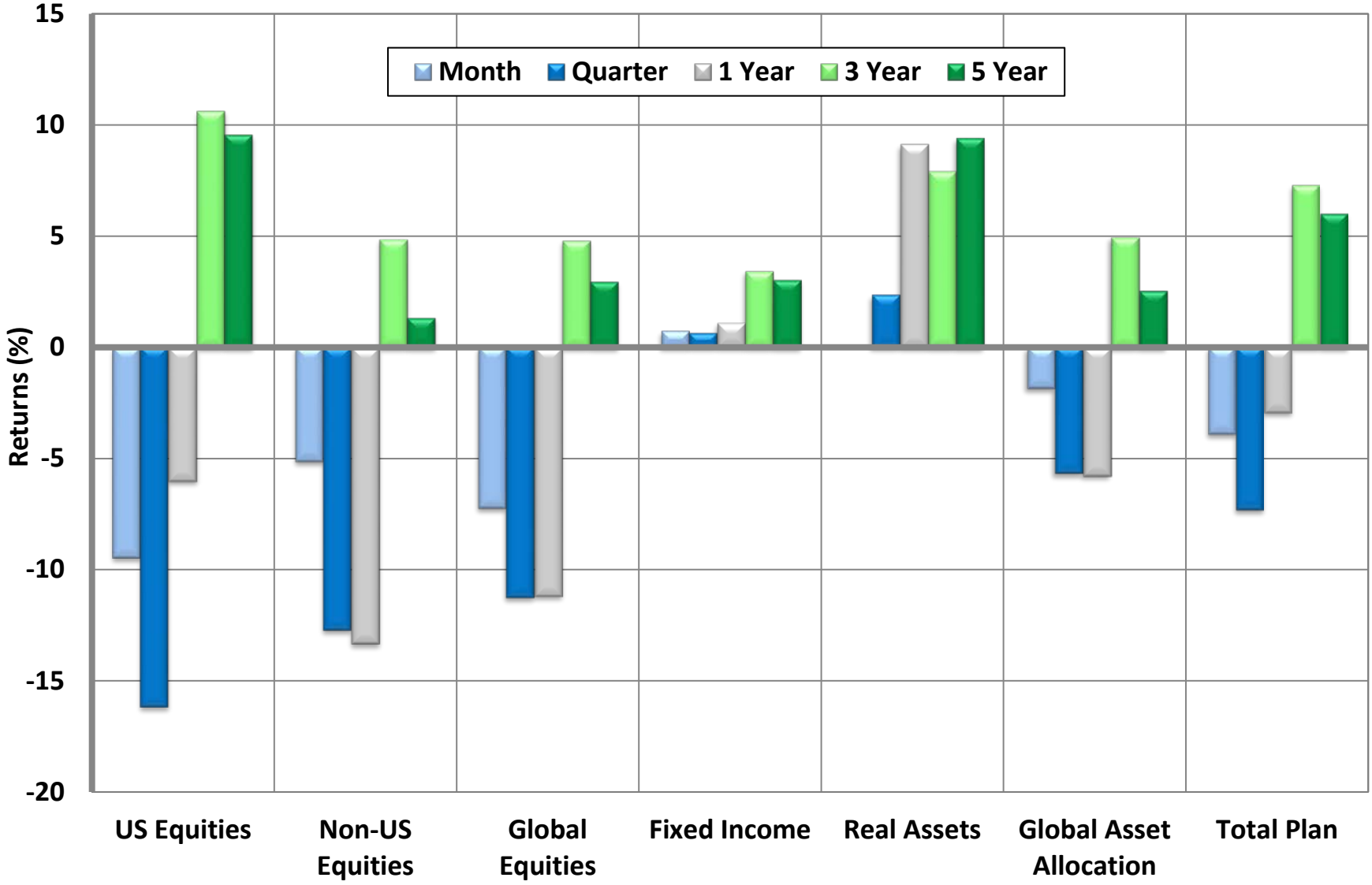
SCERA Investment Summary – Periods Ending 12/31/2018

December	Overall return of -3.9% / 3 basis points over the Plan Target Policy Index US Equity (R3000) -9.3% Non-US Equity (MSCI EAFE -4.9%, MSCI EMG MKTS -2.7%) Real Estate (NCREIF ODCE) N/A BB Aggregate index +1.8%
Quarter	Overall return of -7.3% / 18 basis points over the Plan Target Policy Index US Equity (R3000) -14.3% Non-US Equity (MSCI EAFE -12.5%, MSCI EMG MKTS -7.5%) Real Estate (NCREIF ODCE) +2.1% BB Aggregate index +1.6% Most favorable performance vs. benchmark in basis points (IFM +533, Hexavest +410, GMO +242, Systematic +166, Reams +81, Guggenheim +66, PIMCO +48, Dodge & Cox +31) Most unfavorable performance vs. benchmark in basis points (Neuberger Berman -410, Jacobs Levy -274, Templeton -152, Arrowstreet -111, UBS Trumbull -67, JP Morgan SPF -26, UBS AgriVest -25)
1 Year	Overall return of -2.9% / 104 basis points over the Plan Target Policy Index US Equity (R3000) -5.2% Non-US Equity (MSCI EAFE -13.8%, MSCI EMG MKTS -14.6%) Real Estate (NCREIF ODCE) +8.7% BB Aggregate index 0.0% Most favorable performance vs. benchmark in basis points (IFM +1143, Arrowstreet +464, Dodge & Cox +312, DoubleLine +202, Jacobs Levy +179, Hexavest +166, Reams +144) Most unfavorable performance vs. benchmark in basis points (Neuberger Berman -716, Systematic -297, UBS Trumbull -104, UBS AgriVest -103)
3 Years	Overall return of +7.3% / 88 basis points over the Plan Target Policy Index US Equity (R3000) +9.0% Non-US Equity (MSCI EAFE +2.9%, MSCI EMG MKTS +9.3%) Real Estate (NCREIF ODCE) +8.8% BB Aggregate index +2.1%
5 Years	Overall return of +6.0% / 60 basis points over the Plan Target Policy Index US Equity (R3000) +7.9 Non-US Equity (MSCI EAFE +0.5%, MSCI EMG MKTS +1.7%) Real Estate (NCREIF ODCE) +10.7% BB Aggregate index +2.5%
10 Years	Overall return of +9.6% / 95 basis points over the Plan Target Policy Index
15 Years	Overall return of +6.9% / 50 basis points over the Plan Target Policy Index
20 Years	Overall return of +6.0% / 55 basis points over the Plan Target Policy Index
25 Years	Overall return of +7.6% / 37 basis points over the Plan Target Policy Index

