#### **VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION**

#### **BOARD OF RETIREMENT**

#### **BUSINESS MEETING**

#### **November 21, 2016**

#### **AGENDA**

PLACE: Ventura County Employees' Retirement Association Second Floor Boardroom 1190 South Victoria Avenue

Ventura, CA 93003

#### **TIME:** 9:00 a.m.

Members of the public may comment on any item under the Board's jurisdiction by filling out a speaker form and presenting it to the Clerk. Unless otherwise directed by the Chair, comments related to items on the agenda will be heard when the Board considers that item. Comments related to items not on the agenda will generally be heard at the time designated for Public Comment.

#### ITEM:

I.	CAL	L TO ORDER	Master Page No.						
II.	<u>APP</u>	APPROVAL OF AGENDA							
III.	CON	CONSENT AGENDA							
	A.	Approve Regular and Deferred Retirements and Survivors Continuances for the Month of October 2016	4						
	B.	Receive and File Report of Checks Disbursed in October 2016	5 – 8						
	C.	Receive and File Budget Summary for FY 2016-17 Month Endir October 31, 2016	g 9						
	D.	Receive and File Statement of Fiduciary Net Position, Stateme of Changes in Fiduciary Net Position, Schedule of Investmen and Cash Equivalents, and Schedule of Investment Manageme Fees for the Period Ending September 30, 2016	ts						

**Board Calendar Options for 2017** 

1. Staff Letter

2. Calendar Options

Α.

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BU	SINES	SS MEETING	PAGE 3
VII.	NE\	<u>W BUSINESS</u> (continued)	
	B.	Request for Additional Statement of Work for Linea	
		1. Staff Letter	267
		2. Proposed Statement of Work	268 – 269
	C.	Request to Delete Two (2) Program Administrator II Allocations and add Two (2) Senior Program Administrator Allocations	
		1. Staff Letter	270 – 271
		Memorandum from Chief Operations Officer to Retirement Administrator	272 – 273
	D.	Request for Trustee Bianchi to Attend ILPA Class	
		1. Staff Letter	274 – 278
	E.	Request for Chief Investment Officer, Dan Gallagher to Attend ILPA Class	
		1. Staff Letter	279 – 281
VIII.	<u>INF</u>	ORMATIONAL	
IX.	<u>PUI</u>	BLIC COMMENT	

October 17, 2016

- X. <u>STAFF COMMENT</u>
- XI. **BOARD MEMBER COMMENT**

BOARD OF RETIREMENT

XII. **ADJOURNMENT**  **AGENDA** 

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION REPORT OF REGULAR AND DEFERRED RETIREMENTS AND SURVIVORS CONTINUANCES

				October 2016			
FIRST NAME	LAST NAME	G/S	DATE OF MEMBERSHIP	TOTAL SERVICE	OTHER SERVICE	DEPARTMENT	EFFECTIVE DATE
DECLU AD DET	UDENENTO						
REGULAR RET	IREMENIS:						
Renee	Aguilar	G	11/2/1997	17.00		Public Defender	09/26/16
Rose C.	Alonzo-Koellhoffer	G	1/17/1982	31.10	B=0.1154	Information Services Department	09/24/16
Yvonne L.	Becerra	G	6/3/2015	5.21		Library Services Agency	08/27/16
Michael S.	Bell	S	10/13/1991	24.62		Sheriff's Department	09/07/16
Lisa M.	Brown	G	3/5/1989	26.87		General Services Agency	09/08/16
James S.	Bucy	G	10/30/2006	5.93		General Services Agency (deferred)	10/22/16
Joseph P.	Clark	G	6/29/1997	19.93		Resource Management Agency	09/23/16
Eduardo J.	Daduya	G	9/10/2006	8.99		Sheriff's Department (deferred)	10/08/16
Marla S.	Gay	G	10/22/1995	20.87		Human Services Agency	09/30/16
Carmen M.	Gonzalez	G	11/20/1983	28.83		Health Care Agency	08/09/16
Linda L.	Hagan	G	4/23/2001	15.46		Human Services Agency	09/30/16
Ronald C.	Herndon	G	8/17/2003	17.08	D=3.99620	Sheriff's Department	09/11/16
Andrea J.	Ingamells	G	1/13/1992	23.90 *	C=10.99858	Human Services Agency	09/30/16
Fredrik	Johnson	G	5/26/1991	16.81	A=16.0789 C=24.4430	Public Works Agency (deferred)	07/02/16
Eileen	Katz	G	10/6/2003	12.70		Health Care Agency	09/20/16
Deanna J.	King	G	3/12/2006	9.15		Fire Protection Distirct (deferred)	10/06/16
Sheryl	Low	G	2/17/1991	8.44 *	C=17.184	Health Care Agency (deferred)	
John	McLaughlin	G	6/16/1985	9.24 *	C=3.6211	Resource Management Agency (deferred)	09/01/16
Robert G.	Mireles	G	7/25/1977	39.13		General Services Agency	09/17/16
Raymond R.	Padaoan	S	8/14/1989	27.31	B=0.2538	Fire Protection Distirct	09/04/16
Catherine J.	Pierce	G	1/31/2014	2.54		CEO	09/01/16
						(Non-Member Spouse, Deferred)	
Kevin M.	Quinn	G	6/24/1979	23.33 *	C=12.4070	Resource Management Agency (deferred)	08/02/16
Mary E.	Reed	G	12/28/1986	29.81	B=0.2256	Information Services Department	09/24/16
Carol A.	Stamey	G	11/11/2001	19.96	D=5.07560	Area Agency on Aging	09/25/16
Corby D.	Stinnett	G	11/9/2005	10.45		Public Works Agency	09/24/16
Denise L	Susi	G	10/19/1986	30.62	B=0.69730	Resource Management Agency	09/11/16
Jan L.	West-Frias	G	3/21/1999	16.97	B=0.10250	Health Care Agency	09/20/16
Darrell E.	Wise	S	11/4/1984	31.12		Probation Agency	09/25/16
DEFERRED RE	TIREMENTS:						
Zoe	Carlson	G	07/11/2010	6.24		Public Works Agency	10/01/2016
Michael	Farr	G	09/18/2011	5.04		Public Defender	10/01/2016
Ryan Shari	Hamlin Holloway	S G	09/22/2007 07/09/2001	9.03 14.61	C=4.2933	District Attorney Resource Management Agency	10/08/2016 10/08/2016
Frank	Kiesler	G	11/12/2007	5.74	∪ <del>-4</del> .∠333	Ventura Regional Sanitation District	04/29/2016
Elizabeth	Kimbrough	G	11/07/2004	10.85		Health Care Agency	10/01/2016
Lisabeth	Kozin	Ğ	01/11/2009	5.23		Ventura Superior Court	10/07/2016
Teresa	Mc Grath	G	04/10/2005	5.52		Health Care Agency	10/01/2016
Jamie	Penfield	G	03/22/2009	7.02		District Attorney	10/07/2016
Annie	Shim	G	07/24/2011	5.14		Resource Management Agency	09/10/2016
SURVIVORS' C	ONTINUANCES:						

#### SURVIVORS' CONTINUANCES:

Nestor C. De Jesus Andrew N. Stephenson Billie J. Van Horn

\* = Member Establishing Reciprocity

A = Previous Membership

B = Other County Service (eg Extra Help)

C = Reciprocal Service

D = Public Service

Time: 103745 User:

### **Ventura County Retirement Assn**

Check Register - Standard Period: 04-17 As of: 11/2/2016

1 of 4 Page: Report: Company: VCERA

03630.rpt

Check Nbr	Check Type	Check Date	Vendor ID Vendor Name	Perio To Post (	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
Company:	VCEF	RA								
Acct / Sub: 026683	1002 CK	10/5/2016	00 3035112 ELEANOR HATTEN	04-17	021534	VO	PENSION PAYMENT	10/5/2016	0.00	1,724.48
026684	CK	10/5/2016	101820 RICHARD BURKE	04-17	021535	VO	TRAVEL REIMB	10/5/2016	0.00	71.75
026685	CK	10/5/2016	990002 ARTHUR E. GOULET	04-17	021536	VO	TRAVEL REIMB	10/5/2016	0.00	69.60
026686	CK	10/5/2016	COUNTY COUNTY COUNSEL	04-17	021537	VO	LEGAL FEES	10/5/2016	0.00	21,607.50
026687	CK	10/5/2016	FEDEX FEDEX	04-17	021538	VO	ADMIN EXP	10/5/2016	0.00	93.73
026688	СК	10/5/2016	HANSONBRID HANSON BRIDGETT LLP	04-17	021539	VO	LEGAL FEES	10/5/2016	0.00	452.62
026689	СК	10/5/2016	ILPA INSTITUTIONAL LIMITED PAR	04-17 R	021540	VO	ADMIN EXP	10/5/2016	0.00	3,000.00
026690	CK	10/5/2016	NCPERS NCPERS	04-17	021541	VO	ADMIN EXP	10/5/2016	0.00	550.00
026691	CK	10/5/2016	CORPORATE STAPLES ADVANTAGE	04-17	021542	VO	ADMIN EXP	10/5/2016	0.00	1,698.68
026692	СК	10/10/2016	990004 WILL HOAG	04-17	021543	VO	TRAVEL REIMB	10/10/2016	0.00	8,413.47
026693	СК	10/10/2016	990004 WILL HOAG	04-17	021544	VO	TRAVEL REIMB	10/10/2016	0.00	1,185.33
026694	CK	10/12/2016	102661 LORI NEMIROFF	04-17	021545	VO	TRAVEL REIMB	10/12/2016	0.00	241.91
026695	CK	10/12/2016	BARNEY A.B.U. COURT REPORTING, I	04-17	021546	VO	ADMIN EXP	10/12/2016	0.00	315.00

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Check Nbr		Check Date	Vendor ID Vendor Name	Period To Post Cl		Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
026696	СК	10/12/2016	MEGAPATH GLOBAL CAPACITY	04-17	(	021547	VO	IT/PAS	10/12/2016	0.00	603.63
026697	CK	10/12/2016	HARRIS HARRIS WATER CONDITION	04-17	(	021548	VO	ADMIN EXP	10/12/2016	0.00	144.50
026698	CK	10/12/2016	SEGAL SEGAL CONSULTING	04-17	(	021549	VO	ACTUARY FEES	10/12/2016	0.00	29,500.00
026699	CK	10/12/2016	CORPORATE STAPLES ADVANTAGE	04-17	(	021550	VO	ADMIN EXP	10/12/2016	0.00	193.06
026700	CK	10/12/2016	VOLT VOLT	04-17	(	021551	VO	ADMIN EXP	10/12/2016	0.00	2,705.65
026701	CK	10/19/2016	100748 CHRIS JOHNSTON	04-17	(	021552	VO	TRAVEL REIMB	10/19/2016	0.00	1,356.08
026702	CK	10/19/2016	124968 DAN GALLAGHER	04-17	(	021553	VO	TRAVEL REIMB	10/19/2016	0.00	9,177.20
026703	CK	10/19/2016	990002 ARTHUR E. GOULET	04-17	(	021554	VO	MILEAGE REIMB	10/19/2016	0.00	36.72
026704	CK	10/19/2016	BARNEY A.B.U. COURT REPORTING,	04-17 II	(	021555	VO	ADMIN EXP	10/19/2016	0.00	315.00
026705	CK	10/19/2016	ACCESS ACCESS INFORMATION MAI	04-17 N.	(	021556	VO	ADMIN EXP	10/19/2016	0.00	597.05
026706	CK	10/19/2016	BROWN BROWN ARMSTRONG	04-17	(	021557	VO	ADMIN EXP	10/19/2016	0.00	22,369.86
026707	СК	10/19/2016	HEXAVEST HEXAVEST INC	04-17	(	021558	VO	INVESTMENT FEES	10/19/2016	0.00	92,787.41
026708	СК	10/19/2016	INTERGRATE INTEGRATED FIRE & SAFET	04-17 Y	(	021559	VO	IT	10/19/2016	0.00	250.00

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Check Nbr	Check Type	Check Date	Vendor ID Vendor Name	Period To Post Closed	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
026709	CK	10/19/2016	LINEA LINEA SOLUTIONS	04-17	021560	VO	ADMIN/IT/PAS	10/19/2016	0.00	70,418.75
026710	СК	10/19/2016	SHRED-IT SHRED-IT USA	04-17	021561	VO	ADMIN EXP	10/19/2016	0.00	134.40
026711	СК	10/19/2016	TWC TIME WARNER CABLE	04-17	021562	VO	ΙΤ	10/19/2016	0.00	294.99
026712	СК	10/19/2016	WALTER BNY MELLON INV MGMNT C	04-17 A	021563	VO	INVESTMENT FEES	10/19/2016	0.00	217,394.69
026713	СК	10/19/2016	AT&T AT&T MOBILITY	04-17	021564	VO	IT	10/19/2016	0.00	340.18
026714	СК	10/21/2016	EDSI EXECUTIVE DATA SYSTEMS	04-17 S,	021565	VO	ΙΤ	10/21/2016	0.00	5,855.00
026715	СК	10/26/2016	990008 ROBERT BIANCHI	04-17	021566	VO	MILEAGE REIMB	10/26/2016	0.00	58.32
026716	СК	10/26/2016	BOFA BUSINESS CARD	04-17	021567	VO	ADMINT/IT/PAS	10/26/2016	0.00	2,161.42
026717	СК	10/26/2016	LOOMIS LOOMIS, SAYLES & CO., LP	04-17	021568	VO	INVESTMENT FEES	10/26/2016	0.00	119,326.83
026718	СК	10/26/2016	MF M.F. DAILY CORPORATION	04-17	021569	VO	ADMIN EXP	10/26/2016	0.00	16,935.44
026719	CK	10/26/2016	NEPC NEPC, LLC	04-17	021570	VO	INVESTMENT FEES	10/26/2016	0.00	72,500.00
026720	СК	10/26/2016	NOSSAMAN NOSSAMAN LLP	04-17	021571	VO	LEGAL FEES	10/26/2016	0.00	12,030.00
026721	СК	10/26/2016	REAMS REAMS ASSET MANAGEMEN	04-17 N	021572	VO	INVESTMENT FEE	10/26/2016	0.00	131,989.00
026722	СК	10/26/2016	TORTOISE TORTOISE CAPITAL ADVISO	04-17 F	021573	VO	INVESTMENT FEES	10/26/2016	0.00	185,776.54

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### **Ventura County Retirement Assn**

### **Check Register - Standard**

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Check Nbr	Check Type	Check Date	Vendor ID Vendor Name	Period To Post Closed	Ref Nbr	Doc Type	Invoice Number	Invoice Date	Discount Taken	Amount Paid
026723	СК	10/26/2016	VOLT VOLT	04-17	021574	VO	ADMIN EXP	10/26/2016	0.00	2,719.53
026724	СК	10/26/2016	ZIGMAN LOUIS M. ZIGMAN, ESQ	04-17	021575	VO	ADMIN EXP	10/26/2016	0.00	875.00
Check Count:		42						Acct Sub Total:		1,038,270.32
				Check Type		Count	Amount Paid			
				Regular		42	1,038,270.32			
				Hand		0	0.00			
				Electronic Payment		0	0.00			
				Void		0	0.00			
				Stub		0	0.00			
				Zero		0	0.00			
				Mask		0	0.00			
				Total:		42	1,038,270.32			
					Company	Disc Total	0.00	Company Total		1,038,270.32

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION BUDGET SUMMARY FISCAL YEAR 2016-2017 October 2016 - 33.33% of Fiscal Year Expended

EXPENDITURE DESCRIPTIONS	Adopted 2016/2017 Budget		Adjusted 2016/2017 Budget		<u>Oct-16</u>		Year to Date Expended		Available <u>Balance</u>	Percent Expended
Salaries & Benefits:										
Salaries	\$ 2,370,800.00		2,370,800.00	\$	167,958.63	\$	678,534.90	\$	1,692,265.10	28.62%
Extra-Help	192,400.00		192,400.00		11,462.68		43,540.02		148,859.98	22.63%
Overtime	3,000.00		3,000.00		0.00		0.00		3,000.00	0.00%
Supplemental Payments	74,400.00		74,400.00		4,484.40		19,850.08		54,549.92	26.68%
Vacation Redemption	131,300.00		131,300.00		78,366.00		135,583.67		(4,283.67)	103.26%
Retirement Contributions	432,100.00		432,100.00		27,211.52		119,100.26		312,999.74	27.56%
OASDI Contributions	141,800.00		141,800.00		8,132.05		37,657.83		104,142.17	26.56%
FICA-Medicare	37,800.00		37,800.00		3,592.51		11,917.36		25,882.64	31.53%
Retiree Health Benefit	4,000.00		4,000.00		794.15		3,176.60		823.40	79.42%
Group Health Insurance	194,300.00		194,300.00		13,662.00		55,667.47		138,632.53	28.65%
Life Insurance/Mgmt	1,100.00		1,100.00		79.58		324.32		775.68	29.48%
Unemployment Insurance	2,400.00		2,400.00		169.03		670.18		1,729.82	27.92%
Management Disability Insurance	18,400.00		18,400.00		1,170.36		4,763.56		13,636.44	25.89%
Worker' Compensation Insurance	19,900.00		19,900.00		1,809.86		6,189.63		13,710.37	31.10%
401K Plan Contribution	48,600.00		48,600.00		3,701.34		15,545.45		33,054.55	31.99%
Transfers In	135,500.00		135,500.00		5,404.71		17,472.13		118,027.87	12.89%
Transfers Out	(135,500.00		(135,500.00)		(5,404.71)		(17,472.13)		(118,027.87)	12.89%
	(100,000.00	,	(120,000.00)		(5, .5 1)		( : : , : · <u>2</u> : io)		( : : 0,0=1.01)	-2.0070
Total Salaries & Benefits	\$ 3,672,300.00	\$	3,672,300.00	\$	322,594.11	\$	1,132,521.33	\$	2,539,778.67	30.84%
Services & Supplies:										
Telecommunication Services - ISF	\$ 35,400.00	\$	35,400.00	\$	2,950.85	\$	10,988.78	\$	24,411.22	31.04%
General Insurance - ISF	13,100.00		13,100.00		0.00		0.00		13,100.00	0.00%
Office Equipment Maintenance	2,000.00		2,000.00		0.00		0.00		2,000.00	0.00%
Membership and Dues	14,700.00		14,700.00		3,000.00		7,320.00		7,380.00	49.80%
Education Allowance	8,000.00		8,000.00		0.00		2,000.00		6,000.00	25.00%
Cost Allocation Charges	89,500.00		89,500.00		0.00		0.00		89,500.00	0.00%
Printing Services - Not ISF	12,000.00		12,000.00		0.00		0.00		12,000.00	0.00%
Books & Publications	3,000.00		3,000.00		0.00		47.00		2,953.00	1.57%
Office Supplies	20,000.00		20,000.00		1,891.74		3,656.11		16,343.89	18.28%
Postage & Express	60,000.00		60,000.00		11,777.94		15,916.41		44,083.59	26.53%
Printing Charges - ISF	18,000.00		18,000.00		0.00		0.00		18,000.00	0.00%
Copy Machine Services - ISF	4,500.00		4,500.00		536.85		536.85		3,963.15	11.93%
Board Member Fees	13,300.00		13,300.00		700.00		3,600.00		9,700.00	27.07%
Professional Services	1,292,100.00		1,292,100.00		87,878.27		318,796.73		973,303.27	24.67%
Storage Charges	4,200.00		4,200.00		597.05		1,560.14		2,639.86	37.15%
Equipment	6,000.00		6,000.00		0.00		0.00		6,000.00	0.00%
Office Lease Payments	205,000.00		205,000.00		16,935.44		67,799.42		137,200.58	33.07%
	12,500.00		12,500.00		893.07		3,081.33		9,418.67	24.65%
Private Vehicle Mileage Conference, Seminar and Travel	138,400.00		12,500.00		22,546.24		36,247.33		102,152.67	24.65%
Furniture	15,000.00		15,000.00		0.00		0.00		15,000.00	0.00%
Facilities Charges	13,300.00		13,300.00		255.00		330.00		12,970.00	2.48%
Judgement & Damages	0.00		0.00		0.00		0.00		0.00	#DIV/0!
Transfers In	20,000.00		20,000.00		571.14		1,846.35		18,153.65	9.23%
Transfers Out	(20,000.00	)	(20,000.00)		(571.14)		(1,846.35)		(18,153.65)	9.23%
Total Services & Supplies	\$ 1,980,000.00	\$	1,980,000.00	\$	149,962.45	\$	471,880.10	\$	1,508,119.90	23.83%
Total Sal, Ben, Serv & Supp	\$ 5,652,300.00	\$	5,652,300.00	\$	472,556.56	\$	1,604,401.43	\$	4,047,898.57	28.38%
Technology:										
Computer Hardware	\$ 45,000.00	•	45,000.00	Φ.	153.18		1,426.83	Ф	43,573.17	3.17%
Computer Software	216,000.00		216,000.00	Ψ	6,528.85		31,888.66	φ	184,111.34	14.76%
	449,000.00		449,000.00				91,809.30		357,190.70	20.45%
Systems & Application Support Pension Administration System	353,000.00		353,000.00		18,342.22 53,050.00		195,608.40		157,391.60	55.41%
Total Technology	\$ 1,063,000.00		1,063,000.00	¢	78,074.25	\$	320,733.19	\$	742,266.81	30.17%
			, ,			·	320,733.19	·		
Contingency	\$ 786,000.00	\$	786,000.00	\$	-	\$	-	\$	786,000.00	0.00%
Total Current Year	\$ 7,501,300.00	\$	7,501,300.00	\$	550,630.81	\$	1,925,134.62	\$	5,576,165.38	25.66%

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION STATEMENT OF FIDUCIARY NET POSITION SEPTEMBER 30, 2016 (UNAUDITED)

#### **ASSETS**

CASH & CASH EQUIVALENTS	\$283,739,630
RECEIVABLES	
ACCRUED INTEREST AND DIVIDENDS SECURITY SALES MISCELLANEOUS TOTAL RECEIVABLES	2,878,354 157,976,811 11,304 160,866,469
INVESTMENTS AT FAIR VALUE	
DOMESTIC EQUITY SECURITIES DOMESTIC EQUITY INDEX FUNDS INTERNATIONAL EQUITY SECURITIES INTERNATIONAL EQUITY INDEX FUNDS GLOBAL EQUITY PRIVATE EQUITY DOMESTIC FIXED INCOME - CORE PLUS DOMESTIC FIXED INCOME - U.S. INDEX REAL ESTATE ALTERNATIVES CASH OVERLAY - PARAMETRIC TOTAL INVESTMENTS	112,247,647 1,281,105,325 362,405,870 346,658,699 258,912,948 165,714,941 706,350,042 221,798,339 377,332,470 399,979,098 24,974 4,232,530,353
CAPITAL ASSET - SOFTWARE DEVELOPMENT	12,961,635
TOTAL ASSETS	4,690,098,087
LIABILITIES	
SECURITY PURCHASES PAYABLE ACCOUNTS PAYABLE TAX WITHHOLDING PAYABLE PREPAID CONTRIBUTIONS	4,082,781 1,460,898 2,822,639 120,669,077
TOTAL LIABILITIES	129,035,395
NET POSITION RESTRICTED FOR PENSIONS	\$4,561,062,692

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION STATEMENT OF CHANGES IN FIDUCIARY NET POSITION FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2016 (UNAUDITED)

#### **ADDITIONS**

CONTRIBUTIONS	
EMPLOYER	\$43,282,216
EMPLOYEE	16,547,012
TOTAL CONTRIBUTIONS	59,829,229
INVESTMENT INCOME	
NET APPRECIATION (DEPRECIATION) IN FAIR VALUE OF INVESTMENTS	168,994,438
INTEREST INCOME `	3,688,558
DIVIDEND INCOME	6,480,658
REAL ESTATE OPERATING INCOME, NET	4,143,631
SECURITY LENDING INCOME	112,741
TOTAL INVESTMENT INCOME	183,420,026
LESS INVESTMENT EXPENSES	
MANAGEMENT & CUSTODIAL FEES	3,695,169
SECURITIES LENDING BORROWER REBATES	64,782
SECURITIES LENDING MANAGEMENT FEES	19,324
TOTAL INVESTMENT EXPENSES	3,779,274
NET INVESTMENT INCOME/(LOSS)	179,640,752
TOTAL ADDITIONS	239,469,981
DEDUCTIONS	
BENEFIT PAYMENTS	62,672,912
MEMBER REFUNDS	1,209,674
ADMINISTRATIVE EXPENSES	1,361,411
TOTAL DEDUCTIONS	65,243,997
NET INCREASE/(DECREASE)	174,225,983
NET POSITION RESTRICTED FOR PENSIONS	
BEGINNING OF YEAR	4,386,836,709
ENDING BALANCE	\$4,561,062,692

# VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION INVESTMENTS AND CASH EQUIVALENTS SEPTEMBER 30, 2016 (UNAUDITED)

EQUITY		
DOMESTIC EQUITY WESTERN ASSET INDEX PLUS	\$112,247,647	\$41,814,680
TOTAL DOMESTIC EQUITY	112,247,647	41,814,680
	112,247,047	41,014,000
DOMESTIC INDEX FUNDS	4 004 500 004	
BLACKROCK - US EQUITY MARKET BLACKROCK - EXTENDED EQUITY	1,231,500,384 49,604,941	0
TOTAL EQUITY INDEX FUNDS	1,281,105,325	<u>0</u>
TOTAL EQUIT INDEX TONDS	1,201,103,323	O
INTERNATIONAL EQUITY		
SPRUCEGROVE	180,032,965	0
HEXAVEST WALTER SCOTT	80,475,702 101,897,203	0
TOTAL INTERNATIONAL EQUITY	362,405,870	<u>0</u>
TOTAL INTERNATIONAL EQUITY	302,403,670	O
INTERNATIONAL INDEX FUNDS		
BLACKROCK - ACWIXUS	346,658,699_	0
TOTAL INTERNATIONAL INDEX FUNDS	346,658,699	0
GLOBAL EQUITY		
BLACKROCK - GLOBAL INDEX	258,912,948	0
TOTAL GLOBAL EQUITY	258,912,948	0
PRIVATE EQUITY		
ADAMS STREET	101,802,525	0
PANTHEON	15,397,543	0
HARBOURVEST	48,145,524	0
DRIVE CAPITAL	369,349_	0
TOTAL PRIVATE EQUITY	165,714,941	0
FIXED INCOME DOMESTIC		
LOOMIS SAYLES AND COMPANY	74,344,044	2,536,348
LOOMIS SAYLES - ALPHA	43,638,780	0
REAMS	301,970,778	8,430
WESTERN ASSET MANAGEMENT	286,396,439	1,518,458
TOTAL DOMESTIC	706,350,042	4,063,236
DOMESTIC INDEX FUNDS		
BLACKROCK - US DEBT INDEX	221,798,339	0
TOTAL DOMESTIC INDEX FUNDS	221,798,339	0
REAL ESTATE		
PRUDENTIAL REAL ESTATE	132,029,661	1,527
RREEF	1,004,019	0
UBS REALTY	244,298,789	0
TOTAL REAL ESTATE	377,332,470	1,527

# VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION INVESTMENTS AND CASH EQUIVALENTS SEPTEMBER 30, 2016 (UNAUDITED)

ALTERNATIVES  BRIDGEWATER  TORTOISE (MLP's)  TOTAL ALTERNATIVES	283,683,025 116,296,073 399,979,098	2,818,300 2,818,300
CASH OVERLAY - PARAMETRIC	24,974	226,503,166
IN HOUSE CASH		8,538,722
TOTAL INVESTMENTS AND CASH	\$4,232,530,353	\$283,739,630

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION SCHEDULE OF INVESTMENT MANAGEMENT FEES FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2016 (UNAUDITED)

EQUITY MANAGERS	
DOMESTIC BLACKROCK - US EQUITY	\$63,379
BLACKROCK - US EQUITY BLACKROCK - EXTENDED EQUITY	4,919
WESTERN ASSET INDEX PLUS	70,784
TOTAL	139,082
INTERNATIONAL	
BLACKROCK - ACWIXUS	70,440
SPRUCEGROVE	169,338
HEXAVEST	92,787
WALTER SCOTT	217,395
TOTAL	549,961
GLOBAL	
GRANTHAM MAYO VAN OTTERLOO (GMO)	297,518
BLACKROCK - GLOBAL INDEX TOTAL	24,065 321,583
	,
PRIVATE EQUITY	250 552
ADAMS STREET HARBOURVEST	359,553 209,085
PANTHEON	162,500
TOTAL	731,138
FIXED INCOME MANAGERS DOMESTIC	
BLACKROCK - US DEBT INDEX	27,297
LOOMIS, SAYLES AND COMPANY	75,663
LOOMIS ALPHA	43,664
REAMS ASSET MANAGEMENT	131,989
WESTERN ASSET MANAGEMENT	133,054
TOTAL	411,666
REAL ESTATE	
PRUDENTIAL REAL ESTATE ADVISORS	283,715
RREEF UBS REALTY	2,166 582,488
TOTAL	868,369
ALTERNATIVES	
ALTERNATIVES BRIDGEWATER	277,906
TORTOISE	185,775
TOTAL	463,681
CASH OVERLAY - PARAMETRIC	55,583
SECURITIES LENDING	
BORROWERS REBATE	64,782
MANAGEMENT FEES	19,324
TOTAL	84,105

#### VENTURA COUNTY EMPLOYEES' RETIREMENT ASSOCIATION SCHEDULE OF INVESTMENT MANAGEMENT FEES FOR THE THREE MONTHS ENDED SEPTEMBER 30, 2016 (UNAUDITED)

OTHER	
INVESTMENT CONSULTANT	72,500
INVESTMENT CUSTODIAN	81,606
TOTAL	154,106
TOTAL INVESTMENT MANAGEMENT FEES	\$3,779,274_

# Ventura County Employees' Retirement Association

State Street Securities Finance Program Review November 21, 2016



# Agenda

- Program Update
- VCERA Performance Review
- Collateral Pool Review
- Program Metrics
- Fundamentals of Securities Lending



### State Street Securities Finance

### Our goal is to assist VCERA optimize its lending program without compromising VCERA's approach to risk or need for flexibility

#### Commitment

- Securities Finance is a core business of State Street Bank
- 246 employees dedicated to managing all aspects of the lending business (Legal, Risk, IT, PD, Tax, etc.) 1
- · Access to Bank capital
- One of the largest securities lending providers in the industry (\$3.2T Lendables, \$347B On Loan)<sup>1</sup>

#### Risk Management

- Industry-leading quantitative approach to borrower credit review team that maintains a proprietary borrower rating system and has regular access to senior management
- Continuous stress testing of scenarios that could produce loss, concentration risk, exposure under market stress conditions, liquidity risk, counterparty credit contagion, wrong-way risk
- Enterprise Risk Management oversight
- State Street provides borrower default indemnification

#### Customizable **Programs**

- Customized lending structures minimum spread by asset class, variety of non-cash collateral types, exclusives/auctions, lenders have the ability to manage cash collateral internally
- Customized reporting to assist with oversight of your lending program

## **State Street Securities Finance – Con't**

Our goal is to assist VCERA optimize its lending program without compromising VCERA's approach to risk or need for flexibility

#### Responsive Relationship Culture

- Experienced, dedicated team for each client with direct access to product specialists (Risk, Compliance, Trading, Tax, etc.)
- Provide in depth, customized lending reviews and education to fund boards as well as assist in creating quarterly materials
- Ranked #1 in EMEA and North America in the 2015 Global Investors/Beneficial Owners survey

#### Trading

- 44 trading professionals with an average experience of 10+ years, with country, asset class and sector specialization<sup>1</sup>
- Traders utilize proprietary & 3rd party data to price loans, with focus on specials; General Collateral largely automated
- Local coverage (5 Trading desks) ensures economics of the trades are understood and optimal loan value is captured and any arising difficulties can be dealt with more effectively

#### Cash Collateral Management

- SSGA is a leader in the cash management space managing \$161b in securities cash collateral managed assets as of 9/30/16
- SSGA Global Credit Team solely dedicated to supporting Portfolio Managers
- SSGA Risk Management conducts monthly stress tests on the Navigator Prime fund



# Relationship Summary

- Our relationship commenced in May 1997
- VCERA has 3 funds in securities lending
- 2M1N Western Asset Management
- 2M2D Loomis, Sayles & Co. LP
- 2M2F Western Asset Management

- Earnings Summary (calendar year)
  - Since Inception ~ \$7.4 million (through 2015)
  - 2016 YTD ~ \$ 130 k (as of 11/7/16)
- Programs
  - U.S. Equity
  - U.S. Corporate Bonds
  - U.S. Government
- Cash Collateral
  - Quality D
- VCERA is indemnified against borrower default



# VCERA's Securities Lending Performance

Ventura County Employees' Retirement Association			
	FY 2015	FY 2016	FYTD 2017
Average Lendable (\$)	507,846,207	441,700,804	425,392,002
Average On Loan (\$)	61,330,875	52,690,892	65,378,358
Utilization	12.1%	11.9%	15.4%
Earnings by Program (\$)			
US Equity & Corp. Bond	80,140	53,861	15,781
US Government & Agency	36,488	55,147	28,680
Non-US Fixed	7,871	7,272	614
Total Earnings	124,498	116,280	45,075
Components of Spread (bps)			
Demand Spread	12	7	2
Reinvestment Spread	17	23	36
Net Spread	28	30	38
Return to Lendable (bps)	2.5	2.6	4.1

Notes:

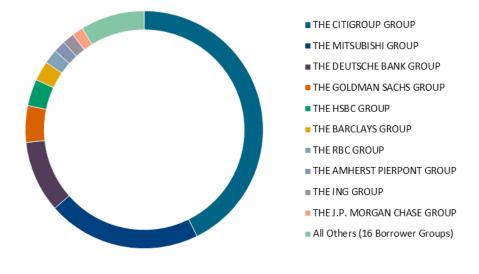
(1) FYTD 2017 data includes July 2016 - September 2016

### **Borrower Diversification**

### September 30, 2016

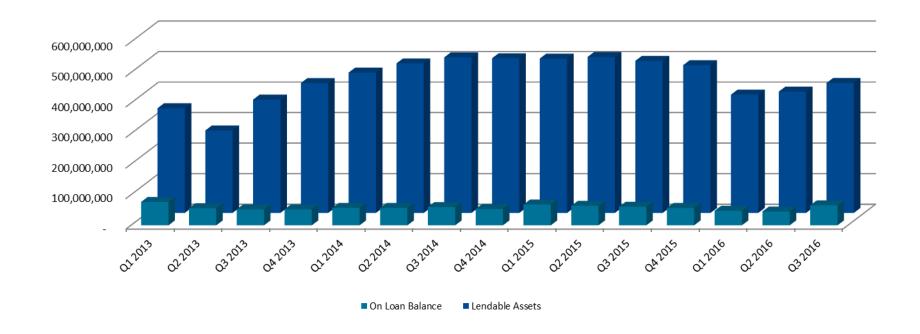
#### Ventura County Employees' Retirement Association

Borrower	Loan Balance (\$)	% of Total
THE CITIGROUP GROUP	21,588,021	43%
THE MITSUBISHI GROUP	10,542,529	21%
THE DEUTSCHE BANK GROUP	4,936,538	10%
THE GOLDMAN SACHS GROUP	2,521,927	5%
THE HSBC GROUP	1,844,663	4%
THE BARCLAYS GROUP	1,352,158	3%
THE RBC GROUP	990,566	2%
THE AMHERST PIERPONT GROUP	818,975	2%
THE ING GROUP	816,884	2%
THE J.P. MORGAN CHASE GROUP	762,027	2%
All Others (16 Borrower Groups)	4,409,157	9%
Total	50,583,445	100%



## Lendable and On Loan Trend

Q1 2013 - Q3 2016



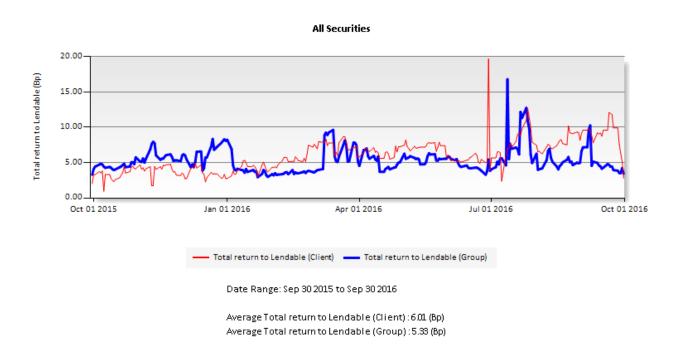
# Performance Benchmarking

### Demonstrated Results: PerformanceExplorer™- Return to Lendables

PerformanceExplorer™ provides independent performance benchmarking for securities lending.

