Investment Performance Review Period Ending September 30, 2022

# **Sunrise Police Retirement Plan**



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Total Fund Compliance:	Yes	No
	tes	NO
The total plan return equaled or exceeded the total plan benchmark over the trailing three and five year periods.		•
The three and five year total plan returns rank in the top 40% of the Fund's peers.		•
The total plan return equaled or exceeded the 7.35% target rate of return over the trailing three year period.		•
The total plan return equaled or exceeded the 7.35% target rate of return over the trailing five year period.		•
Equity Compliance:		
Ceredex Large Cap Value	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.		•
The three and five year return ranks in the top 40% of its peers.		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
Rhumbline R1000G	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.*	•	
The three and five year return ranks in the top 40% of its peers. *	•	
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
Polen Capital	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.*	103	•
The three and five year return ranks in the top 40% of its peers. *		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	

The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.



Mutual of America	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.		•
The three and five year return ranks in the top 40% of its peers.		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
Vanguard R2000 Equity	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods. *	•	
The three and five year return ranks in the top 40% of its peers. *		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
Vanguard International Equity	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.		•
The three and five year return ranks in the top 40% of its peers.	•	
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
Vanguard Emerging Equity	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.**	•	
The three and five year return ranks in the top 40% of its peers.**	•	
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	
JPM International Equity	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.		•
The three and five year return ranks in the top 40% of its peers.		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
The aggregate investment in any one company is less than or equal to 5% of the outstanding shares of the company.	•	



Fixed Income Compliance:		
GHA Fixed Income BCAB A+	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.	•	
The three and five year return ranks in the top 40% of its peers.		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
Are all the fixed income securities ranked in the top "3" categories by Standard & Poor's or Moody's.	•	
GHA Fixed Income BCIGC	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.	•	
The three and five year return ranks in the top 40% of its peers.		•
The amount invested in any one issuing company is less than or equal to 5% of the Manager's total fund.	•	
Are all the fixed income securities ranked in the top "3" categories by Standard & Poor's or Moody's.	•	
Real Estate Compliance:		
Barings Real Estate	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.*		•
The three and five year return ranks in the top 40% of its peers.*		•
ASB Real Estate	Yes	No
The return equaled or exceeded its benchmark over the trailing three and five year periods.*		•
The three and five year return ranks in the top 40% of its peers.*		•

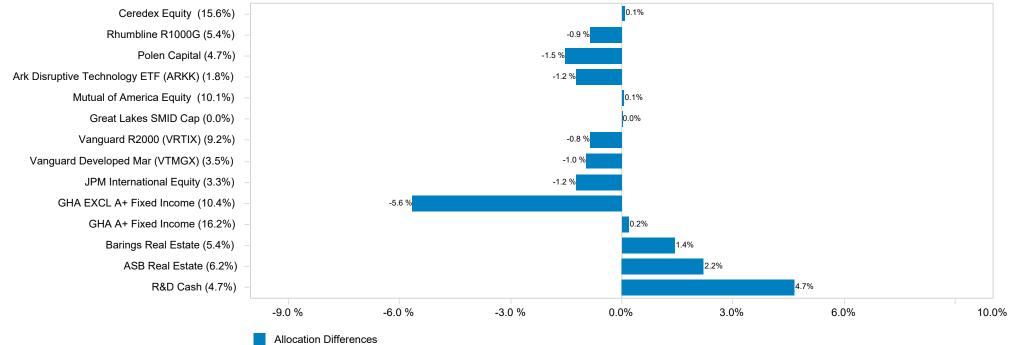
<sup>\*</sup> Only 3 years available

Net perfomance used when available



<sup>\*\*</sup> Since Inception

Asset Allocation Compliance	A 4				
	Asset Allocation \$	Current Allocation (%)	Target Allocation (%)	Differences (%)	Target Rebal. (\$000)
Total Fund Composite	182,314,335	100.0	100.0	0.0	-
Ceredex Equity	28,407,764	15.6	15.5	0.1	-149,042
Rhumbline R1000G	9,807,519	5.4	6.3	-0.9	1,587,127
Polen Capital	8,620,730	4.7	6.3	-1.5	2,773,916
Ark Disruptive Technology ETF (ARKK)	3,230,933	1.8	3.0	-1.2	2,238,497
Mutual of America Equity	18,353,023	10.1	10.0	0.1	-121,590
Great Lakes SMID Cap	-	0.0	0.0	0.0	-
/anguard R2000 (VRTIX)	16,684,765	9.2	10.0	-0.8	1,546,668
/anguard Developed Mar (VTMGX)	6,457,086	3.5	4.5	-1.0	1,747,059
PM International Equity	5,928,550	3.3	4.5	-1.2	2,275,595
GHA EXCL A+ Fixed Income	18,873,726	10.4	16.0	-5.6	10,296,567
GHA A+ Fixed Income	29,490,205	16.2	16.0	0.2	-319,912
Barings Real Estate	9,908,997	5.4	4.0	1.4	-2,616,424
ASB Real Estate	11,314,981	6.2	4.0	2.2	-4,022,407
R&D Cash	8,498,210	4.7	0.0	4.7	-8,498,210
Barings Real Estate ASB Real Estate R&D Cash	11,314,981	6.2	4.0	2.2	
Ceredex Equity (15.6%	6) –		0.1%		
Rhumbline R1000G (5.4%	ó) –		-0.9 %		
Polen Capital (4.7%	6) –		-1.5 %		

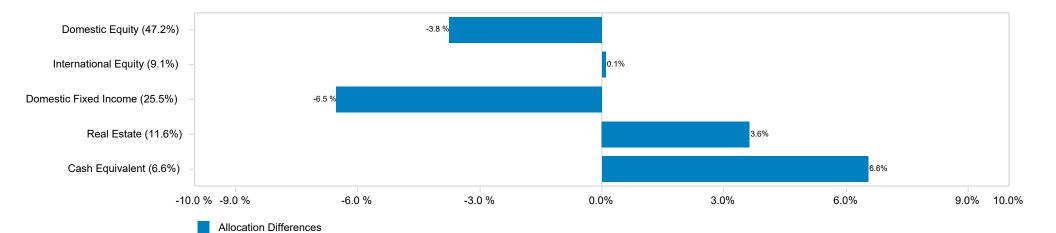


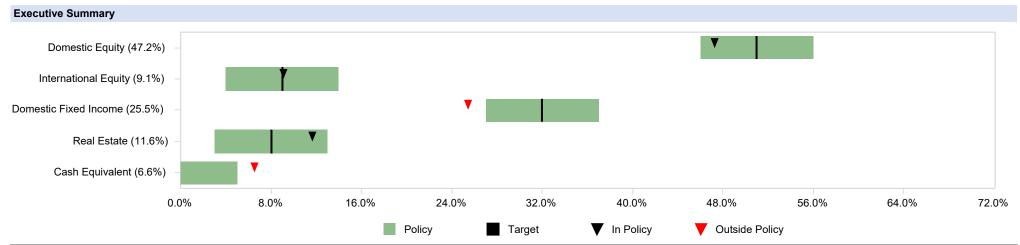


### **Executive Summary** Ceredex Equity (15.6%) Rhumbline R1000G (5.4%) Polen Capital (4.7%) Ark Disruptive Technology ETF (ARKK) (1.8%) Mutual of America Equity (10.1%) Great Lakes SMID Cap (0.0%) Vanguard R2000 (VRTIX) (9.2%) Vanguard Developed Mar (VTMGX) (3.5%) JPM International Equity (3.3%) GHA EXCL A+ Fixed Income (10.4%) GHA A+ Fixed Income (16.2%) Barings Real Estate (5.4%) ASB Real Estate (6.2%) R&D Cash (4.7%) 0.0% 3.0% 6.0% 9.0% 12.0% 15.0% 18.0% 21.0% 24.0% 27.0% Outside Policy Policy ▼ In Policy Target



<b>Asset Allocation Compliance</b>	•				
	Asset Allocation \$	Current Allocation (%)	Target Allocation (%)	Differences (%)	Target Rebal. (\$000)
Domestic Equity	86,129,935	47.2	51.0	-3.8	6,850,376
International Equity	16,591,256	9.1	9.0	0.1	-182,966
Domestic Fixed Income	46,422,393	25.5	32.0	-6.5	11,918,195
Real Estate	21,223,978	11.6	8.0	3.6	-6,638,831
Cash Equivalent	11,946,774	6.6	0.0	6.6	-11,946,774
Total Fund	182,314,335	100.0	100.0	0.0	-

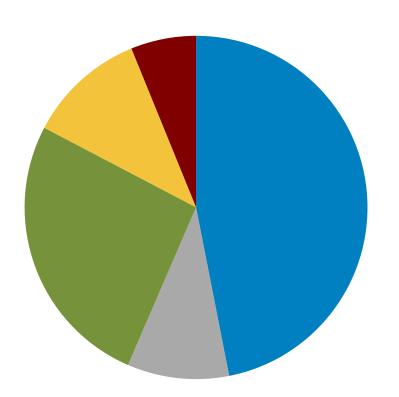


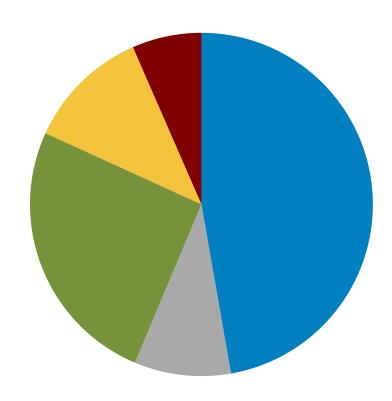




Asset Allocation By Segment as of June 30, 2022 : \$191,504,327

Asset Allocation By Segment as of September 30, 2022 : \$182,314,335



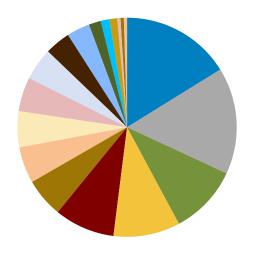


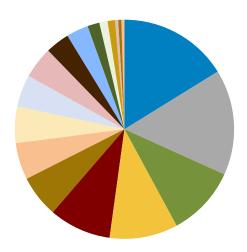
ocation			Allocation		
Segments	Market Value	Allocation	Segments	Market Value	Allocation
■ Domestic Equity	89,830,632	46.9	■ Domestic Equity	86,129,935	47.2
International Equity	18,368,875	9.6	International Equity	16,591,256	9.1
■ Domestic Fixed Income	50,128,336	26.2	Domestic Fixed Income	46,422,393	25.5
Real Estate	21,370,046	11.2	Real Estate	21,223,978	11.6
■ Cash Equivalent	11,806,438	6.2	Cash Equivalent	11,946,774	6.6



Asset Allocation By Manager as of June 30, 2022 : \$191,504,327

Asset Allocation By Manager as of September 30, 2022 : \$182,314,335

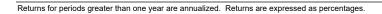




llocation			Allocation		
	Market Value	Allocation		Market Value	Allocatio
GHA A+ Fixed Income	30,962,352	16.2	GHA A+ Fixed Income	29,490,205	16.2
■ Ceredex Equity	30,151,328	15.7	■ Ceredex Equity	28,407,764	15.6
■ GHA EXCL A+ Fixed Income	19,619,219	10.2	■ GHA EXCL A+ Fixed Income	18,873,726	10.4
Mutual of America Equity	18,822,404	9.8	Mutual of America Equity	18,353,023	10.1
■ Vanguard R2000 (VRTIX)	17,051,493	8.9	■ Vanguard R2000 (VRTIX)	16,684,765	9.2
■ ASB Real Estate	11,094,746	5.8	ASB Real Estate	11,314,981	6.2
Barings Real Estate	10,275,300	5.4	Barings Real Estate	9,908,997	5.4
Rhumbline R1000G	10,173,983	5.3	Rhumbline R1000G	9,807,519	5.4
R&D Cash	9,670,265	5.0	Polen Capital	8,620,730	4.7
Polen Capital	9,108,517	4.8	R&D Cash	8,498,210	4.7
■ Vanguard Developed Mar (VTMGX)	7,209,560	3.8	Vanguard Developed Mar (VTMGX)	6,457,086	3.5
■ JPM International Equity	6,530,717	3.4	JPM International Equity	5,928,550	3.3
■ Ark Disruptive Technology ETF (ARKK)	3,415,044	1.8	Ark Disruptive Technology ETF (ARKK)	3,230,933	1.8
Vanguard Emerging Mar (VEMIX)	2,469,990	1.3	Vanguard Emerging Mar Adm (VEMAX)	2,204,296	1.2
■ iShares MSCI EM ex China ETF (EMXC)	2,158,609	1.1	■ iShares MSCI EM ex China ETF (EMXC)	2,001,323	1.1
First Trust Cloud Computing ETF (SKYY)	939,866	0.5	■ First Trust Cloud Computing ETF (SKYY)	861,567	0.5
■ Defiance 5G Next Gen Connectivity ETF (FIVG)	930,963	0.5	Defiance 5G Next Gen Connectivity ETF (FIVG)	842,721	0.5
Ark Autonomous Technology & Robotics ETF (ARKQ)	919,970	0.5	Ark Autonomous Technology & Robotics ETF (ARKQ)	827,936	0.5
■ Vanguard Emerging Mar Adm (VEMAX)	-	0.0	■ Vanguard Emerging Mar (VEMIX)	-	0.0



Comparative Performance Trailing Returns								
	QTR	YTD	FYTD	1 YR	3 YR	5 YR	Inception	Inception Date
Total Fund Composite (Gross)	-4.15 (38)	-19.33 (58)	-16.06 (64)	-16.06 (64)	2.99 (65)	4.24 (62)	5.89 (51)	01/01/1998
Total Fund Policy Index	-3.84 (28)	-17.44 (35)	-13.33 (31)	-13.33 (31)	4.16 (30)	5.14 (27)	6.12 (39)	
Difference	-0.31	-1.89	-2.73	-2.73	-1.17	-0.90	-0.23	
All Public Plans-Total Fund Median	-4.34	-18.70	-14.90	-14.90	3.50	4.51	5.89	
Total Fund Composite (Net)	-4.22	-19.51	-16.31	-16.31	2.68	3.91	5.55	01/01/1998
Total Fund Policy Index	-3.84	-17.44	-13.33	-13.33	4.16	5.14	6.12	
Difference	-0.38	-2.07	-2.98	-2.98	-1.48	-1.23	-0.57	
Total Equity Composite (Gross)	-5.12	-28.07	-23.82	-23.82	3.64	5.05	5.87	01/01/1998
Total Equity Policy Index	-4.65	-24.15	-18.54	-18.54	5.75	6.45	6.79	
Difference	-0.47	-3.92	-5.28	-5.28	-2.11	-1.40	-0.92	
Total Domestic Equity								
Ceredex Equity (Gross)	-5.65 (49)	-23.36 (87)	-15.64 (86)	-15.64 (86)	3.22 (94)	5.03 (82)	10.08 (74)	01/01/2012
Russell 1000 Value Index	-5.62 (48)	-17.75 (64)	-11.36 (65)	-11.36 (65)	4.36 (84)	5.29 (79)	9.99 (76)	
Difference	-0.03	-5.61	-4.28	-4.28	-1.14	-0.26	0.09	
IM U.S. Large Cap Value Equity (SA+CF) Median	-5.72	-16.57	-9.64	-9.64	6.57	6.84	10.92	
Ceredex Equity (Net)	-5.77	-23.66	-16.07	-16.07	2.69	4.48	9.48	01/01/2012
Russell 1000 Value Index	-5.62	-17.75	-11.36	-11.36	4.36	5.29	9.99	
Difference	-0.15	-5.91	-4.71	-4.71	-1.67	-0.81	-0.51	
Rhumbline R1000G (Gross)	-3.60 (36)	-30.64 (42)	-22.51 (37)	-22.51 (37)	10.73 (18)	N/A	11.10 (20)	01/01/2018
Russell 1000 Growth Index	-3.60 (36)	-30.66 (43)	<b>-</b> 22.59 (37)	-22.59 (37)	10.67 (18)	12.16 (20)	11.06 (21)	
Difference	0.00	0.02	80.0	80.0	0.06	N/A	0.04	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-4.12	-31.92	-25.79	-25.79	7.80	10.52	9.56	
Rhumbline R1000G (Net)	-3.61	-30.66	-22.55	-22.55	10.68	N/A	11.05	01/01/2018
Russell 1000 Growth Index	-3.60	-30.66	-22.59	-22.59	10.67	12.16	11.06	
Difference	-0.01	0.00	0.04	0.04	0.01	N/A	-0.01	
Polen Capital (Gross)	-5.21 (75)	-37.46 (92)	-34.01 (90)	-34.01 (90)	5.40 (82)	N/A	10.36 (31)	01/01/2018
Russell 1000 Growth Index	-3.60 (36)	-30.66 (43)	-22.59 (37)	-22.59 (37)	10.67 (18)	12.16 (20)	11.06 (21)	
Difference	-1.61	-6.80	-11.42	-11.42	-5.27	N/A	-0.70	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-4.12	-31.92	-25.79	-25.79	7.80	10.52	9.56	
Polen Capital (Net)	-5.34	-37.82	-34.48	-34.48	4.73	N/A	9.71	01/01/2018
Russell 1000 Growth Index	-3.60	-30.66	-22.59	-22.59	10.67	12.16	11.06	
Difference	-1.74	-7.16	-11.89	-11.89	-5.94	N/A	-1.35	





	QTR	YTD	FYTD	1 YR	3 YR	5 YR	Inception	Inception Date
Ark Disruptive Technology ETF (ARKK) (Net)	-5.39 (88)	-60.12 (100)	-65.59 (100)	-65.59 (100)	N/A	N/A	-35.12 (100)	09/01/2020
Russell 3000 Growth Index	-3.37 (55)	-30.57 (37)	-23.01 (20)	-23.01 (20)	10.16 (11)	11.57 (9)	-3.06 (38)	
Difference	-2.02	-29.55	-42.58	-42.58	N/A	N/A	-32.06	
IM U.S. Growth Equity (MF) Median	-3.07	-32.30	-28.76	-28.76	5.43	7.91	-4.80	
Ark Autonomous Technology & Robotics ETF (ARKQ) (Net)	-10.00 (100)	-41.48 (97)	-41.80 (97)	-41.80 (97)	N/A	N/A	-43.44 (97)	09/01/2021
Russell 1000 Growth Index	-3.60 (39)	-30.66 (36)	-22.59 (32)	-22.59 (32)	10.67 (11)	12.16 (12)	-25.14 (32)	
Difference	-6.40	-10.82	-19.21	-19.21	N/A	N/A	-18.30	
IM U.S. Large Cap Growth Equity (SA+CF) Median	-4.11	-32.50	-26.67	-26.67	7.05	9.47	-28.69	
Defiance 5G Next Gen Connectivity ETF (FIVG) (Net)	-9.16 (99)	-30.84 (27)	-20.16 (8)	-20.16 (8)	N/A	N/A	-23.09 (7)	09/01/2021
Russell 1000 Growth Index	-3.60 (26)	-30.66 (25)	-22.59 (20)	-22.59 (20)	10.67 (8)	12.16 (8)	-25.14 (19)	
Difference	-5.56	-0.18	2.43	2.43	N/A	N/A	2.05	
IM U.S. Large Cap Growth Equity (MF) Median	-4.41	-33.10	-27.73	-27.73	7.08	9.29	-29.66	
First Trust Cloud Computing ETF (SKYY) (net)	-8.31 (100)	-41.99 (97)	-42.20 (97)	-42.20 (97)	N/A	N/A	-41.81 (97)	09/01/2021
S&P MidCap 400 Growth	-0.74 (32)	-25.48 (10)	-19.52 (10)	-19.52 (10)	5.10 (49)	5.69 (82)	-21.39 (11)	
Difference	-7.57	-16.51	-22.68	-22.68	N/A	N/A	-20.42	
IM U.S. Mid Cap Growth Equity (MF) Median	-1.99	-33.10	-29.66	-29.66	5.03	7.74	-30.55	
Mutual of America Equity (Gross)	-2.46 (28)	-21.62 (49)	-15.35 (49)	-15.35 (49)	5.95 (31)	5.79 (50)	9.02 (18)	04/01/2008
S&P MidCap 400 Index	-2.46 (28)	-21.52 (48)	-15.25 (48)	-15.25 (48)	6.01 (30)	5.82 (50)	9.11 (16)	
Difference	0.00	-0.10	-0.10	-0.10	-0.06	-0.03	-0.09	
IM U.S. Mid Cap Equity (MF) Median	-4.04	-22.11	-15.67	-15.67	4.92	5.78	7.86	
Mutual of America Equity (Net)	-2.48	-21.66	-15.42	-15.42	5.87	5.71	8.94	04/01/2008
S&P MidCap 400 Index	-2.46	-21.52	-15.25	-15.25	6.01	5.82	9.11	
Difference	-0.02	-0.14	-0.17	-0.17	-0.14	-0.11	-0.17	
Vanguard R2000 (VRTIX) (Net)	-2.15 (16)	-25.07 (75)	-23.48 (88)	-23.48 (88)	4.36 (54)	N/A	0.28 (62)	09/01/2018
Russell 2000 Index	-2.19 (17)	-25.10 (77)	-23.50 (89)	-23.50 (89)	4.29 (56)	3.55 (51)	0.21 (64)	
Difference	0.04	0.03	0.02	0.02	0.07	N/A	0.07	
IM U.S. Small Cap Core Equity (MF) Median	-4.48	-23.02	-18.44	-18.44	4.60	3.57	0.75	
Total International Equity								
Vanguard Intl Eq (VTMGX) (Net)	-10.44 (52)	-27.69 (38)	-25.53 (32)	-25.53 (32)	-1.26 (40)	-0.63 (33)	3.17 (31)	07/01/2013
MSCI EAFE Index	-9.29 (29)	-26.76 (31)	-24.75 (26)	-24.75 (26)	-1.38 (42)	-0.36 (28)	3.29 (28)	
Difference	-1.15	-0.93	-0.78	-0.78	0.12	-0.27	-0.12	
IM International Equity (MF) Median	-10.39	-28.99	-28.15	-28.15	-1.90	-1.50	2.44	



### Comparative Performance Total Fund

As of September 30, 2022

	QTR	YTD	FYTD	1 YR	3 YR	5 YR	Inception	Inception Date
iShares MSCI EM ex China ETF (EMXC) (Net)	-7.29 (11)	N/A	N/A	N/A	N/A	N/A	N/A	02/01/2022
MSCI EAFE Index	-9.29 (29)	-26.76 (31)	-24.75 (26)	-24.75 (26)	-1.38 (42)	-0.36 (28)	-23.04 (18)	
Difference	2.00	N/A	N/A	N/A	N/A	N/A	N/A	
IM International Equity (MF) Median	-10.39	-28.99	-28.15	-28.15	-1.90	-1.50	-26.44	
Vanguard Emerging Mar Adm (VEMAX) (Net)	N/A	N/A	N/A	N/A	N/A	N/A	-10.15 (40)	09/01/2022
MSCI Emerging Markets Index	-11.42 (58)	-26.89 (29)	-27.80 (30)	-27.80 (30)	-1.71 (40)	-1.44 (33)	-11.67 (84)	
Difference	N/A	N/A	N/A	N/A	N/A	N/A	1.52	
IM Emerging Markets Equity (MF) Median	-11.00	-29.27	-29.88	-29.88	-2.54	-2.37	-10.57	
JPM International Equity (Net)	-9.22 (47)	-30.06 (67)	-27.05 (60)	-27.05 (60)	-1.68 (71)	-0.45 (59)	3.60 (60)	10/01/2015
MSCI EAFE Index	-9.29 (49)	-26.76 (43)	-24.75 (39)	-24.75 (39)	-1.38 (66)	-0.36 (57)	3.34 (67)	
Difference	0.07	-3.30	-2.30	-2.30	-0.30	-0.09	0.26	
IM International Equity (SA+CF) Median	-9.38	-27.45	-25.97	-25.97	-0.43	0.04	3.94	