Notes: 1) Stoplight colors indicate performance relative to the current assumed ROR at the Plan level and relative to Aon's long-term return expectations at the asset class level.
2) All returns are gross-of-fees unless otherwise indicated.

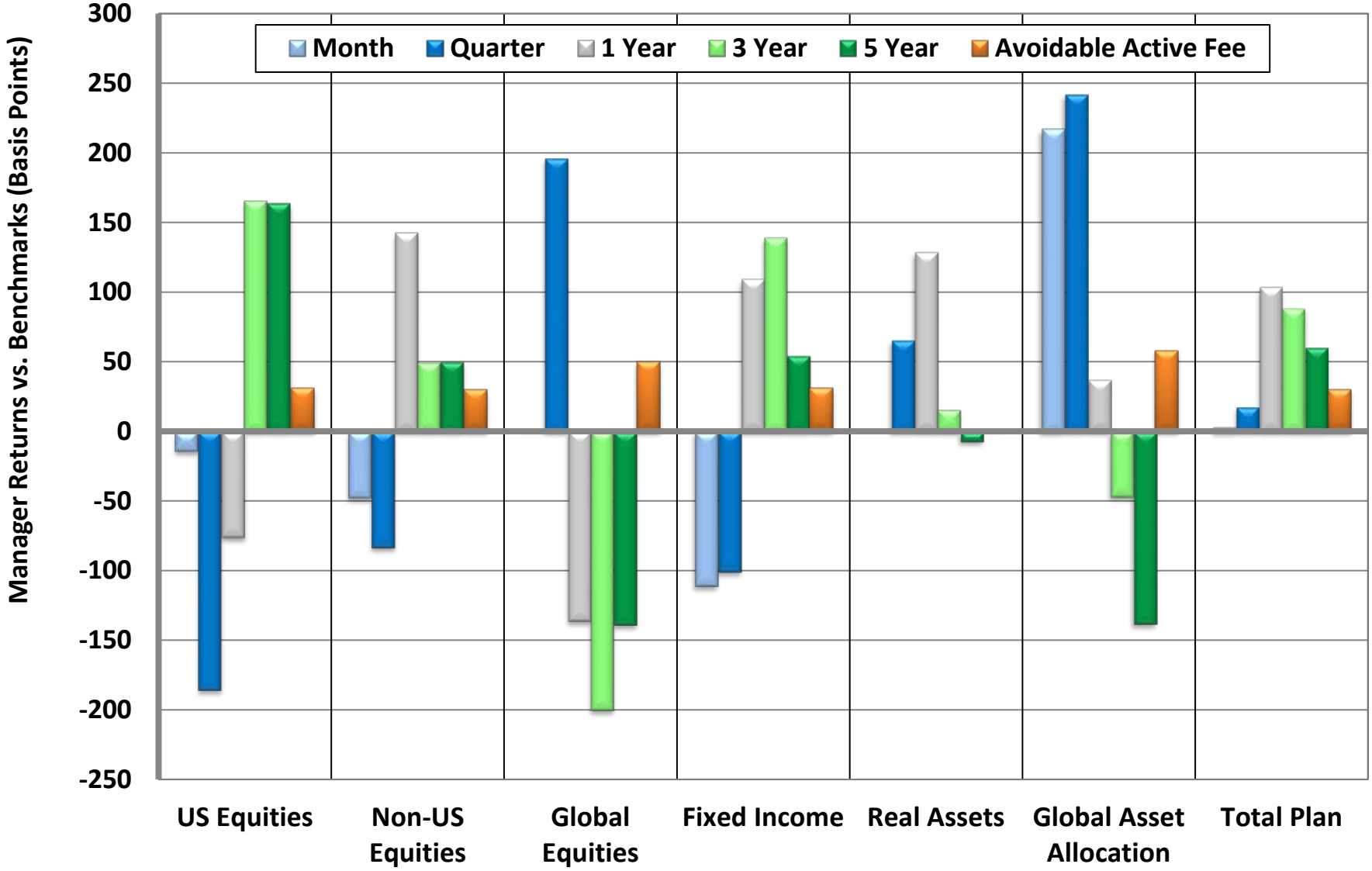
SCERA Investment Returns by Asset Class

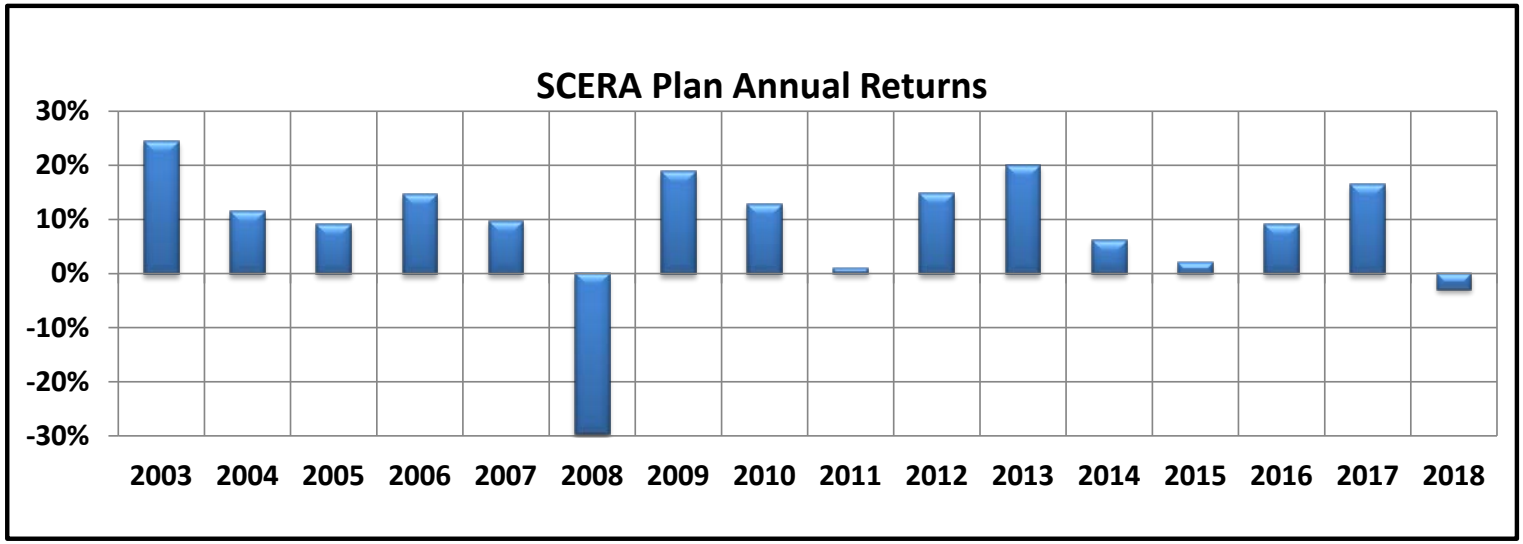
