



Pittsburgh Comprehensive Municipal Pension

Pittsburgh Comprehensive Municipal

Executive Summary

September 30, 2019

Manager Status

Market Value: \$787.1 Million and 100.0% of Fund

Investment Manager	Asset Class	Status	Reason
Vanguard Ultra Short Duration	Short-Term Fixed Income	In Compliance	
Federated Investors	Core Fixed Income	In Compliance	
BlackRock Total Return Fund	Core Fixed Income	In Compliance	
SSgA S&P 500 Index Fund	Large-Cap Core	In Compliance	
Twin Capital	Large-Cap Core	In Compliance	
Frontier Capital Management	Smid-Cap Core	In Compliance	
Guyasuta Investment Advisors	Small-Cap Core	In Compliance	
CIM Investment Management	Small-Cap Core	In Compliance	
MFS International Equity Fund	Non-U.S. Large-Cap Core	In Compliance	
Columbus Macro	Global Core Equity	In Compliance	
SSgA Active Emerging Markets Fund	Emerging Markets	In Compliance	
ABS Emerging Markets	Emerging Markets	In Compliance	
ABS Offshore SPC Global	Hedged Equity Hedge FoF	In Compliance	
Entrust Three Rivers Partners	Multi-Strat. Hedge Fund	In Compliance	
Parametric Defensive Equity	Defensive Equity	In Compliance	
Rreef America II	Core Real Estate	In Compliance	
Barings Core Property Fund	Core Real Estate	In Compliance	
Birchmere Ventures III, LP	Venture Private Equity	In Compliance	
Draper Triangle Ventures II, LP	Venture Private Equity	In Compliance	
Draper Triangle Ventures III, LP	Venture Private Equity	In Compliance	
Hirtle Callaghan Private Equity Fund V, LP	Global Divers. Private Equity FoF	In Compliance	
Crescent Mezzanine Partners VIB, LP	Mezz. Private Equity	In Compliance	
Crescent Mezzanine Partners VIB, LP	Mezz. Private Equity	In Compliance	
Dedicated Funding for CMPTF	Fixed Income Annuity	In Compliance	

Investment Manager Evaluation Terminology

The following terminology has been developed by Marquette Associates to facilitate efficient communication among the Investment Manager, Investment Consultant, and the Plan Sponsor. Each term signifies a particular status with the Fund and any conditions that may require improvement. In each case, communication is made only after consultation with the Trustees and/or the Investment Committee of the Plan.

In Compliance - The investment manager states it is acting in accordance with the Investment Policy Guidelines.

Market Value: \$787.4 Million and 100.0% of Fund

Ending September 30, 2019

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	Asset Class	Market Value	3 Mo Net % Cash Flows	of Portfolio	Policy %	Policy Difference
Total Fund Composite		\$787,358,742	-\$9,062,049	100.0%	100.0%	\$0
Dedicated Funding for CMPTF	Fixed Income Annuity	\$293,097,153	-\$6,688,000	37.2%	40.0%	-\$21,846,344
Total Invested Portfolio		\$494,261,589	-\$2,374,049	62.8%	60.0%	\$21,846,344
Fixed Income Composite		\$96,490,912	-\$36,923	12.3%	13.0%	-\$5,865,725
Vanguard Ultra Short Duration	Short-Term Fixed Income	\$15,140,624	\$0	1.9%		
Federated Investors	Core Fixed Income	\$59,653,630	-\$36,923	7.6%		
BlackRock Total Return Fund	Core Fixed Income	\$21,696,657	\$0	2.8%		
U.S. Equity Composite		\$186,004,411	-\$104,459	23.6%	22.0%	\$12,785,488
SSgA S&P 500 Index Fund	Large-Cap Core	\$122,427,877	-\$12,157	15.5%		
Frontier Capital Management	Smid-Cap Core	\$32,528,382	-\$58,228	4.1%		
Guyasuta Investment Advisors	Small-Cap Core	\$31,048,152	-\$34,074	3.9%		
Non-U.S. Equity Composite		\$88,400,148	-\$15,558	11.2%	12.0%	-\$6,082,901
MFS International Equity Fund	Non-U.S. Large-Cap Core	\$70,336,748	\$0	8.9%		
SSgA Active Emerging Markets Fund	Emerging Markets	\$8,298,619	-\$15,558	1.1%		
ABS Emerging Markets	Emerging Markets	\$9,764,780	\$0	1.2%		
Emerging Manager Composite		\$7,690,920	-\$10,805	1.0%		\$7,690,920
Twin Capital	Large-Cap Core	\$2,845,051	-\$2,470	0.4%		
CIM Investment Management	Small-Cap Core	\$2,527,777	-\$4,285	0.3%		
Columbus Macro	Global Core Equity	\$2,318,092	-\$4,050	0.3%		
Hedge Fund Composite		\$49,102,412	\$0	6.2%	5.0%	\$9,734,475
ABS Offshore SPC Global	Hedged Equity Hedge FoF	\$14,189,138	\$0	1.8%		
Entrust Three Rivers Partners	Multi-Strat. Hedge Fund	\$23,017,305	\$0	2.9%		
Parametric Defensive Equity	Defensive Equity	\$11,895,969	\$0	1.5%		
Real Estate Composite		\$46,095,218	-\$284,947	5.9%	5.0%	\$6,727,280
Rreef America II	Core Real Estate	\$23,253,666	-\$231,315	3.0%	2.5%	\$3,569,697
Barings Core Property Fund	Core Real Estate	\$22,841,552	-\$53,632	2.9%	2.5%	\$3,157,583
Private Equity Composite		\$10,273,157	\$477,869	1.3%	3.0%	-\$13,347,605
Cash Composite		\$10,204,412	-\$2,399,226	1.3%	0.0%	\$10,204,412

- Private Equity Composite may not include current performance, due to reporting cycle limitations.