Group includes data from agent lenders, principal lenders, borrowers and beneficial owners (BNY Mellon, JP Morgan Chase, Northern, HSBC, UBS, Brown Brothers, State Street & others).

VCERA's securities lending program with State Street has outperformed the peer group as indicated.



VCERA's average return to lendable of 6.01 bps was 12.7% higher than the peer group level of 5.33bps.

Source: The above data is provided by Markit Securities Finance and is underpinned by source data provided by PerformanceExplorer™ participants and also market data. However, because of the possibility of human or mechanical errors, neither Markit Securities Finance, nor the providers of the source or market data can guarantee the accuracy, adequacy or completeness of the information. This summary contains information that is confidential and is the property of Markit Group Limited. It may not be copied, published or used, in whole or in part, for any purpose other than expressly authorized by the owners.



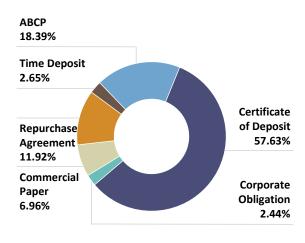
### **Quality Investment Fund D**

#### FC14 — Quality D

#### **Summary Characteristics**

As of September 30, 2016	
1-Day Yield <sup>1</sup>	0.86%
Par Position + Uninvested Cash (in millions)	10,801.34
Floating Rate	40.80
Foreign Issuers <sup>2</sup>	13.61
Weighted Average Maturity (WAM) <sup>3</sup>	38
Weighted Average Life (WAL) <sup>4</sup>	71
Fund Price as of 9/30/16	1.00
Number of Holdings	71
Liquidity Schedule	% of Fund
Next Business Day (3 Day)	12.74
4–7 Days Liquidity	8.71
8–14 Days Liquidity	3.89
15–21 Days Liquidity	14.89
22–28 Days Liquidity	4.31
29–35 Days Liquidity	1.13
36–60 Days Liquidity	8.45
61–90 Days Liquidity	13.63
Greater than 90 Days Liquidity	32.26
90 Day Liquidity	67.74

Long-term Ratings	% of Fund
AAA	_
AA	5.09
A	27.75
BBB+	0.77
BBB	_
BBB-	_
BB+	_
BB	_
BB-	_
Short-term Ratings	% of Fund
A-1+/P-1	10.75
A-1/P-1	45.46
SPLIT	3.47
Other	6.71



Source: SSGA, Bloomberg. Ratings are from Bloomberg and are S&P. Past performance is not a guarantee of future results.

<sup>1</sup> 1 Day yield does not include Management Fees

<sup>2</sup> All YCD's and Repo are being reported as Domestic and thus not included in the % Foreign Issuers

<sup>3</sup> Weighted Average Maturity (WAM): aggregation of WAM of underlying securities in fund defined as (1) Floating rate securities: Next Reset Date – Current Date; (2) Fixed Rate: Maturity Date – Current Date defined in days

<sup>4</sup> Weighted Average Life (WAL): aggregation of WAL of underlying securities in fund defined as (1) Floating rate securities: Expected Maturity Date – Current Date; (2) Fixed Rate: Expected Maturity Date – Current Date (defined in days)

Any S&P ratings below BB- or below A-1 as well as Unrated securities are included in the "Other" category

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## **Quality D Duration**

#### FC4J — Quality D Duration

#### **Summary Characteristics**

As of September 30, 2016	
1-Day Yield <sup>1</sup>	1.16%
Par Position + Uninvested Cash (in millions)	150.13
Floating Rate	99.11
Foreign Issuers <sup>2</sup>	30.38
Weighted Average Maturity (WAM) <sup>3</sup>	22
Weighted Average Life (WAL) <sup>4</sup>	3,154
Fund Price as of 9/30/16	0.95
Number of Holdings	6
Liquidity Schedule	% of Fund
Next Business Day (3 Day)	0.89
4–7 Days Liquidity	0.00
8–14 Days Liquidity	0.00
15–21 Days Liquidity	0.00
22–28 Days Liquidity	0.00
29–35 Days Liquidity	0.00
36–60 Days Liquidity	0.00
30 00 Buys Eiquidity	
61–90 Days Liquidity	0.00
	0.00 99.11

Long-term Ratings	% of Fund
AAA	2.50
AA	75.15
A	9.10
BBB+	_
BBB	_
BBB-	_
BB+	_
BB	_
BB-	_
Short-term Ratings	% of Fund
A-1+/P-1	_
A-1/P-1	_
SPLIT	_
Other	13.25



Source: SSGA, Bloomberg. Ratings are from Bloomberg and are S&P. Past performance is not a guarantee of future results.

<sup>1</sup> 1-Day yield does not include Management Fees

<sup>2</sup> All YCD's and Repo are being reported as Domestic and thus not included in the % Foreign Issuers

<sup>3</sup> Weighted Average Maturity (WAM): aggregation of WAM of underlying securities in fund defined as (1) Floating rate securities: Next Reset Date – Current Date; (2) Fixed Rate: Maturity Date – Current Date defined in days

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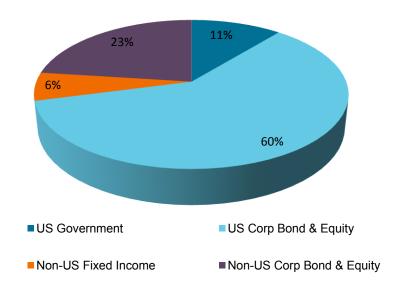
# **Quality D Collateral Pool Allocation**

- December 31, 2010 collateral pool allocation
  - Liquidity Pool ~ \$152.9 (68.9%)
  - Duration Pool ~ \$ 69.0 (31.1%)
- December 31, 2011 allocation
  - Liquidity Pool ~ \$ 64.7 (73.7%)
  - Duration Pool ~ \$ 23.0 (26.3%)
- December 31, 2012 allocation
  - Liquidity Pool ~ \$ 58.9 (85.6%)
  - Duration Pool ~\$ 9.8 (14.4%)
- December 31, 2013 allocation
  - Liquidity Pool ~ \$ 43.5 (84.7%)
  - Duration Pool ~ \$ 7.8 (5.36%)
- December 31, 2014 collateral pool allocation
  - Liquidity Pool ~ \$ 47.9 (89.3%)
  - Duration Pool ~ \$ 5.7 (10.7%)
- December 31, 2015 collateral pool allocation
  - Liquidity Pool ~ \$ 38.4 (91.9%)
  - Duration Pool ~ \$ 3.4 ( 8.9%)
- September 30, 2016 collateral pool allocation
  - Liquidity Pool ~ \$ 50.3 (96.7%)
  - Duration Pool ~ \$ 1.7 ( 3.3%)

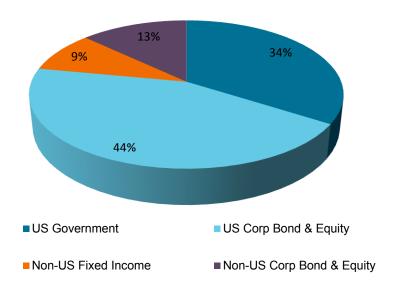
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## Large and Diverse Program

Assets Available for Loan Approximately \$3.23 trillion



# On Loan Balances Approximately \$347 billion



### Global Presence

- Approximately 284 active agency and principal clients worldwide
- Approximately 131 borrower relationships
- Lending across more than 36 international markets
- 9 regional locations with 5 trading desks and 3 full service operations centers
- Approximately 246 employees dedicated specifically to securities lending activities

#### The Americas

- Boston, Massachusetts (World Headquarters)
- Toronto, Ontario

#### Europe/Middle-East/Africa

- Dublin, Ireland
- London, England

#### Asia/Pacific

- Hong Kong, China
- Sydney, Australia
- Tokyo, Japan
- Singapore, Singapore
- Seoul, Korea

- Full Service Center
- Relationship Management Office
- Relationship Management and Trading Office

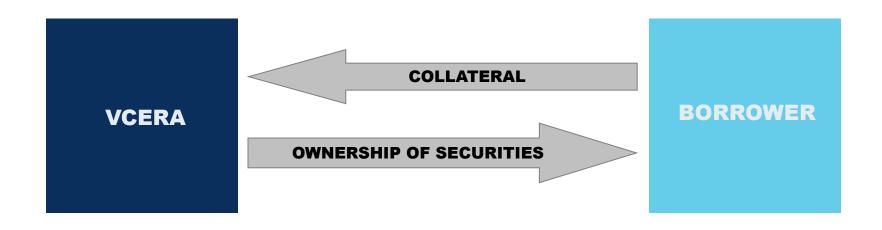


# Fundamentals of Securities Lending



## Securities Lending

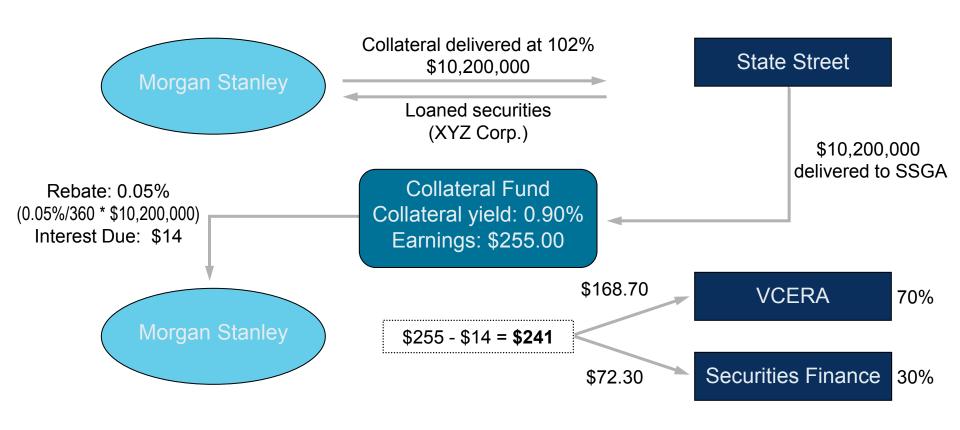
An investment management product where participants generate revenue by temporarily transferring idle securities, in a collateralized transaction, to a borrower.



- Lender transfers legal ownership of securities while retaining rights of beneficial ownership (i.e., entitlements on all dividend distributions and corporate actions)
- Borrower is contractually obligated to return the securities upon recall by the lender

### Fundamentals of Securities Finance

### One Day Sample Transaction Diagram



Yield – Rebate = **Total Spread** 0.90% - 0.05% = 0.85% (25 bps) Yield – Fed Funds Target Rate = Investment Spread
0.90% - 0.25% = 0.65% (15 bps)

Fed Funds Target Rate – Rebate = **Demand Spread**0.25% - 0.05% = 0.20% (10 bps)



## Fundamentals of Securities Lending

How are Earnings Generated?

Cash collateral is posted by the borrower at the inception of the lending transaction

State Street pays interest (the "rebate") on the cash to the borrower at a rate that reflects the supply/demand characteristics of the loaned security

State Street invests this cash collateral according to the VCERA's investment guidelines

The difference between the yield on the investment of the cash and the interest paid to the borrower represents the earnings or "spread"

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# THANK YOU!

# **BLACKROCK®**

# **Ventura County Employees' Retirement Association**

**Anthony Freitas, CFA, Managing Director Timothy Murray, CFA, Director** 

**21 November 2016** 

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- Supplemental Performance
- iii. Disclosures

# I. BlackRock Update

### BlackRock at a glance

### **BlackRock Mission Statement**

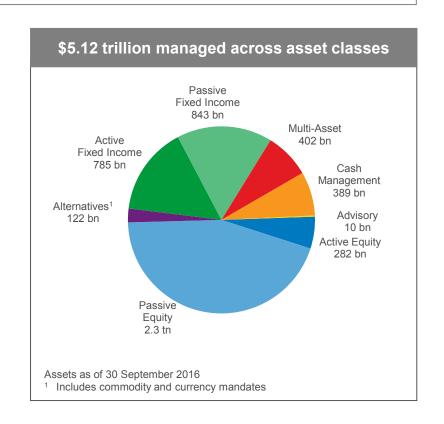
Create a better financial future for our clients by building the most respected investment and risk manager in the world

### BlackRock facts \*

- Established in 1988
- NYSE: BLK
- ▶ \$5.12 trillion assets under management
- More than 12,000 employees
- More than 1,800 investment professionals \*\*
- Offices in over 30 countries
- ▶ 25 primary investment centers globally \*\*
- Clients in over 100 countries
- Over 750 iShares® ETFs Globally
- Through BlackRock Solutions, the Firm provides risk management and enterprise investment services for over 200 clients
- Financial Markets Advisory business managed or advised on over \$8 trillion in asset and derivative portfolios
- Transition Management team partners with clients to save costs and reduce risks when changing investment exposures



<sup>\*\*</sup> As of 30 June 2016



# II. Relationship Summary

## **BlackRock Relationship Team**

Function	Contact	Location	Telephone	Email
Institutional Client Business – Lead	Anthony Freitas, CFA, Managing Director	San Francisco	415-670-6251	tony.freitas@blackrock.com
Institutional Client Business	Tom Holmes, Associate	San Francisco	415-670-4120	tom.holmes@blackrock.com

# **Ventura County Employees' Retirement Association Relationship Summary**

As of 30 September 2016

Ventura County Employees' Retirement System	AUM
US Equity Market Fund (inception 6/02/2008)	\$1,231,500,350
Extended Equity Market Fund (inception 9/30/2002)	\$49,604,941
ACWI Equity Index Fund (inception 6/27/2012)	\$258,912,947
ACWI ex-US IMI Index Fund (inception 5/30/2008)	\$346,658,699
U.S. Debt Index Fund (inception 12/31/1995)	\$221,798,339
Total AUM	\$2,108,475,276

# III. Beta Strategies Overview

## **BlackRock's Beta Strategies Platform**

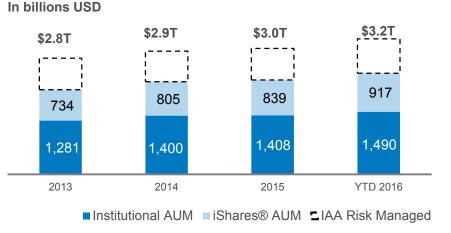
### Global leader in Index Equity assets<sup>1</sup>

- We seek to deliver consistent performance with efficient outcomes for our clients
- Thousands of skillful and thoughtful decisions made each year for swift response to market trends and client demands

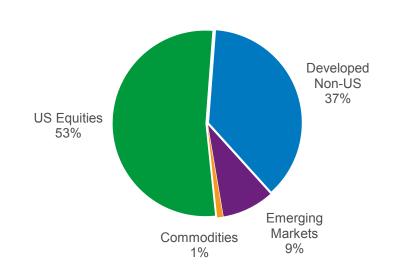
### Extensive and flexible platform for beta strategies

- Over 2,000 funds managed against 650+ benchmarks
- ▶ Daily liquidity with T-1 notification (for US equities) and T-2 notification (for non US equities)²
- Modular fund structure and asset allocation platform facilitates custom and outcome oriented solutions

### Total Beta Strategies risk managed assets of \$3.2 trillion USD



### Distribution of assets by region of mandate



Source: BlackRock, Inc. and its affiliates (together "BlackRock") as of 30 September 2016

<sup>1</sup> In terms of AUM. Source: Pensions & Investments

<sup>2</sup> Frontier markets commingled fund and currency hedged funds are currently open bi-monthly and monthly, respectively

## Beta strategies continue to be a growing portion of client portfolios

### Investors today are enhancing their passive allocations in three ways:

### **Comprehensive core**

- Migrating to broader mandates segregated index mandates are re-aggregated into one
- Going global ACWI / ACWI IMI\* is the fastest growing index strategy
- Moving EM into mainstream no longer niche; gain EM exposure via global indices

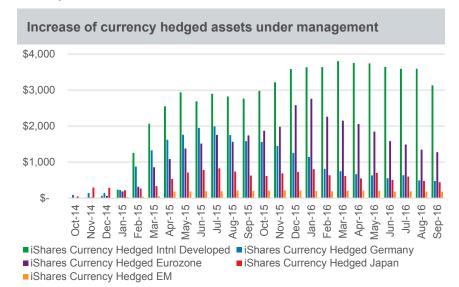
### **Complementary styles**

- Growing suite of smart beta offerings, complementing traditional indices
  - Certain equity risk factors that have demonstrated added value over the long term
    - Value
    - Quality
    - Momentum
    - Size

#### Customization

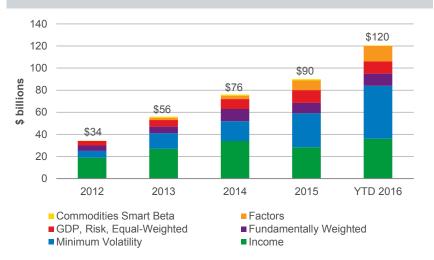
- Social & environmental investment considerations
  - Spurring a wide variety of societal outcomes with capital
  - Multi-faceted goals on top of financial return and risk
- ▶ Tax-sensitive investing

<sup>\*</sup>All Country World Index Investable Market Index



Source: BlackRock, as of 30 September 2016. Above is display of Currency Hedged ETFs with longest track record. BlackRock offers multiple currency hedged vehicles, including: separate accounts, CTFs and ETFs.

### Growth in smart beta long-only equity strategies over 5 years



Source: BlackRock smart beta (non-market cap weighted equity index strategies) assets under management. As of 30 September 2016.

## ETF and Index Investments (EII) – Global Investments Pillar



Rob Kapito, President

#### ETF and Index Investments (EII)

Mark Wiedman, Global Head of EII

#### **Ell Investments Pillar**

Manish Mehta, Global Head of Investments, Product,
Markets

### **Ell Investment Management Teams**

Americas
Portfolio Management

Alan Mason

Europe Portfolio Management

Debbie Jelilian

Asia-Pacific
Portfolio Management

Kevin Hardy

Ell Investments Pillar Cross-Platform Teams

### **Product Strategy**

Kristen Dickey\*

### **Chief Operating Officer**

Debbie Jelilian

**Active Strategies and Index Equity Trading** 

Risk & Quantitative Analysis (RQA) Group

As of November 2016

\*Reports into Manish Mehta and Rachel Lord

### **Americas – Investments Pillar**

#### **ETF and Index Investments Business** Investments Pillar Leadership Manish Mehta Global Head of Investments, Products, and Markets Global Research **Global Strategy** Americas Portfolio Management Alan Mason Ananth Madhavan Kristen Dickey Head of Americas Portfolio Global Head of ETF and Head of Global Management Index Investment Research Product Strategy Portfolio Management Research Strategy **Index Asset** Investment **Index Research** Institutional Portfolio Management iShares Portfolio Management **Global Strategy** Allocation Research Developed & U.S. & Index Plus & U.S. & DB & DC Developed **Emerging** Canada Emerging Creighton Jue, CFA Stephanie Allen Scott Dohemann, CFA Rachel Aguirre Greg Savage, CFA Jennifer Hsui, CFA Amy Whitelaw Matthew Lee, Ph.D. Co-Head of Institutional Co-Head of Institutional Co-Head of iShares Co-Head of iShares Global Head of Head of U.S. Head of Index Global Head of Investment Portfolio Management Portfolio Management Portfolio Management Portfolio Management **Asset Allocation** Index Research **Product Strategy** Research Christian De Leon Defined International **Index Plus** U.S. U.S. Index Research **Research Officers** Developed Benefit Kevin Kim + 7 Portfolio + 2 Portfolio + 6 Portfolio + 5 Portfolio + 3 Portfolio + 10 Index Timothy Murray, CFA + 2 Research Managers Managers Managers Managers Managers Researchers Officers Jacqueline Ramkumar International International Defined FX / Synthetics Canada Developed Contribution **Emerging** + 8 Portfolio + 5 Portfolio + 4 Portfolio + 4 Portfolio + 6 Portfolio Andrew Graver\* Managers Managers Managers Managers Managers Head of EMEA Index Strategy International Emerging Rita Gemelou\* + 5 Portfolio Flora Herries\* Managers Norbert van Veldhuizen\* **APAC** Ben Garland, CFA\* Head of APAC **Index Strategy** As of October 2016 Colin Zhang\* \* Located outside of the US

## Core investment philosophy of total performance management

We believe that superior investment outcomes are best achieved through a disciplined, objective process to manage return, risk and cost



#### Return

- Seek performance as planned with value-added portfolio management
- Flexible strategies and solutions

#### Risk

 Proprietary portfolio & risk management system helps manage investment and operational risk

### Cost

- Trading cost integrated into portfolio construction using proprietary transaction cost models
- Potential for reduced transaction costs through netting of client flows
- Focus on best execution for all external trading, including FX

## Our index investment management process is anything but passive

### Deep expertise and investment skill underpin consistent historical performance

▶ BlackRock's beta portfolios are managed using a team approach to strategy, portfolio management, research, and trading

### The ability to capture gains on hundreds of investment decisions adds up over time

Portfolio managers' decision-making process involves deciding on corporate actions such as dividends, stock splits, spinoffs, rights offerings, and mergers & acquisitions

### Detail-intensive investment decisions in pursuit of performance with precision and reliability

### **Benchmark Knowledge**

- Analysis of forthcoming index changes
- Audit daily updates from index providers
- Develop trade strategies to thoughtfully incorporate index events

### **Portfolio Construction**

- Teams of portfolio managers dedicated by region
- Supported by leading technology and risk models
- Rapid dividend reinvestment and cash equitization

### **Efficient Trading**

- Industry's largest internal market place for potential netting of client flows
- Best execution sought on all trades
- ▶ Economies of scale
- ▶ Dedicated trading research team

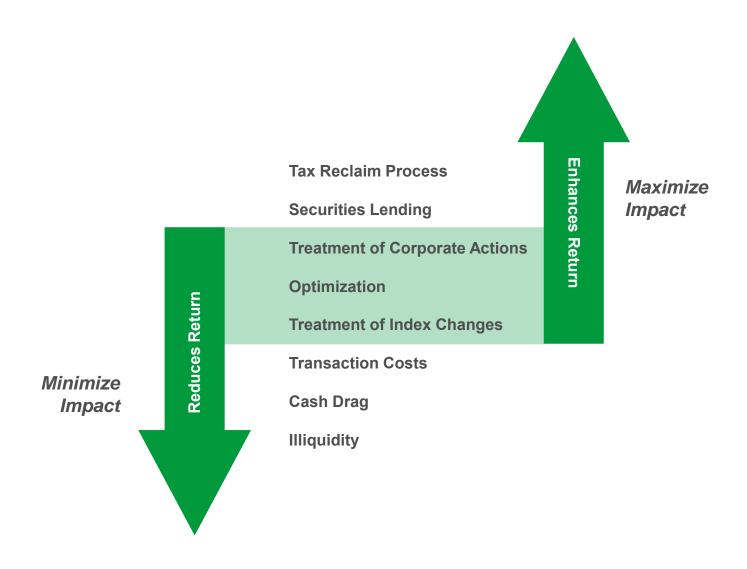
### **Performance & Oversight**

- Daily review by portfolio managers
- Monthly Investment Review Committee
- Independent Risk & Quantitative Analysis Group

### **Risk Management**

Leverage RQA and BlackRock's proprietary Aladdin® system to help identify, monitor and minimize risk

# Major sources of tracking error: Global & domestic index funds



### MSCI 2016 market classification review



MSCI announced on June 14<sup>th</sup>, 2016 that they will delay including China A shares in the MSCI Emerging Markets Index. MSCI is still monitoring several key issues:

### Clarity around beneficial ownership

Largely resolved since the May 2016 announcement from the CSRC

### QFII policy changes affecting accessibility and capital mobility

MSCI will monitor the effectiveness of recent QFII enhancements and remains concerned around 20% repatriation limits

### Measures preventing widespread suspensions of trading

A period of observation is needed to assess the effectiveness of recently announced measures around stock suspensions

### Anti-competitive measures imposed by the local Chinese stock exchanges

Still awaiting alignment to international norms and satisfactory resolution of this issue

#### Other notable annual market classification events



Reclassified to Emerging Markets status, effective May 2017



Included in the 2017 review for possible reclassification back to EM status



Remaining in the EM universe as long as the minimum three index constituents remain



May be removed from the Frontier universe and reclassified as a standalone market, due to capital mobility issues.



Not considered for potential reclassification to DM status as part of the 2017 Review. The frictions related to Korean Won convertibility and restrictions on the use of exchange data for the creation of financial products both remain unaddressed.



Continues to be monitored for possible EM index inclusion. The positive evolution in the opening of the Saudi Arabian equity market for international institutional investors in encouraging.

## **MSCI Quarterly Index Rebalance results**

### Overall, Global Beta Strategies realized \$9.2 million in profits on the rebalance trade

- 40% of the gains derive from capturing intraday price movements whilst the balance was split fairly close between early and residual trades
  - Early trade results: +\$2 million
  - Effective date trade results: +\$3.8 million
  - Residual trade results: \$3.4 million
- ▶ Beta Strategies traded 540 MSCI funds with AUM of \$816 billion across the globe
- Across all regions, Beta Strategies executed over 91k orders worth nearly \$40 billion

### **Rebalance highlights**

- ▶ The weight of foreign listed companies, such as Alibaba, increased as part of the May 2016 SAIR, as the second and final phase of inclusion of such companies. As a result, the one-way index turnover for the MSCI Emerging Markets Index (4.2%) was higher compared to the May 2015 SAIR (2.6%), while the turnover for the MSCI World Index (0.9%) was in line with the historical May SAIRs.
- ▶ The index changes regarding the MSCI Nigeria Index and others that include Nigeria were minimized due to FX liquidity issues.

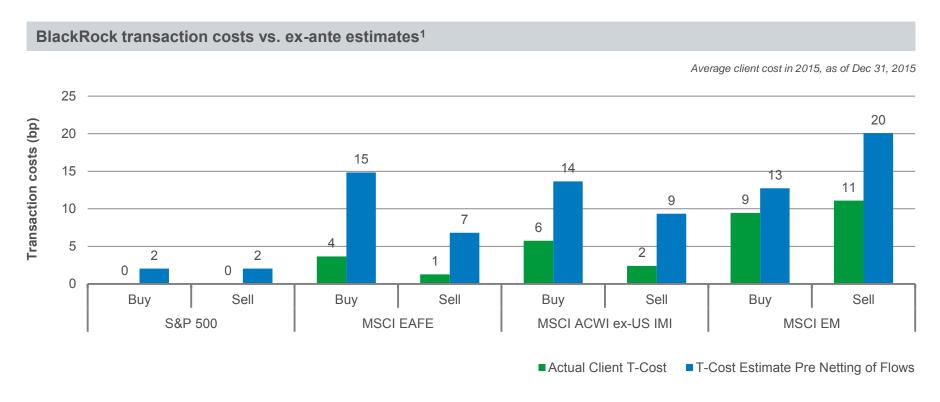
### MSCI index change details

Index	#Adds	#Deletes	May 2016 Two- Way Turnover	May 2015 Two- Way Turnover
EAFE	15	11	2.6%	1.56%
EAFE SC	148	163	11.6%	8.92%
Emerging Markets	15	17	8.4%	5.59%
Emerging SC	139	74	17.6%	19.82%
World	28	20	1.8%	2.27%
Frontier	1	11	12.70%	12.34%

Source: BlackRock, as of June 2016. Past performance is not indicative of future results.



# BlackRock's scale and internal network for netting client flows facilitates the potential to significantly lower transaction costs



### The scale of BlackRock's CTFs and global trading footprint resulted in reduced T costs:

- ▶ On average, we have netted internally approximately 40 50% of client flows
- Market trades reflect the industry's most competitive commission rates

Source: BlackRock. BlackRock Flagship Index Funds shown.

1 Estimated transaction costs includes commissions and taxes based on BlackRock's current standard negotiated rates

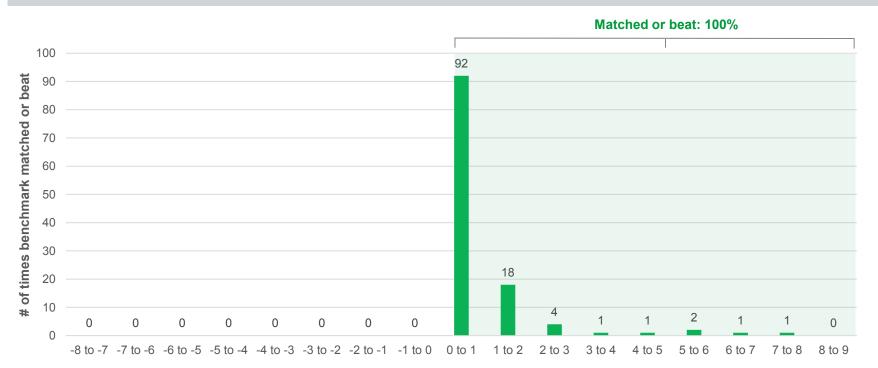
Netting of client flows is not guaranteed, and may depend on several other factors, including but not limited to, client flows and external trading markets. Historical transaction costs are not indicative of future results.



