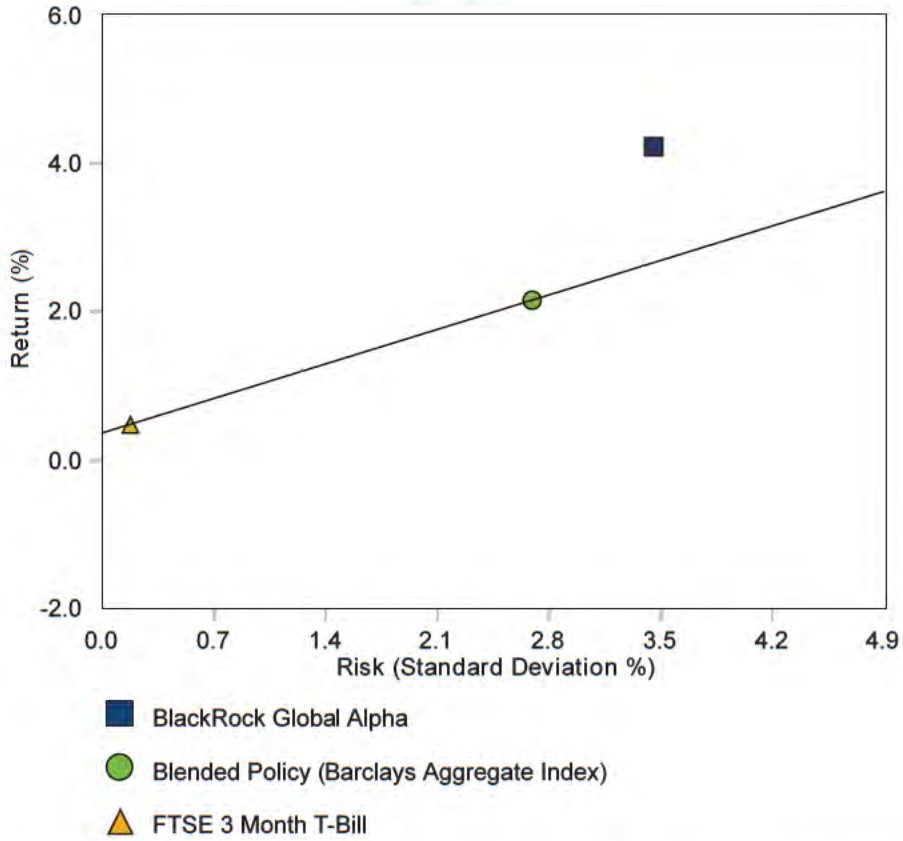
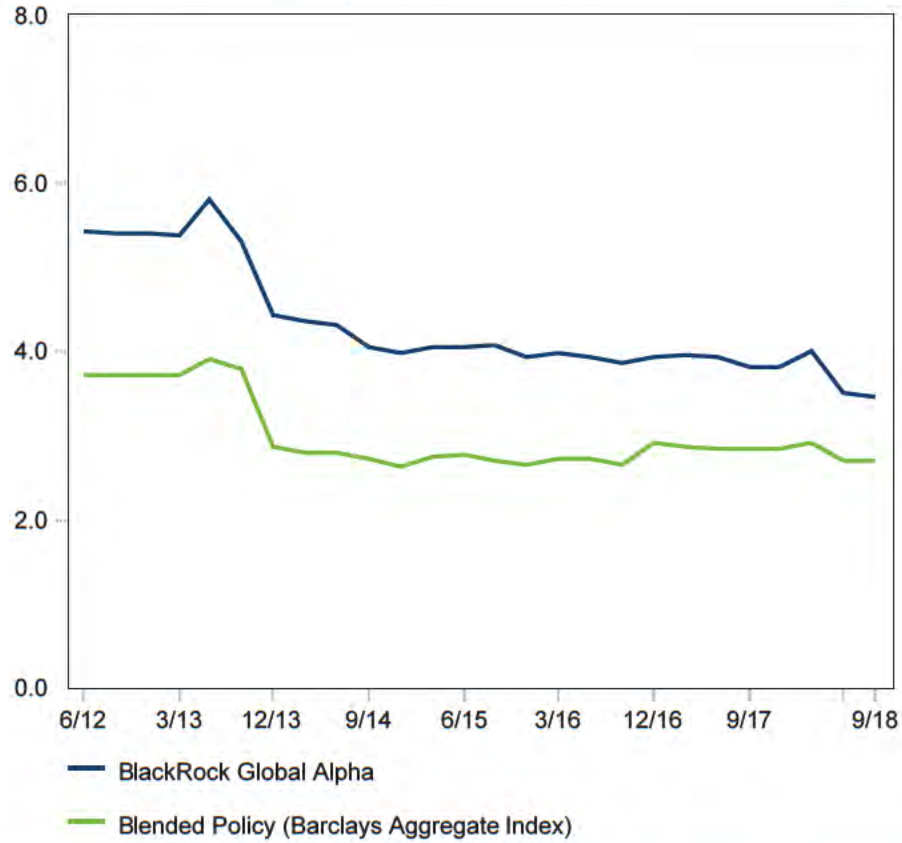
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
BlackRock Global Alpha	2.04	2.41	0.85	0.52	1.06	2.21	0.93	4.23	3.47	0.72
Blended Policy (Barclays Aggregate Index)	0.00	0.00	N/A	1.00	0.62	0.00	1.00	2.16	2.70	1.00
FTSE 3 Month T-Bill	-1.69	2.73	-0.62	0.02	N/A	0.51	-0.01	0.49	0.18	-0.14

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Risk Statistics

BlackRock Global Alpha

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-1.85	3.40	4.23	7.40	6.63	07/01/2007
Standard Deviation	3.25	3.42	3.47	4.55	4.67	
Downside Risk	2.82	1.85	1.83	2.39	2.70	
Downside Semi Deviation	1.10	2.83	2.93	4.34	4.82	
Max Drawdown Recovery Period	N/A	N/A	12.00	3.00	10.00	
Maximum Drawdown	-3.64	-3.64	-4.14	-5.63	-10.07	
Maximum Loss Exposure	-1.96	-0.03	N/A	-5.63	-4.91	
Upside Semi Deviation	0.82	4.13	4.14	5.32	5.17	
Blended Policy (Barclays Aggregate Index)						
Return	-1.22	1.31	2.16	3.83	3.85	
Standard Deviation	2.25	2.66	2.70	3.32	3.28	
Downside Risk	1.88	1.84	1.63	1.91	1.90	
Downside Semi Deviation	0.80	2.90	2.56	3.34	3.31	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	8.00	
Maximum Drawdown	-2.19	-3.28	-3.28	-3.67	-5.58	
Maximum Loss Exposure	-1.81	-0.57	-0.14	-3.59	N/A	
Upside Semi Deviation	0.56	2.60	2.95	3.59	3.55	
vs. Blended Policy (Barclays Aggregate Index)						
Active Return	-0.61	2.07	2.04	3.45	2.71	
Tracking Error	2.52	2.73	2.41	3.08	3.19	
Actual Correlation	0.63	0.62	0.72	0.74	0.73	
Beta	0.92	0.80	0.93	1.01	1.04	
Consistency	58.33	61.11	61.67	69.17	66.67	
Down Market Capture	116.74	72.20	78.60	70.87	78.19	
Down Market Outperformance	-0.62	1.73	1.26	2.11	1.53	
Information Ratio	-0.24	0.76	0.85	1.12	0.85	
Jensen Alpha	-0.80	2.19	2.16	3.44	2.53	
Up Market Capture	100.46	131.85	130.83	141.66	133.36	
Up Market Outperformance	0.01	2.37	2.73	4.43	3.52	
vs. FTSE 3 Month T-Bill						
Excess Return	-3.38	2.61	3.72	6.95	5.93	
Excess Risk	3.26	3.47	3.51	4.59	4.73	
Sharpe Ratio	-1.04	0.75	1.06	1.51	1.25	

Calculation based on monthly periodicity.

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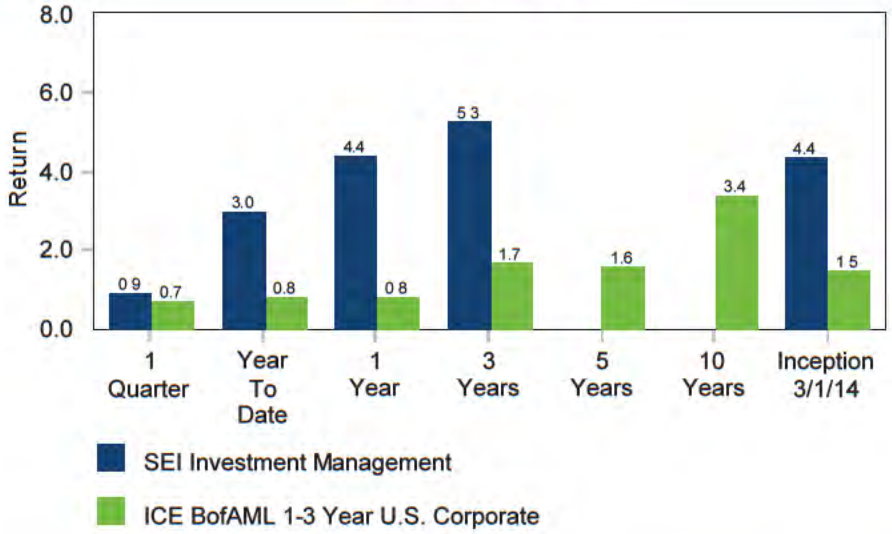
Performance Summary

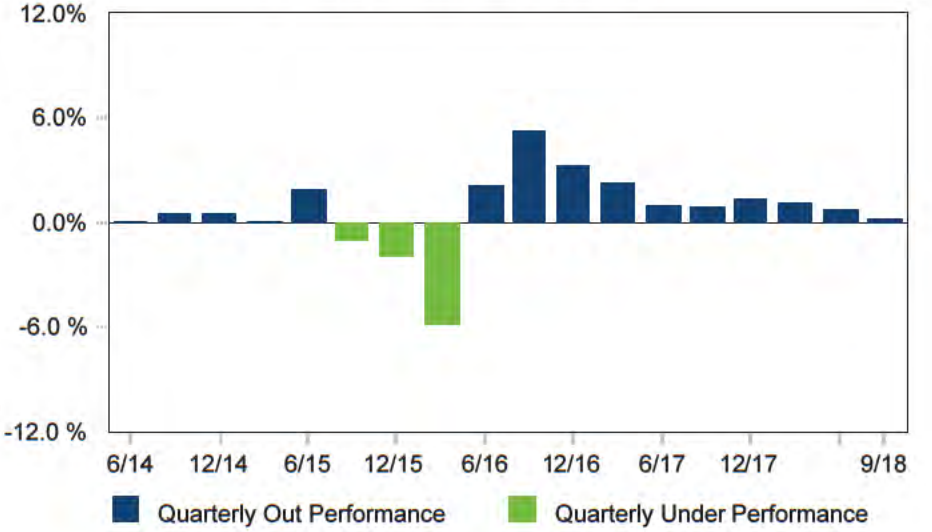
Account Information

Account Name:	SEI Investment Management
Inception Date:	03/01/2014
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	ICE BofAML 1-3 Year U.S. Corporate
Peer Group:	IM U.S. Corporate Bonds (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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AON Empower Results®

Risk Statistics

SEI Investment Management	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	4.40	5.28	N/A	N/A	4.35	03/01/2014
Standard Deviation	0.74	3.50	N/A	N/A	2.96	
Downside Risk	0.00	1.93	N/A	N/A	1.57	
Downside Semi Deviation	N/A	1.47	N/A	N/A	3.49	
Max Drawdown Recovery Period	N/A	10.00	N/A	N/A	14.00	
Maximum Drawdown	0.00	-6.56	N/A	N/A	-7.35	
Maximum Loss Exposure	N/A	-6.56	N/A	N/A	-2.65	
Upside Semi Deviation	1.50	3.62	N/A	N/A	3.17	
ICE BofAML 1-3 Year U.S. Corporate						
Return	0.79	1.66	1.58	3.39	1.47	
Standard Deviation	0.72	0.85	0.79	2.26	0.81	
Downside Risk	0.37	0.36	0.35	1.14	0.36	
Downside Semi Deviation	0.21	0.25	0.74	2.40	0.77	
Max Drawdown Recovery Period	9.00	9.00	9.00	3.00	9.00	
Maximum Drawdown	-0.51	-0.51	-0.51	-3.24	-0.51	
Maximum Loss Exposure	-0.42	-0.13	N/A	-3.24	-0.03	
Upside Semi Deviation	0.24	1.02	0.97	2.50	0.96	
vs. ICE BofAML 1-3 Year U.S. Corporate						
Active Return	3.53	3.57	N/A	N/A	2.85	
Tracking Error	0.78	3.57	N/A	N/A	3.01	
Actual Correlation	0.43	0.04	N/A	N/A	0.07	
Beta	0.44	0.18	N/A	N/A	0.27	
Consistency	91.67	77.78	N/A	N/A	72.73	
Down Market Capture	-185.37	-64.27	N/A	N/A	-48.60	
Down Market Outperformance	1.77	2.21	N/A	N/A	3.10	
Information Ratio	4.54	1.00	N/A	N/A	0.95	
Jensen Alpha	3.17	4.33	N/A	N/A	3.63	
Up Market Capture	225.79	234.27	N/A	N/A	207.69	
Up Market Outperformance	1.80	3.58	N/A	N/A	2.82	
vs. FTSE 3 Month T-Bill						
Excess Return	2.76	4.41	N/A	N/A	3.78	
Excess Risk	0.76	3.50	N/A	N/A	2.94	
Sharpe Ratio	3.61	1.26	N/A	N/A	1.28	

Calculation based on monthly periodicity.

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Non-US Developed Markets Fixed Income

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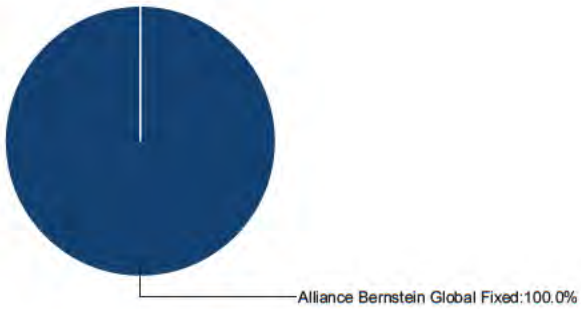
AON Empower Results®

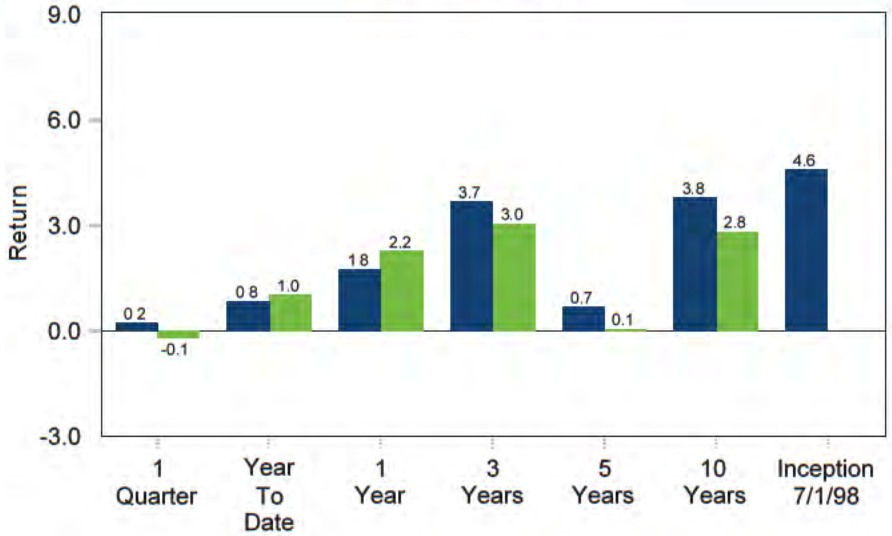
Portfolio Overview

Current Allocation

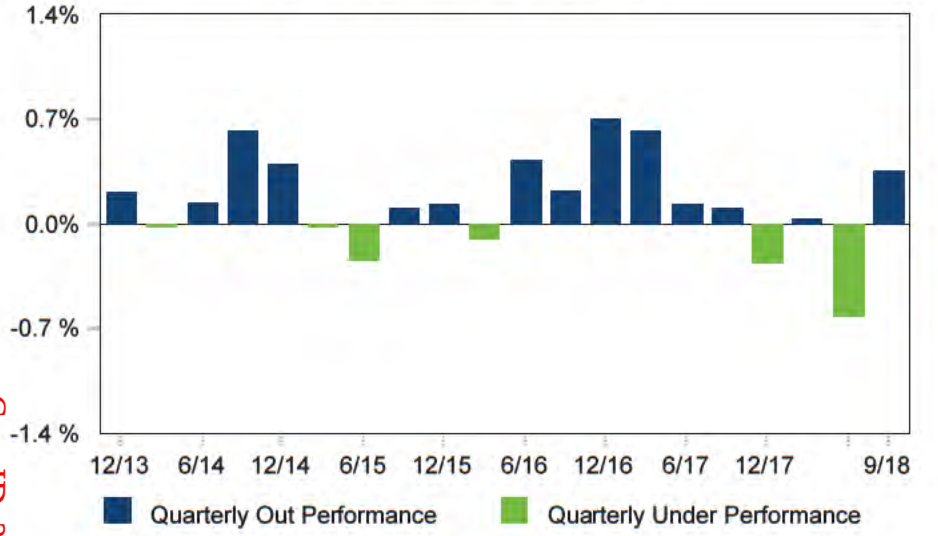
September 30, 2018 : $182M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 7 Years

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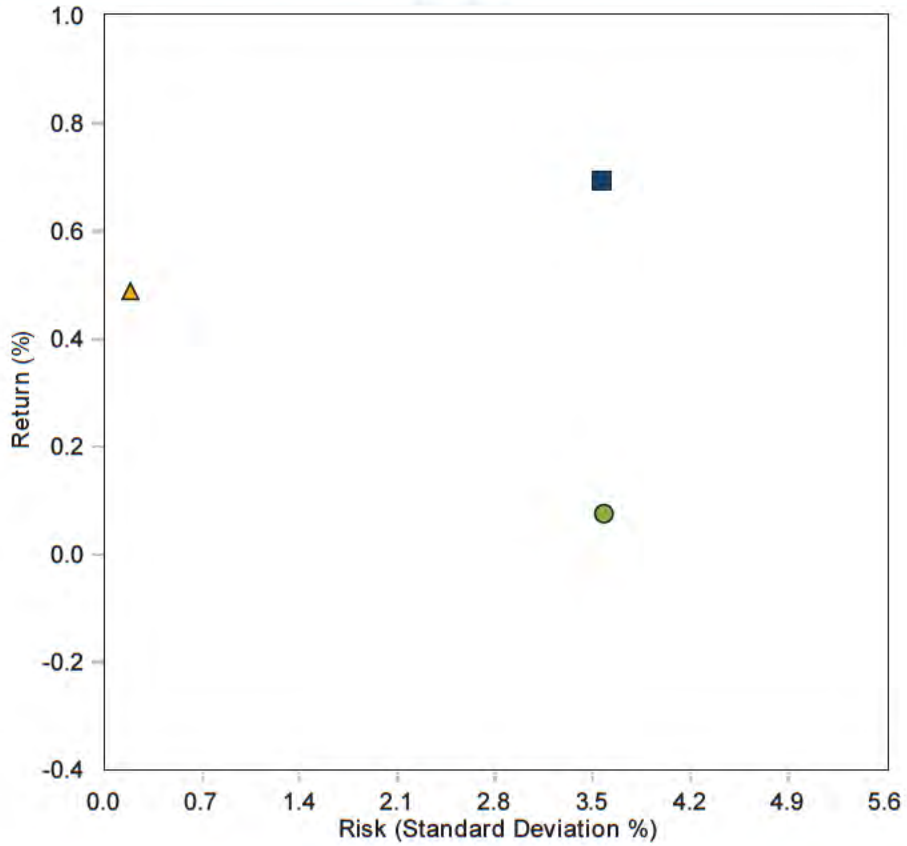
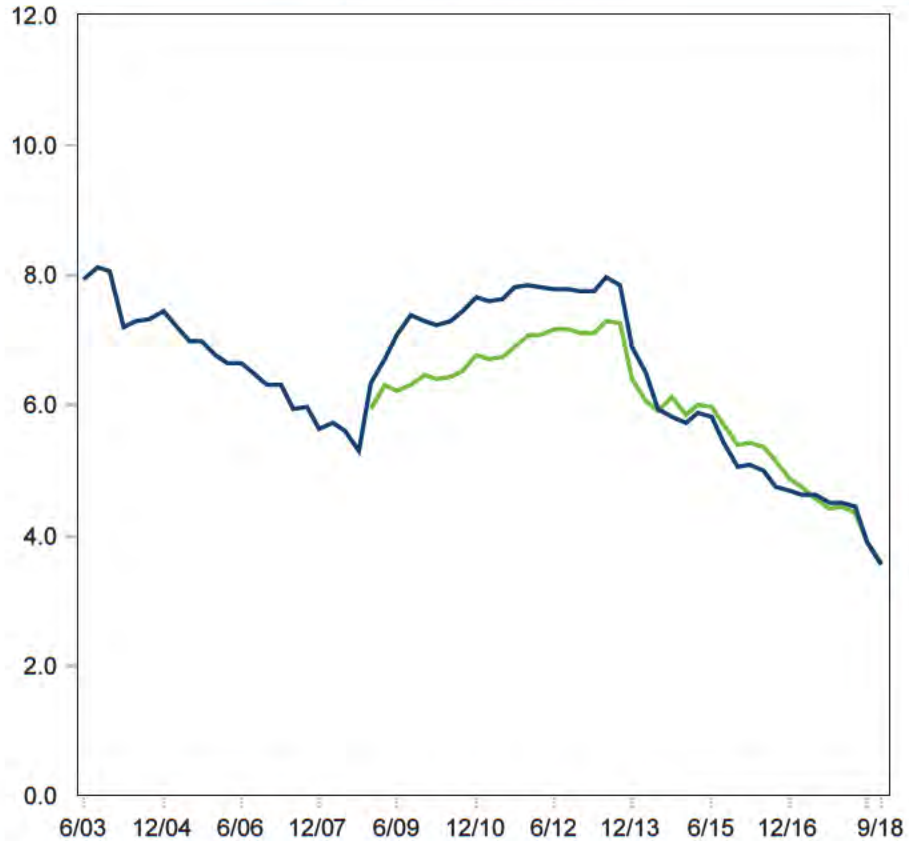
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Ac Corre
Non-U.S. Developed Markets Fixed Income Composite	0.61	0.67	0.91	0.96	0.07	0.62	0.98	0.69	3.57	0
Blended Policy (Barclays GlobalAgg GDP Weighted Dev xUS hedged)	0.00	0.00	N/A	1.00	-0.10	0.00	1.00	0.07	3.58	1
FTSE 3 Month T-Bill	0.35	3.56	0.10	0.02	N/A	0.49	0.01	0.49	0.18	0

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Risk Statistics

Non-U.S. Developed Markets Fixed Income Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.77	3.66	0.69	3.79	4.56	07/01/1998
Standard Deviation	1.36	2.53	3.57	6.15	6.53	
Downside Risk	0.51	1.22	2.61	3.90	3.92	
Downside Semi Deviation	0.22	2.09	3.93	6.35	6.19	
Max Drawdown Recovery Period	4.00	9.00	N/A	N/A	16.00	
Maximum Drawdown	-0.59	-2.54	-13.37	-13.37	-13.89	
Maximum Loss Exposure	N/A	N/A	-8.49	-6.21	-1.03	
Upside Semi Deviation	0.59	3.10	3.32	6.23	6.99	
Blended Policy (Barclays GlobalAgg GDP Weighted Dev xUS hedged)						
Return	2.24	3.04	0.07	2.82	N/A	
Standard Deviation	1.51	2.43	3.58	5.76	N/A	
Downside Risk	0.60	1.27	2.76	3.81	N/A	
Downside Semi Deviation	0.33	2.17	4.16	6.26	N/A	
Max Drawdown Recovery Period	3.00	12.00	N/A	N/A	N/A	
Maximum Drawdown	-0.48	-2.79	-14.08	-14.08	N/A	
Maximum Loss Exposure	N/A	N/A	-9.55	-4.11	N/A	
Upside Semi Deviation	0.56	2.84	3.09	5.59	N/A	
vs. Blended Policy (Barclays GlobalAgg GDP Weighted Dev xUS hedged)						
Active Return	-0.46	0.61	0.61	0.96	N/A	
Tracking Error	0.79	0.75	0.67	2.21	N/A	
Actual Correlation	0.85	0.96	0.98	0.93	N/A	
Beta	0.77	0.99	0.98	1.00	N/A	
Consistency	33.33	58.33	65.00	58.33	N/A	
Down Market Capture	25.50	83.09	91.69	94.19	N/A	
Down Market Outperformance	0.69	0.87	0.77	0.78	N/A	
Information Ratio	-0.59	0.81	0.91	0.44	N/A	
Jensen Alpha	-0.31	0.61	0.61	0.98	N/A	
Up Market Capture	63.39	105.55	105.02	106.96	N/A	
Up Market Outperformance	-1.19	0.46	0.46	1.11	N/A	
vs. FTSE 3 Month T-Bill						
Excess Return	0.20	2.83	0.26	3.60	2.81	
Excess Risk	1.39	2.57	3.56	6.16	6.56	
Sharpe Ratio	0.15	1.10	0.07	0.58	0.43	

Calculation based on monthly periodicity.

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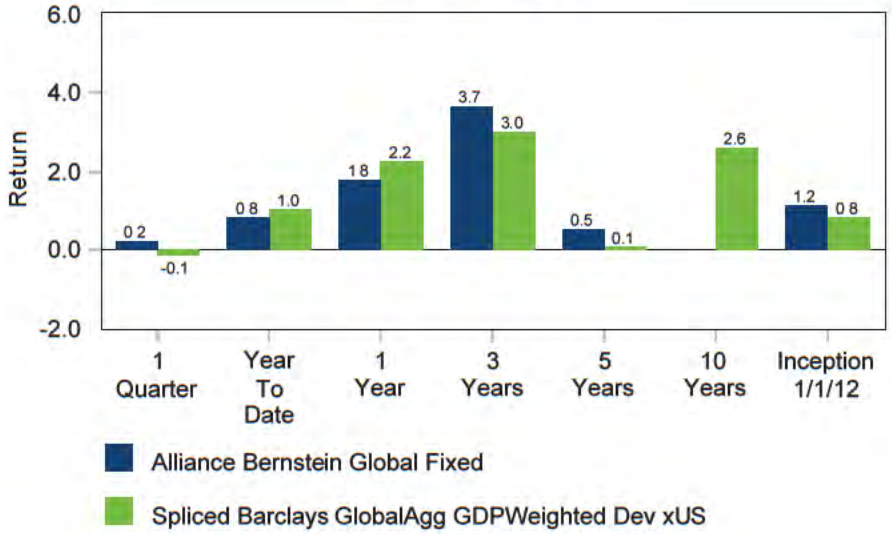
Performance Summary

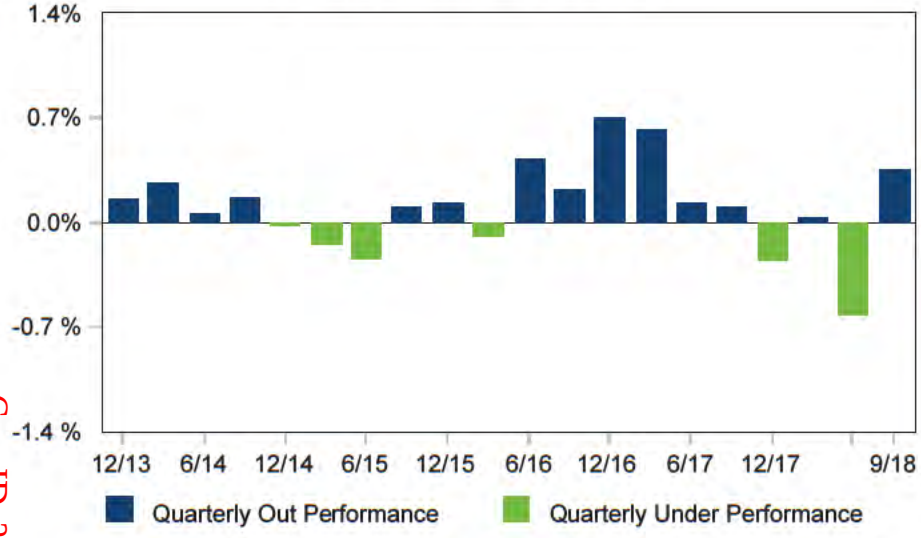
Account Information

Account Name:	Alliance Bernstein Global Fixed
Inception Date:	12/31/2011
Account Structure:	Separate Account
Asset Class:	Global Fixed Income
Benchmark:	Spliced Barclays GlobalAgg GDPWeighted Dev xUS
Peer Group:	IM Global Fixed Income (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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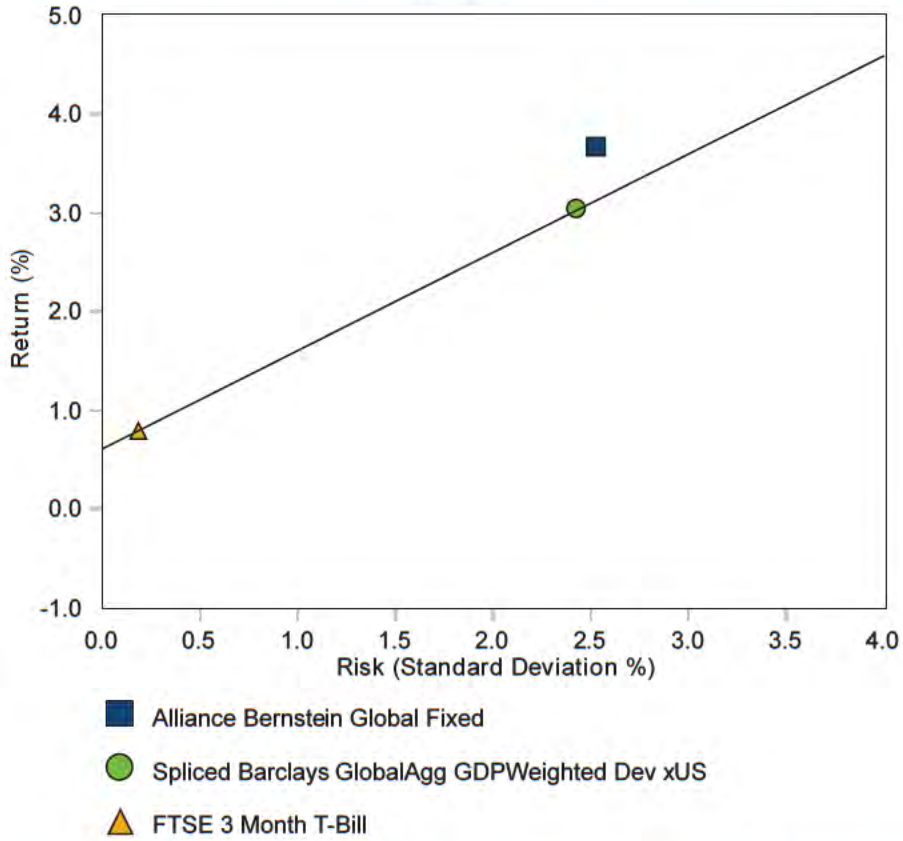
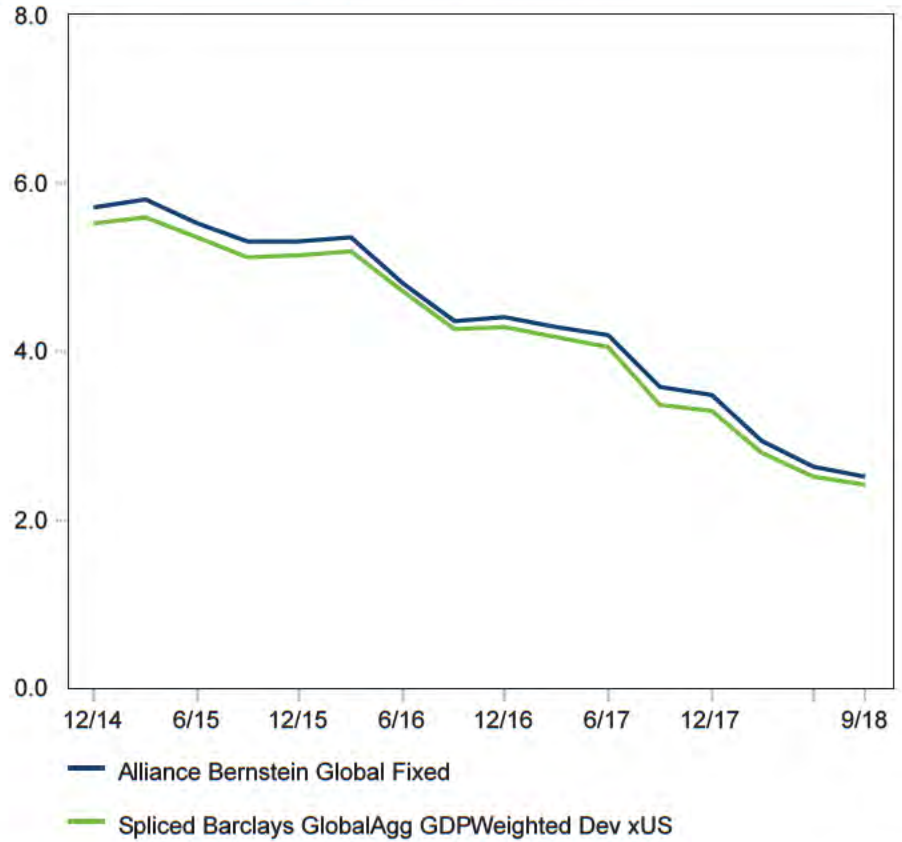
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Alliance Bernstein Global Fixed	0.61	0.75	0.81	0.91	1.10	0.63	0.99	3.66	2.53	0.96
Spliced Barclays GlobalAgg GDPWeighted Dev xUS	0.00	0.00	N/A	1.00	0.90	0.00	1.00	3.04	2.43	1.00
FTSE 3 Month T-Bill	-2.22	2.46	-0.90	0.02	N/A	0.83	-0.01	0.80	0.18	-0.13

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Risk Statistics

Alliance Bernstein Global Fixed

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.77	3.66	0.51	N/A	1.16	01/01/2012
Standard Deviation	1.36	2.53	3.68	N/A	4.46	
Downside Risk	0.51	1.22	2.74	N/A	3.20	
Downside Semi Deviation	0.22	2.09	4.12	N/A	4.91	
Max Drawdown Recovery Period	4.00	9.00	N/A	N/A	N/A	
Maximum Drawdown	-0.59	-2.54	-14.28	N/A	-14.28	
Maximum Loss Exposure	N/A	N/A	-9.32	N/A	-4.46	
Upside Semi Deviation	0.59	3.10	3.35	N/A	4.17	
Spliced Barclays GlobalAgg GDPWeighted Dev xUS						
Return	2.24	3.04	0.07	2.61	0.82	
Standard Deviation	1.51	2.43	3.58	7.16	4.29	
Downside Risk	0.60	1.27	2.76	4.82	3.12	
Downside Semi Deviation	0.33	2.17	4.16	7.68	4.79	
Max Drawdown Recovery Period	3.00	12.00	N/A	N/A	N/A	
Maximum Drawdown	-0.48	-2.79	-14.08	-14.08	-14.08	
Maximum Loss Exposure	N/A	N/A	-9.55	-5.50	-4.77	
Upside Semi Deviation	0.56	2.84	3.09	6.93	3.94	
vs. Spliced Barclays GlobalAgg GDPWeighted Dev xUS						
Active Return	-0.46	0.61	0.44	N/A	0.34	
Tracking Error	0.79	0.75	0.64	N/A	0.69	
Actual Correlation	0.85	0.96	0.99	N/A	0.99	
Beta	0.77	0.99	1.01	N/A	1.03	
Consistency	33.33	58.33	56.67	N/A	56.79	
Down Market Capture	25.50	83.09	96.39	N/A	101.07	
Down Market Outperformance	0.69	0.87	0.33	N/A	-0.12	
Information Ratio	-0.59	0.81	0.69	N/A	0.49	
Jensen Alpha	-0.31	0.61	0.44	N/A	0.32	
Up Market Capture	63.39	105.55	105.79	N/A	106.50	
Up Market Outperformance	-1.19	0.46	0.53	N/A	0.76	
vs. FTSE 3 Month T-Bill						
Excess Return	0.20	2.83	0.09	N/A	0.86	
Excess Risk	1.39	2.57	3.67	N/A	4.46	
Sharpe Ratio	0.15	1.10	0.02	N/A	0.19	

Calculation based on monthly periodicity.

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US Treasuries

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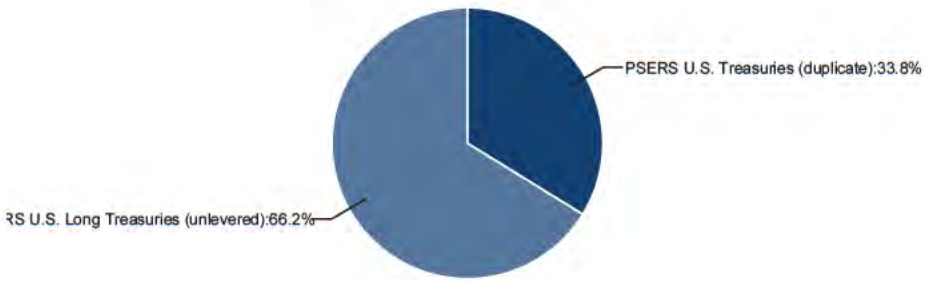
AON Empower Results®

Portfolio Overview

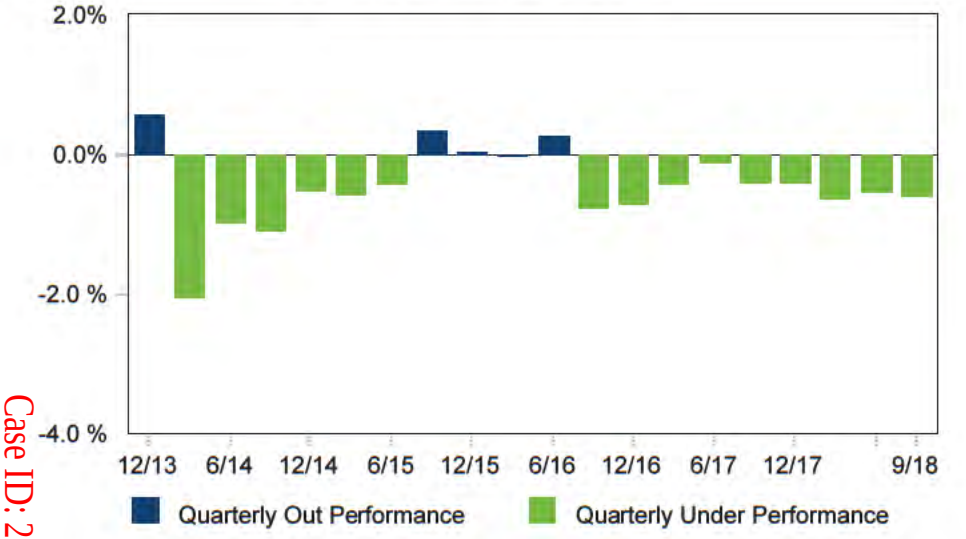
Current Allocation

September 30, 2018 : $2,365M

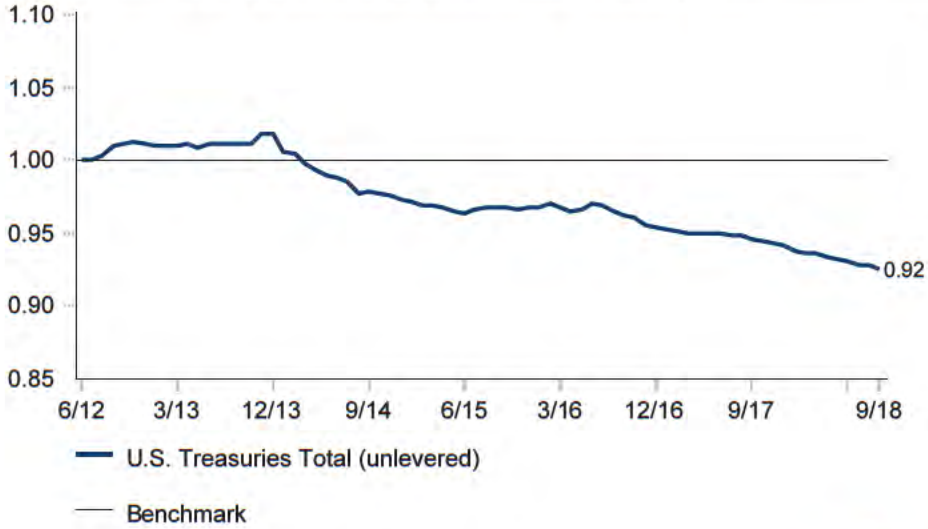


Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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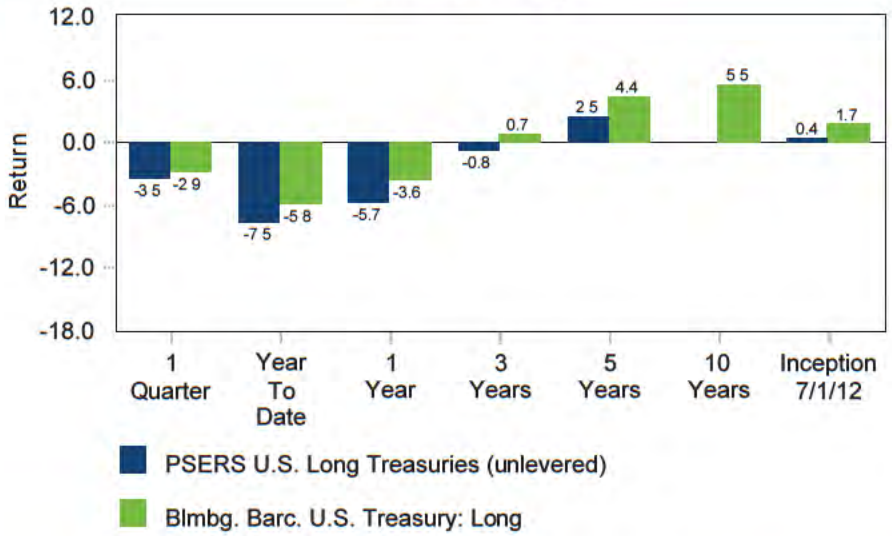
AON Empower Results®

Performance Summary

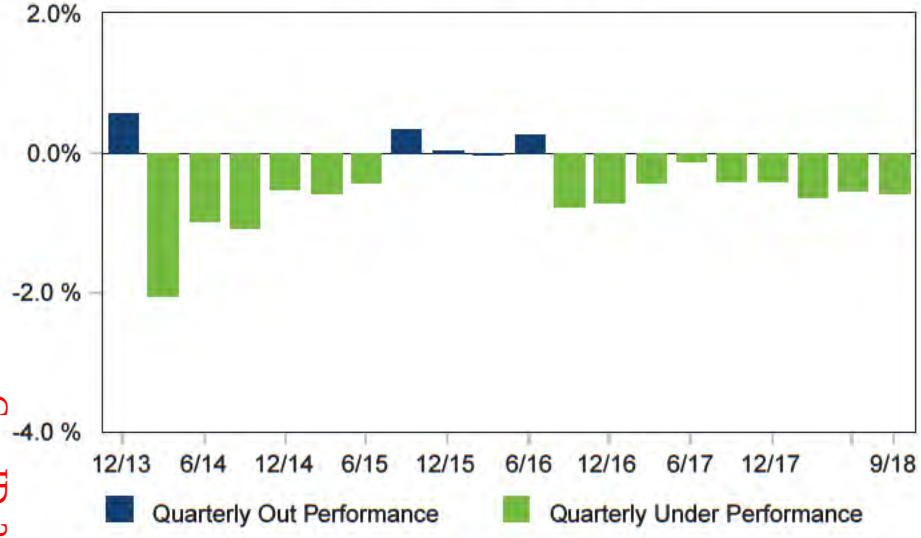
Account Information

Account Name:	PSERS U.S. Long Treasuries (unlevered)
Inception Date:	06/30/2012
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Treasury: Long
Peer Group:	IM U.S. Long Term Treasury/Govt Bond (MF)

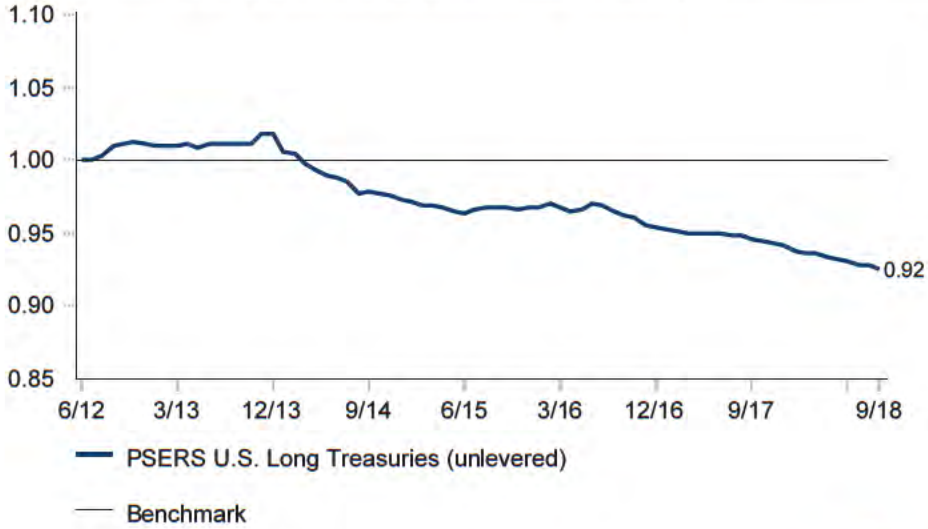
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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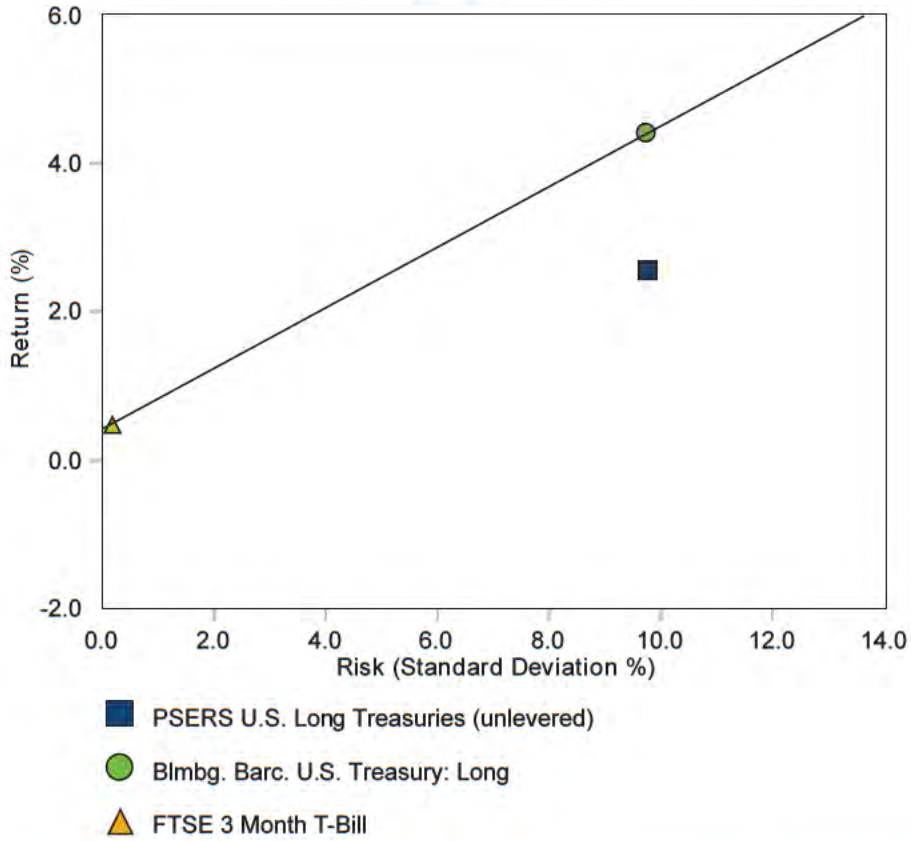
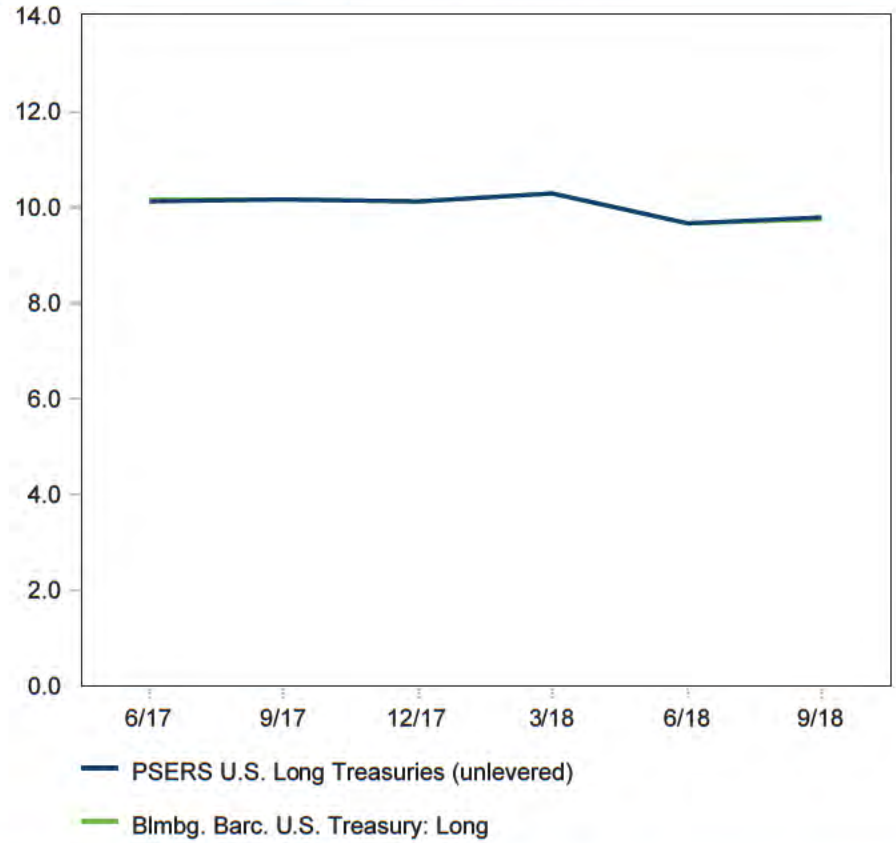
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS U.S. Long Treasuries (unlevered)	-1.80	0.95	-1.89	0.99	0.25	-1.78	1.00	2.55	9.80	1.00
Blmbg. Barc. U.S. Treasury: Long	0.00	0.00	N/A	1.00	0.44	0.00	1.00	4.41	9.76	1.00
FTSE 3 Month T-Bill	-4.30	9.79	-0.44	0.02	N/A	0.50	0.00	0.49	0.18	-0.13

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AON Empower Results®

Risk Statistics

PSERS U.S. Long Treasuries (unlevered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-5.66	-0.76	2.55	N/A	0.44	07/01/2012
Standard Deviation	7.90	9.40	9.80	N/A	9.72	
Downside Risk	6.75	6.84	6.49	N/A	6.77	
Downside Semi Deviation	2.89	9.81	9.97	N/A	9.85	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-7.49	-15.96	-15.96	N/A	-15.96	
Maximum Loss Exposure	-5.66	-2.27	-2.52	N/A	-11.64	
Upside Semi Deviation	1.90	9.27	9.88	N/A	9.74	
Blmbg. Barc. U.S. Treasury: Long						
Return	-3.56	0.72	4.41	5.45	1.71	
Standard Deviation	7.59	8.95	9.76	12.11	9.70	
Downside Risk	6.11	6.31	6.13	7.03	6.48	
Downside Semi Deviation	2.61	8.80	9.07	10.24	9.17	
Max Drawdown Recovery Period	N/A	N/A	N/A	28.00	28.00	
Maximum Drawdown	-6.14	-13.92	-13.92	-15.94	-15.94	
Maximum Loss Exposure	-3.91	-1.38	-3.08	-3.26	-13.16	
Upside Semi Deviation	1.98	9.40	10.65	13.88	10.38	
vs. Blmbg. Barc. U.S. Treasury: Long						
Active Return	-2.17	-1.44	-1.80	N/A	-1.25	
Tracking Error	0.35	0.60	0.95	N/A	0.97	
Actual Correlation	1.00	1.00	1.00	N/A	0.99	
Beta	1.04	1.05	1.00	N/A	1.00	
Consistency	0.00	19.44	18.33	N/A	28.00	
Down Market Capture	111.77	112.24	107.18	N/A	104.07	
Down Market Outperformance	-1.34	-2.07	-1.32	N/A	-0.77	
Information Ratio	-6.15	-2.40	-1.89	N/A	-1.28	
Jensen Alpha	-1.96	-1.45	-1.78	N/A	-1.24	
Up Market Capture	92.71	99.02	93.25	N/A	94.48	
Up Market Outperformance	-0.73	-0.33	-2.50	N/A	-2.00	
vs. FTSE 3 Month T-Bill						
Excess Return	-7.09	-1.13	2.50	N/A	0.50	
Excess Risk	7.90	9.42	9.82	N/A	9.74	
Sharpe Ratio	-0.90	-0.12	0.25	N/A	0.05	

Calculation based on monthly periodicity.