Periods Ending December 31, 2018

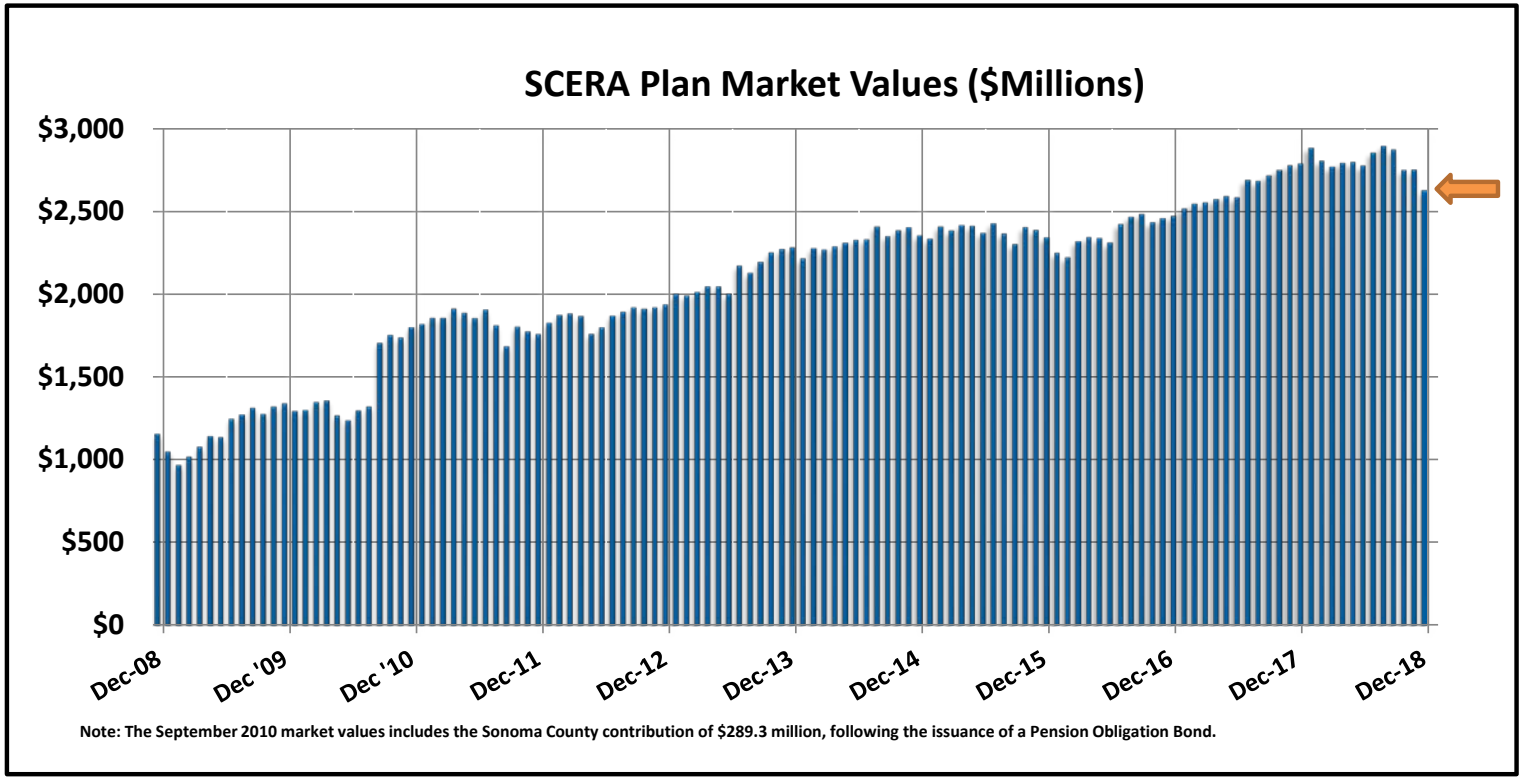


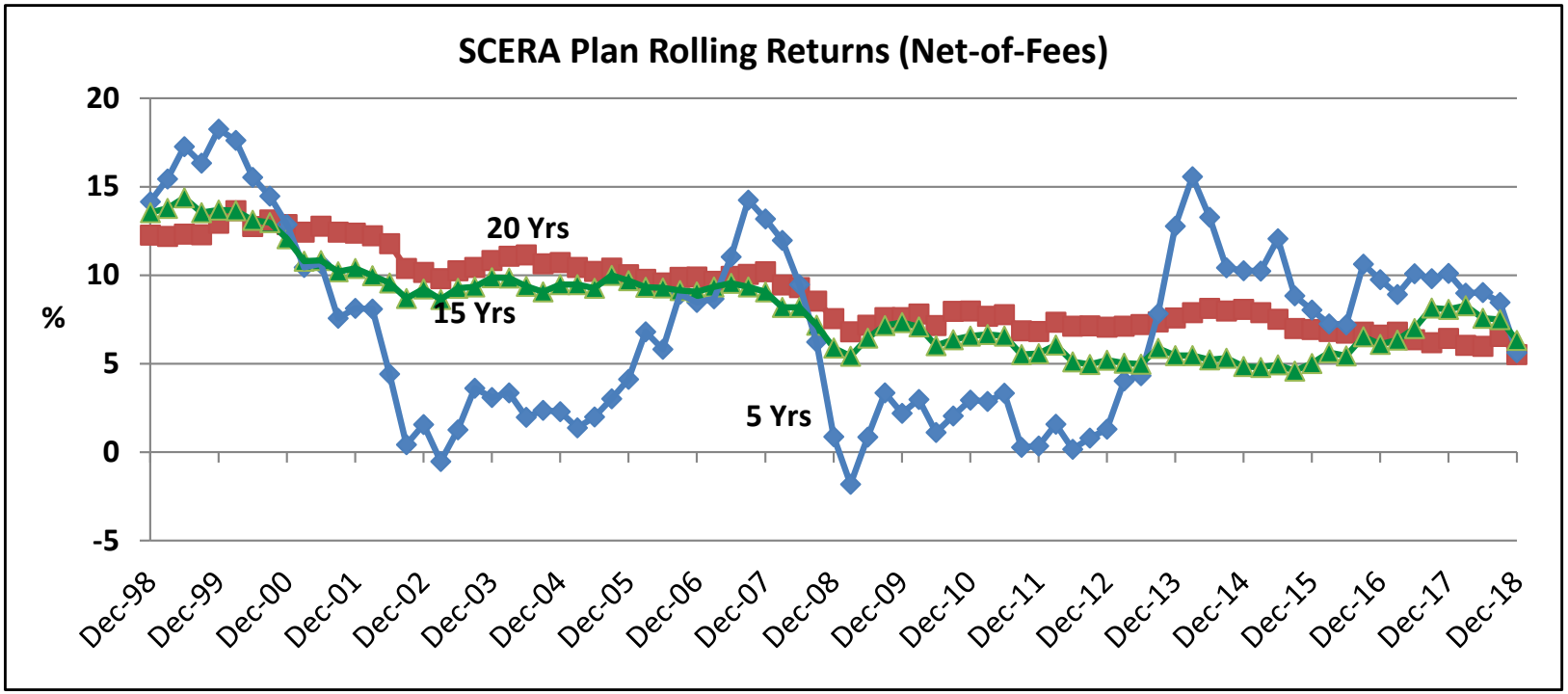
SCERA Asset Class Returns vs. Benchmarks