## Consistent performance, as planned

Over the past 10 years, BlackRock's S&P 500® Index Equity Collective Fund matched or beat the benchmark 100% of the time

### S&P 500 Index Fund A annualized performance — Excess gross returns



### Performance in relation to benchmark (BPS)

Source: BlackRock, Inc. and S&P, as of 30 September 2016. Reported on an annual basis and gross of fees.

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Past performance is not necessarily an indicator of future performance.

# **Key takeaway Our approach to Beta: anything but passive**

Investors today demand more efficient returns and innovative ways to use beta

BlackRock Beta Strategies' approach is focused on:

### **People**

Team combines skill and ingenuity in seeking to enhance outcomes

### **Performance**

Seek to provide consistent performance as planned

### **Process**

Rooted in deep understanding of benchmarks and capital markets

### **Platform**

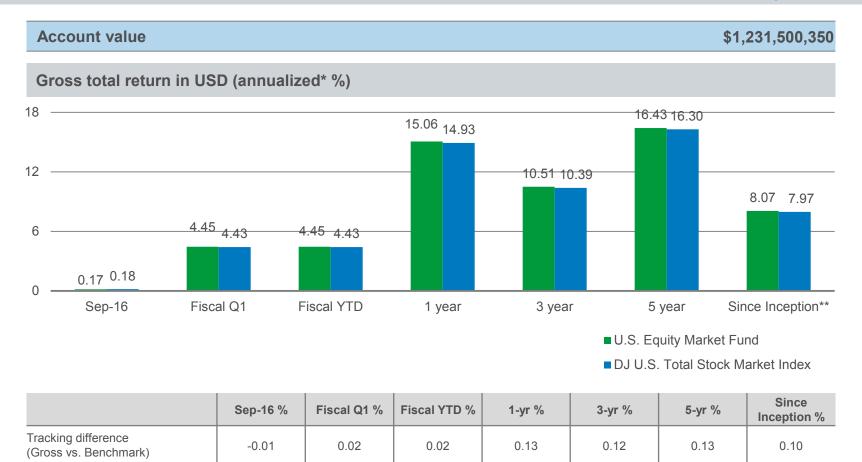
Scale and technology innovations enhance ability to deliver consistent performance and minimize costs

### **Products**

Flexible spectrum of solutions featuring more than 1,000 funds covering 350+ benchmarks



As of 30 September 2016



The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Past performance is not necessarily an indicator of future performance. Performance is for the US Equity Market Collective Trust Fund.

<sup>\*</sup> Period returns for less than a year are cumulative

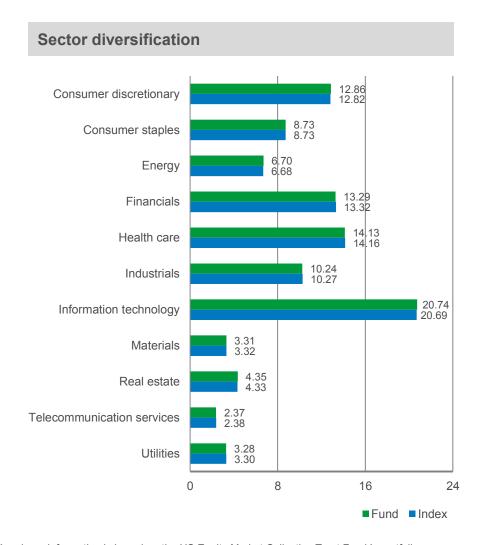
<sup>\*\*</sup> Client inception 2 June 2008

<sup>\*\*\*</sup> Fiscal year-end June 30

### **US Equity Market Fund Characteristics**

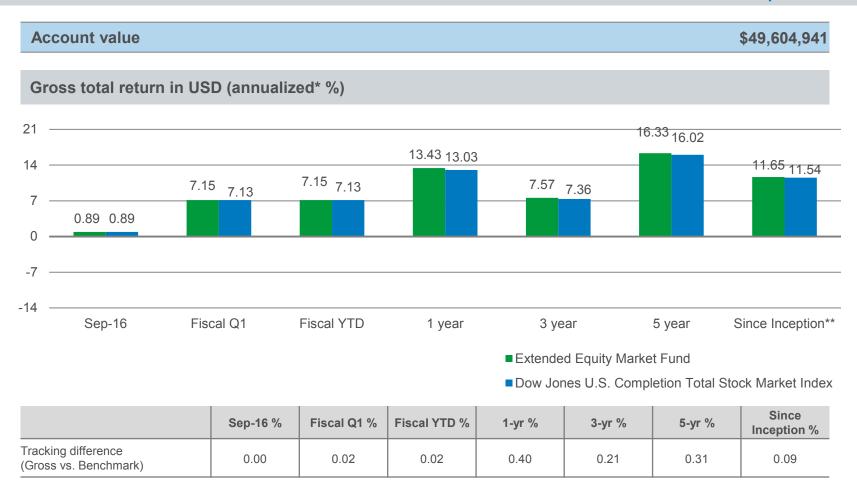
Characteristics	
Strategy	Dow Jones US Total Stock Market Index
Total fund assets	\$9.06B
Number of holdings	2,320

Top 10 holdings				
	Fund %	Index %		
Apple Inc.	2.66	2.66		
Microsoft Corporation	1.96	1.96		
Exxon Mobil Corporation	1.58	1.58		
Amazon.com, Inc.	1.45	1.44		
Johnson & Johnson	1.41	1.41		
Facebook, Inc. Class A	1.31	1.30		
Berkshire Hathaway Inc. Class B	1.18	1.20		
General Electric Company	1.16	1.16		
AT&T Inc.	1.09	1.09		
JPMorgan Chase & Co.	1.04	1.05		



This information is unaudited, subject to change and intended for analytical purposes only. The above information is based on the US Equity Market Collective Trust Fund 's portfolio characteristics. Sources: BlackRock. FactSet

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<sup>\*</sup> Period returns for less than a year are cumulative

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. **Past performance is not necessarily an indicator of future performance.** Performance is for the Extended Equity Market Collective Trust Fund.

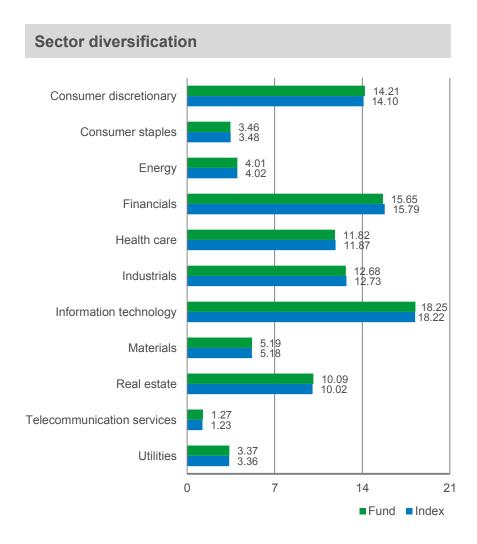
<sup>\*\*</sup> Client inception 30 September 2002

<sup>\*\*\*</sup> Fiscal year-end June 30

### **Extended Market Fund Characteristics**

Characteristics			
Strategy	Dow Jones US Completion Total Stock Market Index		
Total fund assets	\$10.55B		
Number of holdings	2,626		

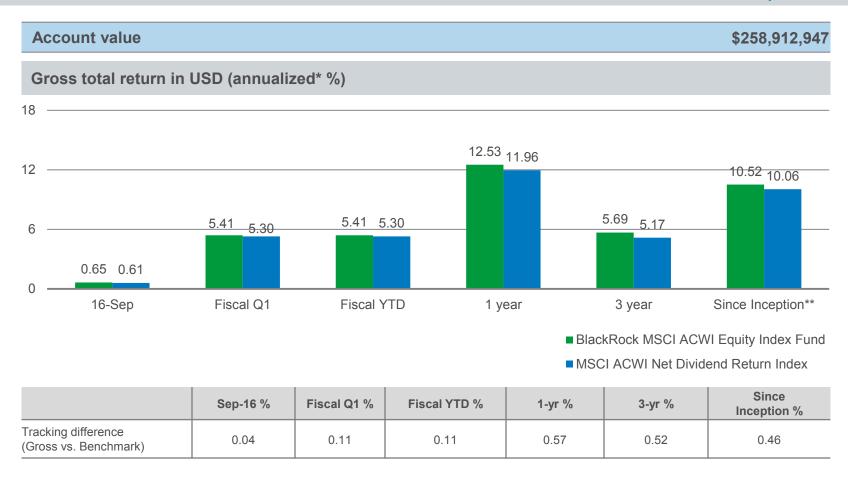
Top 10 holdings				
Fund %	Index %			
0.57	0.56			
0.55	0.55			
0.51	0.51			
0.51	0.50			
0.49	0.50			
0.40	0.40			
0.38	0.38			
0.34	0.34			
0.34	0.34			
0.33	0.33			
	0.57 0.55 0.51 0.51 0.49 0.40 0.38 0.34 0.34			



This information is unaudited, subject to change and intended for analytical purposes only. The above information is based on the Extended Market Collective Trust Fund 's portfolio characteristics. Sources: BlackRock. FactSet

# BlackRock MSCI ACWI Equity Index Fund Ventura County Employees' Retirement Association

As of 30 September 2016



<sup>\*</sup> Period returns for less than a year are cumulative

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. **Past performance is not necessarily an indicator of future performance**. Performance is for the BlackRock MSCI ACWI Equity Index Collective Trust Fund.



<sup>\*\*</sup> Client inception 27 June 2012

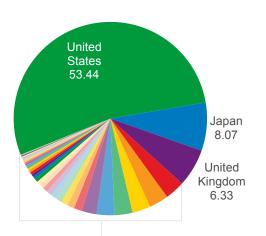
<sup>\*\*\*</sup> Fiscal year-end June 30

### **BlackRock MSCI ACWI Equity Index Fund Characteristics**

Characteristics	
Strategy	MSCI ACWI Index <sup>SM</sup>
Total fund value	\$1.08B
Number of issues	2,384

Top 10 holdings			
	Country	Weight (%)	
Apple Inc.	United States	1.68	
Microsoft Corporation	United States	1.17	
Exxon Mobil Corporation	United States	0.98	
Amazon.com, Inc.	United States	0.91	
Johnson & Johnson	United States	0.88	
Facebook, Inc. Class A	United States	0.81	
General Electric Company	United States	0.74	
AT&T Inc.	United States	0.68	
Nestle S.A.	Switzerland	0.68	
JPMorgan Chase & Co.	United States	0.66	

### **Country allocation (%)**



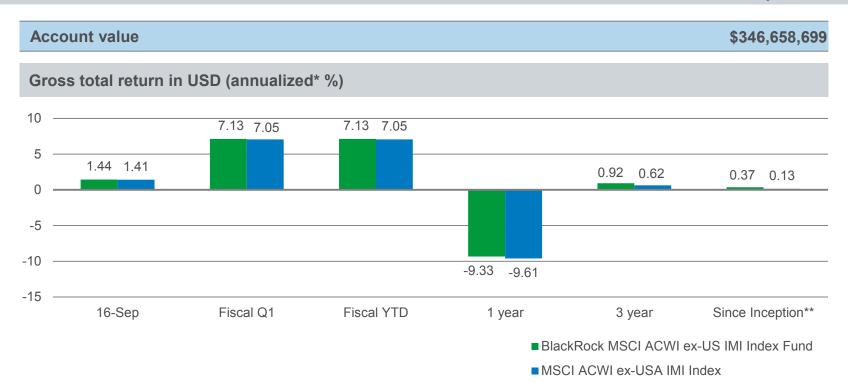
France	3.29	Denmark	0.59	Poland	0.12
Canada	3.25	Belgium	0.48	Qatar	0.10
Germany	3.04	Singapore	0.43	UAE	0.09
China	3.02	Mexico	0.41	New Zealand	0.07
Switzerland	2.99	Russia	0.41	Austria	0.06
Australia	2.47	Finland	0.34	Colombia	0.05
Taiwan	1.36	Indonesia	0.31	Peru	0.04
Hong Kong	1.18	Malaysia	0.30	Portugal	0.04
Netherlands	1.14	Thailand	0.25	Egypt	0.03
Spain	1.03	Israel	0.24	Greece	0.03
India	0.95	Norway	0.22	Hungary	0.03
Sweden	0.95	Ireland	0.16	Czech Republic	0.02
Brazil	0.83	Philippines	0.15	Korea	0.00
South Africa	0.80	Chile	0.13		
Italy	0.64	Turkey	0.13		

This information is unaudited, subject to change and intended for analytical purposes only. The above information is based on the BlackRock MSCI ACWI Equity Index Collective Trust Fund 's portfolio characteristics. Sources: BlackRock, FactSet

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# BlackRock MSCI ACWI ex-US IMI Index Fund Ventura County Employees' Retirement Association

As of 30 September 2016



	Sep-16 %	Fiscal Q1 %	Fiscal YTD %	1-yr %	3-yr %	Since Inception %
Tracking difference (Gross vs. Benchmark)	0.03	0.08	0.08	0.28	0.30	0.24

<sup>\*</sup> Period returns for less than a year are cumulative

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Past performance is not necessarily an indicator of future performance. Performance is for the BlackRock MSCI ACWI ex-US IMI Index Collective Trust Fund.



<sup>\*\*</sup> Client inception 30 May 2008

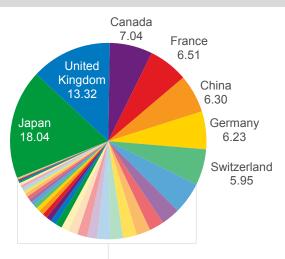
<sup>\*\*\*</sup> Fiscal year end June 30

### BlackRock MSCI ACWI ex-U.S. IMI Index<sup>SM</sup> Fund A **Characteristics**

Characteristics			
Strategy	MSCI ACWI ex-U.S. IMI <sup>SM</sup>		
Total fund value	\$8.47B		
Number of issues in fund	6,132		
Number of issues in index	6,181		

Top 10 holdings						
	Country	Weight (%)				
Nestle S.A.	Switzerland	1.24				
Novartis AG	Switzerland	0.87				
Roche Holding Ltd Genusssch.	Switzerland	0.86				
Tencent Holdings Ltd.	China	0.78				
Toyota Motor Corp.	Japan	0.77				
HSBC Holdings plc	United Kingdom	0.74				
Taiwan Semiconductor Manufacturing Co., Ltd.	Taiwan	0.72				
Alibaba Group Holding Ltd. Sponsored ADR	China	0.60				
British American Tobacco p.l.c.	United Kingdom	0.59				
Anheuser-Busch InBev SA	Belgium	0.54				

### **Country allocation (%)**



Australia	5.22	Russia	0.79	Austria	0.21
Taiwan	3.06	Finland	0.78	Qatar	0.20
Hong Kong	2.43	Malaysia	0.66	UAE	0.20
Sweden	2.29	Indonesia	0.64	Portugal	0.12
Netherlands	2.27	Korea	0.62	Colombia	0.10
India	2.14	Israel	0.59	Greece	0.08
Spain	2.14	Thailand	0.57	Peru	0.08
South Africa	1.64	Norway	0.56	Egypt	0.06
Brazil	1.63	Ireland	0.39	Hungary	0.06
Italy	1.53	Philippines	0.31	Czech Republic	0.03
Denmark	1.25	Turkey	0.28		
Belgium	1.07	Chile	0.27		
Singapore	0.98	Poland	0.25		

0.24

New Zealand

This information is unaudited, subject to change and intended for analytical purposes only. The above information is based on the BlackRock ACWI ex-U.S. IMI Index Collective Trust Fund's portfolio characteristics. Sources: BlackRock, FactSet

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Mexico

0.85

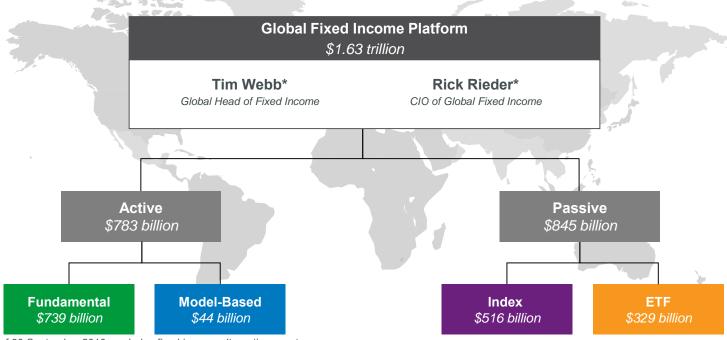
# IV. Fixed Income Indexing Overview

# Global fixed income platform provides greater access to investment opportunities

### Benefits of BlackRock's breadth and depth

- ▶ **Talent:** 400+ fixed income professionals\*\* generate ideas and identify insights to create alpha opportunities
- ▶ **Trading:** Global execution platform provides deep market access
- ▶ Technology: Best-in-class analytics and risk management enables us to better understand and take risk in pursuit of alpha
- ▶ Culture: Fiduciary commitment to advising and serving clients drives our investment culture

### Experienced leadership team oversees portfolio teams with decision-making autonomy



AUM in USD as of 30 September 2016; excludes fixed income alternative assets

<sup>\*\*</sup>Source: BlackRock, as at September 2016. For illustrative purposes only.



<sup>\*</sup>Organizational changes took effect on 2/1/2016

### BlackRock Model-Based North America Portfolio Solutions Team

### The North America portfolio solutions team consists of 27 investment professionals



Scott Radell, CFA, Managing Director, is Head of US Fixed Income Portfolio Solutions within BlackRock's Model-Based Fixed Income Portfolio Management Group.

Mr. Radell's service with the firm dates back to 2003, including his years with Barclays Global Investors (BGI), which merged with BlackRock in 2009. At BGI, Mr. Radell was the Head of Portfolio Solutions, a group responsible for management and oversight of all US based active fixed income funds. Before founding the Portfolio Solutions Group, he was a portfolio manager responsible for BGI's active investment grade long-only and long/short cross-over portfolios. Prior to joining BGI, Scott served for over seven years as an analyst for corporate bond and Commercial Mortgage Backed Securities for Morgan Stanley Investment Management. Mr. Radell began his career as a fixed income client service and mortgage analysts at BARRA.

Mr. Radell earned a BA degree in quantitative economics and decision sciences from the University of California at San Diego in 1992.

Multi-Sector/Other		Credit		Rates/Mortgage/EM	
Scott Radell	Joel Silva	Jonathan Graves	David Dulski	Jay Mauro *	Mark Buell
Sr. Portfolio Manager Multi-Sector	Sr. Portfolio Manager Munis / Canada / Impact	Sr. Portfolio Manager Corporate Credit	Portfolio Manager Corporate Credit	Deputy Head of Portfolio Solutions	Portfolio Manager US Government Bonds
Karen Uyehara	Tao Chen	Allen Kwong	Giulia Cerardi	Wes George	Cynthia Fan
Portfolio Manager Multi-Sector	Portfolio Manager Municipals	Portfolio Manager Corporate Credit	Portfolio Manager Corporate Credit	Portfolio Manager Agency Mortgages	Jr Portfolio Manager US Government Bonds
Jasmita Mohan	Rena Patel	Karishma Kaul	Elya Schwartzman	Marcus Tom	Daniel Ruiz
Portfolio Manager Multi-Sector	Portfolio Manager Municipals	Portfolio Manager Corporate Credit	Portfolio Manager Corporate Credit	Portfolio Manager Agency Mortgages	Portfolio Manager Emerging Markets
Ryan Stone	Jermaine Pierre	Nicolas Giometti	Leo Landes		Gabe Shipley
Jr Portfolio Manager Multi-Sector	Portfolio Manager Canada	Jr Portfolio Manager Corporate Credit	Jr Portfolio Manager Corporate Credit		Portfolio Manager Emerging Markets
Clay Armistead	Lip Tong	Sam Dreyfuss	Jesse Kang		
Portfolio Manager Securitized Credit	Portfolio Manager Canada	Jr Portfolio Manager Corporate Credit	Jr Portfolio Manager Corporate Credit		

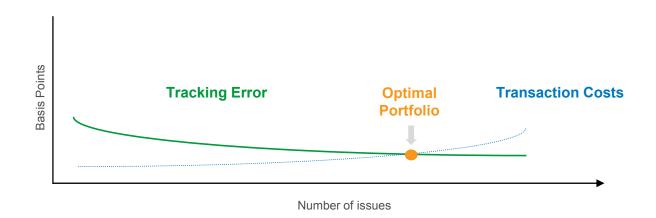
As of 3 October 2016 \*Effective October 13<sup>th</sup>, 2016



## Fixed Income indexing: different market, different strategy

### Quantitative process balances tracking error & transaction costs

- Unlike equities, Fixed Income is not traded on exchanges
- Prohibitive costs, uncertain liquidity, and issue scarcity often makes perfect replication infeasible
- ▶ Index process optimizes marginal contribution to tracking error with T-Costs

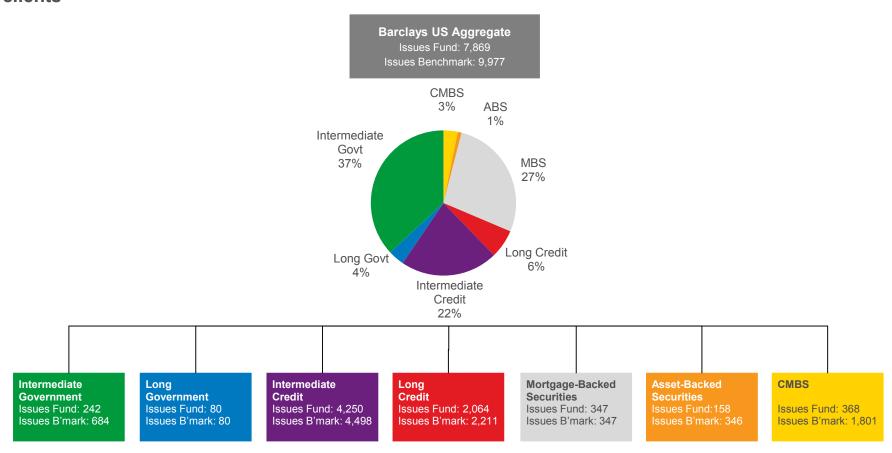


For illustrative purpose only. Source: BlackRock

# **Modular Fund Design**

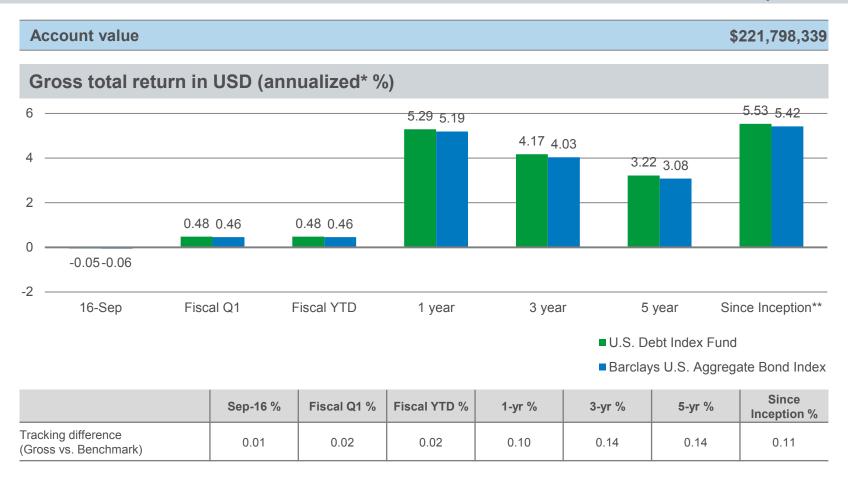


BlackRock's modular fund design leverages our scale and facilitates crossing opportunities for clients



Source: BlackRock; data as of 30 September 2016





<sup>\*</sup> Period returns for less than a year are cumulative

The Fund's net asset value does not include an accrual for the investment management fee but does include an accrual for fund level administrative costs and, if applicable, certain third party acquired fund fees and expenses. If the Fund's net asset value did include an accrual for the investment management fee, the Fund's returns would be lower. Past performance is not necessarily an indicator of future performance. Performance is for the US Debt Index Collective Trust Fund.

<sup>\*\*</sup> Client inception 31 December 1995

<sup>\*\*\*</sup> Fiscal year-end June 30

### U.S. Debt Index Fund Portfolio profile

U.S. Debt Index Fund		
	U.S. Debt Index Fund	Bloomberg Barclays U.S. Aggregate Bond Index
Market value (\$B)	9.21	19,578.70
# Issues	7,893	9,977
Characteristics		
Coupon (%)	3.16	3.09
Yield to maturity (YTM) (%)	1.91	1.92
Weighted avg life (yrs)	7.58	7.58
Effective duration (yrs)	5.29	5.26
Spread duration	3.64	3.63
Option adjusted spread (bps)	43	43
Convexity	0.00	0.00
Quality breakdown (mkt val %	<b>(6)</b>	
AAA or above	71.08	71.18
AA	4.36	4.16
A	10.90	10.86
BBB	13.66	13.81

	U.S. Debt Index Fund	Bloomberg Barclays U.S. Aggregate Bond Index
Sector breakdown (mkt val	%)	
Treasury	35.68	36.26
Agencies	2.94	2.45
Financials	8.11	8.02
Industrials	15.97	15.97
Utilities	1.98	2.00
Non-US credit	4.54	4.57
Taxable munis	0.85	0.90
ABS	0.46	0.46
Mortgages	27.50	27.47
Hybrid ARM	0.19	0.17
CMBS	1.64	1.66
Foreign Government	0.00	0.08
Cash	0.15	0.00
Weighted avg life breakdow	wn (mkt val %)	
0-1	1.31	0.19
1-2	9.30	10.42
2-3	10.95	10.38
3-5	36.14	36.47
5-7	15.40	16.29
7-10	10.96	10.35
10-20	3.55	3.58
20-30	11.89	11.78
30+	0.52	0.53

Data is for analytical purposes only. Index data points may differ to those published by the Index due to different classification criteria. Breakdowns may not sum to total due to rounding, exclusion of cash, STIF, and statistically immaterial factors. Past performance is not a reliable indicator of future results. The above information is based on the U.S. Debt Index Collective Trust Fund's portfolio characteristics. Source: BlackRock

### **Appendix**

### i. Presenter Biographies

### **Presenter Biographies**

**Anthony R. Freitas**, CFA, Managing Director, is a member of the US and Canada Institutional team within BlackRock's Institutional Client Business. He is responsible for developing and maintaining relationships with institutional investors, including public and private pension plans, foundations and endowments.

Prior to joining BlackRock in 2004, Mr. Freitas was with Deutsche Asset Management, most recently as Managing Director and Regional Manager for client service. From 1993 to 2000, he was with Boston Partners Asset Management L.P. Initially a vice president responsible for West Coast client service, he became a Principal in 1995. Mr. Freitas began his career at Callan Associates in 1986 as a pension fund consultant.

Mr. Freitas earned an BA degree in political science from the University of California at Berkeley in 1982 and an MBA in finance from San Francisco State University in 1985.

**Timothy Murray**, CFA, Director, is an Index Equity strategist within BlackRock's Beta Strategies Group.

Mr. Murray's service with the firm dates back to 2007, including his years with Barclays Global Investors (BGI), which merged with BlackRock in 2009. Prior to moving to his role as a product strategist, Mr. Murray was a senior portfolio manager and team leader in BlackRock's Institutional Index Equity Portfolio Management Group. Before joining BGI, Mr. Murray was a manager at State Street working with asset managers on trade processing and settlement. Prior to State Street, he was a financial advisor at Merrill Lynch.

Mr. Murray earned a BS degree in finance from California State University, Sacramento, in 2002, and an MBA degree from the University of California, Davis, in 2013.





## Ventura County Employees' Retirement Association U.S. Equity Market Fund (the "Fund")

Annualized Since Inception	Cumulative Since Inception	Last 3 months Last 6 months Last 9 months Last 12 months	FISCAL YTD	4th Qtr.	Apr May Jun	3rd Qtr.	Jan Feb Mar	2nd Qtr.	Oct Nov	1st Qtr.	Jul Aug Sep	Fiscal Year 2017	2008 <sup>1</sup> 2009 2010 2011 2012 2013 2014 2015 2015 2016 1 Yrs Annualized 5 Yrs Annualized
8.07%	90.82%	4.45% 7.19 8.21 15.06	4.45%							4.45%	4.01% 0.26 0.17		U.S. Equity Market Fund -7.25% -26.29 16.10 32.47 4.16 21.56 21.56 21.56 25.12 7.32 7.30 15.06 10.51 16.43
7.97%	89.38%	4.43% 7.17 8.14 14.93	4.43%							4.43%	3.99% 0.25 0.18		Dow Jones U.S. Total Stock Market Index -7.24% -26.39 -16.13 -3.244 -3.97 -21.46 -25.03 -7.18 -2.05 -14.93 -10.39 -16.30
0.10%	1.44%	0.02% 0.02 0.07 0.13	0.02%							0.02%	0.02% 0.01 -0.01		Tracking Difference -0.01% 0.10 -0.03 0.19 0.19 0.10 0.10 0.13 0.13 0.13 0.13 0.13

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Between September 30, 2001 and June 18, 2004 the benchmark was the Wilshire 5000.

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The Fund's returns may also, The Fund's performance is not necessarily an indication of how well the Fund will perform in the future If applicable, reflect certain third party acquired fund fees and expenses

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Account Inception 06/02/08

Performance figures are annualized as of fiscal year-end

## U.S. Equity Market Fund (the "Fund")

	U.S. Equity Market Fund	Dow Jones U.S. Total Stock Market Index	Tracking Difference
2008	16.78%	16.77%	0.01%
2007	6.71	3 6.82 3 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	0.09
2008	28.49	-37.23 28.67	-0.28
2010	17.80	17.48	0.11
2011	1.22	1.08	0.14
2012	16.63	16.38	0.16
2013	33.62	33.47	0.06
2014	12.66	12.47	0.08
2016	0.62	0.44	0.18
3 Yrs Annualized	10.61	10.39	0.12
6 Yrs Annualized 10 Yrs Annualized	16.43 7.69	16.30 7.48	0.13 0.10
2018			
Jan	-5.63%	-5.68%	0.05%
Mar	-0.03 7.02	7.03	-0.01
1st Qtr.	0.86%	0.91%	0.06%
Apr	0.61%	0.62%	-0.01%
May	1.81	1.79	0.02
JUN	0.10	0.79	-0.01
2nd Qtr.	2.82%	2.81%	0.01%
Jul	4.01%	3.99%	0.02%
Sep	0.26	0.25	0.01
3rd Qtr.	4.46%	4.43%	0.02%
Oct Nov			
4th Qtr.			

Annualized Since Inception	Cumulative Since Inception <sup>2</sup>	YTD 2018 Last 3 months Last 6 months Last 8 months Last 12 months
11.03%	4080.32%	8.21% 4.46% 7.18 8.21 16.08
10.97%	3882.81%	8.14% 4.43% 7.17 8.14 14.83
0.08%	87.61%	0.07% 0.02% 0.02 0.02 0.07

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As of 1/1/89, fund returns are based on NYSE closing prices. Prior returns were based on composite closing prices. Prior to September 30, 2001, the benchmark return for the Dow Jones U.S. Total Stock Market Index was the US Equity Market Index.

Between September 30, 2001 and June 18, 2004 the benchmark was the Wilshire 5000.