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Credit-Related Fixed Income

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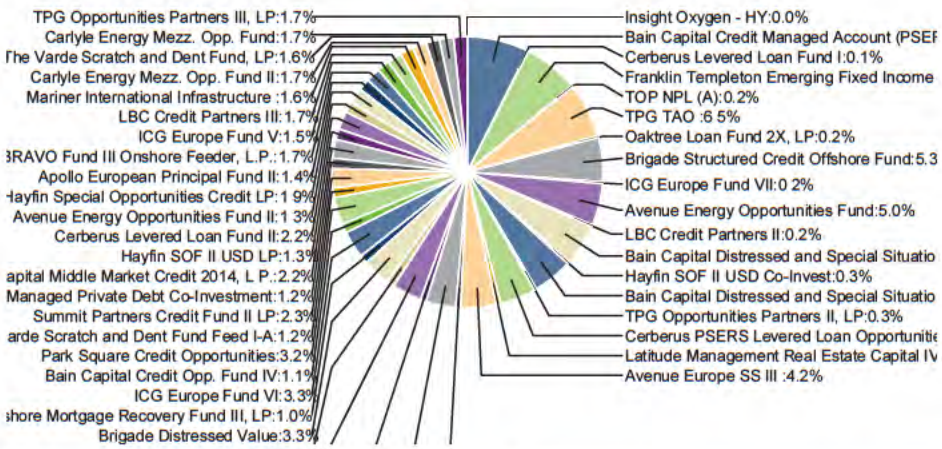
AON Empower Results®

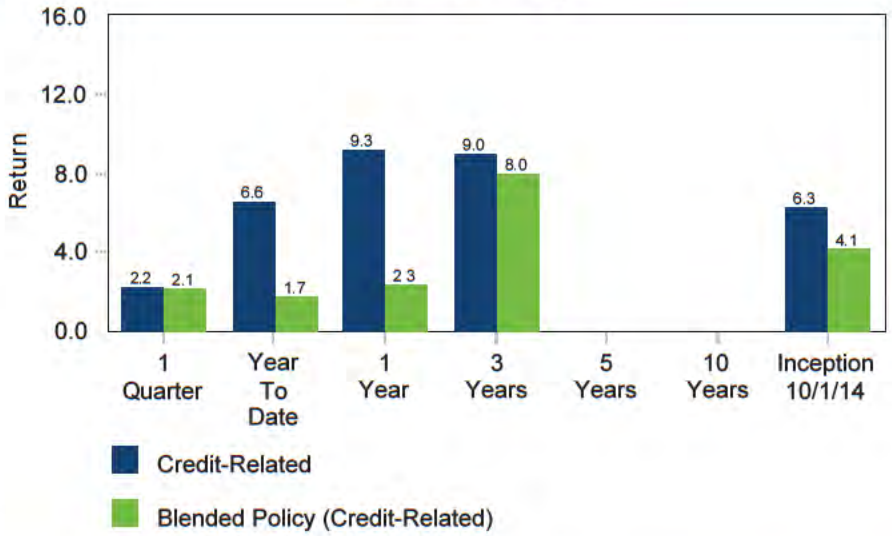
Portfolio Overview

Current Allocation

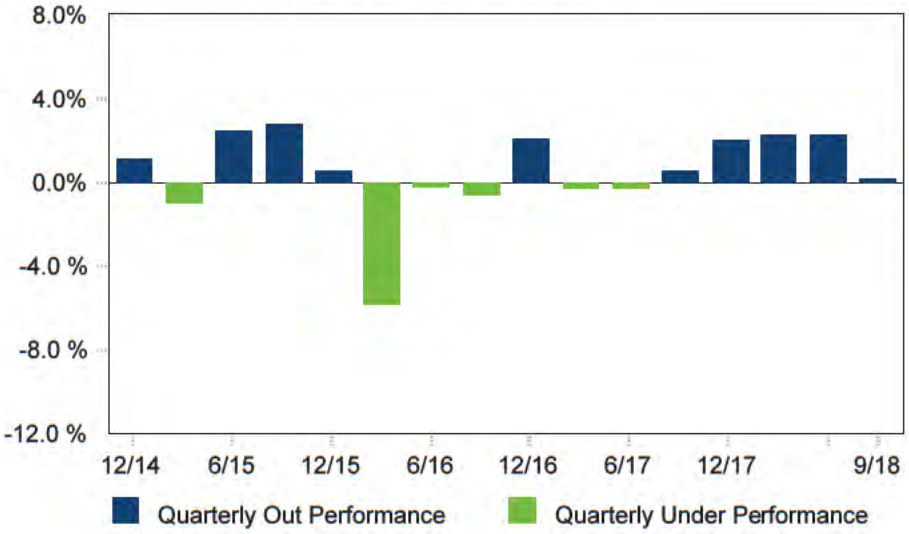
September 30, 2018 : $5,377M



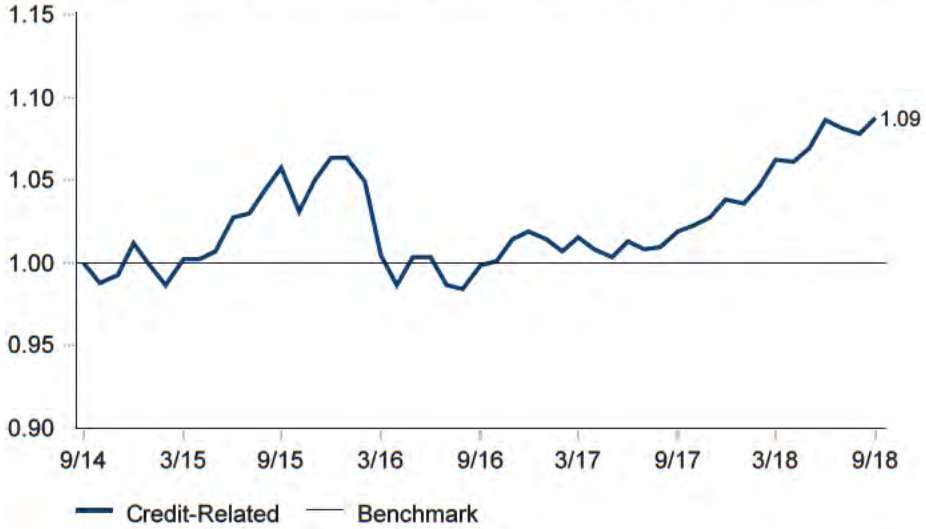
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Emerging Markets Fixed Income

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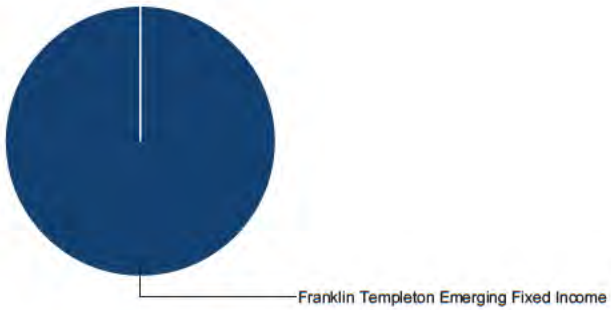
AON Empower Results®

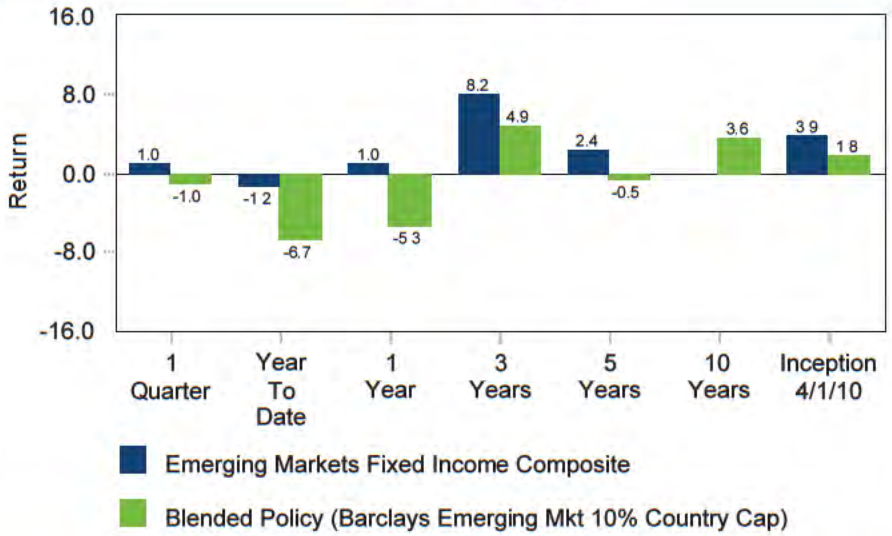
Portfolio Overview

Current Allocation

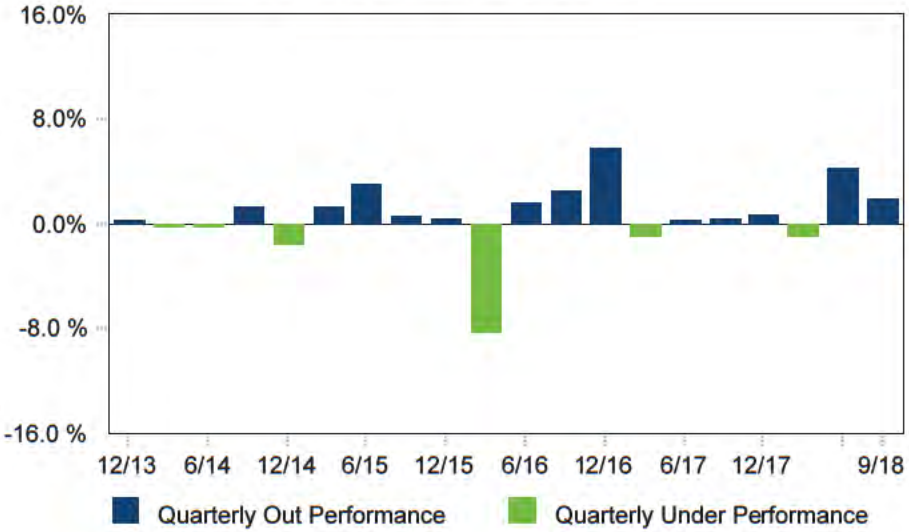
September 30, 2018 : $352M



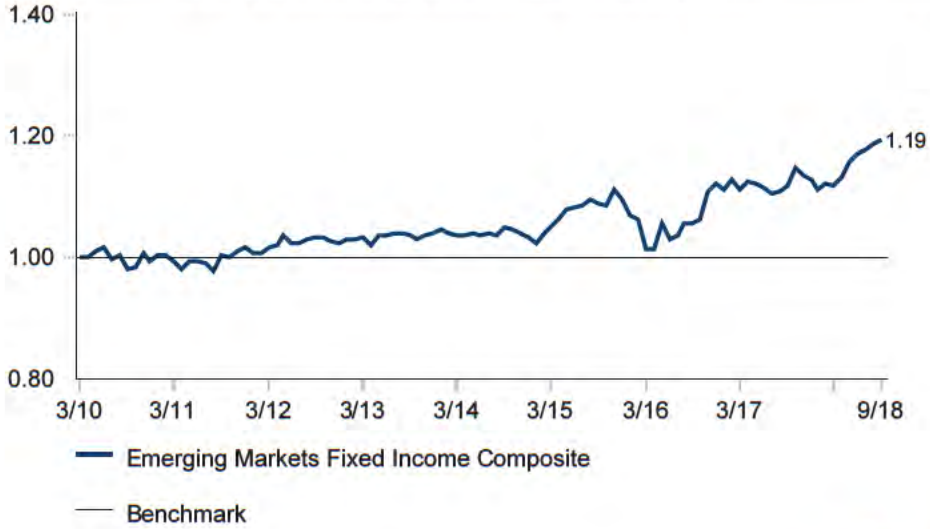
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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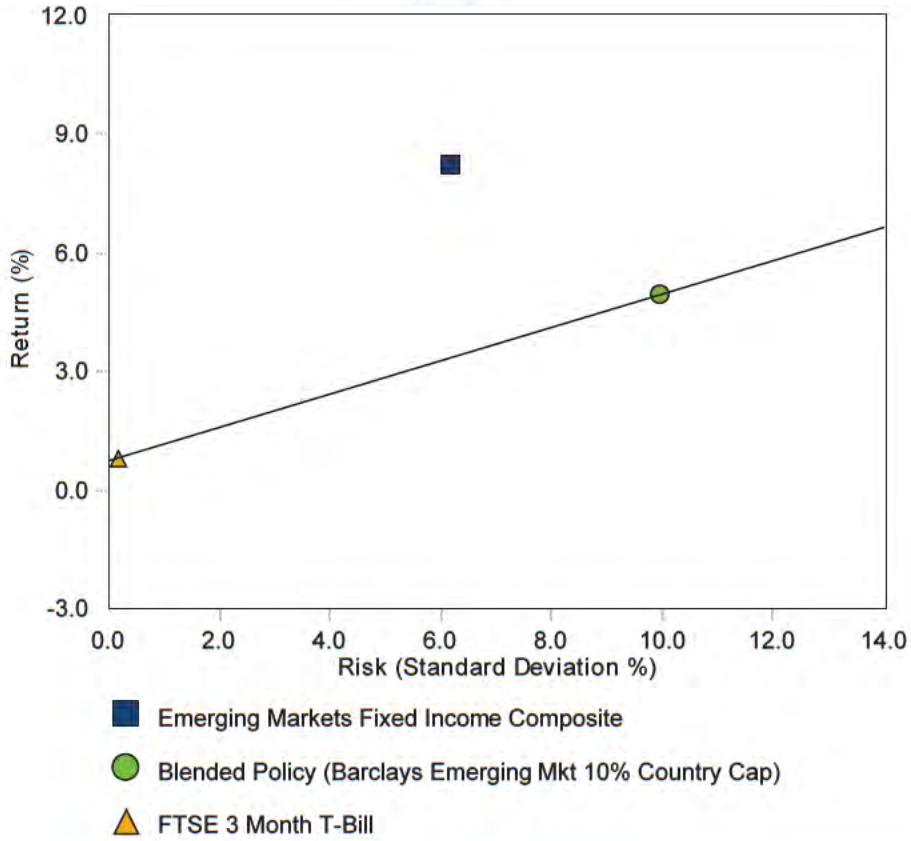
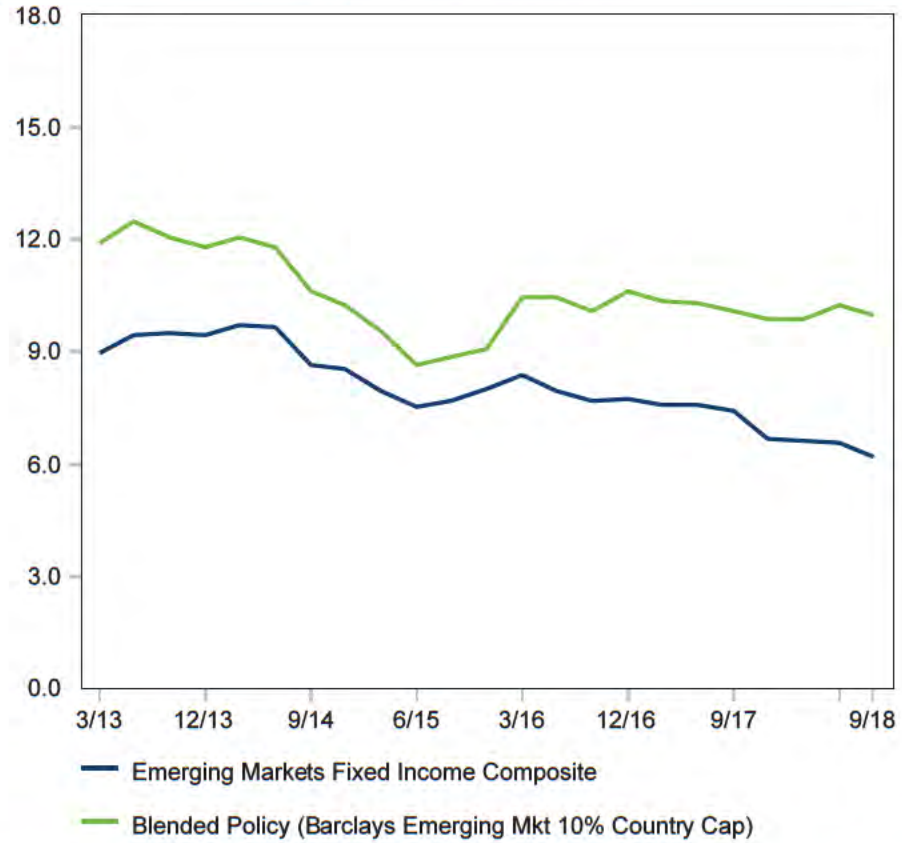
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Emerging Markets Fixed Income Composite	2.78	6.17	0.45	0.65	1.17	5.57	0.50	8.20	6.18	0.81
Blended Policy (Barclays Emerging Mkt 10% Country Cap)	0.00	0.00	N/A	1.00	0.45	0.00	1.00	4.94	9.98	1.00
FTSE 3 Month T-Bill	-4.52	10.02	-0.45	0.05	N/A	0.83	0.00	0.80	0.18	-0.22

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Risk Statistics

Emerging Markets Fixed Income Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.00	8.20	2.36	N/A	3.93	04/01/2010
Standard Deviation	6.19	6.18	7.01	N/A	8.03	
Downside Risk	4.52	3.67	4.87	N/A	5.58	
Downside Semi Deviation	2.17	2.09	7.97	N/A	9.62	
Max Drawdown Recovery Period	N/A	N/A	35.00	N/A	49.00	
Maximum Drawdown	-5.71	-5.71	-17.19	N/A	-18.10	
Maximum Loss Exposure	-1.14	-1.01	-10.53	N/A	-1.85	
Upside Semi Deviation	1.66	6.52	6.53	N/A	7.29	
Blended Policy (Barclays Emerging Mkt 10% Country Cap)						
Return	-5.32	4.94	-0.53	3.56	1.78	
Standard Deviation	9.06	9.98	9.53	12.29	10.67	
Downside Risk	7.50	6.58	6.92	8.70	7.62	
Downside Semi Deviation	3.21	11.73	10.62	14.48	12.27	
Max Drawdown Recovery Period	N/A	N/A	43.00	N/A	N/A	
Maximum Drawdown	-11.33	-11.33	-20.41	-22.54	-22.54	
Maximum Loss Exposure	-6.76	N/A	-15.75	-15.45	-2.84	
Upside Semi Deviation	2.27	9.45	8.77	11.05	9.64	
vs. Blended Policy (Barclays Emerging Mkt 10% Country Cap)						
Active Return	6.25	2.78	2.67	N/A	1.85	
Tracking Error	4.30	6.17	5.04	N/A	4.52	
Actual Correlation	0.91	0.81	0.86	N/A	0.92	
Beta	0.62	0.50	0.63	N/A	0.69	
Consistency	66.67	55.56	55.00	N/A	56.86	
Down Market Capture	48.07	40.61	59.89	N/A	63.80	
Down Market Outperformance	7.72	15.70	9.87	N/A	9.57	
Information Ratio	1.45	0.45	0.53	N/A	0.41	
Jensen Alpha	3.80	5.14	2.48	N/A	2.49	
Up Market Capture	79.65	77.35	79.71	N/A	80.92	
Up Market Outperformance	-2.53	-6.55	-5.69	N/A	-6.01	
vs. FTSE 3 Month T-Bill						
Excess Return	-0.39	7.29	2.09	N/A	3.86	
Excess Risk	6.22	6.22	7.00	N/A	8.03	
Sharpe Ratio	-0.06	1.17	0.30	N/A	0.48	

Calculation based on monthly periodicity.

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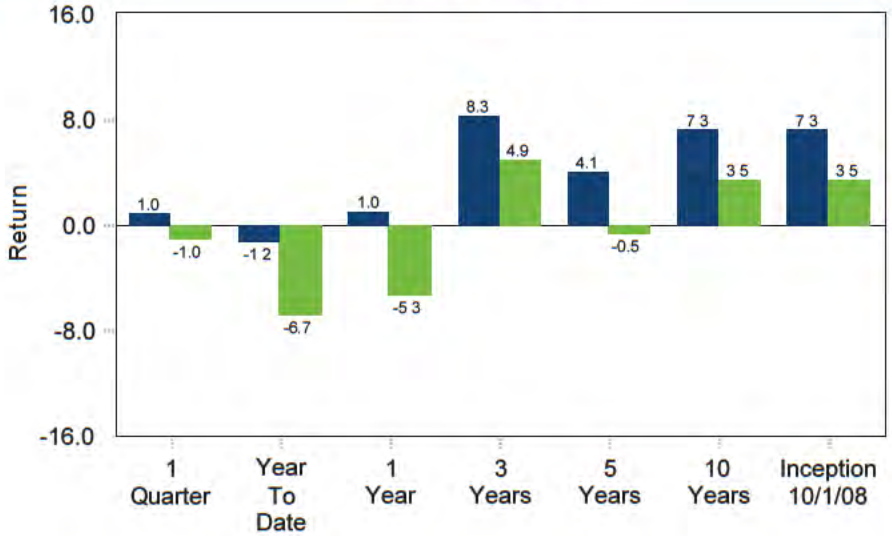
Performance Summary

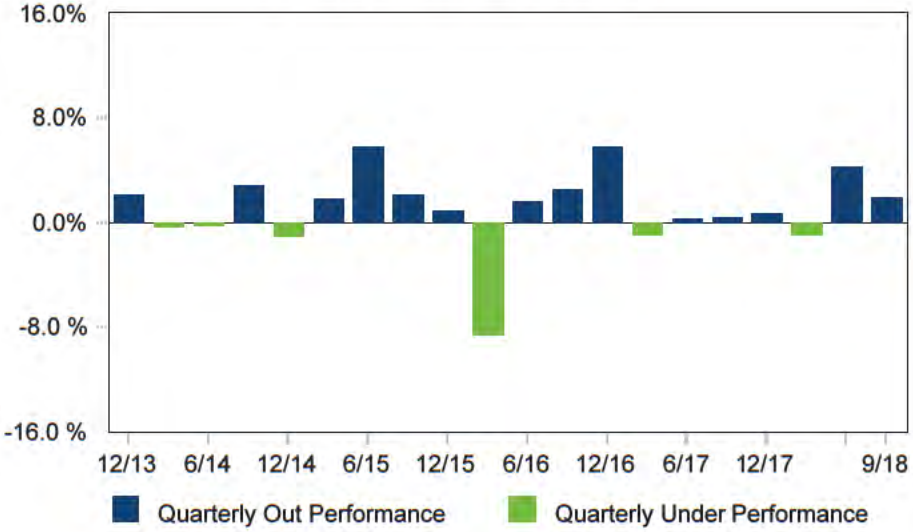
Account Information

Account Name:	Franklin Templeton Emerging Fixed Income
Inception Date:	09/30/2008
Account Structure:	Separate Account
Asset Class:	International-Emerging Fixed Income
Benchmark:	Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)
Peer Group:	IM Emerging Markets Debt (SA+CF)

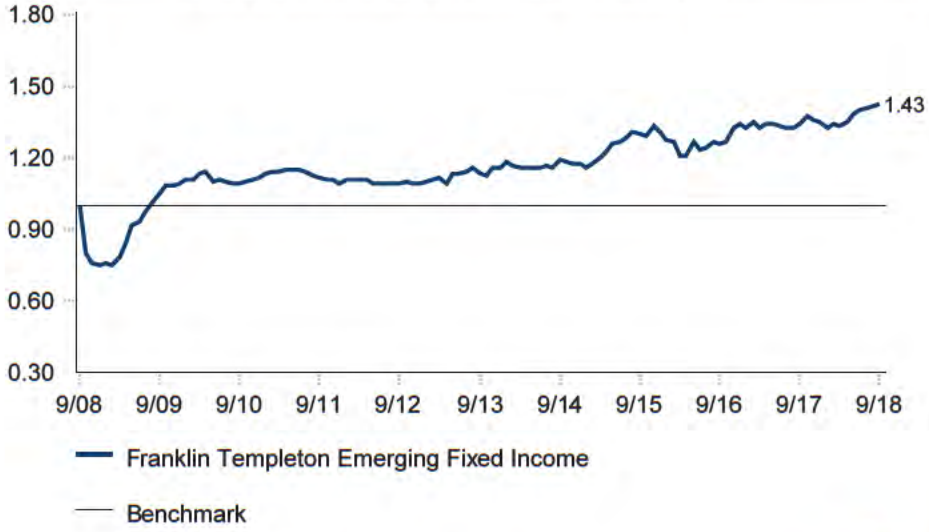
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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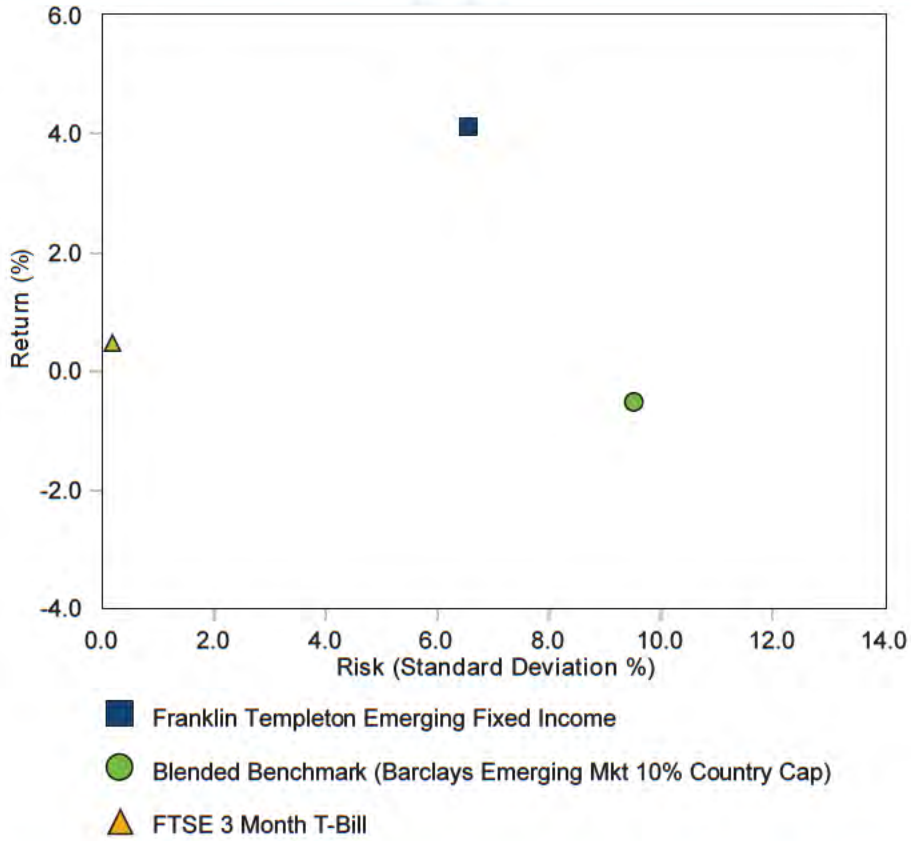
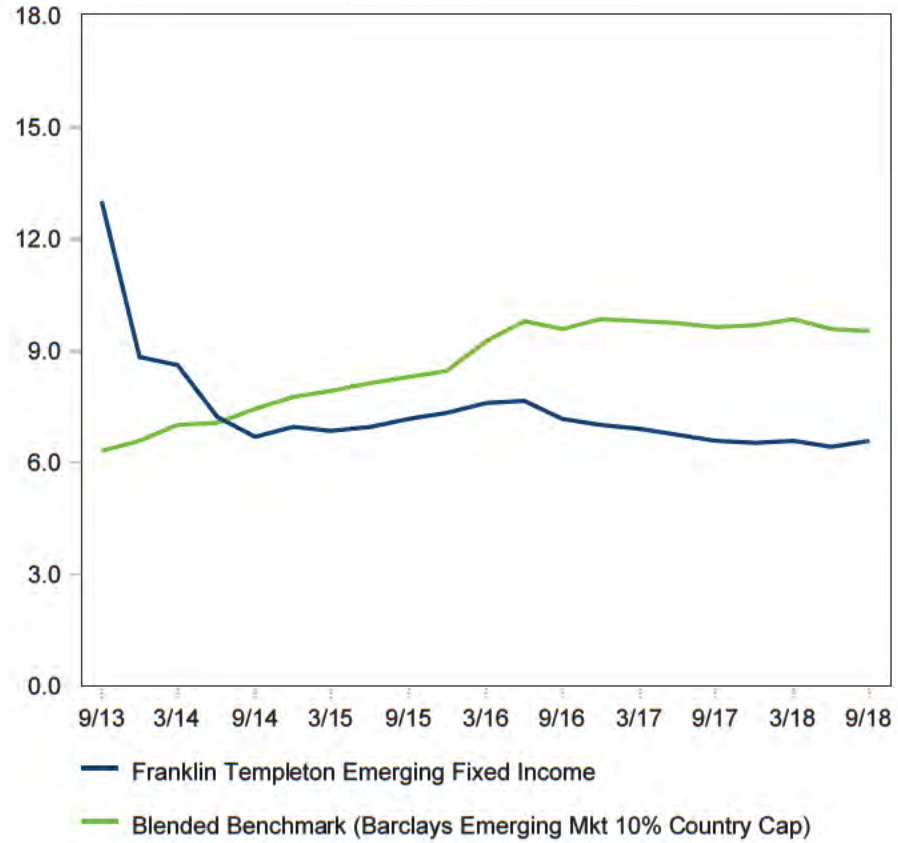
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlatior
Franklin Templeton Emerging Fixed Income	4.32	5.69	0.76	0.66	0.57	4.37	0.56	4.10	6.59	0.81
Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)	0.00	0.00	N/A	1.00	-0.06	0.00	1.00	-0.53	9.53	1.00
FTSE 3 Month T-Bill	0.57	9.54	0.06	0.00	N/A	0.49	0.00	0.49	0.18	-0.01

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AON Empower Results®

Risk Statistics

Franklin Templeton Emerging Fixed Income

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.00	8.26	4.10	7.27	7.27	10/01/2008
Standard Deviation	6.19	6.32	6.59	10.31	10.31	
Downside Risk	4.52	3.80	4.26	7.55	7.55	
Downside Semi Deviation	2.17	2.16	6.97	13.91	13.91	
Max Drawdown Recovery Period	N/A	N/A	27.00	9.00	9.00	
Maximum Drawdown	-5.71	-5.71	-11.43	-23.37	-23.37	
Maximum Loss Exposure	-1.14	-1.04	-4.66	-23.37	-23.37	
Upside Semi Deviation	1.66	6.61	6.63	8.81	8.81	
Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)						
Return	-5.32	4.94	-0.53	3.52	3.52	
Standard Deviation	9.06	9.98	9.53	8.13	8.13	
Downside Risk	7.50	6.58	6.92	5.72	5.72	
Downside Semi Deviation	3.21	11.73	10.62	10.26	10.26	
Max Drawdown Recovery Period	N/A	N/A	43.00	N/A	N/A	
Maximum Drawdown	-11.33	-11.33	-20.41	-22.54	-22.54	
Maximum Loss Exposure	-6.76	N/A	-15.75	N/A	N/A	
Upside Semi Deviation	2.27	9.45	8.77	7.13	7.13	
vs. Blended Benchmark (Barclays Emerging Mkt 10% Country Cap)						
Active Return	6.25	2.84	4.32	3.80	3.80	
Tracking Error	4.30	6.28	5.69	9.33	9.33	
Actual Correlation	0.91	0.79	0.81	0.51	0.51	
Beta	0.62	0.50	0.56	0.64	0.64	
Consistency	66.67	55.56	56.67	57.50	57.50	
Down Market Capture	48.07	39.20	44.52	53.33	53.33	
Down Market Outperformance	7.72	16.09	13.95	10.94	10.94	
Information Ratio	1.45	0.45	0.76	0.41	0.41	
Jensen Alpha	3.80	5.20	4.15	5.14	5.14	
Up Market Capture	79.65	76.82	76.72	96.52	96.52	
Up Market Outperformance	-2.53	-6.72	-6.55	-1.35	-1.35	
vs. FTSE 3 Month T-Bill						
Excess Return	-0.39	7.36	3.75	7.27	7.27	
Excess Risk	6.22	6.36	6.59	10.34	10.34	
Sharpe Ratio	-0.06	1.16	0.57	0.70	0.70	

Calculation based on monthly periodicity.

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High Yield

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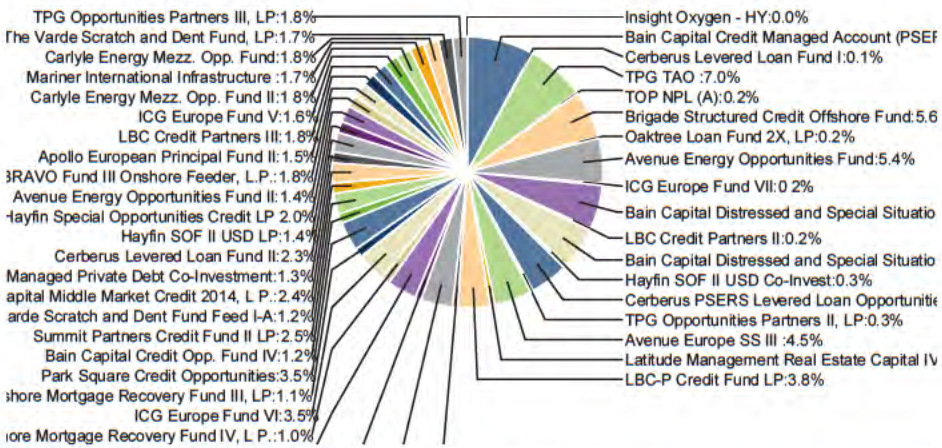
AON Empower Results®

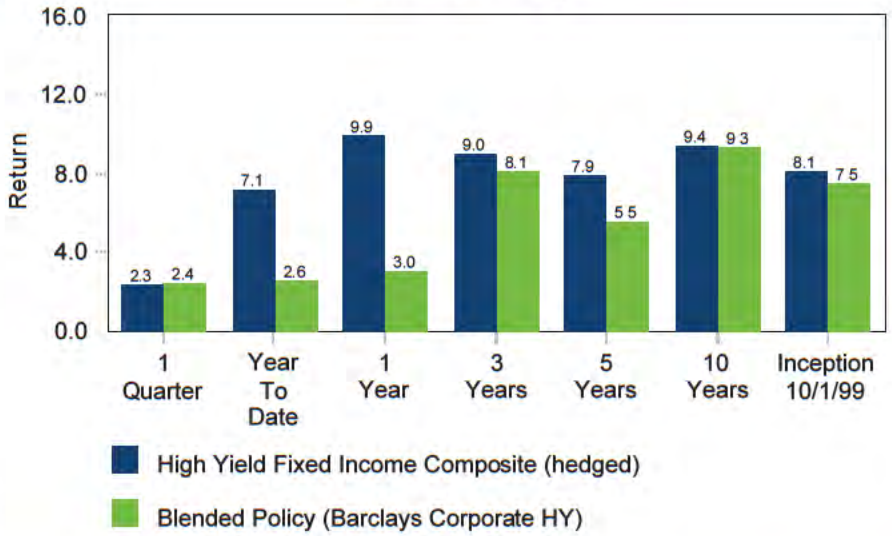
Portfolio Overview

Current Allocation

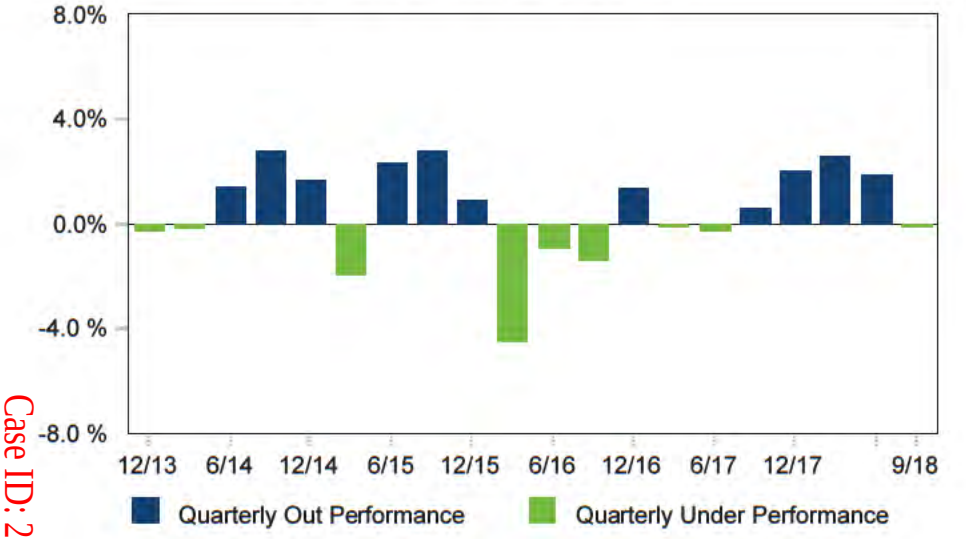
September 30, 2018 : $5,025M



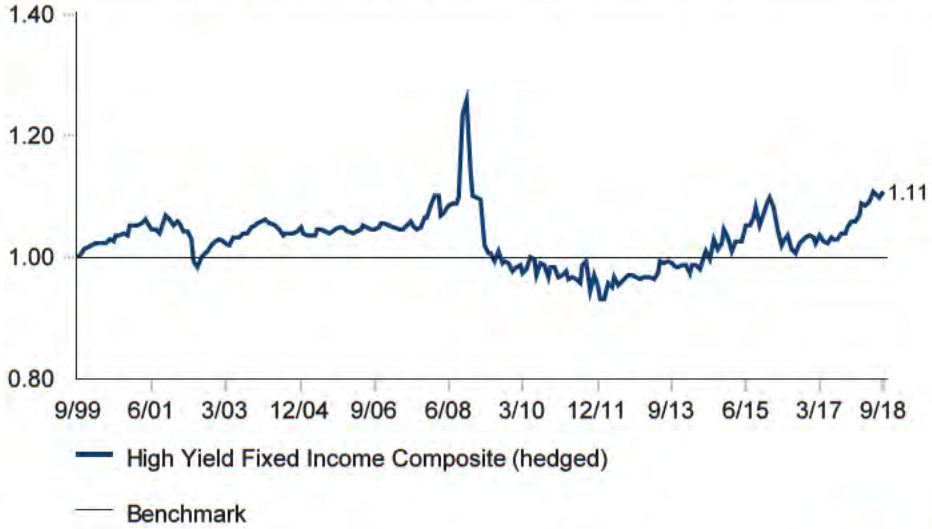
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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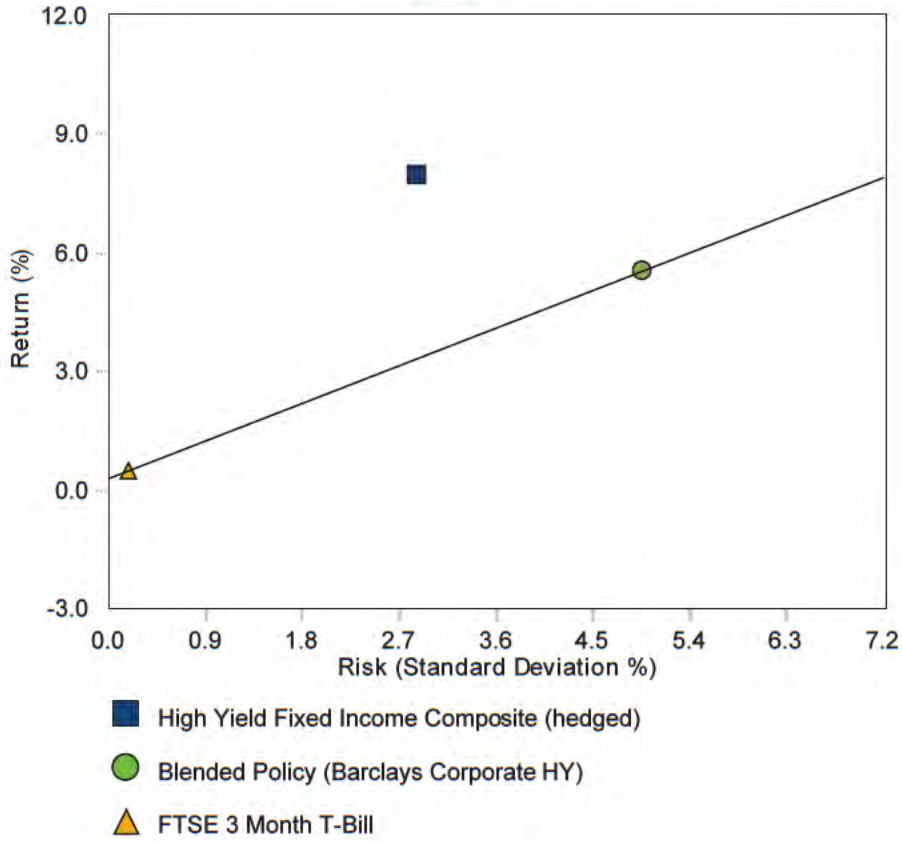
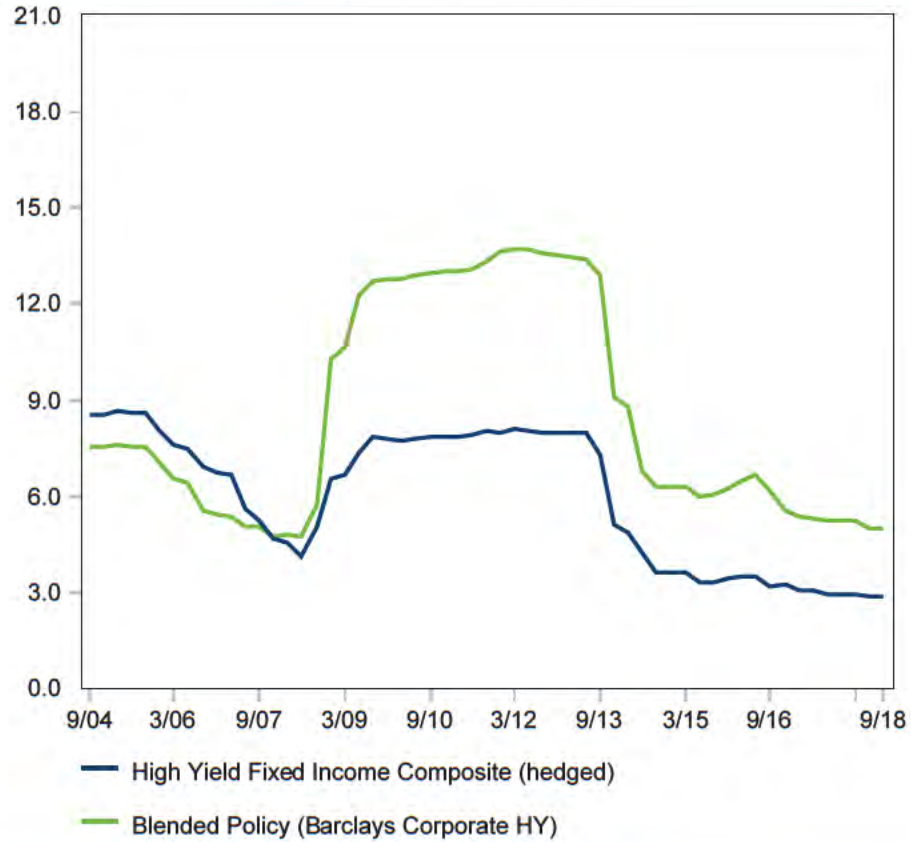
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
High Yield Fixed Income Composite (hedged)	2.19	4.66	0.47	0.15	2.54	6.66	0.23	7.95	2.87	0.39
Blended Policy (Barclays Corporate HY)	0.00	0.00	N/A	1.00	1.02	0.00	1.00	5.54	4.95	1.00
FTSE 3 Month T-Bill	-5.03	4.95	-1.02	0.00	N/A	0.48	0.00	0.49	0.18	0.03

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AON Empower Results®

Risk Statistics

High Yield Fixed Income Composite (hedged)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	9.87	9.00	7.95	9.43	8.06	10/01/1999
Standard Deviation	1.96	2.79	2.87	5.52	6.36	
Downside Risk	0.00	0.94	1.02	3.41	4.06	
Downside Semi Deviation	N/A	0.93	0.75	8.54	8.32	
Max Drawdown Recovery Period	N/A	7.00	12.00	9.00	17.00	
Maximum Drawdown	0.00	-3.01	-4.99	-15.59	-22.67	
Maximum Loss Exposure	N/A	-3.01	N/A	-15.59	-2.11	
Upside Semi Deviation	3.46	3.88	3.84	5.59	6.21	
Blended Policy (Barclays Corporate HY)						
Return	3.05	8.15	5.54	9.32	7.48	
Standard Deviation	2.00	4.93	4.95	9.78	8.54	
Downside Risk	1.12	2.29	2.73	6.53	5.69	
Downside Semi Deviation	0.62	1.30	4.95	12.58	10.39	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	27.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.10	-31.84	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.10	-5.14	
Upside Semi Deviation	0.68	5.86	5.38	9.15	8.08	
vs. Blended Policy (Barclays Corporate HY)						
Active Return	6.45	0.71	2.19	-0.24	0.38	
Tracking Error	2.62	4.55	4.66	7.16	5.51	
Actual Correlation	0.12	0.42	0.39	0.69	0.76	
Beta	0.12	0.24	0.23	0.39	0.57	
Consistency	66.67	58.33	58.33	50.83	54.82	
Down Market Capture	-125.32	-13.80	-13.46	20.30	53.45	
Down Market Outperformance	3.92	9.72	14.54	17.53	9.01	
Information Ratio	2.46	0.16	0.47	-0.03	0.07	
Jensen Alpha	8.06	6.37	6.28	5.42	2.93	
Up Market Capture	153.18	75.84	72.80	65.05	80.63	
Up Market Outperformance	2.66	-4.08	-4.34	-9.14	-4.68	
vs. FTSE 3 Month T-Bill						
Excess Return	7.91	7.88	7.22	8.88	6.29	
Excess Risk	1.94	2.77	2.85	5.54	6.43	
Sharpe Ratio	4.08	2.85	2.54	1.60	0.98	

Calculation based on monthly periodicity.

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Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
High Yield Fixed Income Composite (hedged)	2.34 (31)	7.14 (3)	2.34 (31)	9.87 (1)	9.00 (8)	7.95 (1)	9.43 (10)	8.06 (13)	10/01/1999	5,024,687	100.0
Blended Policy (Barclays Corporate HY)	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	9.32 (11)	7.48 (25)			
Value Added	-0.06	4.57	-0.06	6.82	0.85	2.41	0.11	0.58			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	8.22	6.88			
Internally Managed Private Debt Co-Investment	0.00 (99)	3.85 (11)	0.00 (99)	5.73 (7)	-16.83 (100)	-13.71 (100)	N/A	-12.65 (100)	08/01/2013	66,854	1.3
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.43 (16)			
Value Added	-2.40	1.28	-2.40	2.68	-24.98	-19.25	N/A	-18.08			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	4.75			
Carlyle Energy Mezz. Opp. Fund	-1.02 (100)	-1.36 (100)	-1.02 (100)	2.34 (58)	-20.62 (100)	-10.28 (100)	N/A	-6.08 (100)	10/01/2012	89,640	1.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.80 (18)			
Value Added	-3.41	-3.93	-3.41	-0.71	-28.77	-15.82	N/A	-11.88			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	5.14			
Carlyle Energy Mezz. Opp. Fund II	0.66 (99)	5.70 (5)	0.66 (99)	6.14 (6)	N/A	N/A	N/A	-6.46 (100)	11/01/2015	89,836	1.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	7.39 (16)			
Value Added	-1.74	3.13	-1.74	3.09	N/A	N/A	N/A	-13.85			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	6.00			
ICG Europe Fund V	4.56 (1)	6.36 (4)	4.56 (1)	11.14 (1)	12.83 (1)	13.96 (1)	N/A	9.63 (1)	01/01/2013	81,709	1.6
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.47 (16)			
Value Added	2.16	3.79	2.16	8.09	4.68	8.42	N/A	4.16			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	4.84			
ICG Europe Fund VI	2.37 (26)	1.89 (59)	2.37 (26)	10.94 (1)	N/A	N/A	N/A	56.38 (1)	02/01/2016	175,596	3.5
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	10.74 (17)			
Value Added	-0.03	-0.68	-0.03	7.89	N/A	N/A	N/A	45.64			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	8.91			
ICG Europe Fund VII	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00 (99)	08/01/2018	11,548	0.2
Blmbg. Barc. U.S. Corp: High Yield	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.30 (27)			
Value Added	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-1.30			
M U.S. High Yield Bonds (SA+CF) Median	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.16			
Bain Capital Middle Market Credit 2010, L.P.	-1.79 (100)	-5.92 (100)	-1.79 (100)	-1.75 (100)	-1.74 (100)	1.58 (99)	N/A	5.45 (90)	06/01/2010	30,653	0.6
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	7.60 (14)			
Value Added	-4.19	-8.49	-4.19	-4.80	-9.89	-3.96	N/A	-2.15			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	6.86			

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As of September 30, 2018

Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Bain Capital Middle Market Credit 2014, L.P.	2.24 (42)	7.85 (2)	2.24 (42)	10.99 (1)	6.66 (54)	N/A	N/A	6.46 (2)	11/01/2013	119,605	2.4
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.10 (18)			
Value Added	-0.16	5.28	-0.16	7.94	-1.49	N/A	N/A	1.36			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.42			
Apollo European Principal Fund II	-5.23 (100)	-2.29 (100)	-5.23 (100)	1.42 (89)	8.44 (11)	10.19 (1)	N/A	6.62 (7)	10/01/2012	75,443	1.5
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.80 (18)			
Value Added	-7.63	-4.86	-7.63	-1.63	0.29	4.65	N/A	0.82			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	5.14			
Apollo European Principal Fund III	1.40 (95)	-24.13 (100)	1.40 (95)	N/A	N/A	N/A	N/A	-24.13 (100)	01/01/2018	37,503	0.7
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	N/A	N/A	N/A	N/A	2.57 (29)			
Value Added	-1.00	-26.70	-1.00	N/A	N/A	N/A	N/A	-26.70			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	N/A	N/A	N/A	N/A	2.03			
Bain Capital Credit Opp. Fund IV	-12.47 (100)	33.11 (1)	-12.47 (100)	42.85 (1)	17.68 (1)	10.24 (1)	11.02 (1)	11.02 (1)	10/01/2008	58,121	1.2
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	9.46 (10)	9.46 (10)			
Value Added	-14.87	30.54	-14.87	39.80	9.53	4.70	1.56	1.56			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	8.22	8.22			
Bain Capital Distressed and Special Situations 2013	3.81 (1)	11.21 (1)	3.81 (1)	17.83 (1)	9.58 (5)	8.40 (1)	N/A	7.85 (2)	10/01/2012	264,286	5.3
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.80 (18)			
Value Added	1.41	8.64	1.41	14.78	1.43	2.86	N/A	2.05			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	5.14			
Bain Capital Distressed and Special Situations 2016 (A), L.P.	3.58 (1)	10.44 (1)	3.58 (1)	14.49 (1)	N/A	N/A	N/A	17.56 (1)	11/01/2015	253,951	5.1
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	7.39 (16)			
Value Added	1.18	7.87	1.18	11.44	N/A	N/A	N/A	10.17			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	6.00			
TPG Opportunities Partners II, LP	0.91 (99)	18.68 (1)	0.91 (99)	18.91 (1)	11.47 (1)	15.39 (1)	N/A	13.32 (1)	04/01/2012	15,843	0.3
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	6.36 (16)			
Value Added	-1.49	16.11	-1.49	15.86	3.32	9.85	N/A	6.96			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	5.64			
TPG Opportunities Partners III, LP	3.81 (1)	14.52 (1)	3.81 (1)	20.15 (1)	14.89 (1)	N/A	N/A	7.06 (1)	02/01/2014	88,941	1.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	4.99 (19)			
Value Added	1.41	11.95	1.41	17.10	6.74	N/A	N/A	2.07			
IM U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.30			

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Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
TOP NPL (A)	-2.69 (100)	-3.42 (100)	-2.69 (100)	-3.49 (100)	0.59 (100)	9.70 (1)	N/A	10.89 (1)	04/01/2012	8,975	0.2
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	6.36 (16)			
Value Added	-5.09	-5.99	-5.09	-6.54	-7.56	4.16	N/A	4.53			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	5.64			
TPG TAO	2.22 (45)	10.68 (1)	2.22 (45)	11.58 (1)	9.20 (7)	N/A	N/A	10.01 (1)	01/01/2015	349,813	7.0
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.76 (17)			
Value Added	-0.18	8.11	-0.18	8.53	1.05	N/A	N/A	4.25			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.88			
Brigade Distressed Value	4.50 (1)	11.85 (1)	4.50 (1)	13.71 (1)	14.97 (1)	8.37 (1)	N/A	8.61 (5)	10/01/2011	178,284	3.5
1-Month Libor + 5%	1.77 (83)	5.22 (5)	1.77 (83)	6.87 (5)	6.09 (74)	5.72 (14)	N/A	5.58 (88)			
Value Added	2.73	6.63	2.73	6.84	8.88	2.65	N/A	3.03			
IM U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	6.86			
Brigade Structured Credit Offshore Fund	6.30 (1)	9.15 (1)	6.30 (1)	10.82 (1)	14.62 (1)	N/A	N/A	9.29 (1)	11/01/2014	283,186	5.6
Barclays Corporate High Yield + 0.25%	2.47 (18)	2.76 (26)	2.47 (18)	3.31 (28)	8.42 (11)	N/A	N/A	5.19 (14)			
Value Added	3.83	6.39	3.83	7.51	6.20	N/A	N/A	4.10			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.12			
Avenue Energy Opportunities Fund	3.99 (1)	6.80 (3)	3.99 (1)	10.51 (1)	10.12 (3)	N/A	N/A	4.66 (60)	02/01/2015	269,329	5.4
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.71 (16)			
Value Added	1.59	4.23	1.59	7.46	1.97	N/A	N/A	-1.05			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.86			
Avenue Energy Opportunities Fund II	7.30 (1)	10.60 (1)	7.30 (1)	12.32 (1)	N/A	N/A	N/A	11.66 (1)	09/01/2017	69,091	1.4
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	3.66 (30)			
Value Added	4.90	8.03	4.90	9.27	N/A	N/A	N/A	8.00			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	3.16			
Avenue Europe SS III	2.73 (4)	6.52 (4)	2.73 (4)	9.92 (1)	N/A	N/A	N/A	8.39 (42)	01/01/2016	224,473	4.5
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	9.75 (14)			
Value Added	0.33	3.95	0.33	6.87	N/A	N/A	N/A	-1.36			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	8.05			
Latitude Management Real Estate Capital IV	2.15 (49)	4.63 (7)	2.15 (49)	3.85 (19)	N/A	N/A	N/A	2.29 (95)	05/01/2017	29,786	0.6
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	4.30 (28)			
Value Added	-0.25	2.06	-0.25	0.80	N/A	N/A	N/A	-2.01			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	3.76			

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Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Mariner/Galton RMBS	1.08 (N/A)	1.16 (N/A)	1.08 (N/A)	1.59 (N/A)	4.25 (N/A)	5.74 (N/A)	N/A	7.66 (20)	05/01/2010	189,968	3.8
Blended Benchmark (Barclays US MBS)	-0.12 (N/A)	-1.07 (N/A)	-0.12 (N/A)	-0.92 (N/A)	0.98 (N/A)	2.53 (N/A)	N/A	4.52 (42)			
Value Added	1.20	2.23	1.20	2.51	3.27	3.21	N/A	3.14			
M U.S. Mortgage Backed Bonds (SA+CF) Median	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.62			
Galton Onshore Mortgage Recovery Fund III, LP	-0.32 (100)	2.62 (29)	-0.32 (100)	3.75 (21)	6.55 (56)	N/A	N/A	2.75 (91)	11/01/2013	53,389	1.1
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.10 (18)			
Value Added	-2.72	0.05	-2.72	0.70	-1.60	N/A	N/A	-2.35			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.42			
Galton Onshore Mortgage Recovery Fund IV, L.P.	-0.13 (99)	-7.04 (100)	-0.13 (99)	N/A	N/A	N/A	N/A	-10.90 (100)	11/01/2017	50,061	1.0
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	N/A	N/A	N/A	N/A	2.62 (35)			
Value Added	-2.53	-9.61	-2.53	N/A	N/A	N/A	N/A	-13.52			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	N/A	N/A	N/A	N/A	2.14			
Mariner International Infrastructure	4.50 (1)	7.46 (2)	4.50 (1)	6.84 (5)	8.72 (10)	N/A	N/A	4.44 (48)	12/01/2013	86,034	1.7
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.09 (18)			
Value Added	2.10	4.89	2.10	3.79	0.57	N/A	N/A	-0.65			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.41			
PIMCO BRAVO Fund III Onshore Feeder, L.P.	2.28 (36)	11.51 (1)	2.28 (36)	N/A	N/A	N/A	N/A	21.93 (1)	12/01/2017	92,052	1.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	N/A	N/A	N/A	N/A	2.88 (31)			
Value Added	-0.12	8.94	-0.12	N/A	N/A	N/A	N/A	19.05			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	N/A	N/A	N/A	N/A	2.35			
The Varde Scratch and Dent Fund, LP	1.98 (67)	4.59 (7)	1.98 (67)	7.04 (5)	7.07 (40)	N/A	N/A	8.05 (1)	12/01/2014	86,317	1.7
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	5.23 (18)			
Value Added	-0.42	2.02	-0.42	3.99	-1.08	N/A	N/A	2.82			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.34			
The Varde Scratch and Dent Fund Feed I-A	2.31 (33)	6.13 (4)	2.31 (33)	7.70 (3)	N/A	N/A	N/A	N/A	08/01/2016	62,400	1.2
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	6.80 (25)			
Value Added	-0.09	3.56	-0.09	4.65	N/A	N/A	N/A	N/A			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	5.94			
Cerberus Levered Loan Fund I	2.25 (40)	4.82 (7)	2.25 (40)	6.63 (5)	5.47 (84)	4.15 (79)	N/A	6.02 (62)	01/01/2012	5,095	0.1
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	6.94 (21)			
Value Added	-0.15	2.25	-0.15	3.58	-2.68	-1.39	N/A	-0.92			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	6.20			

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Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Cerberus Levered Loan Fund II	1.37 (96)	3.01 (21)	1.37 (96)	2.40 (55)	2.91 (99)	6.55 (3)	N/A	7.19 (2)	01/01/2013	117,647	2.3
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.47 (16)			
Value Added	-1.03	0.44	-1.03	-0.65	-5.24	1.01	N/A	1.72			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	4.84			
Cerberus PSERS Levered Loan Opportuni ies Fund	1.04 (99)	7.83 (2)	1.04 (99)	10.43 (1)	26.73 (1)	N/A	N/A	26.73 (1)	10/01/2015	228,963	4.6
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	8.15 (13)			
Value Added	-1.36	5.26	-1.36	7.38	18.58	N/A	N/A	18.58			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	6.72			
LBC Credit Partners II	0.62 (99)	16.88 (1)	0.62 (99)	20.07 (1)	18.82 (1)	19.60 (1)	N/A	13.19 (2)	01/01/2009	12,223	0.2
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	11.96 (10)			
Value Added	-1.78	14.31	-1.78	17.02	10.67	14.06	N/A	1.23			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	10.48			
LBC Credit Partners III	2.71 (4)	3.82 (11)	2.71 (4)	3.85 (19)	7.13 (37)	9.63 (1)	N/A	11.56 (1)	04/01/2013	91,005	1.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.18 (16)			
Value Added	0.31	1.25	0.31	0.80	-1.02	4.09	N/A	6.38			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	4.50			
LBC-P Credit Fund LP	3.07 (2)	7.91 (1)	3.07 (2)	11.62 (1)	N/A	N/A	N/A	17.34 (1)	10/01/2016	191,530	3.8
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	5.92 (26)			
Value Added	0.67	5.34	0.67	8.57	N/A	N/A	N/A	11.42			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	5.20			
Summit Partners Credit Fund II LP	1.86 (78)	4.83 (7)	1.86 (78)	8.17 (3)	10.47 (2)	N/A	N/A	6.81 (2)	11/01/2014	123,342	2.5
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	N/A	N/A	4.92 (19)			
Value Added	-0.54	2.26	-0.54	5.12	2.32	N/A	N/A	1.89			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	N/A	N/A	4.12			
Oaktree Loan Fund 2X, LP	0.33 (99)	2.03 (51)	0.33 (99)	1.27 (91)	-0.78 (100)	-3.17 (100)	3.60 (100)	2.74 (100)	01/01/2008	11,441	0.2
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	9.46 (10)	7.70 (13)			
Value Added	-2.07	-0.54	-2.07	-1.78	-8.93	-8.71	-5.86	-4.96			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	8.22	6.81			
Bain Capital Credit Managed Account (PSERS), L.P.	1.75 (54)	4.82 (4)	1.75 (54)	7.39 (3)	7.98 (1)	5.62 (1)	N/A	7.73 (3)	07/01/2009	394,672	7.9
Blmbg. Barc. U.S. Corp: High Yield	2.40 (3)	2.57 (99)	2.40 (3)	3.05 (100)	8.15 (1)	5.54 (1)	N/A	9.45 (1)			
Value Added	-0.65	2.25	-0.65	4.34	-0.17	0.08	N/A	-1.72			
M U.S. Bank Loans (SA+CF) Median	1.76	3.75	1.76	4.89	4.93	3.96	N/A	6.15			

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Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
Park Square Credit Opportunities	0.00 (99)	0.99 (91)	0.00 (99)	1.29 (91)	N/A	N/A	N/A	9.35 (5)	11/01/2015	174,442	3.5
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	7.39 (16)			
Value Added	-2.40	-1.58	-2.40	-1.76	N/A	N/A	N/A	1.96			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	6.00			
Hayfin Special Opportunities Credit LP	5.77 (1)	6.74 (4)	5.77 (1)	10.62 (1)	11.49 (1)	5.88 (11)	N/A	6.92 (2)	03/01/2013	99,546	2.0
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	8.15 (13)	5.54 (17)	N/A	5.29 (16)			
Value Added	3.37	4.17	3.37	7.57	3.34	0.34	N/A	1.63			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	6.72	4.82	N/A	4.63			
Hayfin SOF II USD Co-Invest	1.20 (98)	3.97 (11)	1.20 (98)	6.18 (6)	N/A	N/A	N/A	N/A	08/01/2016	14,516	0.3
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	6.80 (25)			
Value Added	-1.20	1.40	-1.20	3.13	N/A	N/A	N/A	N/A			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	5.94			
Hayfin SOF II USD LP	1.73 (84)	4.86 (7)	1.73 (84)	5.75 (7)	N/A	N/A	N/A	N/A	09/01/2016	68,357	1.4
Blmbg. Barc. U.S. Corp: High Yield	2.40 (24)	2.57 (29)	2.40 (24)	3.05 (33)	N/A	N/A	N/A	6.02 (25)			
Value Added	-0.67	2.29	-0.67	2.70	N/A	N/A	N/A	N/A			
M U.S. High Yield Bonds (SA+CF) Median	2.12	2.03	2.12	2.59	N/A	N/A	N/A	5.23			

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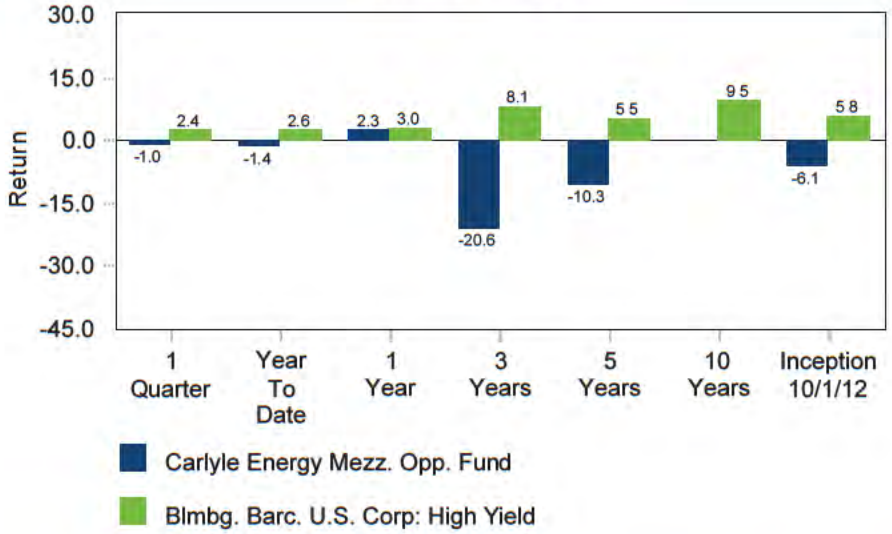
Performance Summary

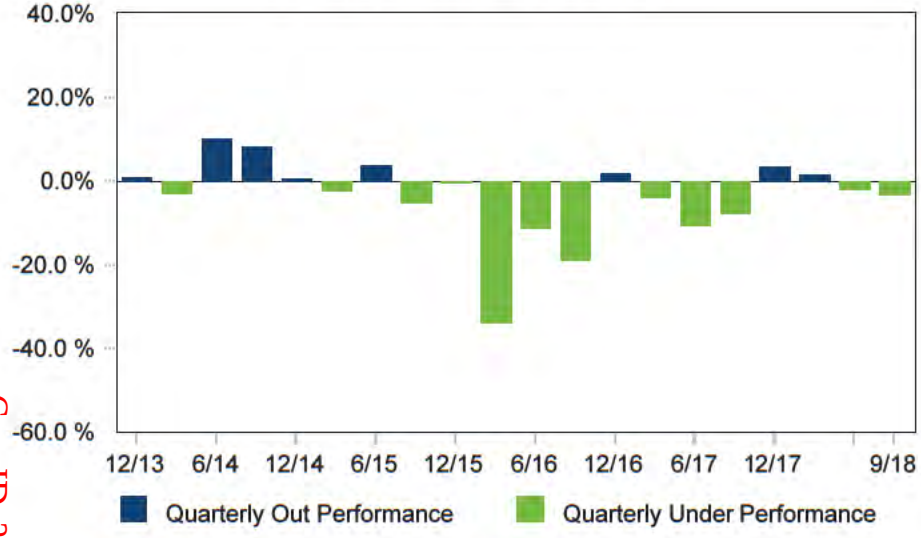
Account Information

Account Name:	Carlyle Energy Mezz. Opp. Fund
Inception Date:	09/30/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

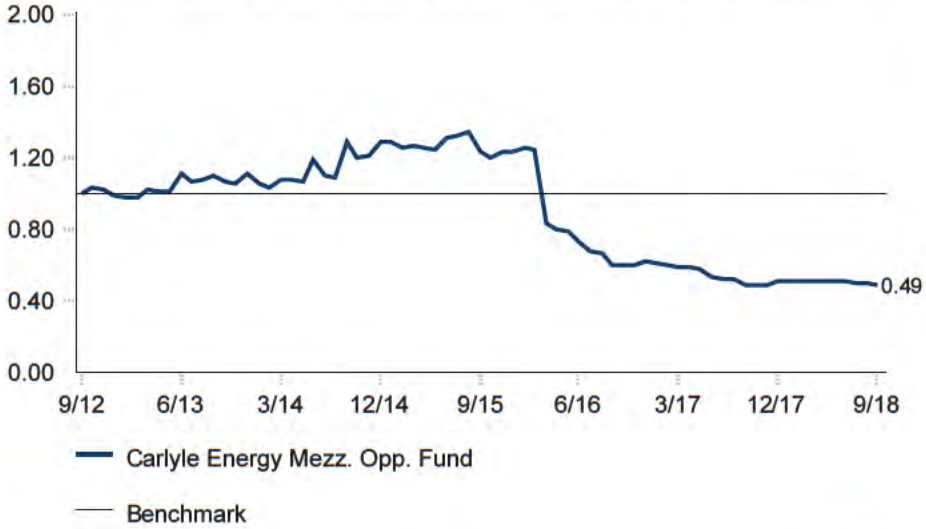
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Carlyle Energy Mezz. Opp. Fund

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	2.34	-20.62	-10.28	N/A	-6.08	10/01/2012
Standard Deviation	4.11	19.43	19.87	N/A	18.78	
Downside Risk	1.35	20.10	16.96	N/A	15.49	
Downside Semi Deviation	1.29	11.44	34.82	N/A	32.64	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-1.80	-51.12	-56.13	N/A	-56.13	
Maximum Loss Exposure	N/A	-32.32	-30.02	N/A	-22.29	
Upside Semi Deviation	1.26	3.73	12.33	N/A	12.25	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.80	
Standard Deviation	2.00	4.93	4.95	10.05	4.85	
Downside Risk	1.12	2.29	2.73	6.68	2.74	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.22	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-0.64	-28.62	-14.17	N/A	-10.11	
Tracking Error	4.71	21.89	21.83	N/A	20.74	
Actual Correlation	-0.08	-0.40	-0.29	N/A	-0.30	
Beta	-0.17	-1.59	-1.17	N/A	-1.14	
Consistency	41.67	30.56	35.00	N/A	37.50	
Down Market Capture	-25.80	35.40	-16.59	N/A	-41.76	
Down Market Outperformance	2.18	5.40	13.45	N/A	17.33	
Information Ratio	-0.14	-1.31	-0.65	N/A	-0.49	
Jensen Alpha	1.06	-9.58	-3.22	N/A	1.33	
Up Market Capture	40.76	-179.64	-95.42	N/A	-61.09	
Up Market Outperformance	-2.98	-42.42	-30.21	N/A	-25.63	
vs. FTSE 3 Month T-Bill						
Excess Return	0.83	-21.45	-9.13	N/A	-4.76	
Excess Risk	4.15	19.39	19.87	N/A	18.79	
Sharpe Ratio	0.20	-1.11	-0.46	N/A	-0.25	

Calculation based on monthly periodicity.