Periods Ending December 31, 2018

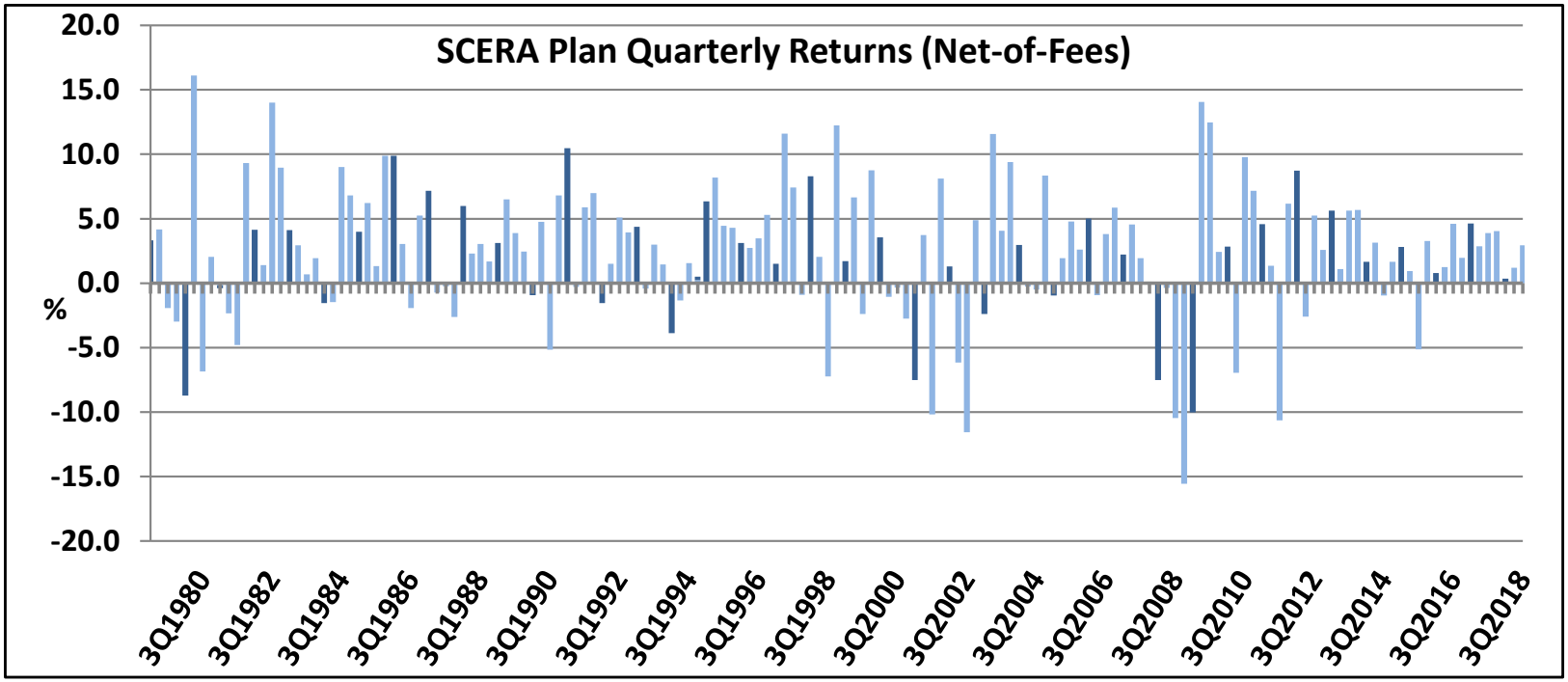



SCERA Plan Annual Returns
30%
20%
10%
0%
-10%
-20%
-30%
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


SCERA Plan Market Values ($Millions)
$3,000
$2,500
$2,000
$1,500
$1,000
$500
$0
Dec-08
Dec '09
Dec '10
Dec-11
Dec-12
Dec-13
Dec-14
Dec-15
Dec-16
Dec-17
Dec-18
Note: The September 2010 market values includes the Sonoma County contribution of $289.3 million, following the issuance of a Pension Obligation Bond.



	Last Value
5 Yrs	5.6%
15 Yrs	6.3%
20 Yrs	5.5%



	Last Value
4Q2018	-7.4%

Source: Aon Hewitt

Sonoma County Employees' Retirement Association
SUMMARY OF PERFORMANCE
RATES OF RETURN (GROSS-OF-FEES)
Periods Ending December 31, 2018
(All $ in thousands)