Total Invested Portfolio

Market Value: \$494.3 Million and 62.8% of Fund

Ending September 30, 2019

	Asset Class	Market Value	3 Mo Net of Cash Flows	% of Portfolio
Total Invested Portfolio		\$494,261,589	-\$2,374,049	100.0%
Fixed Income Composite		\$96,490,912	-\$36,923	19.5%
Vanguard Ultra Short Duration	Short-Term Fixed Income	\$15,140,624	\$0	3.1%
Federated Investors	Core Fixed Income	\$59,653,630	-\$36,923	12.1%
BlackRock Total Return Fund	Core Fixed Income	\$21,696,657	\$0	4.4%
U.S. Equity Composite		\$186,004,411	-\$104,459	37.6%
SSgA S&P 500 Index Fund	Large-Cap Core	\$122,427,877	-\$12,157	24.8%
Frontier Capital Management	Smid-Cap Core	\$32,528,382	-\$58,228	6.6%
Guyasuta Investment Advisors	Small-Cap Core	\$31,048,152	-\$34,074	6.3%
Non-U.S. Equity Composite		\$88,400,148	-\$15,558	17.9%
MFS International Equity Fund	Non-U.S. Large-Cap Core	\$70,336,748	\$0	14.2%
SSgA Active Emerging Markets Fund	Emerging Markets	\$8,298,619	-\$15,558	1.7%
ABS Emerging Markets	Emerging Markets	\$9,764,780	\$0	2.0%
Emerging Manager Composite		\$7,690,920	-\$10,805	1.6%
Twin Capital	Large-Cap Core	\$2,845,051	-\$2,470	0.6%
CIM Investment Management	Small-Cap Core	\$2,527,777	-\$4,285	0.5%
Columbus Macro	Global Core Equity	\$2,318,092	-\$4,050	0.5%
Hedge Fund Composite		\$49,102,412	\$0	9.9%
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Cash Composite		\$10,204,412	-\$2,399,226	2.1%

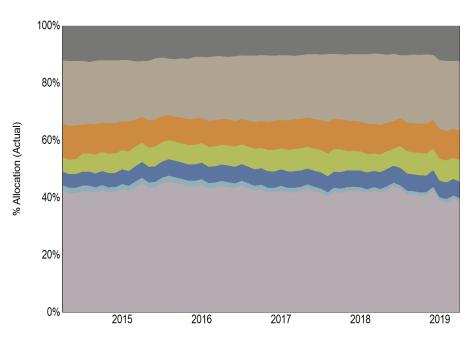
- Private Equity Composite may not include current performance, due to reporting cycle limitations.



Asset Allocation

Market Value: \$787.4 Million and 100.0% of Fund

Historic Asset Allocation



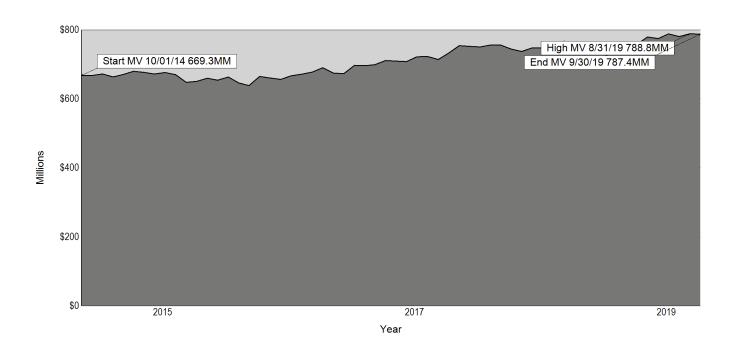


Asset Allocation vs. Target As Of September 30, 2019

	Current	Policy	Difference*	Difference**
Fixed Income	\$96,490,912	\$102,356,636	-\$5,865,725	-0.7%
U.S. Equity	\$191,377,240	\$173,218,923	\$18,158,316	2.3%
Non-U.S. Equity	\$80,953,460	\$94,483,049	-\$13,529,589	-1.7%
Hedge Funds	\$58,867,192	\$39,367,937	\$19,499,255	2.5%
Real Assets	\$46,095,218	\$39,367,937	\$6,727,280	0.9%
Private Equity	\$10,273,157	\$23,620,762	-\$13,347,605	-1.7%
Other	\$303,301,565	\$314,943,497	-\$11,641,932	-1.5%
Total	\$787,358,742	\$787,358,742		

Market Value History

Market Value: \$787.4 Million and 100.0% of Fund



Summary of Cash Flows

	Third Quarter	Year-To-Date	One Year	Three Years
Beginning Market Value	\$493,978,764.63	\$427,989,017.18	\$460,588,679.89	\$401,703,150.69
Net Cash Flow	-\$2,095,278.78	\$9,865,081.44	\$17,384,688.23	-\$6,915,103.76
Net Investment Change	\$2,378,103.43	\$56,407,490.66	\$16,288,221.16	\$99,473,542.35
Ending Market Value	\$494,261,589.28	\$494,261,589.28	\$494,261,589.28	\$494,261,589.28

Annualized Performance (Net of Fees)

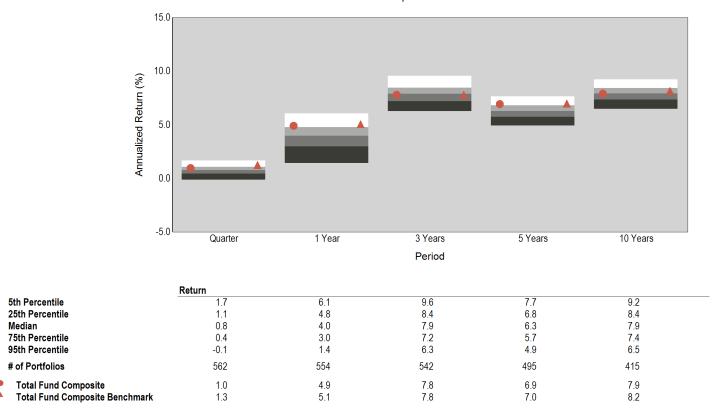
Market Value: \$787.4 Million and 100.0% of Fund