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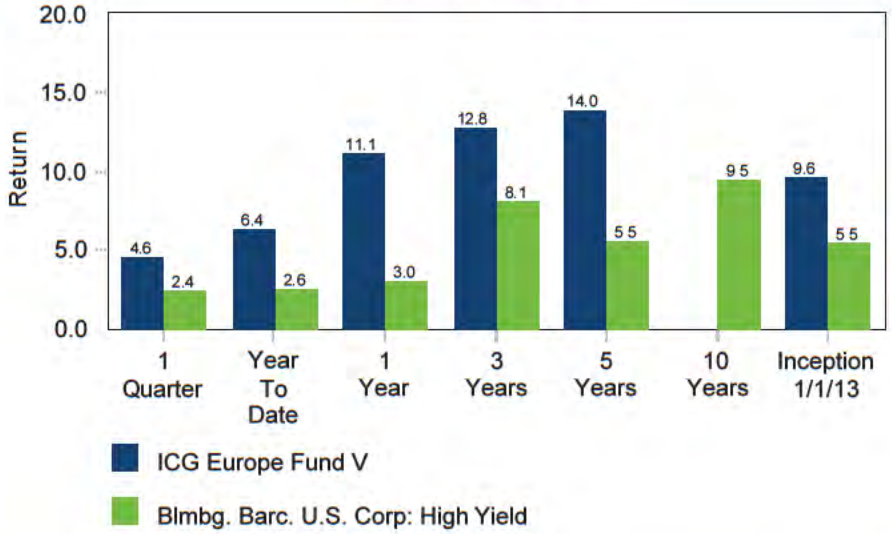
Performance Summary

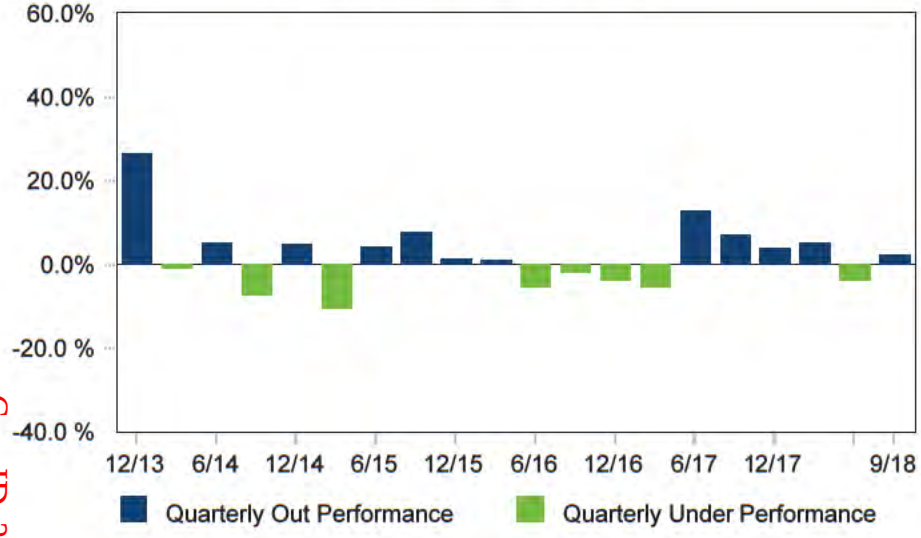
Account Information

Account Name:	ICG Europe Fund V
Inception Date:	12/31/2012
Account Structure:	Commingled Fund
Asset Class:	International Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

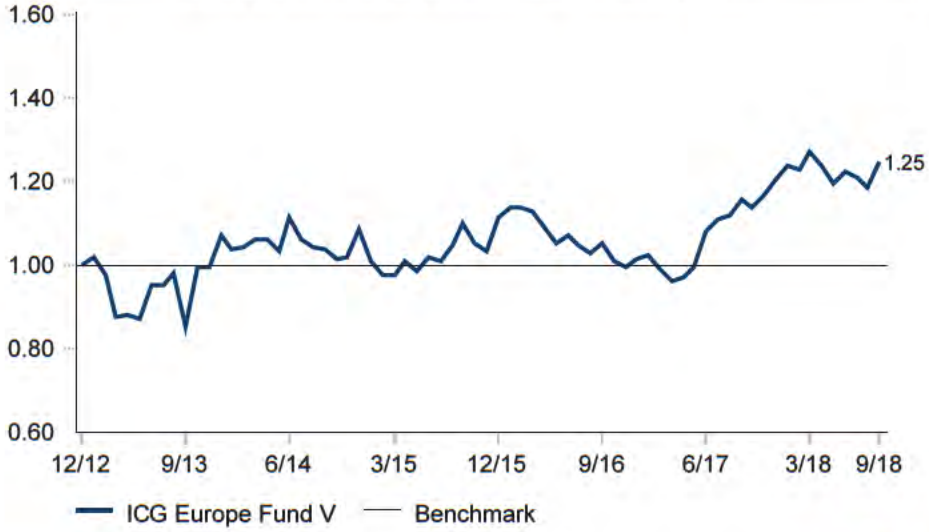
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

ICG Europe Fund V

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	11.14	12.83	13.96	N/A	9.63	01/01/2013
Standard Deviation	9.98	10.68	14.40	N/A	15.56	
Downside Risk	4.91	5.31	6.19	N/A	8.87	
Downside Semi Deviation	2.35	9.07	9.92	N/A	14.08	
Max Drawdown Recovery Period	6.00	4.00	27.00	N/A	9.00	
Maximum Drawdown	-5.31	-5.75	-12.70	N/A	-14.52	
Maximum Loss Exposure	-1.45	-5.48	N/A	N/A	-11.73	
Upside Semi Deviation	3.64	12.59	17.70	N/A	17.13	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.47	
Standard Deviation	2.00	4.93	4.95	10.05	4.93	
Downside Risk	1.12	2.29	2.73	6.68	2.80	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.30	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	8.03	4.70	8.59	N/A	4.94	
Tracking Error	10.06	11.27	14.28	N/A	15.80	
Actual Correlation	0.06	0.11	0.20	N/A	0.11	
Beta	0.31	0.23	0.57	N/A	0.34	
Consistency	50.00	50.00	51.67	N/A	52.17	
Down Market Capture	-9.02	34.62	15.16	N/A	-12.83	
Down Market Outperformance	1.74	5.09	10.18	N/A	14.13	
Information Ratio	0.80	0.42	0.60	N/A	0.31	
Jensen Alpha	9.44	10.72	11.32	N/A	8.59	
Up Market Capture	228.92	125.47	150.59	N/A	99.96	
Up Market Outperformance	6.26	3.98	7.28	N/A	-1.56	
vs. FTSE 3 Month T-Bill						
Excess Return	9.50	11.88	13.62	N/A	9.96	
Excess Risk	9.99	10.66	14.39	N/A	15.55	
Sharpe Ratio	0.95	1.11	0.95	N/A	0.64	

Calculation based on monthly periodicity.

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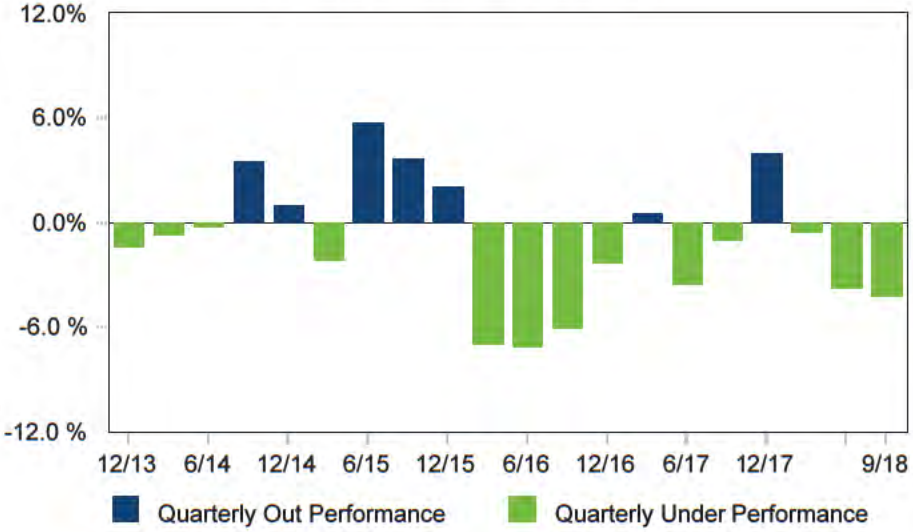
Performance Summary

Account Information

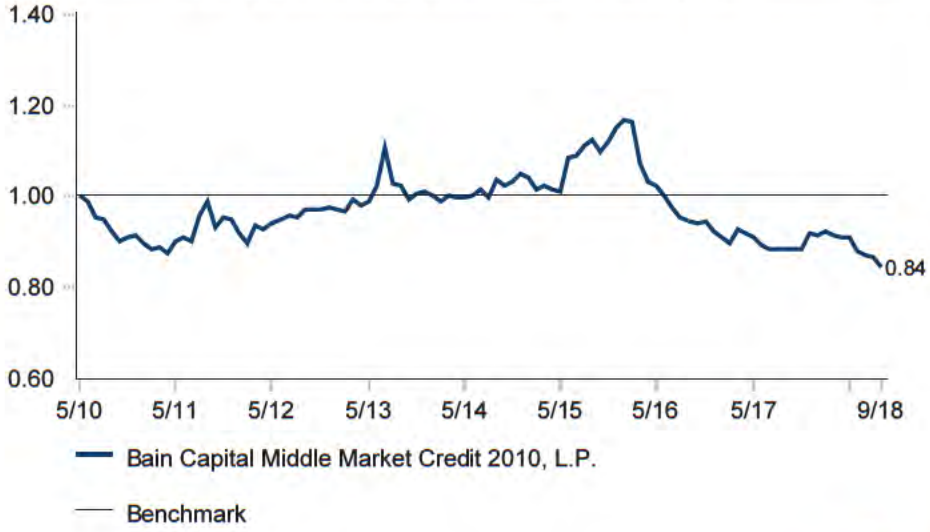
Account Name:	Bain Capital Middle Market Credit 2010, L.P.
Inception Date:	05/31/2010
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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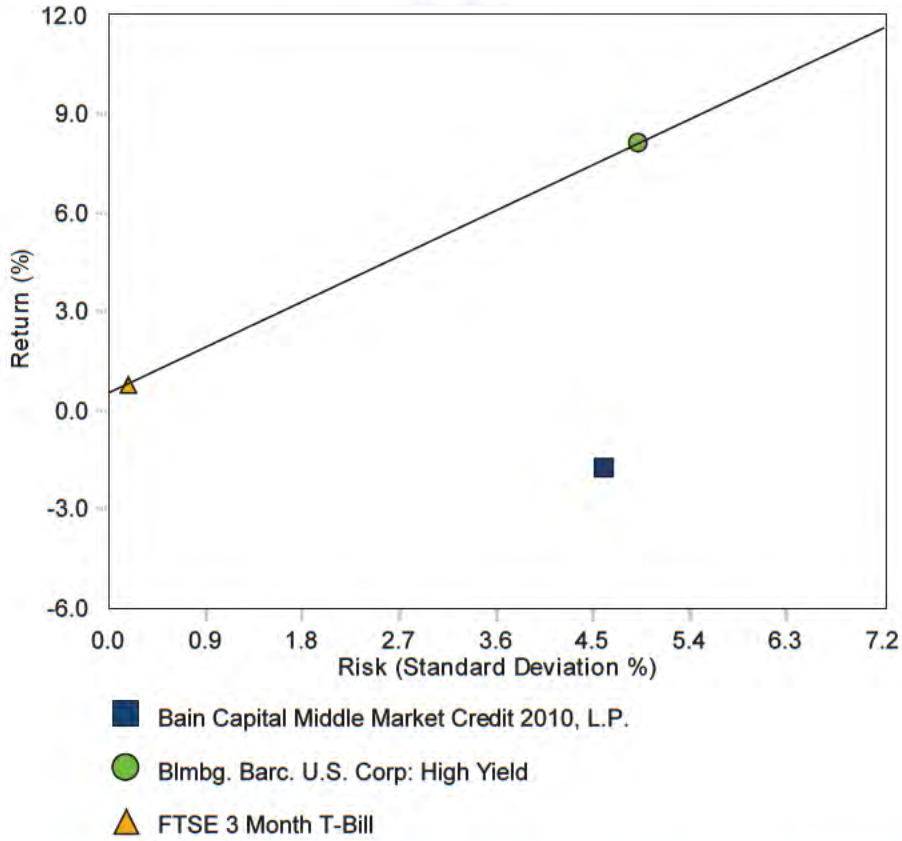
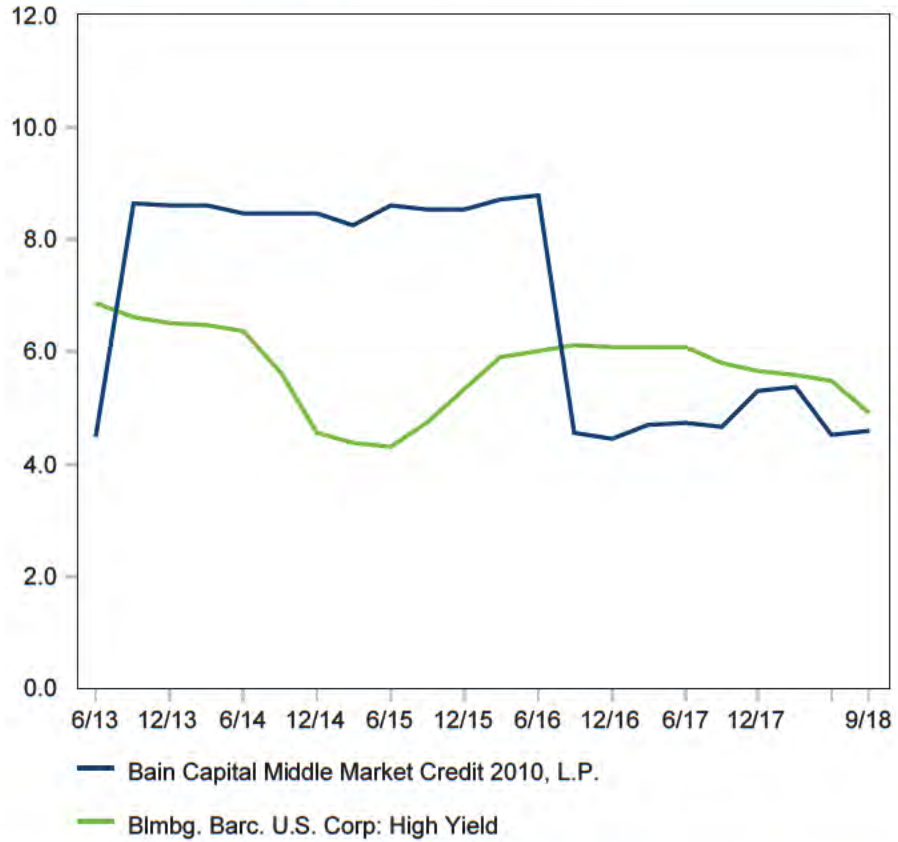
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Bain Capital Middle Market Credit 2010, L.P.	-9.63	7.49	-1.29	0.05	-0.53	0.09	-0.22	-1.74	4.60	-0.23
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.45	0.00	1.00	8.15	4.93	1.00
FTSE 3 Month T-Bill	-7.17	4.96	-1.45	0.02	N/A	0.84	0.00	0.80	0.18	-0.13

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AON Empower Results®

Risk Statistics

Bain Capital Middle Market Credit 2010, L.P.

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-1.75	-1.74	1.58	N/A	5.50	07/01/2010
Standard Deviation	5.95	4.60	4.68	N/A	6.51	
Downside Risk	3.77	3.27	2.58	N/A	3.40	
Downside Semi Deviation	2.55	1.86	5.72	N/A	8.99	
Max Drawdown Recovery Period	N/A	25.00	N/A	N/A	14.00	
Maximum Drawdown	-5.92	-6.07	-7.15	N/A	-7.85	
Maximum Loss Exposure	-1.75	-4.88	-0.43	N/A	-0.24	
Upside Semi Deviation	1.56	3.88	4.45	N/A	6.28	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	7.52	
Standard Deviation	2.00	4.93	4.95	10.05	5.71	
Downside Risk	1.12	2.29	2.73	6.68	3.12	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.85	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	6.24	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-4.63	-9.63	-3.85	N/A	-1.86	
Tracking Error	6.18	7.49	7.59	N/A	8.66	
Actual Correlation	0.05	-0.23	-0.24	N/A	0.00	
Beta	0.14	-0.22	-0.23	N/A	0.00	
Consistency	33.33	30.56	41.67	N/A	45.45	
Down Market Capture	84.50	-20.53	-39.42	N/A	-21.45	
Down Market Outperformance	0.26	10.28	18.05	N/A	17.93	
Information Ratio	-0.75	-1.29	-0.51	N/A	-0.21	
Jensen Alpha	-3.41	-0.96	2.32	N/A	5.33	
Up Market Capture	-2.91	-20.67	-0.10	N/A	37.99	
Up Market Outperformance	-5.15	-19.31	-15.36	N/A	-11.89	
vs. FTSE 3 Month T-Bill						
Excess Return	-3.17	-2.45	1.19	N/A	5.25	
Excess Risk	6.00	4.62	4.71	N/A	6.54	
Sharpe Ratio	-0.53	-0.53	0.25	N/A	0.80	

Calculation based on monthly periodicity.

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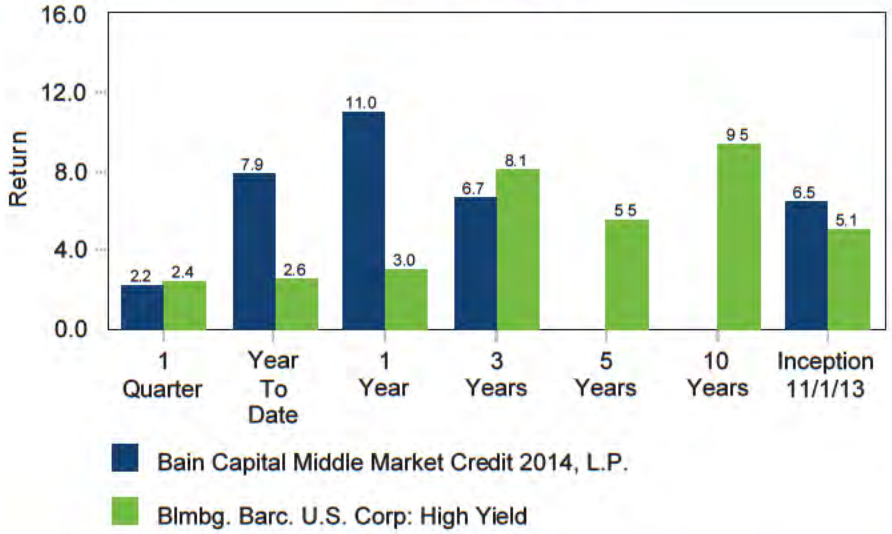
Performance Summary

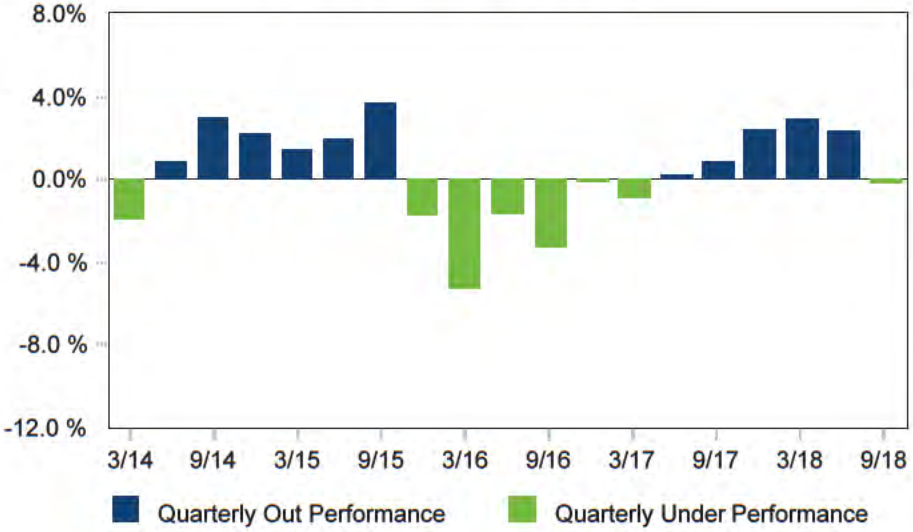
Account Information

Account Name:	Bain Capital Middle Market Credit 2014, L.P.
Inception Date:	11/01/2013
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

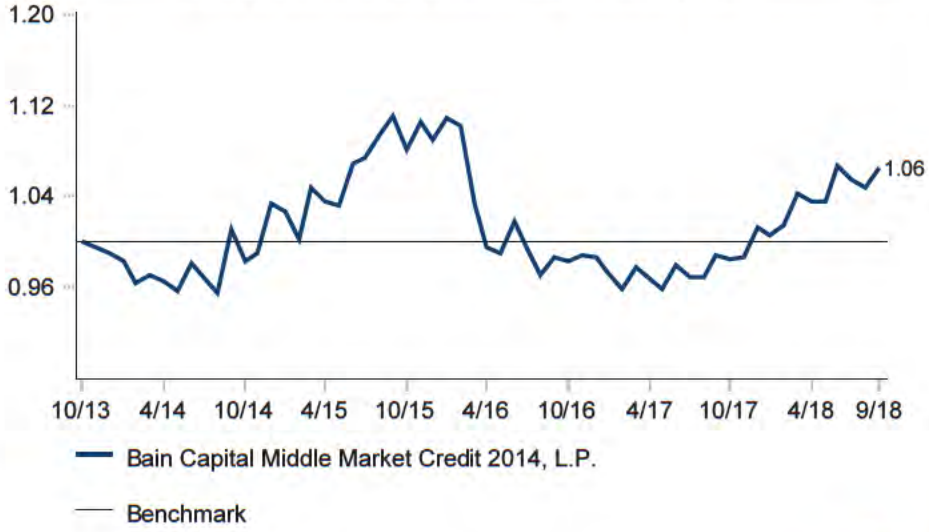
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Bain Capital Middle Market Credit 2014, L.P.

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	10.99	6.66	N/A	N/A	6.46	11/01/2013
Standard Deviation	4.64	5.14	N/A	N/A	5.26	
Downside Risk	0.00	2.50	N/A	N/A	2.40	
Downside Semi Deviation	N/A	3.02	N/A	N/A	2.36	
Max Drawdown Recovery Period	N/A	10.00	N/A	N/A	16.00	
Maximum Drawdown	0.00	-5.68	N/A	N/A	-6.77	
Maximum Loss Exposure	N/A	-5.68	N/A	N/A	N/A	
Upside Semi Deviation	5.63	5.11	N/A	N/A	5.32	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.10	
Standard Deviation	2.00	4.93	4.95	10.05	4.91	
Downside Risk	1.12	2.29	2.73	6.68	2.76	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.95	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-2.69	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.27	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	7.55	-1.39	N/A	N/A	1.30	
Tracking Error	5.14	7.09	N/A	N/A	7.45	
Actual Correlation	-0.05	0.01	N/A	N/A	-0.07	
Beta	-0.11	0.01	N/A	N/A	-0.08	
Consistency	58.33	44.44	N/A	N/A	44.07	
Down Market Capture	-117.43	-1.46	N/A	N/A	-41.87	
Down Market Outperformance	3.77	8.53	N/A	N/A	18.33	
Information Ratio	1.47	-0.20	N/A	N/A	0.17	
Jensen Alpha	9.64	5.91	N/A	N/A	6.49	
Up Market Capture	179.14	59.96	N/A	N/A	48.52	
Up Market Outperformance	3.91	-6.81	N/A	N/A	-7.94	
vs. FTSE 3 Month T-Bill						
Excess Return	9.01	5.79	N/A	N/A	5.91	
Excess Risk	4.63	5.09	N/A	N/A	5.23	
Sharpe Ratio	1.95	1.14	N/A	N/A	1.13	

Calculation based on monthly periodicity.

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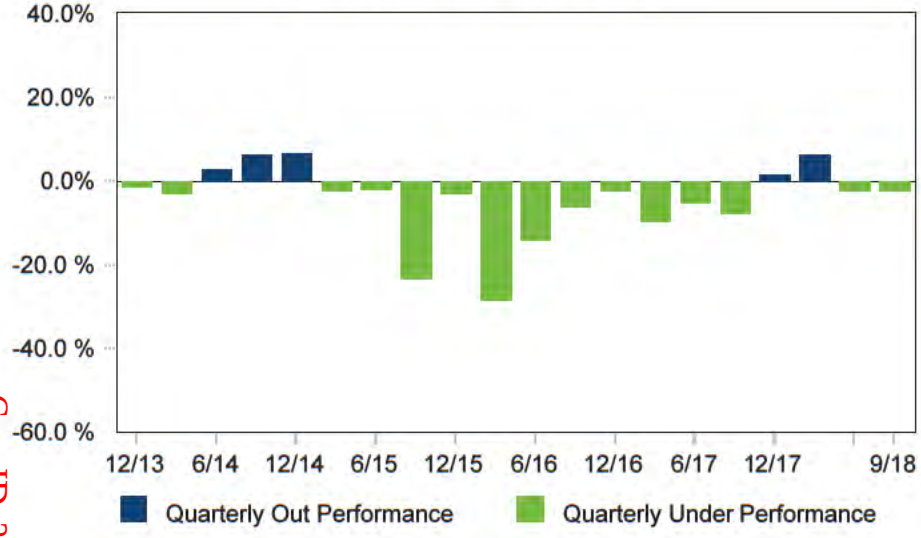
Performance Summary

Account Information

Account Name:	Internally Managed Private Debt Co-Investment
Inception Date:	08/01/2013
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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AON Empower Results®

Risk Statistics

Internally Managed Spec. Situations Co-Invest

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	5.73	-16.83	-13.71	N/A	-12.65	08/01/2013
Standard Deviation	5.79	16.30	19.52	N/A	19.33	
Downside Risk	1.45	16.70	18.76	N/A	18.45	
Downside Semi Deviation	1.39	9.02	36.02	N/A	36.02	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-1.39	-45.60	-61.74	N/A	-61.74	
Maximum Loss Exposure	N/A	-28.25	-31.66	N/A	-30.39	
Upside Semi Deviation	1.87	3.97	7.73	N/A	7.82	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.43	
Standard Deviation	2.00	4.93	4.95	10.05	4.90	
Downside Risk	1.12	2.29	2.73	6.68	2.70	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.84	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-0.61	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.35	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	2.71	-24.77	-18.00	N/A	-16.74	
Tracking Error	6.91	18.61	20.41	N/A	20.24	
Actual Correlation	-0.44	-0.35	-0.06	N/A	-0.06	
Beta	-1.28	-1.16	-0.22	N/A	-0.25	
Consistency	41.67	25.00	35.00	N/A	35.48	
Down Market Capture	-306.20	73.47	115.65	N/A	94.77	
Down Market Outperformance	7.05	1.76	-4.77	N/A	-2.32	
Information Ratio	0.39	-1.33	-0.88	N/A	-0.83	
Jensen Alpha	6.31	-8.82	-11.19	N/A	-10.00	
Up Market Capture	8.82	-134.09	-76.83	N/A	-75.31	
Up Market Outperformance	-4.47	-36.11	-27.15	N/A	-26.82	
vs. FTSE 3 Month T-Bill						
Excess Return	4.18	-17.60	-12.97	N/A	-11.80	
Excess Risk	5.81	16.25	19.51	N/A	19.32	
Sharpe Ratio	0.72	-1.08	-0.66	N/A	-0.61	

Calculation based on monthly periodicity.

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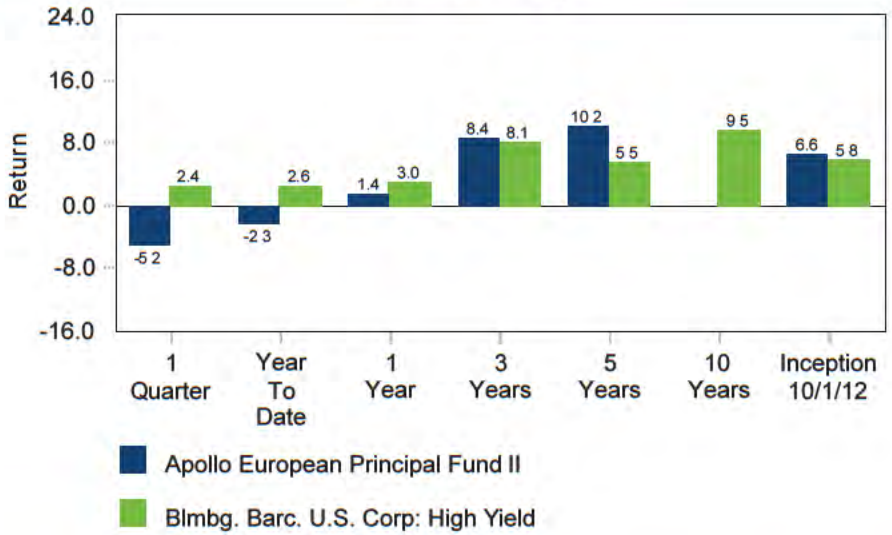
Performance Summary

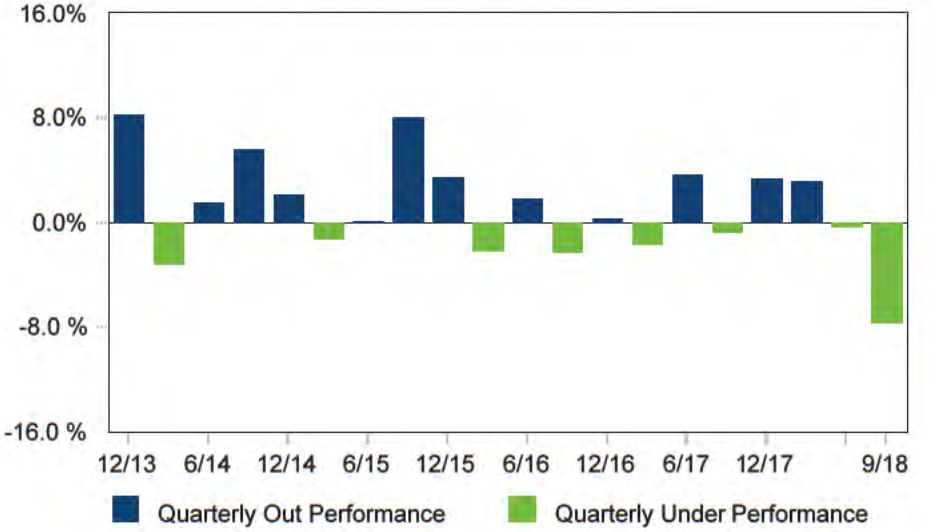
Account Information

Account Name:	Apollo European Principal Fund II
Inception Date:	09/30/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

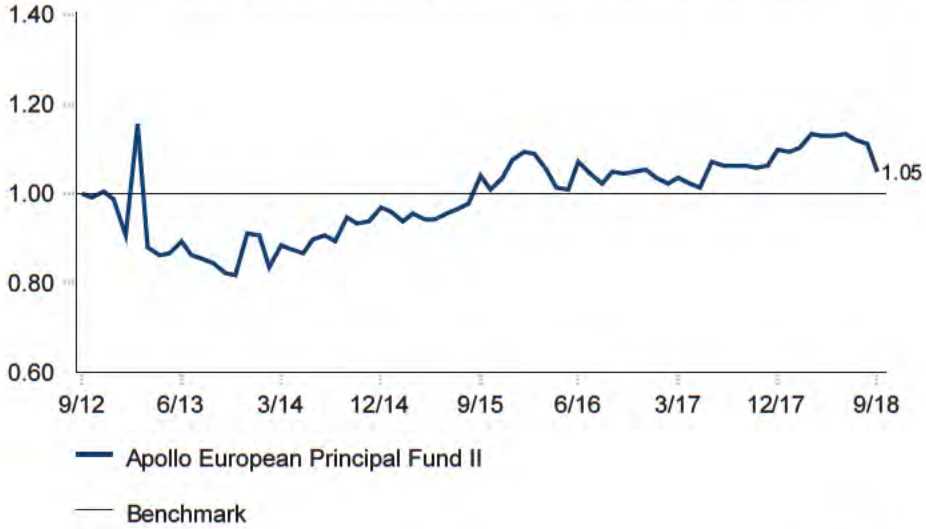
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Apollo European Principal Fund II

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.42	8.44	10.19	N/A	6.62	10/01/2012
Standard Deviation	7.20	6.94	8.64	N/A	17.20	
Downside Risk	5.46	3.06	3.55	N/A	10.48	
Downside Semi Deviation	N/A	N/A	4.54	N/A	9.63	
Max Drawdown Recovery Period	N/A	N/A	5.00	N/A	40.00	
Maximum Drawdown	-5.23	-5.23	-5.86	N/A	-25.55	
Maximum Loss Exposure	N/A	N/A	N/A	N/A	-9.58	
Upside Semi Deviation	1.43	6.78	8.71	N/A	14.69	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.80	
Standard Deviation	2.00	4.93	4.95	10.05	4.85	
Downside Risk	1.12	2.29	2.73	6.68	2.74	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.22	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-1.37	0.39	4.58	N/A	2.10	
Tracking Error	7.94	8.64	10.55	N/A	18.33	
Actual Correlation	-0.25	-0.03	-0.14	N/A	-0.10	
Beta	-0.90	-0.05	-0.25	N/A	-0.36	
Consistency	50.00	47.22	48.33	N/A	45.83	
Down Market Capture	-133.40	-53.87	-67.83	N/A	-51.45	
Down Market Outperformance	4.04	13.34	22.21	N/A	20.16	
Information Ratio	-0.17	0.04	0.43	N/A	0.11	
Jensen Alpha	1.38	8.04	11.37	N/A	9.71	
Up Market Capture	-13.88	62.08	73.46	N/A	57.23	
Up Market Outperformance	-5.73	-6.66	-4.73	N/A	-8.93	
vs. FTSE 3 Month T-Bill						
Excess Return	0.09	7.56	9.61	N/A	7.45	
Excess Risk	7.25	6.98	8.67	N/A	17.21	
Sharpe Ratio	0.01	1.08	1.11	N/A	0.43	

Calculation based on monthly periodicity.

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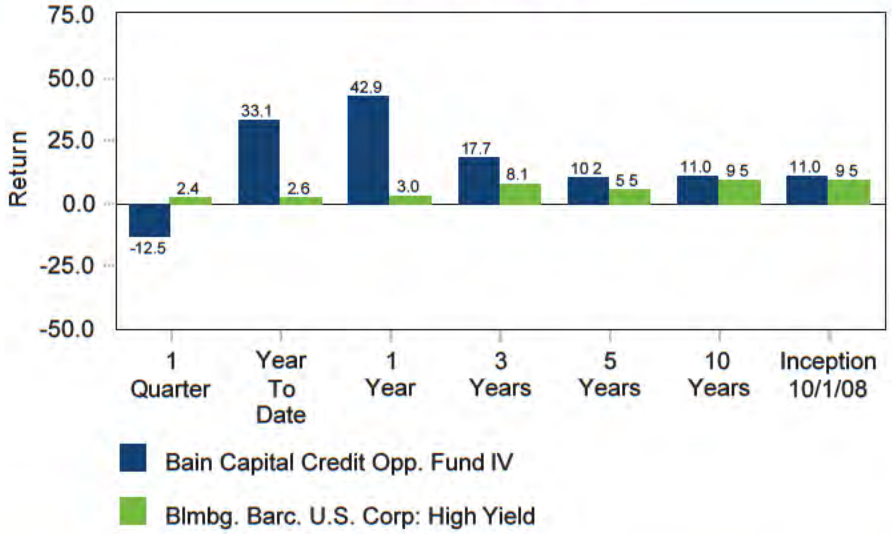
Performance Summary

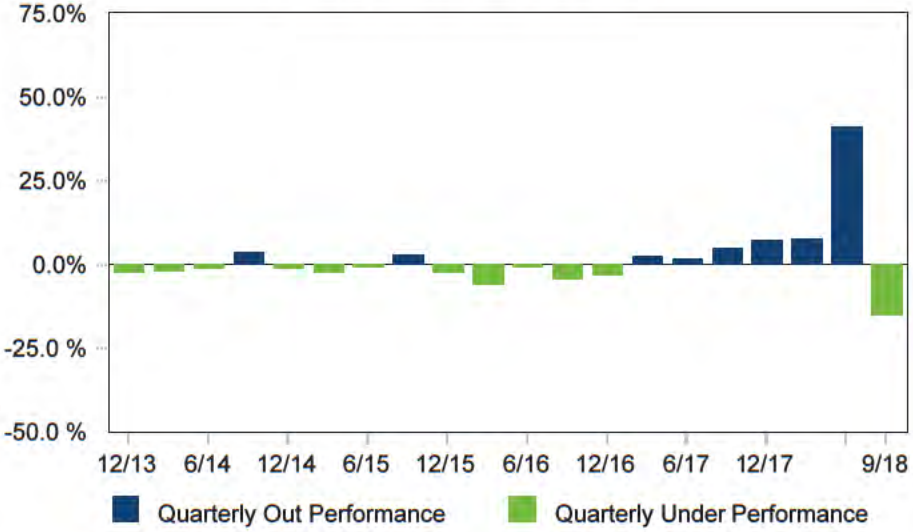
Account Information

Account Name:	Bain Capital Credit Opp. Fund IV
Inception Date:	09/30/2008
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

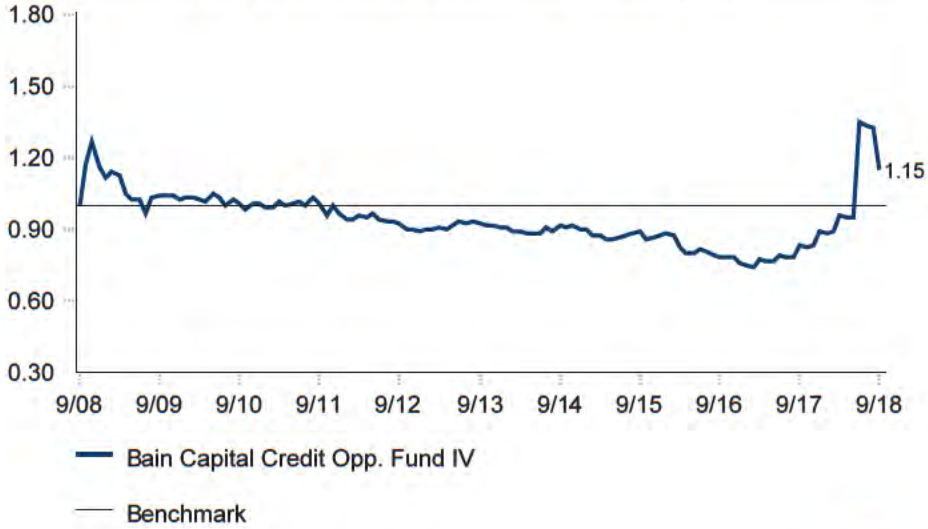
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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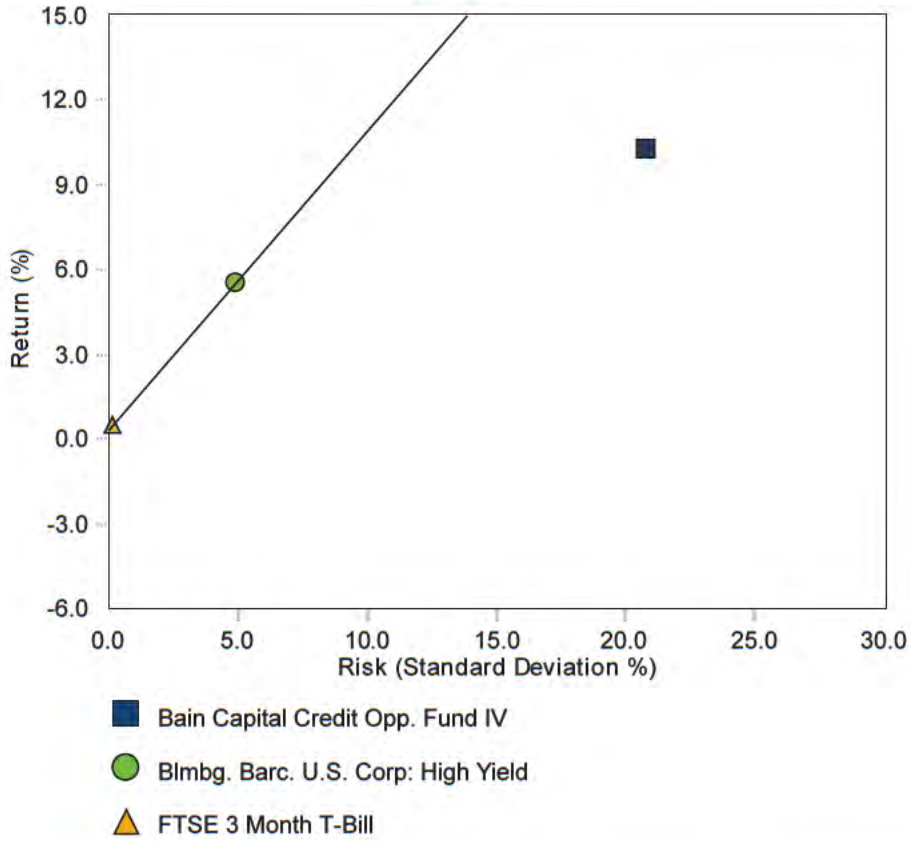
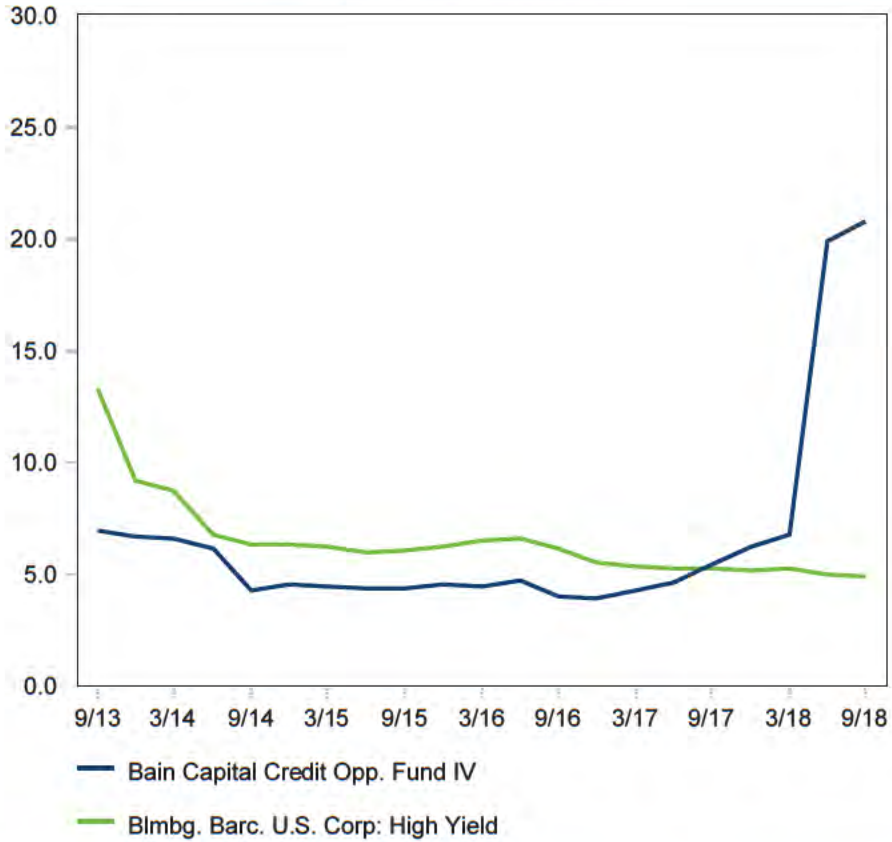
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Bain Capital Credit Opp. Fund IV	6.03	21.33	0.28	0.00	0.53	11.95	0.04	10.24	20.79	0.01
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.02	0.00	1.00	5.54	4.95	1.00
FTSE 3 Month T-Bill	-5.03	4.95	-1.02	0.00	N/A	0.48	0.00	0.49	0.18	0.03

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AON Empower Results®

Risk Statistics

Bain Capital Credit Opp. Fund IV	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	42.85	17.68	10.24	11.02	11.02	10/01/2008
Standard Deviation	45.31	26.62	20.79	15.44	15.44	
Downside Risk	13.02	7.61	6.09	4.78	4.78	
Downside Semi Deviation	N/A	4.92	11.03	9.51	9.51	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-12.47	-12.47	-12.47	-12.47	-12.47	
Maximum Loss Exposure	N/A	-6.85	-6.93	-4.92	-4.92	
Upside Semi Deviation	13.74	29.75	24.48	17.51	17.51	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	9.46	
Standard Deviation	2.00	4.93	4.95	10.05	10.05	
Downside Risk	1.12	2.29	2.73	6.68	6.68	
Downside Semi Deviation	0.62	1.30	4.95	12.88	12.88	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	7.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-23.74	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-23.74	
Upside Semi Deviation	0.68	5.86	5.38	9.42	9.42	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	40.98	11.28	6.03	1.91	1.91	
Tracking Error	45.42	27.35	21.33	17.25	17.25	
Actual Correlation	-0.04	-0.06	0.01	0.13	0.13	
Beta	-0.83	-0.31	0.04	0.21	0.21	
Consistency	50.00	41.67	41.67	45.00	45.00	
Down Market Capture	-396.55	-99.30	-20.70	2.94	2.94	
Down Market Outperformance	8.62	17.27	15.28	22.19	22.19	
Information Ratio	0.90	0.41	0.28	0.11	0.11	
Jensen Alpha	53.80	23.03	11.65	9.70	9.70	
Up Market Capture	779.52	149.63	108.85	70.51	70.51	
Up Market Outperformance	28.79	4.40	-1.26	-9.25	-9.25	
vs. FTSE 3 Month T-Bill						
Excess Return	42.45	18.45	11.07	11.18	11.18	
Excess Risk	45.30	26.58	20.74	15.41	15.41	
Sharpe Ratio	0.94	0.69	0.53	0.73	0.73	

Calculation based on monthly periodicity.

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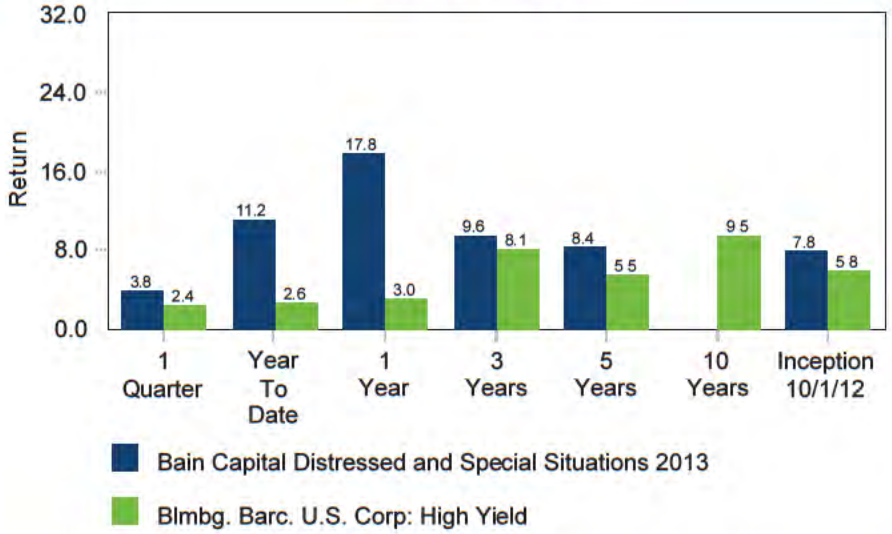
Performance Summary

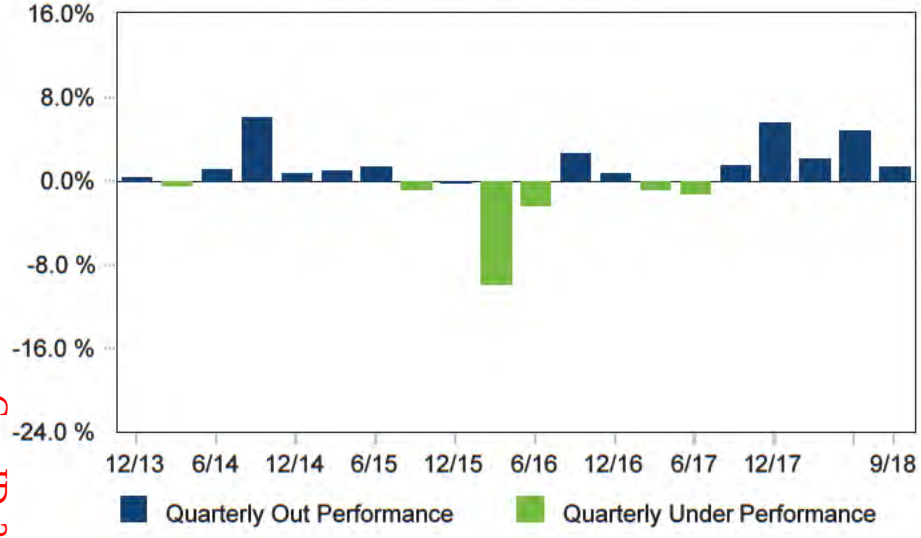
Account Information

Account Name:	Bain Capital Distressed and Special Situations 2013
Inception Date:	09/30/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

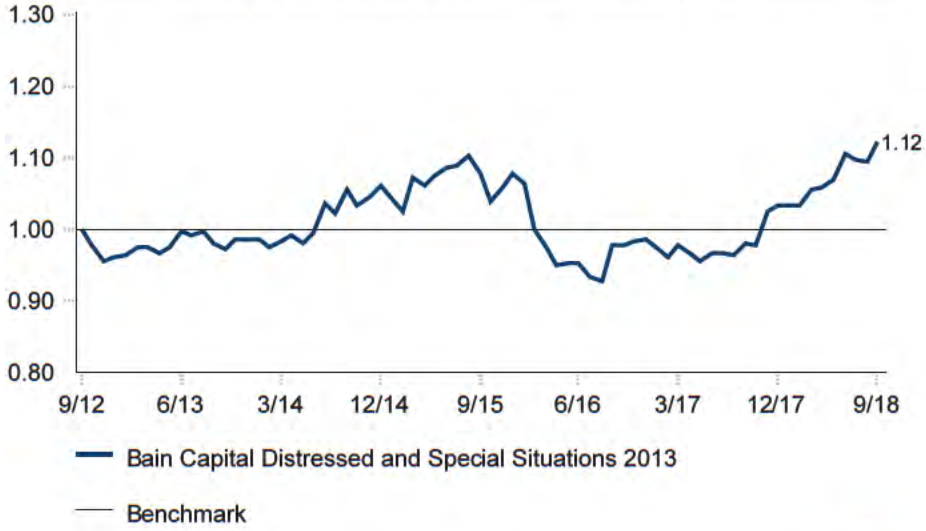
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Bain Capital Distressed and Special Situations 2013

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	17.83	9.58	8.40	N/A	7.85	10/01/2012
Standard Deviation	5.65	6.71	6.30	N/A	5.99	
Downside Risk	0.70	3.69	3.63	N/A	3.42	
Downside Semi Deviation	N/A	2.10	6.97	N/A	6.30	
Max Drawdown Recovery Period	2.00	11.00	22.00	N/A	22.00	
Maximum Drawdown	-0.67	-10.04	-15.33	N/A	-15.33	
Maximum Loss Exposure	N/A	-10.04	N/A	N/A	-2.84	
Upside Semi Deviation	2.28	7.39	6.74	N/A	6.51	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.80	
Standard Deviation	2.00	4.93	4.95	10.05	4.85	
Downside Risk	1.12	2.29	2.73	6.68	2.74	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.22	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	13.64	1.42	2.76	N/A	1.99	
Tracking Error	6.14	7.62	7.16	N/A	6.82	
Actual Correlation	-0.08	0.17	0.21	N/A	0.22	
Beta	-0.22	0.23	0.26	N/A	0.27	
Consistency	66.67	52.78	55.00	N/A	55.56	
Down Market Capture	-378.42	-44.10	-30.45	N/A	-24.91	
Down Market Outperformance	8.39	12.29	16.65	N/A	16.19	
Information Ratio	2.22	0.19	0.39	N/A	0.29	
Jensen Alpha	16.62	7.24	6.72	N/A	6.08	
Up Market Capture	211.87	74.22	71.26	N/A	67.30	
Up Market Outperformance	5.61	-4.55	-4.72	N/A	-5.35	
vs. FTSE 3 Month T-Bill						
Excess Return	15.10	8.60	7.80	N/A	7.34	
Excess Risk	5.65	6.66	6.26	N/A	5.96	
Sharpe Ratio	2.67	1.29	1.24	N/A	1.23	

Calculation based on monthly periodicity.

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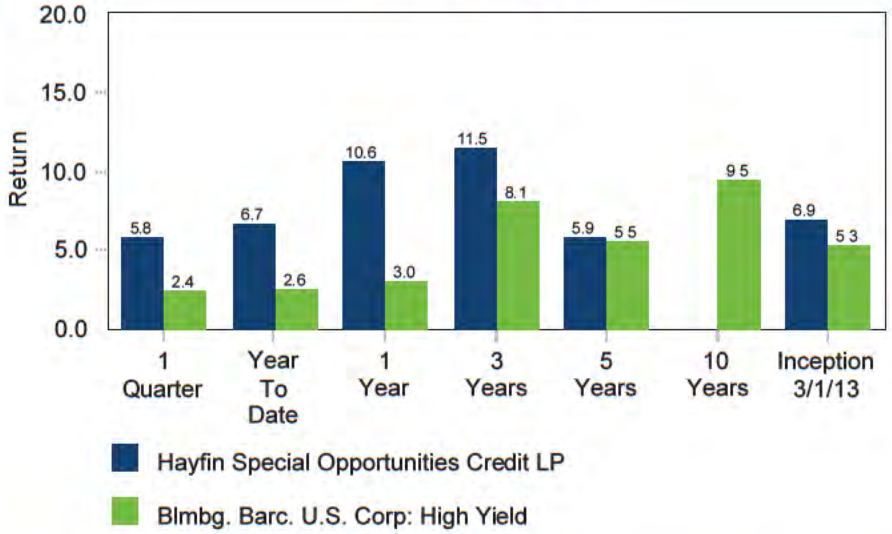
Performance Summary

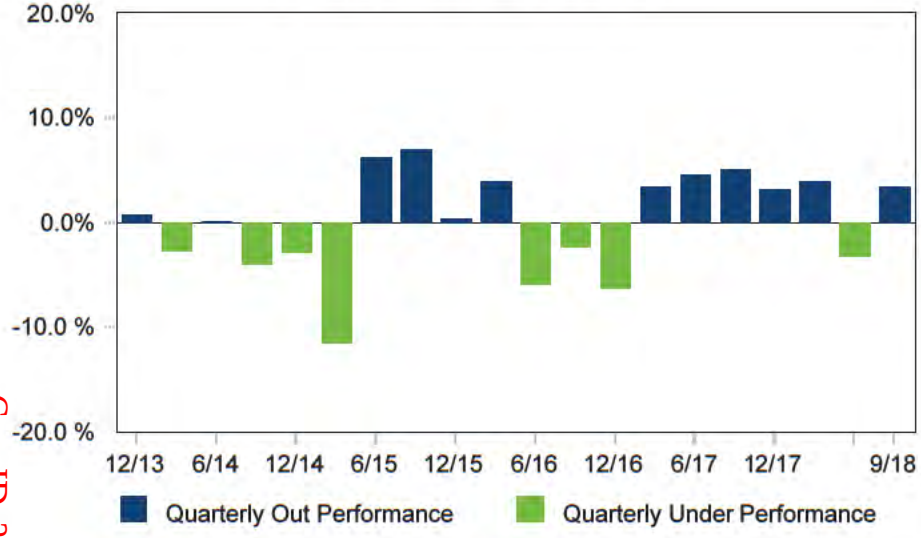
Account Information

Account Name:	Hayfin Special Opportunities Credit LP
Inception Date:	02/28/2013
Account Structure:	Commingled Fund
Asset Class:	International Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

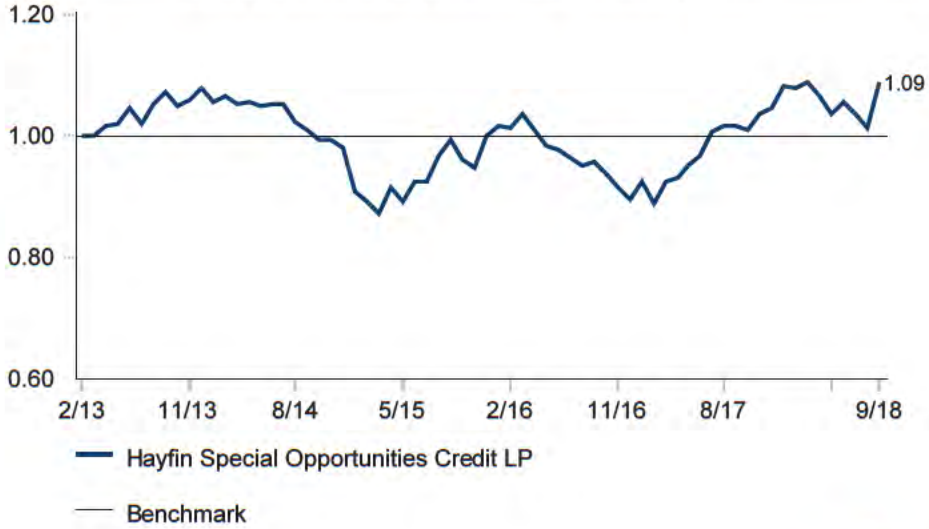
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Hayfin Special Opportunities Credit LP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	10.62	11.49	5.88	N/A	6.92	03/01/2013
Standard Deviation	10.32	9.29	9.28	N/A	8.99	
Downside Risk	4.03	4.12	5.21	N/A	4.94	
Downside Semi Deviation	1.93	7.35	8.35	N/A	7.87	
Max Drawdown Recovery Period	8.00	8.00	35.00	N/A	35.00	
Maximum Drawdown	-5.03	-5.03	-17.56	N/A	-17.56	
Maximum Loss Exposure	N/A	-4.29	-11.54	N/A	-3.40	
Upside Semi Deviation	3.92	11.06	10.23	N/A	10.13	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.29	
Standard Deviation	2.00	4.93	4.95	10.05	4.99	
Downside Risk	1.12	2.29	2.73	6.68	2.84	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-0.43	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.36	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	7.59	3.36	0.62	N/A	1.82	
Tracking Error	10.19	9.24	9.23	N/A	9.01	
Actual Correlation	0.16	0.28	0.28	N/A	0.27	
Beta	0.83	0.52	0.52	N/A	0.49	
Consistency	50.00	47.22	45.00	N/A	49.25	
Down Market Capture	86.06	3.51	32.66	N/A	18.42	
Down Market Outperformance	0.17	7.91	8.12	N/A	10.16	
Information Ratio	0.74	0.36	0.07	N/A	0.20	
Jensen Alpha	8.10	7.07	3.15	N/A	4.42	
Up Market Capture	254.20	104.77	76.98	N/A	81.00	
Up Market Outperformance	7.51	0.44	-4.13	N/A	-3.53	
vs. FTSE 3 Month T-Bill						
Excess Return	9.05	10.53	5.66	N/A	6.66	
Excess Risk	10.31	9.28	9.25	N/A	8.96	
Sharpe Ratio	0.88	1.14	0.61	N/A	0.74	

Calculation based on monthly periodicity.