	QTR	YTD	FYTD	1 YR	3 YR	5 YR	Inception	Inceptio Date
Total Fixed Income Composite	-4.31	-10.66	-10.79	-10.79	-2.17	0.29	4.63	01/01/1998
Total Fixed Income Policy Index	-3.90	-11.76	-12.03	-12.03	-2.44	0.01	3.56	
Difference	-0.41	1.10	1.24	1.24	0.27	0.28	1.07	
GHA A+ Fixed Income (Gross)	-5.13 (96)	-12.44 (8)	-12.49 (7)	-12.49 (7)	-2.62 (40)	0.18 (51)	4.02 (6)	01/01/2007
Blmbg. U.S. Aggregate: A+	-4.74 (72)	-13.86 (27)	-13.89 (25)	-13.89 (25)	-3.24 (92)	-0.37 (98)	2.66 (100)	
Difference	-0.39	1.42	1.40	1.40	0.62	0.55	1.36	
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-4.55	-14.43	-14.48	-14.48	-2.70	0.18	3.35	
GHA A+ Fixed Income (Net)	-4.74	-12.18	-12.30	-12.30	-2.71	0.02	3.80	01/01/2007
Blmbg. U.S. Aggregate: A+	-4.74	-13.86	-13.89	-13.89	-3.24	-0.37	2.66	
Difference	0.00	1.68	1.59	1.59	0.53	0.39	1.14	
GHA EXCL A+ Fixed Income (Gross)	-3.73 (90)	-8.44 (19)	-8.70 (16)	-8.70 (16)	-1.63 (81)	0.45 (78)	4.48 (11)	01/01/1998
Bloomberg Intermediate US Govt/Credit Idx	-3.06 (65)	-9.63 (59)	-10.14 (63)	-10.14 (63)	-1.64 (81)	0.38 (84)	3.73 (93)	,
Difference	-0.67	1.19	1.44	1.44	0.01	0.07	0.75	
IM U.S. Intermediate Duration (SA+CF) Median	-2.96	-9.51	-10.02	-10.02	-1.31	0.68	4.13	
GHA EXCL A+ Fixed Income (Net)	-3.79	-8.62	-8.93	-8.93	-1.87	0.21	4.43	01/01/1998
Bloomberg Intermediate US Govt/Credit Idx	-3.06	-9.63	-10.14	-10.14	-1.64	0.38	3.73	
Difference	-0.73	1.01	1.21	1.21	-0.23	-0.17	0.70	
Fotal Real Estate (Gross)	-0.43 (70)	10.97 (65)	17.34 (64)	17.34 (64)	10.27 (66)	8.88 (71)	8.64 (N/A)	06/01/2017
NCREIF Fund Index-Open End Diversified Core (EW)	0.96 (31)	13.99 (24)	22.76 (30)	22.76 (30)	13.07 (33)	10.80 (44)	10.84 (N/A)	
Difference	-1.39	-3.02	-5.42	-5.42	-2.80	-1.92	-2.20	
IM U.S. Open End Private Real Estate (SA+CF) Median	0.56	11.79	20.19	20.19	12.14	10.65	N/A	
Barings Real Estate (Gross)	-3.32 (96)	6.40 (82)	14.48 (78)	14.48 (78)	9.26 (69)	8.47 (73)	8.55 (73)	07/01/2017
NCREIF Fund Index-Open End Diversified Core (EW)	0.96 (31)	13.99 (24)	22.76 (30)	22.76 (30)	13.07 (33)	10.80 (44)	10.66 (49)	
Difference	-4.28	-7.59	-8.28	-8.28	-3.81	-2.33	-2.11	
IM U.S. Open End Private Real Estate (SA+CF) Median	0.56	11.79	20.19	20.19	12.14	10.65	10.58	
Barings Real Estate (Net)	-3.56	5.64	13.41	13.41	8.27	7.43	7.51	07/01/2017
NCREIF Fund Index-Open End Diversified Core (EW)	0.96	13.99	22.76	22.76	13.07	10.80	10.66	
Difference	-4.52	-8.35	-9.35	-9.35	-4.80	-3.37	-3.15	
ASB Real Estate (Gross)	2.24 (4)	15.31 (13)	19.96 (54)	19.96 (54)	11.21 (64)	9.21 (67)	8.92 (70)	07/01/2017
NCREIF Fund Index-Open End Diversified Core (EW)	0.96 (31)	13.99 (24)	22.76 (30)	22.76 (30)	13.07 (33)	10.80 (44)	10.66 (49)	
Difference	1.28	1.32	-2.80	-2.80	-1.86	-1.59	-1.74	
IM U.S. Open End Private Real Estate (SA+CF) Median	0.56	11.79	20.19	20.19	12.14	10.65	10.58	
ASB Real Estate (Net)	1.99	14.44	18.73	18.73	9.94	7.93	7.63	07/01/2017
NCREIF Fund Index-Open End Diversified Core (EW)	0.96	13.99	22.76	22.76	13.07	10.80	10.66	
Difference	1.03	0.45	-4.03	-4.03	-3.13	-2.87	-3.03	

Returns for periods greater than one year are annualized. Returns are expressed as percentages.



Comparative Performance Fiscal Year to Date									
	FYTD	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015
Total Fund Composite (Gross)	-16.06 (64)	-16.06 (64)	20.33 (44)	8.17 (54)	3.94 (53)	8.38 (39)	11.66 (51)	9.56 (45)	0.60 (18)
Total Fund Policy Index	-13.33 (31)	-13.33 (31)	21.11 (34)	7.67 (59)	4.31 (39)	9.00 (29)	10.90 (70)	10.01 (29)	0.59 (19)
Difference	-2.73	-2.73	-0.78	0.50	-0.37	-0.62	0.76	-0.45	0.01
All Public Plans-Total Fund Median	-14.90	-14.90	19.87	8.51	3.99	7.86	11.68	9.33	-0.71
Total Fund Composite (Net)	-16.31	-16.31	19.98	7.83	3.60	8.01	11.28	9.25	0.22
Total Fund Policy Index	-13.33	-13.33	21.11	7.67	4.31	9.00	10.90	10.01	0.59
Difference	-2.98	-2.98	-1.13	0.16	-0.71	-0.99	0.38	-0.76	-0.37
Total Equity Composite (Gross)	-23.82	-23.82	33.24	9.67	1.68	13.02	19.33	13.45	-1.15
Total Equity Policy Index	-18.54	-18.54	34.91	7.61	0.83	14.65	18.53	13.79	-1.26
Difference	-5.28	-5.28	-1.67	2.06	0.85	-1.63	0.80	-0.34	0.11
Total Domestic Equity									
Ceredex Equity (Gross)	-15.64 (86)	-15.64 (86)	32.34 (73)	-1.49 (41)	4.95 (29)	10.74 (62)	17.71 (52)	16.57 (22)	-5.35 (70)
Russell 1000 Value Index	-11.36 (65)	-11.36 (65)	35.01 (58)	-5.03 (65)	4.00 (39)	9.45 (76)	15.12 (77)	16.19 (25)	-4.42 (63)
Difference	-4.28	-4.28	-2.67	3.54	0.95	1.29	2.59	0.38	-0.93
IM U.S. Large Cap Value Equity (SA+CF) Median	-9.64	-9.64	37.00	-3.30	2.49	11.73	17.80	13.30	-3.40
Ceredex Equity (Net)	-16.07 (88)	-16.07 (88)	31.69 (74)	-2.03 (44)	4.39 (35)	10.15 (68)	17.06 (58)	15.91 (27)	-5.89 (78)
Russell 1000 Value Index	-11.36 (65)	-11.36 (65)	35.01 (58)	-5.03 (65)	4.00 (39)	9.45 (76)	15.12 (77)	16.19 (25)	-4.42 (63)
Difference	-4.71	-4.71	-3.32	3.00	0.39	0.70	1.94	-0.28	-1.47
IM U.S. Large Cap Value Equity (SA+CF) Median	-9.64	-9.64	37.00	-3.30	2.49	11.73	17.80	13.30	-3.40
Rhumbline R1000G (Gross)	-22.51 (37)	-22.51 (37)	27.29 (49)	37.64 (31)	3.71 (52)	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	-22.59 (37)	-22.59 (37)	27.32 (49)	37.53 (31)	3.71 (52)	26.30 (39)	21.94 (39)	13.76 (22)	3.17 (58)
Differnce	0.08	0.08	-0.03	0.11	0.00	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.79	-25.79	27.22	33.77	3.80	24.84	21.10	11.84	3.87
Rhumbline R1000G (Net)	-22.55 (37)	-22.55 (37)	27.25 (50)	37.57 (31)	3.66 (52)	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	-22.59 (37)	-22.59 (37)	27.32 (49)	37.53 (31)	3.71 (52)	26.30 (39)	21.94 (39)	13.76 (22)	3.17 (58)
Differnce	0.04	0.04	-0.07	0.04	-0.05	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.79	-25.79	27.22	33.77	3.80	24.84	21.10	11.84	3.87
Polen Capital (Gross)	-34.01 (90)	-34.01 (90)	30.69 (19)	35.75 (39)	9.69 (11)	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	-22.59 (37)	-22.59 (37)	27.32 (49)	37.53 (31)	3.71 (52)	26.30 (39)	21.94 (39)	13.76 (22)	3.17 (58)
Difference	-11.42	-11.42	3.37	-1.78	5.98	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.79	-25.79	27.22	33.77	3.80	24.84	21.10	11.84	3.87



### Comparative Performance Total Fund

As of September 30, 2022

						As of September 30, 202			
	FYTD	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015
Polen Capital (Net)	-34.48 (91)	-34.48 (91)	29.90 (24)	34.98 (44)	9.03 (15)	N/A	N/A	N/A	N/A
Russell 1000 Growth Index	-22.59 (37)	-22.59 (37)	27.32 (49)	37.53 (31)	3.71 (52)	26.30 (39)	21.94 (39)	13.76 (22)	3.17 (58)
Difference	-11.89	-11.89	2.58	-2.55	5.32	N/A	N/A	N/A	N/A
IM U.S. Large Cap Growth Equity (SA+CF) Median	-25.79	-25.79	27.22	33.77	3.80	24.84	21.10	11.84	3.87
Ark Disruptive Technology ETF (ARKK) (Net)	-65.59 (100)	-65.59 (100)	22.25 (89)	N/A	N/A	N/A	N/A	N/A	N/A
Russell 3000 Growth Index	-23.01 (20)	-23.01 (20)	27.57 (61)	36.12 (28)	2.70 (32)	25.89 (38)	21.87 (27)	13.64 (18)	3.21 (41)
Difference	-42.58	-42.58	-5.32	N/A	N/A	N/A	N/A	N/A	N/A
IM U.S. Growth Equity (MF) Median	-28.76	-28.76	29.03	29.14	0.23	23.96	19.65	10.35	2.36
Ark Autonomous Technology & Robotics ETF (ARKQ) (Net)	-41.80 (97)	-41.80 (97)	N/A						
Russell 1000 Growth Index	-22.59 (32)	-22.59 (32)	27.32 (41)	37.53 (25)	3.71 (39)	26.30 (34)	21.94 (30)	13.76 (19)	3.17 (50)
Difference	-19.21	-19.21	N/A						
IM U.S. Large Cap Growth Equity (SA+CF) Median	-26.67	-26.67	26.43	33.51	2.47	24.27	20.38	10.95	3.13
Defiance 5G Next Gen Connectivity ETF (FIVG) (Net)	-20.16 (8)	-20.16 (8)	N/A						
Russell 1000 Growth Index	-22.59 (20)	-22.59 (20)	27.32 (30)	37.53 (31)	3.71 (30)	26.30 (36)	21.94 (28)	13.76 (15)	3.17 (43)
Difference	2.43	2.43	N/A						
IM U.S. Large Cap Growth Equity (MF) Median	-27.73	-27.73	25.85	34.07	2.15	24.80	20.19	10.85	2.64
First Trust Cloud Computing ETF (SKYY) (net)	-42.20 (97)	-42.20 (97)	N/A						
S&P MidCap 400 Growth	-19.52 (10)	-19.52 (10)	33.26 (33)	8.25 (91)	-2.53 (84)	16.55 (84)	17.29 (59)	12.78 (13)	4.92 (25)
Difference	-22.68	-22.68	N/A						
IM U.S. Mid Cap Growth Equity (MF) Median	-29.66	-29.66	30.55	23.53	3.44	21.73	17.94	8.76	2.09
Mutual of America Equity (Gross)	-15.35 (49)	-15.35 (49)	43.37 (25)	-2.00 (56)	-2.50 (74)	14.25 (39)	17.31 (36)	15.25 (17)	1.41 (34)
S&P MidCap 400 Index	-15.25 (48)	-15.25 (48)	43.68 (24)	-2.16 (56)	-2.49 (74)	14.21 (40)	17.52 (33)	15.33 (17)	1.40 (34)
Difference	-0.10	-0.10	-0.31	0.16	-0.01	0.04	-0.21	-0.08	0.01
IM U.S. Mid Cap Equity (MF) Median	-15.67	-15.67	37.14	0.13	1.97	11.71	16.08	10.98	-0.36
Mutual of America Equity (Net)	-15.42 (52)	-15.42 (52)	43.26 (33)	-2.07 (58)	-2.53 (80)	14.15 (43)	17.23 (51)	15.17 (23)	1.35 (43)
S&P MidCap 400 Index	-15.25 (52)	-15.25 (52)	43.68 (30)	-2.16 (58)	-2.49 (79)	14.21 (43)	17.52 (48)	15.33 (22)	1.40 (43)
Difference	-0.17	-0.17	-0.42	0.09	-0.04	-0.06	-0.29	-0.16	-0.05
IM U.S. Mid Cap Equity (MF) Median	-14.72	-14.72	38.48	1.40	2.89	13.02	17.35	12.20	0.76
Vanguard R2000 (VRTIX) (Net)	-23.48 (88)	-23.48 (88)	47.79 (69)	0.51 (14)	-8.83 (59)	N/A	N/A	N/A	N/A
Russell 2000 Index	-23.50 (89)	-23.50 (89)	47.68 (69)	0.39 (15)	-8.89 (61)	15.24 (24)	20.74 (28)	15.47 (39)	1.25 (45)
Differnce	0.02	0.02	0.11	0.12	0.06	N/A	N/A	N/A	N/A
IM U.S. Small Cap Core Equity (MF) Median	-18.44	-18.44	51.01	-8.26	-8.11	11.70	18.98	14.43	0.91



### Comparative Performance Total Fund As of September 30, 2022

	FYTD	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015
Total International Equity	05 50 (00)	05.50 (00)	00.54 (0.4)	0.40 (05)	0.00 (50)	0.70 (0.4)	10.05 (50)	0.00 (50)	7.00 (45)
Vanguard Intl Eq (VTMGX) (Net)	-25.53 (32)	-25.53 (32)	26.51 (34)	2.18 (65)	-2.08 (52)	2.78 (24)	19.25 (52)	8.03 (59)	-7.90 (45)
MSCI EAFE Index	<b>-</b> 24.75 (26)	-24.75 (26)	26.29 (34)	0.93 (69)	-0.82 (41)	3.25 (21)	19.65 (48)	7.06 (65)	-8.27 (47)
Differnce	-0.78	-0.78	0.22	1.25	-1.26	-0.47	-0.40	0.97	0.37
IM International Equity (MF) Median	-28.15	-28.15	23.07	6.53	-1.89	0.18	19.37	9.31	-8.71
iShares MSCI EM ex China ETF (EMXC) (Net)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI EAFE Index	-24.75 (26)	-24.75 (26)	26.29 (34)	0.93 (69)	-0.82 (41)	3.25 (21)	19.65 (48)	7.06 (65)	-8.27 (47)
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM International Equity (MF) Median	-28.15	-28.15	23.07	6.53	-1.89	0.18	19.37	9.31	-8.71
Vanguard Emerging Mar Adm (VEMAX)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
MSCI Emerging Markets Index	-27.80 (30)	-27.80 (30)	18.58 (56)	10.91 (47)	-1.63 (66)	-0.44 (21)	22.91 (35)	17.21 (38)	-18.98 (58)
Difference	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
IM Emerging Markets Equity (MF) Median	-29.88	-29.88	19.25	10.39	0.25	-3.86	21.20	15.77	-18.47
JPM International Equity (Net)	-27.05 (60)	-27.05 (60)	17.09 (91)	11.25 (35)	6.53 (7)	-3.43 (96)	18.60 (68)	10.45 (43)	N/A
MSCI EAFE Index	-24.75 (39)	-24.75 (39)	26.29 (54)	0.93 (68)	-0.82 (38)	3.25 (46)	19.65 (59)	7.06 (71)	-8.27 (66)
Difference	-2.30	-2.30	-9.20	10.32	7.35	-6.68	-1.05	3.39	N/A
IM International Equity (SA+CF) Median	-25.97	-25.97	27.14	6.24	-2.11	2.80	20.67	9.54	-5.81

### Comparative Performance Total Fund

As of September 30, 2022

						As of September 30, 2022			
	FYTD	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015
Total Fixed Income Composite	-10.79	-10.79	-1.38	6.42	7.74	0.58	0.36	4.79	3.51
Total Fixed Income Policy Index	-12.03	-12.03	-1.00	6.63	8.97	-1.12	-0.09	4.01	3.06
Difference	1.24	1.24	-0.38	-0.21	-1.23	1.70	0.45	0.78	0.45
GHA A+ Fixed Income (Gross)	-12.49 (7)	-12.49 (7)	-1.69 (98)	7.35 (56)	8.45 (97)	0.74 (5)	0.23 (70)	5.53 (61)	3.53 (12)
Blmbg. U.S. Aggregate: A+	-13.89 (25)	-13.89 (25)	-1.60 (97)	6.92 (78)	9.78 (88)	-1.28 (95)	-0.42 (99)	4.50 (96)	3.44 (16)
Difference	1.40	1.40	-0.09	0.43	-1.33	2.02	0.65	1.03	0.09
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-14.48	-14.48	-0.02	7.53	10.42	-0.73	0.63	5.67	3.02
GHA A+ Fixed Income (Net)	-12.30 (6)	-12.30 (6)	-1.94 (99)	7.08 (70)	8.18 (97)	0.48 (8)	-0.02 (91)	5.27 (71)	3.27 (27)
Blmbg. U.S. Aggregate: A+	-13.89 (25)	-13.89 (25)	-1.60 (97)	6.92 (78)	9.78 (88)	-1.28 (95)	-0.42 (99)	4.50 (96)	3.44 (16)
Difference	1.59	1.59	-0.34	0.16	-1.60	1.76	0.40	0.77	-0.17
IM U.S. Broad Market Core Fixed Income (SA+CF) Median	-14.48	-14.48	-0.02	7.53	10.42	-0.73	0.63	5.67	3.02
GHA EXCL A+ Fixed Income (Gross)	-8.70 (16)	-8.70 (16)	-0.94 (98)	5.24 (87)	6.99 (82)	0.42 (15)	0.52 (66)	4.03 (40)	3.45 (7)
Bloomberg Intermediate US Govt/Credit Idx	-10.14 (63)	-10.14 (63)	-0.40 (88)	6.32 (58)	8.17 (39)	-0.96 (95)	0.23 (87)	3.52 (74)	2.68 (51)
Difference	1.44	1.44	-0.54	-1.08	-1.18	1.38	0.29	0.51	0.77
IM U.S. Intermediate Duration (SA+CF) Median	-10.02	-10.02	0.26	6.43	8.01	-0.37	0.70	3.88	2.69
GHA EXCL A+ Fixed Income (Net)	-8.93 (19)	-8.93 (19)	-1.18 (100)	4.99 (88)	6.74 (84)	0.22 (20)	0.52 (66)	4.03 (40)	3.45 (7)
Bloomberg Intermediate US Govt/Credit Idx	-10.14 (63)	-10.14 (63)	-0.40 (88)	6.32 (58)	8.17 (39)	-0.96 (95)	0.23 (87)	3.52 (74)	2.68 (51)
Difference	1.21	1.21	-0.78	-1.33	-1.43	1.18	0.29	0.51	0.77
IM U.S. Intermediate Duration (SA+CF) Median	-10.02	-10.02	0.26	6.43	8.01	-0.37	0.70	3.88	2.69
Total Real Estate (Gross)	17.34 (64)	17.34 (64)	11.89 (82)	2.12 (40)	5.81 (68)	7.85 (76)	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	22.76 (30)	22.76 (30)	15.75 (53)	1.74 (48)	6.17 (66)	8.82 (61)	7.81 (51)	10.62 (68)	14.71 (59)
Difference	-5.42	-5.42	-3.86	0.38	-0.36	-0.97	N/A	N/A	N/A
IM U.S. Open End Private Real Estate (SA+CF) Median	20.19	20.19	16.11	1.72	6.80	9.04	7.83	11.39	15.32
Barings Real Estate (Gross)	14.48 (78)	14.48 (78)	12.00 (82)	1.73 (49)	7.06 (39)	7.51 (87)	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	22.76 (30)	22.76 (30)	15.75 (53)	1.74 (48)	6.17 (66)	8.82 (61)	7.81 (51)	10.62 (68)	14.71 (59)
Difference	-8.28	-8.28	-3.75	-0.01	0.89	-1.31	N/A	N/A	N/A
IM U.S. Open End Private Real Estate (SA+CF) Median	20.19	20.19	16.11	1.72	6.80	9.04	7.83	11.39	15.32
Barings Real Estate (Net)	13.41	13.41	11.05	0.77	6.04	6.36	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	22.76	22.76	15.75	1.74	6.17	8.82	7.81	10.62	14.71
Difference	-9.35	-9.35	-4.70	-0.97	-0.13	-2.46	N/A	N/A	N/A
ASB Real Estate (Gross)	19.96 (54)	19.96 (54)	11.76 (83)	2.59 (26)	4.35 (82)	8.26 (69)	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	22.76 (30)	22.76 (30)	15.75 (53)	1.74 (48)	6.17 (66)	8.82 (61)	7.81 (51)	10.62 (68)	14.71 (59)
Difference	-2.80	-2.80	-3.99	0.85	-1.82	-0.56	N/A	N/A	N/A
IM U.S. Open End Private Real Estate (SA+CF) Median	20.19	20.19	16.11	1.72	6.80	9.04	7.83	11.39	15.32