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	0.8%	1.0%	10.0%	4.9%	6.2%	7.8%	8.0%	6.9%	8.2%	7.9%
Total Fund Composite Benchmark	1.0%	1.3%	9.8%	5.1%	6.5%	7.8%	8.0%	7.0%	7.9%	8.2%
InvMetrics Public DB Net Rank	82	33	95	22	44	55	58	20	23	51
Total Invested Portfolio	1.5%	0.4%	12.9%	3.1%	5.2%	7.7%	8.4%	6.5%	8.0%	7.5%
Total Invested Portfolio Benchmark	1.2%	0.9%	13.7%	3.9%	6.0%	8.3%	8.8%	6.7%	8.1%	8.4%
InvMetrics Public DB Net Rank	12	76	59	73	75	59	39	39	30	71
Fixed Income Composite	-0.3%	2.0%	8.9%	9.4%	4.2%	3.3%	4.1%	3.6%	3.4%	4.6%
BBgBarc US Aggregate TR	-0.5%	2.3%	8.5%	10.3%	4.4%	2.9%	3.5%	3.4%	2.7%	3.7%
InvMetrics Public DB US Fix Inc Net Rank	35	31	14	26	38	31	30	31	18	34
U.S. Equity Composite	2.7%	0.9%	19.9%	1.7%	8.2%	11.6%	13.4%	10.0%	12.8%	12.2%
Dow Jones U.S. Total Stock Market	1.7%	1.1%	20.1%	2.8%	9.9%	12.8%	13.3%	10.4%	12.9%	13.1%
InvMetrics Public DB US Eq Net Rank	7	61	52	61	76	74	17	52	32	66
Non-U.S. Equity Composite	1.8%	-1.4%	15.2%	3.3%	3.2%	8.6%	8.3%	4.9%	6.3%	
MSCI ACWI ex USA	2.6%	-1.8%	11.6%	-1.2%	0.3%	6.3%	7.1%	2.9%	5.0%	4.5%
InvMetrics Public DB ex-US Eq Net Rank	86	18	8	4	7	6	11	9	16	
Emerging Manager Composite	3.0%	-0.2%	15.5%	-2.7%	4.5%	9.3%		-		
Emerging Manager Benchmark	2.0%	-0.3%	17.1%	-1.3%	6.2%	10.7%				
Hedge Fund Composite	0.4%	-1.3%	5.4%	-0.9%	2.0%	4.5%	3.3%	2.9%		
HFRI Fund of Funds Composite Index	-0.4%	-0.9%	5.2%	0.0%	1.5%	3.2%	2.5%	1.9%	3.2%	2.7%
HFRX Equity Hedge Index	0.9%	1.8%	7.9%	-1.4%	0.2%	2.7%	2.0%	1.0%	2.6%	1.0%
InvMetrics Public DB Hedge Funds Net Rank	34	87	61	72	61	42	48	48		
Real Estate Composite	1.4%	1.4%	4.7%	5.9%	6.7%	6.8%	7.5%	8.6%		-
NFI	0.4%	1.1%	3.1%	4.6%	6.2%	6.3%	7.0%	8.4%	9.3%	9.8%
InvMetrics Public DB Real Estate Priv Net Rank	25	56	23	36	62	60	76	71		

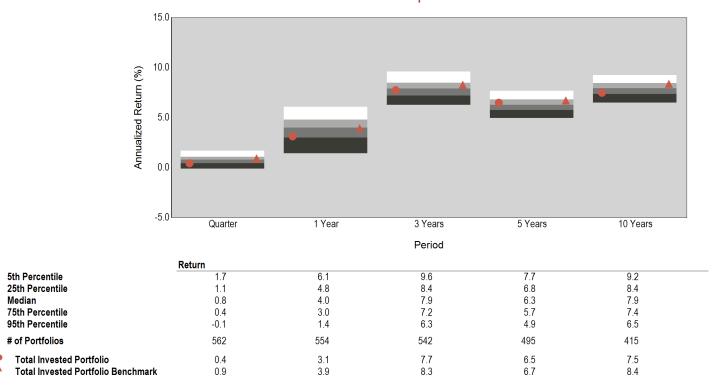
Annualized Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