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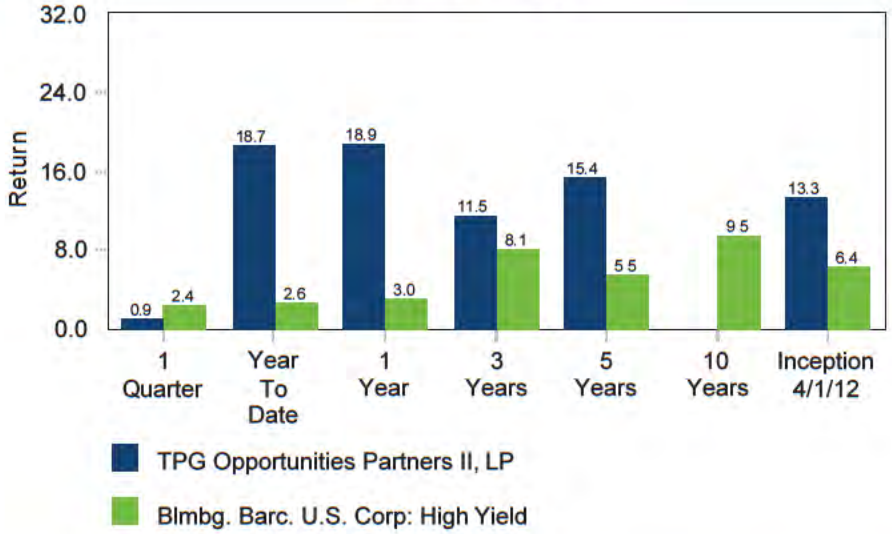
Performance Summary

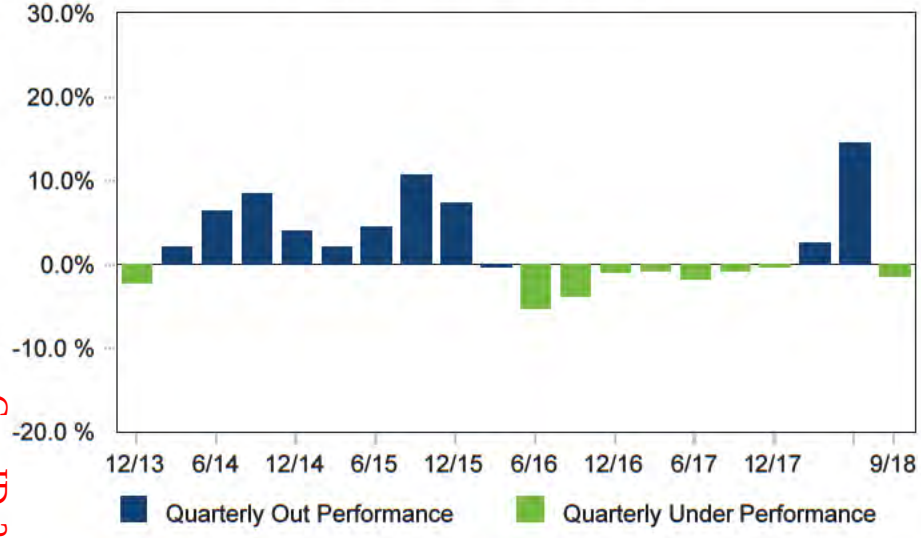
Account Information

Account Name:	TPG Opportunities Partners II, LP
Inception Date:	03/31/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

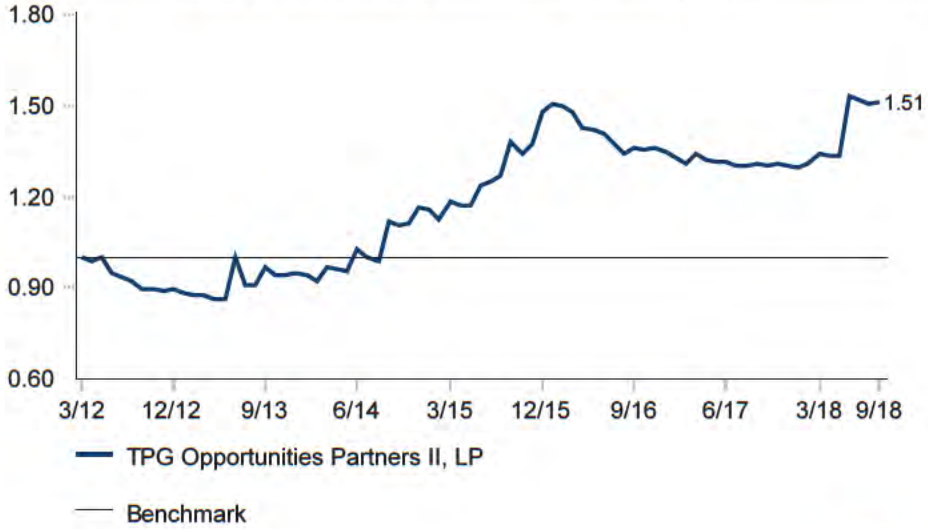
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

TPG Opportunities Partners II, LP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	18.91	11.47	15.39	N/A	13.32	04/01/2012
Standard Deviation	15.32	9.46	10.27	N/A	11.16	
Downside Risk	0.00	0.00	1.63	N/A	3.63	
Downside Semi Deviation	N/A	N/A	N/A	N/A	5.31	
Max Drawdown Recovery Period	N/A	N/A	3.00	N/A	6.00	
Maximum Drawdown	0.00	0.00	-3.61	N/A	-7.62	
Maximum Loss Exposure	N/A	N/A	N/A	N/A	-4.90	
Upside Semi Deviation	16.29	10.02	11.12	N/A	11.53	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	6.36	
Standard Deviation	2.00	4.93	4.95	10.05	4.81	
Downside Risk	1.12	2.29	2.73	6.68	2.68	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.01	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-0.27	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.25	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	15.40	3.33	9.36	N/A	6.86	
Tracking Error	15.37	11.02	12.43	N/A	13.55	
Actual Correlation	0.04	-0.08	-0.24	N/A	-0.33	
Beta	0.28	-0.16	-0.50	N/A	-0.77	
Consistency	50.00	41.67	43.33	N/A	42.31	
Down Market Capture	-106.86	-103.72	-160.74	N/A	-176.41	
Down Market Outperformance	3.58	17.91	36.06	N/A	39.39	
Information Ratio	1.00	0.30	0.75	N/A	0.51	
Jensen Alpha	17.95	12.33	18.30	N/A	18.77	
Up Market Capture	347.97	75.63	81.74	N/A	57.46	
Up Market Outperformance	11.88	-4.62	-3.37	N/A	-7.43	
vs. FTSE 3 Month T-Bill						
Excess Return	16.86	10.50	14.40	N/A	12.76	
Excess Risk	15.29	9.42	10.27	N/A	11.16	
Sharpe Ratio	1.10	1.11	1.40	N/A	1.14	

Calculation based on monthly periodicity.

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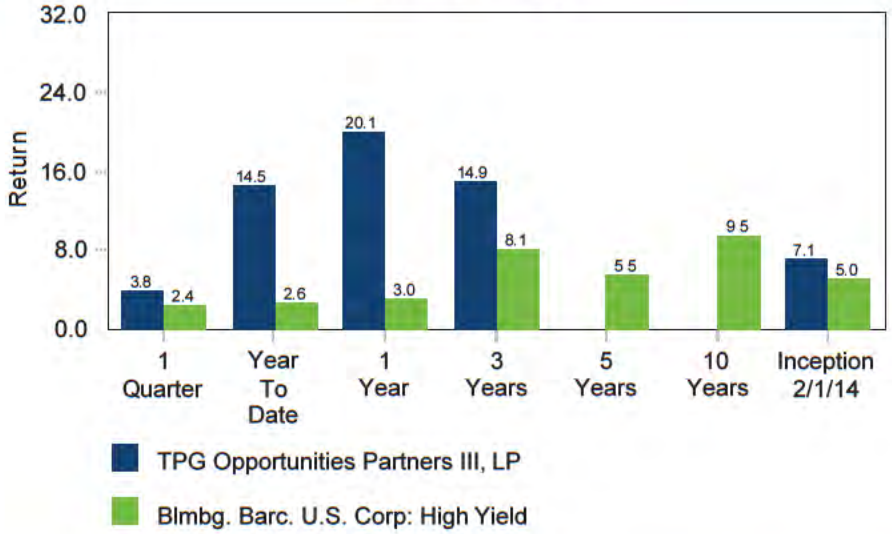
Performance Summary

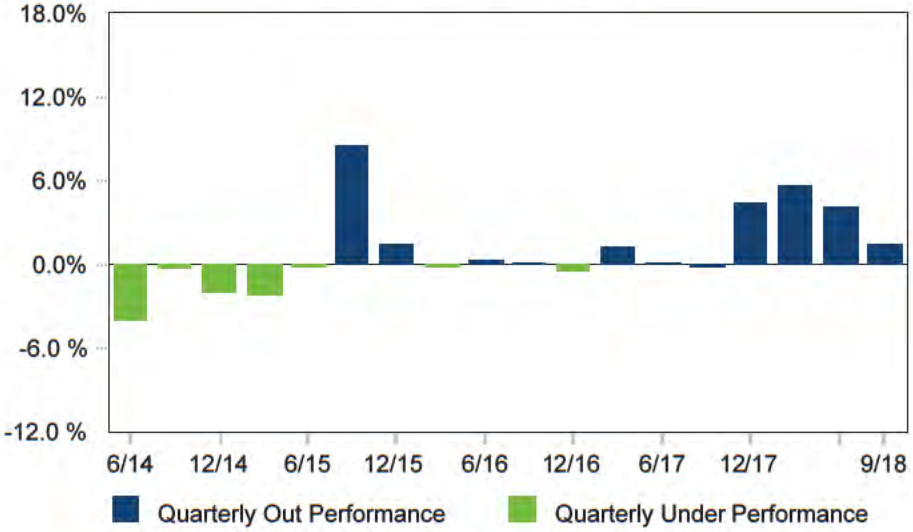
Account Information

Account Name:	TPG Opportunities Partners III, LP
Inception Date:	02/01/2014
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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AON Empower Results®

Risk Statistics

TPG Opportunities Partners III, LP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	20.15	14.89	N/A	N/A	7.06	02/01/2014
Standard Deviation	8.09	7.01	N/A	N/A	9.14	
Downside Risk	0.00	0.36	N/A	N/A	5.44	
Downside Semi Deviation	N/A	N/A	N/A	N/A	5.20	
Max Drawdown Recovery Period	N/A	4.00	N/A	N/A	28.00	
Maximum Drawdown	0.00	-0.62	N/A	N/A	-13.37	
Maximum Loss Exposure	N/A	-0.62	N/A	N/A	-12.86	
Upside Semi Deviation	9.87	8.26	N/A	N/A	8.10	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	4.99	
Standard Deviation	2.00	4.93	4.95	10.05	5.04	
Downside Risk	1.12	2.29	2.73	6.68	2.83	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.95	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-4.37	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.46	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	15.76	6.22	N/A	N/A	2.24	
Tracking Error	8.59	8.43	N/A	N/A	10.16	
Actual Correlation	-0.14	0.04	N/A	N/A	0.06	
Beta	-0.55	0.05	N/A	N/A	0.11	
Consistency	58.33	47.22	N/A	N/A	44.64	
Down Market Capture	-281.04	-93.17	N/A	N/A	-32.62	
Down Market Outperformance	6.61	16.87	N/A	N/A	17.02	
Information Ratio	1.84	0.74	N/A	N/A	0.22	
Jensen Alpha	19.73	13.85	N/A	N/A	6.48	
Up Market Capture	292.06	104.91	N/A	N/A	60.00	
Up Market Outperformance	9.70	0.65	N/A	N/A	-6.95	
vs. FTSE 3 Month T-Bill						
Excess Return	17.23	13.39	N/A	N/A	6.73	
Excess Risk	8.07	6.99	N/A	N/A	9.10	
Sharpe Ratio	2.13	1.92	N/A	N/A	0.74	

Calculation based on monthly periodicity.

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As of September 30, 2018

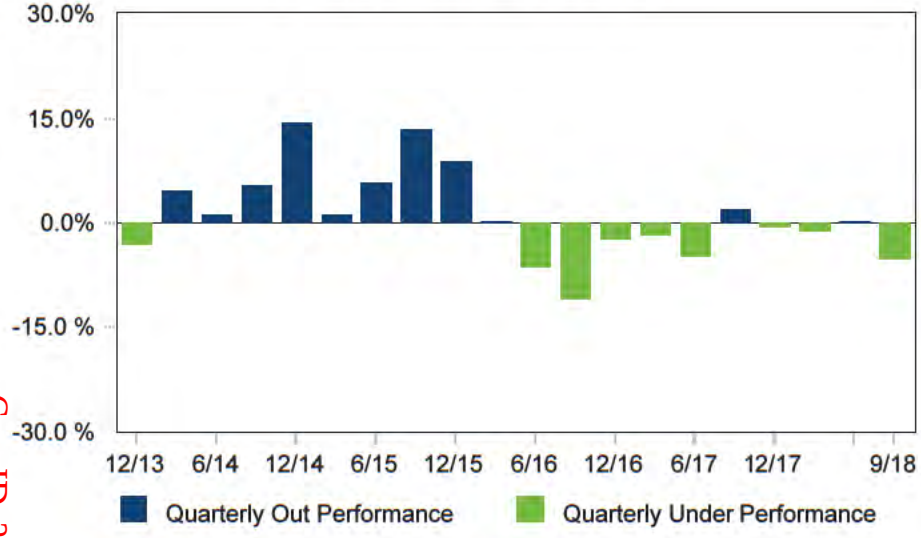
Performance Summary

Account Information

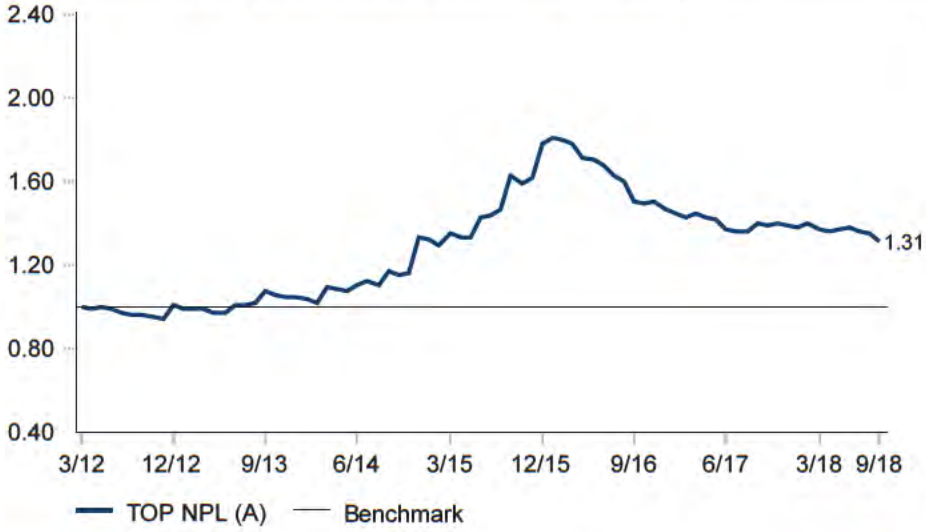
Account Name:	TOP NPL (A)
Inception Date:	03/31/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

TOP NPL (A)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-3.49	0.59	9.70	N/A	10.89	04/01/2012
Standard Deviation	3.68	6.58	9.70	N/A	9.39	
Downside Risk	3.55	4.10	3.16	N/A	2.77	
Downside Semi Deviation	2.40	2.86	2.86	N/A	2.86	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-3.49	-8.20	-8.20	N/A	-8.20	
Maximum Loss Exposure	-3.49	N/A	N/A	N/A	N/A	
Upside Semi Deviation	0.48	5.76	10.22	N/A	9.97	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	6.36	
Standard Deviation	2.00	4.93	4.95	10.05	4.81	
Downside Risk	1.12	2.29	2.73	6.68	2.68	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.01	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-0.27	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.25	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-6.51	-7.17	4.21	N/A	4.50	
Tracking Error	3.87	8.44	12.30	N/A	11.49	
Actual Correlation	0.17	-0.06	-0.34	N/A	-0.23	
Beta	0.32	-0.08	-0.67	N/A	-0.45	
Consistency	33.33	30.56	38.33	N/A	38.46	
Down Market Capture	119.98	-66.24	-189.53	N/A	-154.96	
Down Market Outperformance	-0.36	14.27	40.55	N/A	35.83	
Information Ratio	-1.68	-0.85	0.34	N/A	0.39	
Jensen Alpha	-5.40	0.45	13.25	N/A	13.73	
Up Market Capture	-29.44	-10.50	16.60	N/A	43.19	
Up Market Outperformance	-6.30	-17.87	-13.06	N/A	-9.44	
vs. FTSE 3 Month T-Bill						
Excess Return	-5.05	0.00	9.25	N/A	10.40	
Excess Risk	3.70	6.61	9.75	N/A	9.43	
Sharpe Ratio	-1.36	0.00	0.95	N/A	1.10	

Calculation based on monthly periodicity.

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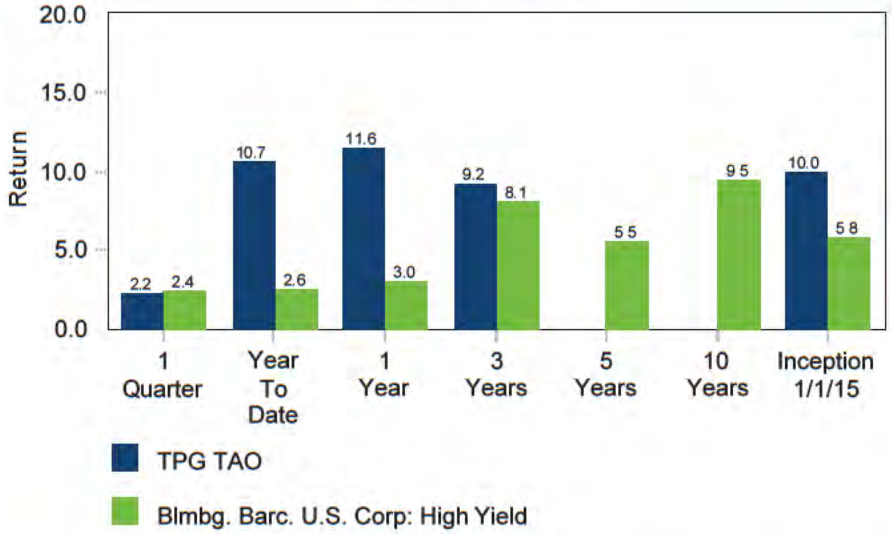
Performance Summary

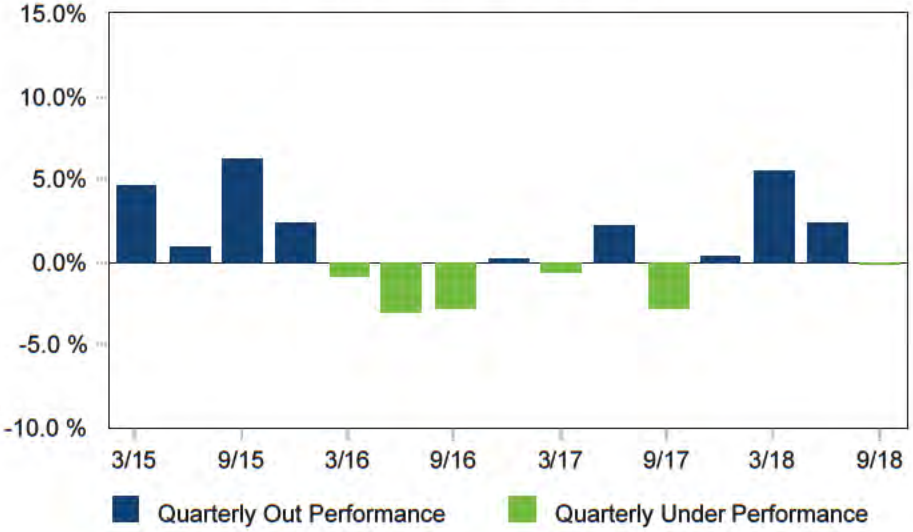
Account Information

Account Name:	TPG TAO
Inception Date:	01/01/2015
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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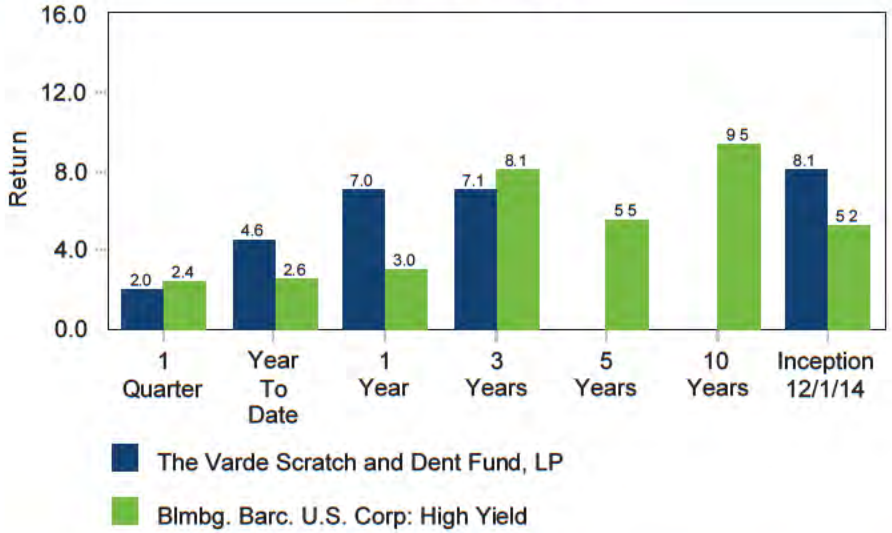
AON Empower Results®

Performance Summary

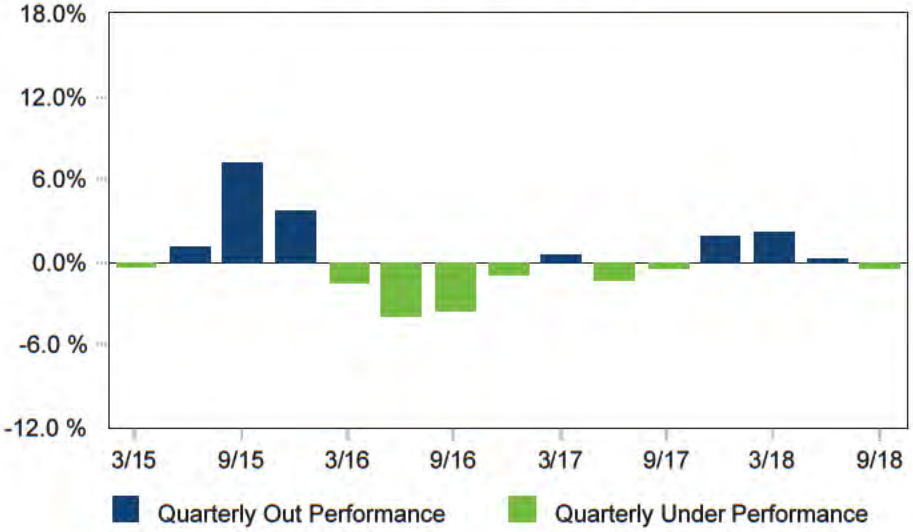
Account Information

Account Name:	The Varde Scratch and Dent Fund, LP
Inception Date:	12/01/2014
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

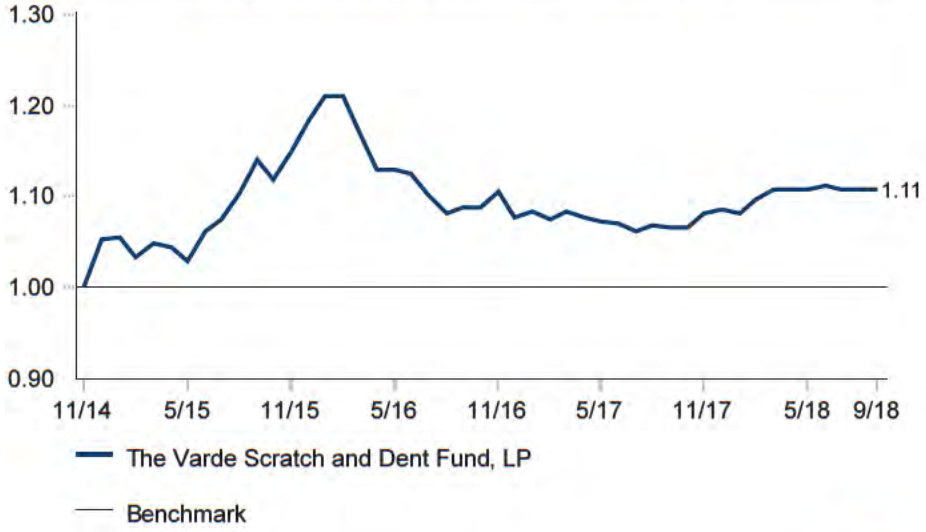
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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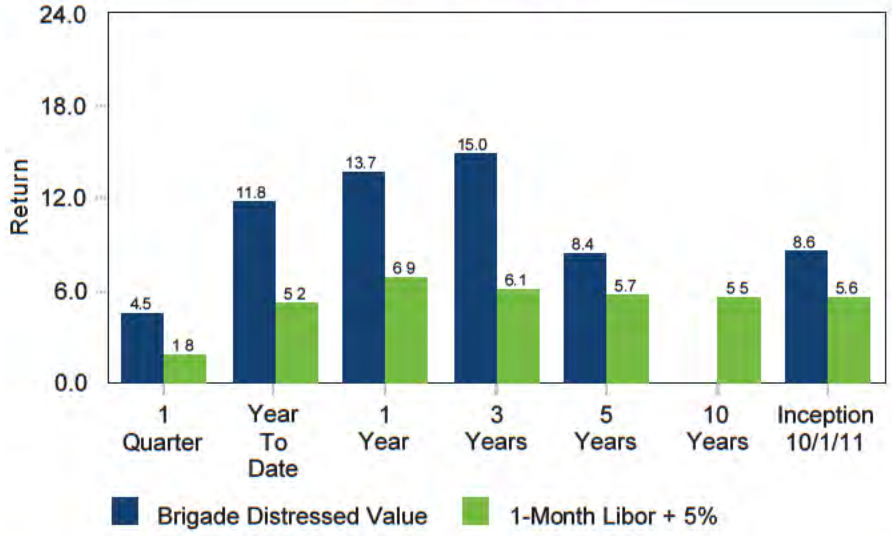
AON Empower Results®

Performance Summary

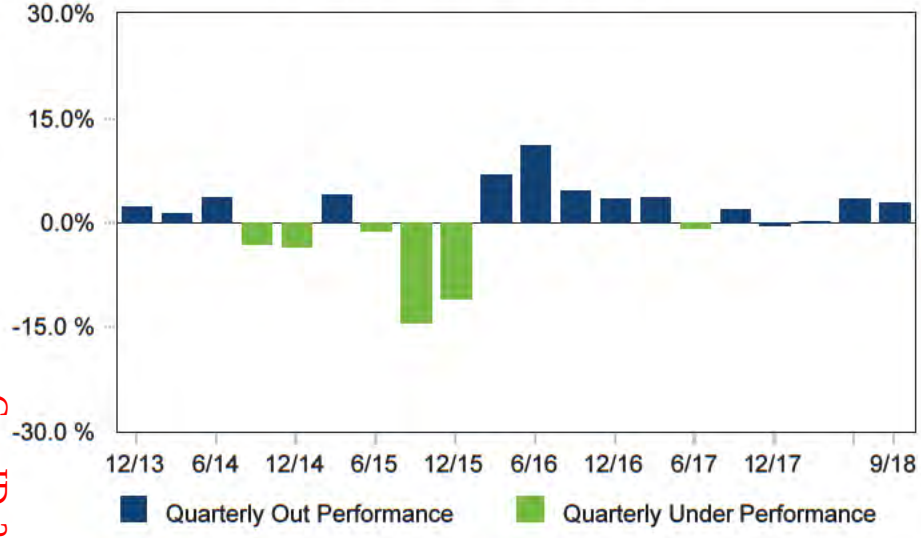
Account Information

Account Name:	Brigade Distressed Value
Inception Date:	10/01/2011
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	1-Month Libor + 5%
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

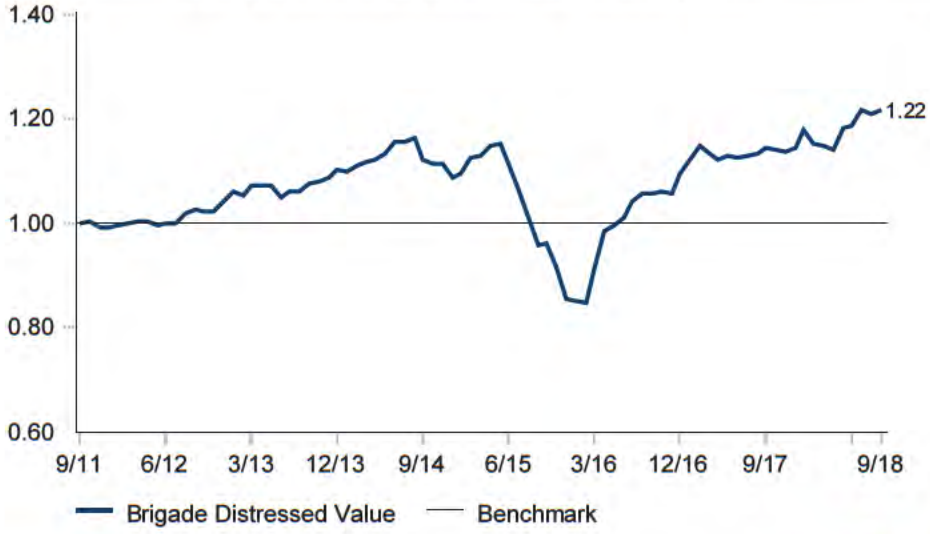
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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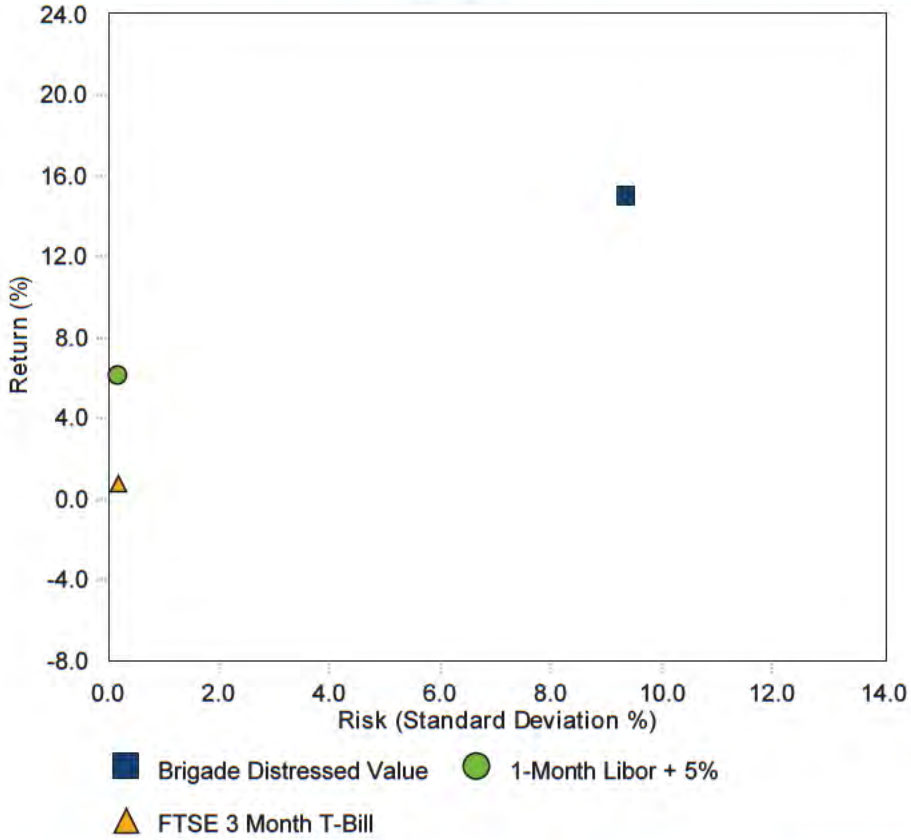
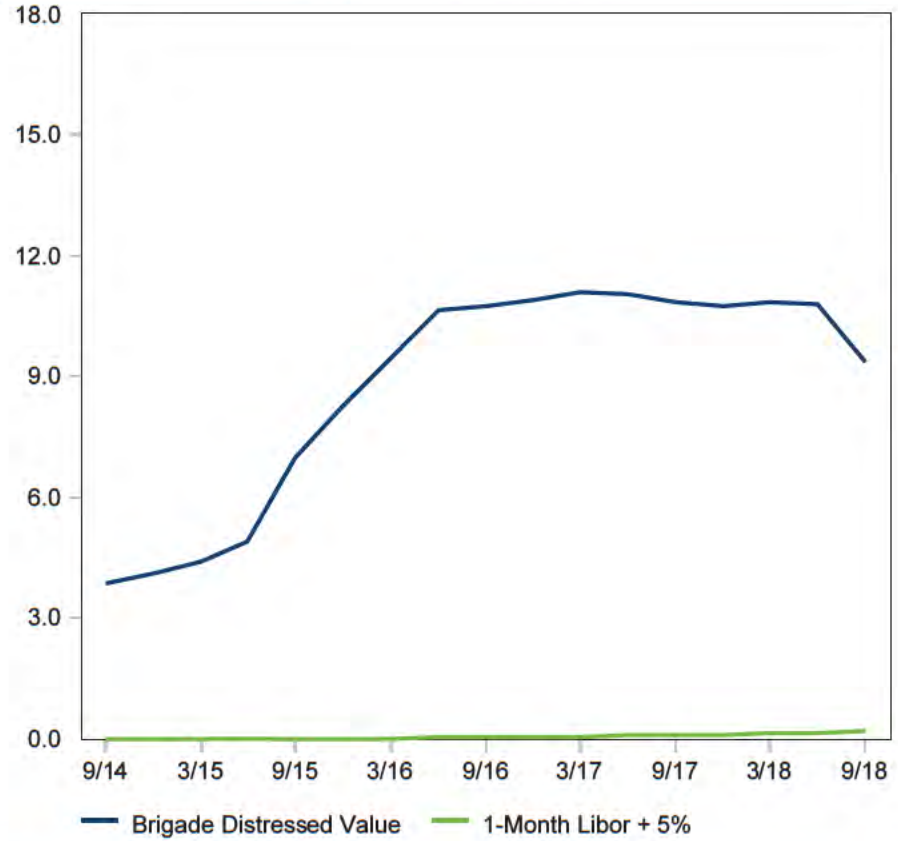
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Brigade Distressed Value	8.52	9.36	0.91	0.00	1.46	8.44	1.07	14.97	9.36	0.02
1-Month Libor + 5%	0.00	0.00	N/A	1.00	254.07	0.00	1.00	6.09	0.18	1.00
FTSE 3 Month T-Bill	-5.13	0.02	-254.07	0.99	N/A	-5.07	1.01	0.80	0.18	0.99

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AON Empower Results®

Risk Statistics

Brigade Distressed Value

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	13.71	14.97	8.37	N/A	8.61	10/01/2011
Standard Deviation	5.91	9.36	9.00	N/A	7.81	
Downside Risk	1.87	4.69	5.49	N/A	4.68	
Downside Semi Deviation	1.79	3.03	11.26	N/A	10.06	
Max Drawdown Recovery Period	4.00	6.00	19.00	N/A	19.00	
Maximum Drawdown	-1.79	-10.59	-23.66	N/A	-23.66	
Maximum Loss Exposure	-0.04	-9.68	-11.15	N/A	-0.02	
Upside Semi Deviation	2.19	10.40	8.75	N/A	7.66	
1-Month Libor + 5%						
Return	6.87	6.09	5.72	5.55	5.58	
Standard Deviation	0.10	0.18	0.19	0.17	0.17	
Downside Risk	0.00	0.00	0.00	0.00	0.00	
Downside Semi Deviation	N/A	N/A	N/A	N/A	N/A	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	0.00	0.00	0.00	0.00	0.00	
Maximum Loss Exposure	N/A	N/A	N/A	N/A	N/A	
Upside Semi Deviation	2.01	1.74	1.63	1.58	1.59	
vs. 1-Month Libor + 5%						
Active Return	6.41	8.52	2.88	N/A	3.14	
Tracking Error	5.87	9.36	8.98	N/A	7.79	
Actual Correlation	0.36	0.02	0.17	N/A	0.15	
Beta	22.04	1.07	8.01	N/A	6.82	
Consistency	50.00	61.11	60.00	N/A	61.90	
Down Market Capture	N/A	N/A	N/A	N/A	N/A	
Down Market Outperformance	N/A	N/A	N/A	N/A	N/A	
Information Ratio	1.09	0.91	0.32	N/A	0.40	
Jensen Alpha	-96.18	2,507.03	-3.96	N/A	70.24	
Up Market Capture	196.17	243.74	151.70	N/A	157.70	
Up Market Outperformance	6.84	8.87	2.65	N/A	3.03	
vs. FTSE 3 Month T-Bill						
Excess Return	11.51	13.65	7.98	N/A	8.22	
Excess Risk	5.88	9.35	8.98	N/A	7.79	
Sharpe Ratio	1.96	1.46	0.89	N/A	1.06	

Calculation based on monthly periodicity.

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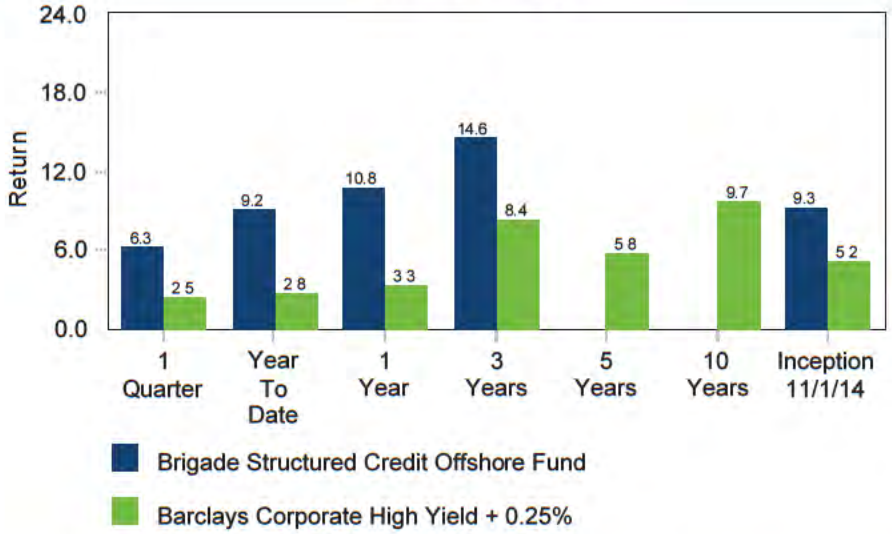
Performance Summary

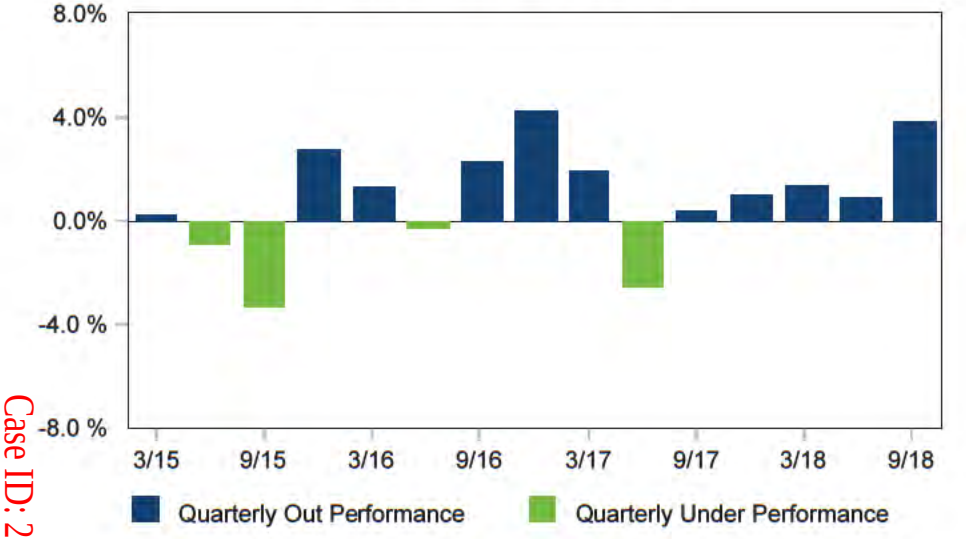
Account Information

Account Name:	Brigade Structured Credit Offshore Fund
Inception Date:	11/01/2014
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Barclays Corporate High Yield + 0.25%
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

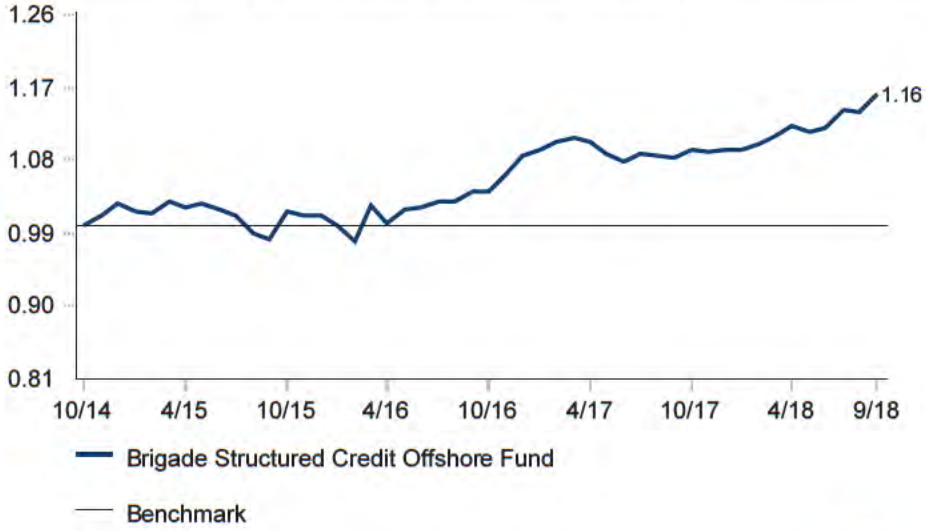
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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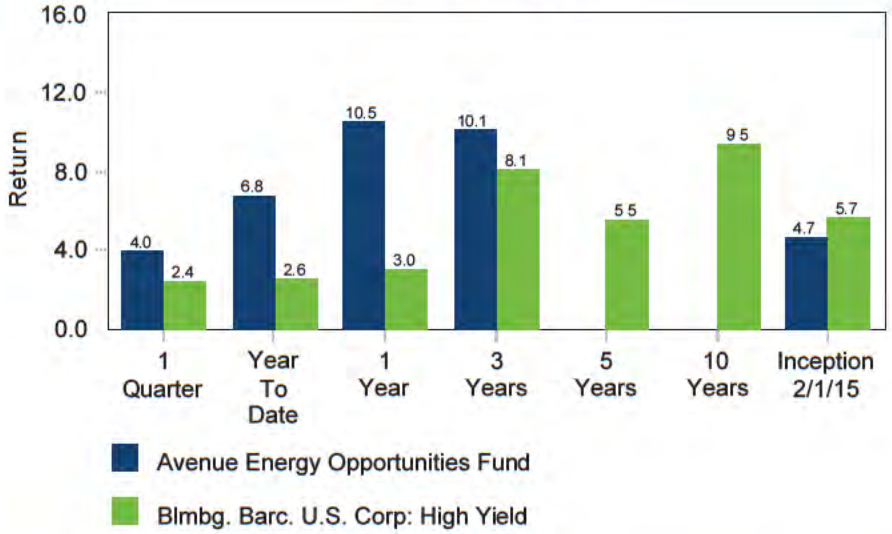
AON Empower Results®

Performance Summary

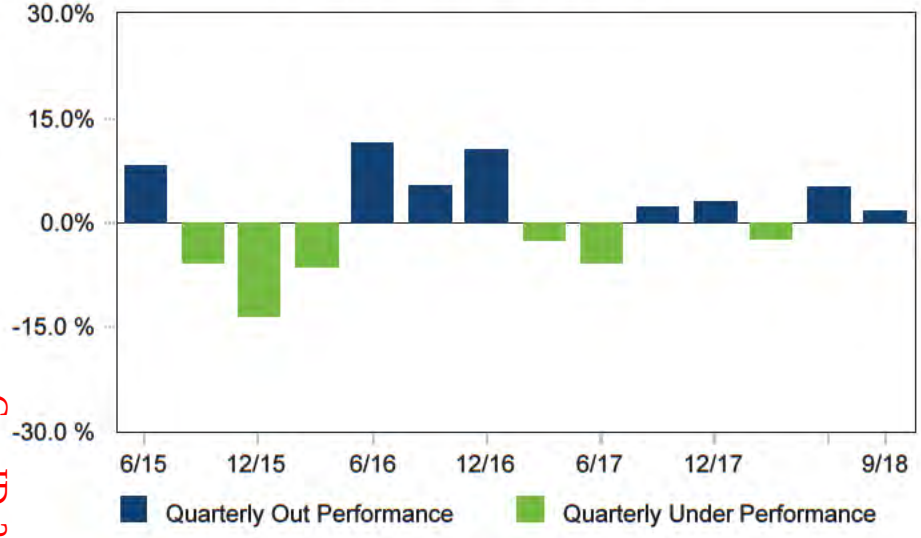
Account Information

Account Name:	Avenue Energy Opportunities Fund
Inception Date:	02/01/2015
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

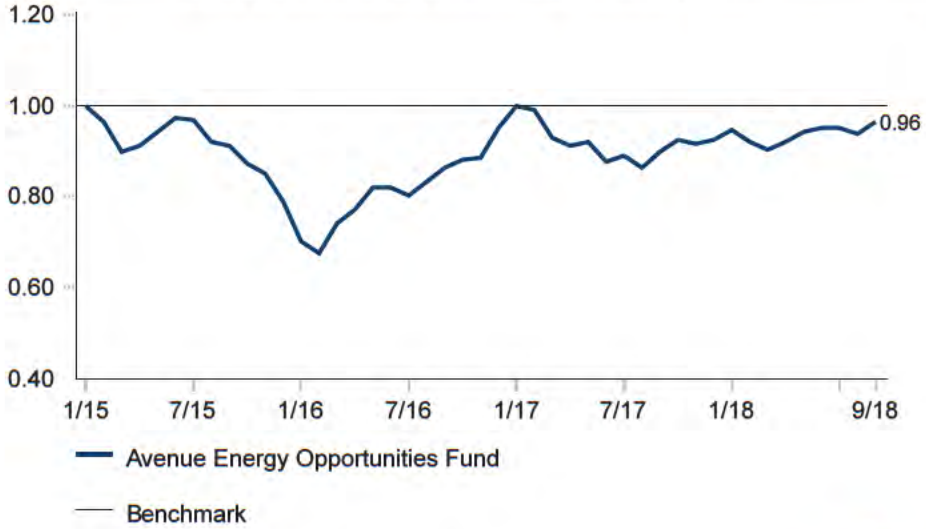
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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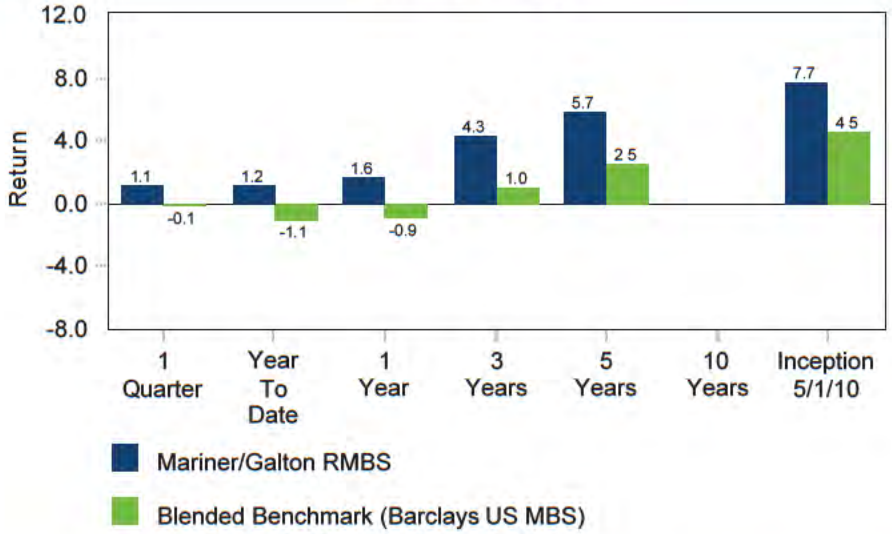
AON Empower Results®

Performance Summary

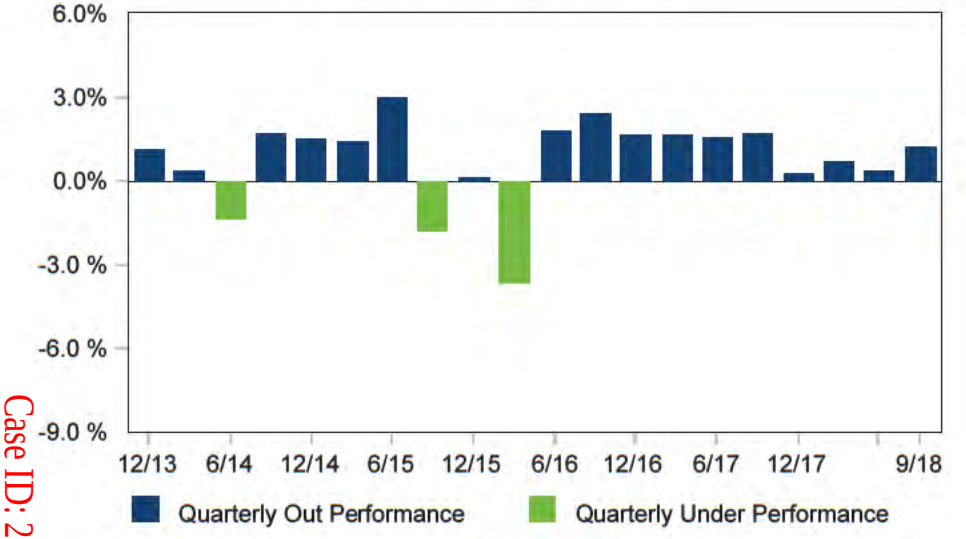
Account Information

Account Name:	Mariner/Galton RMBS
Inception Date:	04/30/2010
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blended Benchmark (Barclays US MBS)
Peer Group:	IM U.S. Mortgage Backed Bonds (SA+CF)

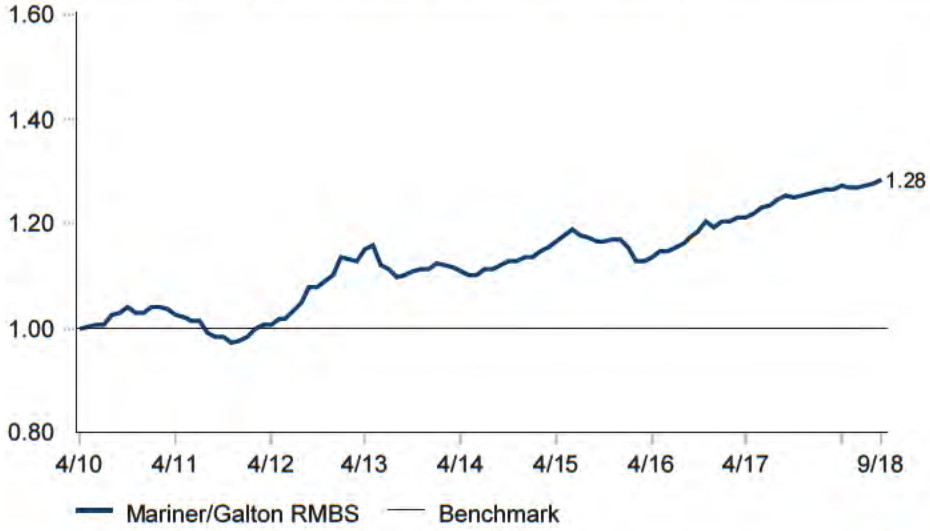
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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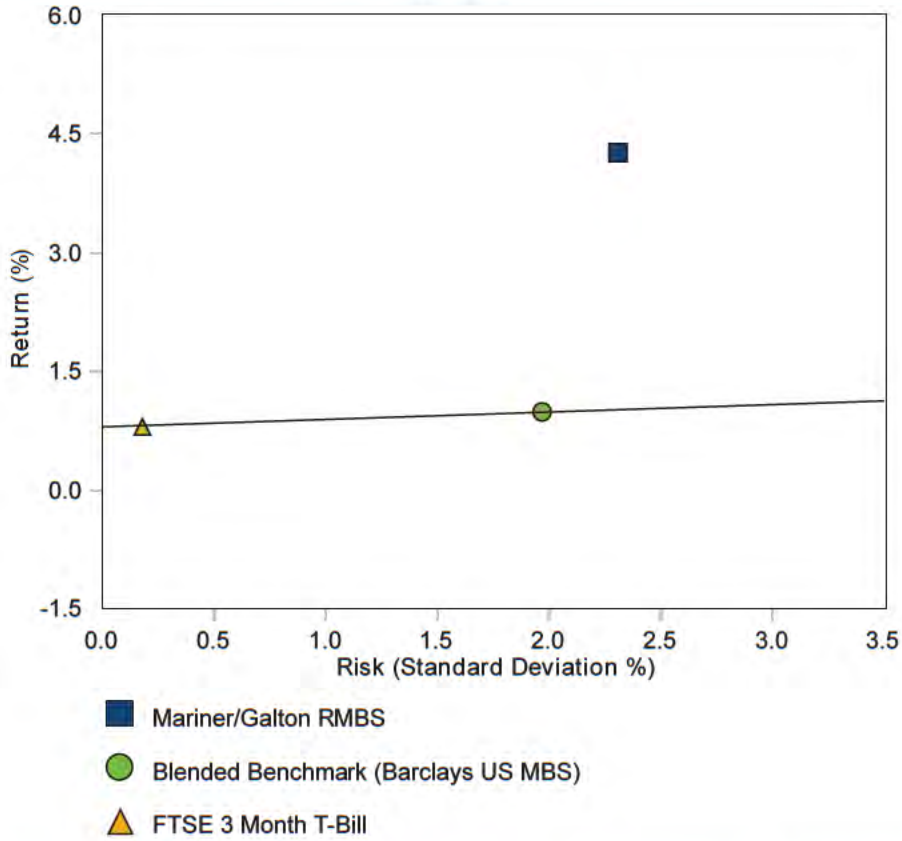
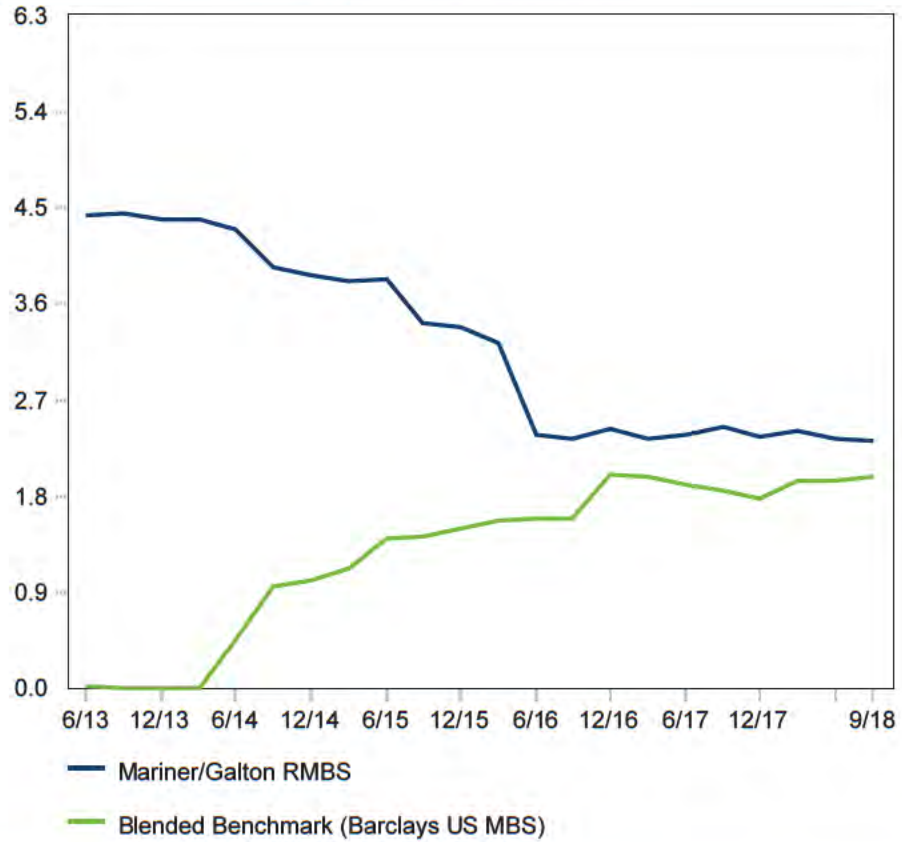
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Mariner/Galton RMBS	3.20	2.48	1.29	0.11	1.46	3.87	0.39	4.25	2.31	0.34
Blended Benchmark (Barclays US MBS)	0.00	0.00	N/A	1.00	0.10	0.00	1.00	0.98	1.97	1.00
FTSE 3 Month T-Bill	-0.19	2.00	-0.10	0.01	N/A	0.81	-0.01	0.80	0.18	-0.11

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AON Empower Results®

Risk Statistics

Mariner/Galton RMBS

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.59	4.25	5.74	N/A	7.66	05/01/2010
Standard Deviation	1.38	2.31	2.19	N/A	3.24	
Downside Risk	0.79	1.31	1.02	N/A	1.42	
Downside Semi Deviation	0.44	0.75	2.27	N/A	3.09	
Max Drawdown Recovery Period	5.00	7.00	11.00	N/A	7.00	
Maximum Drawdown	-0.95	-2.07	-2.38	N/A	-3.40	
Maximum Loss Exposure	-0.53	-1.94	N/A	N/A	N/A	
Upside Semi Deviation	0.45	2.68	2.87	N/A	4.11	
Blended Benchmark (Barclays US MBS)						
Return	-0.92	0.98	2.53	N/A	4.52	
Standard Deviation	2.03	1.97	1.93	N/A	1.63	
Downside Risk	1.64	1.40	1.17	N/A	0.90	
Downside Semi Deviation	0.64	2.21	2.05	N/A	2.05	
Max Drawdown Recovery Period	N/A	11.00	11.00	N/A	11.00	
Maximum Drawdown	-1.82	-2.01	-2.01	N/A	-2.01	
Maximum Loss Exposure	-1.67	-0.10	N/A	N/A	N/A	
Upside Semi Deviation	0.59	1.88	2.10	N/A	2.10	
vs. Blended Benchmark (Barclays US MBS)						
Active Return	2.49	3.20	3.10	N/A	3.02	
Tracking Error	0.99	2.48	2.42	N/A	3.28	
Actual Correlation	0.90	0.34	0.31	N/A	0.23	
Beta	0.61	0.39	0.35	N/A	0.46	
Consistency	66.67	69.44	63.33	N/A	62.38	
Down Market Capture	18.08	-11.88	-51.28	N/A	-51.28	
Down Market Outperformance	2.60	5.30	6.94	N/A	6.94	
Information Ratio	2.51	1.29	1.28	N/A	0.92	
Jensen Alpha	1.52	3.37	4.44	N/A	5.25	
Up Market Capture	93.55	131.74	118.79	N/A	130.44	
Up Market Outperformance	-0.15	1.70	1.20	N/A	2.12	
vs. FTSE 3 Month T-Bill						
Excess Return	0.02	3.40	5.13	N/A	7.13	
Excess Risk	1.34	2.32	2.22	N/A	3.27	
Sharpe Ratio	0.02	1.46	2.31	N/A	2.18	

Calculation based on monthly periodicity.