# Comparative Performance Total Fund

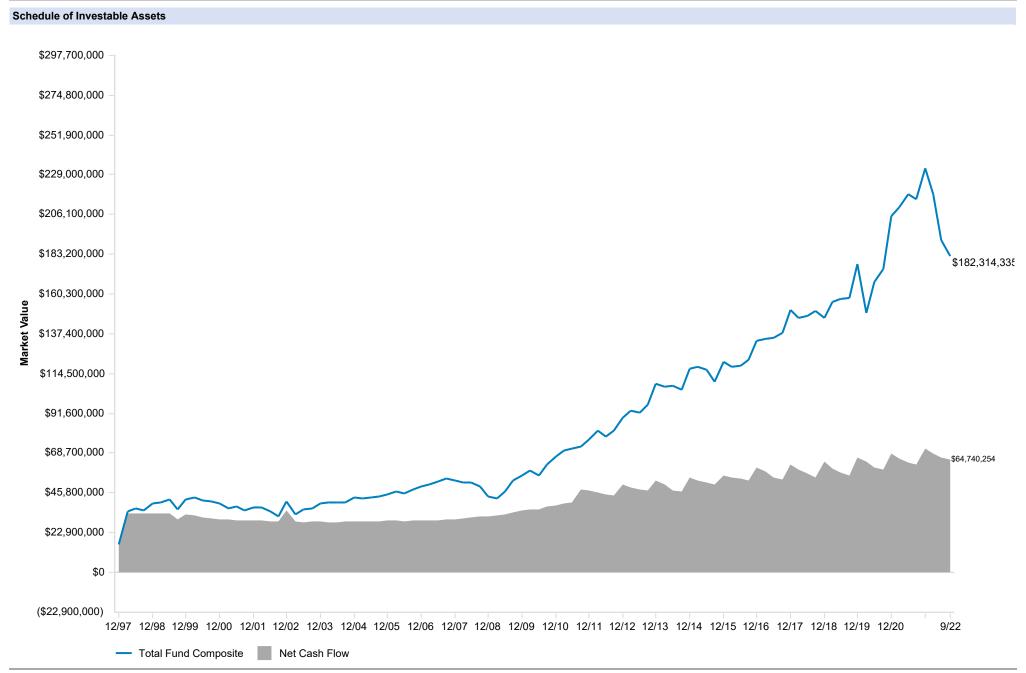
As of September 30, 2022

	FYTD	Oct-2021 To Sep-2022	Oct-2020 To Sep-2021	Oct-2019 To Sep-2020	Oct-2018 To Sep-2019	Oct-2017 To Sep-2018	Oct-2016 To Sep-2017	Oct-2015 To Sep-2016	Oct-2014 To Sep-2015
ASB Real Estate (Net)	18.73	18.73	10.42	1.35	3.08	6.92	N/A	N/A	N/A
NCREIF Fund Index-Open End Diversified Core (EW)	22.76	22.76	15.75	1.74	6.17	8.82	7.81	10.62	14.71
Difference	-4.03	-4.03	-5.33	-0.39	-3.09	-1.90	N/A	N/A	N/A



Financial Reconciliation Quarter to Date										
	Market Value 07/01/2022	Net Transfers	Contributions	Distributions	Management Fees	Other Expenses	Return On Investment	Market Value 09/30/2022	Income	Apprec./ Deprec.
Ceredex Equity	30,151,328	-	-	-	-41,347	-4,410	-1,697,807	28,407,764	156,220	-1,854,027
Rhumbline R1000G	10,173,983	1,356	-	-	-1,356	-	-366,464	9,807,519	-	-366,464
Defiance 5G Next Gen Connectivity ETF (FIVG)	930,963	-3,042	-	-	-	-	-85,200	842,721	3,042	-88,242
Polen Capital	9,108,517	-	-	-	-13,625	-1,332	-472,830	8,620,730	9,138	-481,968
Ark Disruptive Technology ETF (ARKK)	3,415,044	-	-	-	-	-	-184,111	3,230,933	-	-184,111
Ark Autonomous Technology & Robotics ETF (ARKQ)	919,970	-	-	-	-	-	-92,034	827,936	-	-92,034
First Trust Cloud Computing ETF (SKYY)	939,866	-161	-	-	-	-	-78,137	861,567	161	-78,298
Mutual of America Equity	18,822,404	-	-	-	-3,891	-2,753	-462,737	18,353,023	379,798	-842,535
Vanguard R2000 (VRTIX)	17,051,493	-	-	-	-	-	-366,728	16,684,765	72,222	-438,950
Vanguard Developed Mar (VTMGX)	7,209,560	-	-	-	-	-	-752,474	6,457,086	20,835	-773,309
iShares MSCI EM ex China ETF (EMXC)	2,158,609	-	-	-	-	-	-157,286	2,001,323	-	-157,286
Vanguard Emerging Mar (VEMIX)	2,469,990	-2,510,404	-	-	-	-	40,415	-	-	40,415
Vanguard Emerging Mar Adm (VEMAX)	-	2,510,404	-	-	-	-	-306,108	2,204,296	31,092	-337,201
JPM International Equity	6,530,717	-	-	-	-	-	-602,167	5,928,550	-	-602,167
GHA A+ Fixed Income	30,962,352	-	-	-	-19,340	-4,503	-1,448,304	29,490,205	213,328	-1,661,632
GHA EXCL A+ Fixed Income	19,619,219	-	-	-	-12,257	-2,854	-730,382	18,873,726	132,944	-863,326
Barings Real Estate	10,275,300	-	-	-	-25,046	-	-341,256	9,908,997	66,333	-407,590
ASB Real Estate	11,094,746	-	-	-	-28,358	-	248,593	11,314,981	-	248,593
R&D Cash	9,670,265	1,847	1,173,377	-2,361,638	-	-19,384	33,743	8,498,210	33,743	-
Total Fund Composite	191,504,327	-	1,173,377	-2,361,638	-145,221	-35,235	-7,821,274	182,314,335	1,118,856	-8,940,131







Schedule of Invest	Beginning			Net		Ending	
Periods Ending	Market Value	Contributions \$	Withdrawals \$	Cash Flow \$	Gain/Loss \$	Market Value \$	%Return
Dec-1997	-	-	-	-	-	15,998,300	N/A
Mar-1998	15,998,300	17,675,917	-	17,675,917	1,591,809	35,266,026	9.95
Jun-1998	35,266,026	237,384	-	237,384	1,275,793	36,779,203	3.61
Sep-1998	36,779,203	-	34,946	-34,946	-1,362,667	35,381,590	-3.71
Dec-1998	35,381,590	-	84,404	-84,404	4,428,727	39,725,913	12.53
Mar-1999	39,725,913	45,809	-	45,809	571,996	40,343,718	1.44
Jun-1999	40,343,718	-	83,881	-83,881	1,732,162	41,991,999	4.30
Sep-1999	41,991,999	-	3,513,461	-3,513,461	-1,997,343	36,481,195	-4.88
Dec-1999	36,481,195	3,141,344	-	3,141,344	2,286,800	41,909,339	6.31
Mar-2000	41,909,339	-	531,269	-531,269	1,445,328	42,823,398	3.47
Jun-2000	42,823,398	-	986,106	-986,106	-362,829	41,474,463	-0.86
Sep-2000	41,474,463	-	690,560	-690,560	215,472	40,999,375	0.52
Dec-2000	40,999,375	-	577,326	-577,326	-951,616	39,470,433	-2.34
Mar-2001	39,470,433	-	393,550	-393,550	-2,158,027	36,918,856	-5.50
Jun-2001	36,918,856	-	225,319	-225,319	1,167,090	37,860,627	3.17
Sep-2001	37,860,627	40,297	-	40,297	-2,075,500	35,825,424	-5.47
Dec-2001	35,825,424	-	184,219	-184,219	1,729,006	37,370,211	4.84
Mar-2002	37,370,211	-	223,926	-223,926	278,998	37,425,283	0.75
Jun-2002	37,425,283	-	348,391	-348,391	-1,937,612	35,139,280	-5.21
Sep-2002	35,139,280	-	221,225	-221,225	-2,602,605	32,315,450	-7.44
Dec-2002	32,315,450	6,836,371	-	6,836,371	1,438,642	40,590,463	4.41
Mar-2003	40,590,463	-	6,795,099	-6,795,099	-410,557	33,384,807	-1.17
Jun-2003	33,384,807	-	197,693	-197,693	2,866,553	36,053,667	8.62
Sep-2003	36,053,667	252,293	-	252,293	741,955	37,047,915	2.05
Dec-2003	37,047,915	-	21,113	-21,113	2,460,444	39,487,246	6.67
Mar-2004	39,487,246	-	134,073	-134,073	822,971	40,176,144	2.09
Jun-2004	40,176,144	1,194	-	1,194	3,493	40,180,831	-0.01
Sep-2004	40,180,831	397,660	-	397,660	-339,911	40,238,580	-0.85
Dec-2004	40,238,580	54,577	-	54,577	2,802,548	43,095,705	6.96
Mar-2005	43,095,705	· -	186,709	-186,709	-417,831	42,491,165	-0.98
Jun-2005	42,491,165	-	34,346	-34,346	731,050	43,187,869	1.72
Sep-2005	43,187,869	_	43,678	-43,678	503,689	43,647,880	1.17
Dec-2005	43,647,880	423,649	-,	423,649	950,170	45,021,699	2.19
Mar-2006	45,021,699	51,421	-	51,421	1,403,105	46,476,225	3.11
Jun-2006	46,476,225	· -	83,590	-83,590	-718,538	45,674,097	-1.55
Sep-2006	45,674,097	586,713	· -	586,713	1,503,788	47,764,598	3.27
Dec-2006	47,764,598	-	322,499	-322,499	1,978,220	49,420,319	4.19
Mar-2007	49,420,319	45,644	-	45,644	895,483	50,361,446	1.82
Jun-2007	50,361,446	243,909	-	243,909	1,901,240	52,506,595	3.78
Sep-2007	52,506,595	400,316	_	400,316	1,166,875	54,073,786	2.20



Since Inception Ending September 30, 2022

Periods Ending	Beginning Market Value \$	Contributions \$	Withdrawals \$	Net Cash Flow \$	Gain/Loss \$	Ending Market Value \$	%Return
Dec-2007	54,073,786	190,416		190,416	-1,264,986	52,999,216	-2.33
Mar-2008	52,999,216	475,161	_	475,161	-1,773,644	51,700,733	-3.33
Jun-2008	51,700,733	157,090	_	157,090	19,456	51,877,279	0.06
Sep-2008	51,877,279	729,736	_	729,736	-3,090,400	49,516,615	-5.88
Dec-2008	49,516,615	272,688	_	272,688	-5,953,060	43,836,243	-12.10
Mar-2009	43,836,243	645,560	_	645,560	-2,154,563	42,327,240	-4.63
Jun-2009	42,327,240	466,248	_	466,248	4,028,207	46,821,695	9.51
Sep-2009	46,821,695	1,231,187	_	1,231,187	4,915,363	52,968,245	10.42
Dec-2009	52,968,245	728,073	_	728,073	2,085,980	55,782,298	3.90
Mar-2010	55,782,298	530,170	_	530,170	2,014,347	58,326,815	3.60
Jun-2010	58,326,815	495,784	_	495,784	-3,139,138	55,683,461	-5.38
Sep-2010	55,683,461	1,660,776	_	1,660,776	4,453,702	61,797,939	7.87
Dec-2010	61,797,939	651,202	_	651,202	4,073,218	66,522,359	6.59
Mar-2011	66,522,359	634,816	_	634,816	2,936,677	70,093,852	4.43
Jun-2011	70,093,852	665,257	_	665,257	532,225	71,291,334	0.76
Sep-2011	71,291,334	7,862,053	_	7,862,053	-6,957,257	72,196,130	-9.67
Dec-2011	72,196,130	-	654,876	-654,876	4,773,351	76,314,605	6.63
Mar-2012	76,314,605	-	1,466,628	-1,466,628	6,525,345	81,373,322	8.63
Jun-2012	81,373,322	-	1,210,329	-1,210,329	-1,962,942	78,200,051	-2.42
Sep-2012	78,200,051	-	328,909	-328,909	3,699,212	81,570,354	4.75
Dec-2012	81,570,354	6,149,365	-	6,149,365	1,463,069	89,182,788	1.61
Mar-2013	89,182,788	-	1,674,077	-1,674,077	5,563,247	93,071,958	6.29
Jun-2013	93,071,958	-	1,198,519	-1,198,519	117,987	91,991,426	0.15
Sep-2013	91,991,426	-	302,113	-302,113	4,852,470	96,541,783	5.28
Dec-2013	96,541,783	5,486,468	-	5,486,468	6,283,251	108,311,502	6.10
Mar-2014	108,311,502	-	2,359,425	-2,359,425	918,503	106,870,580	0.88
Jun-2014	106,870,580	-	3,191,614	-3,191,614	3,629,450	107,308,416	3.49
Sep-2014	107,308,416	-	452,620	-452,620	-1,543,346	105,312,450	-1.43
Dec-2014	105,312,450	7,621,833	-	7,621,833	4,031,767	116,966,050	3.57
Mar-2015	116,966,050	-	1,512,343	-1,512,343	2,856,300	118,310,007	2.46
Jun-2015	118,310,007	-	1,332,712	-1,332,712	-581,700	116,395,595	-0.50
Sep-2015	116,395,595	-	1,099,361	-1,099,361	-5,449,028	109,847,206	-4.72
Dec-2015	109,847,206	8,251,060	2,762,661	5,488,399	5,689,897	121,025,502	2.58
Mar-2016	121,025,502	7,589,316	8,599,372	-1,010,056	-1,803,617	118,211,829	1.44
Jun-2016	118,211,829	1,424,212	2,565,534	-1,141,322	2,049,990	119,120,498	1.74
Sep-2016	119,120,498	3,743,647	4,750,720	-1,007,073	4,157,724	122,271,148	3.49
Dec-2016	122,271,148	20,010,869	12,411,919	7,598,951	3,172,123	133,042,222	2.44
Mar-2017	133,042,222	3,994,591	6,390,328	-2,395,737	4,004,829	134,651,313	3.04
Jun-2017	134,651,313	12,268,921	15,569,852	-3,300,931	3,602,838	134,953,220	2.71
Sep-2017	134,953,220	15,754,188	16,964,685	-1,210,497	4,039,130	137,781,854	3.00
Dec-2017	137,781,854	34,723,496	26,093,106	8,630,390	4,656,414	151,068,658	3.17



### Schedule of Investable Assets Total Fund

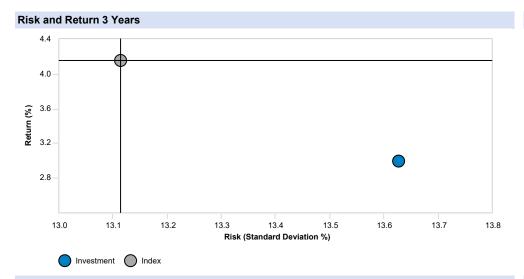
Since Inception Ending September 30, 2022

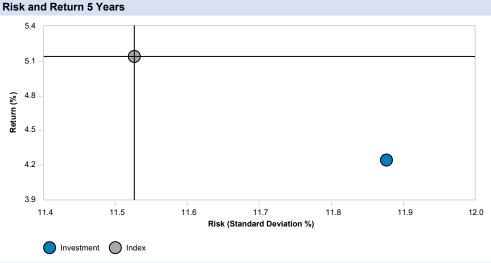
Periods Ending	Beginning Market Value \$	Contributions \$	Withdrawals \$	Net Cash Flow \$	Gain/Loss \$	Ending Market Value \$	%Return
Mar-2018	151,068,658	36,560,097	39,599,539	-3,039,442	-1,310,015	146,719,201	-0.90
Jun-2018	146,719,201	2,531,546	4,858,682	-2,327,136	3,494,498	147,886,563	2.40
Sep-2018	147,886,563	21,023,715	23,353,030	-2,329,315	5,161,780	150,719,028	3.51
Dec-2018	150,719,028	21,868,800	12,579,706	9,289,095	-13,690,229	146,317,894	-8.54
Mar-2019	146,317,894	3,053,173	6,698,694	-3,645,521	12,799,990	155,472,363	8.81
Jun-2019	155,472,363	8,994,188	11,622,765	-2,628,576	4,830,123	157,673,909	3.15
Sep-2019	157,673,909	2,824,811	4,364,556	-1,539,745	1,977,441	158,111,606	1.26
Dec-2019	158,111,606	23,694,123	13,560,039	10,134,085	9,408,326	177,654,016	5.59
Mar-2020	177,654,016	1,829,074	4,196,065	-2,366,991	-25,735,318	149,551,707	-14.62
Jun-2020	149,551,707	3,874,820	7,270,528	-3,395,708	20,766,832	166,922,831	13.95
Sep-2020	166,922,831	13,422,990	14,502,057	-1,079,067	8,806,775	174,650,539	5.29
Dec-2020	174,650,539	22,323,848	13,115,255	9,208,593	21,482,659	205,341,792	11.66
Mar-2021	205,341,792	24,471,180	27,363,519	-2,892,338	8,123,252	210,572,706	3.99
Jun-2021	210,572,706	2,690,535	4,917,426	-2,226,891	9,431,986	217,777,801	4.49
Sep-2021	217,777,801	31,272,674	32,544,064	-1,271,390	-1,788,837	214,717,574	-0.82
Dec-2021	214,717,574	24,798,644	15,700,684	9,097,960	9,077,169	232,892,703	4.05
Mar-2022	232,892,703	9,412,362	12,201,299	-2,788,938	-12,602,016	217,501,749	-5.43
Jun-2022	217,501,749	3,349,301	5,476,901	-2,127,600	-23,869,823	191,504,327	-11.01
Sep-2022	191,504,327	3,688,340	5,057,057	-1,368,717	-7,821,274	182,314,335	N/A
	15,998,300	436,532,904	387,790,950	48,741,954	117,574,081	182,314,335	N/A

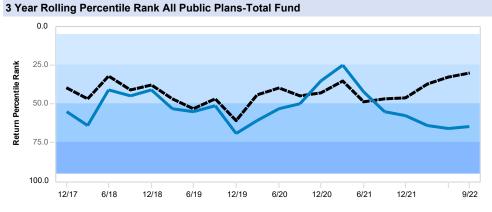


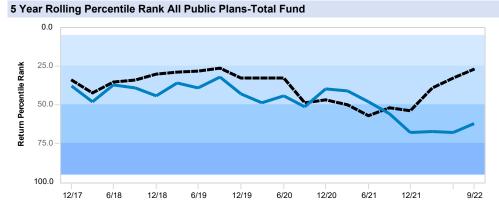
Historical Statistics 3 Years											
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters				
Investment	2.99	13.63	0.24	100.09	7	106.95	5				
Index	4.16	13.11	0.33	100.00	8	100.00	4				

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	4.24	11.88	0.31	99.42	13	105.59	7
Index	5.14	11.53	0.39	100.00	14	100.00	6





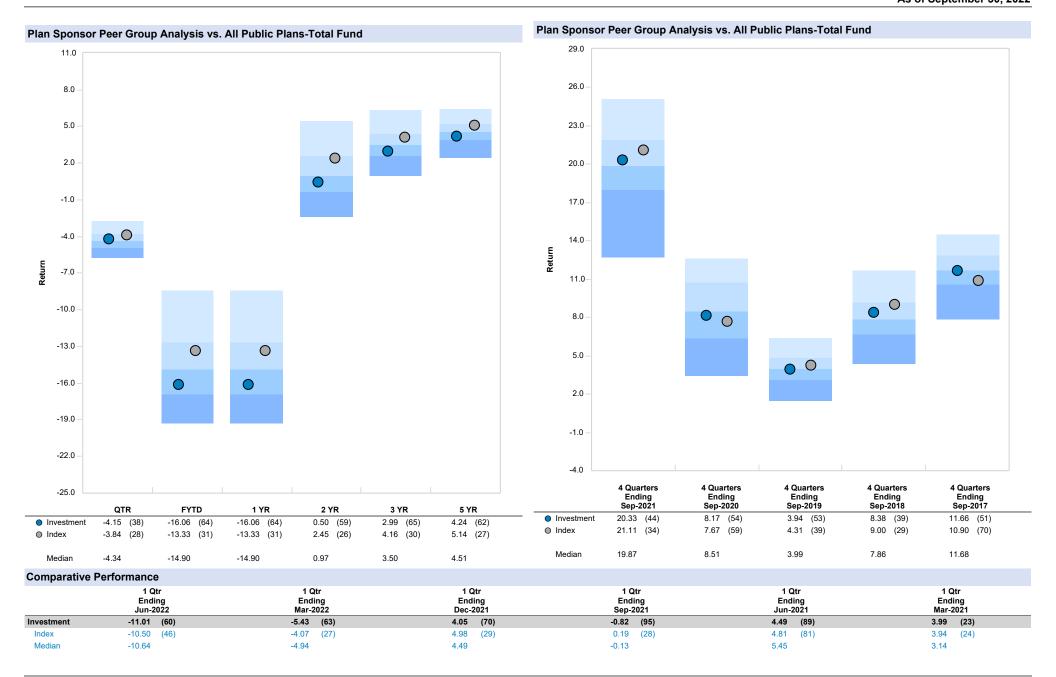




	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	1 (5%)	6 (30%)	13 (65%)	0 (0%)
Index	20	0 (0%)	18 (90%)	2 (10%)	0 (0%)

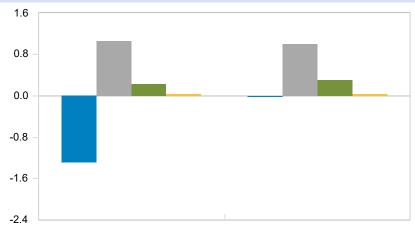
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	20	0 (0%)	14 (70%)	6 (30%)	0 (0%)	
Index	20	0 (0%)	17 (85%)	3 (15%)	0 (0%)	







### Risk / Reward Historical Statistics 3 Years Ending September 30, 2022



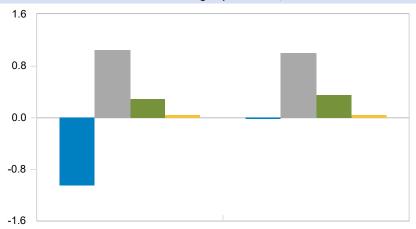
	Total Fund Composite	<b>Total Fund Policy Index</b>
■ Alpha	-1.30	0.00
■ Beta	1.06	1.00
Sharpe Ratio	0.22	0.30
Treynor Ratio	0.04	0.05

### Index Relative Historical Statistics 3 Years Ending September 30, 2022



	Total Fund Composite	Total Fund Policy Index
Actual Correlation	1.00	1.00
Information Ratio	-0.70	N/A
R-Squared	1.00	1.00
Tracking Error	1.40	0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	Total Fund Composite	<b>Total Fund Policy Index</b>
Alpha	-1.05	0.00
■ Beta	1.05	1.00
Sharpe Ratio	0.28	0.36
Treynor Ratio	0.04	0.05

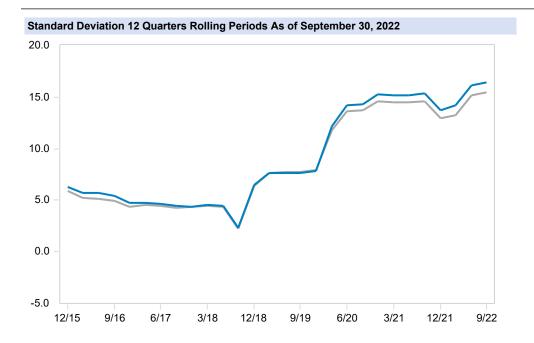
### Index Relative Historical Statistics 5 Years Ending September 30, 2022