Total Fund DB Return Comparison



Invested Portfolio DB Return Comparison



Calendar Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

Calendar Year

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total Fund Composite	-0.1%	11.7%	8.1%	3.2%	9.2%	13.6%	12.3%	1.8%	5.6%	23.4%	-27.0%
Total Fund Composite Benchmark	0.1%	12.2%	7.7%	3.5%	7.2%	14.1%	10.5%	1.3%	12.6%	23.0%	-26.1%
InvMetrics Public DB Net Rank	2	95	26	1	1	66	41	22	98	19	70
Total Invested Portfolio	-5.0%	14.7%	8.5%	0.0%	6.6%	17.6%	14.1%	-2.5%	5.6%	23.3%	-27.0%
Total Invested Portfolio Benchmark	-5.0%	16.3%	7.7%	0.3%	6.9%	17.6%	12.2%	0.3%	12.4%	22.9%	-26.2%
InvMetrics Public DB Net Rank	69	49	16	34	22	22	7	92	98	20	70
Fixed Income Composite	-0.9%	4.3%	4.5%	0.0%	6.1%	-0.4%	8.4%	5.4%	7.8%	13.8%	-9.3%
BBgBarc US Aggregate TR	0.0%	3.5%	2.6%	0.6%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
InvMetrics Public DB US Fix Inc Net Rank	91	39	47	56	15	32	35	87	41	42	91
U.S. Equity Composite	-7.2%	19.5%	16.6%	-2.3%	12.5%	34.2%	17.8%	0.6%	8.6%	25.8%	-36.1%
Dow Jones U.S. Total Stock Market	-5.3%	21.2%	12.6%	0.4%	12.5%	33.5%	16.4%	1.1%	17.5%	28.6%	-37.2%
InvMetrics Public DB US Eq Net Rank	73	70	2	84	14	50	4	48	99	86	29
Non-U.S. Equity Composite	-11.4%	28.5%	1.9%	-1.7%	-4.2%	12.9%	21.3%		-	-	
MSCI ACWI ex USA	-14.2%	27.2%	4.5%	-5.7%	-3.9%	15.3%	16.8%	-13.7%	11.2%	41.4%	-45.5%
InvMetrics Public DB ex-US Eq Net Rank	6	48	83	23	62	82	8	-	-	-	
Emerging Manager Composite	-9.8%	16.9%		-		-			-	-	
Emerging Manager Benchmark	-8.4%	18.9%									
Hedge Fund Composite	-2.9%	9.0%	0.7%	0.0%	4.9%						
HFRI Fund of Funds Composite Index	-4.0%	7.8%	0.5%	-0.3%	3.4%	9.0%	4.8%	-5.7%	5.7%	11.5%	-21.4%
HFRX Equity Hedge Index	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
InvMetrics Public DB Hedge Funds Net Rank	68	23	74	45	35		-	-	-	-	
Real Estate Composite	6.9%	6.5%	8.4%	14.4%	11.0%		-			-	-
NFI	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%
InvMetrics Public DB Real Estate Priv Net Rank	80	63	43	7	67						



Annualized Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Total Fund Composite	0.8%	1.0%	10.0%	4.9%	6.2%	7.8%	8.0%	6.9%	8.2%	7.9%
Total Fund Composite Benchmark	1.0%	1.3%	9.8%	5.1%	6.5%	7.8%	8.0%	7.0%	7.9%	8.2%
InvMetrics Public DB Net Rank	82	33	95	22	44	55	58	20	23	51
Dedicated Funding for CMPTF	-0.4%	1.8%	5.6%	7.6%	7.6%	7.9%	7.6%	7.5%	8.4%	
Annual Return	0.6%	1.8%	5.6%	7.5%	7.5%	7.5%	7.5%	7.5%	7.6%	
Total Invested Portfolio	1.5%	0.4%	12.9%	3.1%	5.2%	7.7%	8.4%	6.5%	8.0%	7.5%
Total Invested Portfolio Benchmark	1.2%	0.9%	13.7%	3.9%	6.0%	8.3%	8.8%	6.7%	8.1%	8.4%
InvMetrics Public DB Net Rank	12	76	59	73	75	59	39	39	30	71
Fixed Income Composite	-0.3%	2.0%	8.9%	9.4%	4.2%	3.3%	4.1%	3.6%	3.4%	4.6%
BBgBarc US Aggregate TR	-0.5%	2.3%	8.5%	10.3%	4.4%	2.9%	3.5%	3.4%	2.7%	3.7%
InvMetrics Public DB US Fix Inc Net Rank	35	31	14	26	38	31	30	31	18	34
Vanguard Ultra Short Duration	0.1%	0.7%								
BofA Merrill Lynch 1 Year Treasury	0.2%	0.6%	2.4%	3.1%	2.2%	1.6%	1.4%	1.2%	0.9%	0.8%
Ultrashort Bond MStar MF Rank	82	48								
Federated Investors	-0.3%	2.3%	9.5%	9.7%	4.5%	3.5%	4.3%	3.6%	3.2%	4.4%
BBgBarc US Aggregate TR	-0.5%	2.3%	8.5%	10.3%	4.4%	2.9%	3.5%	3.4%	2.7%	3.7%
eV US Core Fixed Inc Net Rank	8	48	19	83	48	18	11	35	29	28
BlackRock Total Return Fund	-0.6%	2.1%	9.3%	10.3%	4.2%	3.3%	3.9%	3.7%	3.7%	5.1%
BBgBarc US Aggregate TR	-0.5%	2.3%	8.5%	10.3%	4.4%	2.9%	3.5%	3.4%	2.7%	3.7%
eV US Core Fixed Inc Net Rank	53	85	28	48	72	27	34	31	8	9
U.S. Equity Composite	2.7%	0.9%	19.9%	1.7%	8.2%	11.6%	13.4%	10.0%	12.8%	12.2%
Dow Jones U.S. Total Stock Market	1.7%	1.1%	20.1%	2.8%	9.9%	12.8%	13.3%	10.4%	12.9%	13.1%
InvMetrics Public DB US Eq Net Rank	7	61	52	61	76	74	17	52	32	66
SSgA S&P 500 Index Fund	1.9%	1.7%	20.5%	4.2%	10.8%	13.4%	13.9%	10.8%		
S&P 500	1.9%	1.7%	20.6%	4.3%	10.9%	13.4%	13.9%	10.8%	13.3%	13.2%
eV US Large Cap Core Equity Net Rank	43	51	39	41	32	28	20	21		
Frontier Capital Management	2.8%	-0.6%	17.3%	-5.5%	2.6%	7.8%	11.1%	7.9%	12.0%	12.1%
Russell 2500	1.8%	-1.3%	17.7%	-4.0%	5.6%	9.5%	10.7%	8.6%	11.4%	12.2%
eV US Small-Mid Cap Core Equity Net Rank	38	64	65	69	83	90	35	72	32	47
Guyasuta Investment Advisors	6.3%	-0.9%	20.1%	0.3%	4.6%	9.3%	13.6%	8.8%	12.0%	13.3%
Russell 2000	2.1%	-2.4%	14.2%	-8.9%	2.5%	8.2%	10.0%	8.2%	10.4%	11.2%
eV US Small Cap Core Equity Net Rank	2	39	13	7	33	37	7	38	28	15