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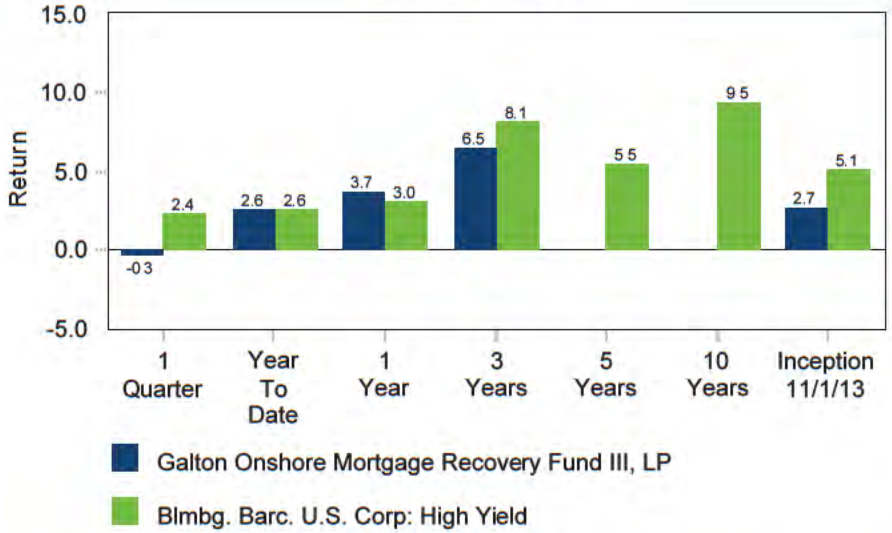
Performance Summary

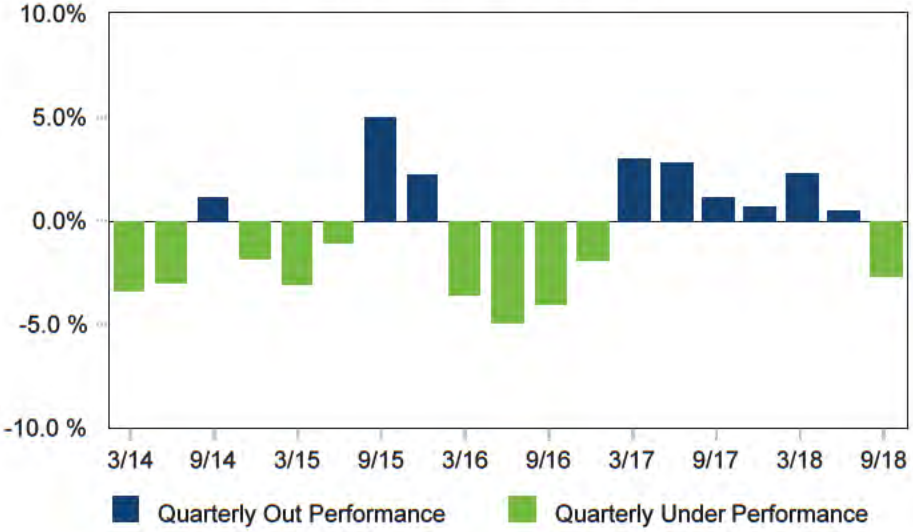
Account Information

Account Name:	Galton Onshore Mortgage Recovery Fund III, LP
Inception Date:	11/01/2013
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	

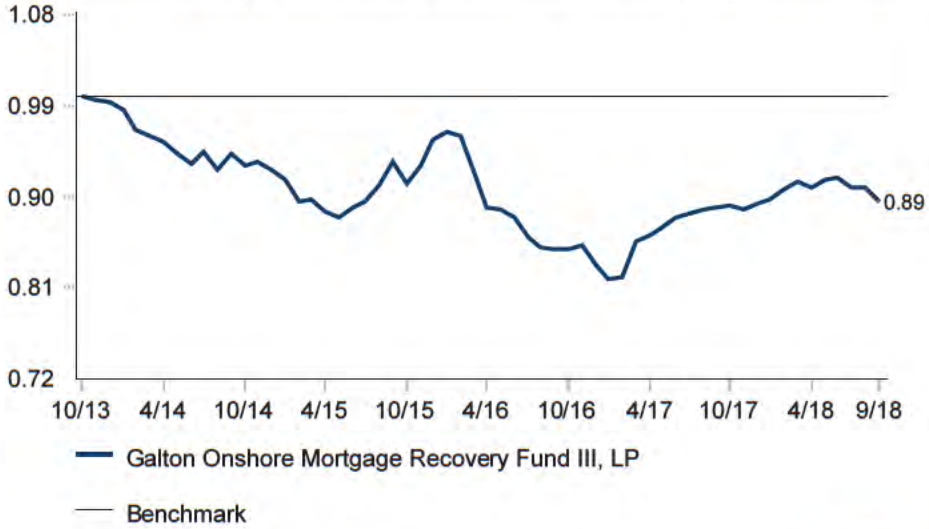
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Galton Onshore Mortgage Recovery Fund III, LP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	3.75	6.55	N/A	N/A	2.75	11/01/2013
Standard Deviation	2.23	3.16	N/A	N/A	2.99	
Downside Risk	1.28	0.99	N/A	N/A	1.42	
Downside Semi Deviation	1.23	0.69	N/A	N/A	2.35	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	37.00	
Maximum Drawdown	-1.01	-1.01	N/A	N/A	-6.55	
Maximum Loss Exposure	N/A	-0.79	N/A	N/A	-3.33	
Upside Semi Deviation	0.68	3.96	N/A	N/A	3.50	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.10	
Standard Deviation	2.00	4.93	4.95	10.05	4.91	
Downside Risk	1.12	2.29	2.73	6.68	2.76	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.95	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-2.69	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.27	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	0.68	-1.57	N/A	N/A	-2.35	
Tracking Error	2.89	5.69	N/A	N/A	5.25	
Actual Correlation	0.07	0.06	N/A	N/A	0.19	
Beta	0.07	0.04	N/A	N/A	0.11	
Consistency	58.33	55.56	N/A	N/A	47.46	
Down Market Capture	-35.06	-48.61	N/A	N/A	-3.39	
Down Market Outperformance	2.33	12.80	N/A	N/A	13.12	
Information Ratio	0.24	-0.28	N/A	N/A	-0.45	
Jensen Alpha	2.07	5.41	N/A	N/A	1.78	
Up Market Capture	65.10	45.59	N/A	N/A	27.60	
Up Market Outperformance	-1.73	-9.05	N/A	N/A	-10.92	
vs. FTSE 3 Month T-Bill						
Excess Return	2.15	5.61	N/A	N/A	2.26	
Excess Risk	2.25	3.17	N/A	N/A	2.95	
Sharpe Ratio	0.95	1.77	N/A	N/A	0.77	

Calculation based on monthly periodicity.

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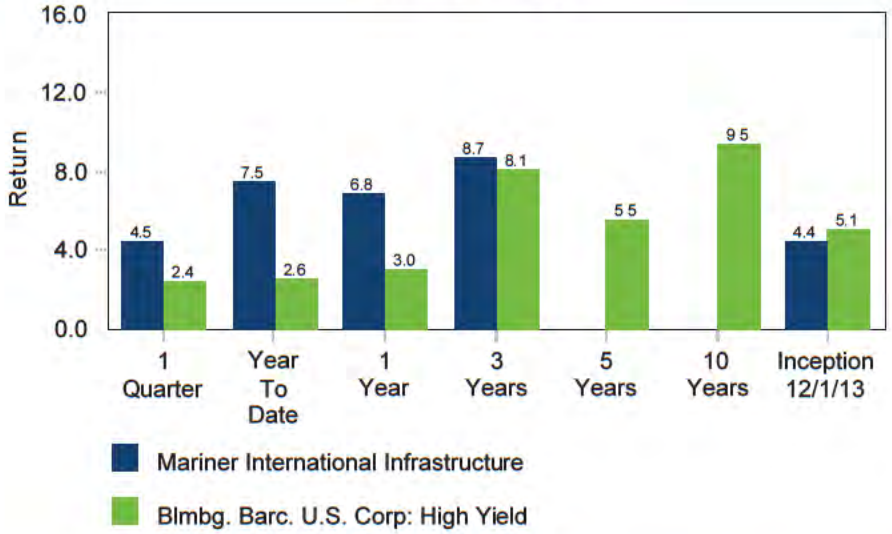
Performance Summary

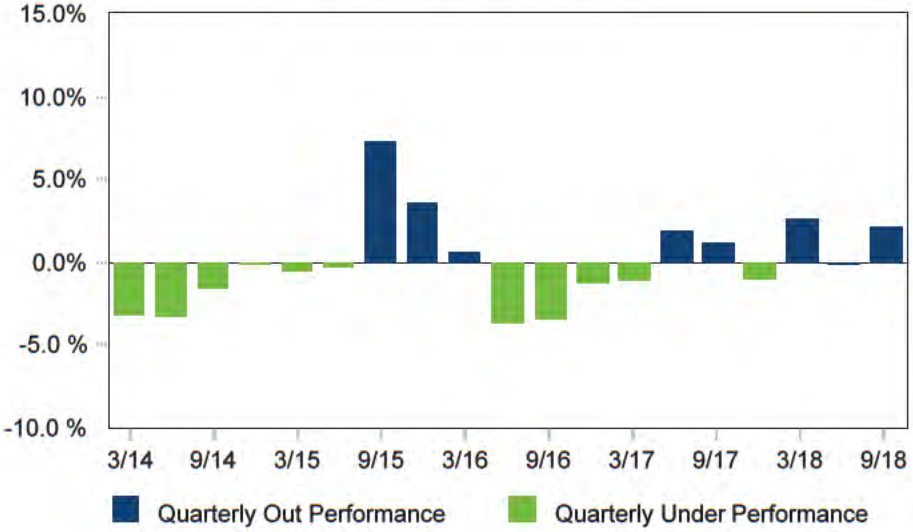
Account Information

Account Name:	Mariner International Infrastructure
Inception Date:	12/01/2013
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

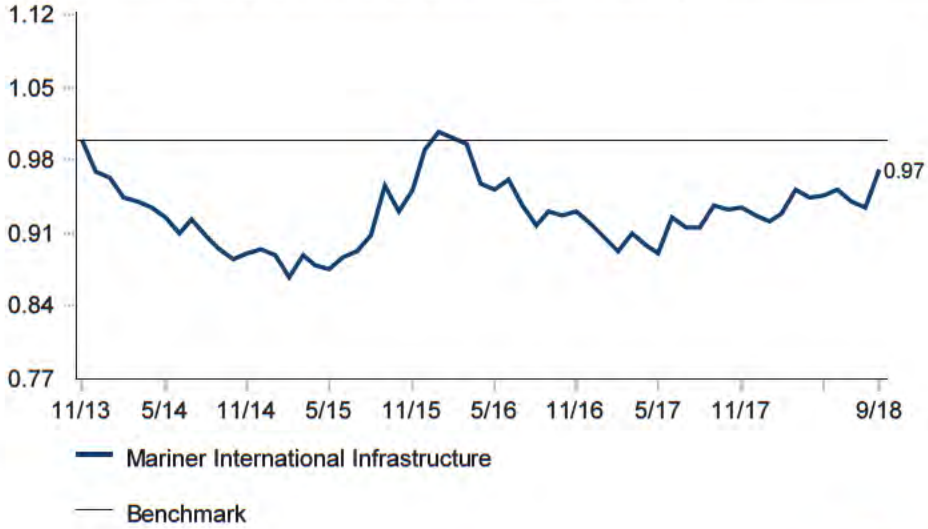
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Mariner International Infrastructure

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	6.84	8.72	N/A	N/A	4.44	12/01/2013
Standard Deviation	4.79	4.60	N/A	N/A	4.64	
Downside Risk	0.60	0.34	N/A	N/A	2.10	
Downside Semi Deviation	N/A	N/A	N/A	N/A	1.87	
Max Drawdown Recovery Period	4.00	4.00	N/A	N/A	27.00	
Maximum Drawdown	-0.58	-0.58	N/A	N/A	-7.93	
Maximum Loss Exposure	-0.58	N/A	N/A	N/A	-7.34	
Upside Semi Deviation	1.56	5.29	N/A	N/A	4.63	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.09	
Standard Deviation	2.00	4.93	4.95	10.05	4.95	
Downside Risk	1.12	2.29	2.73	6.68	2.78	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.95	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-3.18	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.33	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	3.71	0.51	N/A	N/A	-0.63	
Tracking Error	5.19	6.45	N/A	N/A	6.37	
Actual Correlation	0.00	0.09	N/A	N/A	0.12	
Beta	0.00	0.08	N/A	N/A	0.11	
Consistency	50.00	44.44	N/A	N/A	41.38	
Down Market Capture	-101.46	-54.98	N/A	N/A	-20.93	
Down Market Outperformance	3.49	13.45	N/A	N/A	15.50	
Information Ratio	0.72	0.08	N/A	N/A	-0.10	
Jensen Alpha	5.43	7.34	N/A	N/A	3.53	
Up Market Capture	104.53	62.94	N/A	N/A	37.12	
Up Market Outperformance	0.13	-6.32	N/A	N/A	-9.78	
vs. FTSE 3 Month T-Bill						
Excess Return	5.18	7.69	N/A	N/A	3.95	
Excess Risk	4.74	4.58	N/A	N/A	4.60	
Sharpe Ratio	1.09	1.68	N/A	N/A	0.86	

Calculation based on monthly periodicity.

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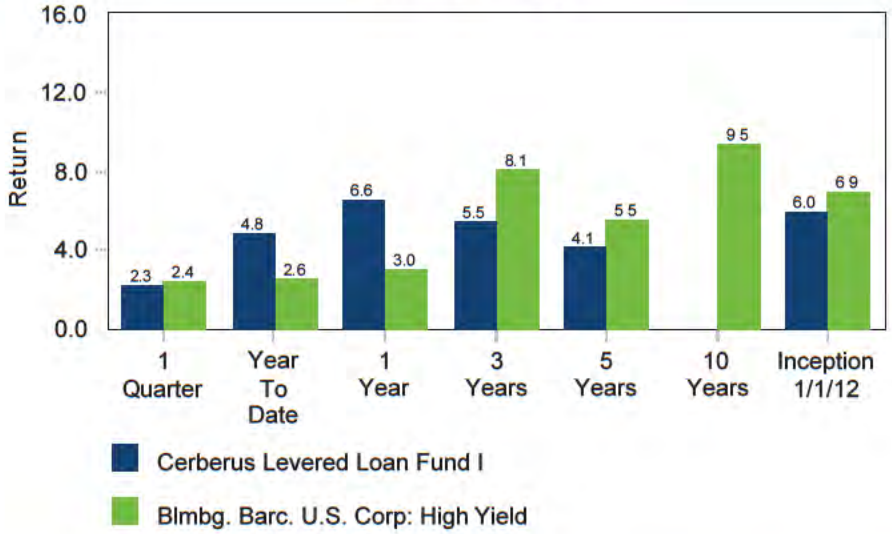
Performance Summary

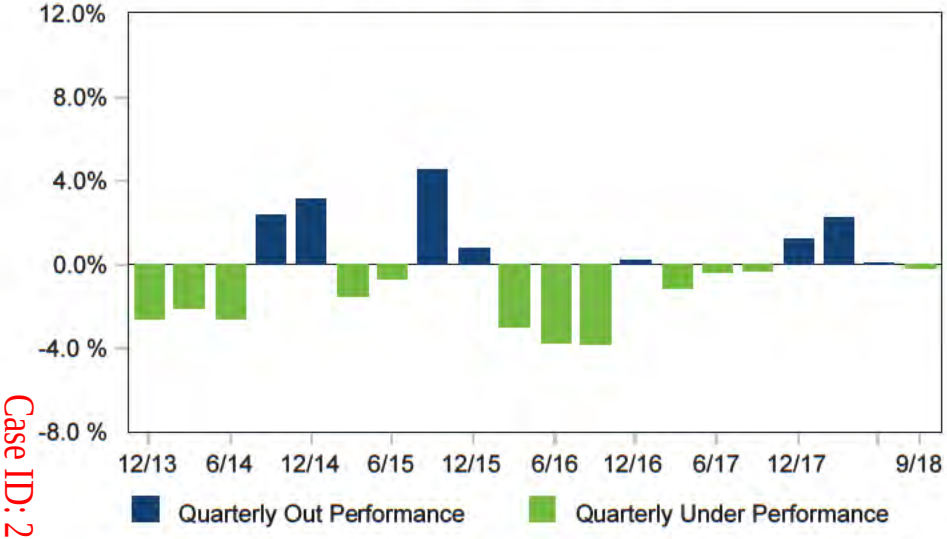
Account Information

Account Name:	Cerberus Levered Loan Fund I
Inception Date:	12/31/2011
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

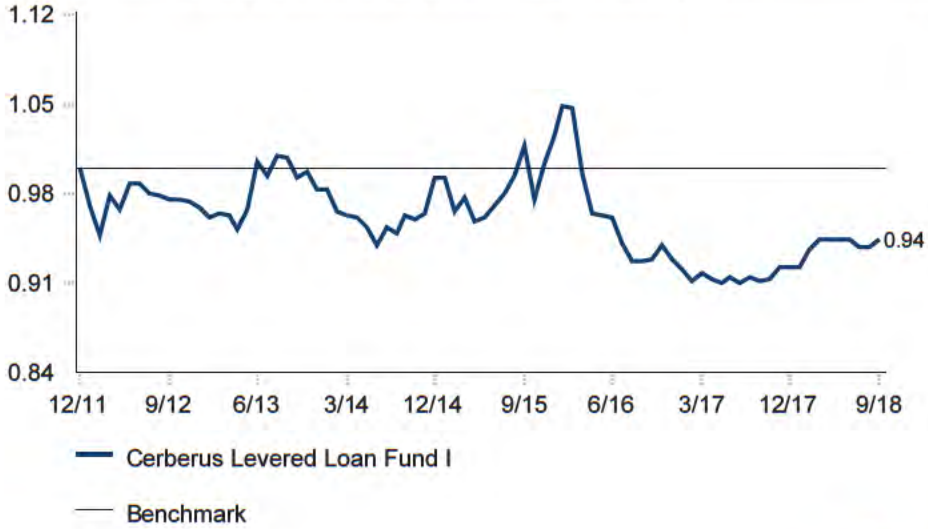
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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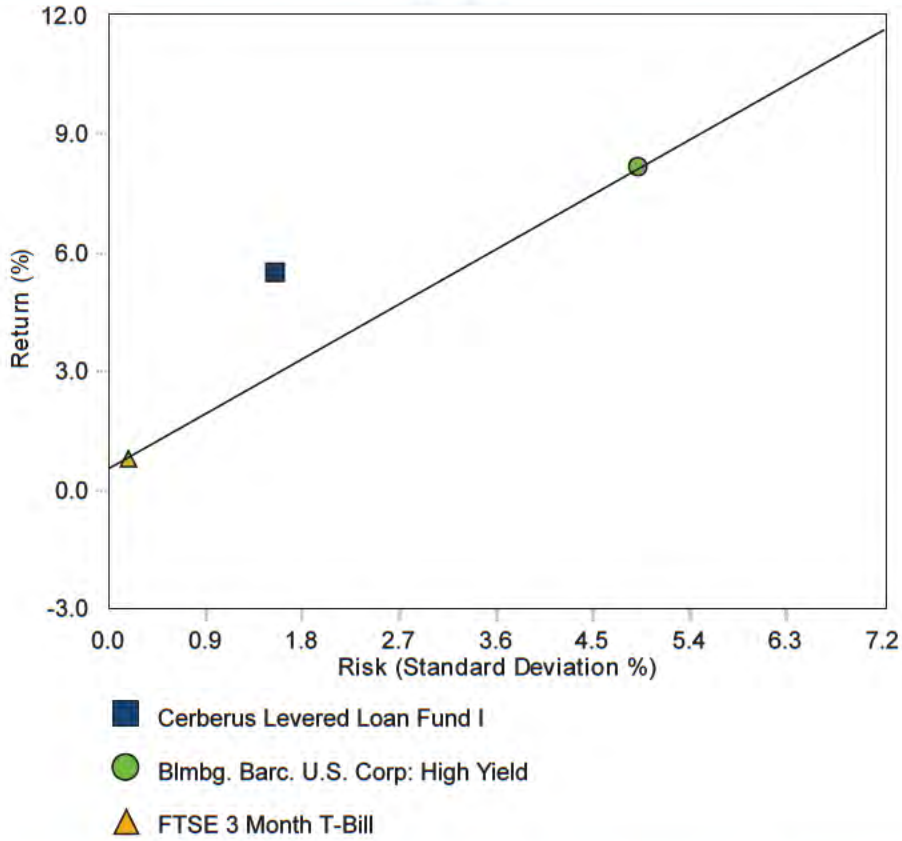
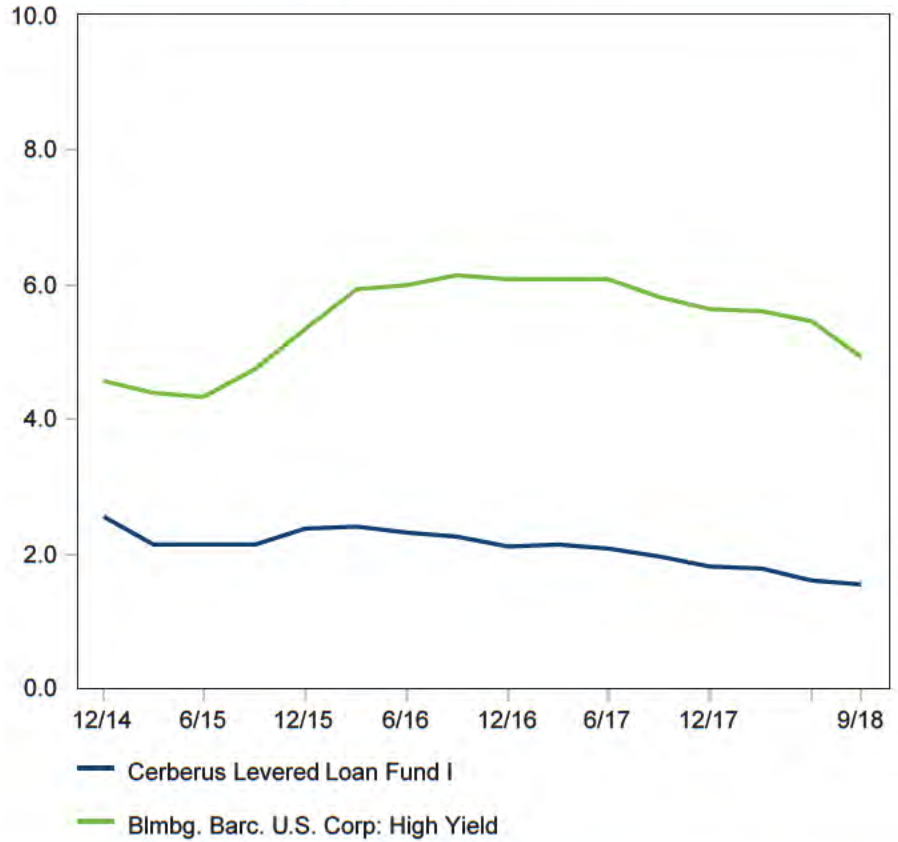
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Cerberus Levered Loan Fund I	-2.63	5.48	-0.48	0.05	3.01	6.06	-0.07	5.47	1.55	-0.22
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.45	0.00	1.00	8.15	4.93	1.00
FTSE 3 Month T-Bill	-7.17	4.96	-1.45	0.02	N/A	0.84	0.00	0.80	0.18	-0.13

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Risk Statistics

Cerberus Levered Loan Fund I

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	6.63	5.47	4.15	N/A	6.02	01/01/2012
Standard Deviation	0.95	1.55	1.88	N/A	2.18	
Downside Risk	0.00	0.96	1.05	N/A	0.90	
Downside Semi Deviation	N/A	1.17	2.32	N/A	2.32	
Max Drawdown Recovery Period	N/A	7.00	16.00	N/A	16.00	
Maximum Drawdown	0.00	-1.47	-2.44	N/A	-2.44	
Maximum Loss Exposure	N/A	-1.47	N/A	N/A	N/A	
Upside Semi Deviation	2.16	2.07	2.23	N/A	2.86	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	6.94	
Standard Deviation	2.00	4.93	4.95	10.05	4.88	
Downside Risk	1.12	2.29	2.73	6.68	2.63	
Downside Semi Deviation	0.62	1.30	4.95	12.88	4.90	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.45	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	3.42	-2.63	-1.44	N/A	-0.96	
Tracking Error	2.11	5.48	5.21	N/A	5.30	
Actual Correlation	0.12	-0.22	0.05	N/A	0.02	
Beta	0.06	-0.07	0.02	N/A	0.01	
Consistency	66.67	44.44	45.00	N/A	43.21	
Down Market Capture	-104.60	-47.09	-21.47	N/A	-42.78	
Down Market Outperformance	3.55	12.74	15.66	N/A	18.39	
Information Ratio	1.62	-0.48	-0.28	N/A	-0.18	
Jensen Alpha	4.93	5.13	3.58	N/A	5.57	
Up Market Capture	97.10	36.31	32.32	N/A	38.89	
Up Market Outperformance	-0.14	-10.51	-10.54	N/A	-10.30	
vs. FTSE 3 Month T-Bill						
Excess Return	4.88	4.55	3.60	N/A	5.50	
Excess Risk	0.95	1.51	1.84	N/A	2.18	
Sharpe Ratio	5.11	3.01	1.95	N/A	2.53	

Calculation based on monthly periodicity.

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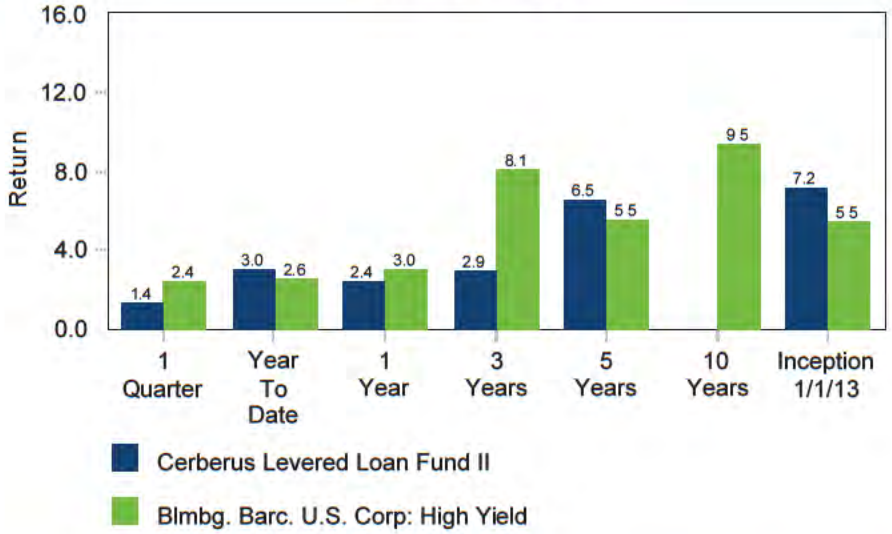
Performance Summary

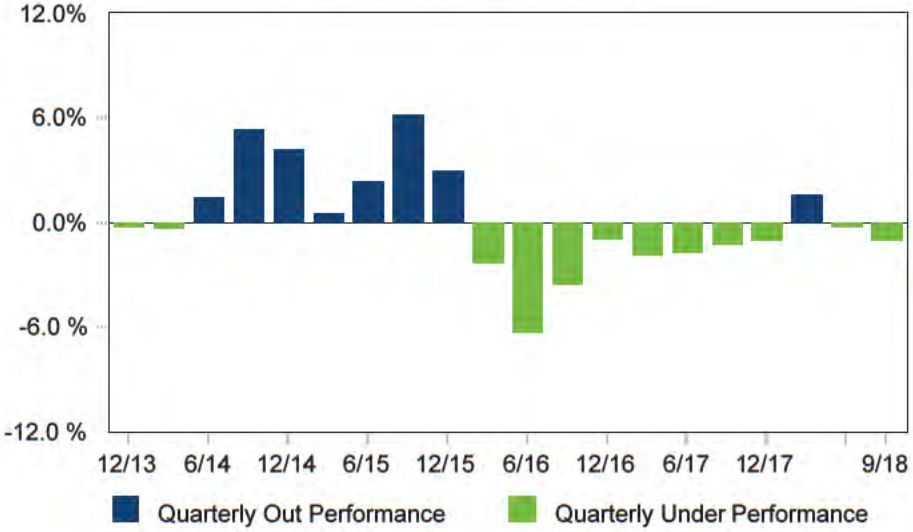
Account Information

Account Name:	Cerberus Levered Loan Fund II
Inception Date:	12/31/2012
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

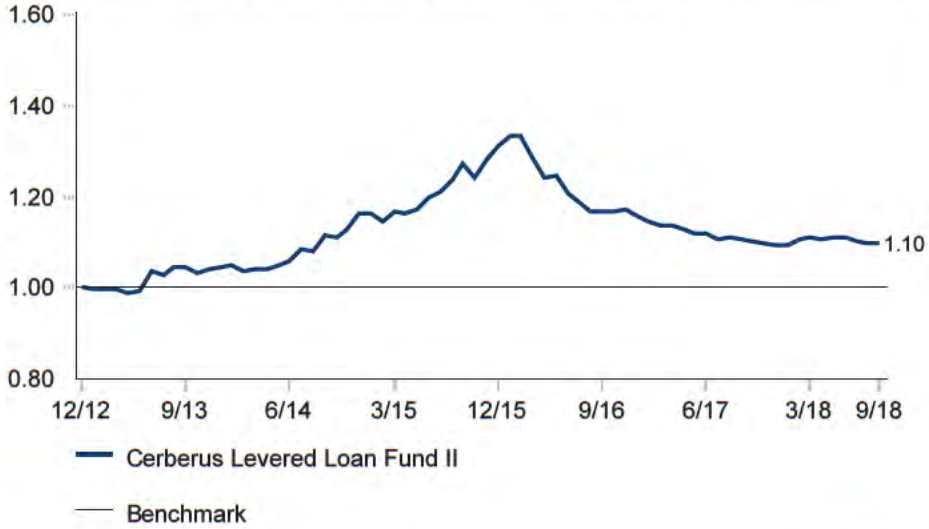
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Cerberus Levered Loan Fund II

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	2.40	2.91	6.55	N/A	7.19	01/01/2013
Standard Deviation	1.15	1.84	2.02	N/A	1.99	
Downside Risk	0.60	1.37	1.06	N/A	0.98	
Downside Semi Deviation	0.41	1.05	1.05	N/A	1.05	
Max Drawdown Recovery Period	4.00	6.00	6.00	N/A	6.00	
Maximum Drawdown	-0.74	-2.27	-2.27	N/A	-2.27	
Maximum Loss Exposure	-0.60	N/A	N/A	N/A	N/A	
Upside Semi Deviation	0.41	1.64	2.67	N/A	2.79	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.47	
Standard Deviation	2.00	4.93	4.95	10.05	4.93	
Downside Risk	1.12	2.29	2.73	6.68	2.80	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.30	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-0.65	-5.09	0.86	N/A	1.53	
Tracking Error	1.90	4.96	5.27	N/A	5.26	
Actual Correlation	0.37	0.17	0.04	N/A	0.03	
Beta	0.21	0.06	0.02	N/A	0.01	
Consistency	25.00	30.56	48.33	N/A	49.28	
Down Market Capture	-6.53	-13.20	-42.50	N/A	-46.43	
Down Market Outperformance	1.84	9.68	18.62	N/A	19.50	
Information Ratio	-0.34	-1.03	0.16	N/A	0.29	
Jensen Alpha	0.55	1.60	5.93	N/A	6.66	
Up Market Capture	47.51	22.89	46.54	N/A	50.32	
Up Market Outperformance	-2.58	-12.63	-8.40	N/A	-7.89	
vs. FTSE 3 Month T-Bill						
Excess Return	0.81	2.09	5.89	N/A	6.55	
Excess Risk	1.10	1.85	2.09	N/A	2.06	
Sharpe Ratio	0.74	1.13	2.82	N/A	3.18	

Calculation based on monthly periodicity.

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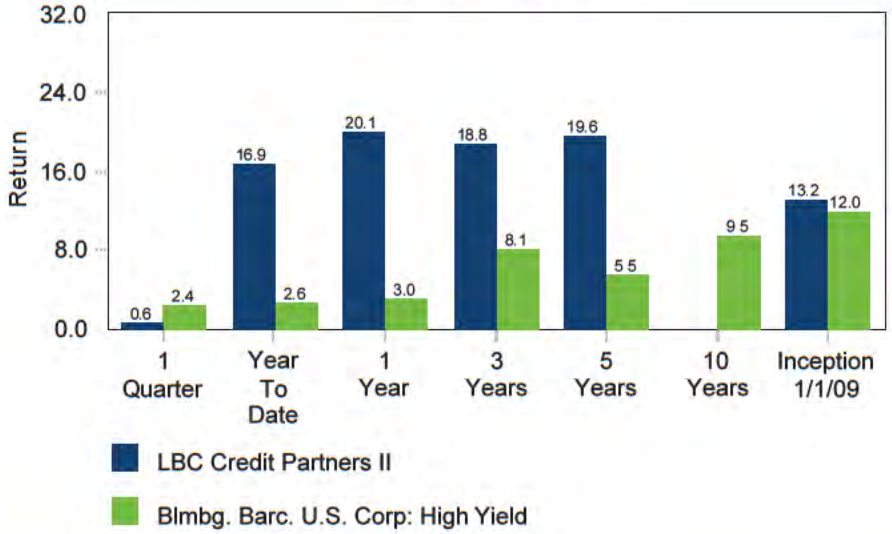
Performance Summary

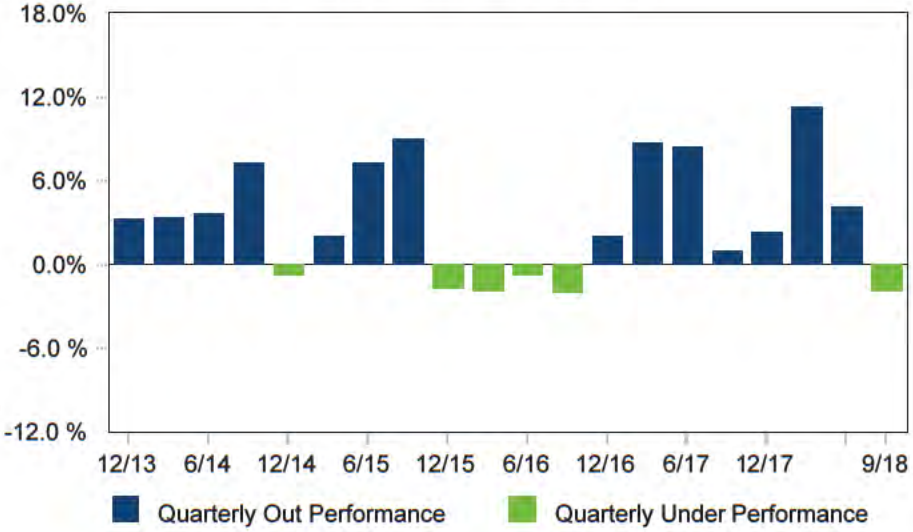
Account Information

Account Name:	LBC Credit Partners II
Inception Date:	12/31/2008
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

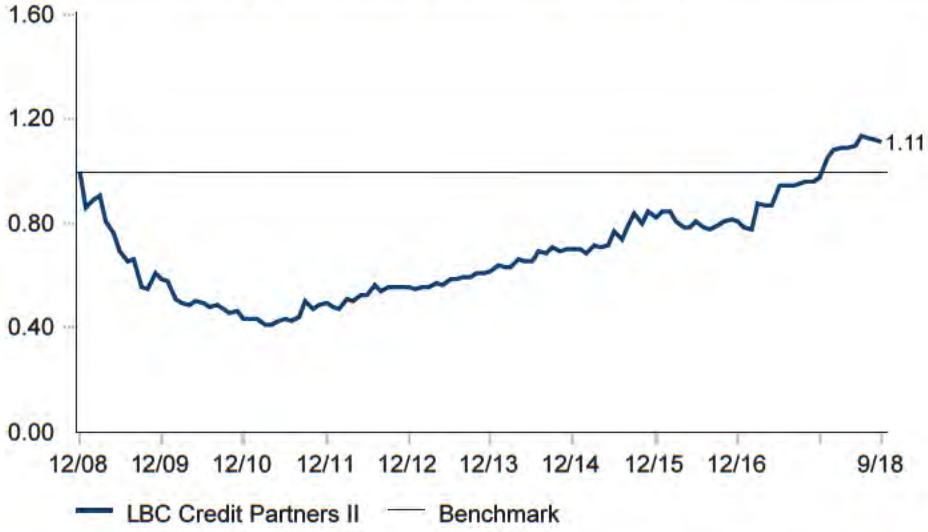
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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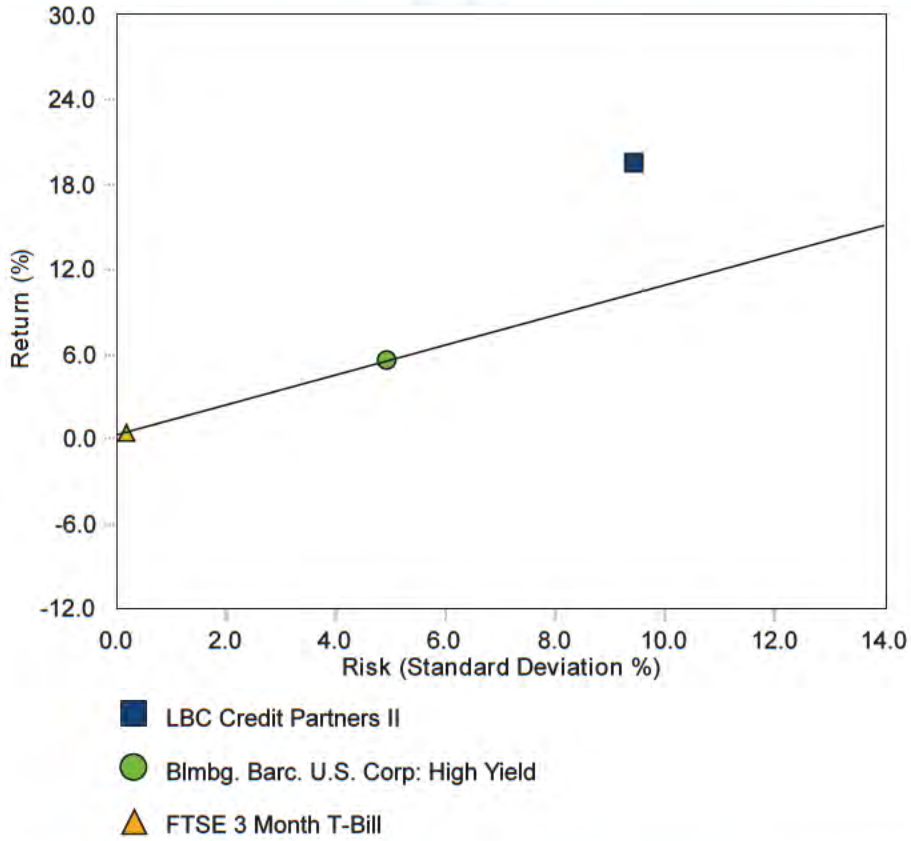
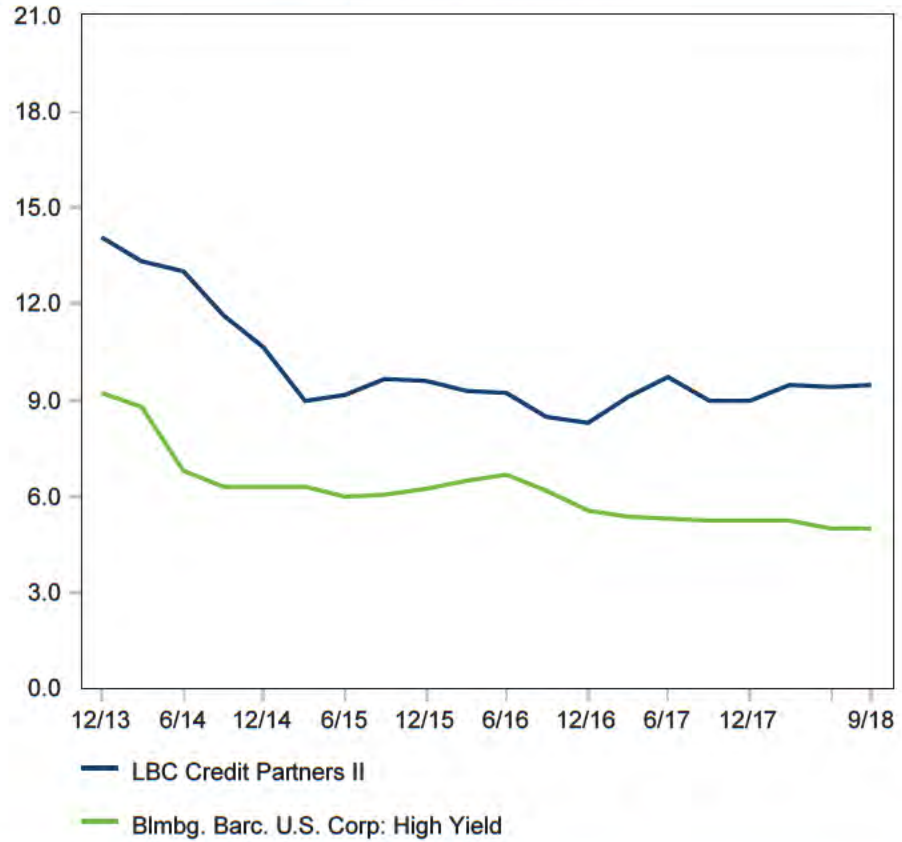
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
LBC Credit Partners II	12.93	11.18	1.16	0.01	1.90	21.61	-0.23	19.60	9.44	-0.12
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.02	0.00	1.00	5.54	4.95	1.00
FTSE 3 Month T-Bill	-5.03	4.95	-1.02	0.00	N/A	0.48	0.00	0.49	0.18	0.03

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Risk Statistics

LBC Credit Partners II

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	20.07	18.82	19.60	N/A	13.19	01/01/2009
Standard Deviation	7.94	10.33	9.44	N/A	12.13	
Downside Risk	0.40	2.95	3.08	N/A	7.05	
Downside Semi Deviation	N/A	2.91	2.79	N/A	18.99	
Max Drawdown Recovery Period	N/A	7.00	7.00	N/A	38.00	
Maximum Drawdown	-0.38	-4.53	-4.53	N/A	-21.58	
Maximum Loss Exposure	N/A	-3.74	N/A	N/A	-11.45	
Upside Semi Deviation	2.95	11.89	11.10	N/A	11.46	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	11.96	
Standard Deviation	2.00	4.93	4.95	10.05	7.67	
Downside Risk	1.12	2.29	2.73	6.68	3.25	
Downside Semi Deviation	0.62	1.30	4.95	12.88	6.40	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	9.02	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	15.68	9.88	12.93	N/A	1.55	
Tracking Error	7.95	11.95	11.18	N/A	15.69	
Actual Correlation	0.12	-0.12	-0.12	N/A	-0.22	
Beta	0.47	-0.24	-0.23	N/A	-0.34	
Consistency	75.00	55.56	58.33	N/A	49.57	
Down Market Capture	-179.04	-174.19	-148.27	N/A	-118.67	
Down Market Outperformance	4.86	24.12	33.79	N/A	37.96	
Information Ratio	1.97	0.83	1.16	N/A	0.10	
Jensen Alpha	17.66	20.47	20.91	N/A	18.10	
Up Market Capture	327.52	116.67	123.58	N/A	47.53	
Up Market Outperformance	11.56	2.61	3.67	N/A	-14.01	
vs. FTSE 3 Month T-Bill						
Excess Return	17.14	17.06	17.97	N/A	12.89	
Excess Risk	7.96	10.31	9.44	N/A	12.12	
Sharpe Ratio	2.15	1.65	1.90	N/A	1.06	

Calculation based on monthly periodicity.

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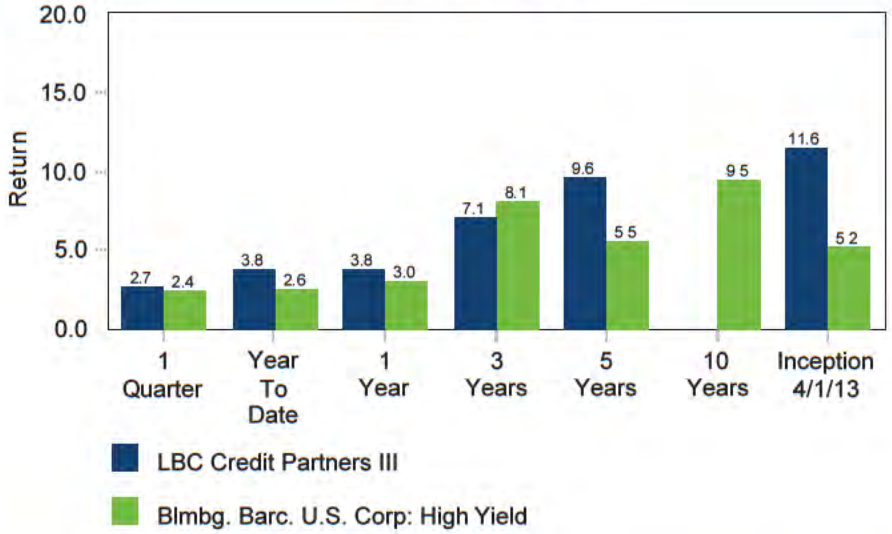
Performance Summary

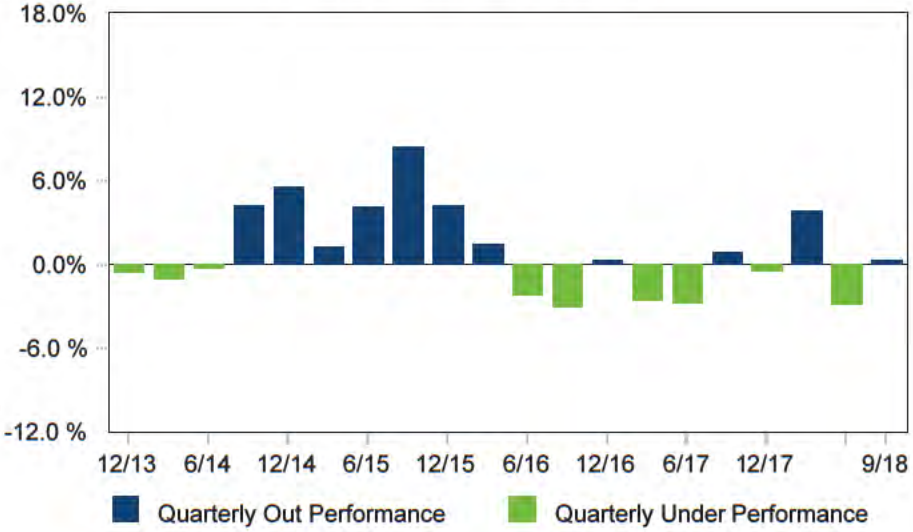
Account Information

Account Name:	LBC Credit Partners III
Inception Date:	03/31/2013
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

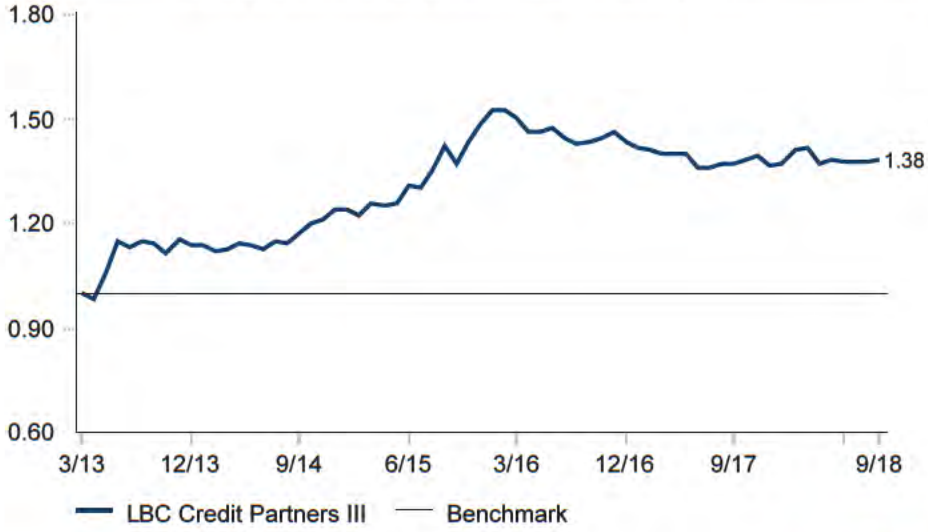
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

LBC Credit Partners III

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	3.85	7.13	9.63	N/A	11.56	04/01/2013
Standard Deviation	4.60	4.07	4.18	N/A	5.20	
Downside Risk	3.47	2.56	2.08	N/A	1.98	
Downside Semi Deviation	3.32	2.19	1.74	N/A	1.74	
Max Drawdown Recovery Period	6.00	6.00	6.00	N/A	6.00	
Maximum Drawdown	-2.89	-2.89	-2.89	N/A	-2.89	
Maximum Loss Exposure	N/A	-1.00	N/A	N/A	N/A	
Upside Semi Deviation	1.03	4.07	4.87	N/A	6.19	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	5.18	
Standard Deviation	2.00	4.93	4.95	10.05	5.02	
Downside Risk	1.12	2.29	2.73	6.68	2.86	
Downside Semi Deviation	0.62	1.30	4.95	12.88	5.03	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-1.44	
Upside Semi Deviation	0.68	5.86	5.38	9.42	5.40	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	0.85	-0.98	3.79	N/A	5.94	
Tracking Error	5.46	6.25	6.73	N/A	7.97	
Actual Correlation	-0.26	0.04	-0.08	N/A	-0.22	
Beta	-0.59	0.04	-0.07	N/A	-0.23	
Consistency	66.67	50.00	53.33	N/A	53.03	
Down Market Capture	-204.74	-96.89	-90.68	N/A	-129.55	
Down Market Outperformance	5.32	17.35	25.64	N/A	32.07	
Information Ratio	0.16	-0.16	0.56	N/A	0.74	
Jensen Alpha	3.31	6.00	9.52	N/A	12.34	
Up Market Capture	6.78	37.95	55.48	N/A	53.09	
Up Market Outperformance	-4.61	-10.33	-7.11	N/A	-7.65	
vs. FTSE 3 Month T-Bill						
Excess Return	2.32	6.19	8.83	N/A	10.67	
Excess Risk	4.59	4.11	4.22	N/A	5.24	
Sharpe Ratio	0.50	1.51	2.09	N/A	2.04	

Calculation based on monthly periodicity.

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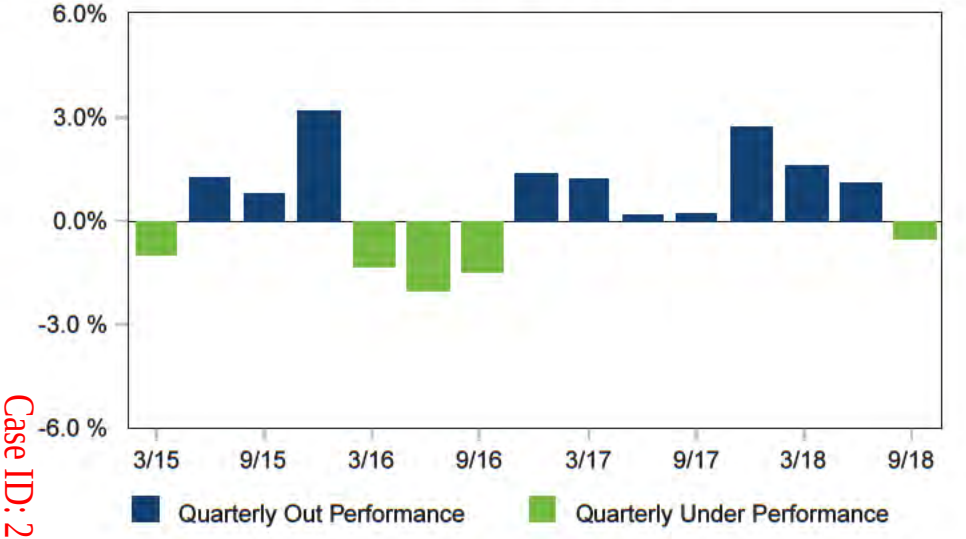
Performance Summary

Account Information

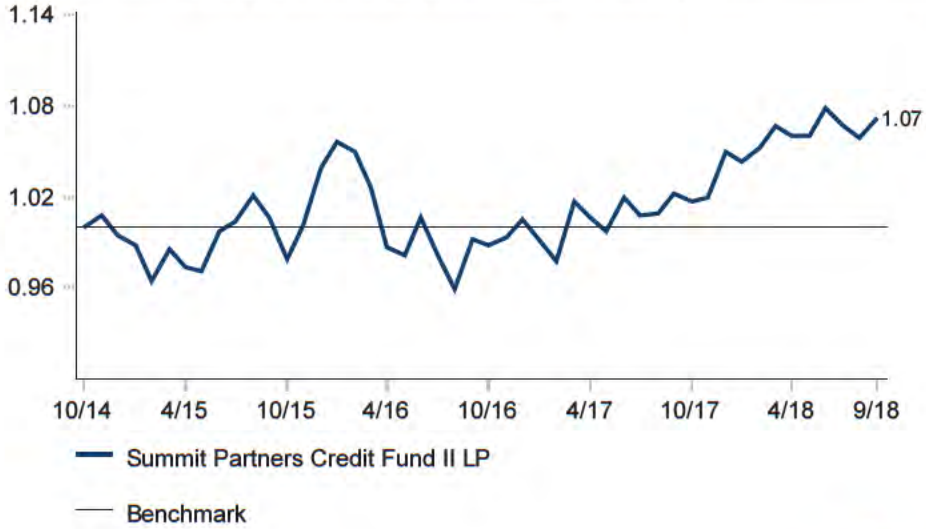
Account Name:	Summit Partners Credit Fund II LP
Inception Date:	11/01/2014
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

Return Summary

Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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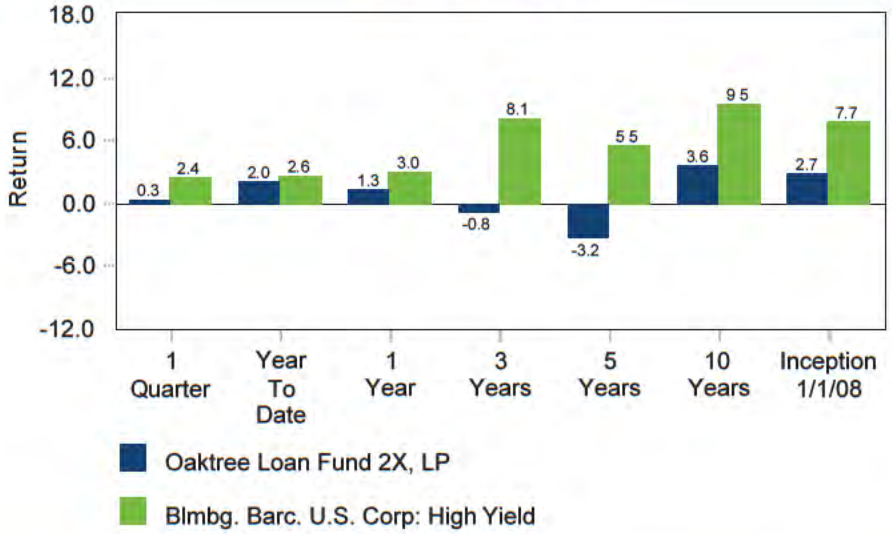
AON Empower Results®

Performance Summary

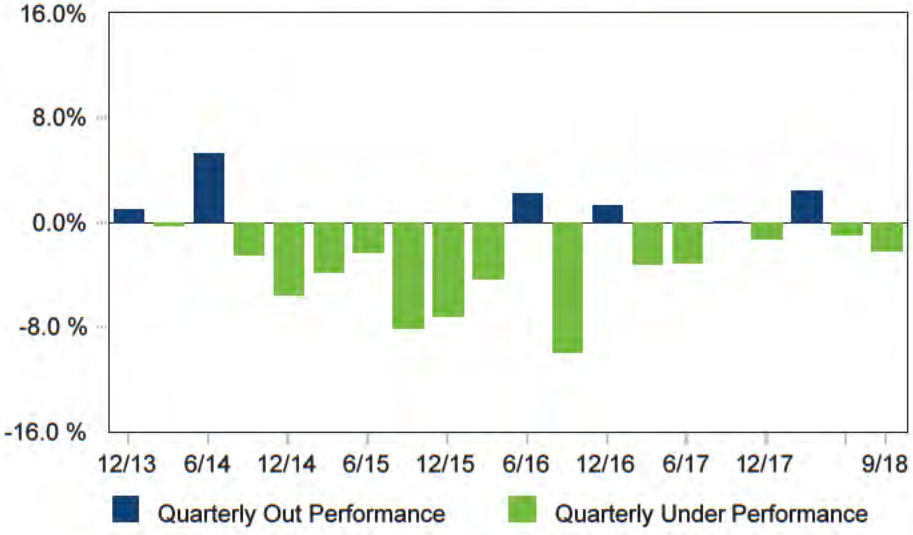
Account Information

Account Name:	Oaktree Loan Fund 2X, LP
Inception Date:	12/31/2007
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. High Yield Bonds (SA+CF)

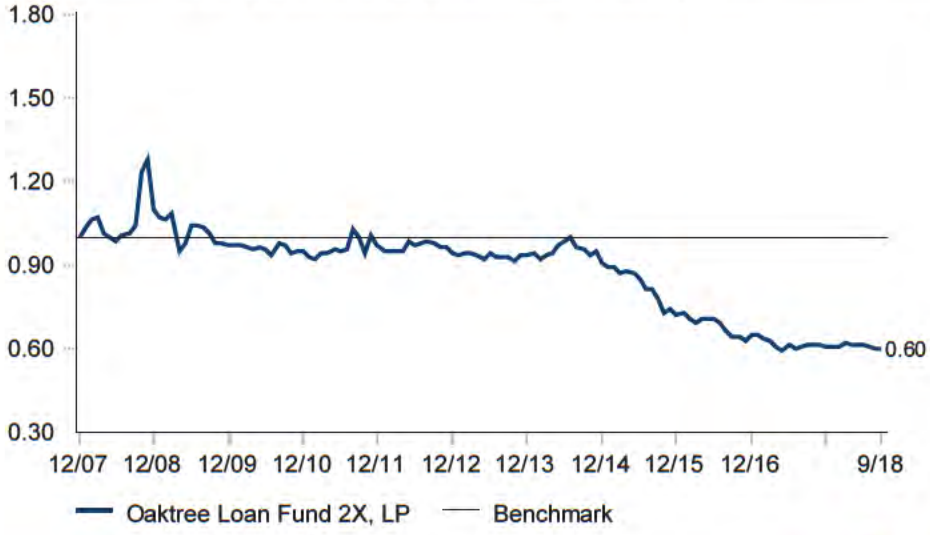
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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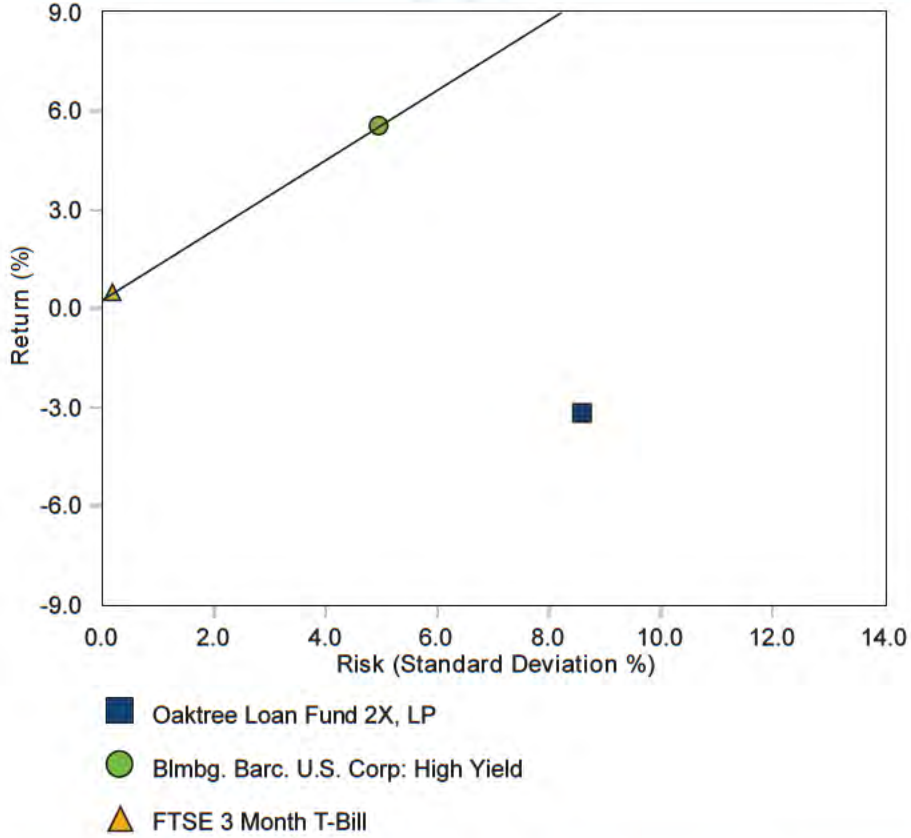
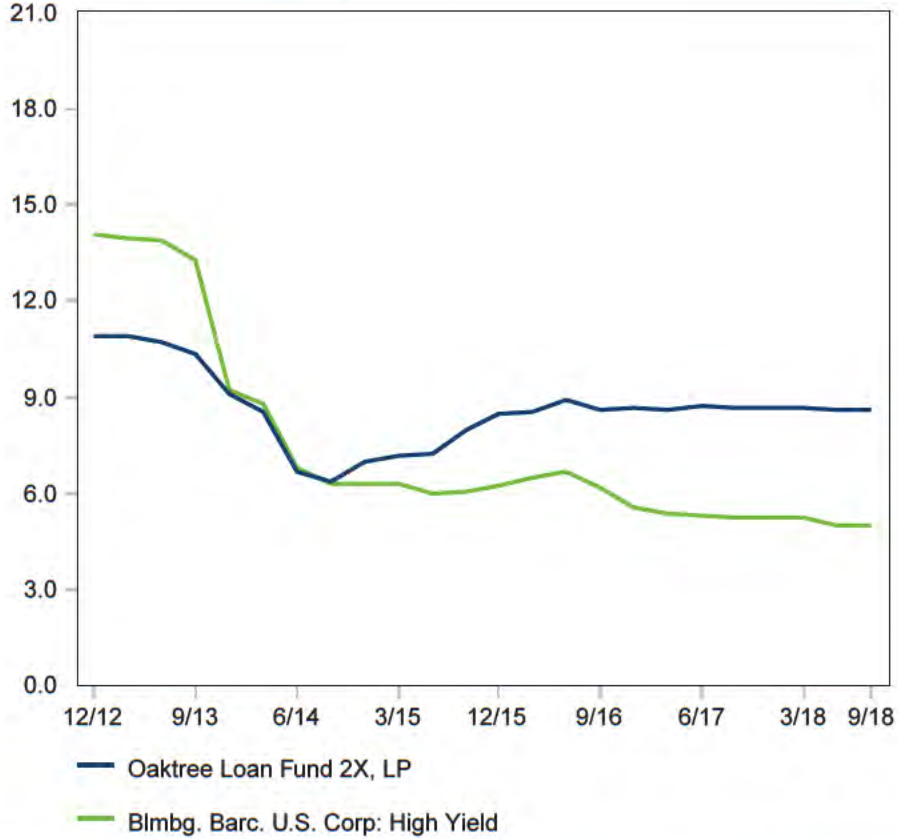
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Oaktree Loan Fund 2X, LP	-8.37	7.25	-1.15	0.29	-0.39	-7.77	0.94	-3.17	8.62	0.54
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.02	0.00	1.00	5.54	4.95	1.00
FTSE 3 Month T-Bill	-5.03	4.95	-1.02	0.00	N/A	0.48	0.00	0.49	0.18	0.03

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AON Empower Results®

Risk Statistics

Oaktree Loan Fund 2X, LP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	1.27	-0.78	-3.17	3.60	2.74	01/01/2008
Standard Deviation	2.98	7.79	8.62	9.70	9.64	
Downside Risk	1.82	5.27	6.81	6.27	6.38	
Downside Semi Deviation	1.01	7.56	9.88	9.76	9.91	
Max Drawdown Recovery Period	6.00	N/A	N/A	N/A	N/A	
Maximum Drawdown	-1.77	-12.37	-34.18	-34.18	-34.18	
Maximum Loss Exposure	-0.74	-12.37	-23.64	-14.10	-19.34	
Upside Semi Deviation	0.86	8.24	7.51	9.85	9.58	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	7.70	
Standard Deviation	2.00	4.93	4.95	10.05	10.23	
Downside Risk	1.12	2.29	2.73	6.68	6.98	
Downside Semi Deviation	0.62	1.30	4.95	12.88	12.80	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	14.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-32.46	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	-31.42	
Upside Semi Deviation	0.68	5.86	5.38	9.42	9.39	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	-1.72	-8.46	-8.37	-5.58	-4.81	
Tracking Error	3.11	7.25	7.25	11.28	11.18	
Actual Correlation	0.27	0.42	0.54	0.35	0.37	
Beta	0.40	0.67	0.94	0.34	0.35	
Consistency	25.00	33.33	40.00	40.83	42.64	
Down Market Capture	49.58	107.70	176.35	74.08	66.69	
Down Market Outperformance	0.85	-0.74	-8.93	5.48	7.20	
Information Ratio	-0.55	-1.17	-1.15	-0.49	-0.43	
Jensen Alpha	-0.83	-5.84	-7.76	0.56	0.09	
Up Market Capture	45.45	24.53	47.88	55.41	53.13	
Up Market Outperformance	-2.69	-12.67	-8.44	-12.15	-12.67	
vs. FTSE 3 Month T-Bill						
Excess Return	-0.26	-1.29	-3.34	3.69	2.73	
Excess Risk	2.97	7.77	8.60	9.71	9.65	
Sharpe Ratio	-0.09	-0.17	-0.39	0.38	0.28	

Calculation based on monthly periodicity.