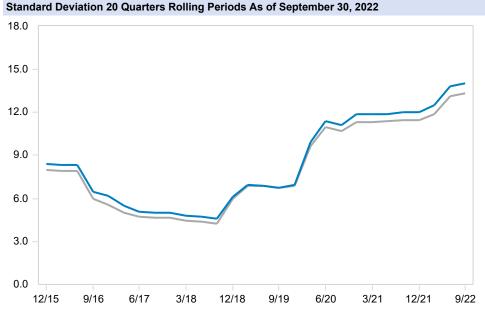


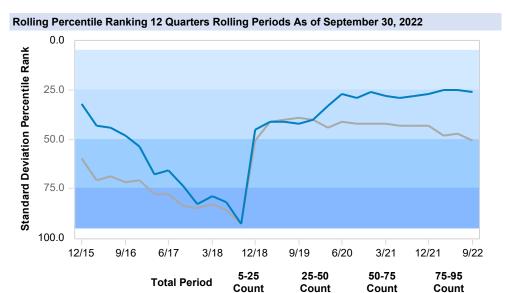
	Total Fund Composite	Total Fund Policy Index
Actual Correlation	1.00	1.00
Information Ratio	-0.67	N/A
R-Squared	1.00	1.00
Tracking Error	1.15	0.00

Benchmark: Total Fund Policy Index









2 (7%)

0 (0%)

18 (64%)

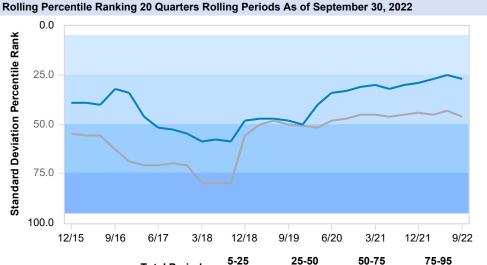
14 (50%)

4 (14%)

7 (25%)

4 (14%)

7 (25%)



**Total Period** Count Count Count Count Total Fund Composite 28 1 (4%) 21 (75%) 6 (21%) 0 (0%) Total Fund Policy Index 28 0 (0%) 13 (46%) 12 (43%) 3 (11%)

Peer: All Public Plans-Total Fund

Total Fund Composite

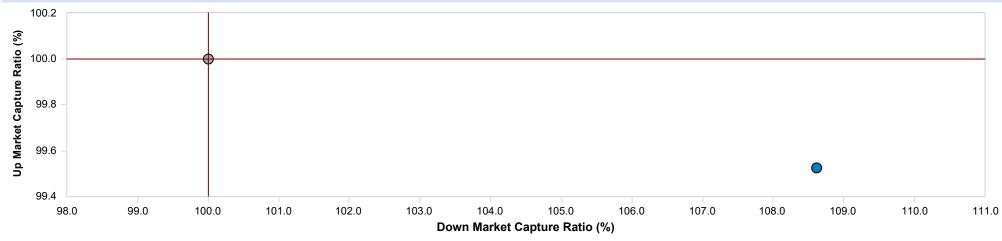
Total Fund Policy Index

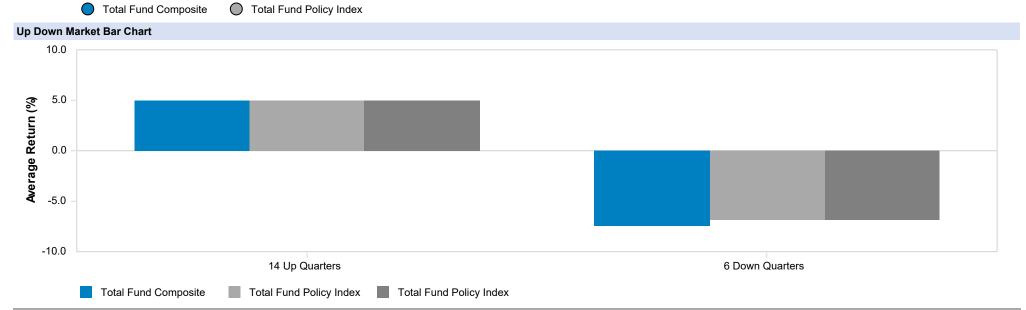
28

28



Up/Down Markets										
	Full Period Return			Quarters Ben	chmark Up(14)			Quarters Bend	chmark Down(6)	
			Portfolio Ahead Portfolio Behind		Behind	Portfolio Ahead		Portfolio Behind		
	Portfolio	Benchmark	No. Quarters	Avg Ahead	No. Quarters	Avg Behind	No. Quarters	Avg Ahead	No. Quarters	Avg Behind
Total Fund Composite	4.24	5.14	8	0.38	6	-0.57	0	0.00	6	-0.59
Total Fund Policy Index	5.14	5.14	14	0.00	0	0.00	6	0.00	0	0.00
Up/Down Markets										
100.0										





Calculation based on quarterly periodicity.

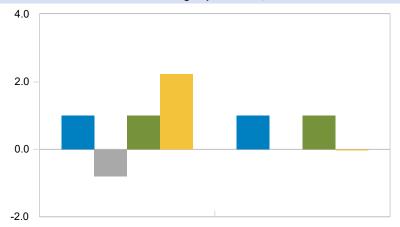


### Risk / Reward Historical Statistics 3 Years Ending September 30, 2022



	Total Equity Composite	Total Equity Policy Index
■ Alpha	-2.10	0.00
■ Beta	1.04	1.00
Sharpe Ratio	0.25	0.33
Treynor Ratio	0.06	0.08

### Index Relative Historical Statistics 3 Years Ending September 30, 2022



	<b>Total Equity Composite</b>	Total Equity Policy Index
Actual Correlation	1.00	1.00
Information Ratio	-0.79	N/A
R-Squared	0.99	1.00
Tracking Error	2.23	0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	<b>Total Equity Composite</b>	<b>Total Equity Policy Index</b>
■ Alpha	-1.44	0.00
Beta	1.03	1.00
Sharpe Ratio	0.28	0.35
Treynor Ratio	0.06	0.08

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



	Total Equity Composite	Total Equity Policy Index
Actual Correlation	1.00	1.00
Information Ratio	-0.64	N/A
R-Squared	0.99	1.00
Tracking Error	1.85	0.00

Benchmark: Total Equity Policy Index



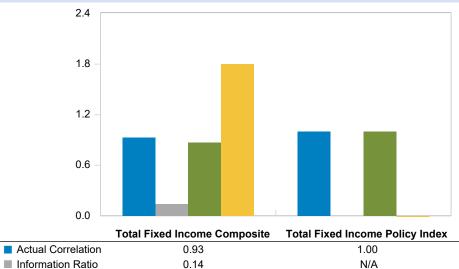
# 1.8 1.2 0.6 -0.6

-1.2		
	Total Fixed Income Composite	Total Fixed Income Policy Index
■ Alpha	-0.04	0.00
■ Beta	0.87	1.00
Sharpe Ratio	-0.57	-0.59
Treynor Ratio	-0.03	-0.03

### Index Relative Historical Statistics 3 Years Ending September 30, 2022

0.87

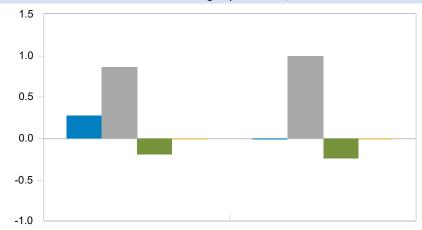
1.80



1.00

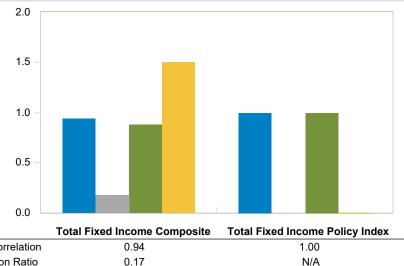
0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	Total Fixed Income Composite	Total Fixed Income Policy Index
Alpha	0.28	0.00
Beta	0.86	1.00
Sharpe Ratio	-0.19	-0.24
Treynor Ratio	-0.01	-0.01

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



 ■ Actual Correlation
 0.94
 1.00

 ■ Information Ratio
 0.17
 N/A

 ■ R-Squared
 0.89
 1.00

 ■ Tracking Error
 1.51
 0.00

Benchmark: Total Fixed Income Policy Index

R-Squared

Tracking Error



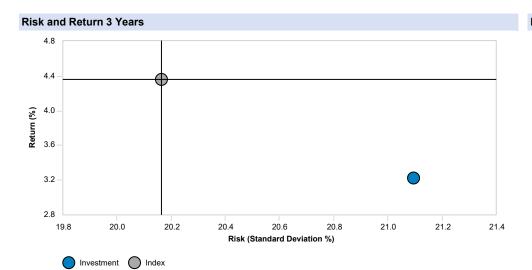
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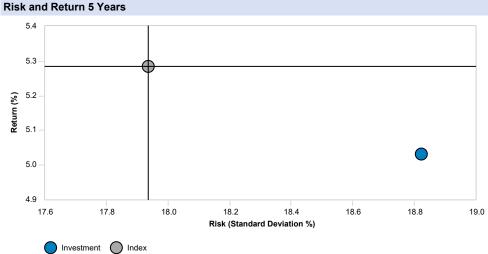


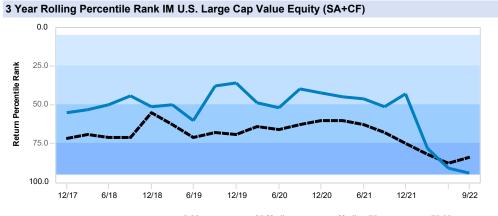
As of September 30, 2022

Historical Statistics 3 Years							
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	3.22	21.09	0.23	99.68	7	103.20	5
Index	4.36	20.17	0.28	100.00	7	100.00	5

Historical Statistics 5 Years							
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.03	18.82	0.30	102.82	13	104.00	7
Index	5.29	17.94	0.31	100.00	13	100.00	7







	0.0	
¥	25.0 –	
e Ra		
Percentile Rank	50.0	
	50.0 –	
Return		
Re	75.0 —	

5 Year Rolling Percentile Rank IM U.S. Large Cap Value Equity (SA+CF)

100.0

12/17

6/18

12/18

6/19

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	20	0 (0%)	11 (55%)	6 (30%)	3 (15%)	
Index	20	0 (0%)	0 (0%)	17 (85%)	3 (15%)	

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	0 (0%)	9 (45%)	9 (45%)	2 (10%)
Index	20	0 (0%)	0 (0%)	13 (65%)	7 (35%)

6/20

12/20

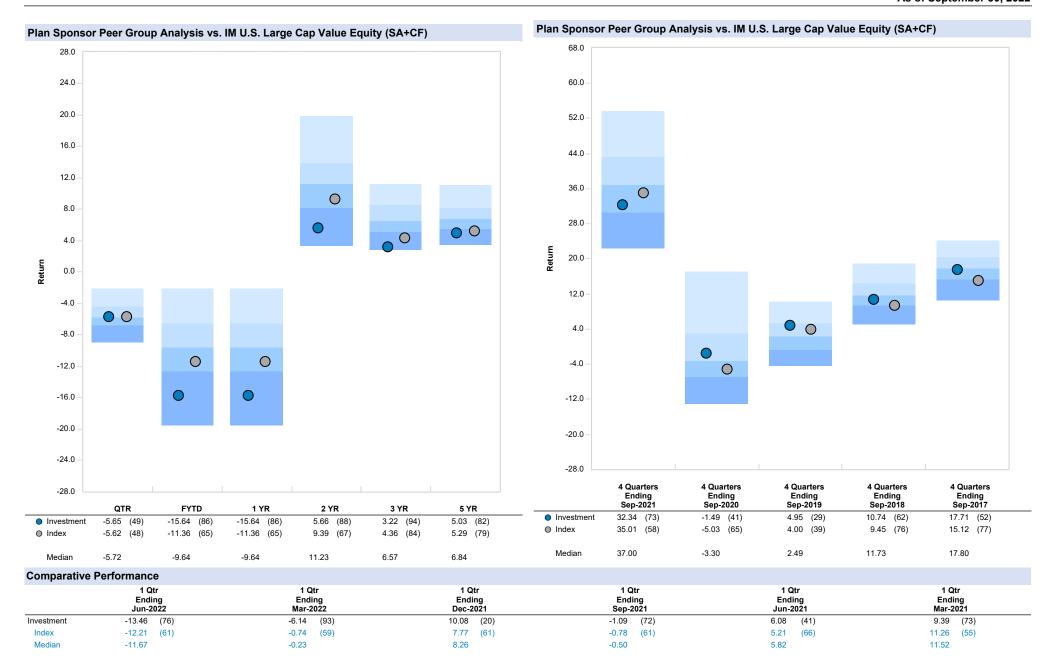
6/21

12/21

12/19



9/22



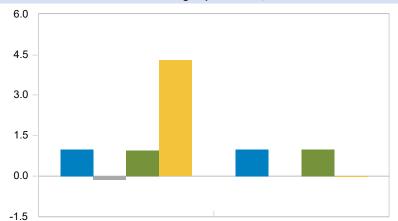


### Risk / Reward Historical Statistics 3 Years Ending September 30, 2022



	Ceredex Equity	Russell 1000 Value Index
■ Alpha	-1.07	0.00
Beta	1.05	1.00
Sharpe Ratio	0.24	0.28
Treynor Ratio	0.06	0.07

### Index Relative Historical Statistics 3 Years Ending September 30, 2022



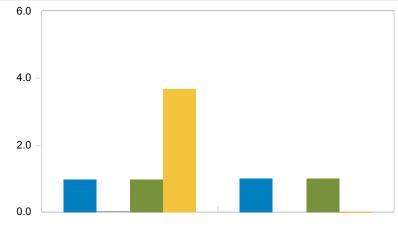
	Ceredex Equity	Russell 1000 Value Index
Actual Correlation	0.99	1.00
Information Ratio	-0.16	N/A
■ R-Squared	0.97	1.00
Tracking Error	4.29	0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	Ceredex Equity	Russell 1000 Value Index
Alpha	-0.34	0.00
■ Beta	1.06	1.00
Sharpe Ratio	0.29	0.31
Treynor Ratio	0.06	0.06

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



	Ceredex Equity	Russell 1000 Value Index
Actual Correlation	0.99	1.00
Information Ratio	0.02	N/A
R-Squared	0.97	1.00
Tracking Error	3.70	0.00
■ R-Squared	0.97	1.00

Benchmark: Russell 1000 Value Index

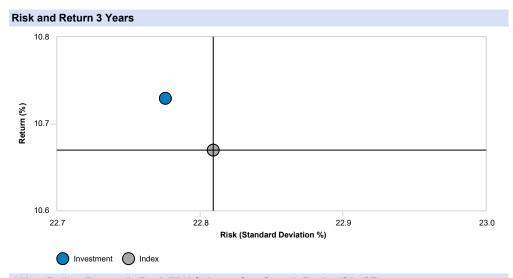


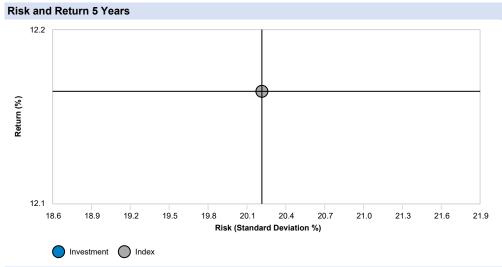
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<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	10.73	22.78	0.53	100.01	8	99.84	4
Index	10.67	22.81	0.53	100.00	8	100.00	4

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	12.16	20.21	0.61	100.00	15	100.00	5







Count

4 (50%)

15 (75%)

Count

4 (50%)

5 (25%)

Count

0 (0%)

0 (0%)

Count

0 (0%)

0 (0%)



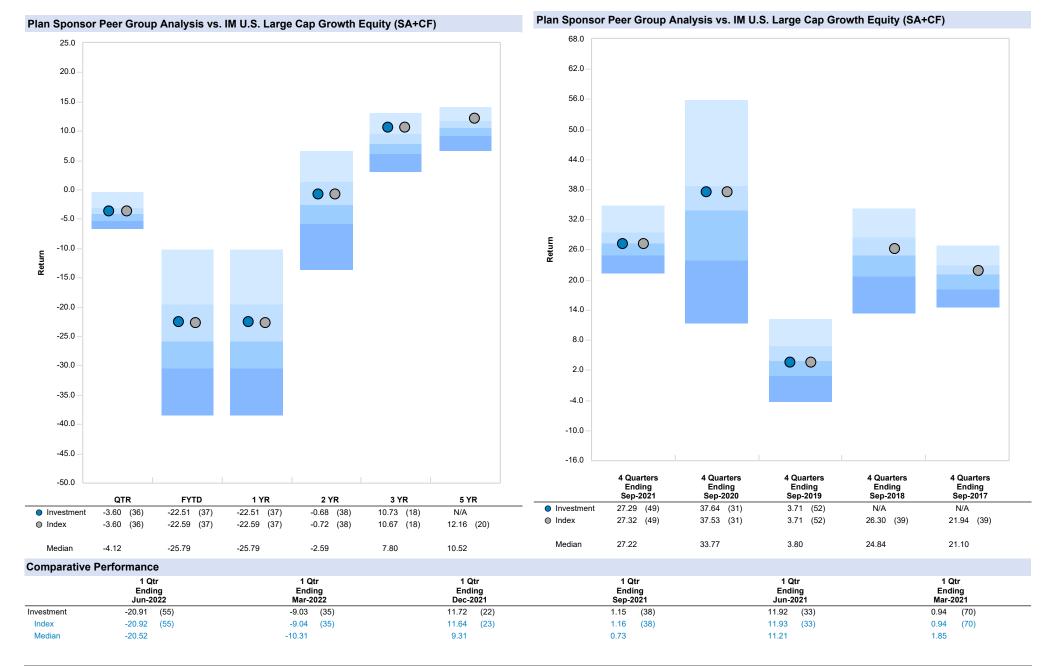
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	0	0	0	0	0
Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)



Investment

\_\_ Index

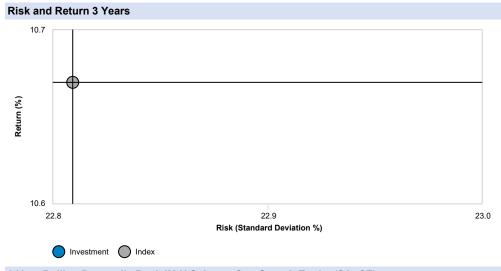
**Total Period** 

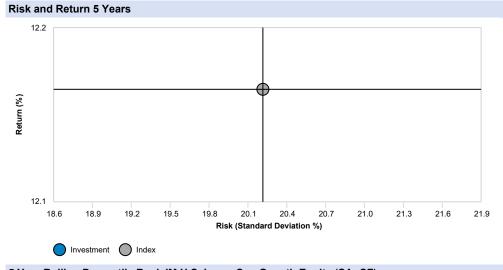




<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	10.67	22.81	0.53	100.00	8	100.00	4

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	12.16	20.21	0.61	100.00	15	100.00	5





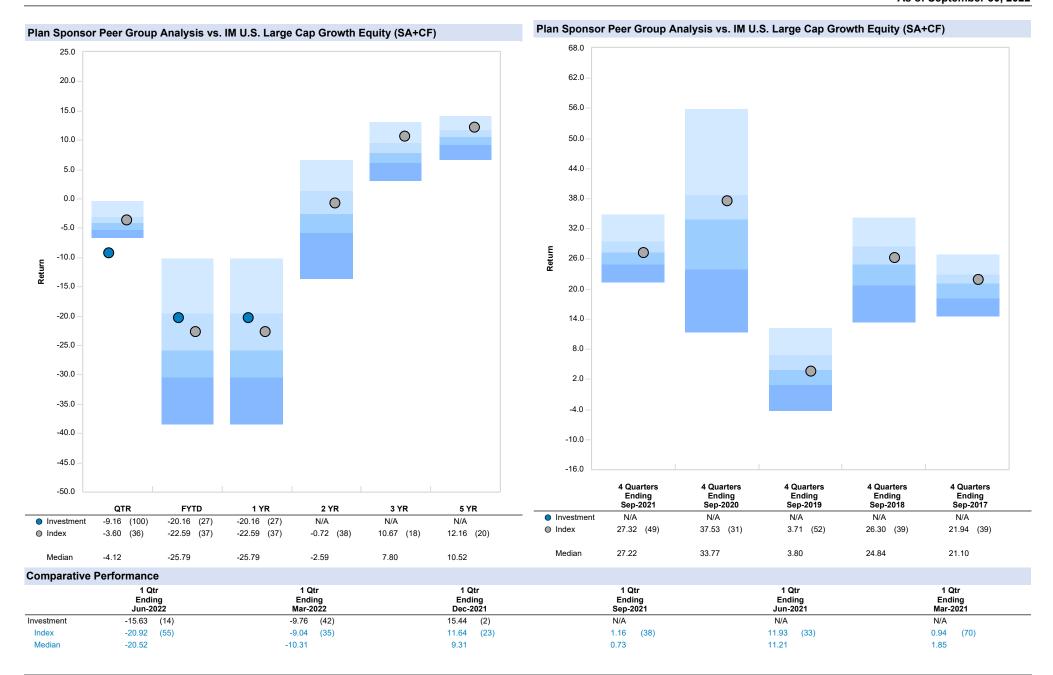


5 Y	ear Ro	olling Pe	rcentile	Rank IM	U.S. La	rge Cap (	Growth E	Equity (S	A+CF)		
	0.0										
entile Rank	25.0 -	1			'~~==					and the same	
Return Perœntile Rank	50.0 - 75.0 -										
	100.0	12/17	6/18	12/18	6/19	12/19	6/20	12/20	6/21	12/21	9/22

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	0	0	0	0	0	
Index	20	5 (25%)	15 (75%)	0 (0%)	0 (0%)	

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	0	0	0	0	0
Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)

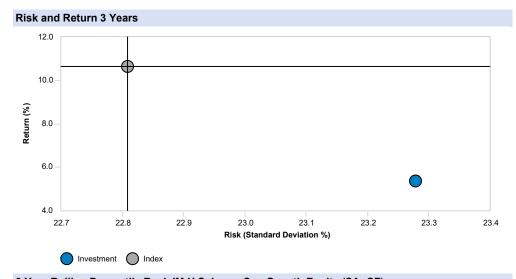


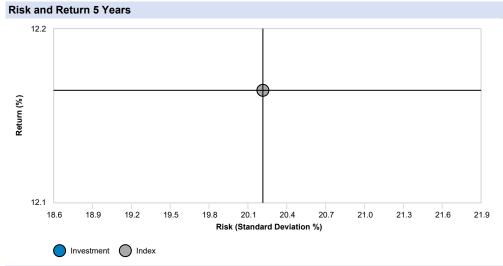




<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.40	23.28	0.32	90.84	8	104.05	4
Index	10.67	22.81	0.53	100.00	8	100.00	4

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	12.16	20.21	0.61	100.00	15	100.00	5