Annualized Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Non-U.S. Equity Composite	1.8%	-1.4%	15.2%	3.3%	3.2%	8.6%	8.3%	4.9%	6.3%	
MSCI ACWI ex USA	2.6%	-1.8%	11.6%	-1.2%	0.3%	6.3%	7.1%	2.9%	5.0%	4.5%
InvMetrics Public DB ex-US Eq Net Rank	86	18	8	4	7	6	11	9	16	
MFS International Equity Fund	1.7%	-0.9%	17.8%	4.6%	4.6%	9.7%	8.6%	5.6%	7.6%	
MSCI EAFE	2.9%	-1.1%	12.8%	-1.3%	0.7%	6.5%	6.5%	3.3%	6.1%	4.9%
Foreign Large Blend MStar MF Rank	89	27	5	2	2	2	3	4	4	
SSgA Active Emerging Markets Fund	2.5%	-4.7%	1.9%	-7.8%	-4.4%	4.2%	7.0%	1.5%	1.5%	
MSCI Emerging Markets	1.9%	-4.2%	5.9%	-2.0%	-1.4%	6.0%	8.6%	2.3%	2.4%	3.4%
eV Emg Mkts Equity Net Rank	18	73	96	99	85	72	69	71	90	
ABS Emerging Markets	1.4%	-2.0%	9.8%	4.8%	0.3%	5.3%	7.3%			
HFRI Emerging Markets (Total) Index	1.0%	-2.1%	6.3%	2.0%	-0.9%	3.9%	5.4%	2.3%	3.4%	2.9%
MSCI Emerging Markets	1.9%	-4.2%	5.9%	-2.0%	-1.4%	6.0%	8.6%	2.3%	2.4%	3.4%
Emerging Manager Composite	3.0%	-0.2%	15.5%	-2.7%	4.5%	9.3%	-	-		
Emerging Manager Composite Emerging Manager Benchmark	3.0% 2.0%	-0.2% -0.3%	15.5% 17.1%	-2.7% -1.3%	4.5% 6.2%	9.3% 10.7%				
		_					 	- - -	 	
Emerging Manager Benchmark	2.0%	-0.3%	17.1%	-1.3%	6.2%	10.7%		-		 13.2%
Emerging Manager Benchmark Twin Capital	2.0% 2.1%	-0.3% 1.4%	17.1% 18.9%	-1.3% 2.5%	6.2% 9.1%	10.7% 12.1%				
Emerging Manager Benchmark Twin Capital S&P 500	2.0% 2.1% 1.9%	-0.3% 1.4% 1.7%	17.1% 18.9% 20.6%	-1.3% 2.5% 4.3%	6.2% 9.1% 10.9%	10.7% 12.1% 13.4%	 13.9%	 10.8%	 13.3%	 13.2%
Emerging Manager Benchmark Twin Capital S&P 500 Russell 1000 eV US Large Cap Core Equity Net	2.0% 2.1% 1.9% 1.7%	-0.3% 1.4% 1.7% 1.4%	17.1% 18.9% 20.6% 20.5%	-1.3% 2.5% 4.3% 3.9%	6.2% 9.1% 10.9% 10.6%	10.7% 12.1% 13.4% 13.2%	 13.9%	 10.8%	 13.3%	 13.2%
Emerging Manager Benchmark Twin Capital S&P 500 Russell 1000 eV US Large Cap Core Equity Net Rank	2.0% 2.1% 1.9% 1.7% 37	-0.3% 1.4% 1.7% 1.4% 58	17.1% 18.9% 20.6% 20.5% 57	-1.3% 2.5% 4.3% 3.9% 54	6.2% 9.1% 10.9% 10.6% 52	10.7% 12.1% 13.4% 13.2% 51	 13.9% 13.6%	 10.8% 10.6% 	 13.3% 13.2%	 13.2%
Emerging Manager Benchmark Twin Capital S&P 500 Russell 1000 eV US Large Cap Core Equity Net Rank CIM Investment Management	2.0% 2.1% 1.9% 1.7% 37	-0.3% 1.4% 1.7% 1.4% 58	17.1% 18.9% 20.6% 20.5% 57	-1.3% 2.5% 4.3% 3.9% 54 -9.2%	6.2% 9.1% 10.9% 10.6% 52 2.3%	10.7% 12.1% 13.4% 13.2% 51 7.3%	 13.9% 13.6% 	 10.8% 10.6% 	 13.3% 13.2% 	 13.2% 13.2%
Emerging Manager Benchmark Twin Capital S&P 500 Russell 1000 eV US Large Cap Core Equity Net Rank CIM Investment Management Russell 2000 eV US Small Cap Core Equity Net	2.0% 2.1% 1.9% 1.7% 37 5.1% 2.1%	-0.3% 1.4% 1.7% 1.4% 58 0.5% -2.4%	17.1% 18.9% 20.6% 20.5% 57 17.7% 14.2%	-1.3% 2.5% 4.3% 3.9% 54 -9.2% -8.9%	6.2% 9.1% 10.9% 10.6% 52 2.3% 2.5%	10.7% 12.1% 13.4% 13.2% 51 7.3% 8.2%	 13.9% 13.6% 	 10.8% 10.6% 	 13.3% 13.2% 	 13.2% 13.2%
Emerging Manager Benchmark Twin Capital S&P 500 Russell 1000 eV US Large Cap Core Equity Net Rank CIM Investment Management Russell 2000 eV US Small Cap Core Equity Net Rank	2.0% 2.1% 1.9% 1.7% 37 5.1% 2.1% 4	-0.3% 1.4% 1.7% 1.4% 58 0.5% -2.4% 16	17.1% 18.9% 20.6% 20.5% 57 17.7% 14.2% 22	-1.3% 2.5% 4.3% 3.9% 54 -9.2% -8.9% 61	6.2% 9.1% 10.9% 10.6% 52 2.3% 2.5% 52	10.7% 12.1% 13.4% 13.2% 51 7.3% 8.2% 65	 13.9% 13.6% 	 10.8% 10.6% 8.2%	 13.3% 13.2% 	 13.2% 13.2%