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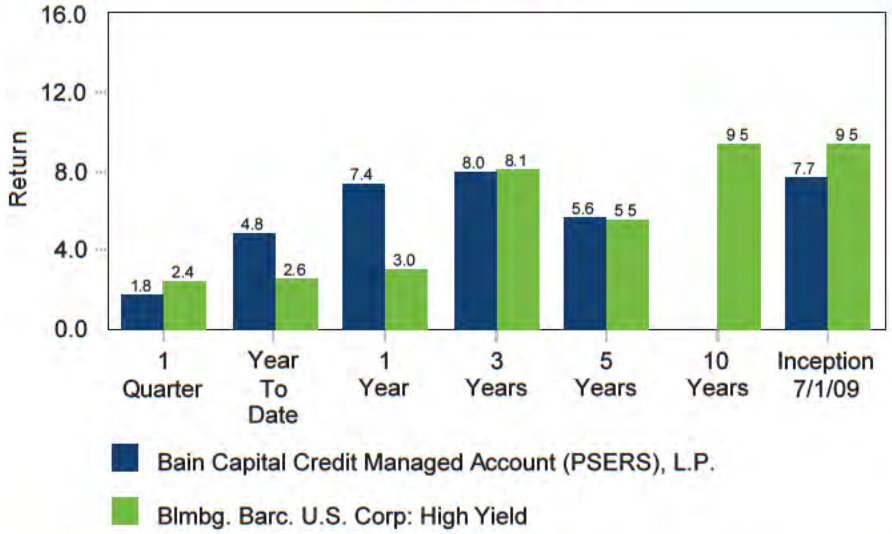
Performance Summary

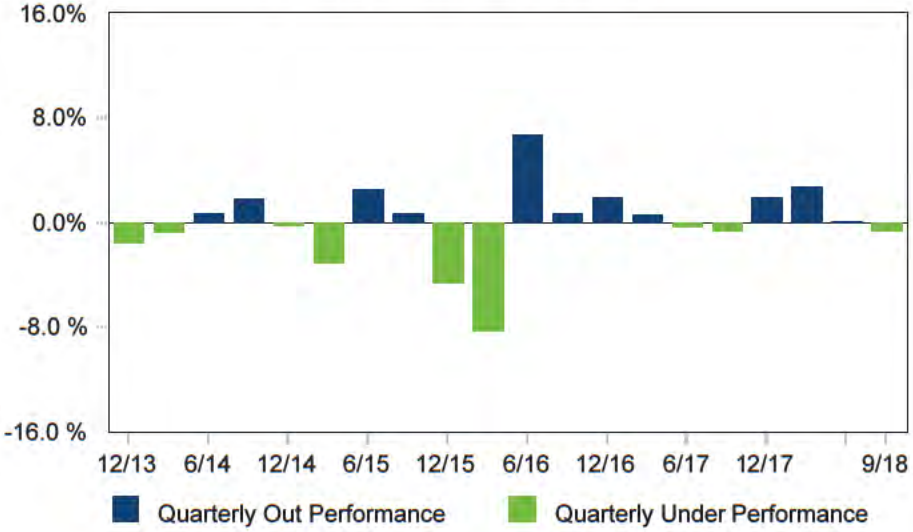
Account Information

Account Name:	Bain Capital Credit Managed Account (PSERS), L.P.
Inception Date:	06/30/2009
Account Structure:	Commingled Fund
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. U.S. Corp: High Yield
Peer Group:	IM U.S. Bank Loans (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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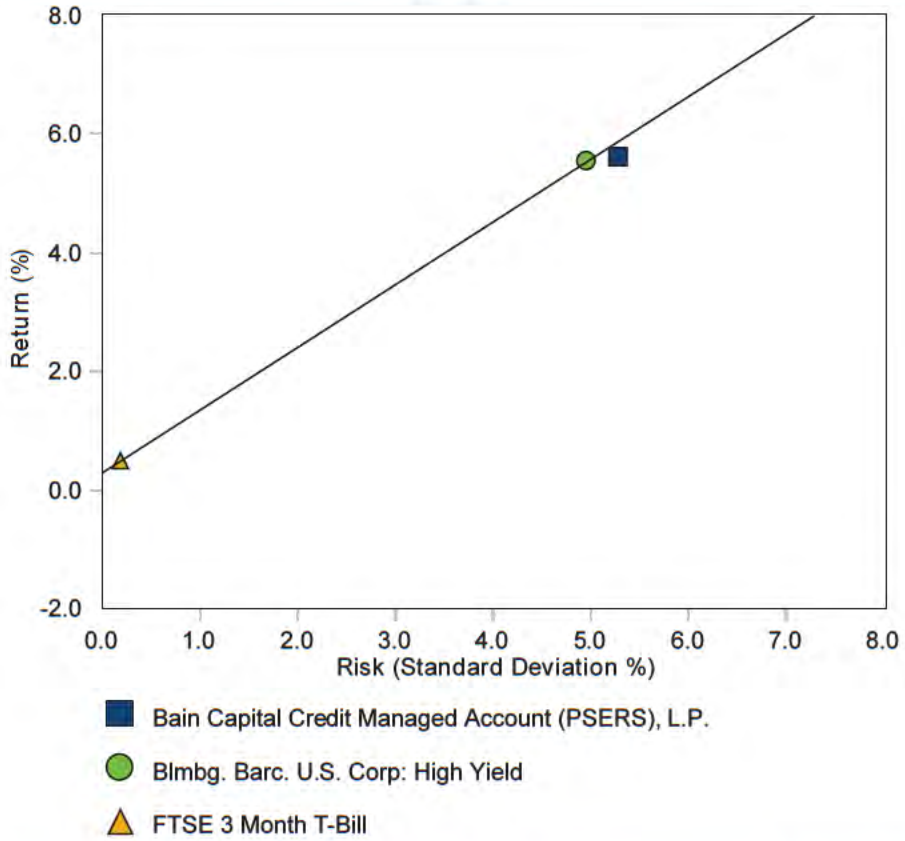
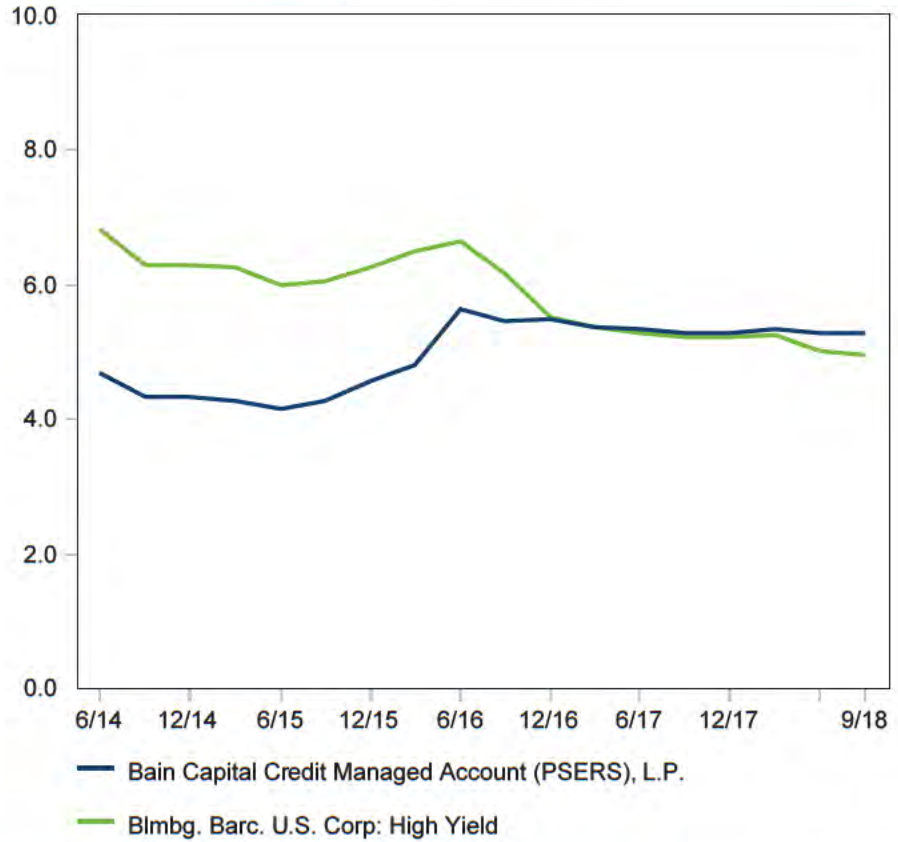
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Bain Capital Credit Managed Account (PSERS), L.P.	0.10	5.36	0.02	0.21	0.97	2.98	0.48	5.62	5.29	0.45
Blmbg. Barc. U.S. Corp: High Yield	0.00	0.00	N/A	1.00	1.02	0.00	1.00	5.54	4.95	1.00
FTSE 3 Month T-Bill	-5.03	4.95	-1.02	0.00	N/A	0.48	0.00	0.49	0.18	0.03

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AON Empower Results®

Risk Statistics

Bain Capital Credit Managed Account (PSERS), L.P.

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	7.39	7.98	5.62	N/A	7.73	07/01/2009
Standard Deviation	2.62	6.13	5.29	N/A	5.14	
Downside Risk	0.80	3.19	2.81	N/A	2.70	
Downside Semi Deviation	N/A	2.44	6.50	N/A	7.08	
Max Drawdown Recovery Period	2.00	10.00	15.00	N/A	15.00	
Maximum Drawdown	-0.76	-11.29	-14.88	N/A	-14.88	
Maximum Loss Exposure	N/A	-11.29	-7.37	N/A	N/A	
Upside Semi Deviation	1.00	6.29	5.34	N/A	5.33	
Blmbg. Barc. U.S. Corp: High Yield						
Return	3.05	8.15	5.54	9.46	9.45	
Standard Deviation	2.00	4.93	4.95	10.05	6.24	
Downside Risk	1.12	2.29	2.73	6.68	3.18	
Downside Semi Deviation	0.62	1.30	4.95	12.88	6.19	
Max Drawdown Recovery Period	6.00	6.00	13.00	7.00	13.00	
Maximum Drawdown	-1.45	-6.22	-9.68	-23.74	-9.68	
Maximum Loss Exposure	-0.39	-3.64	-0.25	-23.74	N/A	
Upside Semi Deviation	0.68	5.86	5.38	9.42	7.04	
vs. Blmbg. Barc. U.S. Corp: High Yield						
Active Return	4.16	-0.09	0.10	N/A	-1.66	
Tracking Error	3.95	6.03	5.36	N/A	6.37	
Actual Correlation	-0.46	0.42	0.45	N/A	0.39	
Beta	-0.60	0.53	0.48	N/A	0.32	
Consistency	58.33	52.78	51.67	N/A	46.85	
Down Market Capture	-226.35	19.88	26.82	N/A	10.68	
Down Market Outperformance	5.70	6.64	9.06	N/A	13.62	
Information Ratio	1.05	-0.02	0.02	N/A	-0.26	
Jensen Alpha	6.74	3.36	2.74	N/A	4.53	
Up Market Capture	68.23	77.57	69.03	N/A	58.64	
Up Market Outperformance	-1.58	-3.94	-5.03	N/A	-8.95	
vs. FTSE 3 Month T-Bill						
Excess Return	5.62	7.08	5.13	N/A	7.29	
Excess Risk	2.64	6.13	5.27	N/A	5.14	
Sharpe Ratio	2.13	1.16	0.97	N/A	1.42	

Calculation based on monthly periodicity.

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Inflation Protected

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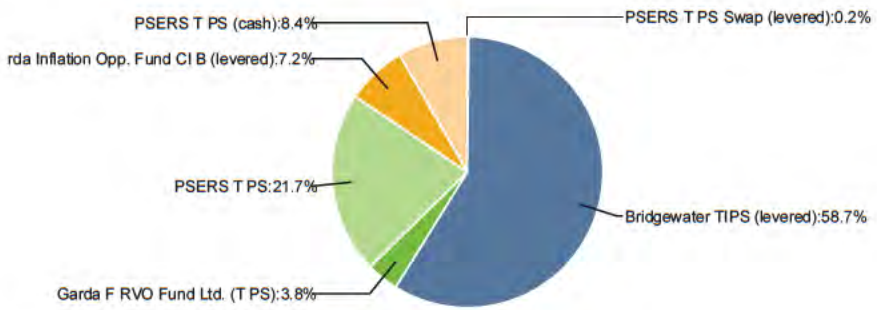
AON Empower Results®

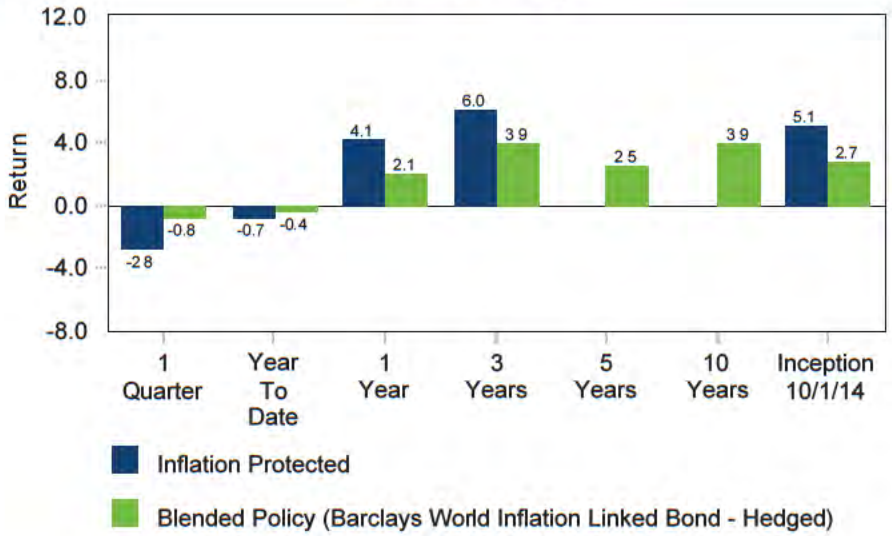
Portfolio Overview

Current Allocation

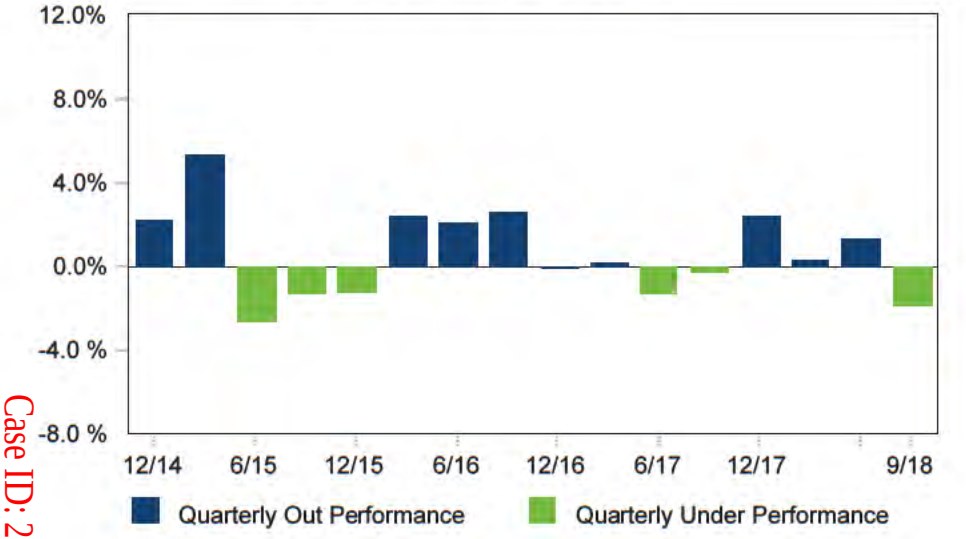
September 30, 2018 : $3,964M



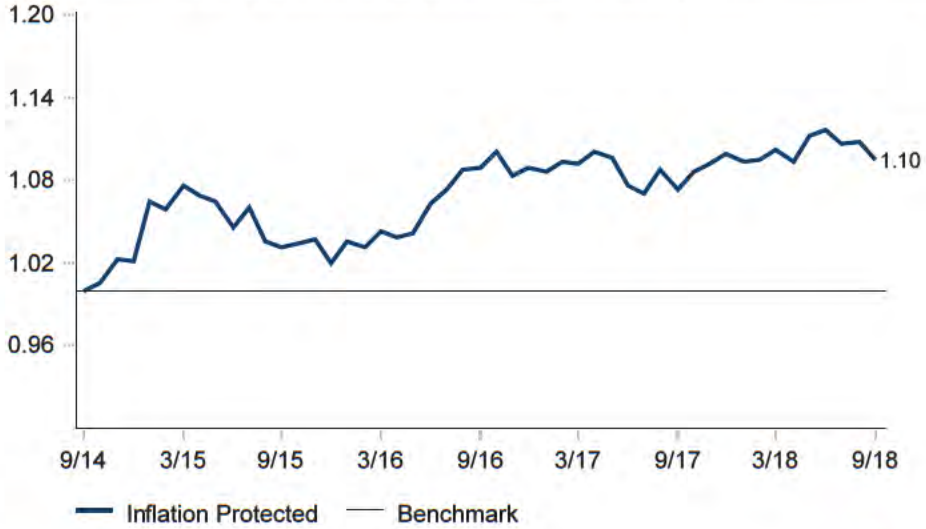
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

TIPS

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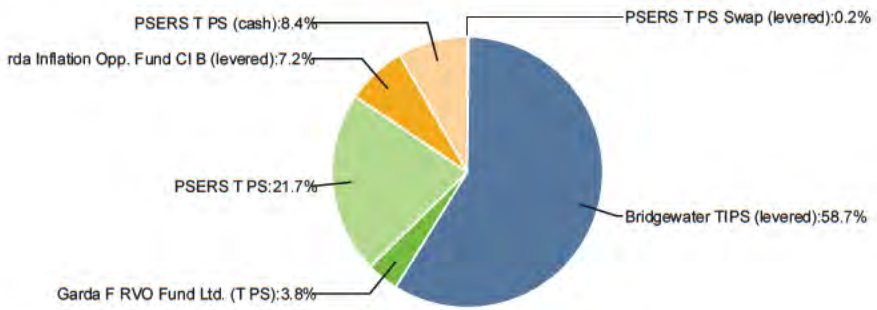
AON Empower Results®

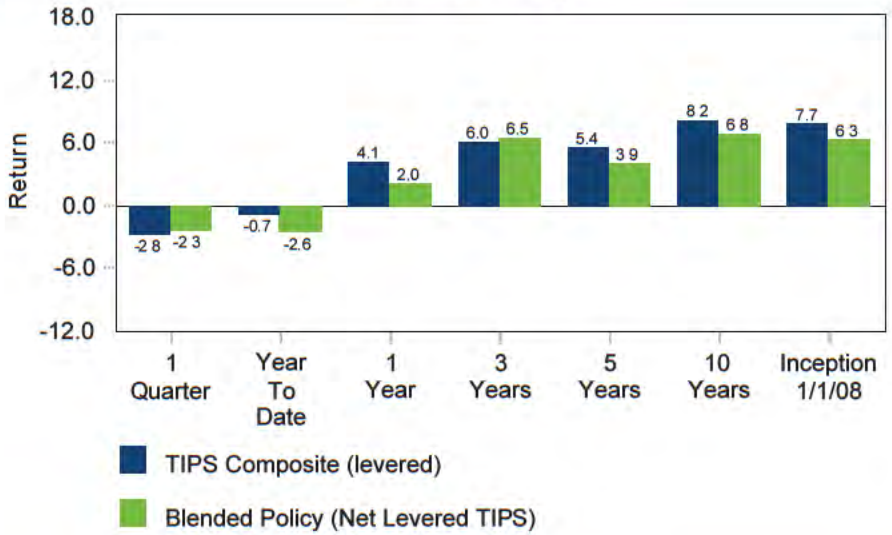
Portfolio Overview

Current Allocation

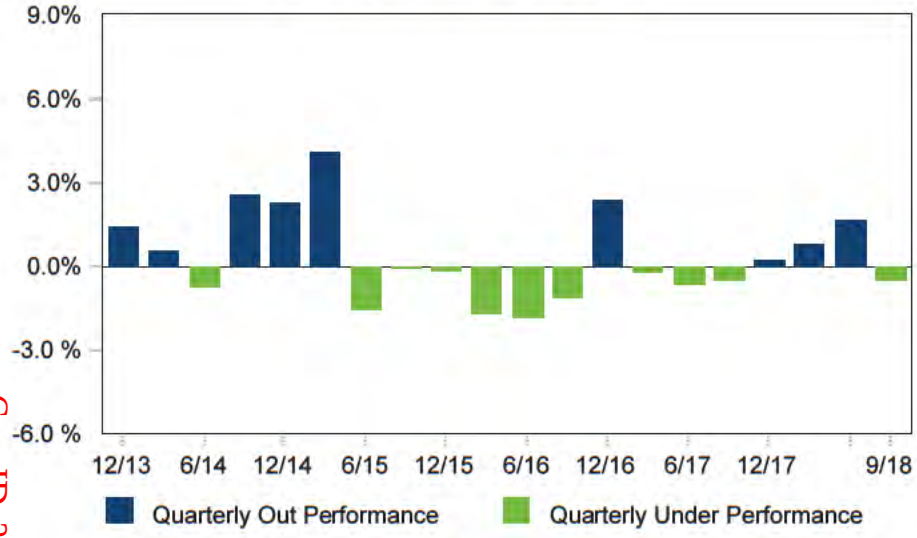
September 30, 2018 : $3,964M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 5 Years

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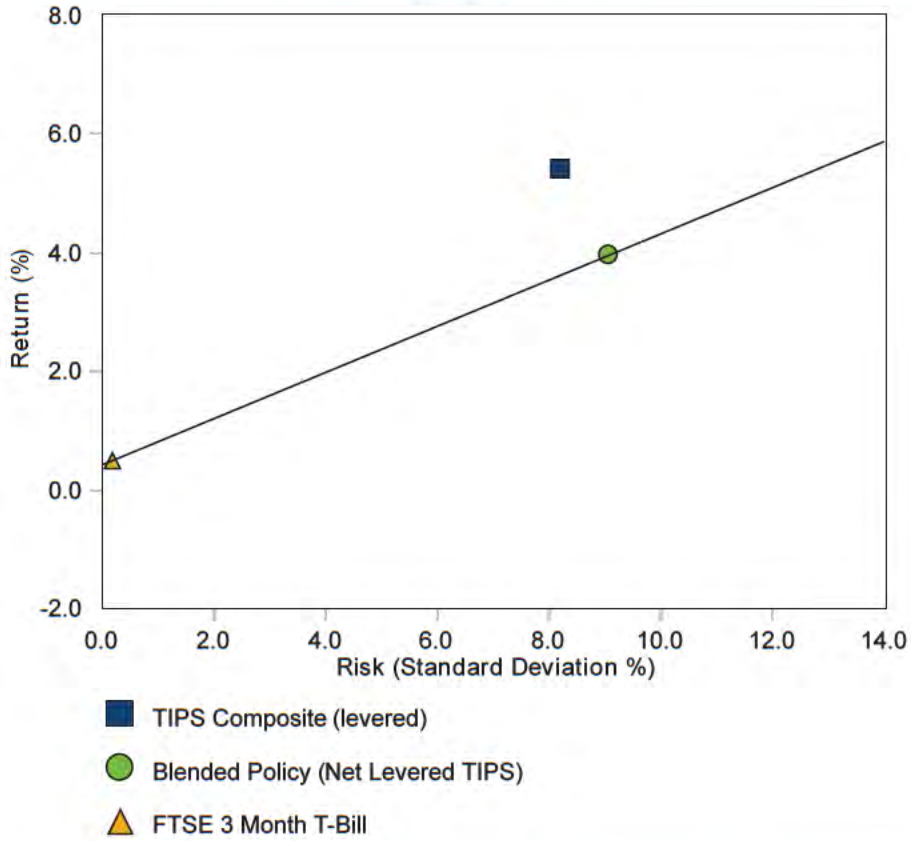
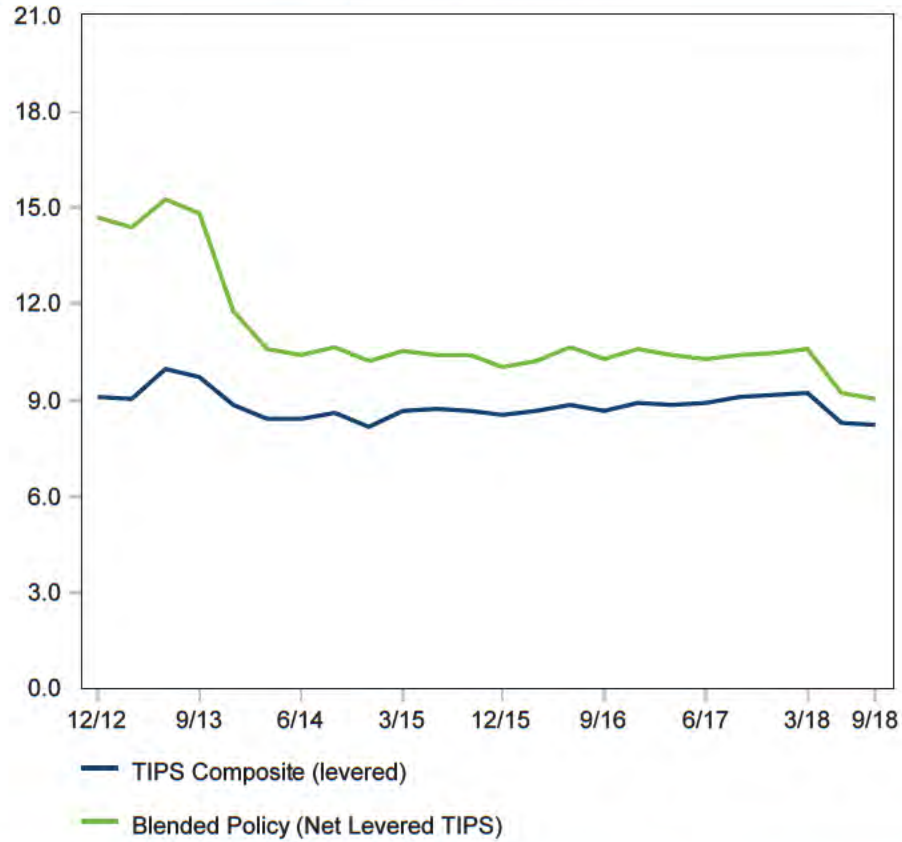
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
TIPS Composite (levered)	1.35	2.72	0.50	0.91	0.62	1.94	0.87	5.42	8.22	0.96
Blended Policy (Net Levered TIPS)	0.00	0.00	N/A	1.00	0.42	0.00	1.00	3.94	9.06	1.00
FTSE 3 Month T-Bill	-3.79	9.07	-0.42	0.00	N/A	0.49	0.00	0.49	0.18	-0.05

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Risk Statistics

TIPS Composite (levered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	4.11	6.02	5.42	8.17	7.00	04/01/2004
Standard Deviation	5.52	7.79	8.22	9.00	8.07	
Downside Risk	3.31	4.52	4.75	5.39	4.94	
Downside Semi Deviation	1.58	7.15	7.45	9.07	8.76	
Max Drawdown Recovery Period	N/A	8.00	17.00	21.00	21.00	
Maximum Drawdown	-2.77	-4.55	-8.84	-12.98	-12.98	
Maximum Loss Exposure	N/A	-2.17	-2.66	-7.56	-4.54	
Upside Semi Deviation	1.80	8.72	9.09	9.51	8.15	
Blended Policy (Net Levered TIPS)						
Return	2.00	6.50	3.94	6.76	N/A	
Standard Deviation	5.97	9.22	9.06	12.29	N/A	
Downside Risk	3.95	5.23	5.41	8.29	N/A	
Downside Semi Deviation	1.69	8.28	8.31	13.80	N/A	
Max Drawdown Recovery Period	N/A	15.00	17.00	44.00	N/A	
Maximum Drawdown	-3.38	-6.88	-9.64	-18.17	N/A	
Maximum Loss Exposure	N/A	-2.06	-4.06	-17.72	N/A	
Upside Semi Deviation	1.94	10.38	9.86	11.73	N/A	
vs. Blended Policy (Net Levered TIPS)						
Active Return	2.03	-0.57	1.35	0.95	N/A	
Tracking Error	2.11	2.37	2.72	5.01	N/A	
Actual Correlation	0.94	0.98	0.96	0.94	N/A	
Beta	0.86	0.82	0.87	0.69	N/A	
Consistency	66.67	47.22	56.67	54.17	N/A	
Down Market Capture	83.73	84.24	82.27	67.70	N/A	
Down Market Outperformance	1.13	2.78	3.34	8.20	N/A	
Information Ratio	0.96	-0.24	0.50	0.19	N/A	
Jensen Alpha	2.13	0.47	1.87	3.20	N/A	
Up Market Capture	108.93	87.40	97.14	85.33	N/A	
Up Market Outperformance	0.93	-4.07	-0.84	-5.44	N/A	
vs. FTSE 3 Month T-Bill						
Excess Return	2.61	5.35	5.13	7.96	5.87	
Excess Risk	5.56	7.82	8.23	9.02	8.11	
Sharpe Ratio	0.47	0.68	0.62	0.88	0.72	

Calculation based on monthly periodicity.

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As of September 30, 2018

Asset Allocation & Peer Rankings

	Performance(%)									Allocation	
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date	Market Value ($000)	%
TIPS Composite (levered)	-2.77 (100)	-0.73 (39)	-2.77 (100)	4.11 (1)	6.02 (1)	5.42 (1)	8.17 (1)	7.00 (1)	04/01/2004	3,963,885	100.0
Blended Policy (Net Levered TIPS)	-2.27 (100)	-2.56 (99)	-2.27 (100)	2 00 (4)	6.50 (1)	3.94 (1)	6.76 (1)	N/A			
Value Added	-0.50	1.83	-0.50	2.11	-0.48	1.48	1.41	N/A			
Blended Policy (Barclays World Inflation Linked Bond - Hedged)	-0.84 (55)	-0.44 (30)	-0.84 (55)	2 06 (4)	3.93 (1)	2.50 (1)	3.89 (2)	3.99 (2)			
Value Added	-1.93	-0.29	-1.93	2 05	2.09	2.92	4.28	3.01			
IM U.S. TIPS (SA+CF) Median	-0.80	-0.91	-0.80	0 20	1.87	1.15	3.19	3.45			
Bridgewater TIPS (levered)	-3.21 (100)	0.80 (3)	-3.21 (100)	7.40 (1)	7.74 (1)	7.71 (1)	11.71 (1)	9.89 (1)	07/01/2004	2,326,235	58.7
BGI Custom IL Bond Index (levered)	-2.13 (100)	0.52 (6)	-2.13 (100)	6.22 (1)	7.54 (1)	6.95 (1)	N/A	N/A			
Value Added	-1.08	0.28	-1.08	1.18	0.20	0.76	N/A	N/A			
M U.S. TIPS (SA+CF) Median	-0.80	-0.91	-0.80	0 20	1.87	1.15	3.19	3.72			
Garda Inflation Opportunity Composite (levered)	-3.97 (100)	-6.11 (100)	-3.97 (100)	-2 91 (100)	5.12 (1)	N/A	N/A	1.47 (1)	08/01/2014	437,869	11.0
Blended Benchmark (Garda)	-3.52 (100)	-7.51 (100)	-3.52 (100)	-3.31 (100)	5.45 (1)	N/A	N/A	-0.98 (100)			
Value Added	-0.45	1.40	-0.45	0.40	-0.33	N/A	N/A	2.45			
M U.S. TIPS (SA+CF) Median	-0.80	-0.91	-0.80	0 20	1.87	N/A	N/A	0.56			
Garda Inflation Opp. Fund Cl B (levered)	-6.48 (100)	-10.07 (100)	-6.48 (100)	-6 01 (100)	4.07 (1)	3.20 (1)	N/A	-2.35 (100)	03/01/2013	285,724	7.2
Blended Benchmark (Garda)	-3.52 (100)	-7.51 (100)	-3.52 (100)	-3.31 (100)	5.45 (1)	1.67 (3)	N/A	-3.94 (100)			
Value Added	-2.96	-2.56	-2.96	-2.70	-1.38	1.53	N/A	1.59			
M U.S. TIPS (SA+CF) Median	-0.80	-0.91	-0.80	0 20	1.87	1.15	N/A	-0.08			
Garda Fixed Income Relative Value Opportunity Fund Ltd. (TIPS)	1.13	2.36	1.13	3 50	5.53	N/A	N/A	4.46	08/01/2014	152,145	3.8
PSERS Total TIPS (levered)	-1.47 (100)	-1.56 (97)	-1.47 (100)	0.78 (11)	2.77 (5)	2.06 (1)	5.15 (1)	4.92 (1)	04/01/2004	1,199,781	30.3
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	-0.82 (53)	-0.84 (45)	-0.82 (53)	0.41 (29)	2.04 (23)	1.37 (13)	3.32 (24)	3.60 (20)			
Value Added	-0.65	-0.72	-0.65	0 37	0.73	0.69	1.83	1.32			
M U.S. TIPS (SA+CF) Median	-0.80	-0.91	-0.80	0 20	1.87	1.15	3.19	3.45			

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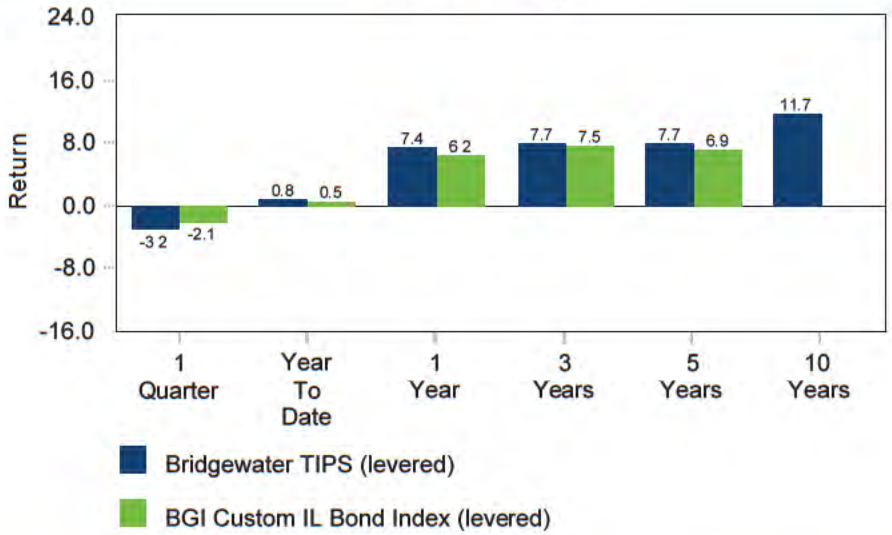
AON Empower Results®

Performance Summary

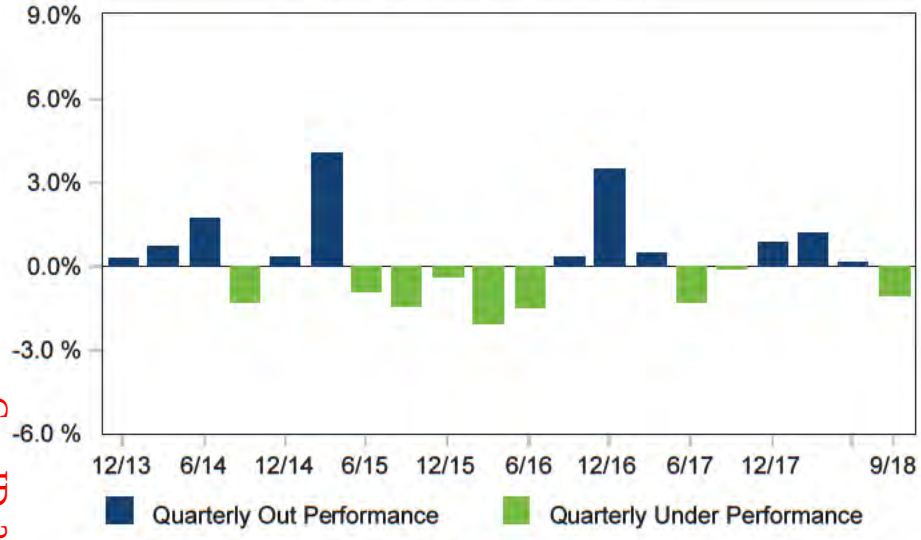
Account Information

Account Name	Bridgewater TIPS (levered)
Account Structure	Separate Account
Asset Class	Global Fixed Income
Benchmark	BGI Custom IL Bond Index (levered)
Peer Group	IM U.S. TIPS (SA+CF)

Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - 3 Years

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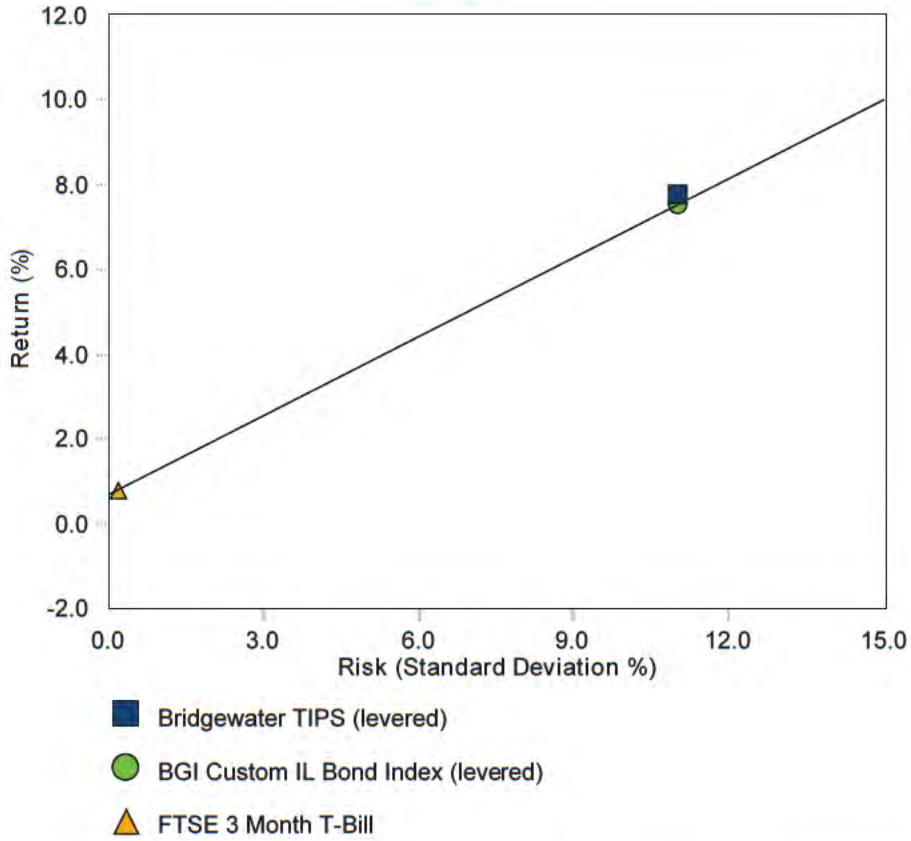
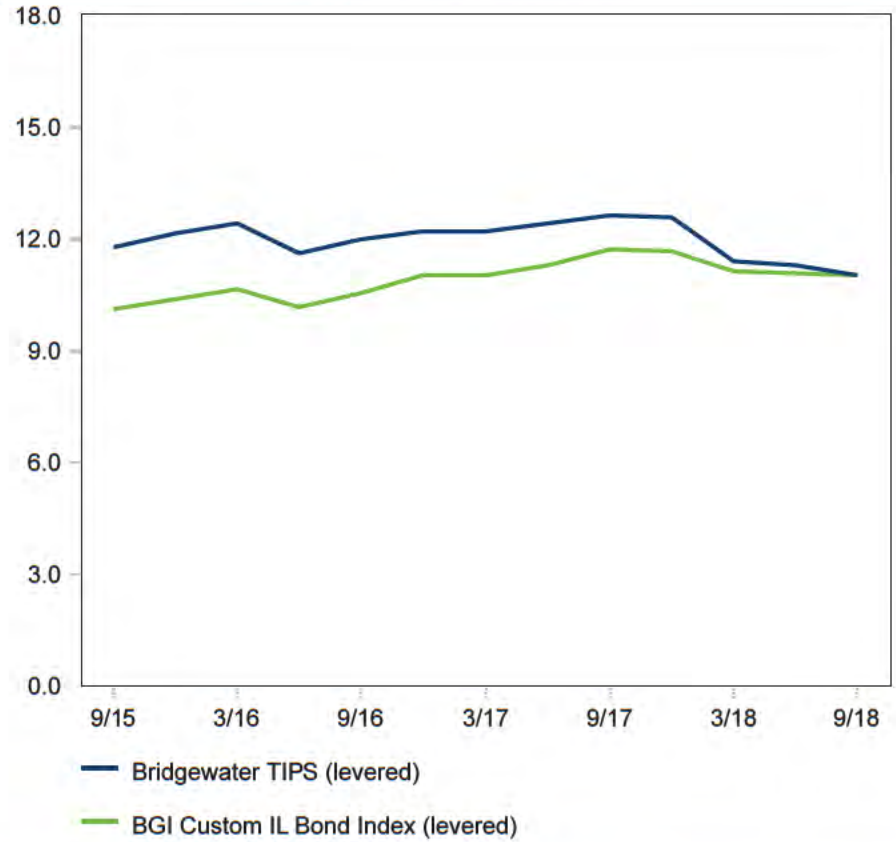
AON Empower Results®

Bridgewater TIPS (levered) Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Bridgewater TIPS (levered)	0.19	2.43	0.08	0.95	0.66	0.38	0.98	7.74	11.02	0.98
BGI Custom IL Bond Index (levered)	0.00	0.00	-0.58	1.00	0.64	0.00	1.00	7.54	11.02	1.00
FTSE 3 Month T-Bill	-7.07	11.04	-0.64	0.01	N/A	0.82	0.00	0.80	0.18	-0.12

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Risk Statistics

Bridgewater TIPS (levered)	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	7.40	7.74	7.71	11.71	9.89	07/01/2004
Standard Deviation	7.10	11.02	11.09	11.30	9.94	
Downside Risk	3.82	6.24	6.23	6.29	5.67	
Downside Semi Deviation	1.83	9.53	9.57	10.99	10.16	
Max Drawdown Recovery Period	N/A	8.00	15.00	16.00	16.00	
Maximum Drawdown	-3.21	-6.96	-10.97	-14.92	-14.92	
Maximum Loss Exposure	N/A	-2.76	-2.74	-4.86	N/A	
Upside Semi Deviation	2.50	12.73	12.67	12.25	10.48	
BGI Custom IL Bond Index (levered)						
Return	6.22	7.54	6.95	N/A	N/A	
Standard Deviation	7.37	11.02	10.28	N/A	N/A	
Downside Risk	4.44	6.12	5.72	N/A	N/A	
Downside Semi Deviation	2.45	9.67	8.97	N/A	N/A	
Max Drawdown Recovery Period	3.00	21.00	17.00	N/A	N/A	
Maximum Drawdown	-3.15	-7.79	-9.59	N/A	N/A	
Maximum Loss Exposure	N/A	-2.40	-3.01	N/A	N/A	
Upside Semi Deviation	2.24	12.50	11.58	N/A	N/A	
vs. BGI Custom IL Bond Index (levered)						
Active Return	1.09	0.19	0.80	N/A	N/A	
Tracking Error	2.13	2.43	2.63	N/A	N/A	
Actual Correlation	0.96	0.98	0.97	N/A	N/A	
Beta	0.92	0.98	1.05	N/A	N/A	
Consistency	66.67	55.56	56.67	N/A	N/A	
Down Market Capture	91.08	95.41	103.47	N/A	N/A	
Down Market Outperformance	0.66	0.92	-0.74	N/A	N/A	
Information Ratio	0.51	0.08	0.30	N/A	N/A	
Jensen Alpha	1.45	0.36	0.46	N/A	N/A	
Up Market Capture	102.82	98.32	106.53	N/A	N/A	
Up Market Outperformance	0.44	-0.74	2.59	N/A	N/A	
vs. FTSE 3 Month T-Bill						
Excess Return	5.83	7.26	7.56	11.43	8.71	
Excess Risk	7.15	11.04	11.11	11.31	9.99	
Sharpe Ratio	0.82	0.66	0.68	1.01	0.87	

Calculation based on monthly periodicity.

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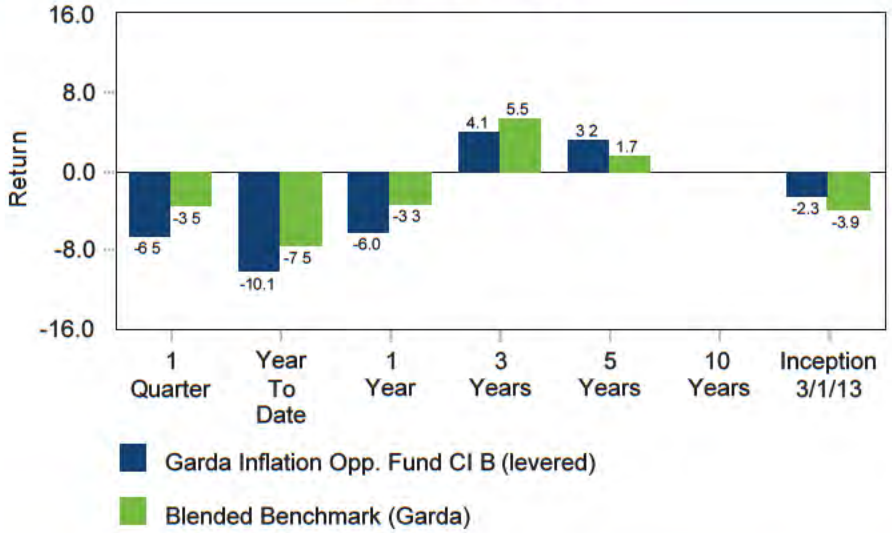
Performance Summary

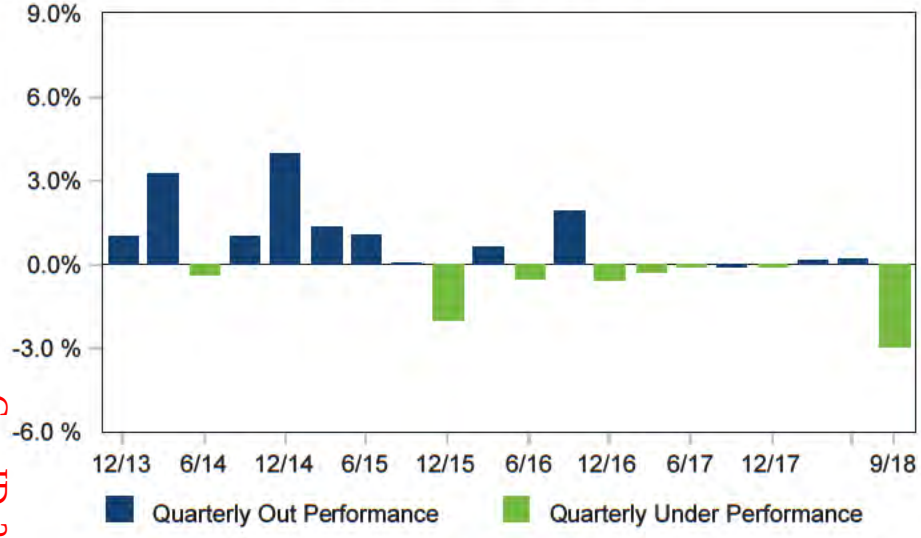
Account Information

Account Name:	Garda Inflation Opp. Fund Cl B (levered)
Inception Date:	01/01/2013
Account Structure:	Separate Account
Asset Class:	Global Fixed Income
Benchmark:	Blended Benchmark (Garda)
Peer Group:	IM U.S. TIPS (SA+CF)

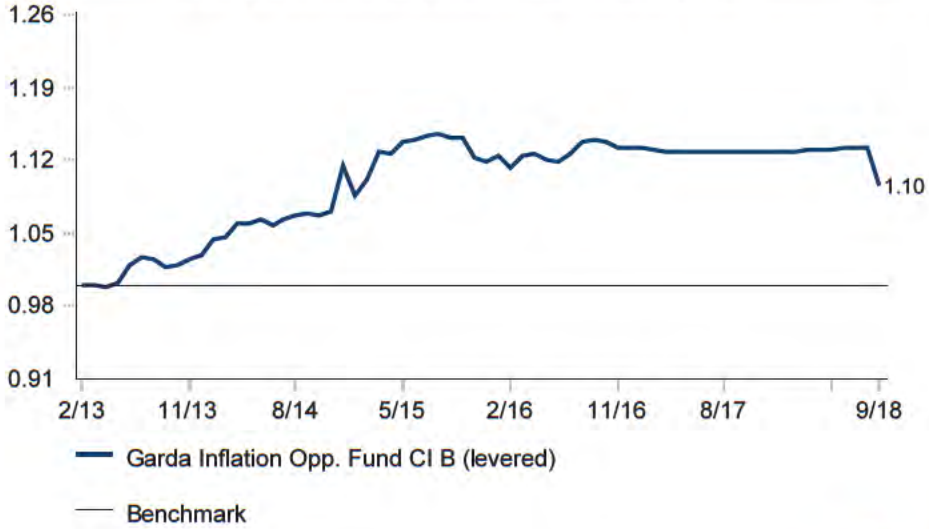
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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AON Empower Results®

Risk Statistics

Garda Inflation Opp. Fund Cl B (levered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-6.01	4.07	3.20	N/A	-2.35	03/01/2013
Standard Deviation	12.66	14.52	17.93	N/A	21.09	
Downside Risk	10.37	9.40	11.42	N/A	15.55	
Downside Semi Deviation	4.96	14.36	16.88	N/A	22.69	
Max Drawdown Recovery Period	N/A	N/A	21.00	N/A	N/A	
Maximum Drawdown	-10.07	-13.50	-17.17	N/A	-33.67	
Maximum Loss Exposure	-6.01	-5.07	-9.50	N/A	-32.29	
Upside Semi Deviation	2.91	15.14	19.17	N/A	19.85	
Blended Benchmark (Garda)						
Return	-3.31	5.45	1.67	N/A	-3.94	
Standard Deviation	11.41	13.70	18.59	N/A	21.82	
Downside Risk	8.81	8.58	12.10	N/A	16.32	
Downside Semi Deviation	4.22	13.11	17.88	N/A	23.81	
Max Drawdown Recovery Period	N/A	N/A	24.00	N/A	N/A	
Maximum Drawdown	-9.82	-12.46	-21.70	N/A	-35.51	
Maximum Loss Exposure	-5.72	-3.10	-10.48	N/A	-34.17	
Upside Semi Deviation	2.85	14.71	19.51	N/A	20.18	
vs. Blended Benchmark (Garda)						
Active Return	-2.68	-1.22	1.38	N/A	1.48	
Tracking Error	3.12	2.38	3.27	N/A	3.17	
Actual Correlation	0.97	0.99	0.98	N/A	0.99	
Beta	1.08	1.05	0.95	N/A	0.96	
Consistency	66.67	52.78	61.67	N/A	61.19	
Down Market Capture	117.72	111.17	94.79	N/A	95.44	
Down Market Outperformance	-2.64	-2.83	1.67	N/A	1.64	
Information Ratio	-0.86	-0.51	0.42	N/A	0.47	
Jensen Alpha	-2.32	-1.46	1.53	N/A	1.40	
Up Market Capture	102.58	102.55	100.76	N/A	100.67	
Up Market Outperformance	0.42	1.42	0.68	N/A	0.65	
vs. FTSE 3 Month T-Bill						
Excess Return	-7.00	4.21	4.23	N/A	-0.58	
Excess Risk	12.67	14.55	17.95	N/A	21.09	
Sharpe Ratio	-0.55	0.29	0.24	N/A	-0.03	

Calculation based on monthly periodicity.