		Market Value	Month	QTR	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	ITD	Inception Date
U.S. EQUITY	**TOTAL US EQUITY**	**497,012**	**-9.45**	**-16.16**	**-6.01**	**-6.01**	**10.62**	**9.55**	**15.23**	**9.11**	**7.48**	**12.56**	**6/1/1982**
	BENCHMARK (RUSSELL 3000)		-9.31	-14.30	-5.24	-5.24	8.97	7.91	13.18	7.89	5.96	11.67	
	JACOBS LEVY 130/30	**189,429**	**-9.04**	**-17.05**	**-3.45**	**-3.45**	**11.85**	**12.81**	**17.16**			**10.07**	**3/1/2007**
	RUSSELL 3000		-9.31	-14.30	-5.24	-5.24	8.97	7.91	13.18			7.16	
	SSGA RUSSELL 1000 INDEX FUND	**194,877**	**-9.09**	**-13.81**								**-13.81**	**10/1/2018**
	RUSSELL 1000		-9.11	-13.82								-13.82	
	SYSTEMATIC	**112,706**	**-10.73**	**-18.54**	**-13.98**	**-13.98**	**9.85**	**7.59**	**15.21**	**9.68**		**11.75**	**1/1/2000**
	[1] *RUSSELL 2000 BLENDED*		-11.88	-20.20	-11.01	-11.01	10.36	5.32	11.31	7.50		9.24	
NON-U.S. EQUITY	**TOTAL NON-US EQUITY**	**514,214**	**-5.13**	**-12.71**	**-13.33**	**-13.33**	**4.88**	**1.35**	**6.82**	**5.32**		**5.73**	**4/1/2001**
	BENCHMARK (BLEND)		-4.65	-11.88	-14.76	-14.76	4.39	0.85	6.71	4.80		4.39	
	ARROWSTREET 130/30	**178,244**	**-4.56**	**-12.99**	**-10.12**	**-10.12**	**8.01**	**3.88**				**6.18**	**2/1/2011**
	[2] *MSCI INT'L EQUITY BLENDED II*		-4.65	-11.88	-14.76	-14.76	4.39	0.85				2.35	
	TEMPLETON	**155,260**	**-6.34**	**-13.40**	**-15.24**	**-15.24**	**1.88**	**-0.94**	**6.10**			**4.09**	**4/1/2005**
	[3] *MSCI INT'L EQUITY BLENDED I*		-4.65	-11.88	-14.76	-14.76	4.39	0.85	6.71			3.86	
	SSGA ACWI EX-US IMI INDEX FUND	**180,710**	**-4.64**	**-11.84**	**-14.53**	**-14.53**	**4.67**	**1.11**				**2.83**	**6/1/2013**
	MSCI ACWI EX-US IMI (NET)		-4.65	-11.88	-14.76	-14.76	4.39	0.85				2.57	
GLOBAL EQUITY	**TOTAL GLOBAL EQUITY**	**357,104**	**-7.22**	**-11.25**	**-11.18**	**-11.18**	**4.82**	**2.97**	**8.67**			**5.80**	**4/1/2005**
	BENCHMARK (BLEND)		-7.21	-13.21	-9.81	-9.81	6.82	4.36	9.57			5.83	
	HEXAVEST	**159,022**	**-5.29**	**-9.11**	**-8.15**	**-8.15**	**6.26**					**4.51**	**4/1/2014**
	[4] *MSCI Global Equity Blended I*		-7.21	-13.21	-9.81	-9.81	6.82					4.31	
	DODGE & COX	**198,082**	**-8.70**	**-12.90**	**-6.69**	**-6.69**	**10.53**	**7.61**	**13.85**	**8.38**	**9.60**	**9.17**	**8/1/1997**
	[5] *MSCI Global Equity Blended II*		-7.21	-13.21	-9.81	-9.81	6.35	5.59	10.99	6.92	6.07	6.70	
GAA	**GMO, GLOBAL ASSET ALLOCATION**	**127,042**	**-1.86**	**-5.70**	**-5.76**	**-5.76**	**4.97**	**2.57**	**7.35**			**5.70**	**4/1/2005**
	[6] *BENCHMARK (COMPOSITE)*		-4.03	-8.11	-6.13	-6.13	5.44	3.96	8.58			5.13	

[1] Russell 2000 Value Inception to 12/31/2016 ; Russell 2000 1/1/2017 to Present

[2] MSCI AC World ex US (Net) 2/1/2011 to 03/31/2011 ; MSCI AC World ex US IMI (Net) 4/1/2011 to Present

[3] MSCI EAFE (Net) 5/1/2001 to 9/30/2007 ; MSCI AC World ex US (Net) 10/1/2007 to 1/31/2013 ; MSCI ACWI ex US IMI (Net) 2/1/2013 to Present

[4] MSCI AC World (Net) 5/1/2008 to 6/30/2013 ; MSCI ACWI IMI (Net) 7/1/2013 - 12/31/2015 ; MSCI ACWI IMI (Net) with USA Gross 1/1/2016 to Present

[5] Russell 1000 Value to 9/30/2018; MSCI ACWI IMI (Net) with USA Gross 1/10/2018 to Present

[6] MSCI AC World (Net) 4/1/2005 to 03/31/2011 ; MSCI AC World IMI (Net) 4/1/2011 to 12/31/2012 ; Composite 65% MSCI ACWI IMI (Net) & 35% BB US Aggregate Bond Index 01/01/2013 to Present

PERFORMANCE SUMMARY (GROSS-OF-FEES)