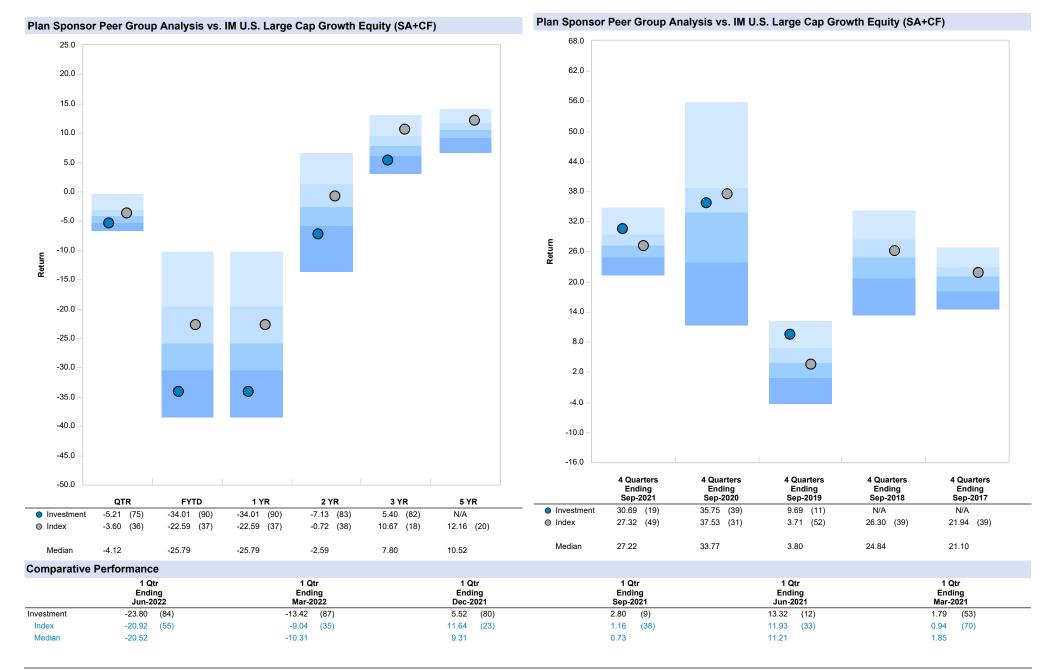


5 Ye	ear Ro	lling Pe	rcentile	Rank IM	U.S. Lai	rge Cap (	Growth E	Equity (S	4+CF)		
	0.0										
ntile Rank	25.0 -	1			'						
Return Percentile Rank	50.0 – 75.0 –										
L.	100.0	12/17	6/18	12/18	6/19	12/19	6/20	12/20	6/21	12/21	9/22

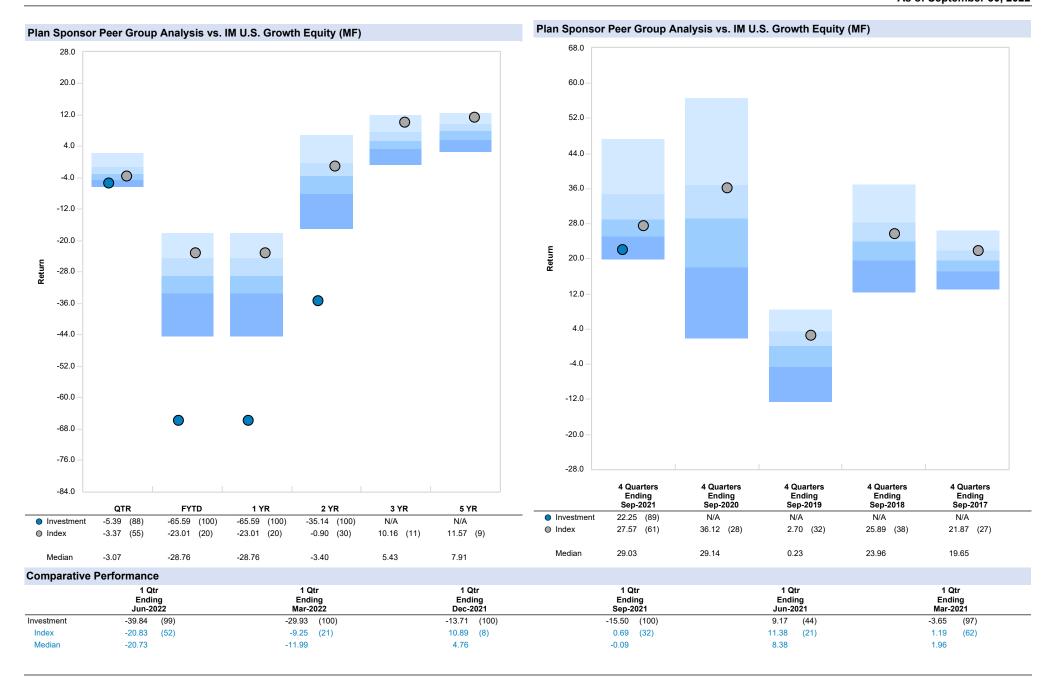
	Total Period	otal Period 5-25 25-Median Count Count		Median-75 Count	75-95 Count		
Investment	8	4 (50%)	2 (25%)	0 (0%)	2 (25%)		
Index	20	5 (25%)	15 (75%)	0 (0%)	0 (0%)		

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	0	0	0	0	0	
Index	20	3 (15%)	17 (85%)	0 (0%)	0 (0%)	

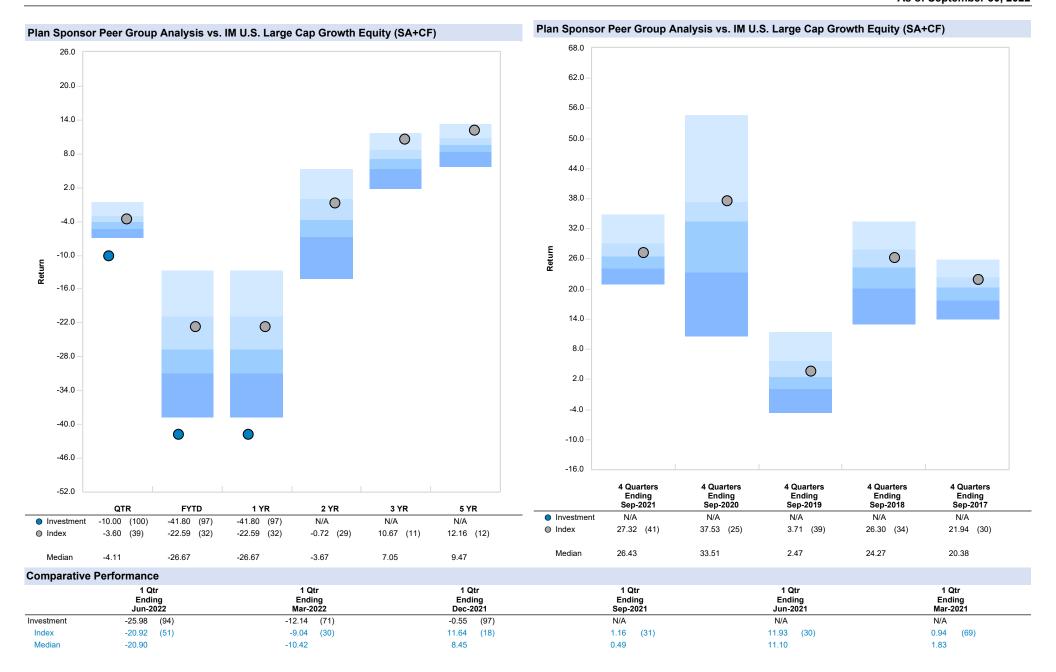








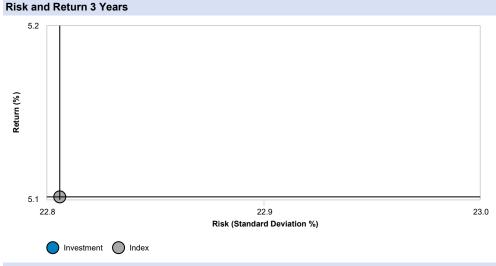


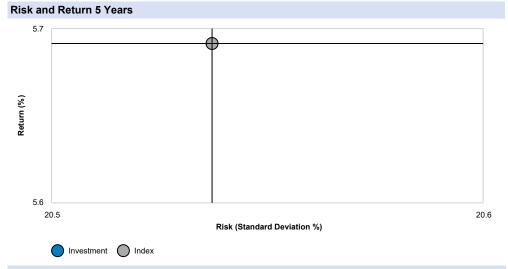


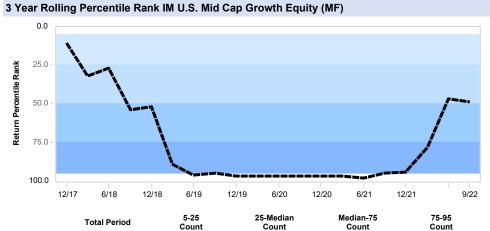


<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	5.10	22.81	0.31	100.00	7	100.00	5

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	5.69	20.54	0.32	100.00	13	100.00	7





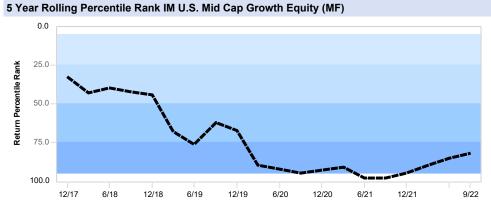


4 (20%)

2 (10%)

13 (65%)

1 (5%)



	Total Period	Count	Count	Count	Count	
Investment	0	0	0	0	0	
Index	20	0 (0%)	5 (25%)	3 (15%)	12 (60%)	



Investment

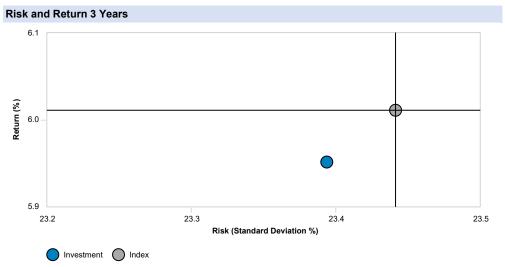
\_\_ Index

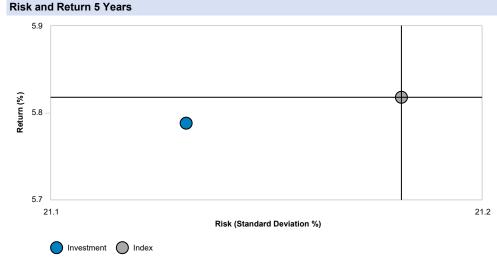


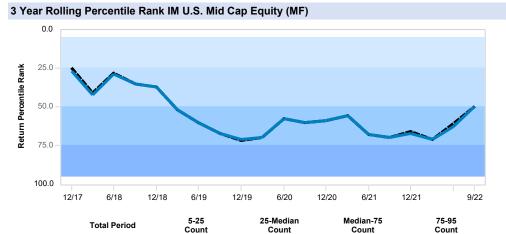


Historical Statistics 3 Years											
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters				
Investment	5.95	23.39	0.34	99.67	7	99.82	5				
Index	6.01	23.44	0.34	100.00	7	100.00	5				

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	5.79	21.13	0.32	99.68	12	99.73	8
Index	5.82	21.18	0.32	100.00	12	100.00	8







6 (30%)

5 (25%)

14 (70%)

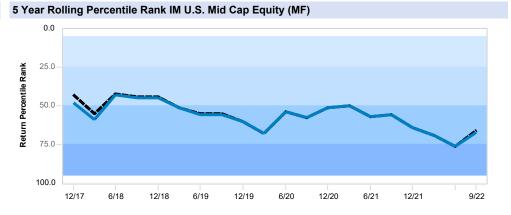
14 (70%)

0 (0%)

0 (0%)

0 (0%)

1 (5%)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	20	0 (0%)	5 (25%)	14 (70%)	1 (5%)	
Index	20	0 (0%)	5 (25%)	14 (70%)	1 (5%)	



Investment

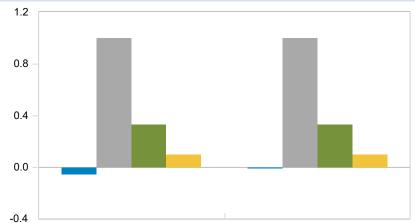
\_\_ Index

20





# Risk / Reward Historical Statistics 3 Years Ending September 30, 2022



	Mutual of America Equity	S&P MidCap 400 Index
■ Alpha	-0.05	0.00
■ Beta	1.00	1.00
Sharpe Ratio	0.33	0.33
Trevnor Ratio	0.10	0.10

### Index Relative Historical Statistics 3 Years Ending September 30, 2022



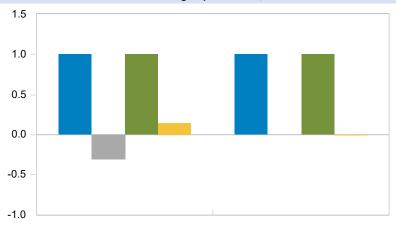
	<b>Mutual of America Equity</b>	S&P MidCap 400 Index
Actual Correlation	1.00	1.00
Information Ratio	-0.45	N/A
R-Squared	1.00	1.00
Tracking Error	0.18	0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	Mutual of America Equity	S&P MidCap 400 Index
Alpha	-0.02	0.00
■ Beta	1.00	1.00
Sharpe Ratio	0.31	0.31
Treynor Ratio	0.08	0.08

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



	Mutual of America Equity	S&P MidCap 400 Index
Actual Correlation	1.00	1.00
Information Ratio	-0.31	N/A
R-Squared	1.00	1.00
Tracking Error	0.14	0.00

Benchmark: S&P MidCap 400 Index



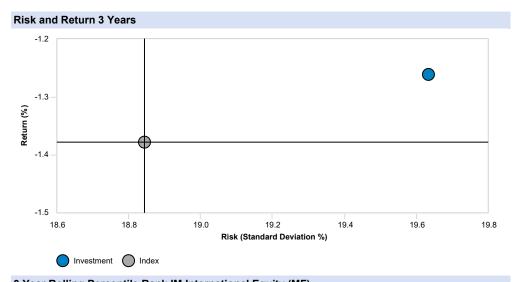


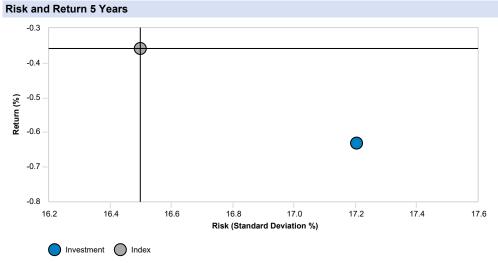


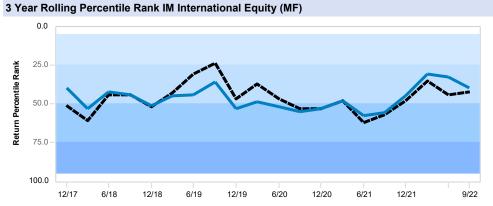


Historical Statistics 3 Years											
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters				
Investment	-1.26	19.63	0.01	105.26	7	104.21	5				
Index	-1.38	18.84	-0.01	100.00	7	100.00	5				

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-0.63	17.21	-0.02	102.74	11	103.52	9
Index	-0.36	16.50	-0.01	100.00	11	100.00	9







5 Ye	ear Ro	olling Pe	ercentile	Rank IM	Internat	tional Eq	uity (MF)	)			
	0.0										
ıtile Rank	25.0	****									
Return Perœntile Rank	50.0 -								/		
Ŗ	75.0 -										
	100.0	12/17	6/18	12/18	6/19	12/19	6/20	12/20	6/21	12/21	9/22

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	20	0 (0%)	12 (60%)	8 (40%)	0 (0%)	
Index	20	1 (5%)	12 (60%)	7 (35%)	0 (0%)	

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	18	0 (0%)	14 (78%)	4 (22%)	0 (0%)	
Index	20	0 (0%)	16 (80%)	4 (20%)	0 (0%)	

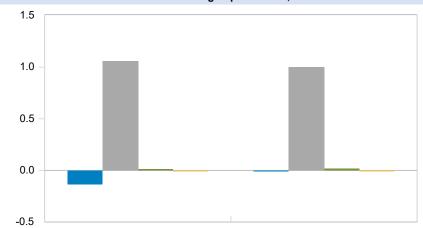






# Risk / Reward Historical Statistics 3 Years Ending September 30, 2022 1.6 1.2 8.0 0.4 0.0 Vanguard Developed Mar (VTMGX) **MSCI EAFE Index** Alpha 0.00 Beta 1.07 1.00 Sharpe Ratio 0.04 0.03 Treynor Ratio 0.01 0.01

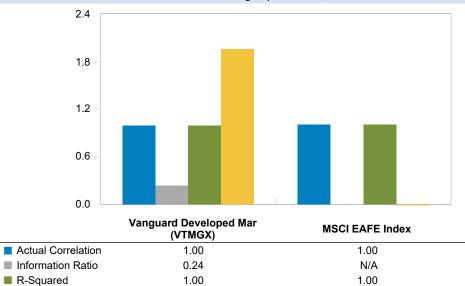
## Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	Vanguard Developed Mar (VTMGX)	MSCI EAFE Index
Alpha	-0.14	0.00
Beta	1.06	1.00
Sharpe Ratio	0.01	0.02
Treynor Ratio	0.00	0.00

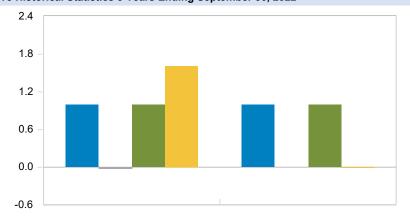
### Index Relative Historical Statistics 3 Years Ending September 30, 2022

1.96



0.00

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



	Vanguard Developed Mar (VTMGX)	MSCI EAFE Index
Actual Correlation	1.00	1.00
Information Ratio	-0.03	N/A
R-Squared	1.00	1.00
Tracking Error	1.62	0.00

Benchmark: MSCI EAFE Index

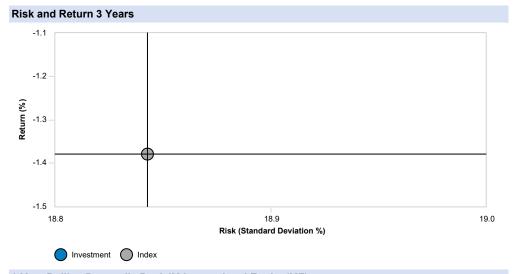




As	of	Sei	otem	ber	30.	2022
	vı	261	JUEII	IDEI	JU,	2022

Historical Statistics 3 Years										
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters			
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Index	-1.38	18.84	-0.01	100.00	7	100.00	5			

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Index	-0.36	16.50	-0.01	100.00	11	100.00	9









	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	0	0	0	0	0	
Index	20	1 (5%)	12 (60%)	7 (35%)	0 (0%)	

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	0	0	0	0	0	
Index	20	0 (0%)	16 (80%)	4 (20%)	0 (0%)	



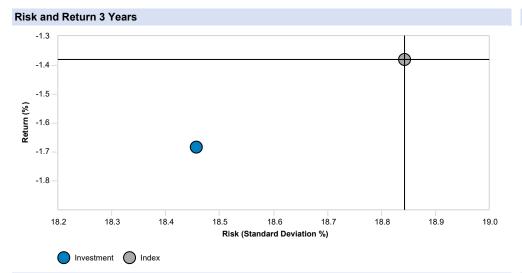


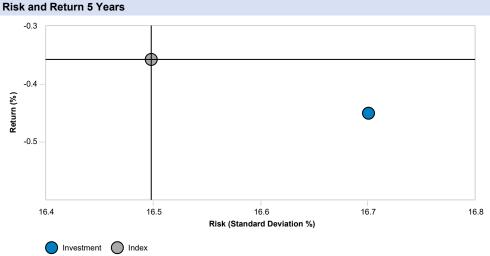


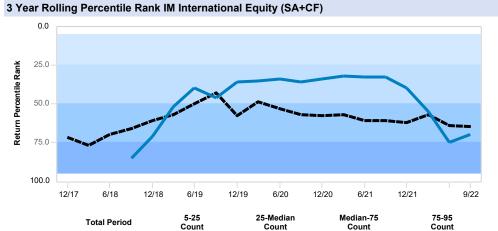
As of September 30, 2022

<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-1.68	18.46	-0.03	100.66	7	102.10	5
Index	-1.38	18.84	-0.01	100.00	7	100.00	5

Historical Statistics 5 Years									
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters		
Investment	-0.45	16.70	-0.01	101.59	10	101.90	10		
Index	-0.36	16.50	-0.01	100.00	11	100.00	9		







11 (65%)

3 (15%)

5 (29%)

16 (80%)

1 (6%)

1 (5%)

0 (0%)

0 (0%)



	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	9	0 (0%)	5 (56%)	4 (44%)	0 (0%)
Index	20	0 (0%)	0 (0%)	20 (100%)	0 (0%)



Investment

\_\_ Index

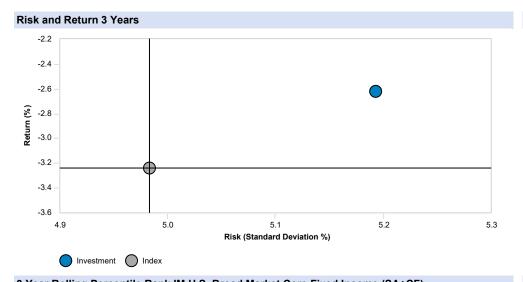
17

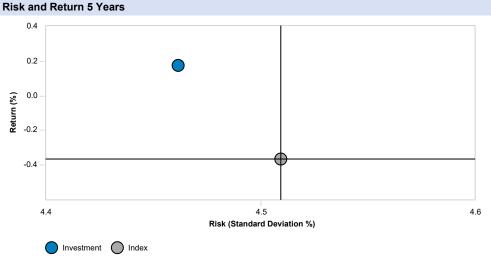


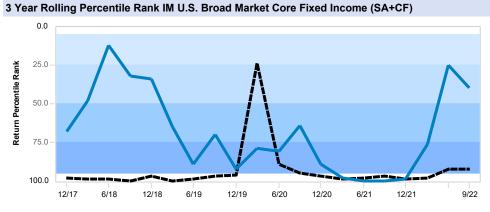


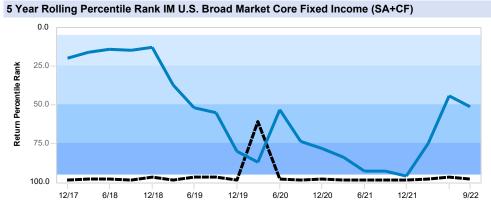
<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-2.62	5.19	-0.59	103.49	5	93.93	7
Index	-3.24	4.98	-0.75	100.00	6	100.00	6

Historical Statistics 5 Years									
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters		
Investment	0.18	4.46	-0.19	94.94	11	85.86	9		
Index	-0.37	4.51	-0.32	100.00	12	100.00	8		









	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	2 (10%)	4 (20%)	4 (20%)	10 (50%)
Index	20	1 (5%)	0 (0%)	0 (0%)	19 (95%)

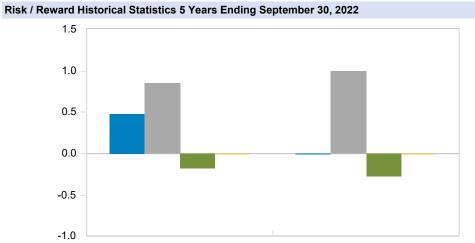
	Total Period	5-25 Count	25-Median Count	Count	Count
Investment	20	5 (25%)	2 (10%)	6 (30%)	7 (35%)
Index	20	0 (0%)	0 (0%)	1 (5%)	19 (95%)







# Risk / Reward Historical Statistics 3 Years Ending September 30, 2022 1.8 1.2 0.6 0.0 -0.6 -1.2



	GHA A+ Fixed Income	Blmbg. U.S. Aggregate: A+
Alpha	0.49	0.00
Beta	0.85	1.00
Sharpe Ratio	-0.18	-0.27
Treynor Ratio	-0.01	-0.01