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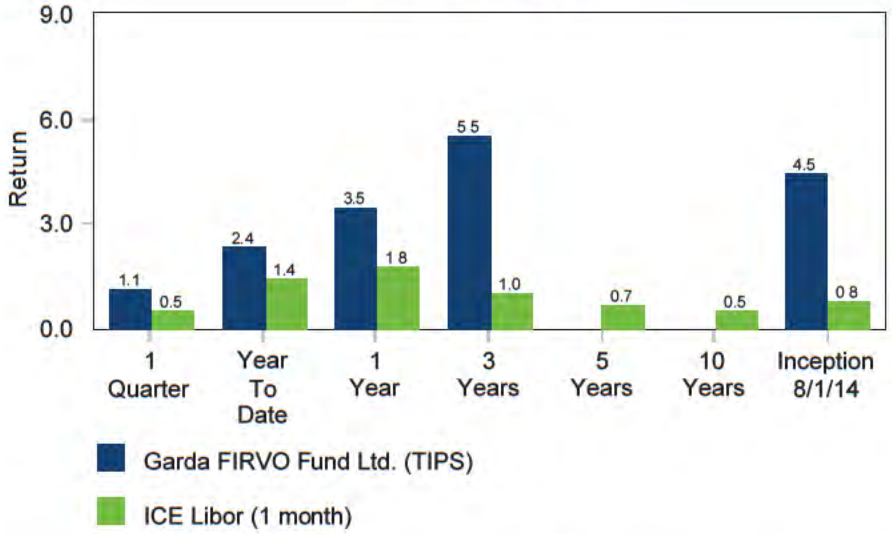
Performance Summary

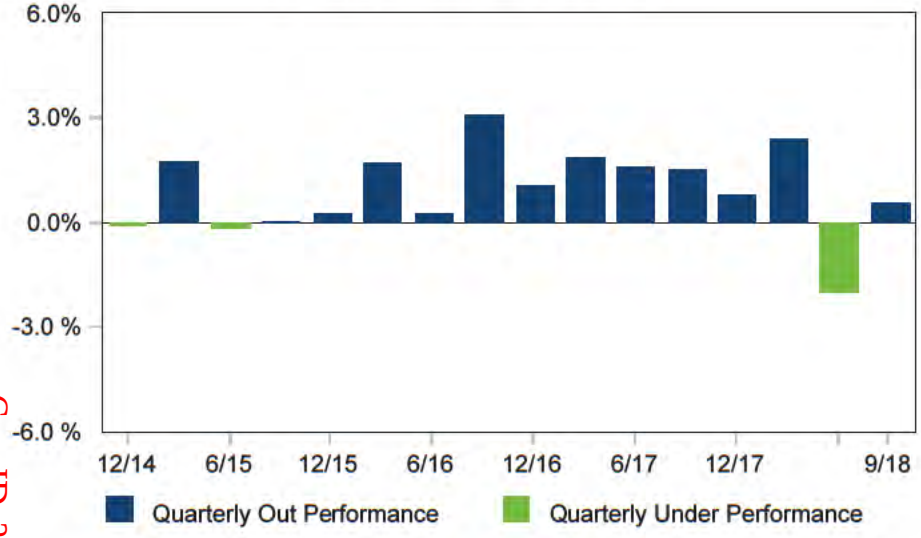
Account Information

Account Name:	Garda FIRVO Fund Ltd. (TIPS)
Inception Date:	08/01/2014
Account Structure:	Separate Account
Asset Class:	Global Fixed Income
Benchmark:	ICE Libor (1 month)
Peer Group:	IM U.S. TIPS (SA+CF)

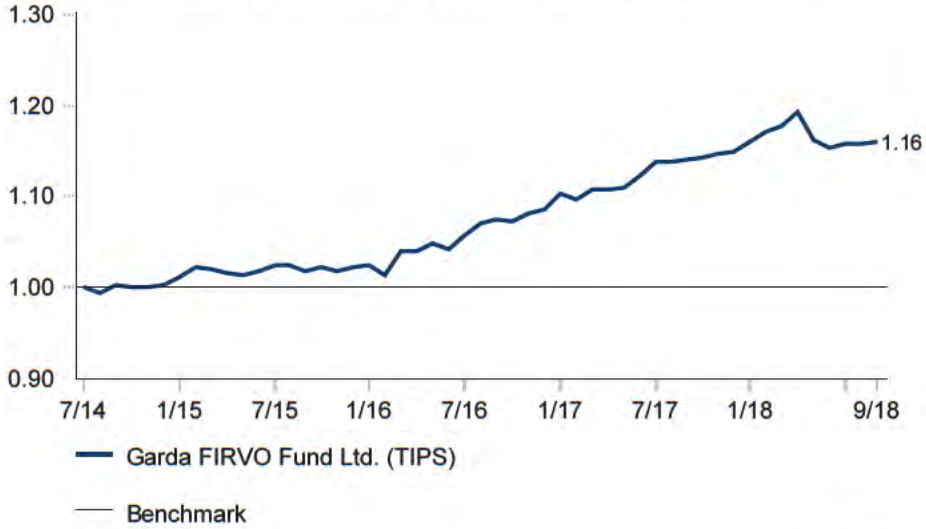
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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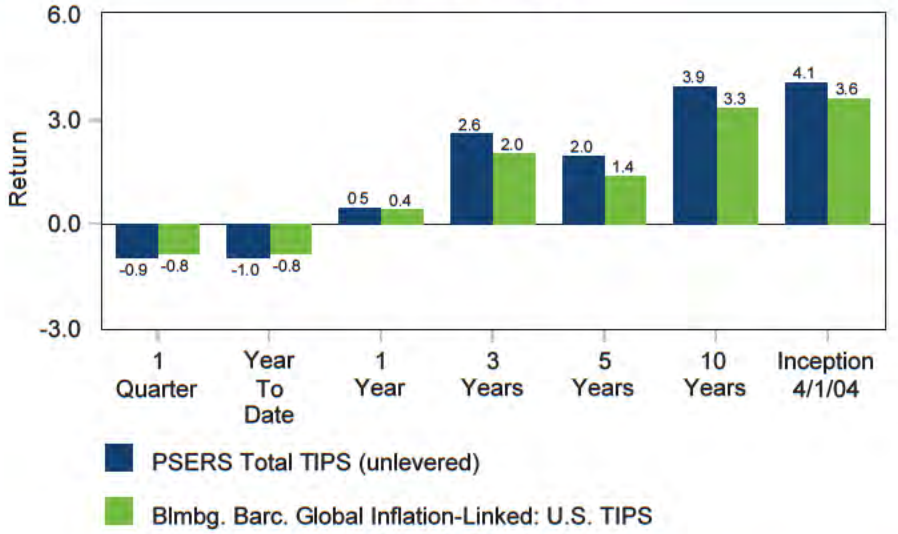
AON Empower Results®

Performance Summary

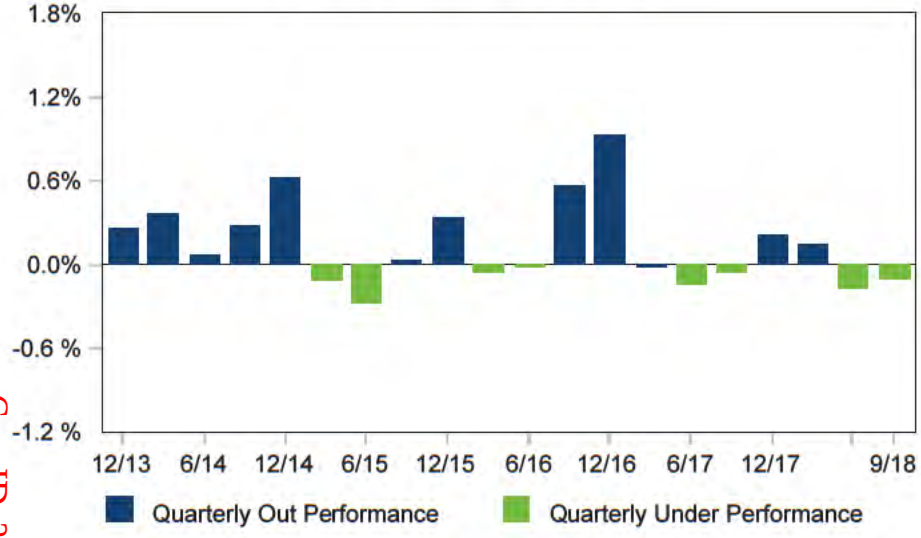
Account Information

Account Name:	PSERS Total TIPS (unlevered)
Inception Date:	03/01/2004
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. Global Inflation-Linked: U.S. TIPS
Peer Group:	IM U.S. TIPS (SA+CF)

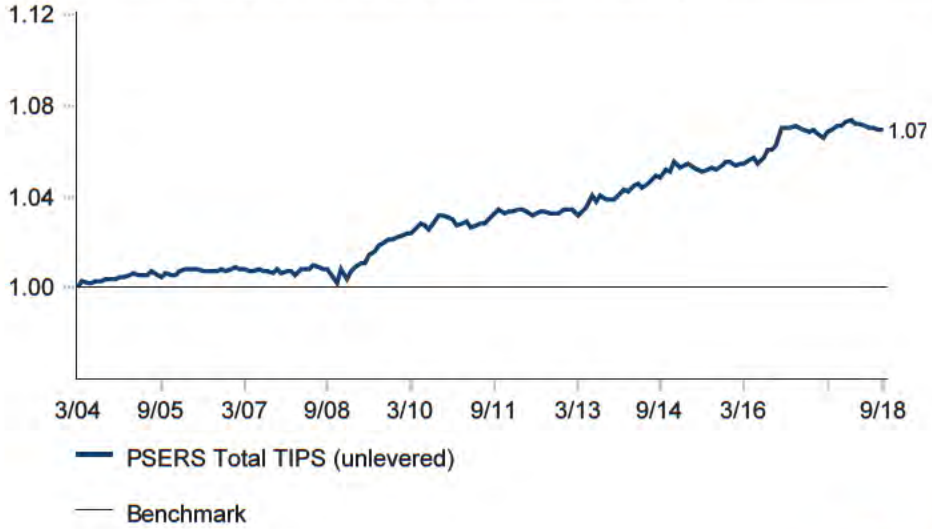
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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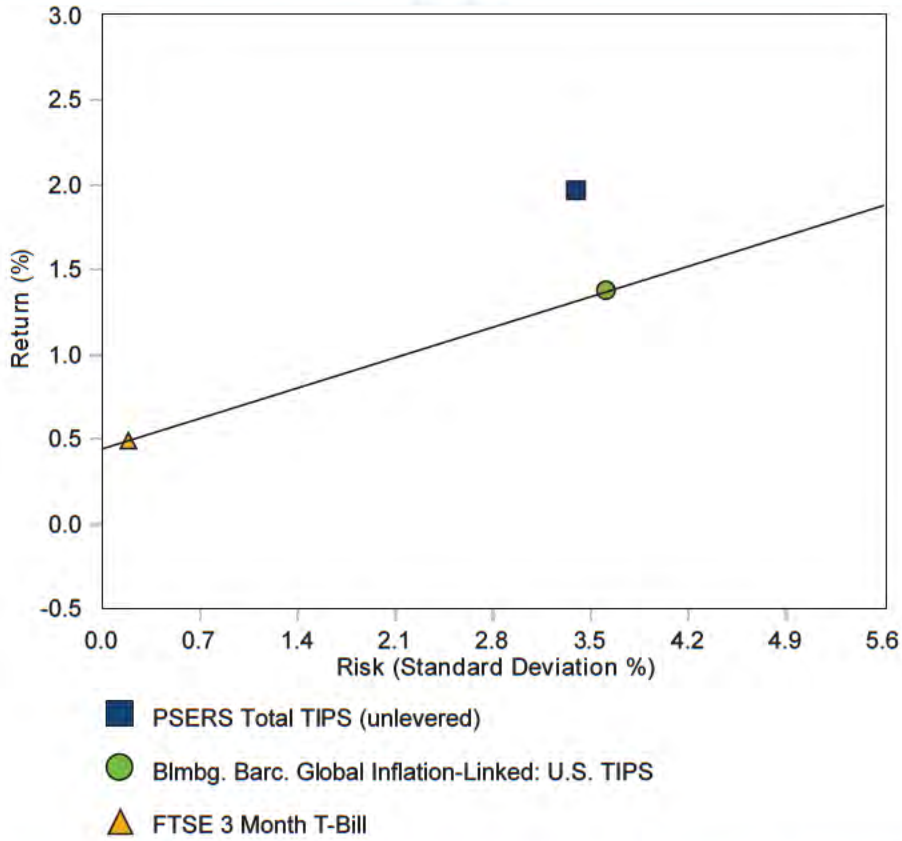
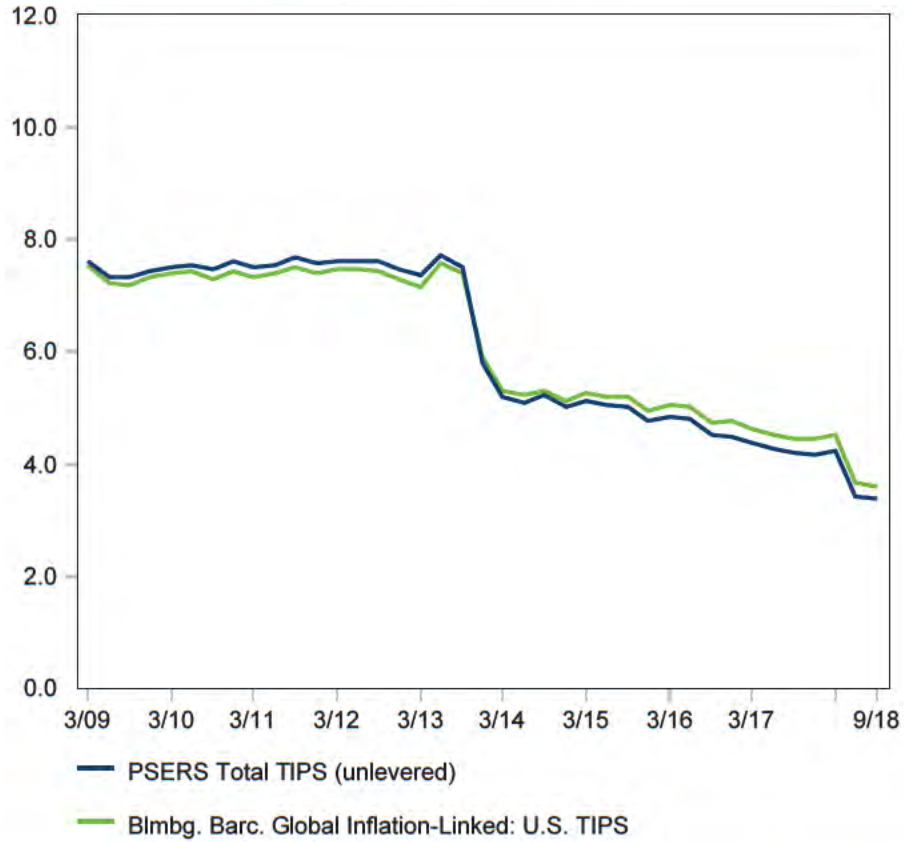
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS Total TIPS (unlevered)	0.57	0.57	1.00	0.98	0.44	0.67	0.93	1.96	3.40	0.99
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	0.00	0.00	N/A	1.00	0.26	0.00	1.00	1.37	3.61	1.00
FTSE 3 Month T-Bill	-0.94	3.62	-0.26	0.00	N/A	0.49	0.00	0.49	0.18	-0.03

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AON Empower Results®

Risk Statistics

PSERS Total TIPS (unlevered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	0.49	2.61	1.96	3.93	4.07	04/01/2004
Standard Deviation	2.33	2.67	3.40	5.83	5.70	
Downside Risk	1.68	1.44	2.03	3.88	3.78	
Downside Semi Deviation	0.80	2.28	3.12	6.37	6.37	
Max Drawdown Recovery Period	8.00	8.00	15.00	5.00	12.00	
Maximum Drawdown	-1.54	-1.54	-4.24	-9.00	-12.47	
Maximum Loss Exposure	-0.09	-0.30	-1.75	-9.00	-4.59	
Upside Semi Deviation	0.64	3.13	3.72	5.71	5.54	
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS						
Return	0.41	2.04	1.37	3.32	3.60	
Standard Deviation	2.53	3.00	3.61	5.83	5.74	
Downside Risk	1.82	1.81	2.25	3.96	3.88	
Downside Semi Deviation	0.87	2.76	3.39	6.52	6.43	
Max Drawdown Recovery Period	8.00	15.00	15.00	61.00	19.00	
Maximum Drawdown	-1.82	-2.41	-4.45	-9.20	-12.22	
Maximum Loss Exposure	-0.58	-0.64	-2.00	-8.69	-4.85	
Upside Semi Deviation	0.69	3.34	3.87	5.57	5.50	
vs. Blmbg. Barc. Global Inflation-Linked: U.S. TIPS						
Active Return	0.07	0.55	0.57	0.59	0.46	
Tracking Error	0.35	0.60	0.57	0.63	0.55	
Actual Correlation	0.99	0.98	0.99	0.99	1.00	
Beta	0.91	0.88	0.93	0.99	0.99	
Consistency	50.00	58.33	58.33	60.83	58.62	
Down Market Capture	92.01	79.73	87.45	91.80	92.62	
Down Market Outperformance	0.27	1.38	1.08	1.02	0.92	
Information Ratio	0.21	0.91	1.00	0.94	0.83	
Jensen Alpha	N/A	N/A	N/A	N/A	N/A	
Up Market Capture	94.83	98.12	100.80	101.71	100.87	
Up Market Outperformance	-0.20	-0.19	0.09	0.27	0.14	
Excess Return	0.07	0.55	0.57	0.59	0.46	
Excess Risk	0.35	0.60	0.57	0.63	0.55	
Sharpe Ratio	0.21	0.91	1.00	0.94	0.83	

Calculation based on monthly periodicity.

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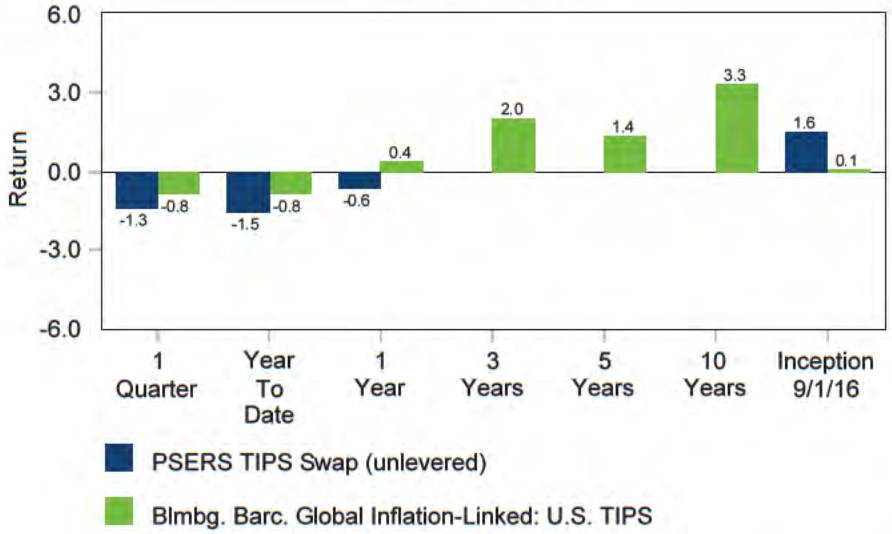
Performance Summary

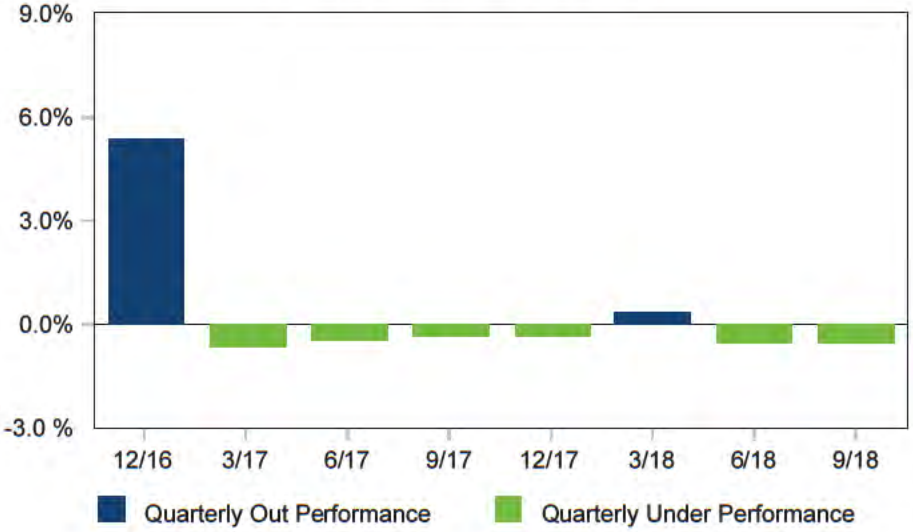
Account Information

Account Name:	PSERS TIPS Swap (unlevered)
Inception Date:	09/01/2016
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blmbg. Barc. Global Inflation-Linked: U.S. TIPS
Peer Group:	IM U.S. TIPS (SA+CF)

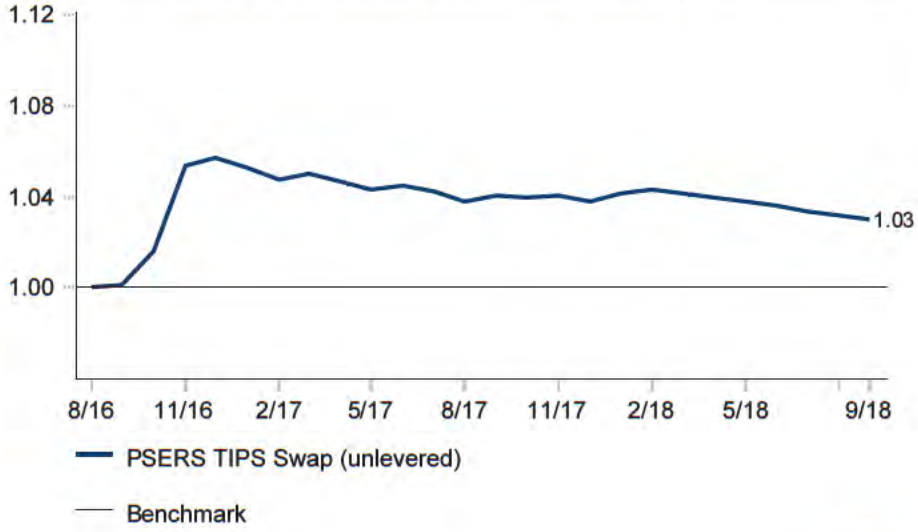
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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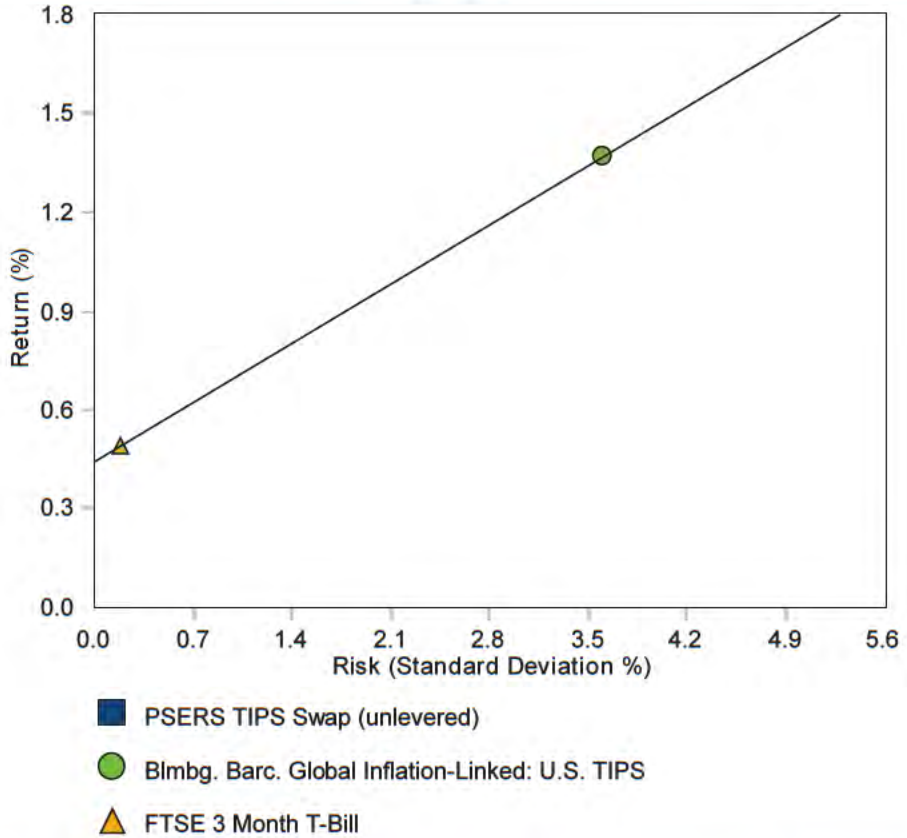
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation

No data found.

5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS TIPS Swap (unlevered)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS	0.00	0.00	N/A	1.00	0.26	0.00	1.00	1.37	3.61	1.00
FTSE 3 Month T-Bill	-0.94	3.62	-0.26	0.00	N/A	0.49	0.00	0.49	0.18	-0.03

Risk Statistics

PSERS TIPS Swap (unlevered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.61	N/A	N/A	N/A	1.55	09/01/2016
Standard Deviation	2.20	N/A	N/A	N/A	2.25	
Downside Risk	1.77	N/A	N/A	N/A	1.37	
Downside Semi Deviation	0.84	N/A	N/A	N/A	0.68	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-1.52	N/A	N/A	N/A	-1.52	
Maximum Loss Exposure	-0.61	N/A	N/A	N/A	N/A	
Upside Semi Deviation	0.52	N/A	N/A	N/A	2.34	
Blmbg. Barc. Global Inflation-Linked: U.S. TIPS						
Return	0.41	2.04	1.37	3.32	0.11	
Standard Deviation	2.53	3.00	3.61	5.83	2.64	
Downside Risk	1.82	1.81	2.25	3.96	2.02	
Downside Semi Deviation	0.87	2.76	3.39	6.52	2.99	
Max Drawdown Recovery Period	8.00	15.00	15.00	61.00	15.00	
Maximum Drawdown	-1.82	-2.41	-4.45	-9.20	-2.41	
Maximum Loss Exposure	-0.58	-0.64	-2.00	-8.69	-1.87	
Upside Semi Deviation	0.69	3.34	3.87	5.57	2.40	
vs. Blmbg. Barc. Global Inflation-Linked: U.S. TIPS						
Active Return	-1.03	N/A	N/A	N/A	1.42	
Tracking Error	0.63	N/A	N/A	N/A	2.86	
Actual Correlation	0.97	N/A	N/A	N/A	0.33	
Beta	0.85	N/A	N/A	N/A	0.28	
Consistency	25.00	N/A	N/A	N/A	40.00	
Down Market Capture	99.16	N/A	N/A	N/A	23.62	
Down Market Outperformance	0.03	N/A	N/A	N/A	5.49	
Information Ratio	-1.63	N/A	N/A	N/A	0.50	
Jensen Alpha	N/A	N/A	N/A	N/A	N/A	
Up Market Capture	72.65	N/A	N/A	N/A	64.45	
Up Market Outperformance	-1.08	N/A	N/A	N/A	-2.71	
Excess Return	-1.03	N/A	N/A	N/A	1.42	
Excess Risk	0.63	N/A	N/A	N/A	2.86	
Sharpe Ratio	-1.63	N/A	N/A	N/A	0.50	

Calculation based on monthly periodicity.

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PIMCO Multi-Sector

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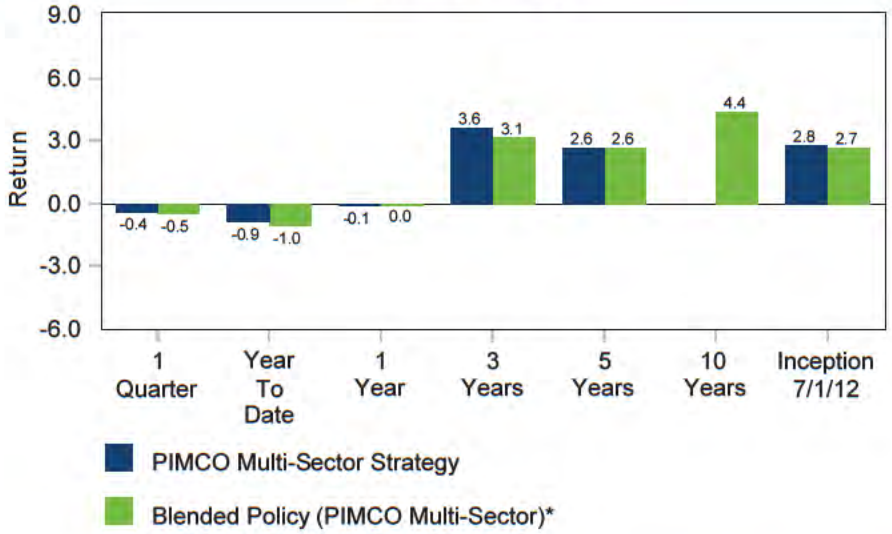
AON Empower Results®

Performance Summary

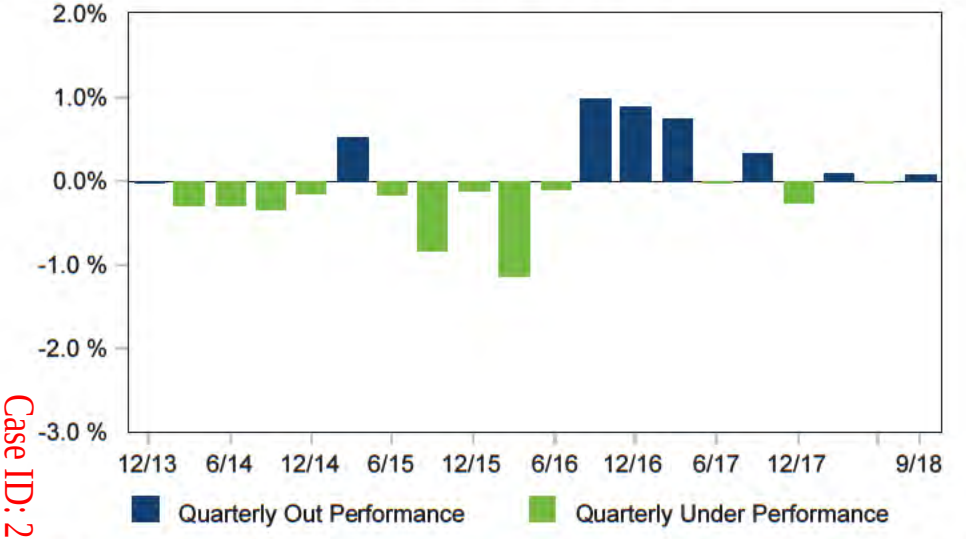
Account Information

Account Name:	PIMCO Multi-Sector Strategy
Inception Date:	06/30/2012
Account Structure:	Separate Account
Asset Class:	US Fixed Income
Benchmark:	Blended Policy (PIMCO Multi-Sector)
Peer Group:	IM U.S. Fixed Income (SA+CF)

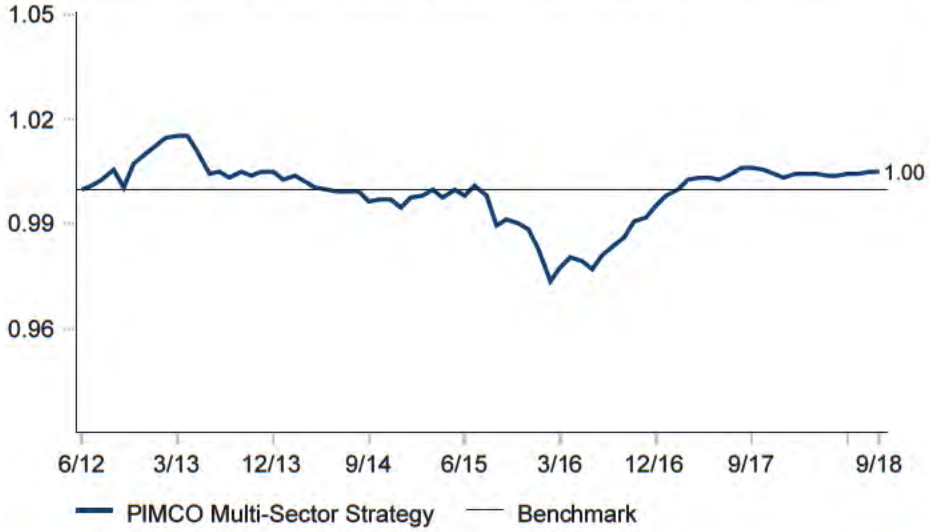
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



*40% Bloomberg Barclays U.S. Aggregate Index, 15% Bloomberg Baclays U.S. Long Treasuries Index, and 45% Bloomberg Barclays Global Agg GDP Weighted Dev xUS (hedged).

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AON Empower Results®

Risk Statistics

PIMCO Multi-Sector Strategy

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.11	3.61	2.62	N/A	2.75	07/01/2012
Standard Deviation	2.46	3.86	4.06	N/A	4.33	
Downside Risk	1.80	2.06	2.41	N/A	2.79	
Downside Semi Deviation	0.86	3.67	3.95	N/A	4.71	
Max Drawdown Recovery Period	N/A	9.00	16.00	N/A	13.00	
Maximum Drawdown	-1.80	-3.56	-5.81	N/A	-6.39	
Maximum Loss Exposure	-1.03	N/A	N/A	N/A	N/A	
Upside Semi Deviation	0.65	4.23	4.30	N/A	4.27	
Blended Policy (PIMCO Multi-Sector)						
Return	-0.01	3.08	2.62	4.39	2.67	
Standard Deviation	2.48	3.84	3.92	3.96	4.04	
Downside Risk	1.83	2.16	2.30	2.25	2.53	
Downside Semi Deviation	0.88	3.42	3.54	3.88	4.04	
Max Drawdown Recovery Period	N/A	N/A	14.00	12.00	12.00	
Maximum Drawdown	-1.89	-4.47	-5.06	-5.27	-5.27	
Maximum Loss Exposure	-0.86	N/A	N/A	-2.36	N/A	
Upside Semi Deviation	0.66	4.36	4.37	4.32	4.21	
vs. Blended Policy (PIMCO Multi-Sector)						
Active Return	-0.11	0.52	0.00	N/A	0.09	
Tracking Error	0.24	0.94	0.92	N/A	0.97	
Actual Correlation	1.00	0.97	0.97	N/A	0.98	
Beta	0.98	0.97	1.01	N/A	1.05	
Consistency	50.00	63.89	53.33	N/A	57.33	
Down Market Capture	99.33	87.90	100.03	N/A	103.78	
Down Market Outperformance	0.02	0.96	-0.01	N/A	-0.38	
Information Ratio	-0.45	0.55	0.00	N/A	0.09	
Jensen Alpha	-0.13	0.57	-0.01	N/A	-0.01	
Up Market Capture	96.37	101.23	100.05	N/A	103.58	
Up Market Outperformance	-0.14	0.15	0.00	N/A	0.46	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.65	2.83	2.18	N/A	2.40	
Excess Risk	2.46	3.89	4.07	N/A	4.34	
Sharpe Ratio	-0.67	0.73	0.54	N/A	0.55	

Calculation based on monthly periodicity.

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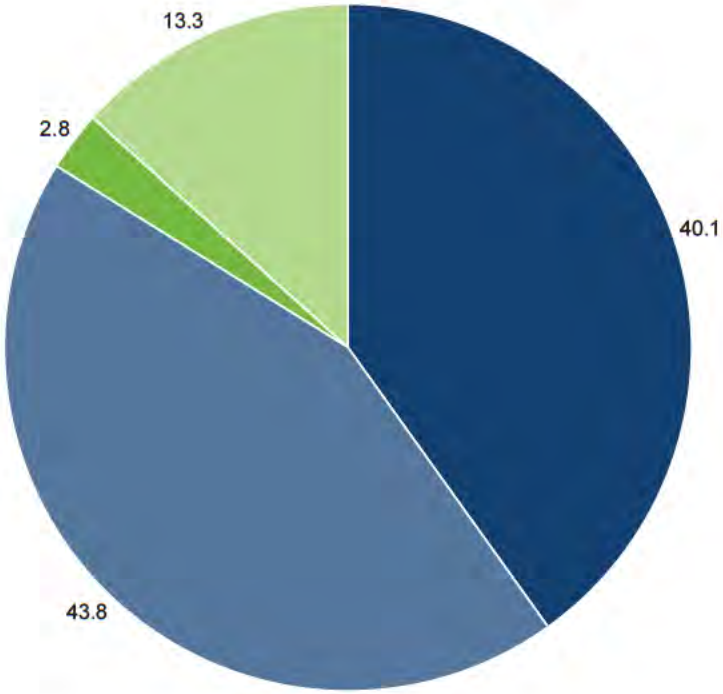
Supplemental Trailing Period Performance

	Performance(%)							Allocation
	1 Quarter	Year To Date	FYTD	1 Year	3 Years	Since Inception	Inception Date	Market Value ($000)
PIMCO Multi-Sector Strategy[1]	-0.42	-0.89	-0.42	-0.11	3.61	2.75	07/01/2012	413,648.28
Blended Policy (PIMCO Multi-Sector)	-0.49	-1.05	-0.49	-0.01	3.08	2.67		
Value Added	0.07	0.16	0.07	-0.10	0.53	0.08		
PIMCO (Blended)	-0.42	-0.89	-0.42	-0.11	3.61	7.27	05/01/1987	
Blended Policy (PIMCO Blended)	-0.49	-1.05	-0.49	-0.01	3.08	6.34		
Value Added	0.07	0.16	0.07	-0.10	0.53	0.93		
PIMCO U.S. Core Plus	-0.08 (93)	-0.99 (31)	-0.08 (93)	-0.62 (40)	2.73 (34)	2.30 (68)	07/01/2012	166,041.52
Blmbg. Barc. U.S. Aggregate	0.02 (85)	-1.60 (76)	0.02 (85)	-1.22 (80)	1.31 (93)	1.70 (93)		
Value Added	-0.10	0.61	-0.10	0.60	1.42	0.60		
IM U.S. Broad Market Core+ Fixed Income (SA+CF) Median	0.33	-1.31	0.33	-0.78	2.27	2.53		
PIMCO Global	1.88 (19)	3.45 (4)	1.88 (19)	4.50 (5)	4.94 (29)	1.81 (59)	07/01/2012	181,115.88
Spliced Barclays GlobalAgg GDPWeighted Dev xUS	-0.15 (62)	1.03 (22)	-0.15 (62)	2.24 (18)	3.04 (58)	0.64 (76)		
Value Added	2.03	2.42	2.03	2.26	1.90	1.17		
IM Global Fixed Income (SA+CF) Median	0.40	-0.82	0.40	-0.07	3.53	2.78		
PIMCO Overlay	-2.18	-4.85	-2.18	-6.56	2.24	3.82	07/01/2012	11,556.23
PIMCO Long Treasuries	-5.43 (100)	-8.44 (98)	-5.43 (100)	-6.37 (96)	0.04 (67)	1.47 (17)	07/01/2012	55,234.28
Blmbg. Barc. U.S. Treasury: Long	-2.88 (89)	-5.79 (78)	-2.88 (89)	-3.56 (74)	0.72 (15)	1.71 (2)		
Value Added	-2.55	-2.65	-2.55	-2.81	-0.68	-0.24		
IM U.S. Long Term Treasury/Govt Bond (MF) Median	-0.54	-1.78	-0.54	-1.96	0.20	0.84		

[1]Performance calculated by Aon Hewitt based on market values provded by State Street and cash flows provded by BNY Mellon. Underlying sleeve market values may not sum to total strategy market value because of net income, cash, and other items.
Performance for each of the underlying portfolios is provided by PIMCO.
PIMCO (Blended) consists of PIMCO PSERS CorePLUS prior to July 2012, and PIMCO Multi-Sector Strategy thereafter. Blended Policy (PIMCO Blended) consists of Barclays Aggregate Index prior to July 2012, and Blended Policy (PIMCO Multi-Sector) thereafter.

Asset Allocation by Manager

September 30, 2018 : $413,948



	Market Value ($000)	Allocation (%)
PIMCO U.S. Core Plus	166,042	40.1
PIMCO Global	181,116	43.8
PIMCO Overlay	11,556	2.8
PIMCO Long Treasuries	55,234	13.3

All market values are provided by State Street. Total may not match to previous pages because of of items such as cash and net income.

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Risk Statistics

PIMCO (Blended)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.11	3.61	2.62	5.74	7.27	05/01/1987
Standard Deviation	2.46	3.86	4.06	4.37	4.31	
Downside Risk	1.80	2.06	2.41	2.41	2.13	
Downside Semi Deviation	0.86	3.67	3.95	4.33	3.98	
Max Drawdown Recovery Period	N/A	9.00	16.00	13.00	17.00	
Maximum Drawdown	-1.80	-3.56	-5.81	-6.39	-7.31	
Maximum Loss Exposure	-1.03	N/A	N/A	-2.31	-1.78	
Upside Semi Deviation	0.65	4.23	4.30	4.85	5.07	
Blended Policy (PIMCO Blended)						
Return	-0.01	3.08	2.62	4.39	6.34	
Standard Deviation	2.48	3.84	3.92	3.96	3.97	
Downside Risk	1.83	2.16	2.30	2.25	2.01	
Downside Semi Deviation	0.88	3.42	3.54	3.88	3.59	
Max Drawdown Recovery Period	N/A	N/A	14.00	12.00	12.00	
Maximum Drawdown	-1.89	-4.47	-5.06	-5.27	-5.27	
Maximum Loss Exposure	-0.86	N/A	N/A	-2.36	-1.77	
Upside Semi Deviation	0.66	4.36	4.37	4.32	4.68	
vs. Blended Policy (PIMCO Blended)						
Active Return	-0.11	0.52	0.00	1.30	0.88	
Tracking Error	0.24	0.94	0.92	1.93	1.39	
Actual Correlation	1.00	0.97	0.97	0.90	0.95	
Beta	0.98	0.97	1.01	0.99	1.03	
Consistency	50.00	63.89	53.33	64.17	58.89	
Down Market Capture	99.33	87.90	100.03	97.73	98.80	
Down Market Outperformance	0.02	0.96	-0.01	0.20	0.09	
Information Ratio	-0.45	0.55	0.00	0.68	0.63	
Jensen Alpha	-0.13	0.57	-0.01	1.34	0.78	
Up Market Capture	96.37	101.23	100.05	115.64	109.21	
Up Market Outperformance	-0.14	0.15	0.00	2.08	1.39	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.65	2.83	2.18	5.37	3.98	
Excess Risk	2.46	3.89	4.07	4.40	4.28	
Sharpe Ratio	-0.67	0.73	0.54	1.22	0.93	

Calculation based on monthly periodicity. PIMCO (Blended) consists of PIMCO PSERS CorePLUS prior to July 2012, and PIMCO Multi-Sector Strategy thereafter
Blended Policy (PIMCO Blended) consists of Barclays Aggregate Index prior to July 2012, and Blended Policy (PIMCO Multi-Sector) thereafter.

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Risk Statistics

PIMCO U.S. Core Plus

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-0.62	2.73	2.76	N/A	2.30	07/01/2012
Standard Deviation	2.56	2.77	2.94	N/A	3.19	
Downside Risk	1.94	1.79	1.69	N/A	2.07	
Downside Semi Deviation	0.83	3.20	2.65	N/A	3.31	
Max Drawdown Recovery Period	N/A	7.00	7.00	N/A	19.00	
Maximum Drawdown	-1.98	-2.45	-2.45	N/A	-5.84	
Maximum Loss Exposure	-1.61	N/A	-0.36	N/A	-0.83	
Upside Semi Deviation	0.72	2.78	3.34	N/A	3.26	
Blmbg. Barc. U.S. Aggregate						
Return	-1.22	1.31	2.16	3.77	1.70	
Standard Deviation	2.25	2.66	2.70	3.24	2.75	
Downside Risk	1.88	1.84	1.63	1.75	1.78	
Downside Semi Deviation	0.80	2.90	2.56	3.02	2.84	
Max Drawdown Recovery Period	N/A	13.00	13.00	13.00	13.00	
Maximum Drawdown	-2.19	-3.28	-3.28	-3.67	-3.67	
Maximum Loss Exposure	-1.81	-0.57	-0.14	-2.36	-1.06	
Upside Semi Deviation	0.56	2.60	2.95	3.62	2.80	
vs. Blmbg. Barc. U.S. Aggregate						
Active Return	0.61	1.39	0.59	N/A	0.60	
Tracking Error	0.50	1.34	1.27	N/A	1.31	
Actual Correlation	0.99	0.88	0.90	N/A	0.91	
Beta	1.12	0.91	0.98	N/A	1.06	
Consistency	58.33	72.22	63.33	N/A	64.00	
Down Market Capture	99.77	77.49	92.57	N/A	101.09	
Down Market Outperformance	0.01	1.40	0.44	N/A	-0.08	
Information Ratio	1.21	1.04	0.47	N/A	0.46	
Jensen Alpha	0.95	1.44	0.63	N/A	0.53	
Up Market Capture	123.66	118.86	108.31	N/A	113.82	
Up Market Outperformance	0.61	1.42	0.73	N/A	1.13	
vs. FTSE 3 Month T-Bill						
Excess Return	-2.15	1.93	2.28	N/A	1.92	
Excess Risk	2.54	2.80	2.96	N/A	3.20	
Sharpe Ratio	-0.85	0.69	0.77	N/A	0.60	

Calculation based on monthly periodicity.

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Risk Statistics

PIMCO Global

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	4.50	4.94	1.59	N/A	1.81	07/01/2012
Standard Deviation	1.90	2.51	3.75	N/A	4.61	
Downside Risk	0.23	1.09	2.67	N/A	3.32	
Downside Semi Deviation	0.22	0.70	4.58	N/A	5.71	
Max Drawdown Recovery Period	3.00	7.00	48.00	N/A	48.00	
Maximum Drawdown	-0.19	-2.06	-12.92	N/A	-12.92	
Maximum Loss Exposure	N/A	N/A	-7.58	N/A	-4.45	
Upside Semi Deviation	0.74	3.04	3.34	N/A	4.04	
Spliced Barclays GlobalAgg GDPWeighted Dev xUS						
Return	2.24	3.04	0.07	2.61	0.64	
Standard Deviation	1.51	2.43	3.58	7.16	4.15	
Downside Risk	0.60	1.27	2.76	4.82	3.02	
Downside Semi Deviation	0.33	2.17	4.16	7.68	4.59	
Max Drawdown Recovery Period	3.00	12.00	N/A	N/A	N/A	
Maximum Drawdown	-0.48	-2.79	-14.08	-14.08	-14.08	
Maximum Loss Exposure	N/A	N/A	-9.55	-5.50	-6.19	
Upside Semi Deviation	0.56	2.84	3.09	6.93	3.83	
vs. Spliced Barclays GlobalAgg GDPWeighted Dev xUS						
Active Return	2.20	1.84	1.51	N/A	1.18	
Tracking Error	2.02	1.47	1.42	N/A	1.56	
Actual Correlation	0.31	0.82	0.93	N/A	0.94	
Beta	0.39	0.85	0.97	N/A	1.05	
Consistency	41.67	63.89	58.33	N/A	56.00	
Down Market Capture	-186.80	35.41	76.24	N/A	88.67	
Down Market Outperformance	2.67	3.35	2.20	N/A	1.12	
Information Ratio	1.09	1.25	1.07	N/A	0.75	
Jensen Alpha	2.64	2.20	1.51	N/A	1.17	
Up Market Capture	85.08	111.60	109.14	N/A	110.81	
Up Market Outperformance	-0.49	0.97	0.84	N/A	1.20	
vs. FTSE 3 Month T-Bill						
Excess Return	2.87	4.06	1.16	N/A	1.49	
Excess Risk	1.88	2.52	3.72	N/A	4.59	
Sharpe Ratio	1.52	1.61	0.31	N/A	0.33	

Calculation based on monthly periodicity.

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Risk Statistics

PIMCO Overlay

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-6.56	2.24	3.07	N/A	3.82	07/01/2012
Standard Deviation	6.21	6.70	5.57	N/A	5.63	
Downside Risk	5.62	4.71	3.86	N/A	3.85	
Downside Semi Deviation	2.03	7.20	6.63	N/A	6.91	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	-6.56	-8.25	-8.25	N/A	-8.25	
Maximum Loss Exposure	-6.56	-1.36	N/A	N/A	N/A	
Upside Semi Deviation	1.83	6.55	5.14	N/A	5.19	
ICE Libor (1 month)						
Return	1.78	1.04	0.69	0.52	0.59	
Standard Deviation	0.10	0.18	0.19	0.17	0.17	
Downside Risk	0.00	0.00	0.00	0.00	0.00	
Downside Semi Deviation	N/A	N/A	N/A	N/A	N/A	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	N/A	
Maximum Drawdown	0.00	0.00	0.00	0.00	0.00	
Maximum Loss Exposure	N/A	N/A	N/A	N/A	N/A	
Upside Semi Deviation	0.54	0.35	0.27	0.23	0.24	
vs. ICE Libor (1 month)						
Active Return	-8.36	1.41	2.49	N/A	3.32	
Tracking Error	6.19	6.74	5.61	N/A	5.66	
Actual Correlation	0.21	-0.20	-0.17	N/A	-0.16	
Beta	13.72	-7.35	-5.08	N/A	-5.23	
Consistency	25.00	52.78	63.33	N/A	66.67	
Down Market Capture	N/A	N/A	N/A	N/A	N/A	
Down Market Outperformance	N/A	N/A	N/A	N/A	N/A	
Information Ratio	-1.35	0.21	0.44	N/A	0.59	
Jensen Alpha	-4.71	-0.32	5.37	N/A	7.92	
Up Market Capture	-372.72	235.90	462.81	N/A	661.06	
Up Market Outperformance	-8.34	1.20	2.38	N/A	3.22	
vs. FTSE 3 Month T-Bill						
Excess Return	-8.15	1.64	2.69	N/A	3.50	
Excess Risk	6.19	6.74	5.61	N/A	5.66	
Sharpe Ratio	-1.32	0.24	0.48	N/A	0.62	

Calculation based on monthly periodicity.

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Risk Statistics

PIMCO Long Treasuries

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	-6.37	0.04	4.03	N/A	1.47	07/01/2012
Standard Deviation	9.02	9.13	9.81	N/A	9.74	
Downside Risk	8.00	6.73	6.32	N/A	6.65	
Downside Semi Deviation	3.83	9.95	9.71	N/A	9.67	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	28.00	
Maximum Drawdown	-8.44	-13.09	-13.09	N/A	-15.41	
Maximum Loss Exposure	-6.37	-1.38	-2.78	N/A	-12.58	
Upside Semi Deviation	1.79	8.61	10.18	N/A	9.97	
Blmbg. Barc. U.S. Treasury: Long						
Return	-3.56	0.72	4.41	5.45	1.71	
Standard Deviation	7.59	8.95	9.76	12.11	9.70	
Downside Risk	6.11	6.31	6.13	7.03	6.48	
Downside Semi Deviation	2.61	8.80	9.07	10.24	9.17	
Max Drawdown Recovery Period	N/A	N/A	N/A	28.00	28.00	
Maximum Drawdown	-6.14	-13.92	-13.92	-15.94	-15.94	
Maximum Loss Exposure	-3.91	-1.38	-3.08	-3.26	-13.16	
Upside Semi Deviation	1.98	9.40	10.65	13.88	10.38	
vs. Blmbg. Barc. U.S. Treasury: Long						
Active Return	-2.84	-0.66	-0.35	N/A	-0.23	
Tracking Error	2.81	1.73	1.41	N/A	1.30	
Actual Correlation	0.96	0.98	0.99	N/A	0.99	
Beta	1.14	1.00	0.99	N/A	1.00	
Consistency	33.33	47.22	45.00	N/A	48.00	
Down Market Capture	121.79	103.24	100.54	N/A	100.22	
Down Market Outperformance	-2.51	-0.58	-0.12	N/A	-0.06	
Information Ratio	-1.01	-0.38	-0.25	N/A	-0.17	
Jensen Alpha	-2.13	-0.66	-0.33	N/A	-0.22	
Up Market Capture	99.24	97.39	98.06	N/A	98.57	
Up Market Outperformance	-0.08	-0.81	-0.72	N/A	-0.52	
vs. FTSE 3 Month T-Bill						
Excess Return	-7.75	-0.35	3.94	N/A	1.52	
Excess Risk	9.03	9.16	9.84	N/A	9.76	
Sharpe Ratio	-0.86	-0.04	0.40	N/A	0.16	

Calculation based on monthly periodicity.

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Real Assets

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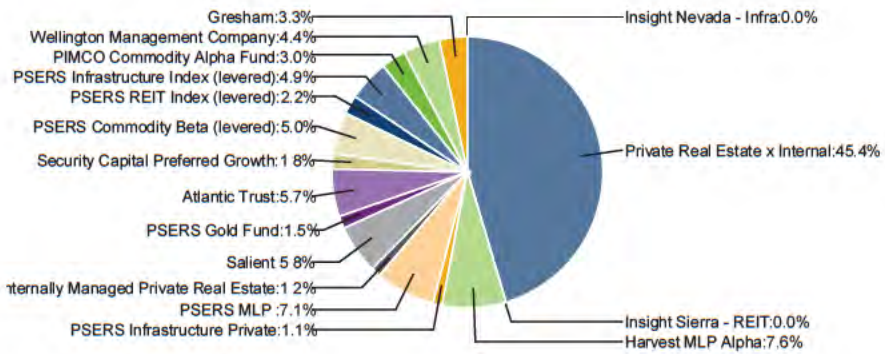
AON Empower Results®

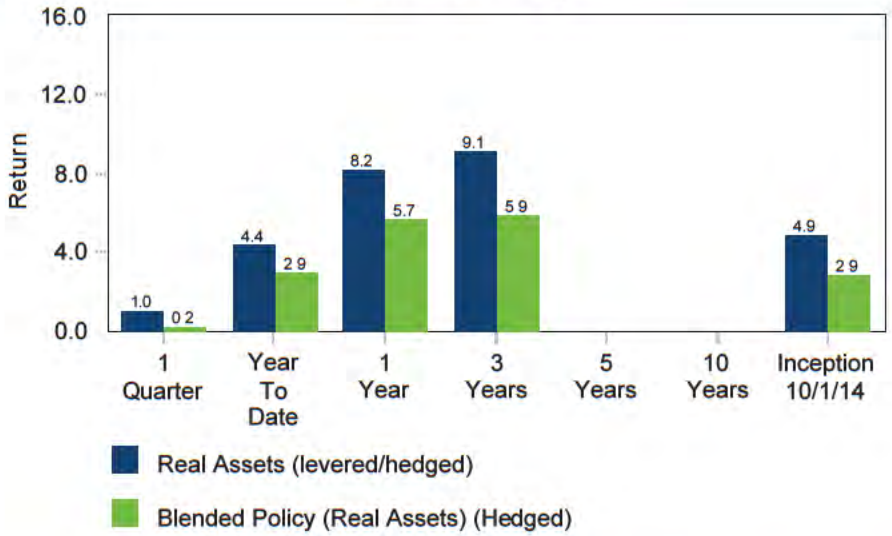
Portfolio Overview

Current Allocation

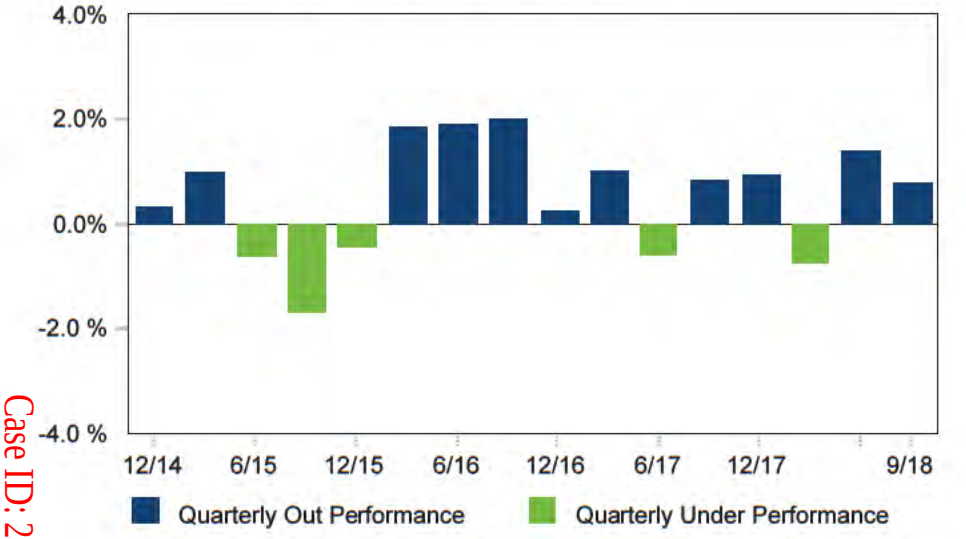
September 30, 2018 : $10,599M



Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception

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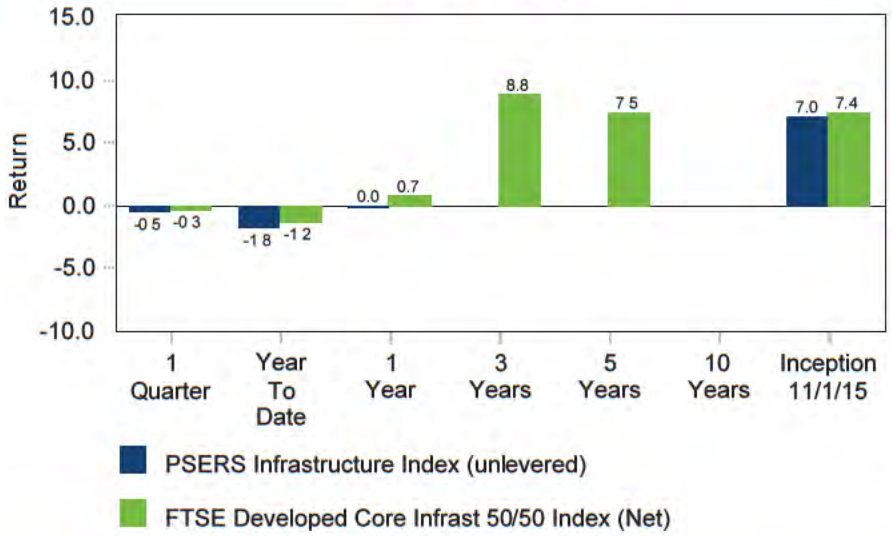
AON Empower Results®

Performance Summary

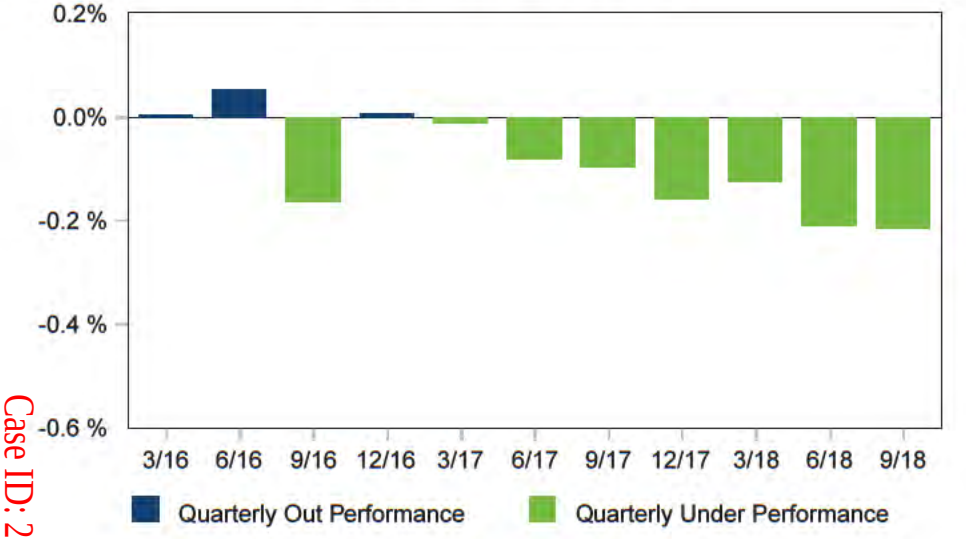
Account Information

Account Name:	PSERS Infrastructure Index (unlevered)
Inception Date:	11/01/2015
Account Structure:	Separate Account
Asset Class:	US Real Assets
Benchmark:	FTSE Developed Core Infrast 50/50 Index (Net)
Peer Group:	

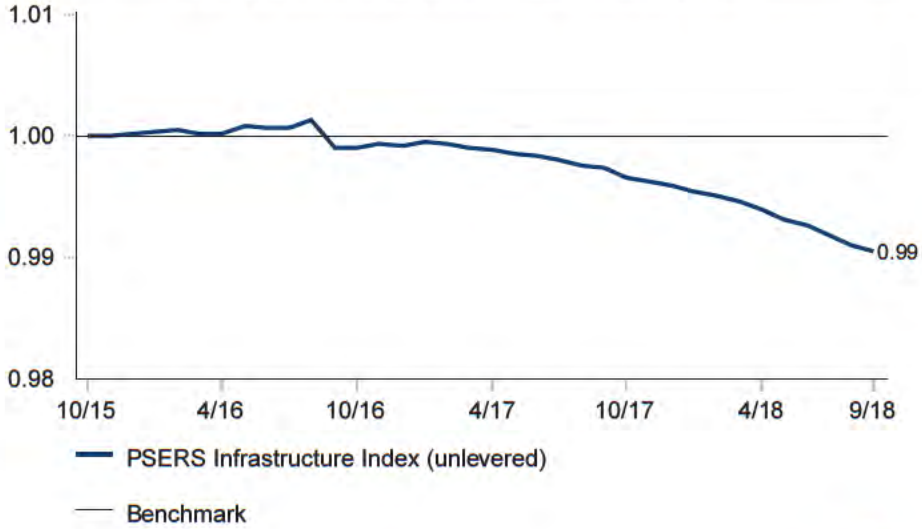
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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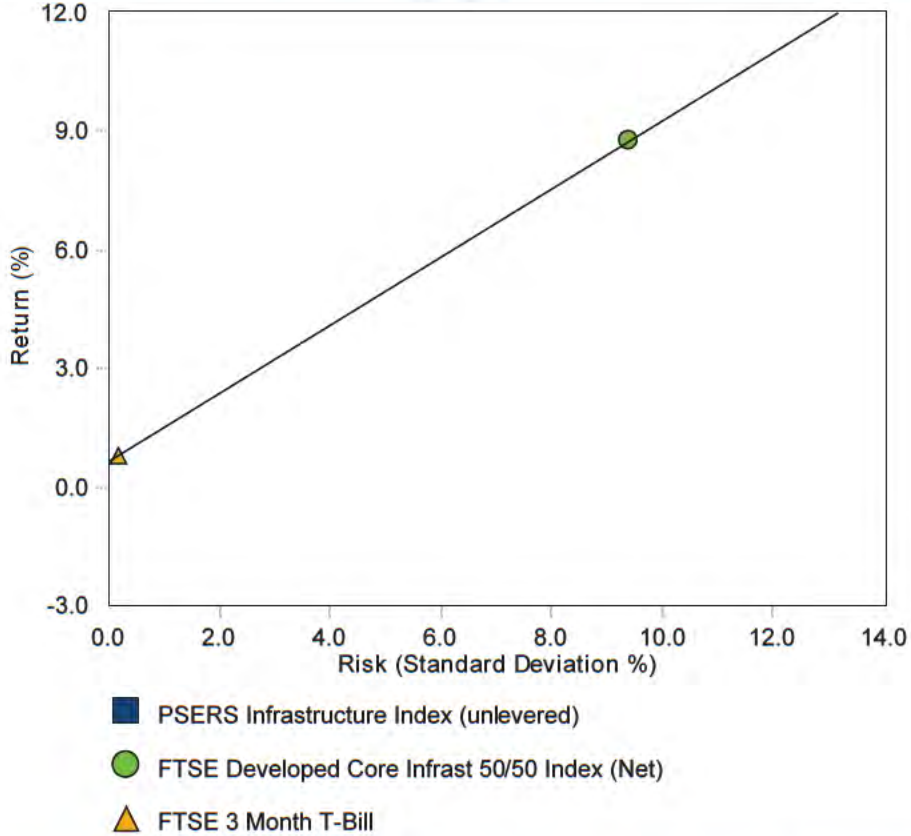
AON Empower Results®

PSERS Infrastructure Index (unlevered) Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation

No data found.

3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS Infrastructure Index (unlevered)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
FTSE Developed Core Infrast 50/50 Index (Net)	0.00	0.00	N/A	1.00	0.85	0.00	1.00	8.76	9.41	1.00
FTSE 3 Month T-Bill	-8.05	9.43	-0.85	0.01	N/A	0.82	0.00	0.80	0.18	-0.11

Risk Statistics

PSERS Infrastructure Index (unlevered)

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	0.04	N/A	N/A	N/A	7.03	11/01/2015
Standard Deviation	8.08	N/A	N/A	N/A	9.23	
Downside Risk	6.55	N/A	N/A	N/A	5.65	
Downside Semi Deviation	2.80	N/A	N/A	N/A	9.14	
Max Drawdown Recovery Period	N/A	N/A	N/A	N/A	8.00	
Maximum Drawdown	-7.50	N/A	N/A	N/A	-7.80	
Maximum Loss Exposure	-4.08	N/A	N/A	N/A	-4.66	
Upside Semi Deviation	2.03	N/A	N/A	N/A	9.90	
FTSE Developed Core Infrast 50/50 Index (Net)						
Return	0.74	8.76	7.47	N/A	7.38	
Standard Deviation	8.10	9.41	9.24	N/A	9.27	
Downside Risk	6.47	5.56	5.64	N/A	5.64	
Downside Semi Deviation	2.77	9.13	9.04	N/A	9.13	
Max Drawdown Recovery Period	N/A	8.00	14.00	N/A	8.00	
Maximum Drawdown	-7.39	-7.69	-8.34	N/A	-7.69	
Maximum Loss Exposure	-3.86	-0.37	N/A	N/A	-4.68	
Upside Semi Deviation	2.09	10.35	9.93	N/A	10.01	
vs. FTSE Developed Core Infrast 50/50 Index (Net)						
Active Return	-0.70	N/A	N/A	N/A	-0.34	
Tracking Error	0.06	N/A	N/A	N/A	0.18	
Actual Correlation	1.00	N/A	N/A	N/A	1.00	
Beta	1.00	N/A	N/A	N/A	1.00	
Consistency	0.00	N/A	N/A	N/A	20.00	
Down Market Capture	103.28	N/A	N/A	N/A	100.77	
Down Market Outperformance	-0.30	N/A	N/A	N/A	-0.15	
Information Ratio	-11.07	N/A	N/A	N/A	-1.91	
Jensen Alpha	-0.70	N/A	N/A	N/A	-0.31	
Up Market Capture	96.70	N/A	N/A	N/A	98.48	
Up Market Outperformance	-0.40	N/A	N/A	N/A	-0.56	
vs. FTSE 3 Month T-Bill						
Excess Return	-1.22	N/A	N/A	N/A	6.40	
Excess Risk	8.07	N/A	N/A	N/A	9.25	
Sharpe Ratio	-0.15	N/A	N/A	N/A	0.69	

Calculation based on monthly periodicity.