Annualized Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

	1 Mo	3 Mo	YTD	1 Yr	2 Yrs	3 Yrs	4 Yrs	5 Yrs	7 Yrs	10 Yrs
Hedge Fund Composite	0.4%	-1.3%	5.4%	-0.9%	2.0%	4.5%	3.3%	2.9%		
HFRI Fund of Funds Composite Index	-0.4%	-0.9%	5.2%	0.0%	1.5%	3.2%	2.5%	1.9%	3.2%	2.7%
HFRX Equity Hedge Index	0.9%	1.8%	7.9%	-1.4%	0.2%	2.7%	2.0%	1.0%	2.6%	1.0%
InvMetrics Public DB Hedge Funds Net Rank	34	87	61	72	61	42	48	48		
ABS Offshore SPC Global	0.6%	1.2%	9.1%	0.3%	2.0%	4.8%	3.0%	3.5%		
HFRX Equity Hedge Index	0.9%	1.8%	7.9%	-1.4%	0.2%	2.7%	2.0%	1.0%	2.6%	1.0%
Entrust Three Rivers Partners	-0.3%	-4.3%	0.6%							
HFRI Fund of Funds Composite Index	-0.4%	-0.9%	5.2%	0.0%	1.5%	3.2%	2.5%	1.9%	3.2%	2.7%
Parametric Defensive Equity	1.4%	1.7%	11.0%	2.0%	5.4%					
50% S&P 500/50% 91 Day T-Bill	1.0%	1.1%	11.0%	3.7%	6.6%	7.5%	7.6%	6.0%	7.0%	6.9%
Real Estate Composite	1.4%	1.4%	4.7%	5.9%	6.7%	6.8%	7.5%	8.6%		
NFI	0.4%	1.1%	3.1%	4.6%	6.2%	6.3%	7.0%	8.4%	9.3%	9.8%
InvMetrics Public DB Real Estate Priv Net Rank	25	56	23	36	62	60	76	71		-
Rreef America II	1.5%	1.5%	4.8%	5.7%	7.2%	7.1%	7.6%	9.0%		
NFI	0.4%	1.1%	3.1%	4.6%	6.2%	6.3%	7.0%	8.4%	9.3%	9.8%
Barings Core Property Fund	1.2%	1.2%	4.6%	6.1%	6.2%	6.5%	7.3%	8.1%	-	
NFI	0.4%	1.1%	3.1%	4.6%	6.2%	6.3%	7.0%	8.4%	9.3%	9.8%

Calendar Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

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	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Total Fund Composite	-0.1%	11.7%	8.1%	3.2%	9.2%	13.6%	12.3%	1.8%	5.6%	23.4%	-27.0%
Total Fund Composite Benchmark	0.1%	12.2%	7.7%	3.5%	7.2%	14.1%	10.5%	1.3%	12.6%	23.0%	-26.1%
InvMetrics Public DB Net Rank	2	95	26	1	1	66	41	22	98	19	70
Dedicated Funding for CMPTF	7.5%	7.5%	7.6%	7.5%	13.2%	8.1%	9.8%	7.2%		-	
Annual Return	7.5%	7.5%	7.5%	7.5%	7.5%	8.0%	8.0%	8.0%			
Total Invested Portfolio	-5.0%	14.7%	8.5%	0.0%	6.6%	17.6%	14.1%	-2.5%	5.6%	23.3%	-27.0%
Total Invested Portfolio Benchmark	-5.0%	16.3%	7.7%	0.3%	6.9%	17.6%	12.2%	0.3%	12.4%	22.9%	-26.2%
InvMetrics Public DB Net Rank	69	49	16	34	22	22	7	92	98	20	70
Fixed Income Composite	-0.9%	4.3%	4.5%	0.0%	6.1%	-0.4%	8.4%	5.4%	7.8%	13.8%	-9.3%
BBgBarc US Aggregate TR	0.0%	3.5%	2.6%	0.5%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
InvMetrics Public DB US Fix Inc Net Rank	91	39	47	56	15	32	35	87	41	42	91
Vanguard Ultra Short Duration		-	-	-	-	_	-	-	_		
BofA Merrill Lynch 1 Year Treasury	1.9%	0.6%	0.8%	0.3%	0.2%	0.3%	0.2%	0.5%	0.7%	0.8%	2.9%
Ultrashort Bond MStar MF Rank											
Federated Investors	-0.9%	4.3%	4.8%	-0.2%	5.0%	-0.8%	7.1%	6.5%	8.2%	11.2%	-2.7%
BBgBarc US Aggregate TR	0.0%	3.5%	2.6%	0.5%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
eV US Core Fixed Inc Net Rank	88	18	7	89	80	19	23	81	12	33	76
BlackRock Total Return Fund	-0.8%	4.3%	3.5%	0.4%	8.2%	-0.1%	10.3%	4.7%	10.1%	16.3%	-11.1%
BBgBarc US Aggregate TR	0.0%	3.5%	2.6%	0.5%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%
eV US Core Fixed Inc Net Rank	85	19	33	64	4	8	2	96	2	14	95
U.S. Equity Composite	-7.2%	19.5%	16.6%	-2.3%	12.5%	34.2%	17.8%	0.6%	8.6%	25.8%	-36.1%
Dow Jones U.S. Total Stock Market	-5.3%	21.2%	12.6%	0.4%	12.5%	33.5%	16.4%	1.1%	17.5%	28.6%	-37.2%
InvMetrics Public DB US Eq Net Rank	73	70	2	84	14	50	4	48	99	86	29
SSgA S&P 500 Index Fund	-4.4%	21.8%	12.0%	1.4%	13.8%						
S&P 500	-4.4%	21.8%	12.0%	1.4%	13.7%	32.4%	16.0%	2.1%	15.1%	26.5%	-37.0%
eV US Large Cap Core Equity Net Rank	32	46	20	36	33	-		-			
Frontier Capital Management	-13.5%	18.6%	20.1%	-6.5%	12.1%	39.0%	18.0%	-6.5%	28.9%	46.5%	-39.5%
Russell 2500	-10.0%	16.8%	17.6%	-2.9%	7.1%	36.8%	17.9%	-2.5%	26.7%	34.4%	-36.8%
eV US Small-Mid Cap Core Equity Net Rank	80	35	5	88	1	26	29	86	25	5	75
Guyasuta Investment Advisors	-10.4%	12.2%	29.4%	-9.9%	8.4%	36.2%	25.7%	4.1%	19.3%	40.8%	-30.6%
Russell 2000	-11.0%	14.6%	21.3%	-4.4%	4.9%	38.8%	16.3%	-4.2%	26.9%	27.2%	-33.8%
eV US Small Cap Core Equity Net Rank	46	71	3	88	15	73	1	17	97	9	18