# -0.04 Index Relative Historical Statistics 3 Years Ending September 30, 2022

0.84

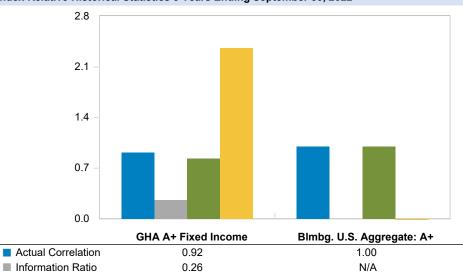
2.36

**GHA A+ Fixed Income** 

0.15

0.85

-0.56



Blmbg. U.S. Aggregate: A+

0.00

1.00

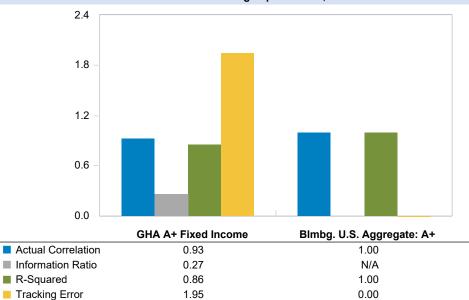
-0.64

-0.04

1.00

0.00

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



Benchmark: Blmbg. U.S. Aggregate: A+

R-Squared

Tracking Error

Alpha

Sharpe Ratio

Treynor Ratio

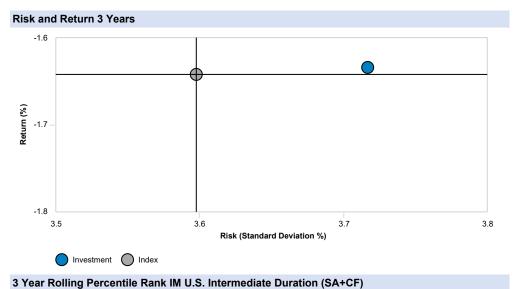
Beta

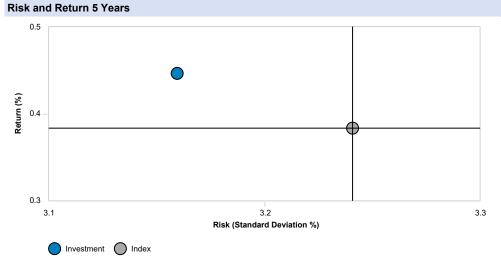


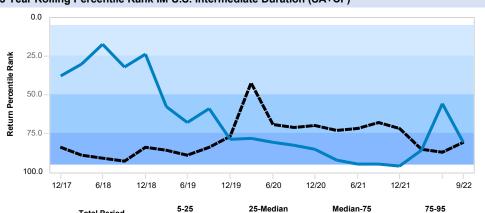


Historical Stati	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	-1.63	3.72	-0.57	96.01	7	96.93	5
Index	-1 64	3.60	-0.60	100.00	7	100.00	5

Historical Statistics 5 Years									
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters		
Investment	0.45	3.16	-0.20	88.71	14	85.94	6		
Index	0.38	3.24	-0.22	100.00	13	100.00	7		







Count

3 (15%)

1 (5%)

Count

11 (55%)

12 (60%)

Count

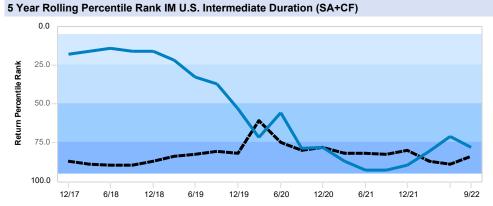
4 (20%)

7 (35%)

Count

2 (10%)

0 (0%)



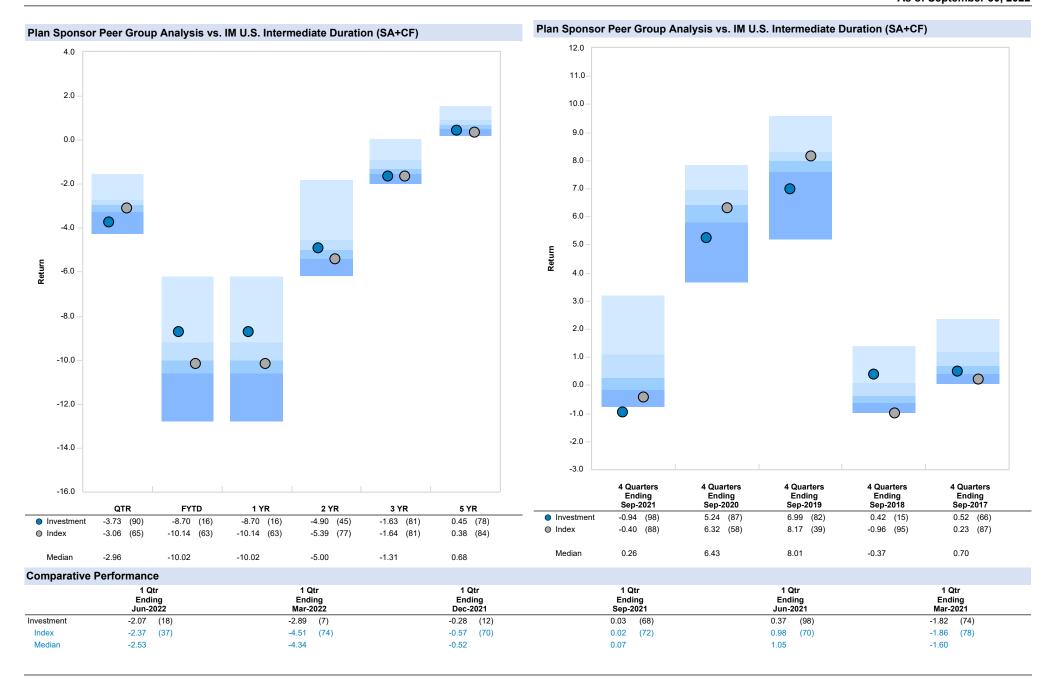
	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	20	6 (30%)	2 (10%)	4 (20%)	8 (40%)
Index	20	0 (0%)	0 (0%)	2 (10%)	18 (90%)



Investment

**Total Period** 

20



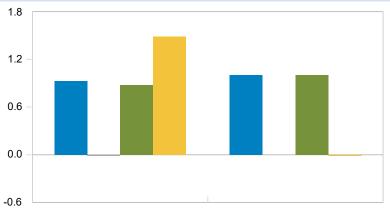


### Risk / Reward Historical Statistics 3 Years Ending September 30, 2022



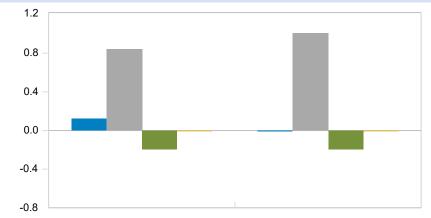
	GHA EXCL A+ Fixed Income	Bloomberg Intermediate US Govt/Credit Idx
Alpha	-0.26	0.00
■ Beta	0.84	1.00
Sharpe Ratio	-0.56	-0.52
Treynor Ratio	-0.03	-0.02

### Index Relative Historical Statistics 3 Years Ending September 30, 2022



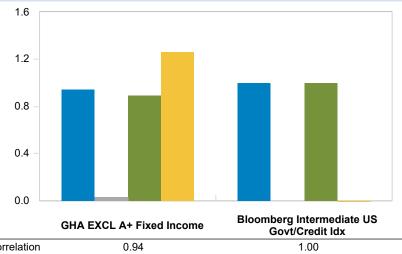
	GHA EXCL A+ Fixed Income	Bloomberg Intermediate US Govt/Credit Idx
Actual Correlation	0.94	1.00
Information Ratio	-0.01	N/A
R-Squared	0.87	1.00
Tracking Error	1.49	0.00

### Risk / Reward Historical Statistics 5 Years Ending September 30, 2022



	GHA EXCL A+ Fixed Income	Bloomberg Intermediate US Govt/Credit Idx
Alpha	0.12	0.00
■ Beta	0.84	1.00
Sharpe Ratio	-0.20	-0.19
Treynor Ratio	-0.01	-0.01

### Index Relative Historical Statistics 5 Years Ending September 30, 2022



		Govi/Credit i
Actual Correlation	0.94	1.00
Information Ratio	0.04	N/A
R-Squared	0.89	1.00
Tracking Error	1.26	0.00

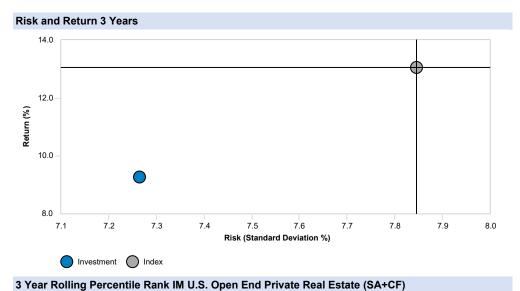
Benchmark: Bloomberg Intermediate US Govt/Credit Idx

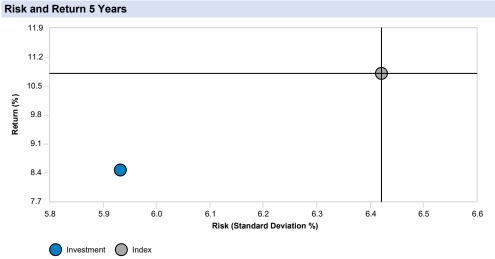




<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.26	7.26	1.17	69.85	10	-4.06	2
Index	13.07	7.85	1.53	100.00	11	100.00	4

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	8.47	5.93	1.20	77.31	18	-4.06	2
Index	10.80	6.42	1.45	100.00	19	100.00	1





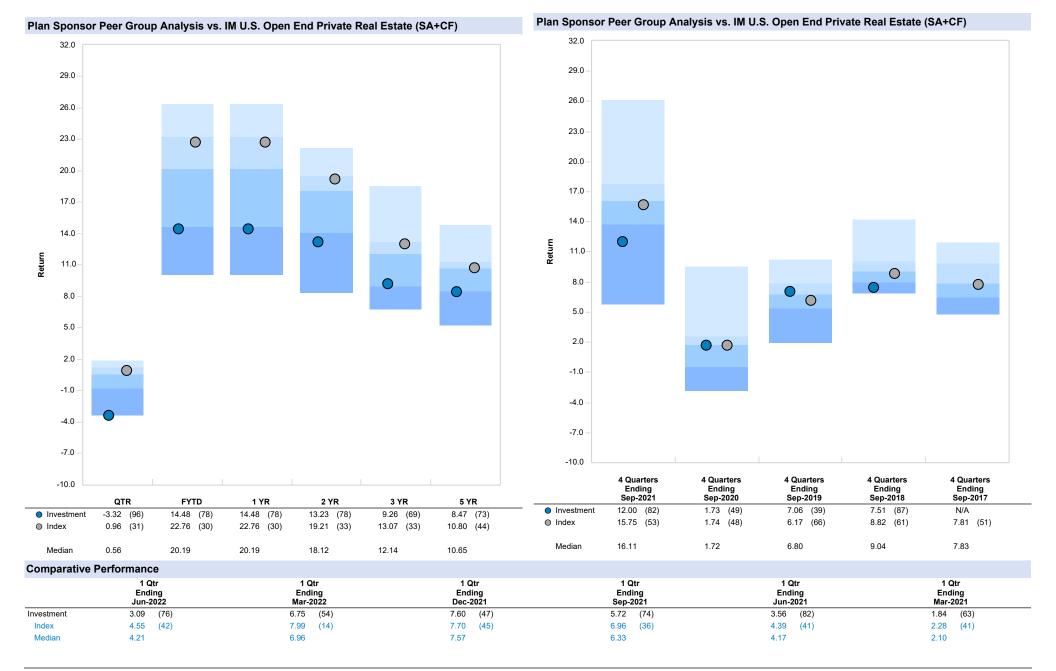


5 16	ear Ro	iling Pe	rcentile	Rank IIVI	U.S. Op	en End P	rivate K	eai Estat	e (SA+C	·r)	
	0.0										
ntile Rank	25.0 –										a
Return Percentile Rank	50.0 – 75.0 –										
_	100.0	12/17	6/18	12/18	6/19	12/19	6/20	12/20	6/21	12/21	9/22

	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count	
Investment	10	0 (0%)	1 (10%)	8 (80%)	1 (10%)	
Index	20	0 (0%)	5 (25%)	15 (75%)	0 (0%)	

	Total Period	Count	Count	Count	Count	
Investment	2	0 (0%)	0 (0%)	1 (50%)	1 (50%)	
Index	20	0 (0%)	1 (5%)	19 (95%)	0 (0%)	

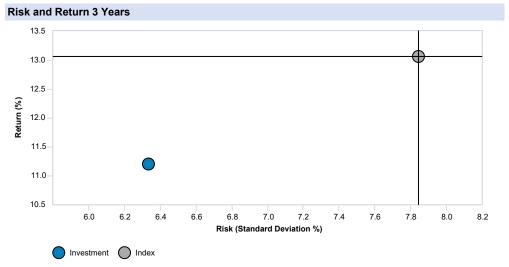


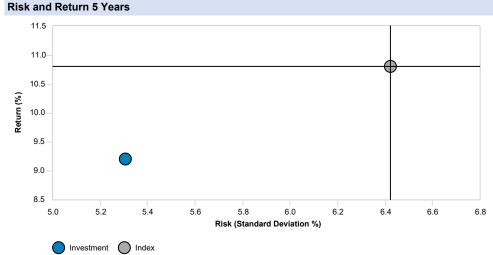


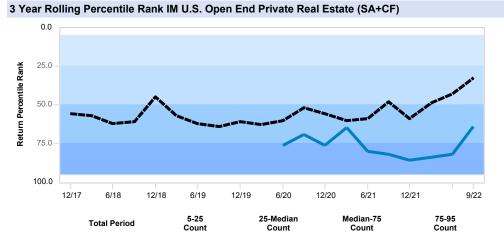


<b>Historical Stati</b>	stics 3 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	11.21	6.34	1.62	84.52	11	42.51	1
Index	13.07	7.85	1.53	100.00	11	100.00	1

<b>Historical Stati</b>	stics 5 Years						
	Return	Standard Deviation	Sharpe Ratio	Up Market Capture	Up Quarters	Down Market Capture	Down Quarters
Investment	9.21	5.31	1.47	84.51	18	42.51	2
Index	10.80	6.42	1.45	100.00	19	100.00	1







0 (0%)

0 (0%)

5 (25%)

3 (30%)

15 (75%)

7 (70%)

0 (0%)

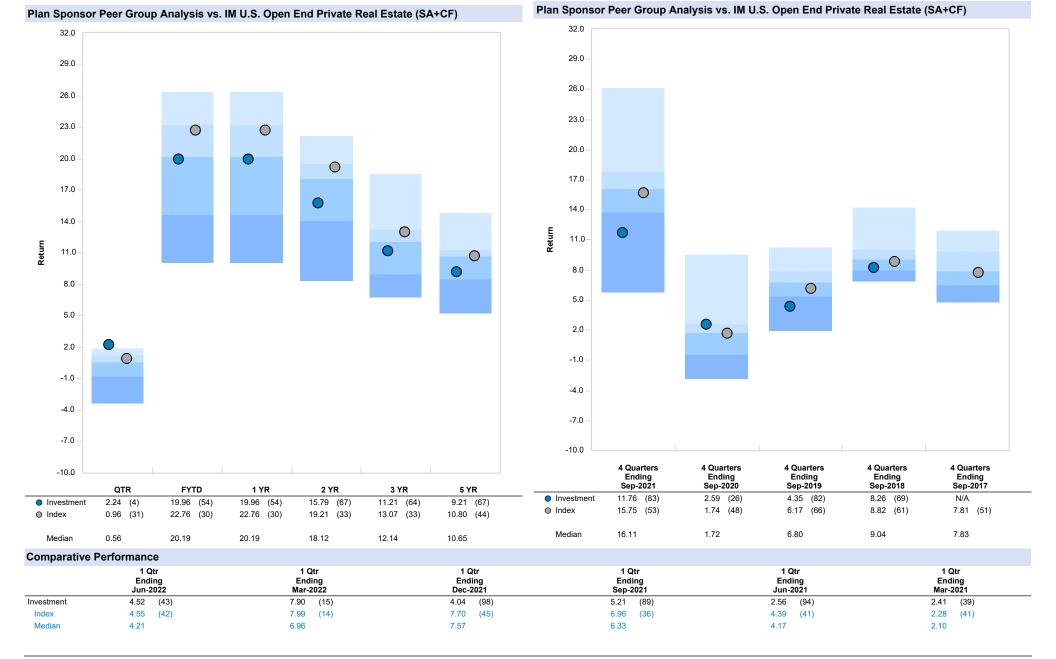


	Total Period	5-25 Count	25-Median Count	Median-75 Count	75-95 Count
Investment	2	0 (0%)	0 (0%)	1 (50%)	1 (50%)
Index	20	0 (0%)	1 (5%)	19 (95%)	0 (0%)



Investment

10





Total Fund Historical Hybrid Composition			
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)
Jan-1998		Jul-2010	
S&P 500 Index	60.00	Russell 1000 Value Index	15.50
ICE BofAML Govt/ Corp Master	40.00	Bloomberg Intermediate US Govt/Credit Idx	20.00
		S&P MidCap 400 Index	10.00
Jan-2000		Russell 2500 Index	10.00
S&P 500 Index	50.00	Russell 1000 Growth Index	15.50
Blmbg. U.S. Aggregate Index	40.00	MSCI EAFE Index	9.00
MSCI EAFE Index	10.00	BImbg. U.S. Aggregate: A+	20.00
Apr-2004		Jul-2017	
S&P 500 Index	50.00	Russell 1000 Value Index	15.50
Blmbg. U.S. Aggregate Index	40.00	Bloomberg Intermediate US Govt/Credit Idx	16.00
Russell 2000 Value Index	10.00	S&P MidCap 400 Index	10.00
		Russell 2500 Index	10.00
Jan-2007		Russell 1000 Growth Index	15.50
S&P 500 Index	50.00	MSCI EAFE Index	9.00
Bloomberg Intermediate US Govt/Credit ldx	24.00	Blmbg. U.S. Aggregate: A+	16.00
Russell 2000 Value Index	10.00	NCREIF Fund Index-Open End Diversified Core (EW)	8.00
Barclays Aggregate A+	16.00		0.00
Jan-2008			
S&P 500 Index	40.00		
Bloomberg Intermediate US Govt/Credit Idx	24.00		
S&P MidCap 400 Index	10.00		
Barclays Aggregate A+	16.00		
Russell 2000 Value Index	10.00		
Apr-2008			
Russell 1000 Value Index	20.00		
Bloomberg Intermediate US Govt/Credit Idx	25.00		
S&P MidCap 400 Index	10.00		
Barclays Aggregate A+	15.00		
Russell 2000 Value Index	10.00		
Russell 1000 Growth Index	20.00		
Apr-2009			
Russell 1000 Value Index	20.00		
Bloomberg Intermediate US Govt/Credit ldx	20.00		
S&P MidCap 400 Index	10.00		
	20.00		
Barclays Aggregate A+ Russell 2000 Value Index	10.00		
Russell 2000 Value Index Russell 1000 Growth Index	20.00		
Vassell 1000 GLOWILLINGEX	20.00		



Total Equity Historical Hybrid Co	omposition	Total Fixed Income Historical Hybrid Composition			
Allocation Mandate	Weight (%)	Allocation Mandate	Weight (%)		
Jan-1998		Jan-1998			
S&P 500 Index	100.00	ICE BofAML Govt/ Corp Master	100.00		
Jan-2000		Jan-2000			
S&P 500 Index	83.30	Blmbg. U.S. Aggregate Index	100.00		
MSCI EAFE Index	16.70	Jan-2007			
Apr-2004		Bloomberg Intermediate US Govt/Credit Idx	60.00		
S&P 500 Index	83.30	Blmbg. U.S. Corporate A+ Index	40.00		
Russell 2000 Value Index	16.70	Apr-2008			
Jan-2008		Bloomberg Intermediate US Govt/Credit Idx	62.50		
S&P 500 Index	66.60	Blmbg. U.S. Corporate A+ Index	37.50		
Russell 2000 Value Index	16.70				
S&P MidCap 400 Index	16.70	Apr-2009 Bloomberg Intermediate US Govt/Credit Idx	50.00		
Apr-2008		Blmbg. U.S. Aggregate: A+	50.00		
Russell 1000 Growth Index	33.30	3 - 33 3			
Russell 2000 Value Index	16.70				
S&P MidCap 400 Index	16.70				
Russell 1000 Value Index	33.30				
Jul-2010					
Russell 1000 Growth Index	25.83				
Russell 2500 Index	16.67				
S&P MidCap 400 Index	16.67				
Russell 1000 Value Index	25.83				
MSCI EAFE Index	15.00				



	Estimated Annual Fee (%)	Market Value (\$)	Estimated Annual Fee (\$)	Fee Schedule
Ark Disruptive Technology ETF (ARKK)	0.75		24,232	0.75 % of Assets
Ark Autonomous Technology & Robotics ETF (ARKQ)	0.75		6,210	0.75 % of Assets
Ceredex Equity	0.56		157,835	0.75 % of First \$10 M 0.45 % of Next \$40 M 0.25 % Thereafter
Rhumbline R1000G	0.05		4,904	0.05 % of Assets
Defiance 5G Next Gen Connectivity ETF (FIVG)	0.30		2,528	0.30 % of Assets
Polen Capital	0.60		51,724	0.60 % of Assets
First Trust Cloud Computing ETF (SKYY)	0.60		5,169	0.60 % of Assets
Mutual of America Equity	0.07		12,847	0.07 % of Assets
Vanguard R2000 (VRTIX)	0.08		13,348	0.08 % of Assets
JPM International Equity	0.75		44,464	0.75 % of Assets
Vanguard Emerging Mar Adm (VEMAX)	0.14	2,204,296	3,086	0.14 % of Assets
iShares MSCI EM ex China ETF (EMXC)	0.25	2,001,323	5,003	0.25 % of Assets
Vanguard Emerging Mar (VEMIX)	0.10		-	0.10 % of Assets
Total Equity Composite	0.32		337,162	
GHA EXCL A+ Fixed Income	0.25		47,184	0.25 % of Assets
GHA A+ Fixed Income	0.25		73,726	0.25 % of Assets
Total Fixed Income Composite	0.25		120,910	
Barings Real Estate	1.10		108,999	1.10 % of Assets
ASB Real Estate	1.11		125,650	1.25 % of First \$5 M 1.00 % of Next \$10 M 0.90 % of Next \$60 M 0.75 % Thereafter
Total Real Estate	1.11		234,649	
R&D Cash			-	
Total Fund Composite	0.38		692,721	



**3rd Quarter 2022 Market Environment** 



## The Economy

- Broadly, global markets declined during the 3rd quarter as inflation remained elevated, causing global central banks further drain liquidity from the market, and geopolitical risks increased as the conflict in Ukraine escalated.
- While inflation moderated slightly in the US, it showed signs of increasing, especially in Europe, where UK and German inflation reached multi-decade highs.
   US CPI was 8.3% in August, down from 9.1% at the end of the 2nd quarter.
- The US Federal Reserve Bank (the Fed) continued to increase interest rates during the quarter by raising 0.75% at the July and September meetings. Importantly, the Fed signaled it was committed to fight inflation by additional rate hikes if needed.
- The US labor market showed its resiliency during the quarter by adding an estimated 1.1 million jobs. As a result, the unemployment rate fell to 3.5% in September. The number of workers re-entering the workforce increased slightly during the period as wage growth remained strong.
- Real estate markets were under pressure during the quarter as rising interest rates pushed mortgages to their highest levels since 2007. As of September, the average 30-year fixed mortgage was roughly 6.7%, up from roughly 3.0% last year at the same time.