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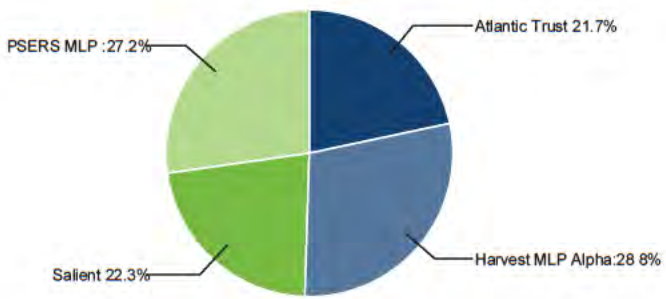
MLPs

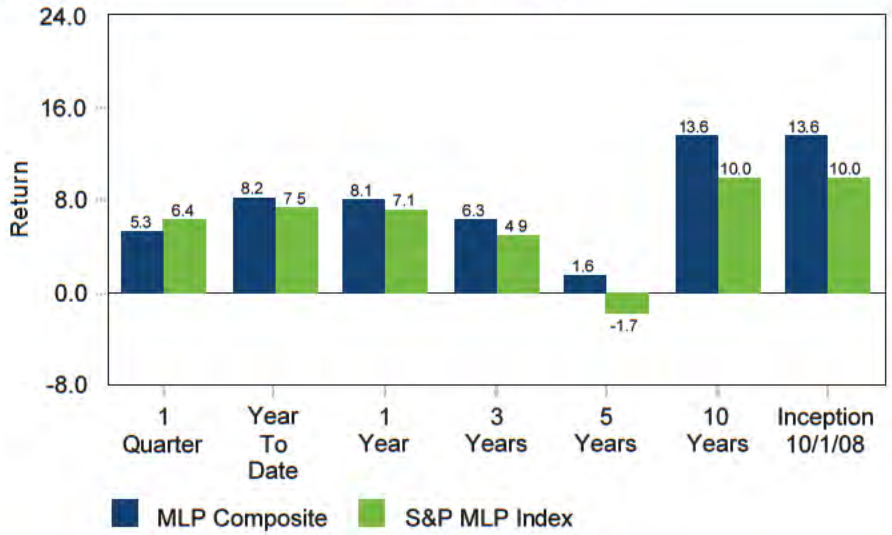
Portfolio Overview

Current Allocation

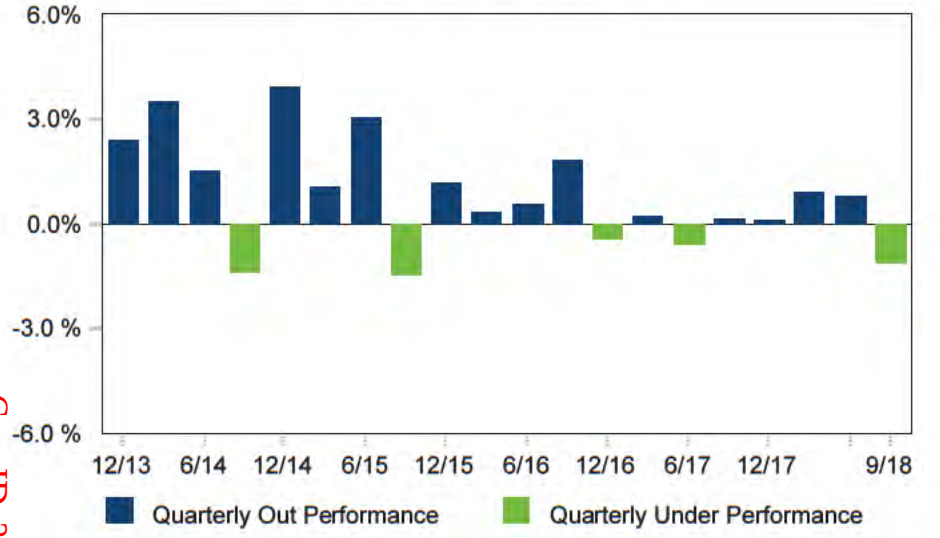
September 30, 2018 : $2,779M



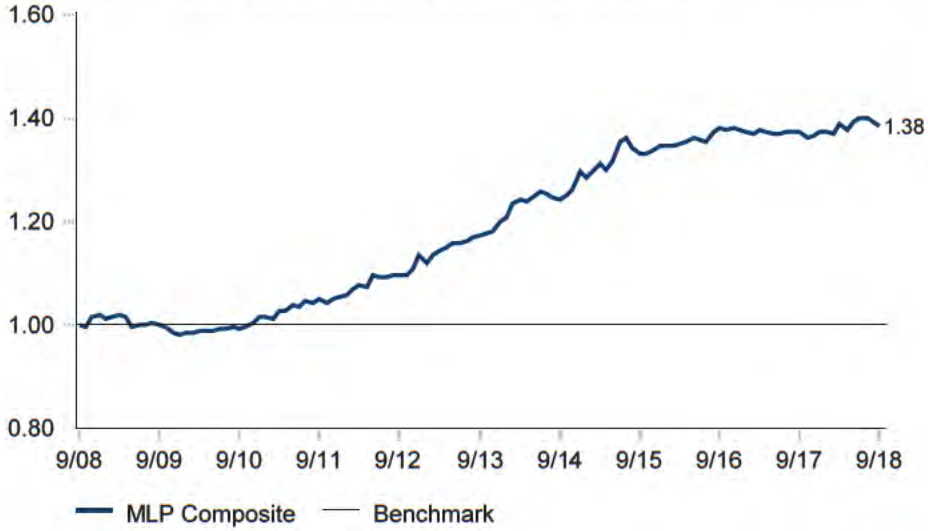
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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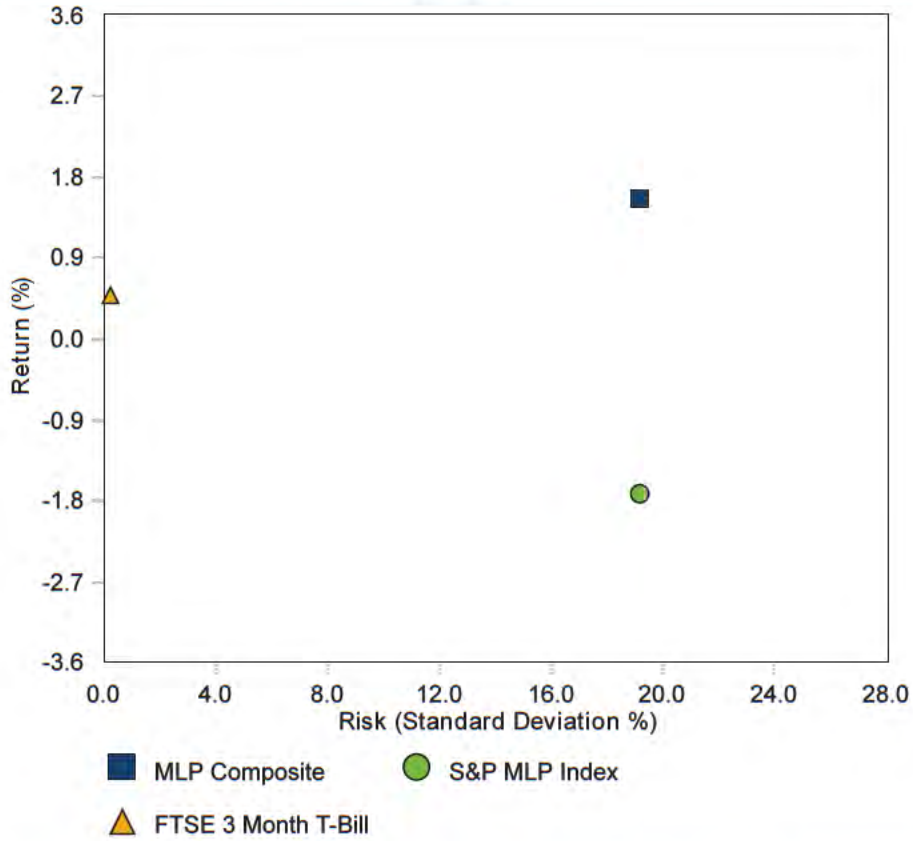
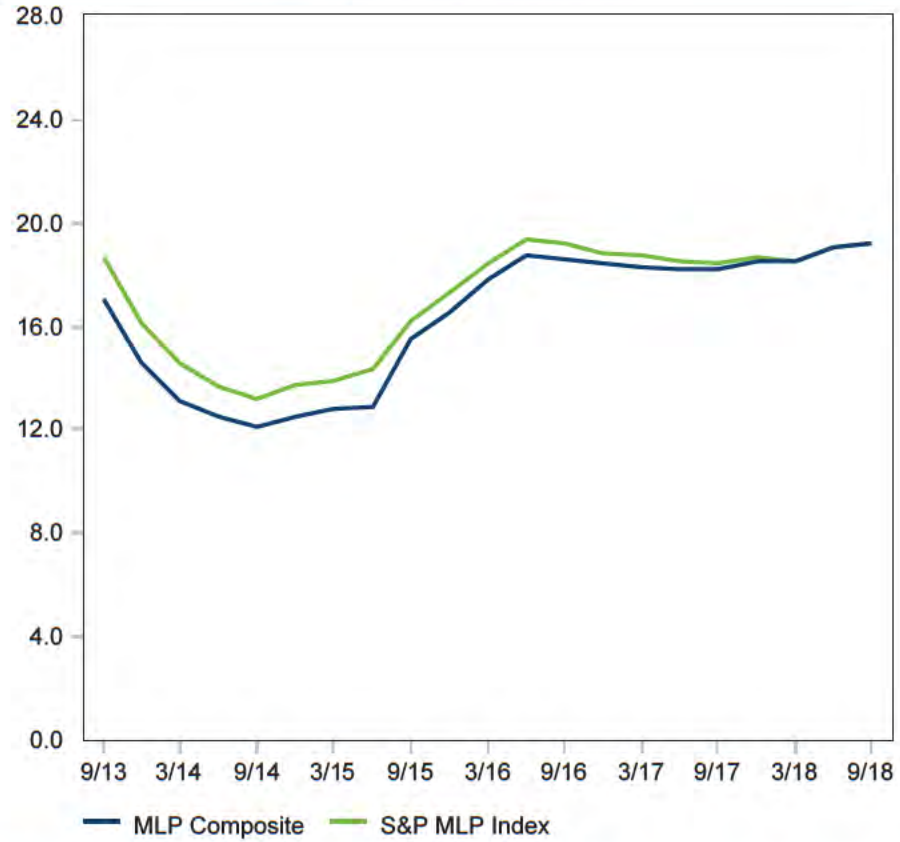
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
MLP Composite	3.28	2.90	1.13	0.98	0.15	3.34	0.99	1.56	19.19	0.99
S&P MLP Index	0.00	0.00	N/A	1.00	-0.02	0.00	1.00	-1.73	19.23	1.00
FTSE 3 Month T-Bill	0.39	19.21	0.02	0.01	N/A	0.49	0.00	0.49	0.18	0.10

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Risk Statistics

MLP Composite

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	8.06	6.34	1.56	13.61	13.61	10/01/2008
Standard Deviation	19.75	19.53	19.19	18.35	18.35	
Downside Risk	12.87	12.80	13.70	11.58	11.58	
Downside Semi Deviation	5.51	19.55	20.25	19.26	19.26	
Max Drawdown Recovery Period	6.00	8.00	N/A	N/A	N/A	
Maximum Drawdown	-14.57	-25.02	-47.29	-47.29	-47.29	
Maximum Loss Exposure	-9.94	-18.23	-26.55	-19.01	-19.01	
Upside Semi Deviation	6.53	20.27	18.58	18.70	18.70	
S&P MLP Index						
Return	7.15	4.90	-1.73	9.97	9.97	
Standard Deviation	19.82	19.50	19.23	19.13	19.13	
Downside Risk	13.08	12.98	14.07	12.30	12.30	
Downside Semi Deviation	5.60	19.20	20.42	19.57	19.57	
Max Drawdown Recovery Period	6.00	11.00	N/A	N/A	N/A	
Maximum Drawdown	-15.56	-25.82	-51.27	-51.27	-51.27	
Maximum Loss Exposure	-10.99	-19.32	-35.96	-20.60	-20.60	
Upside Semi Deviation	6.48	20.46	18.39	19.45	19.45	
vs. S&P MLP Index						
Active Return	0.84	1.37	3.28	3.14	3.14	
Tracking Error	2.48	1.88	2.90	2.76	2.76	
Actual Correlation	0.99	1.00	0.99	0.99	0.99	
Beta	0.99	1.00	0.99	0.95	0.95	
Consistency	50.00	58.33	61.67	63.33	63.33	
Down Market Capture	97.76	96.08	93.38	88.04	88.04	
Down Market Outperformance	0.45	1.20	2.13	3.81	3.81	
Information Ratio	0.34	0.73	1.13	1.14	1.14	
Jensen Alpha	0.93	1.40	3.33	3.76	3.76	
Up Market Capture	100.88	101.55	105.96	102.38	102.38	
Up Market Outperformance	0.38	1.41	4.86	2.14	2.14	
vs. FTSE 3 Month T-Bill						
Excess Return	8.01	7.22	2.90	14.20	14.20	
Excess Risk	19.72	19.52	19.18	18.36	18.36	
Sharpe Ratio	0.41	0.37	0.15	0.77	0.77	

Calculation based on monthly periodicity.

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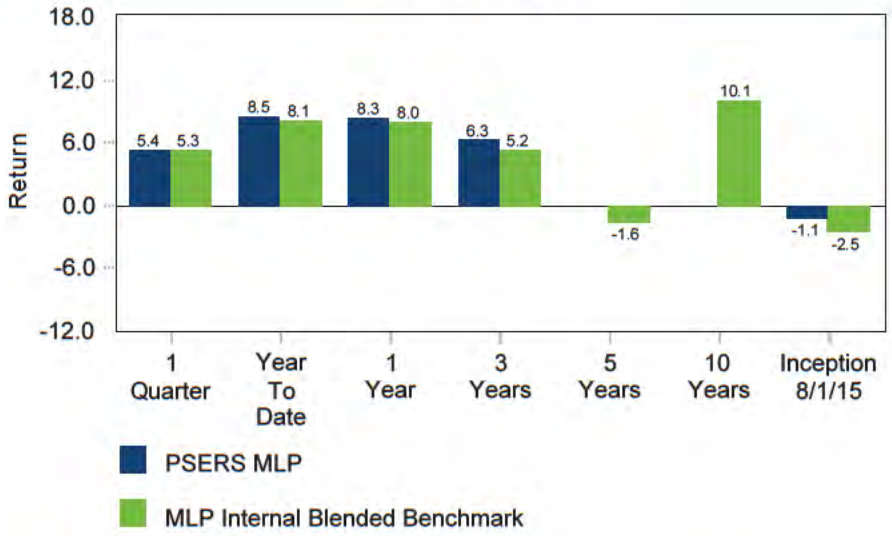
Performance Summary

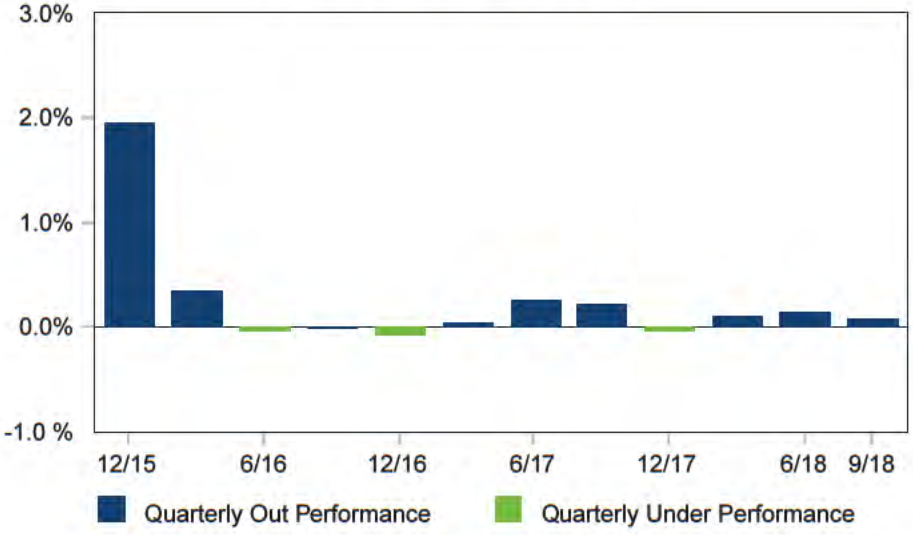
Account Information

Account Name:	PSERS MLP
Inception Date:	07/30/2015
Account Structure:	Separate Account
Asset Class:	US Real Assets
Benchmark:	MLP Internal Blended Benchmark
Peer Group:	

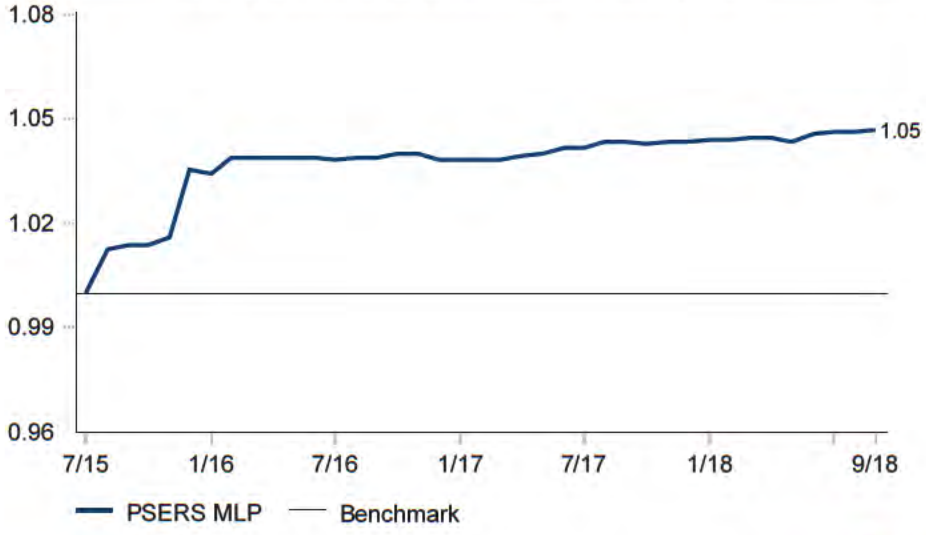
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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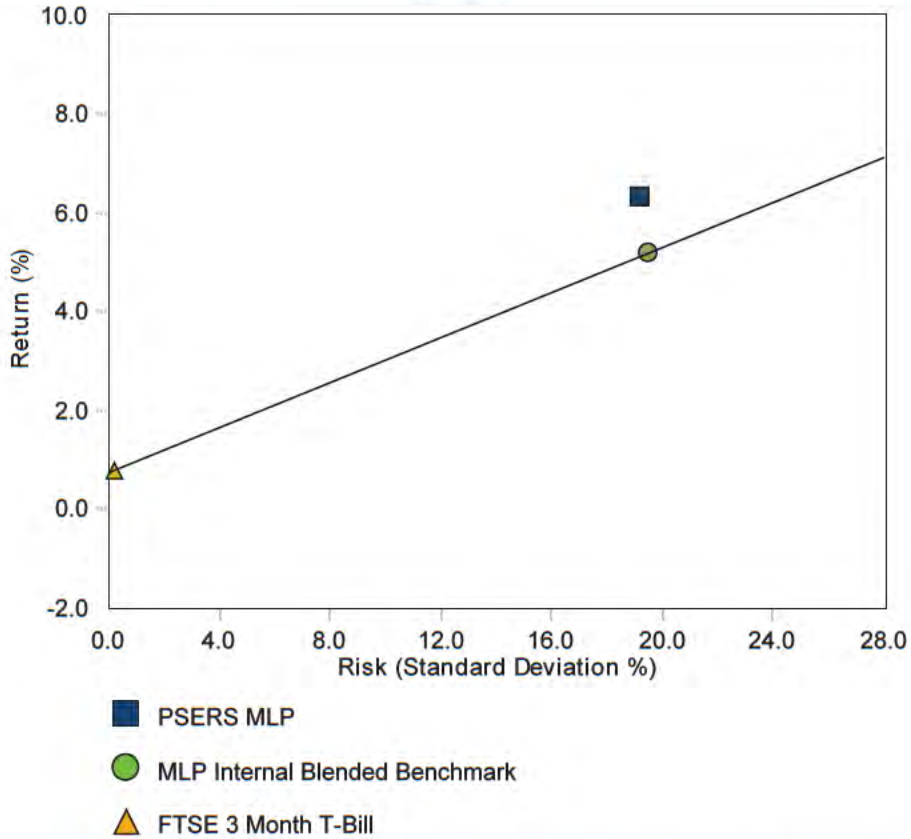
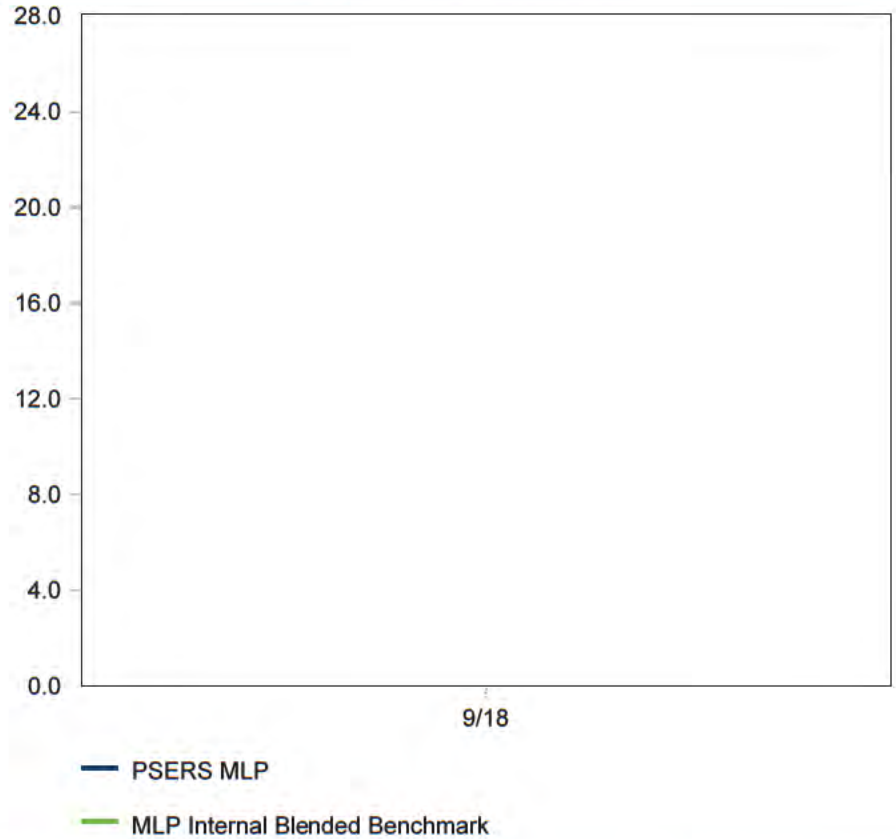
AON Empower Results®

PSERS MLP Risk Profile

Annualized Return vs. Annualized Standard Deviation 3 Years



Rolling 3 Years Standard Deviation



3 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
PSERS MLP	1.01	1.05	0.96	1.00	0.37	1.13	0.98	6.31	19.19	1.00
MLP Internal Blended Benchmark	0.00	0.00	N/A	1.00	0.31	0.00	1.00	5.19	19.48	1.00
FTSE 3 Month T-Bill	-6.12	19.47	-0.31	0.00	N/A	0.80	0.00	0.80	0.18	0.05

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AON Empower Results®

Risk Statistics

PSERS MLP

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	8.28	6.31	N/A	N/A	-1.11	08/01/2015
Standard Deviation	19.71	19.19	N/A	N/A	21.07	
Downside Risk	12.83	12.56	N/A	N/A	15.49	
Downside Semi Deviation	5.49	18.58	N/A	N/A	22.20	
Max Drawdown Recovery Period	6.00	8.00	N/A	N/A	N/A	
Maximum Drawdown	-14.53	-23.97	N/A	N/A	-33.60	
Maximum Loss Exposure	-9.89	-17.35	N/A	N/A	-33.60	
Upside Semi Deviation	6.53	20.48	N/A	N/A	20.48	
MLP Internal Blended Benchmark						
Return	7.98	5.19	-1.57	10.06	-2.52	
Standard Deviation	19.76	19.48	19.23	19.13	21.41	
Downside Risk	12.88	12.92	14.03	12.28	15.92	
Downside Semi Deviation	5.52	19.11	20.37	19.54	22.82	
Max Drawdown Recovery Period	6.00	11.00	N/A	N/A	N/A	
Maximum Drawdown	-14.59	-25.82	-51.27	-51.27	-36.07	
Maximum Loss Exposure	-9.96	-19.32	-35.96	-20.60	-36.07	
Upside Semi Deviation	6.53	20.53	18.43	19.47	20.53	
vs. MLP Internal Blended Benchmark						
Active Return	0.27	1.01	N/A	N/A	1.36	
Tracking Error	0.26	1.05	N/A	N/A	1.19	
Actual Correlation	1.00	1.00	N/A	N/A	1.00	
Beta	1.00	0.98	N/A	N/A	0.98	
Consistency	83.33	72.22	N/A	N/A	73.68	
Down Market Capture	98.86	95.38	N/A	N/A	95.05	
Down Market Outperformance	0.22	1.44	N/A	N/A	1.66	
Information Ratio	1.04	0.96	N/A	N/A	1.15	
Jensen Alpha	0.30	1.11	N/A	N/A	1.36	
Up Market Capture	100.00	99.80	N/A	N/A	99.80	
Up Market Outperformance	0.00	-0.18	N/A	N/A	-0.18	
vs. FTSE 3 Month T-Bill						
Excess Return	8.21	7.12	N/A	N/A	0.33	
Excess Risk	19.68	19.18	N/A	N/A	21.04	
Sharpe Ratio	0.42	0.37	N/A	N/A	0.02	

Calculation based on monthly periodicity.

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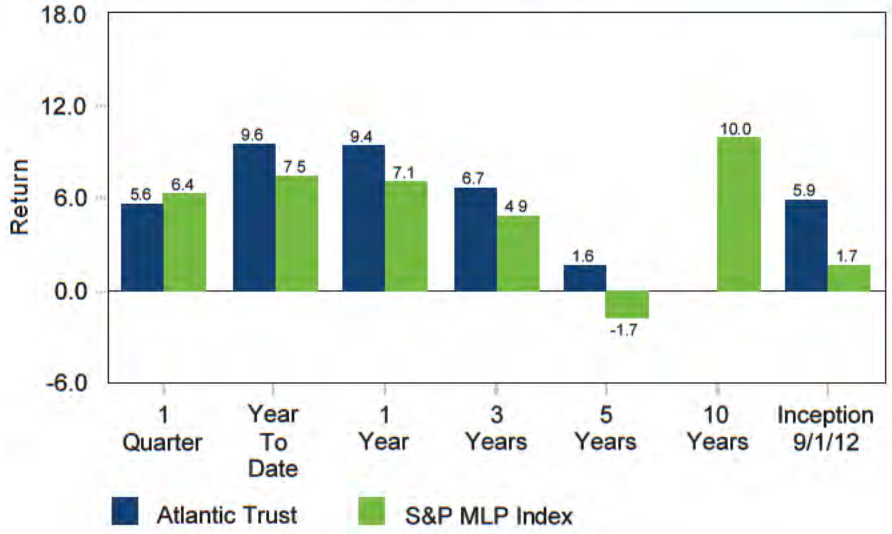
Performance Summary

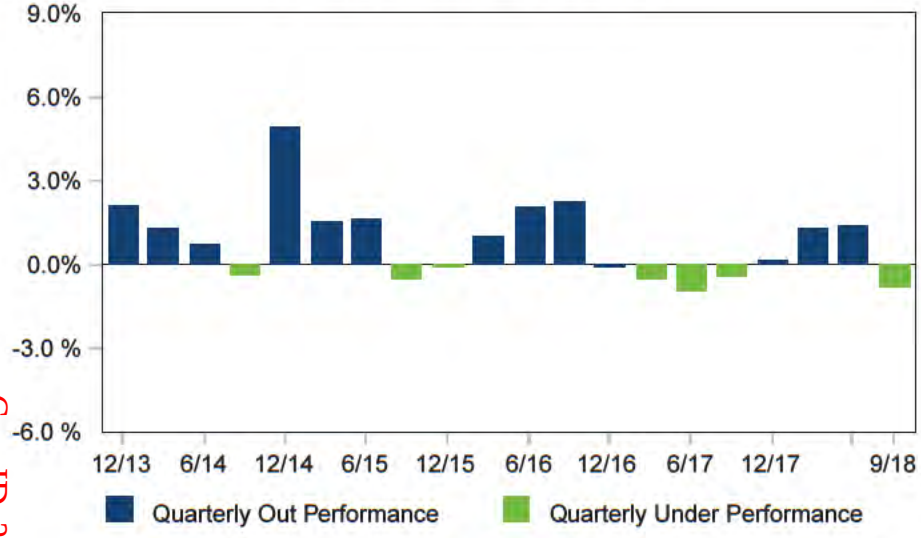
Account Information

Account Name:	Atlantic Trust
Inception Date:	09/30/2012
Account Structure:	Separate Account
Asset Class:	US Real Assets
Benchmark:	S&P MLP Total Return Index
Peer Group:	

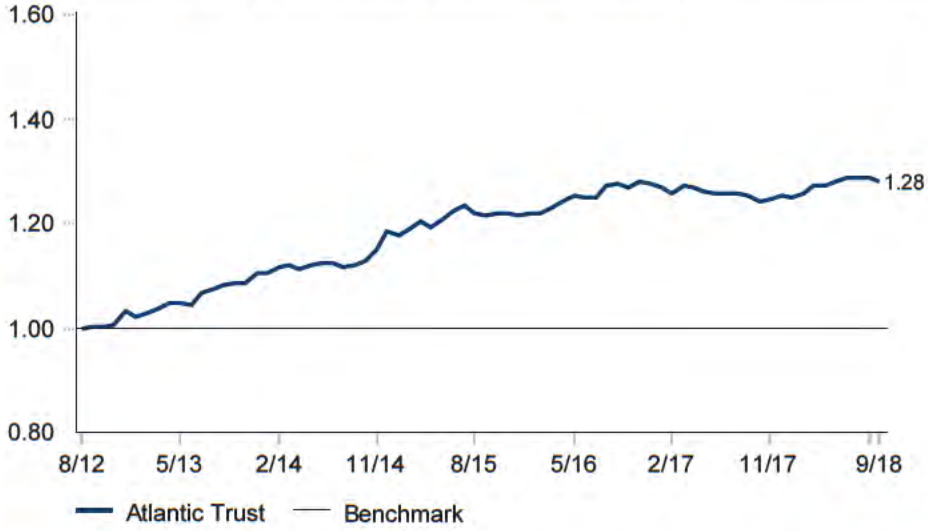
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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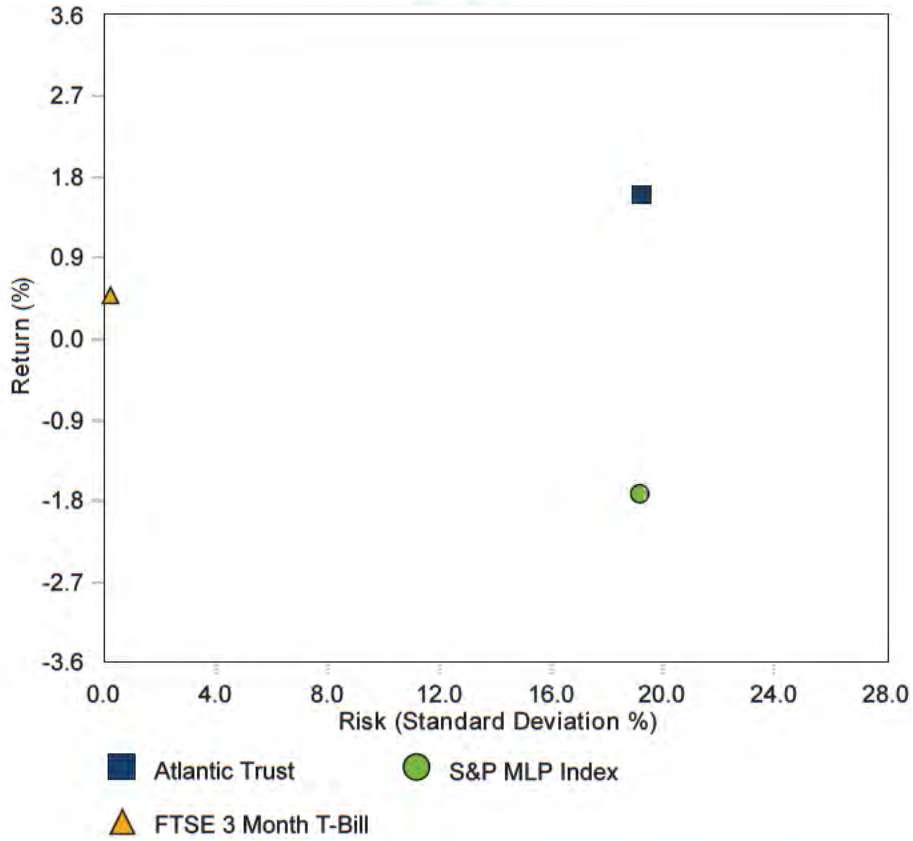
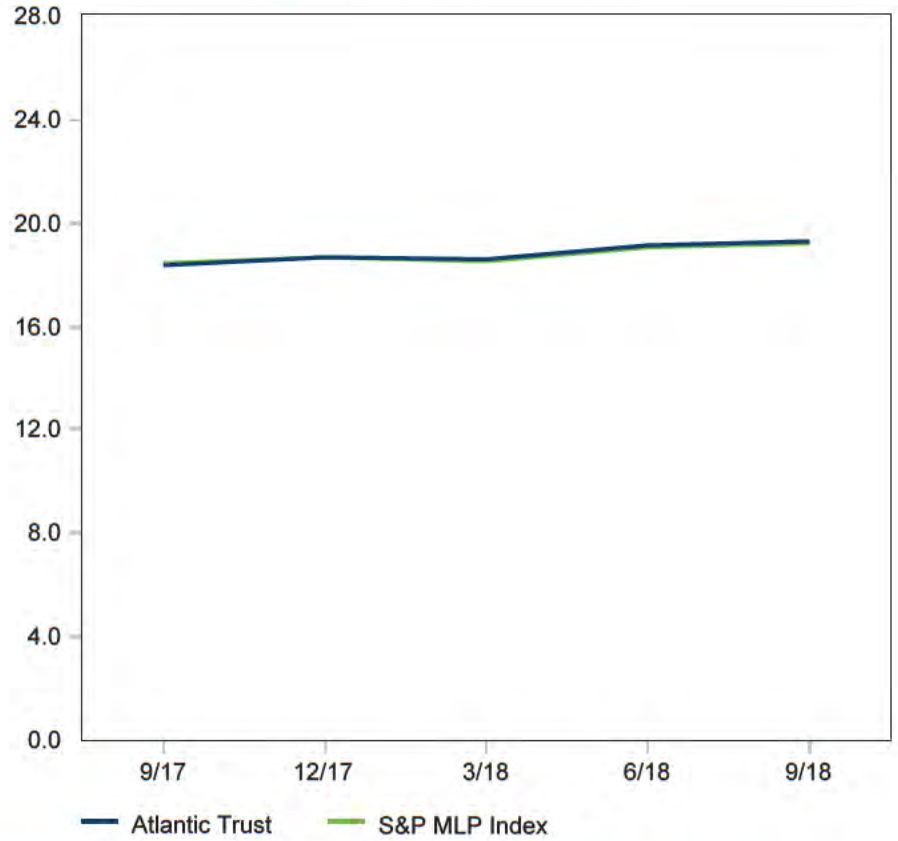
AON Empower Results®

Atlantic Trust Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Atlantic Trust	3.34	2.74	1.22	0.98	0.15	3.39	0.99	1.60	19.27	0.99
S&P MLP Index	0.00	0.00	N/A	1.00	-0.02	0.00	1.00	-1.73	19.23	1.00
FTSE 3 Month T-Bill	0.39	19.21	0.02	0.01	N/A	0.49	0.00	0.49	0.18	0.10

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AON Empower Results®

Risk Statistics

Atlantic Trust

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	9.39	6.69	1.60	N/A	5.87	09/01/2012
Standard Deviation	19.52	19.93	19.27	N/A	18.30	
Downside Risk	12.36	12.91	13.66	N/A	12.41	
Downside Semi Deviation	5.29	20.41	20.57	N/A	19.22	
Max Drawdown Recovery Period	6.00	8.00	N/A	N/A	N/A	
Maximum Drawdown	-14.06	-25.67	-46.77	N/A	-46.77	
Maximum Loss Exposure	-9.64	-19.07	-27.85	N/A	-5.72	
Upside Semi Deviation	6.62	20.36	18.52	N/A	18.05	
S&P MLP Index						
Return	7.15	4.90	-1.73	9.97	1.67	
Standard Deviation	19.82	19.50	19.23	19.13	18.46	
Downside Risk	13.08	12.98	14.07	12.30	12.87	
Downside Semi Deviation	5.60	19.20	20.42	19.57	19.30	
Max Drawdown Recovery Period	6.00	11.00	N/A	N/A	N/A	
Maximum Drawdown	-15.56	-25.82	-51.27	-51.27	-51.27	
Maximum Loss Exposure	-10.99	-19.32	-35.96	-20.60	-22.71	
Upside Semi Deviation	6.48	20.46	18.39	19.45	18.03	
vs. S&P MLP Index						
Active Return	2.02	1.78	3.34	N/A	4.04	
Tracking Error	2.09	2.24	2.74	N/A	2.91	
Actual Correlation	0.99	0.99	0.99	N/A	0.99	
Beta	0.98	1.02	0.99	N/A	0.98	
Consistency	50.00	47.22	56.67	N/A	60.27	
Down Market Capture	94.91	96.28	91.73	N/A	89.30	
Down Market Outperformance	1.04	1.12	2.67	N/A	3.36	
Information Ratio	0.96	0.79	1.22	N/A	1.38	
Jensen Alpha	2.19	1.69	3.39	N/A	4.18	
Up Market Capture	102.33	103.06	104.53	N/A	106.11	
Up Market Outperformance	1.01	2.71	3.59	N/A	4.57	
vs. FTSE 3 Month T-Bill						
Excess Return	9.19	7.62	2.95	N/A	6.97	
Excess Risk	19.50	19.93	19.26	N/A	18.29	
Sharpe Ratio	0.47	0.38	0.15	N/A	0.38	

Calculation based on monthly periodicity.

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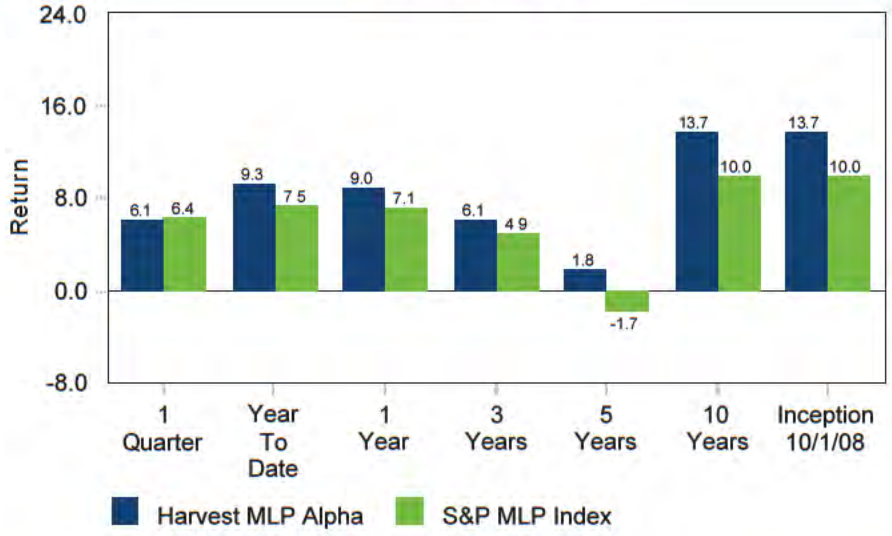
Performance Summary

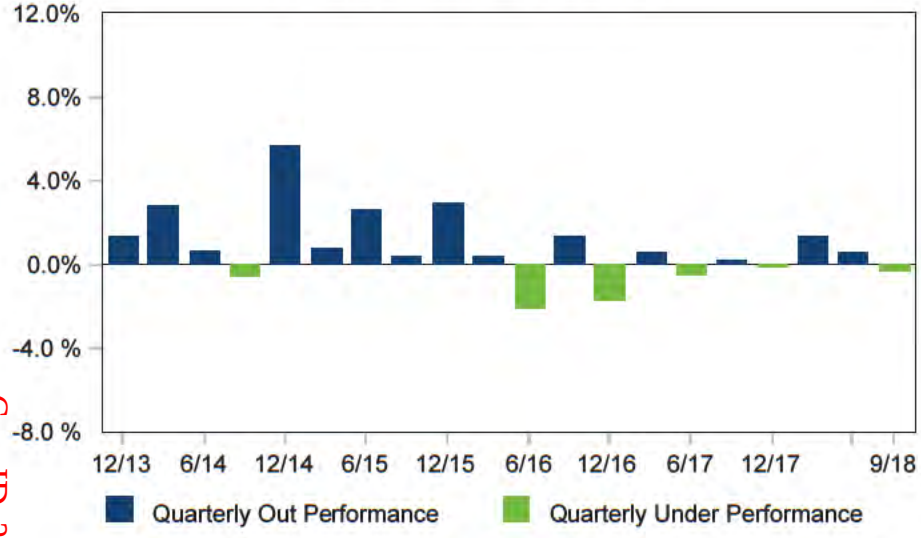
Account Information

Account Name:	Harvest MLP Alpha
Inception Date:	09/30/2008
Account Structure:	Separate Account
Asset Class:	US Real Assets
Benchmark:	S&P MLP Total Return Index
Peer Group:	

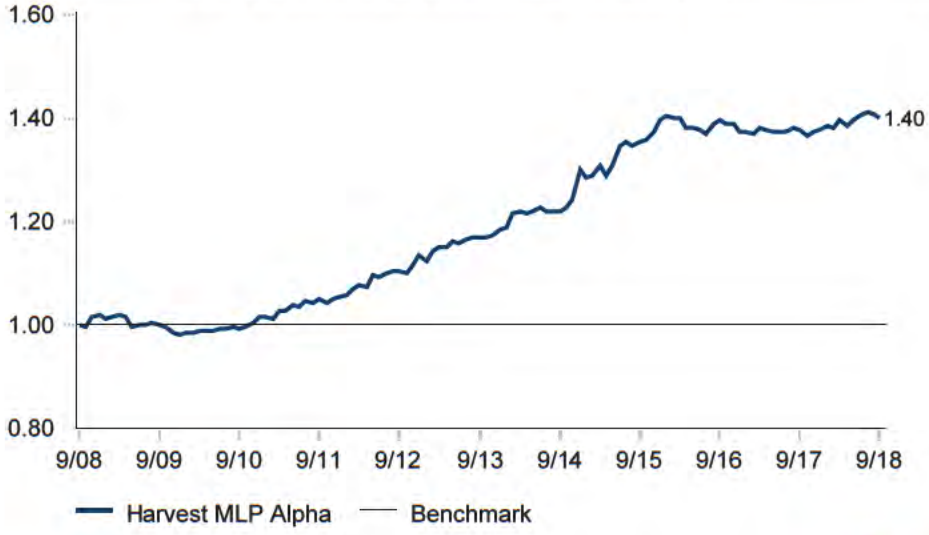
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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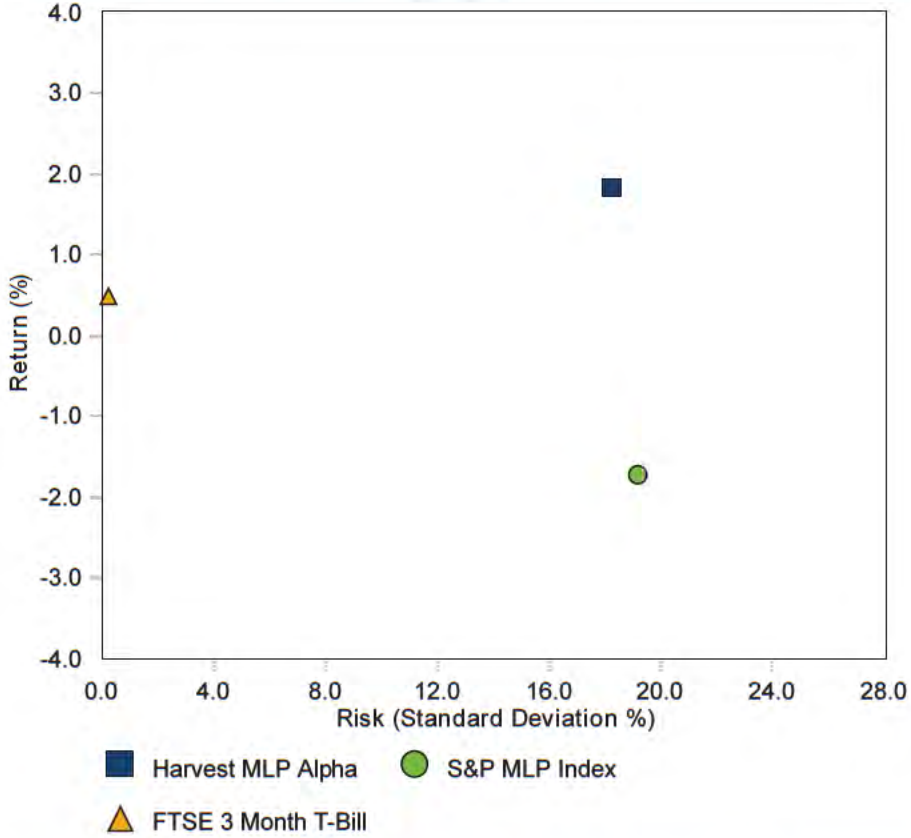
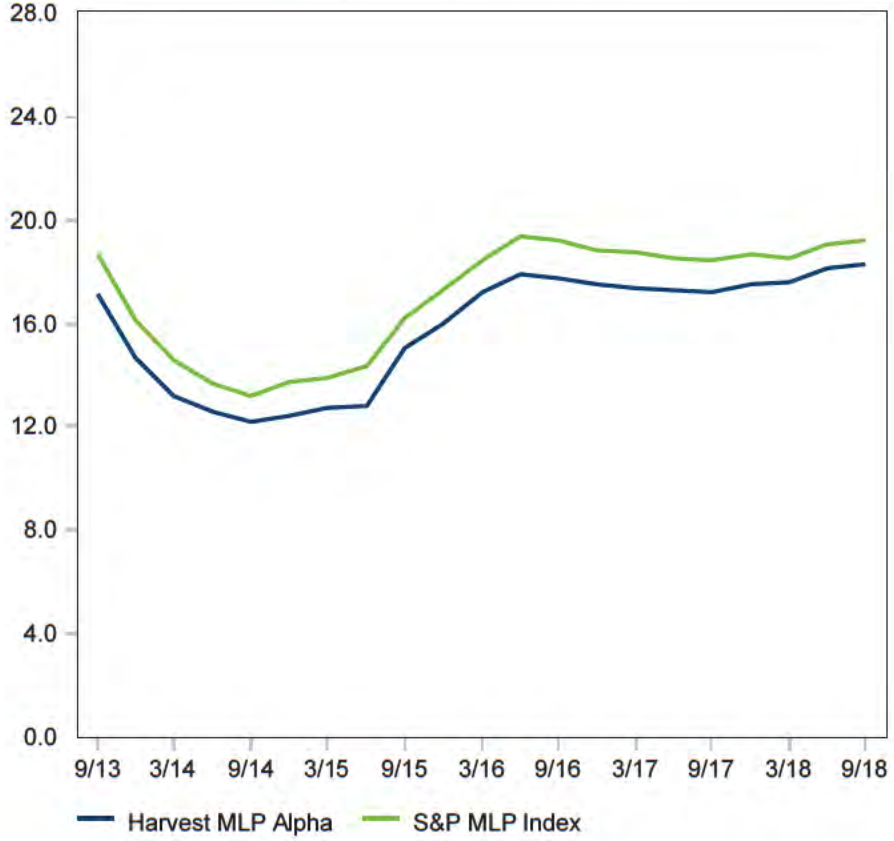
AON Empower Results®

Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Harvest MLP Alpha	3.39	3.35	1.01	0.97	0.16	3.45	0.94	1.83	18.29	0.99
S&P MLP Index	0.00	0.00	N/A	1.00	-0.02	0.00	1.00	-1.73	19.23	1.00
FTSE 3 Month T-Bill	0.39	19.21	0.02	0.01	N/A	0.49	0.00	0.49	0.18	0.10

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Risk Statistics

Harvest MLP Alpha

	1 Year	3 Years	5 Years	10 Years	Since Inception	Inception Date
Return	8.99	6.11	1.83	13.73	13.73	10/01/2008
Standard Deviation	20.08	18.78	18.29	17.93	17.93	
Downside Risk	12.95	12.37	13.02	11.19	11.19	
Downside Semi Deviation	5.55	18.89	19.24	18.62	18.62	
Max Drawdown Recovery Period	6.00	9.00	N/A	N/A	N/A	
Maximum Drawdown	-14.79	-23.54	-44.04	-44.04	-44.04	
Maximum Loss Exposure	-9.67	-16.55	-23.50	-19.01	-19.01	
Upside Semi Deviation	6.71	19.42	17.79	18.42	18.42	
S&P MLP Index						
Return	7.15	4.90	-1.73	9.97	9.97	
Standard Deviation	19.82	19.50	19.23	19.13	19.13	
Downside Risk	13.08	12.98	14.07	12.30	12.30	
Downside Semi Deviation	5.60	19.20	20.42	19.57	19.57	
Max Drawdown Recovery Period	6.00	11.00	N/A	N/A	N/A	
Maximum Drawdown	-15.56	-25.82	-51.27	-51.27	-51.27	
Maximum Loss Exposure	-10.99	-19.32	-35.96	-20.60	-20.60	
Upside Semi Deviation	6.48	20.46	18.39	19.45	19.45	
vs. S&P MLP Index						
Active Return	1.76	1.01	3.39	3.17	3.17	
Tracking Error	2.37	2.46	3.35	3.00	3.00	
Actual Correlation	0.99	0.99	0.99	0.99	0.99	
Beta	1.01	0.96	0.94	0.93	0.93	
Consistency	58.33	52.78	60.00	62.50	62.50	
Down Market Capture	98.08	92.85	88.00	84.80	84.80	
Down Market Outperformance	0.38	2.25	4.00	4.92	4.92	
Information Ratio	0.74	0.41	1.01	1.06	1.06	
Jensen Alpha	1.73	1.28	3.42	4.05	4.05	
Up Market Capture	103.89	97.83	101.00	100.41	100.41	
Up Market Outperformance	1.69	-1.95	0.91	0.50	0.50	
vs. FTSE 3 Month T-Bill						
Excess Return	8.94	6.86	3.00	14.22	14.22	
Excess Risk	20.06	18.77	18.28	17.94	17.94	
Sharpe Ratio	0.45	0.37	0.16	0.79	0.79	

Calculation based on monthly periodicity.

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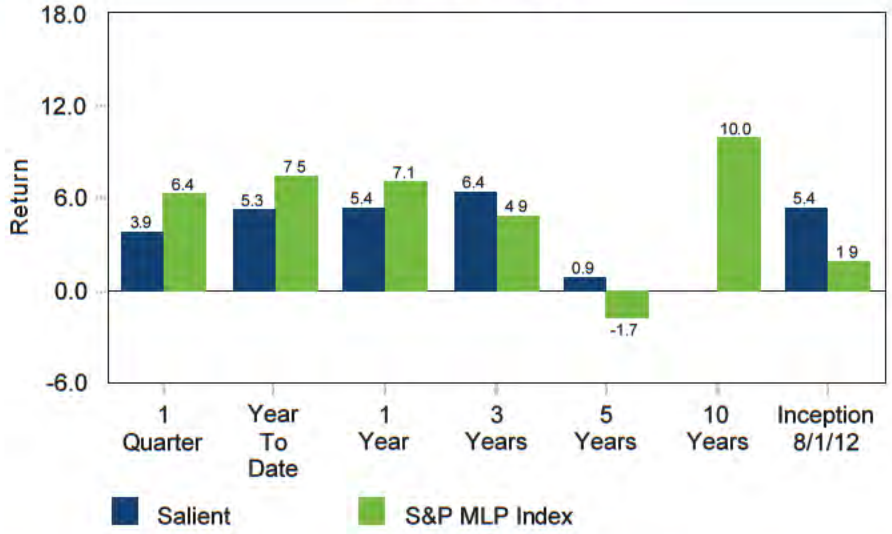
Performance Summary

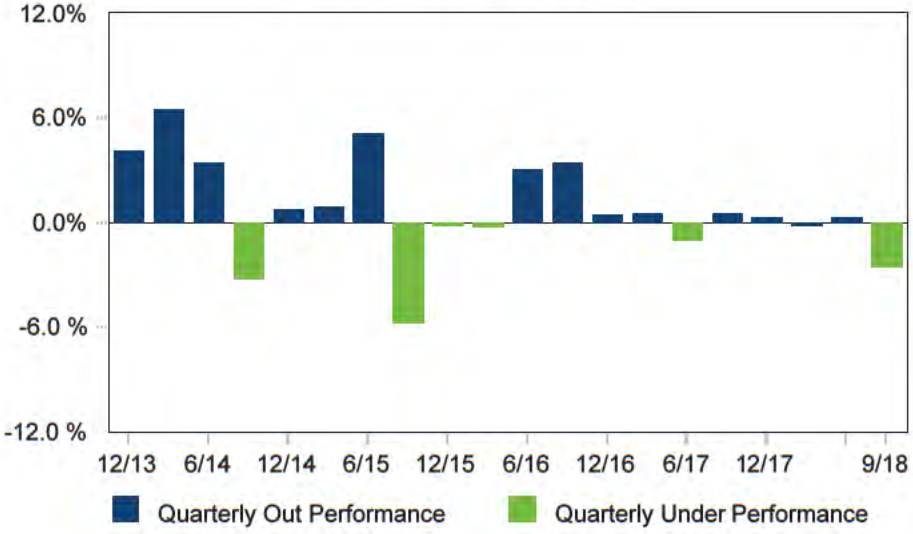
Account Information

Account Name:	Salient
Inception Date:	09/30/2012
Account Structure:	Separate Account
Asset Class:	US Real Assets
Benchmark:	S&P MLP Total Return Index
Peer Group:	

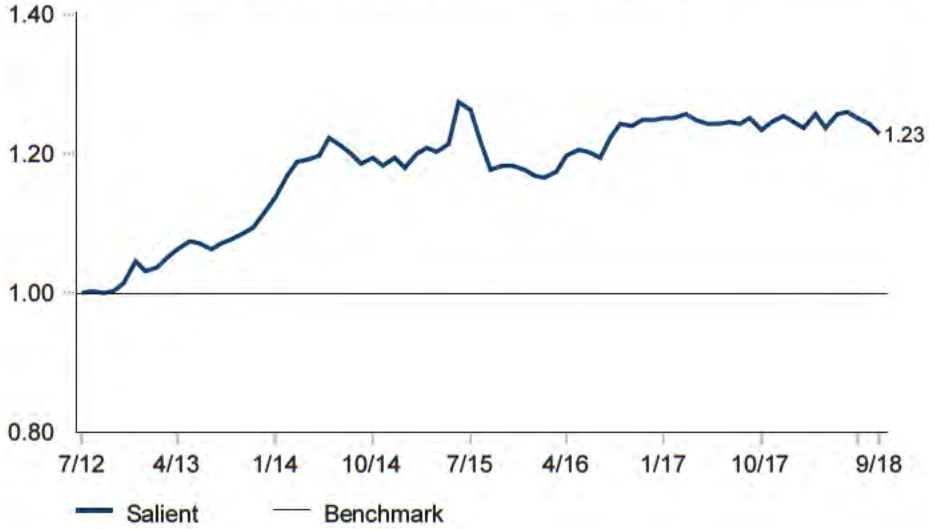
Return Summary



Quarterly Excess Performance



Ratio of Cumulative Wealth - Since Inception



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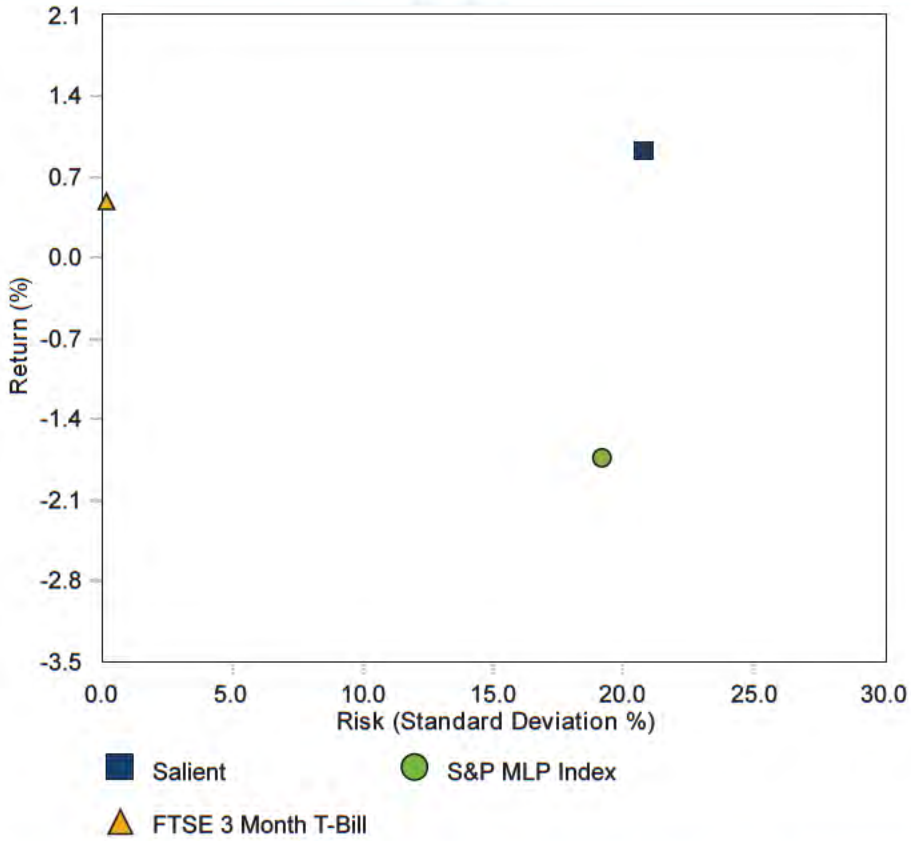
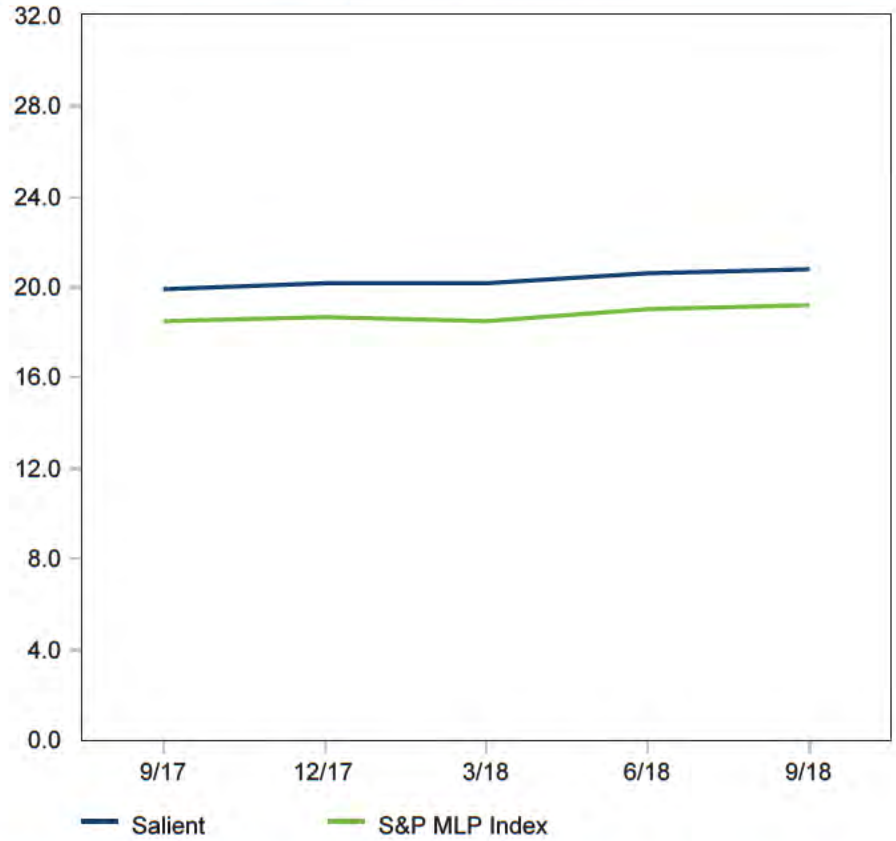
AON Empower Results®

Salient Risk Profile

Annualized Return vs. Annualized Standard Deviation 5 Years



Rolling 5 Years Standard Deviation



5 Years Historical Statistics

	Active Return	Tracking Error	Information Ratio	R-Squared	Sharpe Ratio	Alpha	Beta	Return	Standard Deviation	Actual Correlation
Salient	3.00	4.62	0.65	0.95	0.13	3.03	1.06	0.93	20.79	0.98
S&P MLP Index	0.00	0.00	N/A	1.00	-0.02	0.00	1.00	-1.73	19.23	1.00
FTSE 3 Month T-Bill	0.39	19.21	0.02	0.01	N/A	0.49	0.00	0.49	0.18	0.10

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AON Empower Results®