Calendar Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

Calendar Year

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Non-U.S. Equity Composite	-11.4%	28.5%	1.9%	-1.7%	-4.2%	12.9%	21.3%			-	
MSCI ACWI ex USA	-14.2%	27.2%	4.5%	-5.7%	-3.9%	15.3%	16.8%	-13.7%	11.2%	41.4%	-45.5%
InvMetrics Public DB ex-US Eq Net Rank	6	48	83	23	62	82	8				
MFS International Equity Fund	-10.7%	28.0%	0.3%	0.0%	-4.2%	18.6%	22.5%	-			
MSCI EAFE	-13.8%	25.0%	1.0%	-0.8%	-4.9%	22.8%	17.3%	-12.1%	7.8%	31.8%	-43.4%
Foreign Large Blend MStar MF Rank	9	24	64	37	36	64	12				
SSgA Active Emerging Markets Fund	-14.6%	34.3%	11.7%	-13.7%	-3.3%	-5.6%	17.2%	-			
MSCI Emerging Markets	-14.6%	37.3%	11.2%	-14.9%	-2.2%	-2.6%	18.2%	-18.4%	18.9%	78.5%	-53.3%
eV Emg Mkts Equity Net Rank	30	69	32	59	74	91	69				
ABS Emerging Markets	-13.3%	26.7%	4.9%	-3.4%							
HFRI Emerging Markets (Total) Index	-10.9%	19.4%	7.0%	-3.3%	-2.6%	5.5%	10.4%	-14.0%	11.4%	40.3%	-37.3%
MSCI Emerging Markets	-14.6%	37.3%	11.2%	-14.9%	-2.2%	-2.6%	18.2%	-18.4%	18.9%	78.5%	-53.3%
Emerging Manager Composite	-9.8%	16.9%			-		-				
Emerging Manager Benchmark	-8.4%	18.9%						-			
Twin Capital	-6.5%	20.7%									
S&P 500	-4.4%	21.8%	12.0%	1.4%	13.7%	32.4%	16.0%	2.1%	15.1%	26.5%	-37.0%
Russell 1000	-4.8%	21.7%	12.1%	0.9%	13.2%	33.1%	16.4%	1.5%	16.1%	28.4%	-37.6%
eV US Large Cap Core Equity Net Rank	58	59									
CIM Investment Management	-14.0%	11.1%						-		-	
Russell 2000	-11.0%	14.6%	21.3%	-4.4%	4.9%	38.8%	16.3%	-4.2%	26.9%	27.2%	-33.8%
eV US Small Cap Core Equity Net Rank	71	79									
Columbus Macro	-9.1%										
MSCI ACWI	-9.4%	24.0%	7.9%	-2.4%	4.2%	22.8%	16.1%	-7.3%	12.7%	34.6%	-42.2%
eV Global All Cap Core Eq Net Rank	44										

Calendar Performance (Net of Fees)

Market Value: \$787.4 Million and 100.0% of Fund

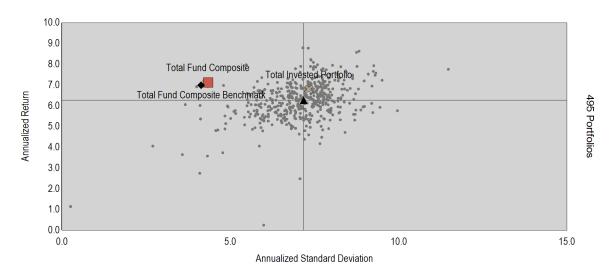
Calendar Year

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Hedge Fund Composite	-2.9%	9.0%	0.7%	0.0%	4.9%	-	-	-	-		
HFRI Fund of Funds Composite Index	-4.0%	7.8%	0.5%	-0.3%	3.4%	9.0%	4.8%	-5.7%	5.7%	11.5%	-21.4%
HFRX Equity Hedge Index	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
InvMetrics Public DB Hedge Funds Net Rank	68	23	74	45	35					-	
ABS Offshore SPC Global	-6.4%	12.3%	-4.3%	4.0%	4.8%		_	-	-		
HFRX Equity Hedge Index	-9.4%	10.0%	0.1%	-2.3%	1.4%	11.1%	4.8%	-19.1%	8.9%	13.1%	-25.5%
Entrust Three Rivers Partners						-			-		
HFRI Fund of Funds Composite Index	-4.0%	7.8%	0.5%	-0.3%	3.4%	9.0%	4.8%	-5.7%	5.7%	11.5%	-21.4%
Parametric Defensive Equity	-2.9%							-	-		
50% S&P 500/50% 91 Day T-Bill	-1.0%	10.9%	6.1%	0.9%	6.7%	15.3%	7.9%	1.4%	7.8%	13.3%	-19.4%
Real Estate Composite	6.9%	6.5%	8.4%	14.4%	11.0%	-		-	-	-	
NFI	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%
InvMetrics Public DB Real Estate Priv Net Rank	80	63	43	7	67						
Rreef America II	7.4%	6.4%	8.1%	15.6%	12.0%				-		
NFI	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%
Barings Core Property Fund	6.3%	6.6%	8.6%	13.0%	-	-	-	-	-	-	
NFI	7.4%	6.7%	7.8%	13.9%	11.5%	12.9%	9.8%	15.0%	15.3%	-30.4%	-10.7%