### **Equity (Domestic and International)**

- US equities declined during the 3rd quarter as concerns regarding inflation, the path of interest rates, and a slowing global economy acted as headwinds. Small cap growth was the best performing domestic segment of the equity market relative to other US market capitalizations and styles during the period while large cap value performed the worst.
- Momentum was decidedly negative in international stocks during the 3rd quarter. The escalating conflict in Ukraine, rising inflation in Europe, and tightening monetary policy all contributed to the decline. The continued strength of the US dollar, which rose against most major developed market and emerging market currencies, also acted as a headwind. Finally, China continued its zero-tolerance policy regarding Covid-19, which led to additional restrictions.

#### **Fixed Income**

- While inflation fell slightly during the quarter, the Fed continued increasing interest rates which acted as a headwind for fixed income performance during the quarter. US interest rates moved significantly higher during the quarter with the US 10-Year Treasury bond rising 83 basis points to close at 3.80%.
- Performance across all bond market sectors was negative during the quarter, with US high yield corporate bonds and US Treasury bonds down the least.
- The combination of higher coupons and a shorter maturity profile relative to high quality government bonds was the primary driver of the relative outperformance of high yield bonds during the period.
- US Treasury bonds declined less than other investment grade bond market sectors during the quarter. During periods of increased volatility, investors have historically preferred the safety of government bonds over those with credit risk.

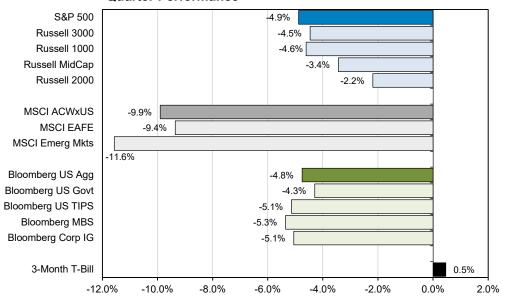
#### **Market Themes**

- Central banks remained hawkish during the quarter with several banks raising interest rates to fight higher inflation. The Fed, the Bank of England, and European Central Bank all raised rates during the quarter. Additionally, the Fed is currently allowing bonds to mature without reinvesting (quantitative tightening), while other banks are also considering similar actions. The outcome would be additional liquidity from the market.
- The escalating crisis in Ukraine spilled over as several gas pipelines were attacked in the Baltic Sea. The result was further disruption of energy supplies to Europe, Germany in particular. Energy costs have risen significantly since the start of the conflict which have negatively impacted economic activity in the region.
- US equity markets experienced their third consecutive quarter of negative performance during the 3rd quarter. Growth-oriented stocks outperformed value stocks as investors believe the Fed will begin slowing the rise of interest rates as economic growth declines. Historically, growth stocks have outperformed value stocks as the economy reaches the trough following a recession.
- Interest rates rose across the Treasury yield curve during the quarter as the Fed hiked interest rates by 0.75% at both the July and September meetings. The 3rd quarter marks the third consecutive quarter the bond market has suffered negative absolute returns. Long-term mortgage and investment grade corporate bonds underperformed during the quarter given their maturity profiles. High yield bonds outperformed primarily due to their shorter maturity profile and higher coupons.

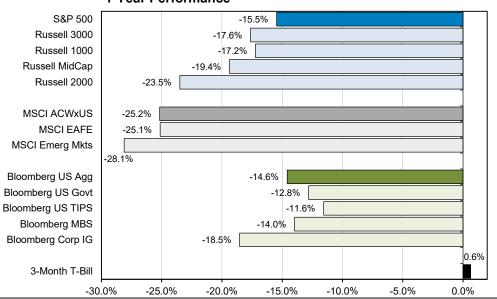


- Negative momentum continued during the 3rd quarter as broad US equity markets experienced negative returns. Factors that contributed to performance included elevated inflation, tighter monetary policy, continued geopolitical events in Ukraine, and expectations of slower economic growth. For the period, the S&P 500 large cap benchmark returned -4.9%, compared to -3.4% for mid-cap and -2.2% for small cap indices.
- Like domestic equities, developed markets international equities also suffered negative results for the 3rd quarter. Europe was negatively impacted by higher-than-expected inflation, the conflict in Ukraine, uncertainty regarding energy supplies, and rising interest rates. Emerging markets were also negatively impacted by war in Ukraine and a strengthening USD. During the period, the MSCI EAFE Index returned -9.4% while the MSCI Emerging Markets Index declined by -11.6%.
- For the quarter, performance of the bond market was broadly negative due to continued concerns about inflation and the FOMC's decision to raise interest rates twice during the period. The Bloomberg (BB) US Aggregate Index returned -4.8%, for the period while Investment Grade Corporate bonds posted a return of -5.1%.
- Performance for developed equity markets was strongly negative over the trailing 1-year period. The primary drivers of return during the period were weakening global economic growth, more restrictive monetary policy from global central banks, and elevated inflation. The S&P 500 large cap stock index led equity market performance for the year with a return of -15.5%. The outlier was the MSCI ACWI ex-US index which declined by -25.2% for the year.
- Over the trailing 1-year period, international markets fell with the developed market MSCI EAFE Index returning -25.1% while the MSCI Emerging Markets Index fell by -28.1%. Global economic growth slowed throughout the year and both developed and emerging markets were negatively impacted by a strong USD and continued geopolitical concerns.
- Bond market returns disappointed over the trailing 1-year period due primarily to concerns about rising inflation and the expectation of higher future interest rates. US TIPS were the best performing sector returning -11.6% while investment grade corporate bonds was the worst, falling -18.5%.

### **Quarter Performance**



#### 1-Year Performance



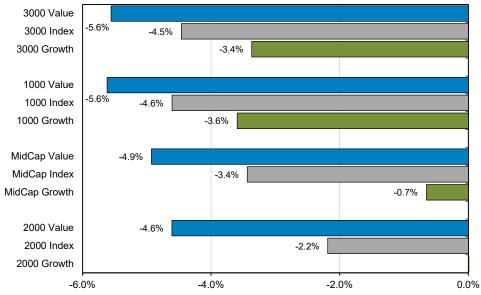
Source: Investment Metrics



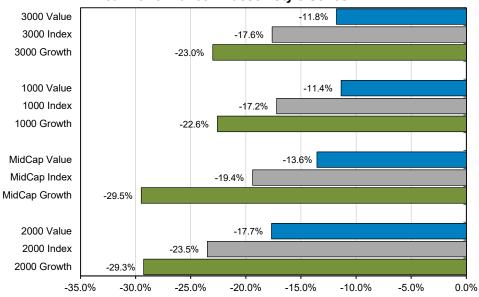
- Volatility was high during the 3rd quarter as broad US equity markets rose sharply before falling to close the period with negative results across both the style and market capitalization spectrums. Leadership switched during the quarter with small cap stocks outperforming, followed by mid and large cap issues. The Russell 2000 Index declined by -2.2% for the quarter while the Russell Mid Cap Index and the Russell 1000 Index fell by -3.4% and -4.6%, respectively.
- Performance across styles and market capitalizations was disparate during the quarter. Large, mid, and small cap growth stocks all outperformed their value counterparts. For the period, the Russell 2000 Growth Index was the best relative performing style index, posting a return of 0.0%. Large and mid cap value stocks were the laggards during the period with the Russell Large Cap Value Index and Russell Mid Cap Value Index falling by -5.6% and -4.9%, respectfully.

- Performance across all market capitalizations and styles was negative over the trailing 1-year period. Unlike the 3rd quarter, large cap stocks outperformed mid and small cap stocks for the year. The Russell 1000 Index return of -17.2% for the year, significantly outperformed both its mid and small cap growth index counterparts. The outlier during the period was the Russell 2000 Index which returned -23.5%.
- There was wide performance dispersion within across all style-based indexes. Value significantly outperformed growth over the year. Within large cap stocks, the Russell 1000 Value returned -11.4% compared to -22.6% for the Russell Large Cap Growth benchmark. The Russell Mid Cap Value Index returned -13.6% while the Russell 2000 Value Index returned -17.7% for the period. In comparison, the Russell Mid Cap Growth Index returned -29.5%, while the Russell 2000 Growth Index declined by -29.3%.

# **Quarter Performance - Russell Style Series**



## 1-Year Performance - Russell Style Series

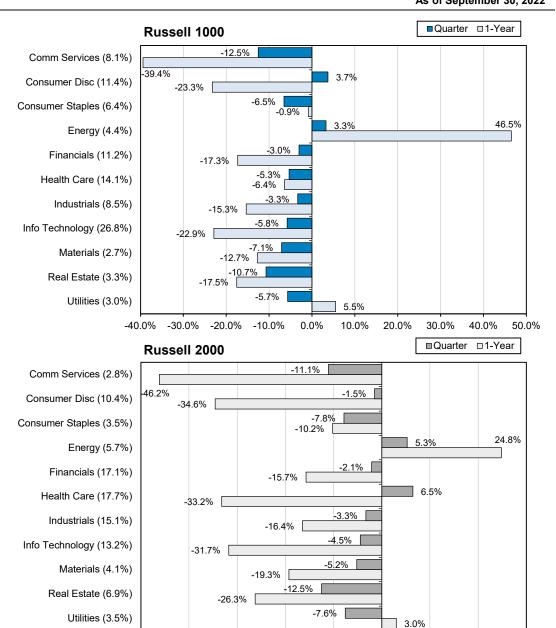


Source: Investment Metrics



- Economic sector performance was negative across nine of the eleven large cap economic sectors for the 3rd quarter. Four sectors outpaced the return of the broad index on a relative basis during the period.
- Consumer Discretionary (3.7%) and Energy (3.3%) were the only sectors with positive absolute performance during the period. Additionally, Financials (-3.0%) and Industrials (-3.3%) outperformed the broad index. Strong consumer demand acted as a tailwind for consumer-related stocks during the quarter. Energy continued its relative outperformance as the price of oil remained elevated.
- For the full year, six sectors exceeded the return of the broad large cap benchmark: Energy (46.5%), Utilities (5.5%), Consumer Staples (-0.9%), Health Care (-6.4%), Materials (-12.7%), and Industrials (-15.3%). The weakest economic sector performance in the Russell 1000 for the year was Communication Services which declined by returns (-39.4%).

- Small cap sector performance was also mixed during the quarter with two economic sectors posting positive performance relative to return of the broader Russell 2000 Index (-2.2%). Health Care (6.5%), and Energy (5.3%) were the best performing sectors for the period. Real Estate (-12.5%), and Communication Services (-11.1%) were the worst performing sectors for the quarter.
- For the trailing 1-year period, six of the eleven sectors outpaced the broad benchmark's return. Not surprisingly, sector performance was led by Energy (24.8%), Utilities (3.0%), Consumer Staples (-10.2%), Financials (-15.7%), and Industrials (-16.4%). The weakest sector over the full year was Communication Services (-46.2%), followed by Consumer Discretionary (-34.6%).



-10.0%

0.0%

10.0%

20.0%

-50.0%

-40.0%

-30.0%

-20.0%



As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.



30.0%

Top 10 Weighted Stocks						
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector		
Apple Inc	6.31%	1.22%	-1.79%	Information Technology		
Microsoft Corp	5.21%	-9.12%	-16.69%	Information Technology		
Amazon.com Inc	3.00%	6.39%	-31.20%	Consumer Discretionary		
Tesla Inc	2.02%	18.17%	2.61%	Consumer Discretionary		
Alphabet Inc Class A	1.72%	-12.22%	-28.45%	Communication Services		
Alphabet Inc Class C	1.55%	-12.09%	-27.85%	Communication Services		
Berkshire Hathaway Inc Class B	1.44%	-2.20%	-2.17%	Financials		
UnitedHealth Group Inc	1.41%	-1.36%	30.94%	Health Care		
Johnson & Johnson	1.28%	-7.35%	3.82%	Health Care		
Exxon Mobil Corp	1.09%	2.91%	55.15%	Energy		

Top 10 Weighted Stocks						
Russell 2000	Weight 1-Qtr 1-Year Return Return		Sector			
ShockWave Medical Inc	0.45%	45.5%	35.1%	Health Care		
Biohaven Pharmaceutical Holding Co	0.43%	3.7%	8.8%	Health Care		
Chart Industries Inc	0.31%	10.1%	-3.5%	Industrials		
Karuna Therapeutics Inc	0.30%	77.8%	83.9%	Health Care		
Apellis Pharmaceuticals Inc	0.28%	51.0%	107.2%	Health Care		
Murphy USA Inc	0.28%	18.2%	65.3%	Consumer Discretionary		
Texas Roadhouse Inc	0.27%	19.8%	-2.4%	Consumer Discretionary		
SouthState Corp	0.27%	3.2%	8.5%	Financials		
RBC Bearings Inc	0.27%	12.4%	-2.1%	Industrials		
EMCOR Group Inc	0.27%	12.3%	0.5%	Information Technology		

Top 10 Performing Stocks (by Quarter)					
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector	
Signify Health Inc Ordinary Shares	0.01%	111.23%	63.12%	Health Care	
First Solar Inc	0.04%	94.14%	38.56%	Information Technology	
Wolfspeed Inc	0.04%	62.90%	28.03%	Information Technology	
Penumbra Inc	0.02%	52.26%	-28.86%	Health Care	
Oak Street Health Inc Ordinary Shares	0.01%	49.15%	-42.35%	Health Care	
Sarepta Therapeutics Inc	0.03%	47.47%	19.53%	Health Care	
Constellation Energy Corp	0.08%	45.54%	N/A	Energy	
The Trade Desk Inc Class A	0.08%	42.64%	-15.01%	Information Technology	
Nutanix Inc Class A	0.01%	42.38%	-44.75%	Information Technology	
Enphase Energy Inc	0.11%	42.12%	85.02%	Energy	

Top 10 Performing Stocks (by Quarter)						
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector		
Akero Therapeutics Inc	0.04%	260.3%	52.3%	Health Care		
Forma Therapeutics Holdings Inc	0.03%	189.6%	-14.0%	Health Care		
Velo3D Inc	0.01%	185.5%	-52.9%	Industrials		
Ventyx Biosciences Inc	0.04%	185.4%	N/A	Health Care		
Verve Therapeutics Inc	0.06%	124.8%	-26.9%	Health Care		
AN2 Therapeutics Inc	0.00%	124.3%	N/A	Health Care		
Prothena Corp PLC	0.10%	123.3%	-14.9%	Health Care		
Target Hospitality Corp Class A	0.02%	121.0%	238.3%	Consumer Discretionary		
1Life Healthcare Inc Ordinary Shares	0.14%	118.8%	-15.3%	Health Care		
Global Blood Therapeutics Inc	0.19%	113.1%	167.3%	Health Care		

Bottom 10 Performing Stocks (by Quarter)						
Russell 1000	Weight	1-Qtr Return	1-Year Return	Sector		
Sotera Health Co Ordinary Shares	0.00%	-65.2%	-73.9%	Health Care		
Novavax Inc	0.00%	-64.6%	-91.2%	Health Care		
Spectrum Brands Holdings Inc	0.00%	-52.1%	-58.4%	Consumer Staples		
AMC Entertainment Holdings Inc	0.01%	-48.6%	-81.7%	Communication Services		
WeWork Inc	0.00%	-47.2%	N/A	Real Estate		
The Scotts Miracle Gro Co A	0.01%	-45.4%	-70.1%	Materials		
AppLovin Corp Ordinary Shares	0.01%	-43.4%	-73.1%	Information Technology		
Azenta Inc	0.01%	-40.6%	-58.1%	Health Care		
NCR Corp	0.01%	-38.9%	-51.0%	Information Technology		
Enhabit Inc Shs	0.00%	-38.9%	N/A	Health Care		

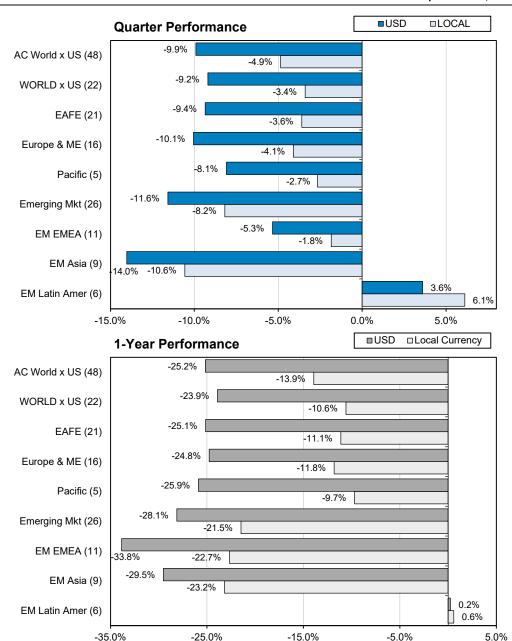
Bottom 10 Performing Stocks (by Quarter)						
Russell 2000	Weight	1-Qtr Return	1-Year Return	Sector		
Leafly Holdings Inc	0.00%	-84.9%	0.0%	Communication Services		
VistaGen Therapeutics Inc	0.00%	-82.7%	N/A	Health Care		
Faraday Future Intelligent Electric Inc	0.00%	-75.5%	N/A	Consumer Discretionary		
SelectQuote Inc Ordinary Shares	0.00%	-70.6%	-94.4%	Financials		
IronNet Inc	0.00%	-68.8%	N/A	Information Technology		
Core Scientific Inc Ord Shs - Class A	0.00%	-67.9%	N/A	Consumer Discretionary		
Rockley Photonics Holdings Ltd	0.00%	-67.4%	N/A	Information Technology		
Loyalty Ventures Inc Ordinary Shares	0.00%	-66.1%	0.0%	Communication Services		
Cryptyde Inc	0.00%	-65.9%	0.0%	Materials		
Vintage Wine Estates Inc	0.00%	-64.8%	-72.9%	Consumer Staples		

Source: Morningstar Direct



Most developed and emerging market international equity indexes tracked in the chart posted negative returns in both US dollar (USD) and local currency (LC) terms for the 3rd quarter. The outlier during the period was the Latin America region. Higher commodity prices and demand benefited export-driven countries like Brazil. The developed market MSCI EAFE Index returned -9.4% in USD and -3.6% in LC terms for the period, while the MSCI Emerging Markets Index declined by -11.6% in USD and -8.2% in LC terms.

The trailing 1-year results for international developed and emerging markets were broadly negative across most regions and currencies. The MSCI EAFE Index returned -25.1% in USD for the year and -11.1% in LC terms. Similarly, returns across emerging markets were broadly lower with the exception being Latin America with the MSCI Emerging Markets Index declining by -28.1% in USD and -25.1% in LC terms. Latin America regional index's return were the outlier, rising by 0.2% in USD and 0.6% in LC term. In contrast, performance in the EMEA regional benchmark significantly detracted from emerging market index performance with the EMEA Index returning -33.8% in USD and -22.7% in LC terms, respectively, due primarily to concerns related to Ukraine.



Source: MSCI Global Index Monitor (Returns are Net)



MSCI - EAFE	Sector Weight	Quarter Return	1-Year Return
Communication Services	4.8%	-13.7%	-28.6%
Consumer Discretionary	11.3%	-9.8%	-32.3%
Consumer Staples	11.3%	-7.1%	-17.3%
Energy	4.9%	-5.0%	6.0%
Financials	17.6%	-9.6%	-22.1%
Health Care	13.5%	-10.6%	-19.8%
Industrials	15.0%	-8.3%	-31.5%
Information Technology	7.9%	-8.3%	-38.9%
Materials	7.5%	-8.9%	-21.3%
Real Estate	2.8%	-13.1%	-29.1%
Utilities	3.4%	-13.3%	-20.3%
Total	100.0%	-9.4%	-25.1%

MSCI - ACWIXUS	Sector Weight	Quarter Return	1-Year Return
Communication Services	6.1%	-16.5%	-32.0%
Consumer Discretionary	11.4%	-13.0%	-32.3%
Consumer Staples	9.4%	-6.4%	-16.7%
Energy	6.2%	-6.3%	-5.0%
Financials	20.7%	-7.9%	-18.3%
Health Care	9.6%	-11.0%	-23.5%
Industrials	12.1%	-8.2%	-28.7%
Information Technology	10.8%	-12.1%	-39.3%
Materials	8.2%	-7.9%	-21.1%
Real Estate	2.4%	-14.5%	-29.8%
Utilities	3.4%	-10.9%	-16.0%
Total	100.0%	-9.9%	-25.2%

MSCI - Emerging Mkt	Sector Weight	Quarter Return	1-Year Return
Communication Services	9.7%	-19.3%	-36.2%
Consumer Discretionary	14.0%	-18.7%	-33.7%
Consumer Staples	6.6%	-4.5%	-17.8%
Energy	5.3%	-2.6%	-30.1%
Financials	22.6%	-5.1%	-14.3%
Health Care	3.9%	-13.8%	-42.8%
Industrials	5.8%	-9.9%	-20.8%
Information Technology	18.3%	-15.5%	-36.1%
Materials	8.7%	-7.4%	-26.3%
Real Estate	2.0%	-19.3%	-31.9%
Utilities	3.2%	-4.3%	-8.0%
Total	100.0%	-11.6%	-28.1%