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Performance figures are annualized as of period end

Fund Inception 01/31/81

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## Ventura County Employees' Retirement Association Extended Equity Market Fund (the "Fund")

Annualized Risk	Annualized Since Inception	Cumulative Since Inception	Last 3 months Last 6 months Last 9 months Last 12 months	Fiscal YTD	4th Qtr.	Apr May Jun	3rd Qtr.	Jan Feb Mar	2nd Qtr.	Oct Nov Dec	1st Qtr.	Jul Aug Sep	Fiscal Year 2017	2016 2016 1 Yr3 3 Yr5 Annualized 6 Yr5 Annualized 7 Yr5 Annualized 10 Yr5 Annualized	2012 2013 2014	2009 2010 2011	2006 2007 2008	2003 <sup>1</sup> 2004 2006	
17.11%	11.06%	307.67%	7.16% 10.83 9.94 13.43	7.16%							7.16%	5.39% 0.78 0.89		6.29 6.23 13.43 7.67 7.67 13.64	-1.60 25.67 26.89	127.00 123.08 10.38	14.50 19.41 -11.19	23.66% 29.73 13.86	Fund
17.04%	11.54%	301.30%	7.13% 10.71 9.67 13.08	7.13%							7.13%	5.38% 0.76 0.89		0.18 -5.63 13.03 7.26 10.02 8.26	-2.11 26.11 26.76	27.64 24.27 39.19	14.03 19.76 -11.41	24.23% 29.63 13.40	Dow Jones U.S. Completion Total Stock Market Index <sup>2</sup>
0.41%	0.11%	0.18%	0.02% 0.12 0.27 0.40	0.02%							0.02%	0.01% 0.02 0.00		0.11 0.40 0.40 0.21 0.31 0.26	0.61 0.46 0.14	-0.36 -0.29 0.19	0.47 -0.34 0.22	-0.58% 0.20 0.36	Tracking Difference

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Prior to August 31, 2001, nark return for the Dow Jones U.S. Completion Total Stock Market Index was the Extended Equity Market Index une 30, 2004 the benchmark was the Wilahire 4500.

ice figures are ann alized as of fiscal year

## Extended Equity Market Fund (the "Fund")

Annualized Risk	Annualized Since Inception	Cumulative Since inception	Last 3 months Last 6 months Last 9 months Last 12 months	YTD 2016	4th Qtr.	Oct Nov Dec	and Otr.	Jul Aug Sap	and Otr.	Apr May Jun	1at Otr.	Jan Pab Mar	2016	10 Yra Annualized	5 Yrs Annualized 7 Yrs Annualized	1 Yrs Annualized	2015	2012	2010	2008	2006	4	2004	2000	1997	0000	1992	1994	1988	1986	1904	1981	
17.73%	11.01%	4049.72%	7.15% 10.03 9.94 13.43	9.94%			7.15%	5.39% 0.70 0.89	3.44%	1.72% 1.02 -0.14	-0.81%	-0.74% 0.40 0.19		8.36	10.00	13.43 7.57	7.02	10.47	-3.41	-38.40 35.02	5.41	0000	-10.00	-9.12	26.61	10.00	10.54	14.50	20.72	4.32	1.50	0.48% 15.60 24.05	Fund
17.09%	10.77%	3739.10%	7.13% 10.71 8.07 13.03	9.07%			7.13%	5.38% 0.76 0.89	3.34%	1.00% 1.70 -0.16	-0.94%	-0.04% 0.45 0.10		0.26	19.02	13.03 7.36	7.63	17.09	28.62	-38.03 37.43	5.39	17.94	-77.29 -17.00	-9.50	26.30 7.16	33.73	14.00 10.00 10.00	49.50	22.79	4.00	21.11	0.00% 10.47 23.51	Completion Total Stock Market Index <sup>2</sup>
0.50%	0.24%	310.02%	0.02% 0.12 0.42 0.40	0.27%			0.02%	0.01% 0.02 0.00	0.10%	0.04% 0.04 0.01	0.13%	0.10% 0.01		0.10	0.34	0.40	0.29	0.50	0.36	-2.41	0.02	0.00	0.04	0.40	0.31	0.00	-0.67	0.91	0.00	0.55	0.75	0.42% -0.87 0.84	Tracking Difference

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Fund inception 01/31/81

<sup>&</sup>lt;sup>2</sup> Prior to August 31, 2001, the benchmark return for the Dow Jones U.S. Completion Total Stock Market Index was Between September 30, 2001 and June 30, 2004 the benchmark was the Wilshire 4500.

## Ventura County Employees' Retirement Association ACWI Equity Index Fund (the "Fund")

Annualized Risk	Annualized Since Inception	Cumulative Since Inception	Last 5 months Last 6 months Last 9 months Last 12 months	FIscal YTD	4th Gtr.	Apr May Jun	3rd Qtr.	Jan Feb Mar	2nd Otr.	Oct Nov Dec	1st atr.	Jul Aug Sep	Flacal Year 2017	1 Yrs 3 Yrs Annualized	2016	2015	2013	20121	
10.55%	10.52%	53.15%	5.41% 6.63 7.03 12.53	5.41%							5.41%	4.33% 0.38 0.65		12.53 5.69	3.24	1.13	17.09	2.82%	Fund
10.56%	10.06%	50.44%	5.30% 6.34 6.60 11.96	5.30%							5.30%	4.31% 0.34 0.61		11.96 5.17	-3.73	0.71	16.57	2.82%	MSCI ACWI Net Dividend Return Index
0.13%	0.46%	2.71%	0.11% 0.29 0.43 0.57	0.11%							0.11%	0.02% 0.04 0.04		0.57 0.52	0.49	0.42	0.52	0.00%	Tracking Difference

General Notes:

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Account Inception 06/27/12

ance figures are ialized as of fiscal year-end

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# MSCI ACWI Equity Index Fund (the "Fund")

YTD 2016	4th atr.	Oct Nov Dec	and outr.	Jul Aug Sep	2nd Qtr.	Apr May Jun	1st Qtr.	Jan Feb Mar	2016	2010 <sup>1</sup> 2011 2012 2013 2014 2015 2015 7 Yrs Annualized 5 Yrs Annualized
7.03%			5.41%	4.33% 0.38 0.65	1.15%	1.53% 0.20 -0.57	0.37%	-6.01% -0.63 7.47		Fund 7.78% -6.85 16.65 23.26 4.60 -1.92 12.53 5.69 11.13
6.60%			5.30%	4.31% 0.34 0.61	0.99%	1.48% 0.13 -0.61	0.24%	-5.03% -0.69 7.41		MSCI ACWI Net Dividend Return Index 7.57% -7.35 16.13 22.80 4.16 -2.36 11.56 5.17 10.63
0.43%			0.11%	0.02% 0.04 0.04	0.16%	0.05% 0.07 0.04	0.13%	0.02% 0.06 0.06		Tracking Difference 0.21% 0.50 0.52 0.44 0.44 0.57 0.52 0.52

Inception

Cumulative Since inception

58.52%

54.08%

Annualized Risk

14.09%

14.14%

0.16% 0.47%

6.94%

7.41%

Last 3 months
Last 6 months
Last 9 months

5.41% 6.63 7.03 12.53

5.30% 6.34 6.60 11.96

0.11% 0.29 0.43 0.57

4.44%

Last 12 months

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nance figures are ann alized as of period end.

## Ventura County Employees' Retirement Association ACWI ex-US IMI Index Fund (the "Fund")

	Fund	MSCI ACWI ex-U.S. IMI Index	Tracking Difference
2008 <sup>1</sup> 2009 2010	-8.18% -30.35 11.44	-8.26% -30.50 11.49	0.08% 0.15 -0.05
2011	30.61	30.26	0.35
2012	-14.53 14.20	-14.79 13.91	0.26 0.29
2014	22.58	22.28	0.30
2015	-4.70 -9.33	-4.97 -9.61	0.27 0.28
1 Yr2	10.19	9.81	0.38
3 Yrs Annualized 5 Yrs Annualized	0.92 6.68	0.62 6.37	0.30 0.31
7 Yrs Annualized	4.31	4.05	0.26
Fiscal Year 2017			
Jul	5.05% 0.52	5.03% 0.51	0.02%
Sep	1.44	1.41	0.03
1st Qtr.	7.13%	7.05%	0.08%
Oct Nov Dec			
2nd Qtr.			
Jan Feb Mar			
ard otr.			
Apr May Jun			
4th Qtr.			
FIscal YTD	7.13%	7.05%	0.08%
Last 3 months Last 6 months Last 9 months Last 12 months	7.13% 6.59 6.42 10.19	7.05% 6.32 6.08 9.81	0.08% 0.27 0.34 0.38
Cumulative Since Inception	3.09%	1.06%	2.03%
Annualized Since Inception	0.37%	0.13%	0.24%
Annualized Risk	20.09%	20.13%	0.18%

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Account Inception 05/30/08

<sup>&</sup>lt;sup>2</sup> Performance figures are annualized as of fiscal year-end

MSCI ACWI

## ACWI ex-US IMI Index Fund (the "Fund")

Annualized Risk 20.06%	Annualized Since 1.85%	Cumulative Since Inception 16.97%	Last 3 months 7.13%  Last 6 months 6.59  Last 9 months 6.42  Last 12 months 10.19	YTD 2016 6.42%	4th Qtr.	Oct Nov Dec	3rd Qtr. 7.13%	Jul 5.05% Aug 0.52 Sep 1.44	2nd Qtr0.50%	Apr 2.73% May -1.47 Jun -1.70	1st Qtr0.16%	Jan -5.92% Feb -0.92 Mar 8.27	2016	2008 <sup>1</sup> -37.07% 2009 43.27 2010 -12.90 2011 -14.05 2012 17.36 2013 16.15 2013 -3.65 2014 -3.65 2015 -4.35 1 Yrs Annualized 0.92 5 Yrs Annualized 6.68 7 Yrs Annualized 4.31	Fund
	1.58%	14.33%	7.05% 6.32 6.08 9.81	6.08%			7.05%	5.03% 0.51 1.41	-0.68%	2.65% -1.55 -1.73	-0.23%	-6.92% -0.94 8.21		37.48% 43.60 12.73 -14.31 17.04 15.82 -3.89 -4.60 9.81 0.62 6.37 4.05	ex-U.S. IMI Index
0.18%	0.27%	2.64%	0.08% 0.27 0.34 0.38	0.34%			0.08%	0.02% 0.01 0.03	0.18%	0.08% 0.08 0.03	0.07%	0.00% 0.02 0.06		0.41% -0.33 0.17 0.26 0.32 0.33 0.24 0.25 0.38 0.31 0.31	Tracking Difference

### Seneral Notes

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<sup>1</sup>Fund Inception 03/20/08

Performance figures are annualized as of period end

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### U.S. Ventura County Employees' Retirement Association **Debt Index** Fund (the "Fund")

	Fund	Bloomberg Barclays U.S. Aggregate Bond Index <sup>2</sup>	Tracking Difference
19961	4.11%	-1.21%	0.10%
1997	8.14	8.16	-0.01
1998	10.61	10.54	0.07
1999	3.17	9.16	0.02
2000	4.64	4.67	0.07
2001	11.38	11.23	0.16
2002	8.87	8.63	0.24
2003	10.47	10.40	0.07
2004	0.33	0.32	0.01
2006	0.86	6.80	0.06
2000	0.70	-0.81	0.06
2007	0.21	0.12	0.00
2009	0.16	0.05	0.10
2010	9.61	9.50	0.11
2011	4.03	3.90	0.13
2012	7.50	7.47	0.09
2013	-0.48	-0.09	0.21
2014	4.40	4.37	0.12
2016	1.99	1.80	0.13
2016	0.13	6.00	0.13
1 177	6.29	6.19	0.10
2 Yrs Annualized	4.17	4.00	0.11
3 Yrs Annualized	4.17	4.03	0.14
4 Yrs Annualized	2.71	2.67	0.14
6 Yrs Annualized	3.22	3.08	0.14
7 Yrs Annualized	4.24	4.10	0.14
10 Yrs Annualized	4.92	4.79	0.13

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0.64% -0.11 -0.05

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%60.0 0.11% 0.10% 0.40% 0.40% 2.08 6.80 6.19

0.02% 0.02% 0.07 0.10 0.10

5.63%

0.48% 0.48% 2.76 6.90 6.29

nnualized Risk nualized Since

Account Inception 12/31/95 5/31/96 performance differe

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## U.S. Debt Index Fund (the "Fund")

Annualized Risk	Annualized Since Inception	Oumulative Since Inception	Last 3 months Last 6 months Last 9 months Last 12 months	YTD 2018	400 000	Oct Nev	and Otr.	Sap Bar	2nd Otr.	Apr May Jun	1st Qtr.	Jan Pab Mar	2018	10 Yrs Annualized	7 Yrs Annualized	4 Yrs Annualized	3 Yrs Annualized	1 472	1014	2004	20010	10 00	2007	9000	2003	2000	1000	0000	1000	1993	10001	6 6 6	1986		
3.63%	0.04%	600.00%	0.48% 9.76 6.90	%00.3			0.48%	0.64% -0.11 -0.08	0.00%	0.41% 0.07 1.77	3.07%	1.45% 0.67 0.92		4.00	4 io	2.71	4.17	# 0.00 0.00 0.00 0.00	0.00	1.0	7.59	0.04	7.07	2.47	1004	0.00	0.53	# 10 d	18,40	9.74	16.03 7.37	0.00	7.93	Fund	
3.84%	a.ea%	600.40%	6.40% 6.40%	£.80%			0.46%	0.63% -0.11 -0.08	0.04%	0.38% 0.03 1.80	3.03%	1.30% 0.71 0.92		4.79	4.10	2.67	***	0.46	6.97	0 4 0	7.04	6 10 4	4.00	10.40	4.10	0.44	5.00	3 to 0	18.47	9.76 -0.99	7.40	0.04	7.90	Index <sup>2</sup>	Bloomberg Barolays U.S.
0.00%	0.08%	11.46%	0.02% 0.07 0.10 0.10	0.10%			0.02%	0.01%	0.05%	0.03% 0.04 -0.03	0.04%	0.07% -0.04 0.00		0.13	0.14	0.14	0.11	0.10	0.27	0.13	0.06	0.08	0.10	0.00	0.10	0.00	-0.01	000	0.00	-0.01	-0.03	-0.07	0.00	Difference	

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It is not possible to directly invest in an unmanaged index.

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The Barclays US Government/Credit Index is a widely recognized index that features a blend of US Treasury, government-sponsored (US Agency and supranational), and corporate securities limited to a maturity of more than ten years.

The Barclays Long Term Government/Credit Index is an unmanaged index of U.S. Government or Investment Grade Credit Securities having a maturity of 10 years or more.



### **Important Notes cont'd**

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Preliminary Performance Report Month Ending October 31, 2016

Anthony Ferrara, CAIA, Consultant Allan Martin, Partner

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### Total Fund Performance Detail Net of Fees

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Fund	4,583,808,508	100.0	100.0	-1.4	-0.4	5.8	1.9	4.0	4.5	8.3	5.1	7.8	Apr-94
Policy Index				<u>-1.3</u>	<u>-0.5</u>	<u>5.7</u>	<u>2.3</u>	<u>4.4</u>	<u>5.4</u>	<u>8.4</u>	<u>5.4</u>	<u>7.8</u>	Apr-94
Over/Under				-0.1	0.1	0.1	-0.4	-0.4	-0.9	-0.1	-0.3	0.0	
Allocation Index				-1.4	-0.7	5.2	2.1	3.5	4.6	7.7	4.9		Apr-94
60% MSCI ACWI (Net)/40% CITI WGBI				-2.4	-1.9	5.9	0.8	3.8	2.2	4.9	4.1		Apr-94
Total Fund ex Parametric	4,441,987,244	96.9		-1.4	-0.4	6.1	1.5	4.2	4.7	8.3	5.1	7.8	Apr-94
Total Fund ex Private Equity	4,416,153,043	96.3		-1.4	-0.5	5.9	1.8	3.9	4.3	-		8.1	Jan-12
Policy Index				<u>-1.3</u>	<u>-0.5</u>	<u>5.7</u>	<u>2.3</u>	<u>4.4</u>	<u>5.4</u>	<u>8.4</u>	<u>5.4</u>	<u>8.8</u>	Jan-12
Over/Under				-0.1	0.0	0.2	-0.5	-0.5	-1.1			-0.7	
Total US Equity	1,404,129,165	30.6	28.0	-2.2	-1.7	6.0	2.2	4.4	8.2	13.6	6.5	8.7	Dec-93
Russell 3000				<u>-2.2</u>	<u>-1.8</u>	<u>5.8</u>	<u>2.1</u>	<u>4.3</u>	<u>8.1</u>	<u>13.3</u>	<u>6.9</u>	<u>9.0</u>	Dec-93
Over/Under				0.0	0.1	0.2	0.1	0.1	0.1	0.3	-0.4	-0.3	
BlackRock Equity Market Fund	1,204,901,735	26.3		-2.2	-1.7	5.9	2.2	4.3	8.2	13.4		6.8	Dec-07
Dow Jones U.S. Total Stock Market				<u>-2.2</u>	<u>-1.8</u>	<u>5.8</u>	<u>2.1</u>	<u>4.2</u>	<u>8.1</u>	<u>13.3</u>	<u>6.9</u>	<u>6.7</u>	Dec-07
Over/Under				0.0	0.1	0.1	0.1	0.1	0.1	0.1		0.1	
Western U.S. Index Plus	151,525,641	3.3		-1.8	-1.5	7.3	2.3	5.6	9.4	14.8		3.7	May-07
S&P 500				<u>-1.8</u>	<u>-1.7</u>	<u>5.9</u>	<u>2.0</u>	<u>4.5</u>	<u>8.8</u>	<u>13.6</u>	<u>6.7</u>	<u>5.8</u>	May-07
Over/Under				0.0	0.2	1.4	0.3	1.1	0.6	1.2		-2.1	
BlackRock Extended Equity Index	47,701,789	1.0		-3.8	-2.2	5.6	3.0	3.2	5.1	12.3	7.4	11.0	Oct-02
Dow Jones U.S. Completion Total Stock Market				<u>-3.9</u>	<u>-2.3</u>	<u>5.4</u>	<u>3.0</u>	<u>3.0</u>	<u>5.0</u>	<u>12.1</u>	<u>7.3</u>	<u>11.0</u>	Oct-02
Over/Under				0.1	0.1	0.2	0.0	0.2	0.1	0.2	0.1	0.0	

Policy Index: Currently, 28% Russell 3000, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10%MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Prior to January 2016 the Total U.S. Equity Benchmark was a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

CPI+4% and CPI+5% are estimated due to CPI monthly lag.



October 31, 2016

### Total Fund Performance Detail Net of Fees

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Non-US Equity	698,267,441	15.2	15.0	-1.5	0.5	5.9	5.4	2.1	-0.6	4.7	1.8	6.0	Mar-94
MSCI ACWI ex USA				<u>-1.4</u>	<u>0.4</u>	<u>4.3</u>	<u>5.4</u>	<u>0.2</u>	<u>-1.5</u>	<u>3.6</u>	<u>1.6</u>	<u>4.7</u>	Mar-94
Over/Under				-0.1	0.1	1.6	0.0	1.9	0.9	1.1	0.2	1.3	
MSCI EAFE				-2.0	-0.8	-0.4	4.3	-3.2	-1.3	5.0	1.2	4.3	Mar-94
MSCI ACWI ex USA Local Currency				1.1	2.8	3.1	7.5	1.0	4.4	8.7	2.7		Mar-94
MSCI EAFE Local Currency				1.2	2.4	-0.4	7.3	-1.9	4.6	10.1	2.1	4.4	Mar-94
BlackRock ACWI ex-U.S. Index	341,127,406	7.4		-1.6	0.3	4.6	5.4	1.0	-0.9	4.2		1.1	Mar-07
MSCI ACWI ex USA				<u>-1.4</u>	<u>0.4</u>	<u>4.3</u>	<u>5.4</u>	<u>0.2</u>	<u>-1.5</u>	<u>3.6</u>	<u>1.6</u>	<u>0.6</u>	Mar-07
Over/Under				-0.2	-0.1	0.3	0.0	8.0	0.6	0.6		0.5	
MSCI ACWI ex USA Local Currency				1.1	2.8	3.1	7.5	1.0	4.4	8.7	2.7	2.0	Mar-07
Sprucegrove	179,915,260	3.9		-0.1	3.5	9.0	8.7	3.5	-0.9	4.7	2.2	6.9	Mar-02
MSCI ACWI ex USA				<u>-1.4</u>	<u>0.4</u>	<u>4.3</u>	<u>5.4</u>	<u>0.2</u>	<u>-1.5</u>	<u>3.6</u>	<u>1.6</u>	<u>5.9</u>	Mar-02
Over/Under				1.3	3.1	4.7	3.3	3.3	0.6	1.1	0.6	1.0	
MSCI EAFE				-2.0	-0.8	-0.4	4.3	-3.2	-1.3	5.0	1.2	5.3	Mar-02
MSCI ACWI ex USA Local Currency				1.1	2.8	3.1	7.5	1.0	4.4	8.7	2.7	4.7	Mar-02
MSCI EAFE Local Currency				1.2	2.4	-0.4	7.3	-1.9	4.6	10.1	2.1	3.8	Mar-02
Hexavest	78,057,751	1.7		-3.0	-2.9	1.5	1.0	-1.6	-1.0	4.5		2.9	Dec-10
MSCI EAFE				<u>-2.0</u>	<u>-0.8</u>	<u>-0.4</u>	<u>4.3</u>	<u>-3.2</u>	<u>-1.3</u>	<u>5.0</u>	<u>1.2</u>	<u>3.0</u>	Dec-10
Over/Under				-1.0	-2.1	1.9	-3.3	1.6	0.3	-0.5		-0.1	
MSCI EAFE Local Currency				1.2	2.4	-0.4	7.3	-1.9	4.6	10.1	2.1	6.6	Dec-10
Walter Scott	99,167,024	2.2		-2.7	-1.8	7.5	3.2	5.3	1.2	5.7		4.1	Dec-10
MSCI ACWI ex USA				<u>-1.4</u>	<u>0.4</u>	<u>4.3</u>	<u>5.4</u>	<u>0.2</u>	<u>-1.5</u>	<u>3.6</u>	<u>1.6</u>	<u>1.6</u>	Dec-10
Over/Under				-1.3	-2.2	3.2	-2.2	5.1	2.7	2.1		2.5	
MSCI ACWI ex USA Local Currency				1.1	2.8	3.1	7.5	1.0	4.4	8.7	2.7	5.5	Dec-10
Total Global Equity	467,133,120	10.2	10.0	-1.6	-0.3	5.8	3.8	2.6	2.2	7.3	2.9	4.8	May-05
MSCI ACWI				<u>-1.7</u>	<u>-0.8</u>	<u>4.8</u>	<u>3.5</u>	<u>2.0</u>	<u>3.2</u>	<u>8.0</u>	<u>3.8</u>	<u>5.8</u>	May-05
Over/Under				0.1	0.5	1.0	0.3	0.6	-1.0	-0.7	-0.9	-1.0	
BlackRock MSCI ACWI Equity Index	467,133,120	10.2		-1.7	-0.7	5.2	3.6	2.5	3.6			9.1	Jul-12
MSCI ACWI				<u>-1.7</u>	<u>-0.8</u>	<u>4.8</u>	<u>3.5</u>	<u>2.0</u>	<u>3.2</u>	<u>8.0</u>	<u>3.8</u>	<u>8.8</u>	Jul-12
Over/Under				0.0	0.1	0.4	0.1	0.5	0.4			0.3	



### Total Fund Performance Detail Net of Fees

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total Private Equity	167,655,465	3.7	10.0	0.0	3.1	4.1	3.6	6.4	14.2			13.5	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>-1.9</u>	<u>-1.0</u>	<u>8.4</u>	<u>3.2</u>	<u>7.3</u>	<u>11.3</u>	<u>16.6</u>		<u>17.0</u>	Jan-12
Over/Under				1.9	4.1	-4.3	0.4	-0.9	2.9			-3.5	
Adams Street Global Fund Series	103,942,146	2.3		0.0	3.1	3.7	3.1	6.6	12.5			12.3	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>-1.9</u>	<u>-1.0</u>	<u>8.4</u>	<u>3.2</u>	<u>7.3</u>	<u>11.3</u>	<u>16.6</u>		<u>17.0</u>	Jan-12
Over/Under				1.9	4.1	-4.7	-0.1	-0.7	1.2			-4.7	
Harbourvest- Dover Street VII	47,866,394	1.0		-0.1	0.7	3.3	2.3	6.0	19.8			17.5	Jul-13
DJ U.S. Total Stock Market Index + 3%				<u>-1.9</u>	<u>-1.0</u>	<u>8.4</u>	<u>3.2</u>	<u>7.3</u>	<u>11.3</u>	<u>16.6</u>		<u>13.8</u>	Jul-13
Over/Under				1.8	1.7	-5.1	-0.9	-1.3	8.5			3.7	
Pantheon Global Secondary Funds	15,397,544	0.3		0.0	11.2	9.2	11.2	7.7	11.6			9.8	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>-1.9</u>	<u>-1.0</u>	<u>8.4</u>	<u>3.2</u>	<u>7.3</u>	<u>11.3</u>	<u>16.6</u>		<u>17.0</u>	Jan-12
Over/Under				1.9	12.2	0.8	8.0	0.4	0.3			-7.2	
Drive Capital Fund	449,382	0.0		0.0								0.0	Sep-16
DJ U.S. Total Stock Market Index + 3%				<u>-1.9</u>	<u>-1.0</u>	<u>8.4</u>	<u>3.2</u>	<u>7.3</u>	<u>11.3</u>	<u>16.6</u>		<u>-1.5</u>	Sep-16
Over/Under				1.9								1.5	

### Please Note

Private Equity performance is shown on a time-weighted return basis. Values are cash adjusted with current month cash flows.

Drive Capital Fund, funded 9/1/2016



### Private Equity Limited Partnership Performance

îl											i	Since Inception			
Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date <sup>1</sup>	Outstanding Commitment <sup>1</sup>	Call Ratio	Add'l Fees <sup>2</sup>	Distributions to Date	Valuation	Total Value	Net Benefit	IRR		Total Value to Paid In Multiple (TVPI)	
Adams Street 2010 U.S. Fund	2010	5/21/2010	\$42,500,000	\$29,665,000	\$12,835,000	70%	\$15,213	\$10,764,481	\$33,373,243	\$44,137,724	\$14,457,511	14.0%	0.36x	1.49x	
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	\$25,500,000	\$19,545,749	\$5,954,251	77%	\$1,589	\$7,653,243	\$15,577,320	\$23,230,563	\$3,683,225	7.2%	0.39x	1.19x	
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	\$8,500,000	\$6,111,500	\$2,388,500	72%	\$0	\$314,436	\$7,510,516	\$7,824,952	\$1,713,452	9.1%	0.05x	1.28x	
Adams Street 2010 Direct Fund	2010	5/21/2010	\$8,500,000	\$7,879,500	\$620,500	93%	\$6,697	\$4,831,957	\$7,079,912	\$11,911,869	\$4,025,672	12.0%	0.61x	1.51x	
Total Adams Street 2010	2010	5/21/2010	\$85,000,000	\$63,201,749	\$21,798,251	74%	\$23,499	\$23,564,117	\$63,540,991	\$87,105,108	\$23,879,860	11.6%	0.37x	1.38x	
Adams Street 2013 Global Fund	2013	6/27/2013	\$75,000,000	\$41,475,000	\$33,525,000	55%	\$10,728	\$3,108,905	\$40,401,164	\$43,510,069	\$2,024,341	3.1%	0.07x	1.05x	
Adams Street 2016 Global Fund	TBD	TBD	\$60,000,000	\$0	\$60,000,000	0%	\$0	\$0	\$0	\$0	\$0	-	-	-	
Drive Capital Fund II	2016	9/1/2016	\$15,000,000	\$449,382	\$14,550,618	3%	\$3,210	\$0	\$449,382	\$449,382	(\$3,210)	-0.4%	-	0.99x	
HarbourVest - Dover Street VIII	2013	5/30/2013	\$67,500,000	\$55,687,500	\$11,812,500	83%	\$84,954	\$26,738,658	\$48,145,524	\$74,884,182	\$19,111,728	24.5%	0.48x	1.34x	
HarbourVest - Dover Street IX	TBD	TBD	\$60,000,000	\$0	\$60,000,000	0%	\$0	\$0	\$0	\$0	\$0	-	-	124	
Pantheon Global Secondary Fund IV	2010	8/20/2010	\$15,000,000	\$9,960,000	\$5,040,000	66%	\$0	\$8,310,001	\$6,050,666	\$14,360,667	\$4,400,667	13.8%	0.83x	1.44x	
Pantheon Global Secondary Fund V	2015	2/26/2015	\$50,000,000	\$7,441,510	\$42,558,490	15%	(\$137,480)	\$0	\$9,346,877	\$9,346,877	\$2,042,847	16.5%	1540	1.28x	
Total VCERA Private Equity Program		5/21/2010	\$427,500,000	\$178,215,141	\$249,284,859	42%	(\$15,089)	\$61,721,681	\$167,934,604	\$229,656,285	\$51,456,233	12.7%	0.35x	1.29x	

<sup>1.</sup> Includes recycled/recallable distributions received to date.

Note: Private equity performance data is reported net of fees.

Performance shown is based on 6/30/2016 NAVs cash-adjusted for cash flows through 10/31/2016.



<sup>2.</sup> Add'l Fees represents notional interest paid/(received).

<sup>2.</sup> Add'l Fees for Pantheon Global Secondary Fund V includes notional interest paid/(received) and management fee rebates paid to VCERA.

### Total Fund Performance Detail Net of Fees

	Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
Total US Fixed Income	931,967,544	20.3	20.0	-0.4	0.1	6.5	0.9	5.2	3.2	4.0	5.8	6.1	Feb-94
Barclays Aggregate				<u>-0.8</u>	<u>-0.9</u>	<u>5.0</u>	<u>-0.3</u>	<u>4.4</u>	<u>3.5</u>	<u>2.9</u>	<u>4.6</u>	<u>5.6</u>	Feb-94
Over/Under				0.4	1.0	1.5	1.2	8.0	-0.3	1.1	1.2	0.5	
BlackRock U.S. Debt Fund	220,114,690	4.8		-0.8	-0.9	5.0	-0.3	4.4	3.5	3.0	4.7	5.5	Nov-95
Barclays Aggregate				<u>-0.8</u>	<u>-0.9</u>	<u>5.0</u>	<u>-0.3</u>	<u>4.4</u>	<u>3.5</u>	<u>2.9</u>	<u>4.6</u>	<u>5.4</u>	Nov-95
Over/Under				0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	
Western	287,973,869	6.3		-0.7	-0.5	6.7	0.7	6.0	4.7	4.8	5.5	6.4	Dec-96
Barclays Aggregate				<u>-0.8</u>	<u>-0.9</u>	<u>5.0</u>	<u>-0.3</u>	<u>4.4</u>	<u>3.5</u>	<u>2.9</u>	<u>4.6</u>	<u>5.5</u>	Dec-96
Over/Under				0.1	0.4	1.7	1.0	1.6	1.2	1.9	0.9	0.9	
Reams	302,312,728	6.6		0.1	0.7	6.4	1.1	4.7	1.3	3.3	5.9	5.7	Sep-01
Reams Custom Index				<u>0.1</u>	<u>0.2</u>	<u>0.6</u>	<u>0.3</u>	<u>0.7</u>	<u>0.4</u>	<u>1.2</u>	<u>3.8</u>	<u>4.1</u>	Sep-01
Over/Under				0.0	0.5	5.8	8.0	4.0	0.9	2.1	2.1	1.6	
Barclays Aggregate				-0.8	-0.9	5.0	-0.3	4.4	3.5	2.9	4.6	4.7	Sep-01
Loomis Sayles Multi Strategy	77,549,652	1.7		-0.6	1.3	9.8	3.0	6.8	4.6	6.0	6.7	6.7	Jul-05
Loomis Custom Index				<u>-0.4</u>	<u>0.3</u>	<u>8.1</u>	<u>1.5</u>	<u>6.0</u>	<u>3.6</u>	<u>4.1</u>	<u>5.5</u>	<u>5.4</u>	Jul-05
Over/Under				-0.2	1.0	1.7	1.5	8.0	1.0	1.9	1.2	1.3	
Barclays Govt/Credit				-1.0	-1.4	5.6	-0.6	4.8	3.6	3.0	4.7	4.5	Jul-05
Loomis Strategic Alpha	44,016,605	1.0		0.8	1.6	5.2	2.6	3.6	2.5			2.4	Jul-13
Barclays Aggregate				<u>-0.8</u>	<u>-0.9</u>	<u>5.0</u>	<u>-0.3</u>	<u>4.4</u>	<u>3.5</u>	<u>2.9</u>	<u>4.6</u>	<u>3.6</u>	Jul-13
Over/Under				1.6	2.5	0.2	2.9	-0.8	-1.0			-1.2	

Reams Custom Index: Merrill Lynch 3 Month Libor Constant Maturity Index, prior to February 2013 the Barclays Aggregate.

Loomis Custom Index: 65% Barclays Aggregate, 30% Citigroup High Yield Market Index and 5% JPM Non-US Hedged Bond Index.