Periods Ending December 31, 2018

		Market Value	Month	QTR	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs	15 Yrs	20 Yrs	ITD	Inception Date
FIXED INCOME	**TOTAL FIXED INCOME**	**491,079**	**0.73**	**0.62**	**1.10**	**1.10**	**3.44**	**3.06**	**6.95**	**5.10**	**5.31**	**7.02**	**9/1/1986**
	BENCHMARK (BB US AGGREGATE)		1.84	1.64	0.01	0.01	2.06	2.52	3.48	3.87	4.55	6.05	
	REAMS CORE PLUS	**121,937**	**1.92**	**2.45**	**1.45**	**1.45**	**3.41**	**2.93**	**7.64**	**5.52**		**5.62**	**7/1/2001**
	BB US AGGREGATE		1.84	1.64	0.01	0.01	2.06	2.52	3.48	3.87		4.39	
	DOUBLELINE CORE PLUS	**121,297**	**1.22**	**1.65**	**2.03**	**2.03**	**3.25**					**3.28**	**7/1/2014**
	BB US AGGREGATE		1.84	1.64	0.01	0.01	2.06					1.93	
	BB US MORTGAGE BACKED SECURITIES INDEX		1.81	2.08	0.99	0.99	1.71					1.94	
	PIMCO CORE PLUS	**96,173**	**2.16**	**2.12**	**0.89**	**0.89**	**3.02**	**2.98**				**3.50**	**4/1/2011**
	BB US AGGREGATE		1.84	1.64	0.01	0.01	2.06	2.52				2.83	
	GUGGENHEIM BANK LOANS	**78,130**	**-2.02**	**-2.42**	**1.41**	**1.41**	**5.08**	**3.86**				**3.82**	**10/1/2013**
	CREDIT SUISSE LEV LOAN INDEX		-2.29	-3.08	1.14	1.14	5.03	3.33				3.52	
	NEUBERGER BERMAN UNCONSTRAINED	**73,542**	**-0.86**	**-2.51**	**-1.00**	**-1.00**	**2.63**					**1.67**	**7/1/2015**
	LIBOR+4%/Year		0.54	1.59	6.16	6.16	5.29					5.14	
REAL ASSETS*	**TOTAL REAL ASSETS**	**483,609**		**2.35**	**9.12**	**9.12**	**7.93**	**9.39**	**2.81**	**5.68**		**5.75**	**1/1/2003**
	BENCHMARK (COMPOSITE)			1.70	7.84	7.84	7.77	9.47	4.98	7.73		7.78	
	UBS TRUMBULL PROPERTY FUND	**136,356**		**1.42**	**7.64**	**7.64**	**7.28**	**9.11**	**5.68**	**8.34**		**8.25**	**1/1/2003**
	NCREIF ODCE 1 MONTH LAGGED			2.09	8.68	8.68	8.80	10.72	5.58	8.14		8.17	
	JPMORGAN STRAT. PROPERTY FUND	**134,630**		**1.83**	**8.01**	**8.01**	**8.38**	**10.33**				**11.77**	**1/1/2011**
	NCREIF ODCE 1 MONTH LAGGED			2.09	8.68	8.68	8.80	10.72				11.57	
	IFM GLOBAL INFRASTRUCTURE FUND	**91,570**		**6.51**	**18.71**	**18.71**						**16.41**	**9/1/2017**
	CPI+5%/Year			1.18	7.28	7.28						7.31	
	UBS AGRIVEST FARMLAND FUND	**121,053**		**0.96**	**5.43**	**5.43**	**6.03**	**6.72**				**9.17**	**11/1/2010**
	CORE FARMLAND INDEX 1 MO. LAG			1.21	6.46	6.46	5.67	6.94				9.87	
	NCREIF FARMLAND INDEX 1 MO. LAG			1.29	6.82	6.82	7.17	9.89				12.34	

* Real Assets are reported with a one month lag. Real Estate returns are quarterly, infratsructure is monthly.

STRATEGIC	**PLAN LEVEL CASH**	**66,154**	**0.19**	**0.54**	**1.76**	**1.76**	**0.94**	**0.59**	**0.53**			**1.30**	**5/1/2006**
	91 DAY T-BILL		0.18	0.56	1.87	1.87	1.02	0.63	0.37			1.11	
	TOTAL STRATEGIC PORT EXCL OVERLAYS	**2,536,213**	**-4.00**	**-7.54**	**-3.28**	**-3.28**	**7.18**	**5.92**	**9.54**	**6.81**	**5.96**	**9.30**	**3/1/1979**
	[7] **PARAMETRIC CASH OVERLAY G/L IMPACT**	**18,141**	**-0.26**	**-0.47**	**-0.31**	**-0.31**	**0.12**					**0.14**	**12/1/2013**
	PARAMETRIC EIRP OVERLAY G/L IMPACT	**14,011**	**-0.02**	**-0.04**	**-0.03**	**-0.03**						**0.00**	**3/1/2017**
	[8] ***PARAMETRIC EIRP RETURN ON NOTIONAL***		***-0.54***	***-1.33***	***-1.01***	***-1.01***						***0.21***	***3/1/2017***
	TOTAL STRATEGIC PORTFOLIO	**2,568,366**	**-3.99**	**-7.53**	**-3.29**	**-3.29**	**7.24**	**5.98**	**9.59**	**6.84**	**5.98**	**9.31**	**3/1/1979**
	TOTAL FUND TARGET POLICY		**-3.93**	**-7.50**	**-3.96**	**-3.96**	**6.43**	**5.42**	**8.66**	**6.36**	**5.44**	**9.76**	
Opp.	**DAVIDSON KEMPNER FUNDS**	**58,365**	**0.11**	**2.03**	**13.95**	**13.95**				***Staff calculated IRR***		***9.94***	**7/1/2016**
	[9] BENCHMARK		1.02	-3.72	**1.03**	**1.03**							
TOTAL	**TOTAL PLAN**	**2,626,730**	**-3.90**	**-7.32**	**-2.92**	**-2.92**	**7.31**	**6.02**	**9.61**	**6.86**	**5.99**	**9.31**	**3/1/1979**
	TOTAL PLAN TARGET POLICY		**-3.93**	**-7.50**	**-3.96**	**-3.96**	**6.43**	**5.42**	**8.66**	**6.36**	**5.44**	**9.76**	

[7] Cash Overlay Impact includes the gains/losses from the GBP hedge for the investment in Davidson Kempner SOF III-A.

[8] Returns are calculated on the notional exposure of the options which began at $25 million on March 1, 2017 and escalated to $75 million as of May 1, 2017. Returns expected to be in the range of 2% to 3% pa.