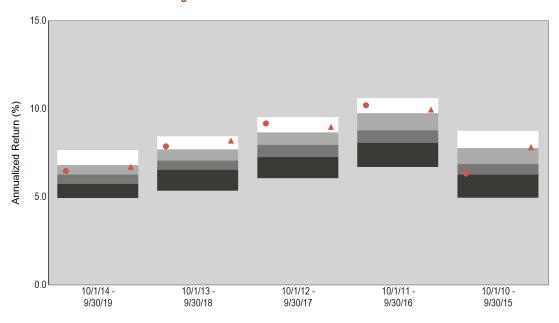
Invested Portfolio vs. Peer Universe

Market Value: \$494.3 Million and 62.8% of Fund

Annualized Return vs. Annualized Standard Deviation 5 Years Ending September 30, 2019



Rolling 5 Year Returns: Invested Portfolio



	Return (Rank)									
5th Percentile	7.7		8.4		9.5		10.6		8.8	
25th Percentile	6.8		7.7		8.7		9.7		7.8	
Median	6.3		7.1		8.0		8.8		6.9	
75th Percentile	5.7		6.5		7.3		8.1		6.3	
95th Percentile	4.9		5.3		6.1		6.7		5.0	
# of Portfolios	495		219		227		219		198	
Total Invested Portfolio	6.5	(39)	7.9	(20)	9.2	(9)	10.2	(11)	6.3	(72)
Total Invested Portfolio Benchmark	6.7	(29)	8.2	(11)	9.0	(13)	10.0	(19)	7.8	(24)

Fee Schedule

Market Value: \$787.4 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Short-Term Fixed Income	Vanguard Ultra Short Duration	0.10% on the Balance	0.10% \$15,141	0.47%
Core Fixed Income	Federated Investors	0.25% on the Balance	0.25% \$149,134	0.30%
Core Fixed Income	BlackRock Total Return Fund	0.40% on the Balance	0.40% \$86,787	0.56%
Large-Cap Core	SSgA S&P 500 Index Fund	0.04% on the Balance	0.04% \$48,971	0.03%
Large-Cap Core	Twin Capital	0.35% on the first \$50 million 0.20% on the Balance	0.35% \$9,958	0.55%
Smid-Cap Core	Frontier Capital Management	0.75% on the Balance	0.75% \$243,963	0.80%
Small-Cap Core	Guyasuta Investment Advisors	0.45% on the Balance	0.45% \$139,717	0.85%
Small-Cap Core	CIM Investment Management	0.75% on the first \$1 million 0.65% on the next \$3 million 0.60% on the Balance	0.69% \$17,431	0.85%
Non-U.S. Large-Cap Core	MFS International Equity Fund	0.75% on the Balance	0.75% \$527,526	0.85%
Global Core Equity	Columbus Macro	0.70% on the Balance	0.70% \$16,227	0.71%
Emerging Markets	SSgA Active Emerging Markets Fund	0.75% on the Balance	0.75% \$62,240	0.90%
Emerging Markets	ABS Emerging Markets	0.80% on the Balance	0.80% \$78,118	1.00%
Hedged Equity Hedge FoF	ABS Offshore SPC Global	1.00% on the Balance	1.00% \$141,891	1.00%
Multi-Strat. Hedge Fund	Entrust Three Rivers Partners	1.25% on the Balance	1.25% \$287,716	1.00%
Defensive Equity	Parametric Defensive Equity	0.325% on the first \$50 million 0.30% on the next \$50 million 0.275% on the Balance	0.32% \$38,662	1.00%
Core Real Estate	Rreef America II	0.95% on the Balance	0.95% \$220,910	1.00%
Core Real Estate	Barings Core Property Fund	1.10% on the first \$15 million 1.00% on the next \$10 million 0.80% on the Balance	1.07% \$243,416	1.00%
Venture Private Equity	Draper Triangle Ventures III, LP	2.50% on total commitments plus 20% carried interest	3.18% \$50,000	2.87%
Mezz. Private Equity	Crescent Mezzanine Partners VIB, LP	1.50% on total commitments plus 20% carried interest after 8% preferred return	4.18% \$150,000	4.18%
Mezzanine Debt	Crescent Mezzanine Partners VIIB, L.P.	0.75% on total commitments 0.75% on invested capital plus 20% carried interest	2.26% \$112,357	2.26%



Fee Schedule

Market Value: \$787.4 Million and 100.0% of Fund

Asset Class	Investment Manager	Fee Schedule 0.80% on the Balance	Expense Ratio & Estimated Annual Fee ¹	Industry Average ²
Venture Private Equity	Draper Triangle Ventures III, LP	2.50% on total commitments plus 20% carried interest	3.18% \$50,000	2.87%
Mezz. Private Equity	Crescent Mezzanine Partners VIB, LP	1.50% on total commitments plus 20% carried interest after 8% preferred return	4.18% \$150,000	4.18%
Mezzanine Debt	Crescent Mezzanine Partners VIIB, L.P.	0.75% on total commitments 0.75% on invested capital plus 20% carried interest	2.26% \$112,357	2.26%
Fixed Income Annuity	Dedicated Funding for CMPTF	0.00% on the Balance	0.00% \$0	0.00%
Total Investment Management Fee	es		0.33% \$2,625,022	0.37%
Custodian	PNC Bank	0.03% on the all assets, excluding Dedicated Funding for CMPTF	0.02% \$149,050	
Total Fund			0.35% \$2,774, 071	