### Total Fund Performance Detail Net of Fees

Market Value (\$)	% of Portfolio	Policy %	1 Mo (%)	3 Mo (%)	YTD (%)	Fiscal YTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Return (%)	Since
377,332,470	8.2	7.0	0.0	1.5	5.1	1.5	8.1	10.7	10.3	3.7	7.9	Mar-94
			<u>0.0</u>	<u>1.8</u>	<u>5.8</u>	<u>1.8</u>	<u>9.1</u>	<u>11.4</u>	<u>11.3</u>	<u>5.0</u>	<u>8.2</u>	Mar-94
			0.0	-0.3	-0.7	-0.3	-1.0	-0.7	-1.0	-1.3	-0.3	
132,029,661	2.9		0.0	1.8	5.7	1.8	8.9	12.1	11.7	4.7	6.0	Jun-04
			<u>0.0</u>	<u>1.8</u>	<u>5.8</u>	<u>1.8</u>	<u>9.1</u>	<u>11.4</u>	<u>11.3</u>	<u>5.0</u>	<u>7.1</u>	Jun-04
			0.0	0.0	-0.1	0.0	-0.2	0.7	0.4	-0.3	-1.1	
			0.0	2.1	6.5	2.1	10.1	12.4	12.4	6.0	8.1	Jun-04
244,298,789	5.3		0.0	1.5	4.9	1.5	7.8	9.8	9.6	5.4	7.6	Mar-03
			<u>0.0</u>	<u>1.8</u>	<u>5.8</u>	<u>1.8</u>	<u>9.1</u>	<u>11.4</u>	<u>11.3</u>	<u>5.0</u>	<u>7.3</u>	Mar-03
			0.0	-0.3	-0.9	-0.3	-1.3	-1.6	-1.7	0.4	0.3	
			0.0	2.1	6.5	2.1	10.1	12.4	12.4	6.0	8.3	Mar-03
1,004,019	0.0		0.0	-12.6	-16.2	-12.6	-17.0	5.2	10.2		-6.4	Sep-07
			<u>0.0</u>	<u>1.8</u>	<u>5.8</u>	<u>1.8</u>	<u>9.1</u>	<u>11.4</u>	<u>11.3</u>	<u>5.0</u>	<u>3.8</u>	Sep-07
			0.0	-14.4	-22.0	-14.4	-26.1	-6.2	-1.1		-10.2	
			0.0	2.1	6.5	2.1	10.1	12.4	12.4	6.0	4.7	Sep-07
395,502,039	8.6	10.0	-2.3	-1.2		0.6	3.9	1.6			4.2	Apr-13
			<u>0.6</u>	<u>1.6</u>					<u>10.6</u>			Apr-13
			-2.9	-2.8			-1.9	-4.6			-2.2	
281,515,500	6.1		-1.6	-0.8	10.1	1.6	5.6	2.8			4.3	Aug-13
			<u>0.6</u>	<u>1.8</u>	<u>6.6</u>	<u>2.1</u>	<u>6.8</u>	<u>6.2</u>			<u>6.1</u>	Aug-13
			-2.2	-2.6	3.5	-0.5	-1.2	-3.4			-1.8	
113,986,539	2.5		-4.2	-2.4	7.9	-1.8	0.1	-1.3			0.7	Apr-13
			<u>-4.5</u>	<u>-3.1</u>	<u>12.7</u>	<u>-1.6</u>	<u>-2.9</u>	<u>-6.1</u>	<u>2.7</u>		<u>-4.3</u>	Apr-13
			0.3	0.7	-4.8	-0.2	3.0	4.8			5.0	
141,821,264	3.1	0.0										
141,821,264	3.1											
	(\$)  377,332,470  132,029,661  244,298,789  1,004,019  395,502,039  281,515,500  113,986,539  141,821,264	(\$) Portfolio  377,332,470 8.2  132,029,661 2.9  244,298,789 5.3  1,004,019 0.0  395,502,039 8.6  281,515,500 6.1  113,986,539 2.5  141,821,264 3.1	(\$) Portfolio Policy %  377,332,470 8.2 7.0  132,029,661 2.9  244,298,789 5.3  1,004,019 0.0  395,502,039 8.6 10.0  281,515,500 6.1  113,986,539 2.5  141,821,264 3.1 0.0	(\$) Portfolio Policy % (%)  377,332,470 8.2 7.0 0.0	(\$) Portfolio Policy % (%) (%)  377,332,470 8.2 7.0 0.0 1.5	(\$) Portfolio Policy % (%) (%) (%) (%) (%)  377,332,470 8.2 7.0 0.0 1.5 5.1  0.0 1.8 5.8 0.0 -0.3 -0.7  132,029,661 2.9 0.0 1.8 5.8 0.0 0.0 0.0 -0.1 0.0 2.1 6.5  244,298,789 5.3 0.0 1.5 4.9 0.0 1.8 5.8 0.0 -0.3 -0.9 0.0 2.1 6.5 1,004,019 0.0 0.0 -12.6 -16.2 0.0 1.8 5.8 0.0 -14.4 -22.0 0.0 2.1 6.5 395,502,039 8.6 10.0 -2.3 -1.2 9.5 0.6 1.6 5.7 -2.9 -2.8 3.8 281,515,500 6.1 -1.6 -0.8 10.1 0.6 1.8 6.6 -2.2 -2.6 3.5 113,986,539 2.5 -4.2 -2.4 7.9 -4.5 -3.1 12.7 0.3 0.7 -4.8	Market Value	Narket value	Market Value	Market Value	Narket Value	Market Value

Total Real Estate Benchmark: NCREIF ODCE; prior to January 2006, the NCREIF Property Index.

Real Estate managers and NCREIF ODCE are valued on a quarterly basis. Performance is not applicable in mid-quarter months, therefore 0% return is shown.

CPI+4% and CPI+5% is estimated by carrying the last available month forward.

Real Estate Valuation is as of 6/30/2016.



October 31, 2016

### Total Fund

### **Cash Flow Summary**

### Month Ending October 31, 2016

			Month	inding Cotobol Ci,	20.0		
	Beginning Market Value	Withdrawals	Contributions	Net Cash Flow	Fees	Net Investment Change	Ending Market Value
Adams Street Global Fund Series	\$101,802,531	-\$410,370	\$2,550,000	\$2,139,630	\$0	-\$16	\$103,942,146
BlackRock ACWI ex-U.S. Index	\$346,658,699	\$0	\$0	\$0	-\$30,094	-\$5,531,293	\$341,127,406
BlackRock Equity Market Fund	\$1,231,500,384	\$0	\$0	\$0	-\$22,165	-\$26,598,649	\$1,204,901,735
BlackRock Extended Equity Index	\$49,604,941	\$0	\$0	\$0	-\$3,180	-\$1,903,153	\$47,701,789
BlackRock MSCI ACWI Equity Index	\$258,912,948	\$0	\$212,000,000	\$212,000,000	-\$17,238	-\$3,779,828	\$467,133,120
BlackRock U.S. Debt Fund	\$221,798,339	\$0	\$0	\$0	-\$10,670	-\$1,683,649	\$220,114,690
Bridgewater All Weather Fund	\$286,030,977	\$0	\$0	\$0	-\$91,982	-\$4,515,477	\$281,515,500
Drive Capital Fund	\$366,139	\$0	\$83,243	\$83,243	\$0	\$0	\$449,382
GMO Global Equity	\$153,739,815	-\$153,739,815	\$0	-\$153,739,815	\$0	\$0	\$0
Harbourvest- Dover Street VII	\$47,936,336	\$0	\$0	\$0	\$0	-\$69,942	\$47,866,394
Hexavest	\$80,475,702	\$0	\$0	\$0	-\$30,186	-\$2,417,951	\$78,057,751
Loomis Sayles Multi Strategy	\$77,961,468	\$0	\$0	\$0	-\$25,221	-\$411,816	\$77,549,652
Loomis Strategic Alpha	\$43,638,780	\$0	\$0	\$0	-\$14,672	\$377,825	\$44,016,605
Pantheon Global Secondary Funds	\$15,397,544	\$0	\$0	\$0	\$0	\$0	\$15,397,544
Parametric	\$226,472,444	-\$253,489,520	\$170,531,402	-\$82,958,118	-\$23,315	-\$1,693,063	\$141,821,264
Prudential Real Estate	\$132,029,661	\$0	\$0	\$0	\$0	\$0	\$132,029,661
Reams	\$301,979,211	-\$8,433	\$0	-\$8,433	-\$44,039	\$341,950	\$302,312,728
RREEF	\$1,004,019	\$0	\$0	\$0	\$0	\$0	\$1,004,019
Sprucegrove	\$180,032,965	\$0	\$0	\$0	-\$57,066	-\$117,705	\$179,915,260
Tortoise Energy Infrastructure	\$118,896,984	\$0	\$0	\$0	-\$59,368	-\$4,910,445	\$113,986,539
UBS Real Estate	\$244,298,789	\$0	\$0	\$0	\$0	\$0	\$244,298,789
Walter Scott	\$101,897,203	\$0	\$0	\$0	-\$71,459	-\$2,730,180	\$99,167,024
Western	\$289,877,431	\$0	\$0	\$0	-\$48,497	-\$1,903,562	\$287,973,869
Western U.S. Index Plus	\$154,227,107	\$0	\$0	\$0	-\$31,441	-\$2,701,466	\$151,525,641
Total	\$4,666,540,419	-\$407,648,138	\$385,164,645	-\$22,483,493	-\$580,593	-\$60,248,418	\$4,583,808,508



### Information Disclaimer and Reporting Methodology

### **Information Disclaimer**

- Past performance is no guarantee of future results.
- All investments carry some level of risk. Diversification and other asset allocation techniques are not guaranteed to ensure profit or protect against losses.
- NEPC's source for portfolio pricing, calculation of accruals, and transaction information is the plan's custodian bank.
   Information on market indices and security characteristics is received from other sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- Some index returns displayed in this report or used in calculation of a policy, allocation or custom benchmark may be preliminary and subject to change.
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### **Reporting Methodology**

- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.







Investment Summary
Quarter Ending September 30, 2016

Allan Martin, Partner Anthony Ferrara, CAIA, Consultant

255 State Street, Boston, MA 02109 | TEL: 617.374.1300 | FAX: 617.374.1313 | www.nepc.com BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | SAN FRANCISCO Market Environment Update and Outlook



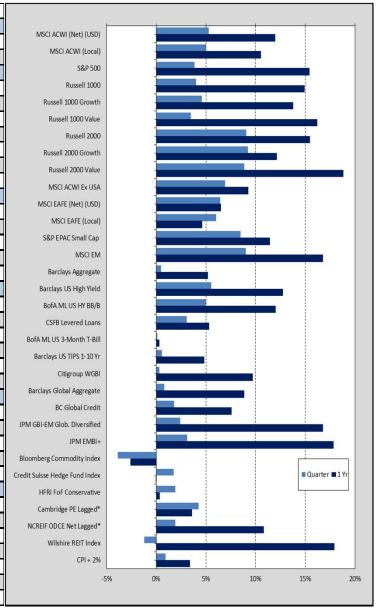
### **Economic Environment**

- Second quarter GDP growth rate (third estimate) printed at a modest 1.4%.
  - Retail sales ended August at +1.6% on a year-over-year basis. In the same period last year the YoY growth rate was 1.3%.
  - The inventory-to-sales ratio ended August flat at 1.4 and has remained relatively flat since early 2010.
  - Corporate profits (ended April) as a percent of GDP increased to 8.8% from 8.5% (in January) and remain elevated relative to historical levels.
  - The U.S. trade deficit widened ending August as the rate of change in imports increased to a level not seen since last September.
- The unemployment rate increased 0.1% to 5.0% in Q3; U-6, a broader measure of unemployment, increased to 9.7% during the third quarter from 9.6%.
- The Case-Shiller Home Price Index (ended July) increased to 183.6 from 180.7 in July and is at levels higher than that of pre-financial crisis levels of 150.9.
- Rolling 12-month seasonally adjusted CPI saw an uptick to 1.36% at the end of September;
   Capacity Utilization was flat at 75.4% ended Q3.
- Fed Funds rate was unchanged at 0.50%. The 10-year Treasury Yield (constant maturity) finished Q3 unchanged at 1.6% vs Q2.
- The Fed balance sheet decreased slightly during Q3 2016, while the European Central Bank balance sheet continues to increase.
  - ECB held its benchmark refinance rate at 0%, deposit rates -0.4% and asset purchases at €80 billion per month of corporate and public securities.
- S&P valuations increased slightly in Q3 remaining above the 10-year and long-term averages.
  - Cyclically adjusted Shiller PE ratio (26.71x) is above the long-term average of 16.68x and above the 10-year average of 22.92x.



### Market Environment – Q3 2016 Overview

MSCI ACWI (Net   (USD)   World   5.3%   12.0%   5.2%   10.6%   4.3%			Qtr.	1 Yr.	3 Yr.	5 Yr.	10 Yr.
MSCI ACWI (Local)   World (Local Currency)   5.1%   10.5%   7.7%   12.8%   4.8%	World Equity Benchmarks						
Domestic Equity Benchmarks	MSCI ACWI (Net) (USD)	World	5.3%	12.0%	5.2%	10.6%	4.3%
S&P 500         Large Core         3.9%         15.4%         11.2%         16.4%         7.2%           Russell 1000         Large Core         4.0%         14.9%         10.8%         16.4%         7.4%           Russell 1000 Growth         Large Growth         4.6%         13.8%         11.8%         16.6%         8.8%           Russell 1000 Value         Large Value         3.5%         16.2%         9.7%         16.2%         5.9%           Russell 2000 Growth         Small Growth         9.2%         12.1%         6.6%         16.1%         8.3%           Russell 2000 Value         Small Growth         9.2%         12.1%         6.6%         16.1%         8.3%           Russell 2000 Value         Small Growth         9.2%         12.1%         6.6%         16.1%         8.3%           Russell 2000 Value         Small Cap         Small Cap         8.8%         8.8%         18.8%         6.8%         15.4%         5.8%         15.4%         5.8%         15.4%         5.8%         15.4%         5.8%         16.1%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%         8.3%	MSCI ACWI (Local)	World (Local Currency)	5.1%	10.5%	7.7%	12.6%	4.6%
Russell 1000	Domestic Equity Benchmarks						
Russell 1000 Growth	S&P 500	Large Core	3.9%	15.4%	11.2%	16.4%	7.2%
Russell 1000 Value	Russell 1000	Large Core	4.0%	14.9%	10.8%	16.4%	7.4%
Russell 2000   Small Core   9.0%   15.5%   6.7%   15.8%   7.1%	Russell 1000 Growth	Large Growth	4.6%	13.8%	11.8%	16.6%	8.8%
Russell 2000 Growth   Small Growth   9.2%   12.1%   6.6%   16.1%   8.3%	Russell 1000 Value	Large Value	3.5%	16.2%	9.7%	16.2%	5.9%
Russell 2000 Value   Small Value   S.9%   18.8%   6.8%   15.4%   5.8%   International Equity Benchmarks	Russell 2000	Small Core	9.0%	15.5%	6.7%	15.8%	7.1%
International Equity Benchmarks   MSCI ACWI Ex USA   World ex-US   6.9%   9.3%   0.2%   6.0%   2.2%   MSCI EAFE (Net) (USD)   Int'l Developed   6.4%   6.5%   0.5%   7.4%   1.8%   MSCI EAFE (Local)   Int'l Developed (Local Currency)   6.0%   4.6%   5.3%   11.2%   2.2%   S&P EPAC Small Cap   Small Cap   Int'l   8.5%   11.4%   5.6%   11.5%   4.8%   MSCI EM   Emerging Equity   9.0%   16.8%   -0.8%   3.0%   3.9%   Domestic Fixed Income Benchmarks    Barclays Aggregate   Core Bonds   0.5%   5.2%   4.0%   3.1%   4.8%	Russell 2000 Growth	Small Growth	9.2%	12.1%	6.6%	16.1%	8.3%
MSCI ACWI Ex USA         World ex-US         6.9%         9.3%         0.2%         6.0%         2.2%           MSCI EAFE (Net) (USD)         Int'l Developed         6.4%         6.5%         0.5%         7.4%         1.8%           MSCI EAFE (Local)         Int'l Developed (Local Currency)         6.0%         4.6%         5.3%         11.2%         2.2%           S&P EPAC Small Cap         Small Cap int'l         8.5%         11.4%         5.6%         11.5%         4.8%           MSCI EM         Emerging Equity         9.0%         16.8%         -0.6%         3.0%         3.9%           Domestic Fixed Income Benchmarks         Emerging Equity         9.0%         16.8%         -0.6%         3.0%         3.9%           Domestic Fixed Income Benchmarks           Barclays Us High Yield         High Yield         5.6%         12.7%         5.3%         8.3%         7.7%           Barclays Us High Yield         High Yield         5.0%         12.0%         5.6%         8.0%         7.1%           CSFB Levered Loans         Bank Loans         3.1%         5.3%         3.6%         5.4%         4.3%           BofA MIL US 3-Month T-Bill         Cash         0.1%	Russell 2000 Value	Small Value	8.9%	18.8%	6.8%	15.4%	5.8%
MSCI EAFE (Net) (USD)         Int'l Developed         6.4%         6.5%         0.5%         7.4%         1.8%           MSCI EAFE (Local)         Int'l Developed (Local Currency)         6.0%         4.6%         5.3%         11.2%         2.2%           S&P EPAC Small Cap         Small Cap Int'l         8.5%         11.4%         5.6%         11.5%         4.8%           MSCI EM         Emerging Equity         9.0%         16.8%         -0.6%         3.0%         3.9%           Domestic Fixed Income Benchmarks         Barclays Us High Yield         High Yield         5.5%         4.0%         3.1%         4.8%           Barclays US High Yield         High Yield         5.6%         12.7%         5.3%         8.3%         7.7%           BofA ML US HY BB/B         High Yield         5.0%         12.0%         5.6%         8.0%         7.1%           CSFB Levered Loans         Bank Loans         3.1%         5.3%         3.6%         5.4%         4.3%           BofA ML US 3-Month T-Bill         Cash         0.1%         0.3%         0.1%         0.1%         0.9%           Barclays US Tilps 1-10 Yr         Inflation         0.6%         4.8%         1.5%         1.3%         3.8%           Glo	International Equity Benchmarks						
MSCI EAFE (Local)         Int'l Developed (Local Currency)         6.0%         4.6%         5.3%         11.2%         2.2%           S&P EPAC Small Cap         Small Cap Int'l         8.5%         11.4%         5.6%         11.5%         4.8%           MSCI EM         Emerging Equity         9.0%         16.8%         -0.6%         3.0%         3.9%           Domestic Fixed Income Benchmarks           Barclays Aggregate         Core Bonds         0.5%         5.2%         4.0%         3.1%         4.8%           Barclays US High Yield         High Yield         5.6%         12.7%         5.3%         8.3%         7.7%           BofA ML US HY BB/B         High Yield         5.0%         12.0%         5.6%         8.0%         7.1%           CSFB Levered Loans         Bank Loans         3.1%         5.3%         3.6%         5.4%         4.3%           BofA ML US 3-Month T-Bill         Cash         0.1%         0.3%         0.1%         0.1%         0.9%           Barclays US TIPS 1-10 Yr         Inflation         0.6%         4.8%         1.5%         1.3%         3.8%           Citigroup WGBI         World Gov. Bonds         0.3%         9.7%         1.8%         0.8%         4.	MSCI ACWI Ex USA	World ex-US	6.9%	9.3%	0.2%	6.0%	2.2%
S&P EPAC Small Cap         Small Cap Int'I         8.5%         11.4%         5.6%         11.5%         4.8%           MSCI EM         Emerging Equity         9.0%         16.8%         -0.6%         3.0%         3.9%           Domestic Fixed Income Benchmarks         Barclays Aggregate         Core Bonds         0.5%         5.2%         4.0%         3.1%         4.8%           Barclays US High Yield         High Yield         5.6%         12.7%         5.3%         8.3%         7.7%           BofA ML US HY BB/B         High Yield         5.0%         12.0%         5.6%         8.0%         7.1%           CSFB Levered Loans         Bank Loans         3.1%         5.3%         3.6%         5.4%         4.3%           BofA ML US 3-Month T-Bill         Cash         0.1%         0.3%         0.1%         0.1%         0.9%           Barclays US TIPS 1-10 Yr         Inflation         0.6%         4.8%         1.5%         1.3%         3.8%           Global Fixed Income Benchmarks         Citigroup WGBI         World Gov. Bonds         0.3%         9.7%         1.8%         0.8%         4.1%           Barclays Global Aggregate         Global Bonds         1.8%         7.6%         2.9%         3.7% <t< td=""><td>MSCI EAFE (Net) (USD)</td><td>Int'i Developed</td><td>6.4%</td><td>6.5%</td><td>0.5%</td><td>7.4%</td><td>1.8%</td></t<>	MSCI EAFE (Net) (USD)	Int'i Developed	6.4%	6.5%	0.5%	7.4%	1.8%
MSCI EM	MSCI EAFE (Local)	Int'l Developed (Local Currency)	6.0%	4.6%	5.3%	11.2%	2.2%
Domestic Fixed Income Benchmarks	S&P EPAC Small Cap	Small Cap Int'l	8.5%	11.4%	5.6%	11.5%	4.8%
Barclays Aggregate	MSCI EM	Emerging Equity	9.0%	16.8%	-0.6%	3.0%	3.9%
Barclays US High Yield   High Yield   5.6%   12.7%   5.3%   8.3%   7.7%	Domestic Fixed Income Benchmarks						
BofA ML US HY BB/B	Barclays Aggregate	Core Bonds	0.5%	5.2%	4.0%	3.1%	4.8%
CSFB Levered Loans   Bank Loans   3.1%   5.3%   3.6%   5.4%   4.3%	Barclays US High Yield	High Yield	5.6%	12.7%	5.3%	8.3%	7.7%
BofA ML US 3-Month T-Bill   Cash   0.1%   0.3%   0.1%   0.1%   0.9%	BofA ML US HY BB/B	High Yield	5.0%	12.0%	5.6%	8.0%	7.1%
Barclays US TIPS 1-10 Yr	CSFB Levered Loans	Bank Loans	3.1%	5.3%	3.6%	5.4%	4.3%
Citigroup WGBI   World Gov. Bonds   0.3%   9.7%   1.8%   0.8%   4.1%	BofA ML US 3-Month T-Bill	Cash	0.1%	0.3%	0.1%	0.1%	0.9%
Citigroup WGBI         World Gov. Bonds         0.3%         9.7%         1.8%         0.8%         4.1%           Barclays Global Aggregate         Global Core Bonds         0.8%         8.8%         2.1%         1.7%         4.3%           BC Global Credit         Global Bonds         1.8%         7.6%         2.9%         3.7%         4.6%           JPM GBI-EM Glob. Diversified         Em. Mkt. Bonds (Local Currency)         2.4%         16.8%         -2.7%         0.0%         5.5%           JPM EMBI+         Em. Mkt. Bonds         3.1%         17.8%         8.0%         7.3%         7.6%           Alternative Benchmarks         Bloomberg Commodity Index         Commodity         -3.9%         -2.6%         -12.3%         -9.4%         -5.3%           Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%	Barclays US TIPS 1-10 Yr	Inflation	0.6%	4.8%	1.5%	1.3%	3.8%
Barclays Global Aggregate Global Core Bonds 0.8% 8.8% 2.1% 1.7% 4.3% BC Global Credit Global Bonds 1.8% 7.6% 2.9% 3.7% 4.6% JPM GBI-EM Glob. Diversified Em. Mkt. Bonds (Local Currency) 2.4% 16.8% -2.7% 0.0% 5.5% JPM EMBI+ Em. Mkt. Bonds 3.1% 17.8% 8.0% 7.3% 7.6% Alternative Benchmarks  Bloomberg Commodity Index Commodity -3.9% -2.6% -12.3% -9.4% -5.3% Credit Suisse Hedge Fund Index Hedge Fund 1.8% -0.0% 2.6% 4.3% 4.2% HFRI FoF Conservative Fund of Hedge Funds 1.9% 0.3% 2.2% 3.1% 1.5% Cambridge PE Lagged* Private Equity 4.2% 3.6% 11.3% 11.3% 10.8% NCREIF ODCE Net Lagged* Real Estate 1.9% 10.8% 12.0% 11.7% 5.2% Wilshire REIT Index REIT -1.2% 17.9% 14.3% 15.8% 5.9%	Global Fixed Income Benchmarks						
BC Global Credit Global Bonds 1.8% 7.6% 2.9% 3.7% 4.6%  JPM GBI-EM Glob. Diversified Em. Mkt. Bonds (Local Currency) 2.4% 16.8% -2.7% 0.0% 5.5%  JPM EMBI+ Em. Mkt. Bonds 3.1% 17.8% 8.0% 7.3% 7.6%  Alternative Benchmarks  Bloomberg Commodity Index Commodity -3.9% -2.6% -12.3% -9.4% -5.3%  Credit Suisse Hedge Fund Index Hedge Fund 1.8% -0.0% 2.6% 4.3% 4.2%  HFRI FoF Conservative Fund of Hedge Funds 1.9% 0.3% 2.2% 3.1% 1.5%  Cambridge PE Lagged* Private Equity 4.2% 3.6% 11.3% 11.3% 10.8%  NCREIF ODCE Net Lagged* Real Estate 1.9% 10.8% 12.0% 11.7% 5.2%  Wilshire REIT 1.12% 17.9% 14.3% 15.8% 5.9%	Citigroup WGBI	World Gov. Bonds	0.3%	9.7%	1.8%	0.8%	4.1%
JPM GBI-EM Glob. Diversified         Em. Mkt. Bonds (Local Currency)         2.4%         16.8%         -2.7%         0.0%         5.5%           JPM EMBI+         Em. Mkt. Bonds         3.1%         17.8%         8.0%         7.3%         7.6%           Alternative Benchmarks         Bloomberg Commodity Index         Commodity         -3.9%         -2.6%         -12.3%         -9.4%         -5.3%           Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	Barclays Global Aggregate	Global Core Bonds	0.8%	8.8%	2.1%	1.7%	4.3%
JPM EMBI+         Em. Mkt. Bonds         3.1%         17.8%         8.0%         7.3%         7.6%           Alternative Benchmarks           Bloomberg Commodity Index         Commodity         -3.9%         -2.6%         -12.3%         -9.4%         -5.3%           Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	BC Global Credit	Global Bonds	1.8%	7.6%	2.9%	3.7%	4.6%
Alternative Benchmarks         Bloomberg Commodity Index         Commodity         -3.9%         -2.6%         -12.3%         -9.4%         -5.3%           Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	JPM GBI-EM Glob. Diversified	Em. Mkt. Bonds (Local Currency)	2.4%	16.8%	-2.7%	0.0%	5.5%
Bloomberg Commodity Index         Commodity         -3.9%         -2.6%         -12.3%         -9.4%         -5.3%           Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	JPM EMBI+	Em. Mkt. Bonds	3.1%	17.8%	8.0%	7.3%	7.6%
Credit Suisse Hedge Fund Index         Hedge Fund         1.8%         -0.0%         2.6%         4.3%         4.2%           HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	Alternative Benchmarks						
HFRI FoF Conservative         Fund of Hedge Funds         1.9%         0.3%         2.2%         3.1%         1.5%           Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	Bloomberg Commodity Index	Commodity	-3.9%	-2.6%	-12.3%	-9.4%	-5.3%
Cambridge PE Lagged*         Private Equity         4.2%         3.6%         11.3%         11.3%         10.8%           NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	Credit Suisse Hedge Fund Index	Hedge Fund	1.8%	-0.0%	2.6%	4.3%	4.2%
NCREIF ODCE Net Lagged*         Real Estate         1.9%         10.8%         12.0%         11.7%         5.2%           Wilshire REIT Index         REIT         -1.2%         17.9%         14.3%         15.8%         5.9%	HFRI FoF Conservative	Fund of Hedge Funds	1.9%	0.3%	2.2%	3.1%	1.5%
Wilshire REIT Index REIT -1.2% 17.9% 14.3% 15.8% 5.9%	Cambridge PE Lagged*	Private Equity	4.2%	3.6%	11.3%	11.3%	10.8%
	NCREIF ODCE Net Lagged*	Real Estate	1.9%	10.8%	12.0%	11.7%	5.2%
CPI + 2%         Inflation/Real Assets         0.9%         3.4%         3.0%         3.2%         3.8%	Wilshire REIT Index	REIT	-1.2%	17.9%	14.3%	15.8%	5.9%
	CPI + 2%	Inflation/Real Assets	0.9%	3.4%	3.0%	3.2%	3.8%



<sup>\*</sup> As of 6/30/2016



September 30, 2016

### Market Environment

### **Global Equity**

- U.S. equities posted modest gains in the third quarter (+3.9%) according to the S&P 500. Volatility related to political change and economic uncertainty continued in the quarter.
- Small cap stocks outperformed large cap stocks during the quarter, with the Russell 2000 Index returning
   9.0% and the Russell 1000 Index returning 4.0%.
- International equities outperformed U.S. markets during the quarter, returning +6.9%, as measured by the MSCI ACWI ex-U.S. Index. Emerging markets returned +9.0 as measured by the MSCI Emerging Markets Index in U.S. dollar terms.
  - Developed international markets returned +6.4% as measured by the MSCI EAFE Index.

### **Private Equity**

- Private equity fundraising totaled \$71.7 billion in Q3 2016.
- Buyout and Special Situations fundraising totaled \$38 billion in Q3 2016.
- Venture capital fundraising totaled \$11.7 billion.
  - VC fundraising as a percent of total new PE funds is in line with historical post-dot com levels.
- Fund of fund and multi-manager co-investment fundraising totaled \$3 billion.
- Growth equity fundraising totaled \$7.2 billion.



### Market Environment

### **Fixed Income**

- The nominal yield curve flattened in the Q3. Intermediate yields increased 13 -to- 17 basis points and long duration yields increased 2 basis points.
- The spread between two and 10-year rates decreased to 83 basis points in Q3 from 91 basis points in Q2. Treasury Inflation-Protected Securities, or TIPS, returned +0.6% during the quarter, as measured by the Barclays US TIPS 1-10 Yr Index.
- The Barclays Long Duration Credit Index gained +2.26% as the long end of the curve ended the quarter 2 basis points higher.
- Long Treasuries lost -0.36% and investment-grade US corporate debt gained +0.5%.
- The Barclays 1-3 year Government/ Credit Index returned +0.02%. US high yield bonds gained +5.6% driven by lower quality and Energy names.
- Emerging markets debt continued its broad rally.
  - US dollar-denominated debt, as measured by the JP Morgan EMBI Index, gained +3.1%; local currency debt gained +2.4%, according to the JP Morgan GBI-EM Index.
  - 90% of flows have been into EM Hard Currency
  - Despite a spectacular +17% YTD, EM Local 3-year return is still -3.17%



#### Market Environment

#### Real Assets/Inflation-Linked Assets

- Massive energy market dislocation.
  - Seek inflation sensitive asset classes that offer positive yield
  - Oil prices stabilizing and remain low.
  - Private equity and private debt opportunities may be relatively attractive.
  - Potential for public stressed/distressed credit, equity and commodity plays.
- Select infrastructure opportunities showing signs of being attractive.
  - Target opportunistic strategies in niche sub-sectors to take advantage of market dislocations.
  - Secular opportunities may exist within the shipping industry as traditional financing sources (both debt and equity) are less abundant
- Timber opportunities remain elusive.
  - Income yields (net) are low as assets are predominantly traded between like-minded institutions
  - Private strategies are illiquid and constrain quick entrance/exit (i.e. long-term lock-up)
  - Liquid strategies have limited pure timber exposure (and limited active-play options)
- Metals & Mining; weakened commodity prices may be the new norm as China growth shifts.
- Agriculture; outlook supported by strong demographic trends.



#### Market Environment

#### **Commodities**

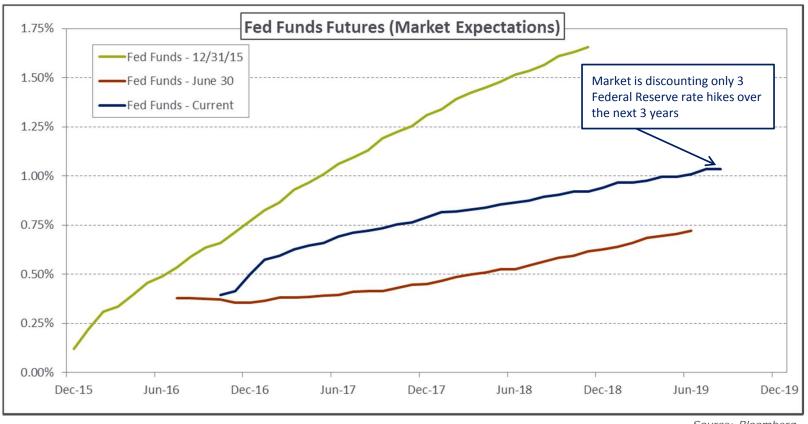
- Commodities ended quarter down -3.9% as measured by the Bloomberg Commodity Index.
  - Gold lost -0.5% in the third quarter though rallying YTD approximately 24%.
  - Agricultural commodities were lower during the guarter.