[9] Opportunistic and its benchmark (which is the Total Plan Policy) return are lagged one month.

Source: State Street Analytics

Sonoma County Employees' Retirement Association
SUMMARY OF PERFORMANCE
INTERNAL RATES OF RETURN (NET-OF- BASE MANAGEMENT FEES)
Periods Ending **30-Nov-18**
Davidson Kempner Special Opportunities Funds

SOF Fund III	USD (000's)
Total Capital Commitment	75,000
Capital Contributions ITD	49,168
Remaining Commitment	25,832
Capital Distributions ITD	21,274
Net Profit/Loss ITD	10,912
Ending Appraised Value	38,807
Inception to Date IRR	11.71%

SOF Fund III-A	GBP (000's)
Total Capital Commitment	19,090
Capital Contributions ITD	4,582
Remaining Commitment	NA
Capital Distributions ITD	3,449
Net Profit/Loss ITD	-113
Ending Appraised Value	1,020
Inception to Date IRR	-1.06%

SOF Fund IV	USD (000's)
Total Capital Commitment	50,000
Capital Contributions ITD	25,000
Remaining Commitment	32,500
Capital Distributions ITD	7,500
Net Profit/Loss ITD	762
Ending Appraised Value	18,262
Inception to Date IRR	9.75%

Staff estimates for return incl. hedge	
Inception to Date IRR	-0.51%

***Management Fee: 0.75%**
Performance Fee Hurdle: 8.00%
Performance Fee: 10.00%

(*) The management fee for SOF IV is reduced to 0.5% during the one year extension to the investment period.

Source: Citco Fund Administration

Sonoma County Employees' Retirement Association
ASSET ALLOCATION vs. POLICY RANGES
Period Ending: December 31, 2018
(All $ in thousands)

	Market Values	% of Strategic Assets	Trigger for Physical Rebalance	Policy Targets	Trigger for Physical Rebalance	Derivatives Overlay	Economic Exposure	% of Total Plan assets	Trigger for Derivative Rebalance	Policy Targets	Trigger for Derivative Rebalance
Core Plus Fixed Income	**339,407**	**13.7%**	**11%**	**13%**	**15%**	**(11,207)**					
Bank Loans	78,130	3.2%		3.0%							
Unconstrained Bonds	73,542	3.0%		3.0%							
Total Alternative Fixed Income	**151,672**	**6.1%**	**4%**	**6.0%**	**8%**						
Total Fixed Income	**491,079**	**19.9%**	**17%**	**19%**	**21%**	**(11,207)**	**479,872**	**18.7%**	**18%**	**19**	**20%**
Core Real Estate	270,986	11.0%		10%							
Farmland	121,053	4.9%		5%							
Infrastructure	91,570	3.7%		3%							
Total Real Assets	**483,609**	**19.6%**	**15%**	**18%**	**21%**		**483,609**	**18.8%**		**18%**	
US Large Cap Broad	189,429	7.7%		8%		**11,749**	**201,179**	**7.8%**	**7.0%**	**8.0%**	**9.0%**
US Large Cap	194,877	7.9%		8.5%		**20,825**	**215,702**	**8.4%**	**7.5%**	**8.5%**	**9.5%**
US Small Cap	112,706	4.6%		5%		**14,430**	**127,137**	**5.0%**	**4.5%**	**5.0%**	**5.5%**
Total US Equity	**497,012**	**20.1%**	**19.5**	**21.5**	**23.5%**	**47,005**	**544,018**	**21.2%**		**21.5%**	
Non- US Equity	**514,214**	**20.8%**	**19.5**	**21.5**	**23.5%**	**30,612**	**544,827**	**21.2%**	**20.5%**	**21.5%**	**22.5%**
Global Equity	**357,104**	**14.5%**	**13%**	**15%**	**17%**	**24,543**	**381,647**	**14.9%**	**14%**	**15%**	**16%**
Total Equities	**1,368,330**	**55.4%**	**55%**	**58%**	**61%**	**102,161**	**1,470,491**	**57.3%**	**56%**	**58%**	**60%**
Global Asset Allocation	**127,042**	**5.1%**	**3.0%**	**5.0%**	**7%**	**6,969**	**134,011**	**5.2%**	**4.5%**	**5.0%**	**5.5%**
Total Strategic Port. ex Cash	**2,470,060**	**100%**									
Cash (Plan + Overlays)	**98,306**					**(97,924)**	**382**	**0.0%**			
Opportunistic	**58,365**						**58,365**	excluded from Cash Overlay but SOF III-A GBP exposure hedged			
Total Plan Assets	**2,626,730**						**2,626,730**	**100%**			

Non-US as % of Total Equities - Physicals	**49%**	***40.0%***
Non-US as % of Total Equities - Economic Exposure	**49%**	

Note 1) The total market exposure gained/reduced in addition to the managers by using derivatives within the Parametric overlay account is $97.9 million.
2) The total physical cash (including manager cash) being overlaid by Parametric is $114.6 million.
3) The Total Cash contains $10 million of "On-Call" Cash set aside for the Davidson Kempner SOF III & SOF IV
4) The Total Cash contains $32.2 million for the margin accounts supporting the Parametric Cash and EIRP overlays.

The percentage that the non-US market comprises of the total MSCI All Country World IMI Index: 45.59%