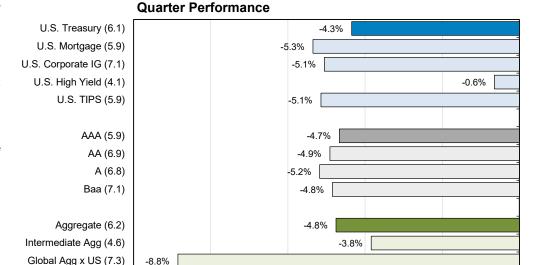
Country         Weight         Weight         Return         Roturn           Jaspan         22.6%         14.1%         -7.7%         -20.3%           United Kingdom         15.5%         9.7%         -10.8%         -14.1%           France         11.3%         7.1%         -3.9%         -24.0%           Switzerland         10.7%         -7.5%         -16.5%           Australia         8.0%         5.0%         -6.7%         -16.5%           Australia         8.0%         5.0%         -6.7%         -16.5%           Australia         8.0%         5.0%         -6.7%         -16.4%           Germany         7.6%         4.7%         -12.6%         -31.1%           Neltherlands         4.1%         2.6%         -10.7%         -38.2%           Sweden         3.4%         2.1%         -8.8%         -35.7%           Hong Kong         3.0%         1.9%         -17.0%         -22.3%           Spain         2.2.6%         1.7%         -12.3%         -25.5%           Belance         1.8%         1.5%         -14.1%         -2.65%           Italy         2.3%         1.4%         1.5%         -22.1% <tr< th=""><th></th><th>MSCI-EAFE</th><th>MSCI-ACWIXUS</th><th>Ougutor</th><th>1- Year</th></tr<>		MSCI-EAFE	MSCI-ACWIXUS	Ougutor	1- Year
Japan	Country			Quarter	
United Kingdom					
France 11.3% 7.1% 8.9% -2.4.0% Switzerland 10.7% 6.7% -7.5% -16.6% -10.7% -12.6% -37.1% Netherlands 4.1% 2.6% -10.7% -38.2% -33.2% -23.5% -22.3% -22.					
Switzerland	·				
Australia 8.0% 5.0% -6.7% -16.4% -7.7% -16.4% Germany 7.6% 4.7% -12.6% -37.1% -16.4% -7.1% -12.6% -37.1% -7.1% -7.6% 4.7% -12.6% -37.1% -7					
Germany 7.6% 4.7% -12.6% -37.1% Netherlands 4.1% 2.6% -10.7% -38.2% -35.7% Netherlands 4.1% 2.6% -10.7% -38.2% -35.7% Netherlands 4.1% 2.6% -10.7% -38.2% -35.7% Norden 3.4% 2.1% -4.8% -35.7% Norden 3.4% 2.1% -4.8% -35.7% Norden 3.0% 1.9% -17.0% -22.3% -22.3% -14.1% -25.6% Norden 2.4% 1.5% -14.1% -25.6% Norden 2.3% 1.4% -4.8.5% -28.5% Spain 2.4% 1.5% -14.1% -25.6% Norden 1.0% -1.6% -2.21% -2.5% Norden 1.0% -1.5% -2.21% -2.5% -2.5% -2.5% -2.5% -2.25					
Netherlands					
Sweden         3.4%         2.1%         -8.8%         -35.7%           Hong Kong         3.0%         1.9%         -17.0%         -22.3%           Demmark         2.6%         1.7%         -12.3%         -23.5%           Spain         2.4%         1.5%         -14.1%         -25.6%           Singapore         1.6%         1.0%         -1.5%         -22.1%           Beigium         1.0%         0.6%         -13.2%         -27.3%           Finland         1.0%         0.6%         -7.2%         -25.0%           Norway         0.8%         0.5%         -15.3%         -20.7%           Israel         0.8%         0.5%         -15.3%         -20.7%           Israel         0.8%         0.5%         -1.9%         -21.8%           Ireland         0.6%         0.4%         -5.5%         -38.9%           Portugal         0.2%         0.1%         -11.0%         -12.9%           Austria         0.2%         0.1%         -11.0%         -12.9%           New Zealand         0.2%         0.1%         -8.6%         -33.4%           Total Developed Countries         70.7%         9.2%         -23.9%	,				
Hong Kong   3.0%   1.9%   -17.0%   -22.3%   -22.3%   2.6%   1.7%   -12.3%   -23.5%   5.5pain   2.4%   1.5%   -14.1%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.6%   1.4%   -25.5%   -28.5%   1.4%   -25.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.1%   1.6%   1.0%   -1.5%   -22.7%   1.2%   -25.0%   1.0%   -1.5%   -20.7%   1.5%   -20					
Denmark         2.6%         1.7%         -12.3%         -23.5%           Spain         2.4%         1.5%         -14.1%         -25.6%           Italy         2.3%         1.4%         -8.5%         -28.5%           Singapore         1.6%         1.0%         -1.5%         -22.1%           Belgium         1.0%         0.6%         -13.2%         -27.3%           Finland         1.0%         0.6%         -7.2%         -25.0%           Norway         0.8%         0.5%         -15.3%         -20.7%           Israel         0.8%         0.5%         -1.9%         -21.8%           Ireland         0.6%         0.4%         -5.5%         -38.9%           Portugal         0.2%         0.1%         -11.0%         -12.9%           Austria         0.2%         0.1%         -11.0%         -12.9%           New Zealand         0.2%         0.1%         -8.6%         -33.4%           Total EAFE Countries         10.0%         62.5%         9.4%         -25.1%           Canada         8.2%         7.8%         -12.6%           Total Developed Countries         70.7%         9.2%         -22.5%         -35.4%					
Spain					
Italy         2.3%         1.4%         -8.5%         -28.5%           Singapore         1.6%         1.0%         -1.5%         -22.1%           Belgium         1.0%         0.6%         -1.5%         -22.1%           Belgium         1.0%         0.6%         -1.5%         -22.1%           Belgium         1.0%         0.6%         -7.2%         -25.0%           Norway         0.8%         0.5%         -15.3%         -20.7%           Israel         0.8%         0.5%         -15.3%         -20.7%           Israel         0.8%         0.4%         -5.5%         -38.9%           Portugal         0.2%         0.1%         -11.0%         -12.9%           Austria         0.2%         0.1%         -15.2%         -40.9%           New Zealand         0.2%         0.1%         -8.6%         -33.4%           Total EAFE Countries         100.0%         52.5%         -9.4%         -25.1%           Total EAFE Countries         70.7%         9.2%         -23.9%           China         9.2%         -22.5%         -35.4%           Total EAFE Countries         70.7%         9.2%         -23.9%           China					
Singapore	•				
Belgium	,				
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Austria         0.2%         0.1%         -15.2%         -40.9%           New Zealand         0.2%         0.1%         -8.6%         -33.4%           Total EAFE Countries         100.0%         62.5%         -9.4%         -25.1%           Canada         8.2%         -7.8%         -12.6%           Total Developed Countries         70.7%         -9.2%         -22.5%         -35.4%           China         9.2%         -22.5%         -35.4%         -30.5%           India         4.0%         -14.5%         -30.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%         -9.9%           Korea         3.1%         -16.4%         -40.7%         -9.9%           South Arabia         1.7%         8.5%         4.3%         -9.9%           South Africa         1.0%         -12.3%         -19.2%         -19.2%           Mexico         0.7%         -5.4%         -7.4%         -7.4%         -7.4%         -7.4%         -7.4%         -14.3%         -19.2%         -18.8%         14.3%         -14.3%         -15.9%         -14.3%         -15.9%         -14.3% <t< td=""><td></td><td></td><td></td><td></td><td></td></t<>					
New Zealand         0.2%         0.1%         -8.6%         -33.4%           Total EAFE Countries         100.0%         62.5%         -9.4%         -25.1%           Canada         8.2%         -7.8%         -12.6%           Total Developed Countries         70.7%         -9.2%         -22.5%         -35.4%           China         9.2%         -22.5%         -35.4%           Taiwan         4.0%         -14.5%         -5.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           Qatar         0.4%         -7.1%         -15.9%           Quited Arab Emirates         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%	·				
Total EAFE Countries         100.0%         62.5%         -9.4%         -25.1%           Canada         8.2%         -7.8%         -12.6%           Total Developed Countries         70.7%         -9.2%         -22.5%         -35.4%           China         9.2%         -22.5%         -35.4%           Taiwan         4.0%         -14.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         -2.5%         5.1%           Kuwait         0.3%         -5.5%         6.4%           Philippines					
Canada         8.2%         -7.8%         -12.6%           Total Developed Countries         70.7%         -9.2%         -23.9%           China         9.2%         -22.5%         -35.4%           Taiwan         4.0%         -14.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         -2.5%         5.1%           Atuar         0.2%         -5.5%         6.4%           Poland         0.2%         -25.5%	New Zealand		-		
Total Developed Countries         70.7%         -9.2%         -23.9%           China         9.2%         -22.5%         -35.4%           Taiwan         4.0%         -14.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         2.29%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         -2.5%         5.1%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%	Total EAFE Countries	100.0%	62.5%	-9.4%	-25.1%
China         9.2%         -22.5%         -35.4%           Taiwan         4.0%         -14.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         -0.9%         3.0%	Canada				
Taiwan         4.0%         -14.5%         -30.5%           India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         -2.5%         5.1%           Quatr         0.4%         -3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%	Total Developed Countries		70.7%	-9.2%	
India         4.5%         6.5%         -9.9%           Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -25.1%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%	China		9.2%	-22.5%	-35.4%
Korea         3.1%         -16.4%         -40.7%           Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -25.1%         -51.9%           Chile         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -15.0%         -54.3%	Taiwan		4.0%	-14.5%	-30.5%
Brazil         1.7%         8.5%         4.3%           Saudi Arabia         1.4%         -0.1%         1.9%           South Africa         1.0%         -12.3%         -19.2%           Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%	India		4.5%	6.5%	-9.9%
Saudi Arabia       1.4%       -0.1%       1.9%         South Africa       1.0%       -12.3%       -19.2%         Mexico       0.7%       -5.4%       -7.4%         Thailand       0.6%       -2.9%       -6.8%         Indonesia       0.6%       7.8%       14.3%         Malaysia       0.4%       -7.1%       -15.9%         United Arab Emirates       0.4%       -2.5%       5.1%         Qatar       0.4%       3.1%       12.7%         Kuwait       0.3%       -5.5%       6.4%         Philippines       0.2%       -13.6%       -26.3%         Poland       0.2%       -25.1%       -51.9%         Chile       0.2%       3.2%       0.6%         Turkey       0.1%       16.3%       3.8%         Peru       0.1%       -0.9%       3.0%         Greece       0.1%       -7.5%       -25.2%         Colombia       0.0%       -18.5%       -23.6%         Czech Republic       0.0%       -15.0%       -54.3%         Egypt       0.0%       -1.5%       -28.8%         Total Emerging Countries       29.3%       -11.6%       -28.1% <td>Korea</td> <td></td> <td>3.1%</td> <td>-16.4%</td> <td>-40.7%</td>	Korea		3.1%	-16.4%	-40.7%
South Africa       1.0%       -12.3%       -19.2%         Mexico       0.7%       -5.4%       -7.4%         Thailand       0.6%       -2.9%       -6.8%         Indonesia       0.6%       7.8%       14.3%         Malaysia       0.4%       -7.1%       -15.9%         United Arab Emirates       0.4%       -2.5%       5.1%         Qatar       0.4%       3.1%       12.7%         Kuwait       0.3%       -5.5%       6.4%         Philippines       0.2%       -13.6%       -26.3%         Poland       0.2%       -25.1%       -51.9%         Chile       0.2%       3.2%       0.6%         Turkey       0.1%       16.3%       3.8%         Peru       0.1%       16.3%       3.8%         Peru       0.1%       -7.5%       -25.2%         Colombia       0.0%       -18.5%       -23.6%         Czech Republic       0.0%       -19.2%       -9.8%         Hungary       0.0%       -15.0%       -54.3%         Egypt       0.0%       -1.3%       -28.8%         Total Emerging Countries       29.3%       -11.6%       -28.1% <td>Brazil</td> <td></td> <td>1.7%</td> <td>8.5%</td> <td>4.3%</td>	Brazil		1.7%	8.5%	4.3%
Mexico         0.7%         -5.4%         -7.4%           Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         16.3%         3.8%           Peru         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	Saudi Arabia		1.4%	-0.1%	1.9%
Thailand         0.6%         -2.9%         -6.8%           Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         16.3%         3.8%           Peru         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	South Africa			-12.3%	-19.2%
Indonesia         0.6%         7.8%         14.3%           Malaysia         0.4%         -7.1%         -15.9%           United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	Mexico		0.7%	-5.4%	-7.4%
Malaysia       0.4%       -7.1%       -15.9%         United Arab Emirates       0.4%       -2.5%       5.1%         Qatar       0.4%       3.1%       12.7%         Kuwait       0.3%       -5.5%       6.4%         Philippines       0.2%       -13.6%       -26.3%         Poland       0.2%       -25.1%       -51.9%         Chile       0.2%       3.2%       0.6%         Turkey       0.1%       16.3%       3.8%         Peru       0.1%       -0.9%       3.0%         Greece       0.1%       -7.5%       -25.2%         Colombia       0.0%       -18.5%       -23.6%         Czech Republic       0.0%       -19.2%       -9.8%         Hungary       0.0%       -15.0%       -54.3%         Egypt       0.0%       -1.3%       -28.8%         Total Emerging Countries       29.3%       -11.6%       -28.1%	Thailand		0.6%	-2.9%	-6.8%
United Arab Emirates         0.4%         -2.5%         5.1%           Qatar         0.4%         3.1%         12.7%           Kuwait         0.3%         -5.5%         6.4%           Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	Indonesia		0.6%	7.8%	14.3%
Qatar       0.4%       3.1%       12.7%         Kuwait       0.3%       -5.5%       6.4%         Philippines       0.2%       -13.6%       -26.3%         Poland       0.2%       -25.1%       -51.9%         Chile       0.2%       3.2%       0.6%         Turkey       0.1%       16.3%       3.8%         Peru       0.1%       -0.9%       3.0%         Greece       0.1%       -7.5%       -25.2%         Colombia       0.0%       -18.5%       -23.6%         Czech Republic       0.0%       -19.2%       -9.8%         Hungary       0.0%       -15.0%       -54.3%         Egypt       0.0%       -1.3%       -28.8%         Total Emerging Countries       29.3%       -11.6%       -28.1%	Malaysia		0.4%	-7.1%	-15.9%
Kuwait     0.3%     -5.5%     6.4%       Philippines     0.2%     -13.6%     -26.3%       Poland     0.2%     -25.1%     -51.9%       Chile     0.2%     3.2%     0.6%       Turkey     0.1%     16.3%     3.8%       Peru     0.1%     -0.9%     3.0%       Greece     0.1%     -7.5%     -25.2%       Colombia     0.0%     -18.5%     -23.6%       Czech Republic     0.0%     -19.2%     -9.8%       Hungary     0.0%     -15.0%     -54.3%       Egypt     0.0%     -1.3%     -28.8%       Total Emerging Countries     29.3%     -11.6%     -28.1%	United Arab Emirates		0.4%	-2.5%	5.1%
Kuwait     0.3%     -5.5%     6.4%       Philippines     0.2%     -13.6%     -26.3%       Poland     0.2%     -25.1%     -51.9%       Chile     0.2%     3.2%     0.6%       Turkey     0.1%     16.3%     3.8%       Peru     0.1%     -0.9%     3.0%       Greece     0.1%     -7.5%     -25.2%       Colombia     0.0%     -18.5%     -23.6%       Czech Republic     0.0%     -19.2%     -9.8%       Hungary     0.0%     -15.0%     -54.3%       Egypt     0.0%     -1.3%     -28.8%       Total Emerging Countries     29.3%     -11.6%     -28.1%	Qatar		0.4%	3.1%	12.7%
Philippines         0.2%         -13.6%         -26.3%           Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Poland         0.2%         -25.1%         -51.9%           Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	Philippines				
Chile         0.2%         3.2%         0.6%           Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	• • • • • • • • • • • • • • • • • • • •				
Turkey         0.1%         16.3%         3.8%           Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Peru         0.1%         -0.9%         3.0%           Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Greece         0.1%         -7.5%         -25.2%           Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%	•				
Colombia         0.0%         -18.5%         -23.6%           Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Czech Republic         0.0%         -19.2%         -9.8%           Hungary         0.0%         -15.0%         -54.3%           Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Hungary     0.0%     -15.0%     -54.3%       Egypt     0.0%     -1.3%     -28.8%       Total Emerging Countries     29.3%     -11.6%     -28.1%					
Egypt         0.0%         -1.3%         -28.8%           Total Emerging Countries         29.3%         -11.6%         -28.1%					
Total Emerging Countries 29.3% -11.6% -28.1%					
Total ACWIVIS Countries 100.0% 25.2%					
	Total ACWIXUS Countries		100.0%	-9.9%	-25.2%

Source: Morningstar Direct, MSCI Global Index Monitor (Returns are Net in USD)

As a result of the GICS classification changes on 9/28/2018 and certain associated reporting limitations, sector performance represents backward looking performance for the prior year of each sector's current constituency, post creation of the Communication Services sector.



- Fixed income market results were broadly negative during the 3rd quarter. Investors' concerns about rising inflation, combined with expectations of higher US interest rates, detracted from performance. As a result, US Treasury yields continued to rise across the maturity curve throughout the quarter.
- The return for the BB US Aggregate Bond Index, the bellwether investment grade benchmark, was down -4.8% for the period.
- Performance across the investment grade index's segments was also negative during the period with the US Corporate Investment Grade bonds returning -5.1% and the US Mortgage index component posting a return of -5.3%.
- High yield bonds outperformed their investment grade counterparts, but still
  declined by -0.6%. US TIPS, which have delivered strong performance in
  recent periods, posted a decline of -5.1% as investors' expectations of future
  inflation declined.
- Outside of domestic markets, the BB Global Aggregate ex US Index posted a return of -8.8% for the quarter. Like domestic bonds, global bond index performance was negatively impacted by rising interest rates and a strengthening USD, which acted as a drag on domestic index returns.
- Over the trailing 1-year period, domestic investment grade benchmark performance was negative, led lower by investment grade corporate bonds (-18.5%), followed by mortgage-backed bonds (-14.0%), US Treasury bonds (-12,9%), and US TIPS (-11.6%). The bellwether Bloomberg US Aggregate Bond Index (-14.6%) declined for the year.
- Lower quality high yield corporate bonds outperformed their investment grade counterparts on a relative basis with the Bloomberg US High Yield Index returning -14.1% for the period.
- Performance for non-US bonds was broadly negative for the year with the developed market Bloomberg Global Aggregate ex US Index falling by -24.9%. The combination of rising interest rates overseas, persistent inflation, and USD strength hindered index performance for the year.



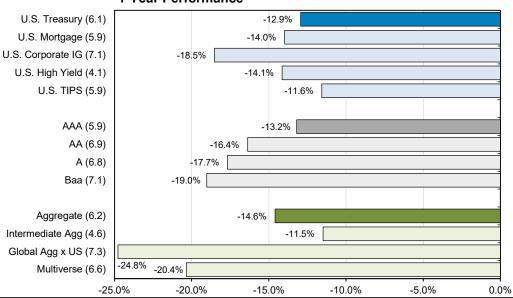
### 1-Year Performance

-8.0%

-6.8%

Multiverse (6.6)

-10.0%



-6.0%

-4.0%

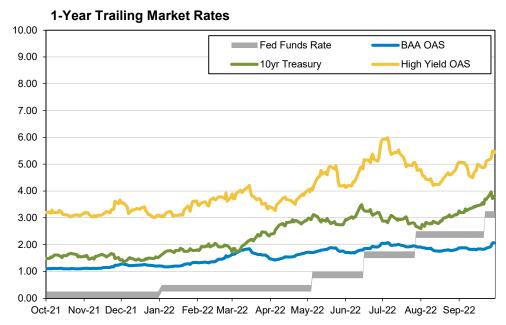
-2.0%

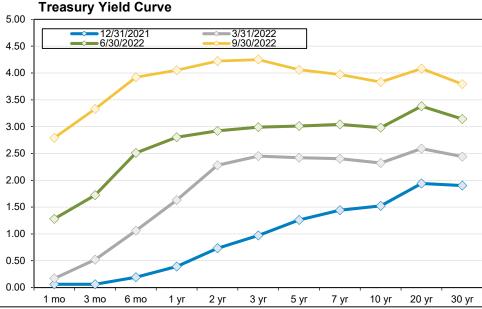
0.0%

Source: Bloomberg



- The gray band across the graph illustrates the range of the current Fed Funds Rate. In the 3rd quarter this year, the Fed raised its target rate range from 1.75% to 3.25%. During its recent September meeting, the Federal Open Market Committee (FOMC) stated it intends to continue to remove liquidity from the market by raising interest rates and also allowing bonds held on its balance sheet to mature without reinvesting those proceeds. Importantly, the FOMC stated that it will remain vigilant in its fight against persistently higher inflation.
- The yield on the US 10-year Treasury (green line) ended the period higher as concerns over the pace of inflation, combined with the Fed's announced rate increase, drove yields higher. Interest rates continued to climb during the quarter, reaching a high of roughly 4.00% during the latter part of September 2022, before settling at 3.83% at the end of the month.
- The blue line illustrates changes in the BAA OAS (Option Adjusted Spread). This measure quantifies the additional yield premium that investors require to purchase and hold non-US Treasury investment grade issues. For the full year, the spread widened slightly from 1.10% to 2.06%. High Yield OAS was largely unchanged during the year as spreads rose from 3.17% to 5.43%. High Yield spreads reached as high as 5.80% in early July before trading lower the remainder of the quarter.
- The lower graph provides a snapshot of the US Treasury yield curve at the end of each of the last four quarters. Short-term rates continued to rise during the 3rd quarter as the FOMC continued raising rates to combat rising inflation. Both intermediate and longer-term rates were modestly higher across the curve, albeit less dramatically than short-term rates. The curve remained inverted between 2-year rates and 10-year rates. Said differently, the short-term rate was higher than the long-term rate. Historically, a persistent inversion of these two key rates has been an indication of a future recession withing 6- to 24-months.





Source: US Department of Treasury, FRED (Federal Reserve of St. Louis)



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## **Disclosures**

# Disclosures as they pertain to GHA balanced account:

• Due to the balanced account, Total Equity, Total Fixed Income Composites, GHA LCG, and GHA EXCL A+ returns are shown as segment level returns that do not include their respective cash balances and returns prior to 12/31/2017.



**Active Return** 

- Arithmetic difference between the manager's performance and the designated benchmark return over a specified time period.

Alpha

- A measure of the difference between a portfolio's actual performance and its expected return based on its level of risk as determined by beta. It determines the portfolio's non-systemic return, or its historical performance not explained by movements of the market.

Beta

- A measure of the sensitivity of a portfolio to the movements in the market. It is a measure of the portfolio's systematic risk.

Consistency

- The percentage of quarters that a product achieved a rate of return higher than that of its benchmark. Higher consistency indicates the manager has contributed more to the product's performance.

Distributed to Paid In (DPI)

- The ratio of money distributed to Limited Partners by the fund, relative to contributions. It is calculated by dividing cumulative distributions by paid in capital. This multiple shows the investor how much money they got back. It is a good measure for evaluating a fund later in its life because there are more distributions to measure against.

**Down Market Capture** 

- The ratio of average portfolio performance over the designated benchmark during periods of negative returns. A lower value indicates better product performance

**Downside Risk** 

- A measure similar to standard deviation that utilizes only the negative movements of the return series. It is calculated by taking the standard deviation of the negative quarterly set of returns. A higher factor is indicative of a riskier product.

**Excess Return** 

- Arithmetic difference between the manager's performance and the risk-free return over a specified time period.

Excess Risk

- A measure of the standard deviation of a portfolio's performance relative to the risk free return.

Information Ratio

- This calculates the value-added contribution of the manager and is derived by dividing the active rate of return of the portfolio by the tracking error. The higher the Information Ratio, the more the manager has added value to the portfolio.

**Public Market Equivalent (PME)** 

- Designs a set of analyses used in the Private Equity Industry to evaluate the performance of a Private Equity Fund against a public benchmark or index.

R-Squared

- The percentage of a portfolio's performance that can be explained by the behavior of the appropriate benchmark. A high R-Squared means the portfolio's performance has historically moved in the same direction as the appropriate benchmark.

Return

- Compounded rate of return for the period.

**Sharpe Ratio** 

- Represents the excess rate of return over the risk free return divided by the standard deviation of the excess return. The result is an absolute rate of return per unit of risk. A higher value demonstrates better historical risk-adjusted performance.

Standard Deviation

- A statistical measure of the range of a portfolio's performance. It represents the variability of returns around the average return over a specified time period.

Total Value to Paid In (TVPI)

- The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date. It is a good measure of performance before the end of a fund's life

**Tracking Error** 

- This is a measure of the standard deviation of a portfolio's returns in relation to the performance of its designated market benchmark.

**Treynor Ratio** 

- Similar to Sharpe ratio but utilizes beta rather than excess risk as determined by standard deviation. It is calculated by taking the excess rate of return above the risk free rate divided by beta to derive the absolute rate of return per unit of risk. A higher value indicates a product has achieved better historical risk-adjusted performance.

**Up Market Capture** 

- The ratio of average portfolio performance over the designated benchmark during periods of positive returns. A higher value indicates better product performance.



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