#### **Real Estate**

- NEPC continues to be neutral on core real estate in the US and remains positive on non-core real estate, that is, value-add and opportunistic strategies.
- Within U.S. core real estate, strong fundamentals continue to be the story along with attractive income spreads relative to interest rates.
  - Real estate fundamentals and debt terms are attractive, however valuations are high and the possibility of rising interest rates and the impact on cap rates causes concern.
- Overall, the non-core real estate investment environment in the U.S. is normalizing; however, select areas remain attractive.
- US REITs recorded negative returns -1.2% as measured by the Wilshire REIT Index. The sector is trading at a slight premium to NAV ending Q3.
- Europe is viewed as the best place for a marginal dollar of non-core real estate investment.
  - Current US-dollar denominated investors with currency exposure will feel near-term impact of Brexit, but new investors may benefit from a strong US-dollar. Long-term Brexit implications, however, are unclear.



### **Expectations of Federal Reserve Action Have Decreased Considerably**

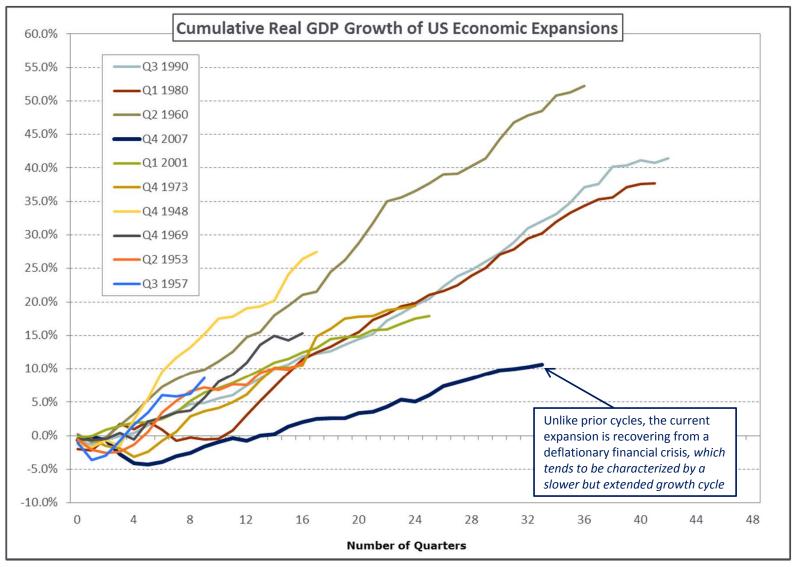


Source: Bloomberg

- Muted, but consistent, US economic growth gives the Fed flexibility to move slowly with policy tightening
- Markets discounting a more muted pace increases potential for a negative Fed surprise



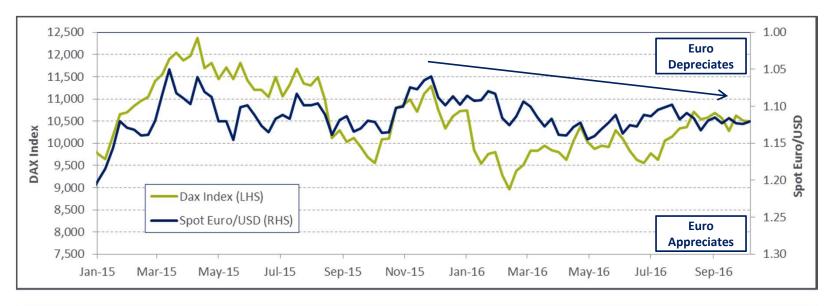
### A Prolonged US Economic Expansion can Support an Extended Rally for Risk Assets



Source: Federal Reserve Bank of St. Louis



### Central Bank Ability to Weaken the Currency and Stimulate Equity Markets has Waned

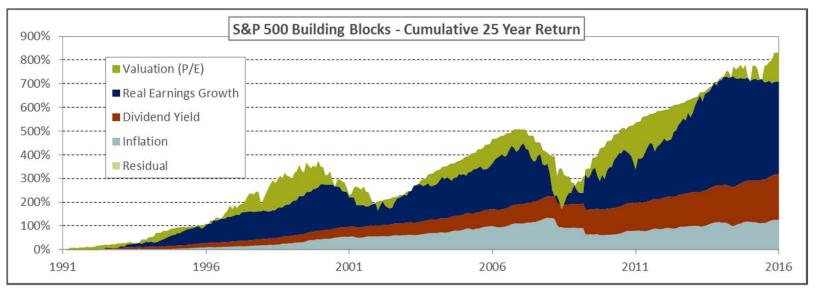


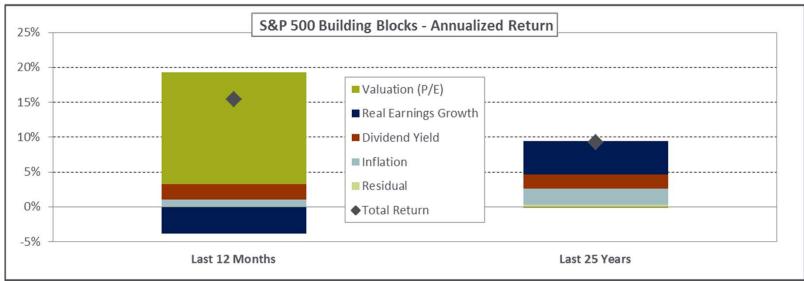






### S&P Earnings Weakness has been Overlooked as Expanding Valuations Drive Recent Returns



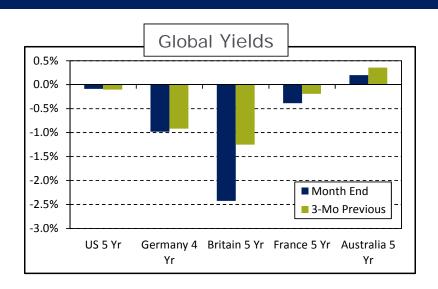


Source: Bloomberg, NEPC



### Global Bonds – Developed Market Sovereign Debt

 Global real yields continue trending lower



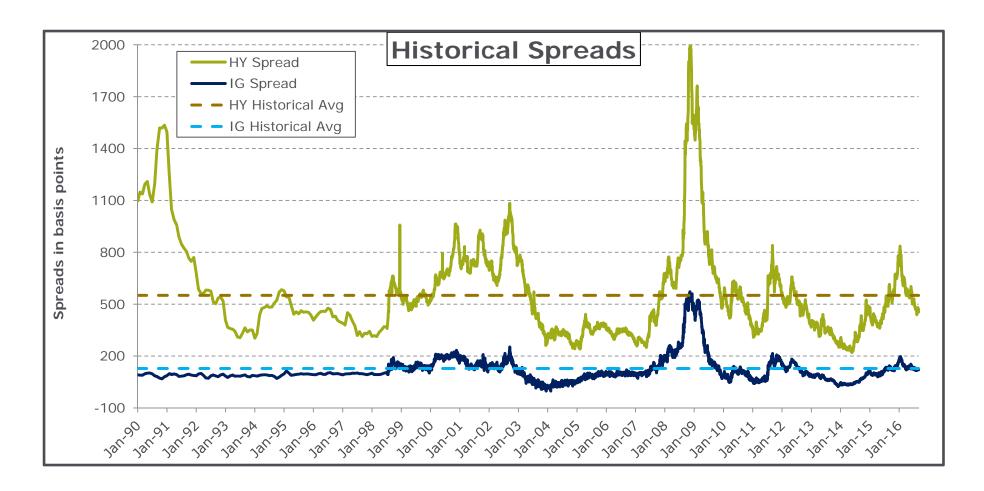
 Global government yields by maturity buckets – more than a third is negative yielding!





### Credit Cycle and Historical Spreads

IG and HY spreads are at or below historical averages





#### **General Actions for Clients**

#### Trim US equity exposure as US markets have rebounded significantly

- Remain disciplined and look for rebalancing opportunities should equity markets decline
- Use tactical strategies to capture pockets of value in US high yield as spreads compress

#### Maintain overweight exposure to non-US developed market equities

- Central bank support and dollar strength provide a positive economic backdrop
- Small-cap equity and global equity are preferred implementation approaches
  - · These strategies offer the best opportunity to exploit valuation discrepancies among stocks

#### Emerging Markets offer the most attractive total return opportunity for investors in public markets

- China uncertainty, dollar pressure and idiosyncratic country risks temper excitement
- Overweight small-cap and consumer focused strategies relative to broad mandates

#### · Developed market duration exposure is generally unattractive

- Preserve US duration exposure with a bias towards TIPS over core bonds
- Rebalance long treasuries, long credit, and risk parity following recent gains
- Look to eliminate WGBI focused global bond strategies with yields at historic lows

#### Embrace illiquidity in opportunistic credit and private credit strategies

- Stressed credit liquidity magnifies the scale of price movements in traditional credit assets
- Credit markets ability to absorb an exodus from crowded positions is challenged



## Highlights of Third Quarter Happenings at NEPC

**September 30, 2016** 

#### **NEPC Insights**

#### **Recent White Papers**

- "DC Governance: Slaying the Hydra" (August)
- "Nonprofit Annual Audit Survival Guide" (August)
- "Class is in Session: Lawsuits Against Higher Education Retirement Plans" (September)
- Market Chatter: "NEPC's Summer Travel: Perspectives on China" (September)
- NEPC's 11<sup>th</sup> Annual Defined Contribution Plan & Fee Survey

#### Webinar

 "2016 Defined Contribution Plan & Fee Survey Webinar" (September); Panel reviewed key findings from our 11th annual NEPC 2016 Defined Contribution Plan & Fee Survey.

#### **Video Series**

- "Five Questions with Jeff Roberts on Healthcare Strategic Private Equity Investing" (July)
- "Five Questions with Richard M. Charlton" (July)
- "Discussing Pension Risk Transfers with Chris Levell and Craig Svendsen" (August)

#### **NEPC Recognitions**

We are pleased to announce that *Chief Investment Officer* published their fifth annual list of the world's most influential investment consultants featuring NEPC's **Tim McCusker**, **FSA**, **CFA**, **CAIA**, **CIO**, **Partner**, and **Scott Perry**, **CAIA**, **Partner**.





#### **Upcoming Events**

The 8<sup>th</sup> Annual NEPC, LLC Public Fund Workshop will be held January 23-24, 2017 in Tempe, Arizona at the Tempe Mission Palms.

NEPC's 22<sup>nd</sup> Annual Investment Conference will be held on May 9-10, 2017 at the InterContinental Hotel in Boston, MA.

## ESG – Clearing Up The Confusion Webinar (Coming in December)

NEPC is hosting a webinar to continue the conversation around Environmental, Social and Governance integration (ESG). We aim to help clear up the confusion around what ESG represents and why it has become a growing topic of interest. NEPC will be joined by investment managers from different asset classes who will offer their insights into how they are implementing ESG into their investment portfolios.

#### **NEPC Gives Back**

- NEPC employees went "sock-less" and participated in the Sox for Socks drive to support the Boston Health Care for the Homeless Program, which provides socks for the homeless men and women of Boston.
- Eighteen NEPC employees volunteered to work with Habitat for Humanity Greater Boston, stepping up to help build new homes for lowincome families in need of decent and affordable housing.









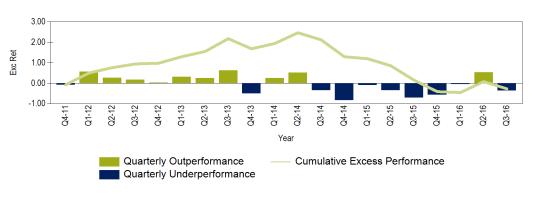


### Total Fund Performance Summary (Net)

	Market Value	3 Mo	Rank	YTD	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank	Return	Since
Total Fund	\$4,666,540,419	3.3%	82	7.2%	35	10.2%	19	6.0%	41	10.1%	17	5.5%	38	7.9%	Apr-94
Policy Index		3.6%	61	7.1%	40	10.7%	3	6.8%	7	10.2%	13	5.8%	21	7.9%	Apr-94
60% MSCI ACWI (Net)/40% CITI WGBI		3.3%	82	8.5%	8	11.3%	1	4.0%	95	6.8%	97	4.6%	86		Apr-94
InvestorForce Public DB > \$1B Net Median		3.8%		6.8%		9.3%		5.5%		9.0%		5.4%		7.4%	Apr-94

- For the five-year period ending September 30, 2016, the Fund returned 10.1%, trailing the policy index by 0.1% and ranking in the 17th percentile of its peers. However, outperforming the actuarial assumed rate of 7.5%. The Fund's volatility, as measured by standard deviation, ranked in the 73rd percentile of its peers, and the risk-adjusted return, or Sharpe Ratio, ranks in the 37th percentile. This means that the Fund has earned more return per unit of volatility taken than 63% of its peers.
- For the three-year period, the Fund returned 6.0%, trailing the policy index by 0.8% and ranking in the 41st percentile of its peers. The Fund's volatility ranks in the bottom half of its peers over this period, with the Fund's Sharpe Ratio ranking in the 44th percentile.
- For the one-year period, the Fund returned 10.2%, trailing the policy index by 0.5% and ranking in the 19th percentile of the InvestorForce Public Funds > \$1 Billion Universe (Net of Fees).
- For the one-year period, the Fund experienced a net investment gain of \$446 million, which includes a net investment gain of \$154 million in the quarter. Assets decreased from \$4.21 billion one year ago to \$4.67 billion.

#### **Quarterly and Cumulative Excess Performance**



#### 3 Years Ending September 30, 2016

	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank	
Total Fund	6.0%	41	6.8%	68	0.9	44	1.5	31	
Policy Index	6.8%	7	6.7%	67	1.0	17	1.7	11	
InvestorForce Public DB > \$1B Net Median	5.5%		6.4%		0.8		1.4		

#### 5 Years Ending September 30, 2016

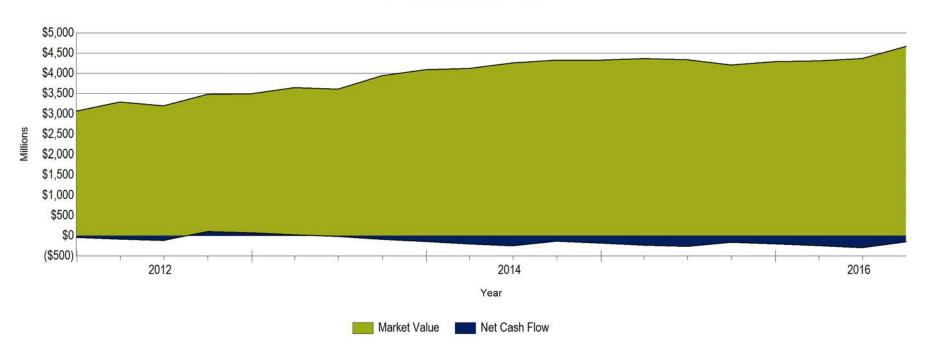
	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Sharpe Ratio	Rank	Sortino Ratio RF	Rank	
Total Fund	10.1%	17	7.5%	73	1.3	37	2.3	20	
Policy Index	10.2%	13	7.5%	74	1.4	35	2.2	27	
InvestorForce Public DB > \$1B Net Median	9.0%		7.0%		1.3		2.1		

Policy Index as of January 2016: 28% Russell 3000, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.



### Total Fund Asset Growth Summary

Market Value History
5 Years Ending September 30, 2016

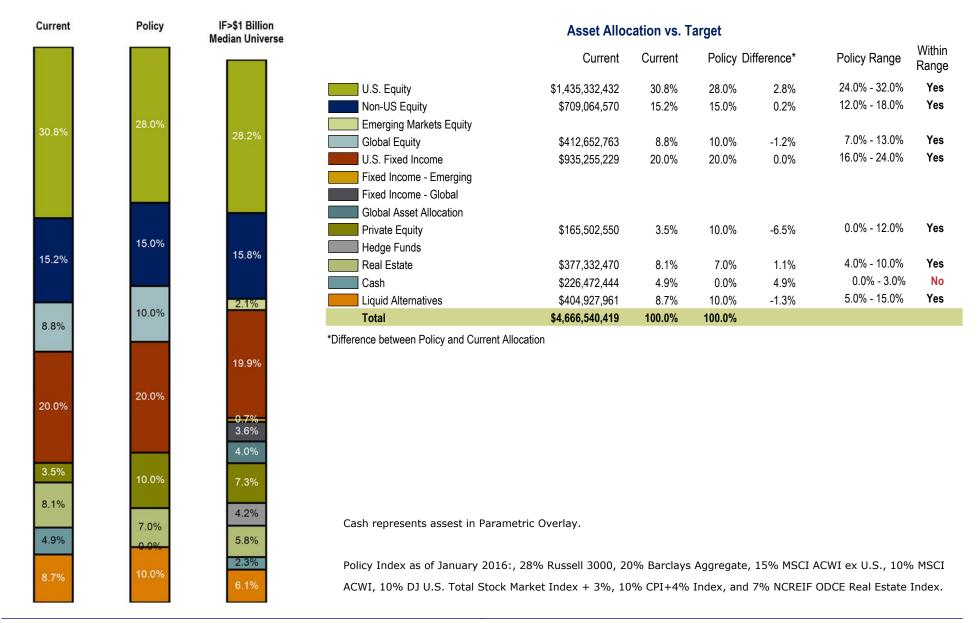


#### **Summary of Cash Flows**

		•			
	Last Three Months	Year-To-Date	One Year	Three Years	Five Years
Beginning Market Value	\$4,367,190,644	\$4,290,811,595	\$4,208,105,148	\$3,944,521,428	\$2,927,905,337
Net Cash Flow	\$145,278,429	\$50,345,120	\$11,964,262	-\$61,098,474	-\$148,882,893
Net Investment Change	\$154,071,346	\$325,383,704	\$446,471,009	\$783,117,465	\$1,887,517,975
Ending Market Value	\$4,666,540,419	\$4,666,540,419	\$4,666,540,419	\$4,666,540,419	\$4,666,540,419

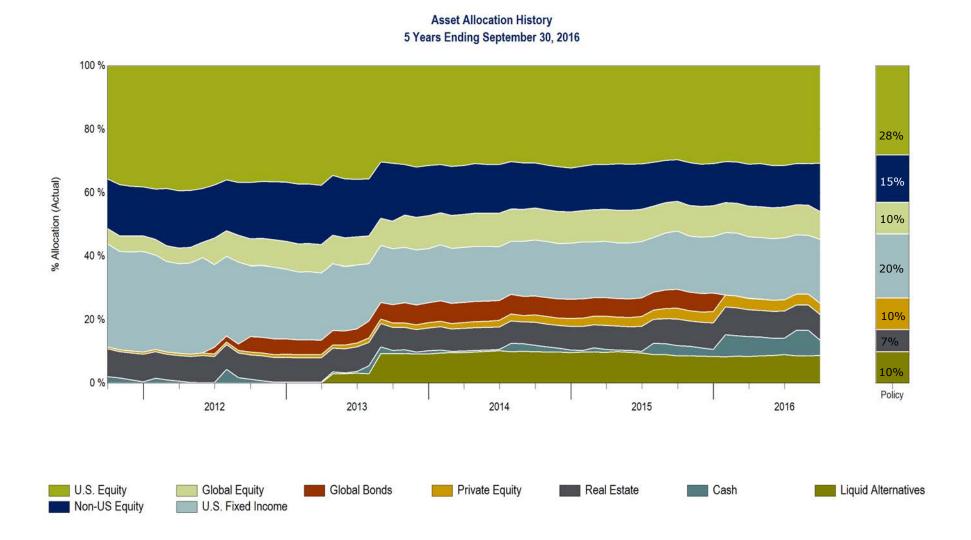


### Total Fund Asset Allocation vs. Policy Targets





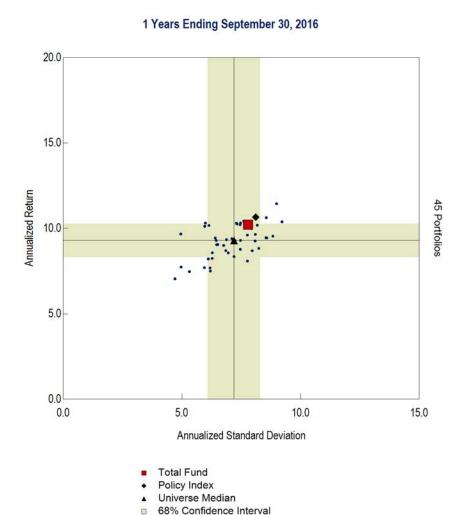
### Total Fund Allocation History



Policy Index shown is most recently approved index

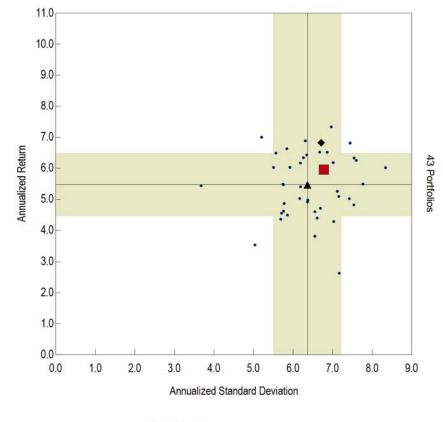


### Total Fund Risk/Return



InvestorForce Public DB > \$1B Net

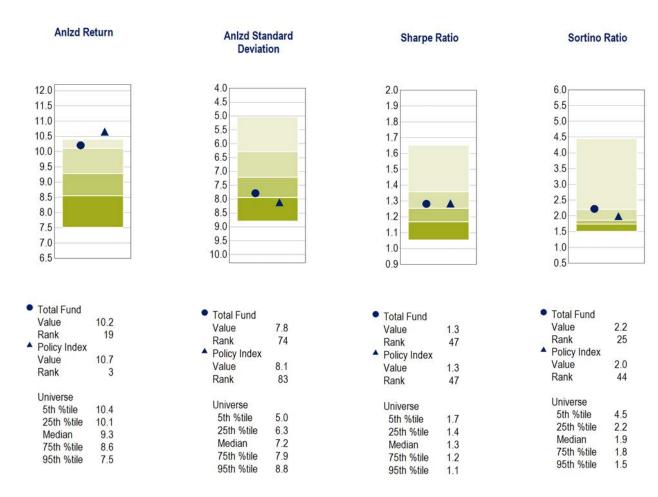




- Total Fund
- Policy Index
- Universe Median
- 68% Confidence Interval
- InvestorForce Public DB > \$1B Net

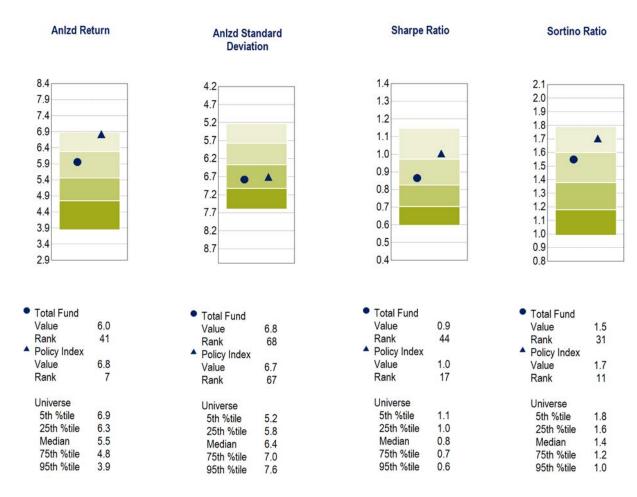
### Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net
1 Year

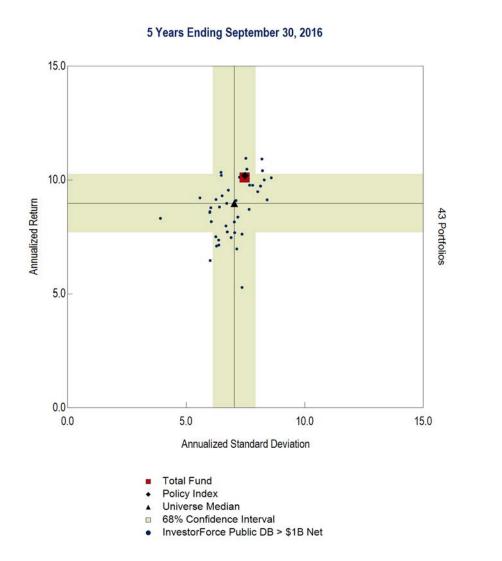


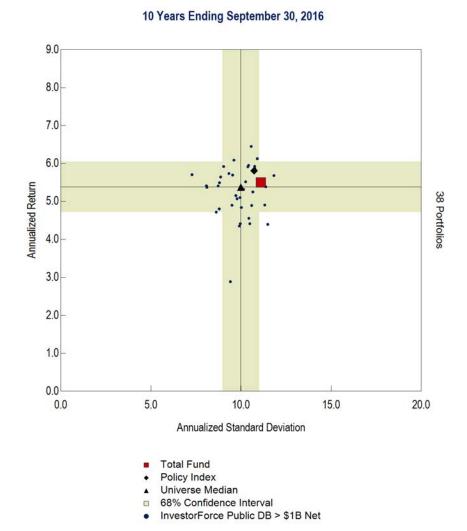
### Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net 3 Years



### Total Fund Risk/Return

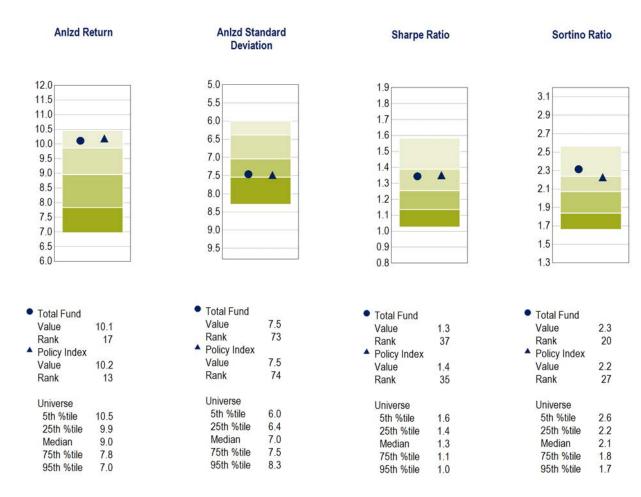






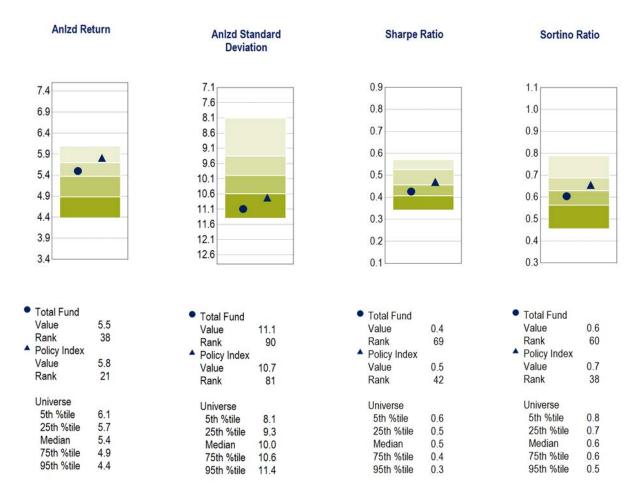
### Total Fund Risk Statistics vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net 5 Years

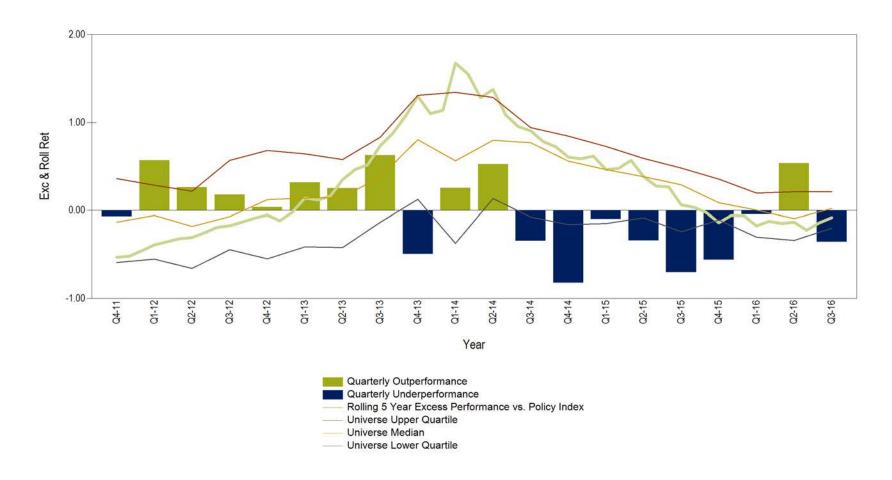


### Total Fund Risk Statistics vs. Peer Universe

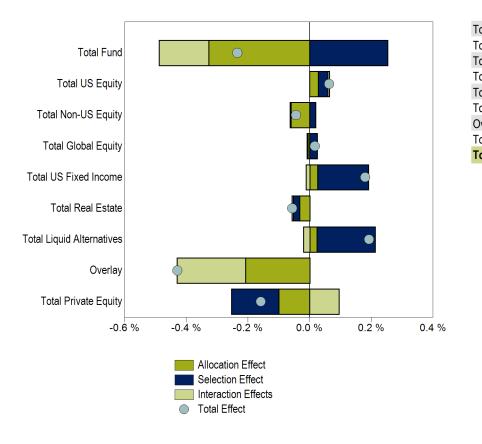
Total Fund vs. InvestorForce Public DB > \$1B Net 10 Years



#### Rolling Annualized Excess Performance



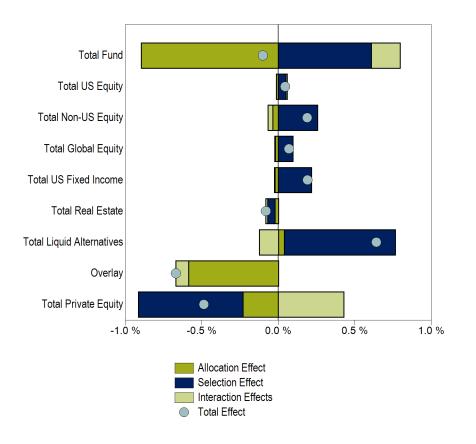
Attribution Effects
3 Months Ending September 30, 2016



## Attribution Summary 3 Months Ending September 30, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	4.5%	4.4%	0.1%	0.0%	0.0%	0.0%	0.1%
Total Non-US Equity	7.0%	6.9%	0.1%	0.0%	-0.1%	0.0%	0.0%
Total Global Equity	5.6%	5.3%	0.3%	0.0%	0.0%	0.0%	0.0%
Total US Fixed Income	1.3%	0.5%	0.8%	0.2%	0.0%	0.0%	0.2%
Total Real Estate	1.5%	1.8%	-0.3%	0.0%	0.0%	0.0%	-0.1%
Total Liquid Alternatives	3.0%	1.2%	1.9%	0.2%	0.0%	0.0%	0.2%
Overlay	-4.4%	0.1%	-4.4%	0.0%	-0.2%	-0.2%	-0.4%
Total Private Equity	3.6%	5.2%	-1.6%	-0.2%	-0.1%	0.1%	-0.2%
Total	3.4%	3.6%	-0.2%	0.3%	-0.3%	-0.2%	-0.2%

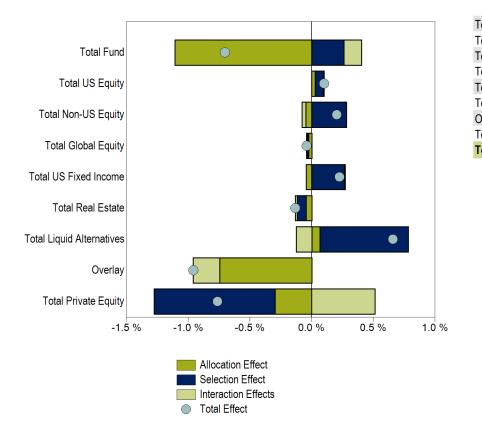
Attribution Effects
Year to Date Ending September 30, 2016



#### Attribution Summary Year to Date Ending September 30, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	8.4%	8.2%	0.2%	0.1%	0.0%	0.0%	0.0%
Total Non-US Equity	7.6%	5.8%	1.8%	0.3%	0.0%	0.0%	0.2%
Total Global Equity	7.5%	6.6%	0.9%	0.1%	0.0%	0.0%	0.1%
Total US Fixed Income	6.9%	5.8%	1.1%	0.2%	0.0%	0.0%	0.2%
Total Real Estate	5.1%	5.8%	-0.7%	0.0%	0.0%	0.0%	-0.1%
Total Liquid Alternatives	12.1%	5.1%	7.0%	0.7%	0.0%	-0.1%	0.6%
Overlay	4.6%	0.2%	4.4%	0.0%	-0.6%	-0.1%	-0.7%
Total Private Equity	4.1%	10.5%	-6.5%	-0.7%	-0.2%	0.4%	-0.5%
Total	7.0%	7.1%	-0.1%	0.6%	-0.9%	0.2%	-0.1%

Attribution Effects
1 Year Ending September 30, 2016

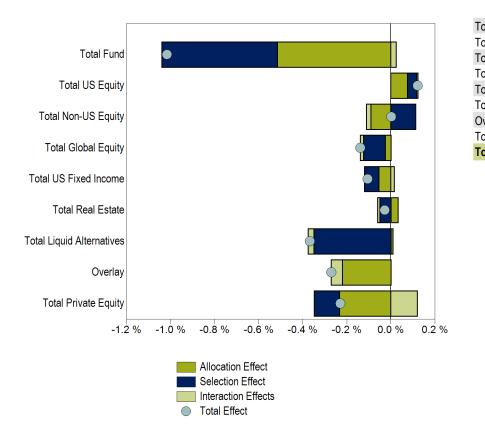


# Attribution Summary 1 Year Ending September 30, 2016

		•					
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	15.2%	14.9%	0.2%	0.1%	0.0%	0.0%	0.1%
Total Non-US Equity	11.2%	9.3%	2.0%	0.3%	0.0%	0.0%	0.2%
Total Global Equity	11.9%	12.0%	-0.1%	0.0%	0.0%	0.0%	0.0%
Total US Fixed Income	6.5%	5.2%	1.3%	0.3%	0.0%	0.0%	0.2%
Total Real Estate	8.1%	9.1%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Total Liquid Alternatives	12.0%	5.5%	6.5%	0.7%	0.1%	-0.1%	0.7%
Overlay	1.1%	0.2%	0.9%	0.0%	-0.7%	-0.2%	-1.0%
Total Private Equity	6.4%	18.3%	-11.9%	-1.0%	-0.3%	0.5%	-0.8%
Total	10.2%	10.7%	-0.5%	0.3%	-1.1%	0.1%	-0.7%



Attribution Effects
3 Years Ending September 30, 2016

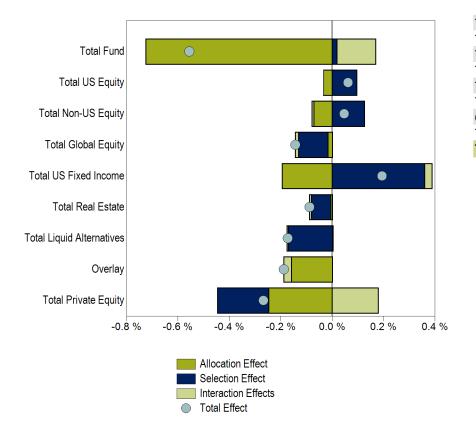


# Attribution Summary 3 Years Ending September 30, 2016

	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	10.5%	10.4%	0.1%	0.0%	0.1%	0.0%	0.1%
Total Non-US Equity	1.0%	0.2%	0.8%	0.1%	-0.1%	0.0%	0.0%
Γotal Global Equity	4.2%	5.2%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Total US Fixed Income	3.7%	4.0%	-0.3%	-0.1%	-0.1%	0.0%	-0.1%
Total Real Estate	10.7%	11.4%	-0.8%	-0.1%	0.0%	0.0%	0.0%
Total Liquid Alternatives	3.2%	7.0%	-3.8%	-0.4%	0.0%	0.0%	-0.4%
Overlay	3.9%	0.1%	3.8%	0.0%	-0.2%	0.0%	-0.3%
Total Private Equity	14.0%	13.7%	0.4%	-0.1%	-0.2%	0.1%	-0.2%
Total	6.1%	6.9%	-0.8%	-0.5%	-0.5%	0.0%	-1.0%



Attribution Effects
5 Years Ending September 30, 2016



# Attribution Summary 5 Years Ending September 30, 2016

		•		•			
	Wtd. Actual Return	Wtd. Index Return	Excess Return	Selection Effect	Allocation Effect	Interaction Effects	Total Effects
Total US Equity	16.6%	16.3%	0.3%	0.1%	0.0%	0.0%	0.1%
Total Non-US Equity	6.9%	6.0%	0.9%	0.1%	-0.1%	0.0%	0.0%
Total Global Equity	9.4%	10.6%	-1.2%	-0.1%	0.0%	0.0%	-0.1%
Total US Fixed Income	4.3%	3.1%	1.2%	0.4%	-0.2%	0.0%	0.2%
Total Real Estate	10.3%	11.3%	-1.0%	-0.1%	0.0%	0.0%	-0.1%
Total Liquid Alternatives				-0.2%	0.0%	0.0%	-0.2%
Overlay				0.0%	-0.2%	0.0%	-0.2%
Total Private Equity				-0.2%	-0.2%	0.2%	-0.3%
Total	10.0%	10.4%	-0.4%	0.0%	-0.7%	0.1%	-0.6%

### Total Fund Risk Statistics

#### 1 Year Ending September 30, 2016

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	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	54.8%	13.6%	39	13.1%	45	2.0%	41	1.0%	1	1.7	3	1.0
MSCI ACWI		12.0%	51	13.5%	52	0.0%	57	0.0%	1			1.0
Total US Equity	30.8%	15.2%	27	12.8%	41	0.1%	29	0.1%	1	2.1	1	1.0
Russell 3000		14.9%	28	12.7%	39	0.0%	30	0.0%	1			1.0
Total Non-US Equity	15.2%	11.2%	18	14.3%	60	2.4%	24	1.4%	1	1.5	1	1.0
MSCI ACWI ex USA		9.3%	34	15.0%	77	0.0%	40	0.0%	1			1.0
Total Global Equity	8.8%	11.9%	47	13.2%	56	0.2%	52	1.1%	1	-0.1	49	1.0
MSCI ACWI		12.0%	45	13.5%	60	0.0%	53	0.0%	1			1.0
Total Fixed Income	20.0%	6.4%	40	2.9%	63	2.3%	24	3.3%	79	-0.7	94	0.4
Barclays Global Aggregate		8.8%	8	5.0%	98	0.0%	85	0.0%	1			1.0
Total US Fixed Income	20.0%	6.5%	36	3.0%	65	2.5%	34	2.4%	65	0.5	39	0.8
Barclays Aggregate		5.2%	50	2.3%	55	0.0%	75	0.0%	1			1.0
Total Liquid Alternatives	8.7%	12.0%		10.6%		-15.5%		10.3%		0.6		5.2
CPI + 4% (Unadjusted)		5.5%		0.9%		0.0%		0.0%				1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.1%	8.1%	88	3.5%	46
NCREIF ODCE Net		9.1%	67	3.9%	66
Total Private Equity	3.5%	6.4%	29	3.9%	41
DJ U.S. Total Stock Market Index + 3%		18.3%	1	12.8%	99

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used for Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 50 portfolios ) and Total Private Equity(InvestorForce Public DB Private Equity Consists of 29 portfolios).



### Total Fund Risk Statistics

3 Years	<b>Fnding</b>	September	30	2016
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				0	aa ook		•					
	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	54.8%	6.8%	70	11.0%	23	1.8%	72	1.1%	1	1.4	6	1.0
MSCI ACWI		5.2%	84	11.3%	32	0.0%	86	0.0%	1			1.0
Total US Equity	30.8%	10.5%	20	11.0%	23	0.1%	22	0.1%	1	1.8	1	1.0
Russell 3000		10.4%	21	11.0%	23	0.0%	23	0.0%	1			1.0
Total Non-US Equity	15.2%	1.0%	63	12.0%	49	0.8%	63	1.2%	1	0.7	26	0.9
MSCI ACWI ex USA		0.2%	81	12.7%	82	0.0%	81	0.0%	1			1.0
Total Global Equity	8.8%	4.2%	74	11.5%	48	-1.0%	75	1.3%	1	-0.8	92	1.0
MSCI ACWI		5.2%	62	11.3%	42	0.0%	66	0.0%	1			1.0
Total Fixed Income	20.0%	3.2%	67	2.3%	37	2.2%	10	2.7%	82	0.4	43	0.4
Barclays Global Aggregate		2.1%	99	4.2%	97	0.0%	86	0.0%	1			1.0
Total US Fixed Income	20.0%	3.7%	52	2.2%	42	1.7%	24	2.2%	57	-0.1	51	0.5
Barclays Aggregate		4.0%	45	2.6%	57	0.0%	77	0.0%	1			1.0
Total Liquid Alternatives	8.7%	3.2%		10.2%		-6.1%		9.8%		-0.4		1.3
CPI + 4% (Unadjusted)		7.0%		2.0%		0.0%		0.0%				1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.1%	10.7%	81	4.4%	46
NCREIF ODCE Net		11.4%	72	4.7%	52
Total Private Equity	3.5%	14.0%	15	6.9%	74
DJ U.S. Total Stock Market Index + 3%		13.7%	20	11.0%	93

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used for Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 45 portfolios) and Total Private Equity(InvestorForce Public DB Private Equity Consists of 28 portfolios).



### Total Fund Risk Statistics

#### 5 Years Ending September 30, 2016

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank	Anlzd AJ	Rank	Tracking Error	Rank	Info Ratio	Rank	Beta
Total Equity	54.8%	12.8%	87	11.6%	23	2.8%	88	1.6%	1	1.4	4	0.9
MSCI ACWI		10.6%	97	12.3%	36	0.0%	98	0.0%	1			1.0
Total US Equity	30.8%	16.6%	26	11.5%	21	0.2%	20	0.3%	1	1.1	1	1.0
Russell 3000		16.3%	32	11.4%	20	0.0%	25	0.0%	1			1.0
Total Non-US Equity	15.2%	6.9%	86	13.3%	38	1.3%	86	1.4%	1	0.7	49	0.9
MSCI ACWI ex USA		6.0%	97	14.2%	81	0.0%	98	0.0%	1			1.0
Total Global Equity	8.8%	9.4%	82	11.6%	26	-0.5%	79	1.9%	1	-0.7	93	0.9
MSCI ACWI		10.6%	69	12.3%	42	0.0%	74	0.0%	1			1.0
Total Fixed Income	20.0%	4.0%	45	2.7%	37	3.1%	15	2.6%	75	0.9	21	0.5
Barclays Global Aggregate		1.7%	99	4.2%	83	0.0%	97	0.0%	1			1.0
Total US Fixed Income	20.0%	4.3%	42	2.6%	46	2.2%	26	2.1%	45	0.6	45	0.7
Barclays Aggregate		3.1%	60	2.7%	47	0.0%	84	0.0%	1			1.0
Total Liquid Alternatives	8.7%											
CPI + 4% (Unadjusted)	-	12.7%		9.5%	-	0.0%		0.0%			-	1.0

	% of Tot	Anlzd Ret	Rank	Anlzd Std Dev	Rank
Total Real Estate	8.1%	10.3%	84	4.2%	33
NCREIF ODCE Net	-	11.3%	75	4.6%	41

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.

Total Non-U.S. Equity Benchmark: MSCI ACWI ex US Free, prior to May 2002, the MSCI EAFE.

Composite rankings are used for Total Real Estate (InvestorForce Public DB Real Estate Pub+Priv consists of 37 portfolios).



#### Total Fund Performance Detail (Net) Market Value % of 3 Mo YTD 1 Yr 3 Yrs 5 Yrs 10 Yrs Return Policy % Rank Rank Rank Rank Rank Rank Since Portfolio (%) (%)(%) (%) (%) (%) (\$) (%)**Total Fund** 4.666.540.419 100.0 100.0 35 10.2 19 41 10.1 38 Apr-94 17 <u>3.6</u> 61 <u>7.1</u> <u>10.7</u> <u>6.8</u> <u>10.2</u> <u>5.8</u> 21 <u>7.9</u> Policy Index 40 3 7 13 Apr-94 -0.3 0.0 Over/Under 0.1 -0.5 8.0--0.1 -0.3 Allocation Index 3.6 62 6.7 54 10.4 6 6.0 37 9.3 38 5.3 57 Apr-94 60% MSCI ACWI (Net)/40% CITI WGBI 3.3 82 8.5 8 11.3 4.0 95 6.8 97 46 86 Apr-94 InvestorForce Public DB > \$1B Net Median 3.8 9.3 5.5 9.0 5.4 7.4 6.8 Apr-94 Total Fund ex Parametric 4.440.067.975 95.1 2.9 7.5 10.4 6.2 10.0 5.5 7.9 Apr-94 Total Fund ex Private Equity 4,501,037,869 96.5 3.3 83 7.4 25 10.3 5.7 42 8.6 Jan-12 3.6 61 7.1 10.7 3 6.8 7 5.8 21 9.3 Policy Index 40 10.2 13 Jan-12 Over/Under -0.3 0.3 -0.4 -1.1-0.7 InvestorForce Public DB > \$1B Net Median 3.8 6.8 9.3 5.5 9.0 5.4 8.3 Jan-12 1.435.332.432 30.8 28.0 4.5 60 41 15.2 27 26 60 **Total US Equity** 8.4 10.5 20 16.6 7.1 8.8 Dec-93 Russell 3000 4.4 61 8.2 42 14.9 28 10.4 21 16.3 32 7.5 49 9.2 Dec-93 Over/Under 0.1 0.2 0.3 0.1 0.3 -0.4 -0.4 5.1 eA All US Equity Net Median 7.3 12.1 8.4 15.3 7.4 9.9 Dec-93 BlackRock Equity Market Fund 1,231,500,384 26.4 42 15.0 10.5 20 16.4 30 Dec-07 Dow Jones U.S. Total Stock Market 4.4 61 <u>8.1</u> 43 14.9 28 10.4 21 16.3 32 7.5 48 7.1 Dec-07 Over/Under 0.0 0.1 0.1 0.1 0.1 0.0 eA All US Equity Net Median 5.1 7.3 12.1 8.4 15.3 7.4 7.0 Dec-07 Western U.S. Index Plus 3.3 154,227,107 65 33 16.8 17 11.8 17.6 May-07 S&P 500 <u>3.9</u> 30 70 <u>7.8</u> 46 <u>15.4</u> 25 <u>11.2</u> 12 16.4 <u>7.2</u> 56 <u>6.1</u> May-07

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40

Color Coding: PERFORMANCE: Green-Over performance, Red-Under performance / Color Coding: RANKS: 1 - 25 Green - Positive Result, 26 - 50 Yellow, 50 - 75 Orange, 76 - 100 Red - Negative Result.

Policy Index: Currently, 28% Russell 3000 Index, 20% Barclays Aggregate, 15% MSCI ACWI ex U.S., 10% MSCI ACWI, 10% DJ U.S. Total Stock Market Index + 3%, 10% CPI+4% Index, and 7% NCREIF ODCE Real Estate Index.

Total U.S. Equity Benchmark: Russell 3000 Index. Prior to January 2016, the Benchmark is a dynamic hybrid using the respective managers' market value weights within the U.S. Equity component toward their benchmark. Prior to May 2013, the Dow Jones U.S. Total Stock Market Index. Prior to May 2007, the Russell 3000 Index.



Over/Under

Over/Under

eA All US Equity Net Median

BlackRock Extended Equity Index

Dow Jones U.S. Completion Total Stock Market

eA US Small-Mid Cap Equity Net Median

September 30, 2016

-2.1

6.1

11.4

11.4

0.0

11.0

May-07

Oct-02

Oct-02

Oct-02

## Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Non-US Equity	709,064,570	15.2	15.0	7.0	39	7.6	9	11.2	18	1.0	63	6.9	86	2.3	63	6.1	Mar-94
MSCI ACWI ex USA				<u>6.9</u>	43	<u>5.8</u>	19	<u>9.3</u>	34	<u>0.2</u>	81	<u>6.0</u>	97	<u>2.2</u>	70	<u>4.8</u>	Mar-94
Over/Under				0.1		1.8		1.9		8.0		0.9		0.1		1.3	
MSCI EAFE				6.4	51	1.7	59	6.5	57	0.5	73	7.4	73	1.8	80	4.5	Mar-94
MSCI ACWI ex USA Local Currency				6.4	52	2.0	56	6.9	50	5.2	14	9.9	34	2.9	51		Mar-94
MSCI EAFE Local Currency				6.0	63	-1.6	94	4.6	78	5.3	14	11.2	20	2.2	69	4.4	Mar-94
eA All EAFE Equity Net Median				6.5		2.6		6.9		1.9		9.0		2.9		6.1	Mar-94
BlackRock ACWI ex-U.S. Index	346,658,699	7.4		7.1	36	6.3	34	10.1	39	0.8	80	6.6	83			1.3	Mar-07
MSCI ACWI ex USA				<u>6.9</u>	40	<u>5.8</u>	34	<u>9.3</u>	49	<u>0.2</u>	82	<u>6.0</u>	90	<u>2.2</u>	78	<u>0.8</u>	Mar-07
Over/Under				0.2		0.5		8.0		0.6		0.6				0.5	
MSCI ACWI ex USA Local Currency				6.4	54	2.0	76	6.9	70	5.2	13	9.9	26	2.9	59	1.9	Mar-07
eA ACWI ex-US All Cap Equity Net Median				6.6		3.8		9.0		2.8		8.6		3.4		2.3	Mar-07
Sprucegrove	180,032,965	3.9		8.8	7	9.1	13	11.3	33	0.2	83	6.6	83	2.7	62	6.9	Mar-02
MSCI ACWI ex USA				<u>6.9</u>	40	<u>5.8</u>	34	9.3	49	<u>0.2</u>	82	<u>6.0</u>	90	<u>2.2</u>	78	<u>6.1</u>	Mar-02
Over/Under				1.9		3.3		2.0		0.0		0.6		0.5		0.8	
MSCI EAFE				6.4	53	1.7	80	6.5	76	0.5	82	7.4	79	1.8	88	5.5	Mar-02
MSCI ACWI ex USA Local Currency				6.4	54	2.0	76	6.9	70	5.2	13	9.9	26	2.9	59	4.6	Mar-02
MSCI EAFE Local Currency				6.0	61	-1.6	99	4.6	89	5.3	13	11.2	13	2.2	76	3.8	Mar-02
eA ACWI ex-US All Cap Equity Net Median				6.6		3.8		9.0		2.8		8.6		3.4		6.9	Mar-02
Hexavest	80,475,702	1.7		4.1	87	4.7	30	7.1	44	1.1	58	7.0	86			3.5	Dec-10
MSCI EAFE				<u>6.4</u>	40	<u>1.7</u>	57	<u>6.5</u>	49	<u>0.5</u>	76	<u>7.4</u>	70	<u>1.8</u>	76	<u>3.4</u>	Dec-10
Over/Under				-2.3		3.0		0.6		0.6		-0.4				0.1	
MSCI EAFE Local Currency				6.0	52	-1.6	94	4.6	78	5.3	2	11.2	10	2.2	60	6.5	Dec-10
eA EAFE All Cap Equity Net Median				6.2		2.9		6.2		1.7		8.5		2.5		4.2	Dec-10
Walter Scott	101,897,203	2.2		6.1	60	10.5	7	17.8	5	2.7	51	7.7	72			4.6	Dec-10
MSCI ACWI ex USA				<u>6.9</u>	40	<u>5.8</u>	34	<u>9.3</u>	49	<u>0.2</u>	82	<u>6.0</u>	90	<u>2.2</u>	78	<u>1.9</u>	Dec-10
Over/Under				-0.8		4.7		8.5		2.5		1.7				2.7	
MSCI ACWI ex USA Local Currency				6.4	54	2.0	76	6.9	70	5.2	13	9.9	26	2.9	59	5.4	Dec-10
eA ACWI ex-US All Cap Equity Net Median				6.6		3.8		9.0		2.8		8.6		3.4		4.3	Dec-10



## Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Global Equity	412,652,763	8.8	10.0	5.6	41	7.5	39	11.9	47	4.2	74	9.4	82	3.4	77	5.0	May-05
MSCI ACWI				<u>5.3</u>	46	<u>6.6</u>	47	<u>12.0</u>	45	<u>5.2</u>	62	<u>10.6</u>	69	<u>4.3</u>	65	<u>6.0</u>	May-05
Over/Under				0.3		0.9		-0.1		-1.0		-1.2		-0.9		-1.0	
eA All Global Equity Net Median				5.0		6.3		11.2		6.0		11.7		4.8		6.9	May-05
BlackRock MSCI ACWI Equity Index	258,912,948	5.5		5.4	44	7.0	44	12.5	41	5.6	55					9.8	Jul-12
MSCI ACWI				<u>5.3</u>	46	<u>6.6</u>	47	<u>12.0</u>	45	<u>5.2</u>	62	<u>10.6</u>	69	<u>4.3</u>	65	<u>9.4</u>	Jul-12
Over/Under				0.1		0.4		0.5		0.4						0.4	
eA All Global Equity Net Median				5.0		6.3		11.2		6.0		11.7		4.8		10.2	Jul-12
GMO Global Equity	153,739,815	3.3		5.7	37	8.2	32	11.3	50	2.7	84	8.3	89	4.2	67	5.8	May-05
MSCI ACWI				<u>5.3</u>	46	<u>6.6</u>	47	<u>12.0</u>	45	<u>5.2</u>	62	<u>10.6</u>	69	<u>4.3</u>	65	<u>6.0</u>	May-05
Over/Under				0.4		1.6		-0.7		-2.5		-2.3		-0.1		-0.2	
eA All Global Equity Net Median				5.0		6.3		11.2		6.0		11.7		4.8		6.9	May-05



### Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Private Equity	165,502,550	3.5	10.0	3.6	33	4.1	54	6.4	29	14.0	15	-				13.8	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>5.2</u>	4	<u>10.5</u>	1	<u>18.3</u>	1	<u>13.7</u>	20	<u>19.7</u>	1			<u>17.8</u>	Jan-12
Over/Under				-1.6		-6.4		-11.9		0.3						-4.0	
InvestorForce Public DB Private Eq Net Median				2.3		4.1		4.5		11.7		10.1		9.2		11.3	Jan-12
Adams Street Global Fund Series	101,802,531	2.2		3.1		3.7		6.6		12.3						12.6	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>5.2</u>		<u>10.5</u>		<u>18.3</u>		<u>13.7</u>		<u>19.7</u>				<u>17.8</u>	Jan-12
Over/Under				-2.1		-6.8		-11.7		-1.4						-5.2	
Harbourvest- Dover Street VII	47,936,336	1.0		2.4		3.4		6.2		19.7						18.1	Jul-13
DJ U.S. Total Stock Market Index + 3%				<u>5.2</u>		<u>10.5</u>		<u>18.3</u>		<u>13.7</u>		<u>19.7</u>				<u>14.9</u>	Jul-13
Over/Under				-2.8		-7.1		-12.1		6.0						3.2	
Pantheon Global Secondary Funds	15,397,544	0.3		11.2		9.2		7.7		11.6						10.0	Jan-12
DJ U.S. Total Stock Market Index + 3%				<u>5.2</u>		<u>10.5</u>		<u>18.3</u>		<u>13.7</u>		<u>19.7</u>				<u>17.8</u>	Jan-12
Over/Under				6.0		-1.3		-10.6		-2.1						-7.8	
Drive Capital Fund	366,139	0.0															

Private equity performance shown above is calculated using a time-weighted return methodology. Market values shown are cash-adjusted based on the current period's cash flows.

Adams Street Global Fund Series includes Adams Street 2010 U.S. Fund, 2010 Non-U.S. Developed Markets Fund, 2010 Non-U.S. Emerging Markets Fund, 2010 Direct Fund, and 2013 Global Fund.

Pantheon Global Secondary Funds includes Pantheon Global Secondary Fund IV and Global Secondary Fund V.

Drive Captial Fund funded 9/1/2016.



### Private Equity Limited Partnership Performance

												Since Inception			
Fund Name	Vintage Year	Initial Investment Date	Commitment	Capital Called to Date <sup>1</sup>	Outstanding Commitment <sup>1</sup>	Call Ratio	Add'l Fees <sup>2</sup>	Distributions to Date	Valuation	Total Value	Net Benefit	IRR	Distributions to Paid In Multiple (DPI)		
Adams Street 2010 U.S. Fund	2010	5/21/2010	\$42,500,000	\$29,665,000	\$12,835,000	70%	\$15,213	\$10,764,481	\$33,373,243	\$44,137,724	\$14,457,511	14.0%	0.36x	1.49x	
Adams Street 2010 Non-U.S. Dev. Mkts Fund	2010	5/21/2010	\$25,500,000	\$19,545,749	\$5,954,251	77%	\$1,589	\$7,653,243	\$15,577,320	\$23,230,563	\$3,683,225	7.2%	0.39x	1.19x	
Adams Street 2010 Non-U.S. Emg Mkts Fund	2010	1/3/2011	\$8,500,000	\$6,111,500	\$2,388,500	72%	\$0	\$314,436	\$7,510,516	\$7,824,952	\$1,713,452	9.1%	0.05x	1.28x	
Adams Street 2010 Direct Fund	2010	5/21/2010	\$8,500,000	\$7,879,500	\$620,500	93%	\$6,697	\$4,831,957	\$7,079,912	\$11,911,869	\$4,025,672	12.0%	0.61x	1.51x	
Total Adams Street 2010	2010	5/21/2010	\$85,000,000	\$63,201,749	\$21,798,251	74%	\$23,499	\$23,564,117	\$63,540,991	\$87,105,108	\$23,879,860	11.6%	0.37x	1.38x	
Adams Street 2013 Global Fund	2013	6/27/2013	\$75,000,000	\$38,925,000	\$36,075,000	52%	\$10,728	\$2,698,535	\$38,261,534	\$40,960,069	\$2,024,341	3.2%	0.07x	1.05x	
Adams Street 2016 Global Fund	TBD	TBD	\$60,000,000	\$0	\$60,000,000	0%	\$0	\$0	\$0	\$0	\$0	100	-		
Drive Capital Fund II	2016	9/1/2016	\$15,000,000	\$366,139	\$14,633,861	2%	\$3,210	\$0	\$366,139	\$366,139	(\$3,210)	-0.9%	**	0.99x	
HarbourVest - Dover Street VIII	2013	5/30/2013	\$67,500,000	\$55,687,500	\$11,812,500	83%	\$84,954	\$26,738,658	\$48,145,524	\$74,884,182	\$19,111,728	24.5%	0.48x	1.34x	
HarbourVest - Dover Street IX	TBD	TBD	\$60,000,000	\$0	\$60,000,000	0%	\$0	\$0	\$0	\$0	\$0	122	S22		
Pantheon Global Secondary Fund IV	2010	8/20/2010	\$15,000,000	\$9,960,000	\$5,040,000	66%	\$0	\$8,310,001	\$6,050,666	\$14,360,667	\$4,400,667	13.8%	0.83x	1.44x	
Pantheon Global Secondary Fund V	2015	2/26/2015	\$50,000,000	\$7,441,510	\$42,558,490	15%	(\$137,480)	\$0	\$9,346,877	\$9,346,877	\$2,042,847	16.5%	-	1.28x	
Total VCERA Private Equity Program	-	5/21/2010	\$427,500,000	\$175,581,898	\$251,918,102	41%	(\$15,089)	\$61,311,311	\$165,711,731	\$227,023,042	\$51,456,233	13.1%	0.35x	1.29x	

<sup>1.</sup> Includes recycled/recallable distributions received to date.

Performance shown is based on 6/30/2016 NAVs cash-adjusted for cash flows through 9/30/2016.



<sup>2.</sup> Add'l Fees represents notional interest paid/(received).

<sup>2.</sup> Add'l Fees for Pantheon Global Secondary Fund V includes notional interest paid/(received) and management fee rebates paid to VCERA.

Note: Private equity performance data is reported net of fees.

### Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total US Fixed Income	935,255,229	20.0	20.0	1.3	37	6.9	37	6.5	36	3.7	52	4.3	42	5.9	27	6.1	Feb-94
Barclays Aggregate				<u>0.5</u>	63	<u>5.8</u>	49	<u>5.2</u>	50	<u>4.0</u>	45	<u>3.1</u>	60	<u>4.8</u>	50	<u>5.6</u>	Feb-94
Over/Under				0.8		1.1		1.3		-0.3		1.2		1.1		0.5	
eA All US Fixed Inc Net Median				0.8		5.6		5.2		3.8		3.7		4.8		5.5	Feb-94
BlackRock U.S. Debt Fund	221,798,339	4.8		0.5	63	5.8	49	5.2	50	4.1	44	3.2	59	4.9	48	5.5	Nov-95
Barclays Aggregate				<u>0.5</u>	63	<u>5.8</u>	49	<u>5.2</u>	50	<u>4.0</u>	45	<u>3.1</u>	60	<u>4.8</u>	50	<u>5.5</u>	Nov-95
Over/Under				0.0		0.0		0.0		0.1		0.1		0.1		0.0	
eA All US Fixed Inc Net Median			_	0.8		5.6		5.2		3.8		3.7		4.8		5.4	Nov-95
Western	289,877,431	6.2		1.4	35	7.5	31	7.3	30	5.3	23	5.1	34	5.7	30	6.5	Dec-96
Barclays Aggregate				<u>0.5</u>	63	<u>5.8</u>	49	<u>5.2</u>	50	<u>4.0</u>	45	<u>3.1</u>	60	<u>4.8</u>	50	<u>5.5</u>	Dec-96
Over/Under				0.9		1.7		2.1		1.3		2.0		0.9		1.0	
eA All US Fixed Inc Net Median				0.8		5.6		5.2		3.8		3.7		4.8		5.4	Dec-96
Reams	301,979,211	6.5		1.0	45	6.3	42	6.0	41	1.6	83	3.6	52	6.0	26	5.7	Sep-01
Reams Custom Index				<u>0.2</u>	74	<u>0.5</u>	98	<u>0.6</u>	96	<u>0.4</u>	98	<u>1.2</u>	89	<u>3.8</u>	72	<u>4.1</u>	Sep-01
Over/Under				0.8		5.8		5.4		1.2		2.4		2.2		1.6	
Barclays Aggregate				0.5	63	5.8	49	5.2	50	4.0	45	3.1	60	4.8	50	4.8	Sep-01
eA All US Fixed Inc Net Median				0.8		5.6		5.2		3.8		3.7		4.8		4.8	Sep-01
Loomis Sayles Multi Strategy	77,961,468	1.7		3.6	13	10.4	20	9.3	22	5.6	19	7.0	17	6.9	14	6.8	Jul-05
Loomis Custom Index				<u>1.9</u>	26	<u>8.6</u>	25	<u>7.4</u>	30	<u>4.3</u>	39	<u>4.6</u>	40	<u>5.6</u>	31	<u>5.5</u>	Jul-05
Over/Under				1.7		1.8		1.9		1.3		2.4		1.3		1.3	
Barclays Govt/Credit				0.4	65	6.7	38	5.9	42	4.2	40	3.2	58	4.9	48	4.7	Jul-05
eA All US Fixed Inc Net Median				0.8		5.6		5.2		3.8		3.7		4.8		4.7	Jul-05
Loomis Strategic Alpha	43,638,780	0.9		1.8	28	4.3	62	3.5	70	2.5	73		-			2.2	Jul-13
Barclays Aggregate				<u>0.5</u>	63	<u>5.8</u>	49	<u>5.2</u>	50	<u>4.0</u>	45	<u>3.1</u>	60	<u>4.8</u>	50	<u>4.0</u>	Jul-13
Over/Under				1.3		-1.5		-1.7		-1.5						-1.8	
eA All US Fixed Inc Net Median				0.8		5.6		5.2		3.8		3.7		4.8		3.8	Jul-13

Reams Custom Index: Merrill Lynch 3 Month Libor Constant Maturity Index, prior to February 2013 the Barclays Aggregate

Loomis Custom Index: 65% Barclays Aggregate, 30% Citigroup High Yield Market Index and 5% JPM Non-US Hedged Bond Index

As of January 2016, Loomis Strategic Alpha was moved from the Total Global Fixed Income composite to the Total US Fixed Income composite.



## Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%)	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Real Estate	377,332,470	8.1	7.0	1.5	49	5.1	87	8.1	88	10.7	81	10.3	84	3.7	87	7.9	Mar-94
NCREIF ODCE Net				<u>1.8</u>	37	<u>5.8</u>	70	<u>9.1</u>	67	<u>11.4</u>	72	<u>11.3</u>	75	<u>5.0</u>	50	<u>8.2</u>	Mar-94
Over/Under				-0.3		-0.7		-1.0		-0.7		-1.0		-1.3		-0.3	
InvestorForce Public DB Real Estate Pub+Priv Net Median				1.5		6.3		9.9		12.0		12.2		5.0		7.2	Mar-94
Prudential Real Estate	132,029,661	2.8		1.8		5.7		8.9		12.1		11.7		4.7		6.1	Jun-04
NCREIF ODCE Net				<u>1.8</u>		<u>5.8</u>		<u>9.1</u>		<u>11.4</u>		<u>11.3</u>		<u>5.0</u>		<u>7.1</u>	Jun-04
Over/Under				0.0		-0.1		-0.2		0.7		0.4		-0.3		-1.0	
NCREIF ODCE				2.1		6.5		10.1		12.4		12.4		6.0		8.1	Jun-04
UBS Real Estate	244,298,789	5.2		1.5		4.9		7.8		9.8		9.6		5.4		7.6	Mar-03
NCREIF ODCE Net				<u>1.8</u>		<u>5.8</u>		<u>9.1</u>		<u>11.4</u>		<u>11.3</u>		<u>5.0</u>		<u>7.3</u>	Mar-03
Over/Under				-0.3		-0.9		-1.3		-1.6		-1.7		0.4		0.3	
NCREIF ODCE				2.1		6.5		10.1		12.4		12.4		6.0		8.3	Mar-03
RREEF	1,004,019	0.0		-12.6		-16.2		-17.0		5.2		10.2				-6.4	Sep-07
NCREIF ODCE Net				<u>1.8</u>		<u>5.8</u>		<u>9.1</u>		<u>11.4</u>		<u>11.3</u>		<u>5.0</u>		<u>3.8</u>	Sep-07
Over/Under				-14.4		-22.0		-26.1		-6.2		-1.1				-10.2	
NCREIF ODCE				2.1		6.5		10.1		12.4		12.4		6.0		4.7	Sep-07

Total Real Estate Benchmark: NCREIF ODCE; prior to January 2006, the NCREIF Property Index



### Ventura County Employees' Retirement Association

# Total Fund Performance Detail (Net)

	Market Value (\$)	% of Portfolio	Policy %	3 Mo (%)	Rank	YTD (%)	Rank	1 Yr (%)	Rank	3 Yrs (%)	Rank	5 Yrs (%) F	Rank	10 Yrs (%)	Rank	Return (%)	Since
Total Liquid Alternatives	404,927,961	8.7	10.0	3.0	-	12.1		12.0		3.2		-	-			5.0	Apr-13
CPI + 4% (Unadjusted)				<u>1.2</u>		<u>5.1</u>		<u>5.5</u>		<u>7.0</u>		<u>12.7</u>				<u>6.3</u>	Apr-13
Over/Under				1.8		7.0		6.5		-3.8					_	-1.3	
Bridgewater All Weather Fund	286,030,977	6.1		3.3		11.9		10.8		4.2						4.9	Aug-13
CPI + 5% (Unadjusted)				<u>1.4</u>		<u>5.9</u>		<u>6.5</u>		<u>6.1</u>						<u>6.1</u>	Aug-13
Over/Under				1.9		6.0		4.3		-1.9					_	-1.2	
Tortoise Energy Infrastructure	118,896,984	2.5		2.5		12.6		15.1	-	1.0						2.0	Apr-13
Wells Fargo MLP Index				<u>3.0</u>		<u>18.1</u>		<u>10.5</u>		<u>-3.7</u>		<u>5.7</u>				<u>-3.1</u>	Apr-13
Over/Under				-0.5		-5.5		4.6		4.7						5.1	
Overlay	226,472,444	4.9	0.0														
Parametric	226,472,444	4.9															

Overlay performance is not applicable on an individual account level

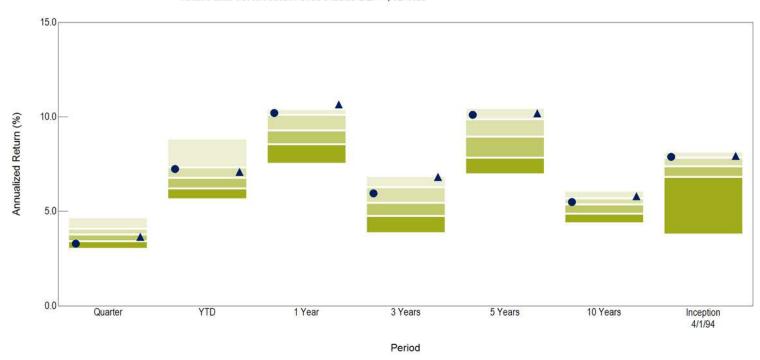
Color Coding: PERFORMANCE: Green-Over performance, Red-Under performance

Color Coding: RANKS: 1 - 25 Green - Positive Result, 26 - 50 Yellow, 50 - 75 Orange, 76 - 100 Red - Negative Result



# Total Fund Return Summary vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net

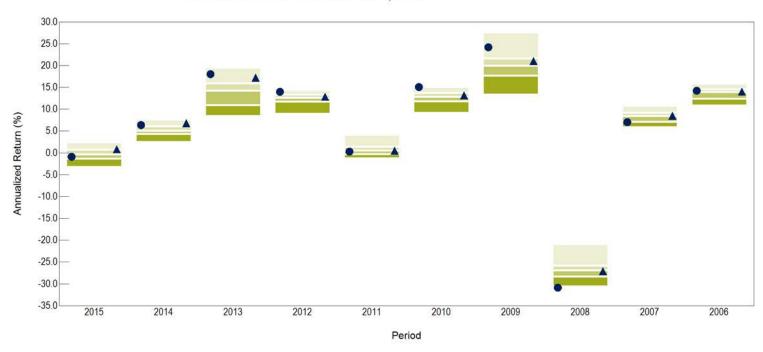


	Return (Rank)													
5th Percentile	4.7		8.9		10.4		6.9		10.5		6.1		8.2	
25th Percentile	4.1		7.3		10.1		6.3		9.9		5.7		7.8	
Median	3.8		6.8		9.3		5.5		9.0		5.4		7.4	
75th Percentile	3.4		6.2		8.6		4.8		7.8		4.9		6.8	
95th Percentile	3.0		5.7		7.5		3.9		7.0		4.4		3.8	
# of Portfolios	45		45		45		43		43		38		25	
Total Fund	3.3	(82)	7.2	(35)	10.2	(19)	6.0	(41)	10.1	(17)	5.5	(38)	7.9	(21)
Policy Index	3.6	(61)	7.1	(40)	10.7	(3)	6.8	(7)	10.2	(13)	5.8	(21)	7.9	(19)



# Total Fund Return Summary vs. Peer Universe

### Total Fund vs. InvestorForce Public DB > \$1B Net

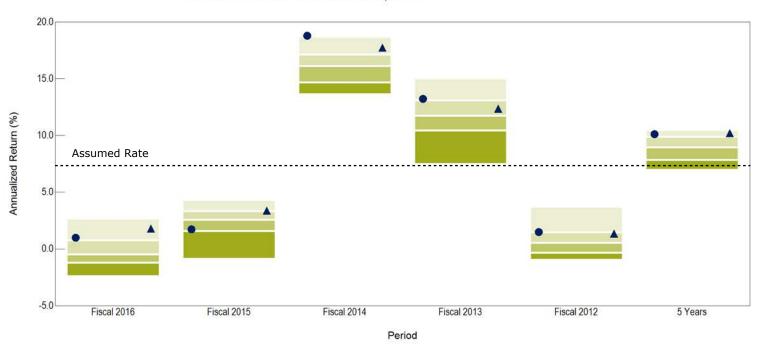


	Return (Ra	ank)																		
5th Percentile	2.4		7.6		19.5		14.3		4.2		15.1		27.5		-20.9		10.7		15.8	
25th Percentile	0.8		6.1		16.0		13.4		1.5		13.8		21.7		-25.7		9.2		14.6	
Median	-0.4		5.1		14.3		12.7		0.6		12.8		20.0		-26.9		8.5		14.0	
75th Percentile	-1.3		4.4		11.0		11.8		-0.3		11.8		17.7		-28.3		7.1		12.5	
95th Percentile	-3.2		2.6		8.5		9.0		-1.2		9.3		13.4		-30.5		5.9		10.9	
# of Portfolios	57		55		48		44		42		41		40		39		39		38	
Total Fund	-0.9	(61)	6.4	(19)	18.0	(10)	14.0	(15)	0.3	(61)	15.1	(6)	24.2	(16)	-30.9	(98)	7.0	(77)	14.2	(41)
Policy Index	0.8	(25)	6.8	(12)	17.2	(14)	12.9	(41)	0.5	(55)	13.2	(44)	21.0	(33)	-27.1	(54)	8.5	(50)	14.0	(50)



# Total Fund Return Summary vs. Peer Universe

Total Fund vs. InvestorForce Public DB > \$1B Net

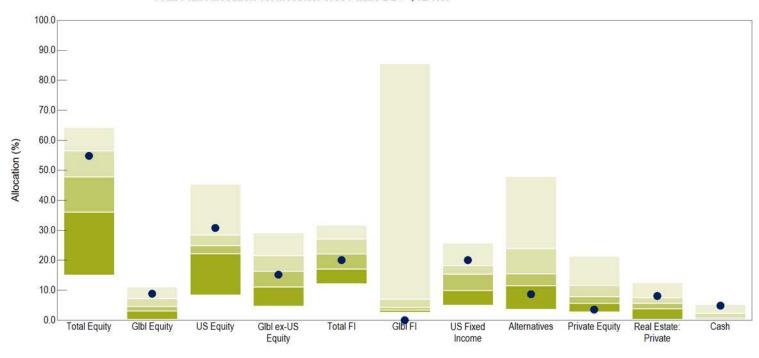


	Return (Rank)											
5th Percentile	2.7		4.3		18.7		15.0		3.7		10.5	
25th Percentile	0.8		3.3		17.2		13.1		1.5		9.9	
Median	-0.5		2.6		16.1		11.8		0.5		9.0	
75th Percentile	-1.2		1.6		14.7		10.5		-0.3		7.8	
95th Percentile	-2.4		-0.9		13.6		7.5		-0.9		7.0	
# of Portfolios	55		53		43		56		41		43	
Total Fund	1.0	(21)	1.7	(70)	18.8	(5)	13.2	(22)	1.5	(25)	10.1	(17)
Policy Index	1.8	(9)	3.4	(25)	17.7	(19)	12.4	(39)	1.4	(27)	10.2	(13)



# Total Fund Allocations vs. Peer Universe

### Total Plan Allocation vs. InvestorForce Public DB > \$1B Net



5th Percentile 25th Percentile Median 75th Percentile 95th Percentile # of Portfolios

**Total Fund** 

ocation		
64.3		-
56.6		
47.9		
36.2		
15.2		
41		
54.8	(10)	
	36 4.9	



# Manager Due Diligence

### Ventura County Employees' Retirement Association

# Due Diligence Monitor

The items below summarize the recent quarter's performance and any changes or announcements from the Plan's managers/products. A "-" indicates there were no material announcements. A "Yes" indicates there was an announcement and a brief summary is provided on the following pages. NEPC's Due Diligence Committee meets every two weeks to review events as they relate to investment managers and determine if any action should be taken (by NEPC and/or by our clients). Events are rated: No Action, Watch, Hold, Client Review or Terminate. NEPC's recommendation in view of the recent quarter's developments (performance, manager events, and any of the longer-term trending data) is refreshed quarterly.

Investment Options	Performance (Recent Quarter)	Changes/ Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
BlackRock Equity Market Index	-	-	-	-		10/2013
Western U.S. Index Plus	-	-	-	-		6/2014
BlackRock Extended Equity Index	-	-	-	-		10/2013
BlackRock MSCI ACWI ex-U.S. Index	-	-	-	-		10/2013
Sprucegrove	Top Decile	Yes	Hold	Watch (Board Driven)	3Q 2014 Departure & Performance	N/A
Hexavest	Bottom Quartile	-	-	-		1/2013
Walter Scott	-	-	-	-		10/2012
BlackRock MSCI ACWI Index	-	-	-	-		10/2013
GMO	-	-	Hold	Hold	Organizational Changes & Performance	6/2016
Adams Street	N/A	-	-	-		11/2013
HarbourVest	N/A	-	-	-		3/2014
Pantheon	N/A	-	-	-		1/2015
BlackRock U.S. Debt Fund	-	-	-	-		10/2013
Western	-	-	-	-		6/2014
Reams	-	-	-	-		11/2013
Loomis Sayles Multi-Sector Full Discretion	Top Quartile	-	-	-		11/2013



# Due Diligence Monitor Continued

Investment Options	Performance (Recent Quarter)	Changes/ Announcements (Recent Quarter)	NEPC DD Committee Rec.	Plan Rec.	Comments	Last Onsite Conducted
Loomis Sayles Strategic Alpha	-	-	-	-		11/2013
Prudential	N/A	-	-	-		7/2014
RREEF	N/A	-	-	-		7/2013
UBS	N/A	-	-	-		8/2011
Bridgewater	N/A	-	-	-		9/2012
Tortoise	N/A	-	-	-		8/2013
Parametric/Clifton	N/A	-	-	-		7/2013

	NEPC Due Diligence Committee Recommendation Key								
No Action	Informational items have surfaced; no action is recommended.								
Watch	Issues have surfaced to be concerned over; manager can participate in future searches, but current and prospective clients must be made aware of the issues.								
Hold	Serious issues have surfaced to be concerned over; manager cannot participate in future searches unless a client specifically requests, but current and prospective clients must be made aware of the issues.								
Client Review	Very serious issues have surfaced with an Investment Manager; manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to review the manager.								
Terminate	We have lost all confidence in the product; manager would not be recommended for searches and clients would be discouraged from using. The manager cannot participate in future searches unless a client specifically requests. Current clients must be advised to replace the manager.								



### Ventura County Employees' Retirement Association

# **Due Diligence Commentary**

Below is a summary of manager changes, announcements and due diligence events since the issuance of our last quarterly report.

Manager Changes/Announcements

### **Sprucegrove**

On July  $27^{\text{th}}$  Sprucegrove announced that they will open all products at the firm for new investment. They had been closed for a number of years, but following a period of poor performance and asset outflows they now have capacity. While this is a positive event, it triggers an opportunity to reconsider any allocation to the products. Assets have been declining. YTD performance has rebounded, but longer term numbers remain challenged.

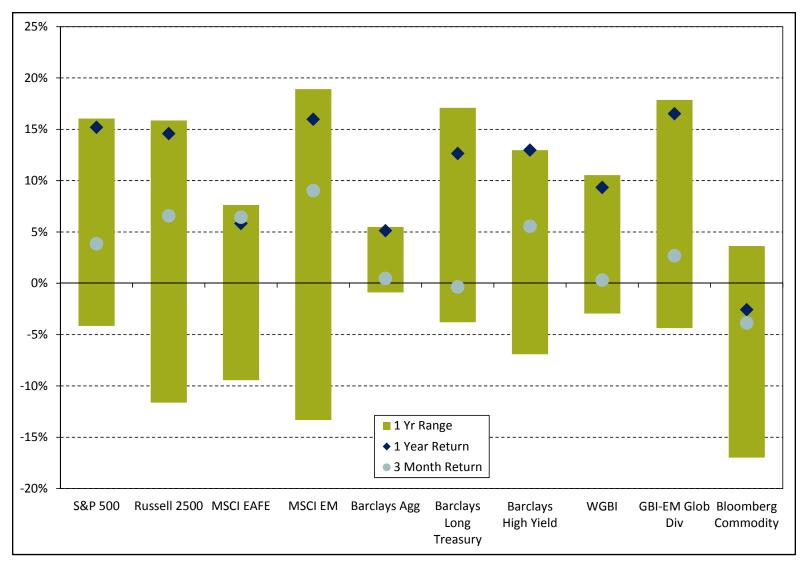
NEPC recommends a Hold rating at this time. We will continue to monitor the situation and provide updates as necessary.



**Appendix: Market Environment** 



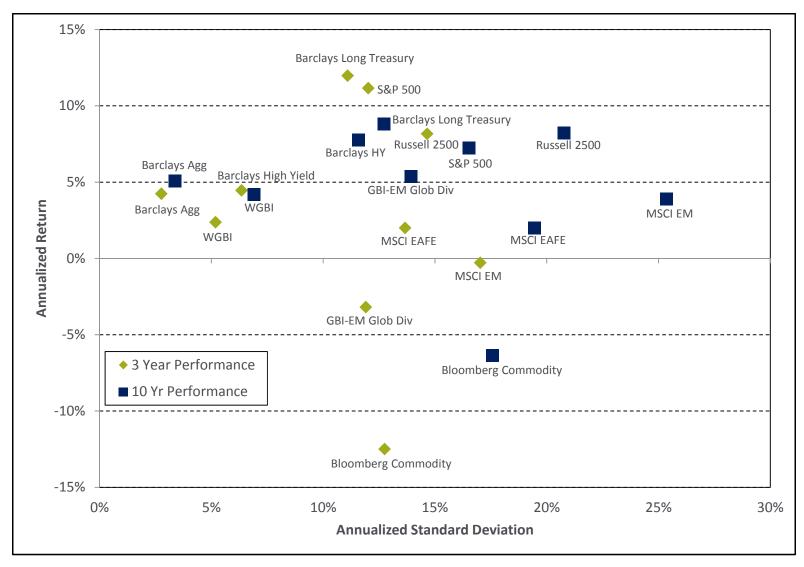
# Near Term Broad Market Performance Summary as of 09/30/2016



Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan \*1 Yr Range: Represents range of cumulative high/low daily index returns for an investment made one year ago



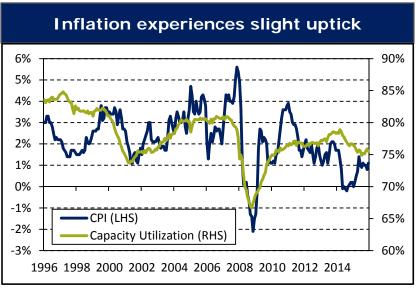
# Long Term Broad Market Performance Summary as of 09/30/2016



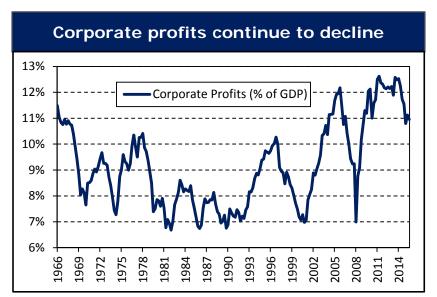
Source: Bloomberg, Standard and Poors, Russell, MSCI, Barclays, Citigroup, JP Morgan



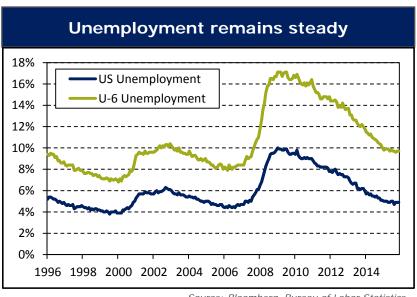
# US Economic Indicators



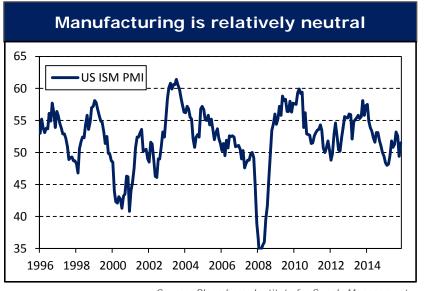
Source: Bloomberg, Federal Reserve, Bureau of Labor Statistics



Source: Bloomberg, Bureau of Economic Analysis



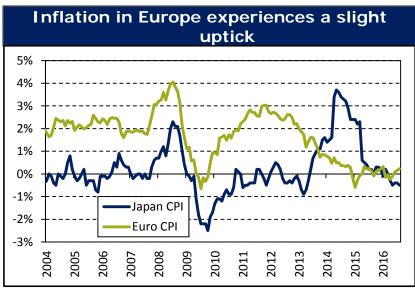
Source: Bloomberg, Bureau of Labor Statistics



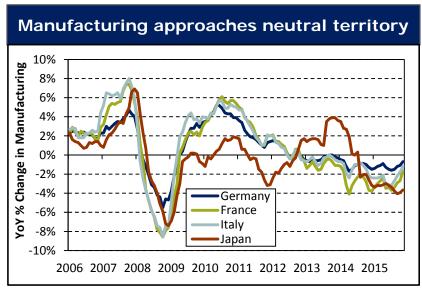
Source: Bloomberg, Institute for Supply Management



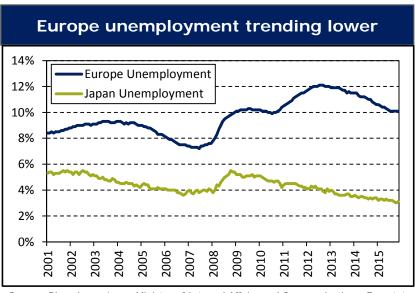
# **International Economic Indicators**



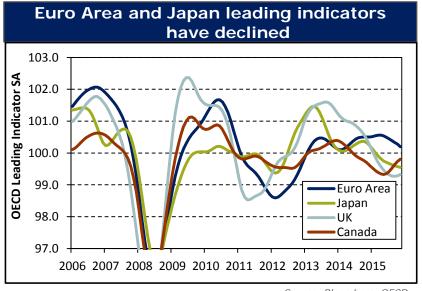
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat



Source: Bloomberg, OECD, Eurostat



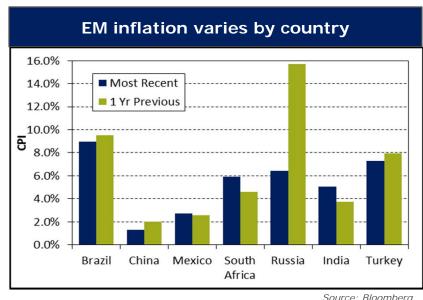
Source: Bloomberg, Japan Ministry of Internal Affairs and Communications, Eurostat

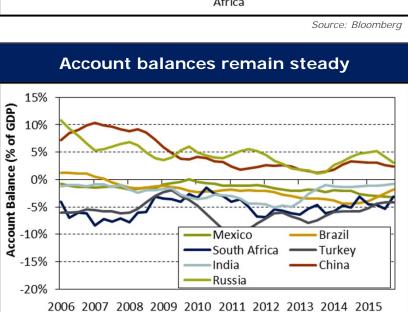


Source: Bloomberg, OECD

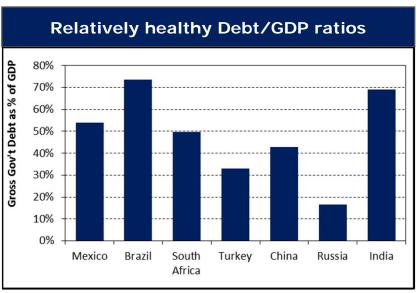


# Emerging Market Economic Indicators

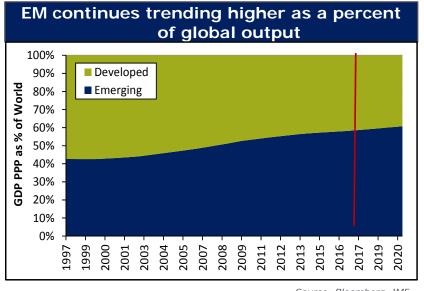




Source: Bloomberg



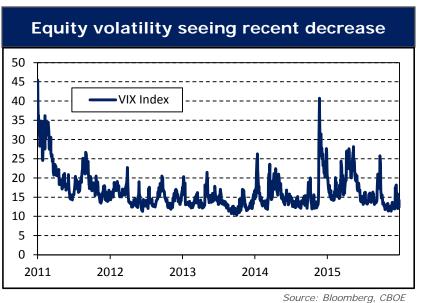
Source: Bloomberg, IMF

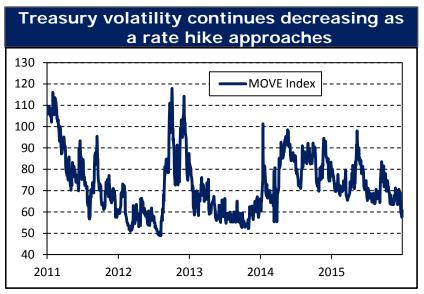


Source: Bloomberg, IMF

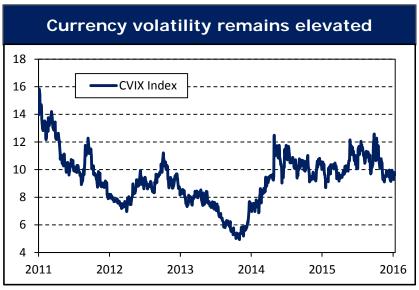


# Volatility

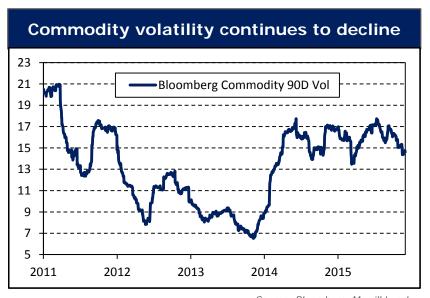




Source: Bloomberg, Merrill Lynch



Source: Bloomberg, Deutsche Bank



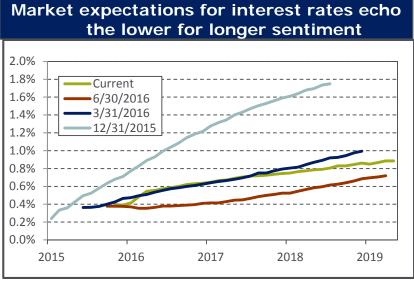
Source: Bloomberg, Merrill Lynch



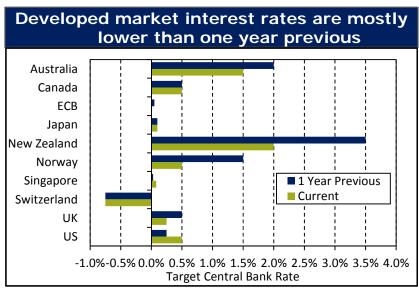
### Central Banks

### Central banks continue increasing balance sheet size \$5.00 FED sheet assets) \$4.50 **ECB** \$4.00 BoJ \$3.50 \$3.00 Trillions (balance \$2.50 \$2.00 \$1.50 \$1.00 \$0.50 \$0.00 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016

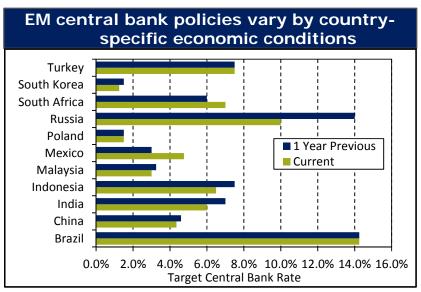
Source: Bloomberg, Federal Reserve, Bank of Japan, ECB, NEPC



Source: Bloomberg, Federal Reserve



Source: Bloomberg



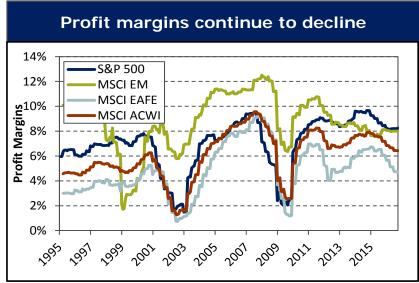
Source: Bloomberg



# Global Equity

### Global valuations increased over the year 50 45 40 +1 Std Dev -1 St Dev **Ratio** 30 **◆** 9/30/2015 9/30/2016 <u>₩</u>25 20 15 10 S&P 500 MSCI EM **MSCI EAFE** MSCI ACWI

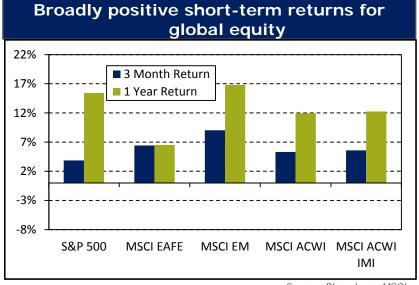
Source: Bloomberg, Standard and Poors, MSCI \*MSCI EAFE is ex UK Telecom \*Standard deviation calculations based on 20 years of data



Source: Bloomberg, MSCI



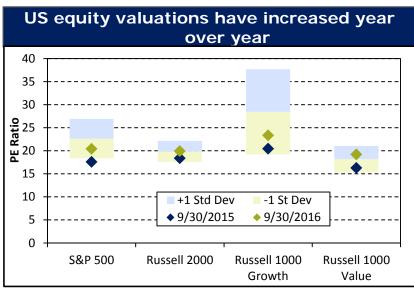
Source: Bloomberg, Standard and Poors, MSCI



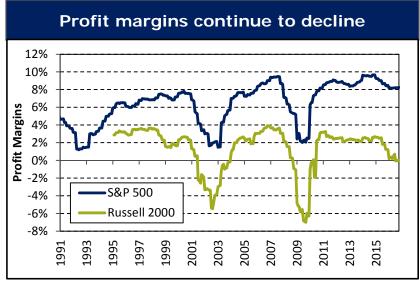
Source: Bloomberg, MSCI



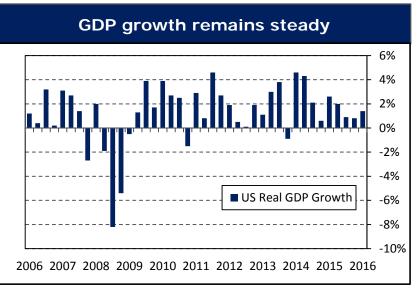
# **US** Equity



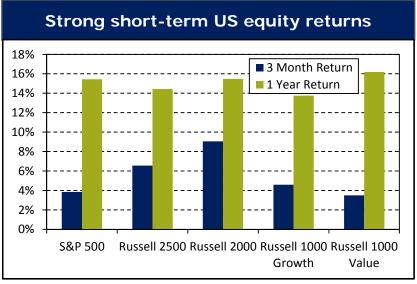
Source: Bloomberg, Standard and Poors, Russell \*Russell 2000 PE is index adjusted positive\*
Standard deviation calculations based on 20 years of data



Source: Bloomberg, Standard and Poors, Russell



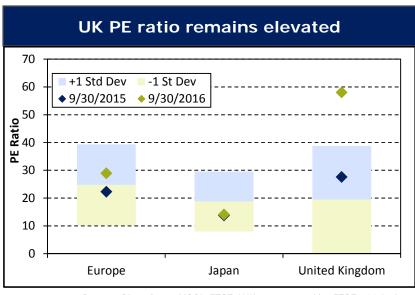
Source: Bloomberg, Bureau of Economic Analysis



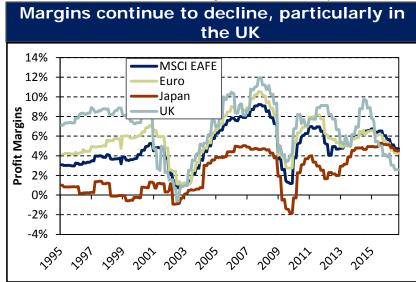
Source: Bloomberg, Standard and Poors, Russell



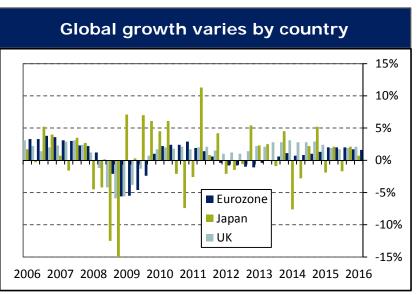
# International Equity



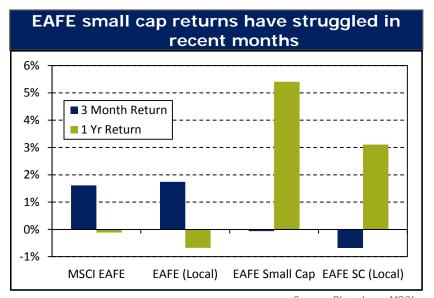
Source: Bloomberg, MSCI, FTSE \*UK represented by FTSE 100 Index \*Standard deviation calculations based on 20 years of data, with Europe since 12/1998



Source: Bloomberg, MSCI



Source: Bloomberg



Source: Bloomberg, MSCI

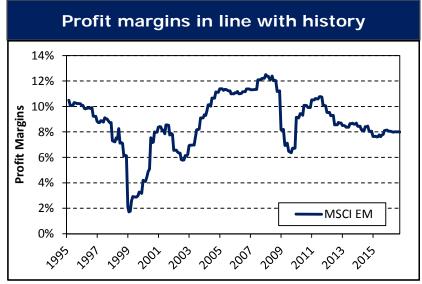


# **Emerging Markets Equity**

### Regional valuations similar year over year with the exception of Brazil 30 Brazil PE 83.7 25 as of 09/30 **PE Ratio** 20 10 +1 Std Dev -1 St Dev ♦ 9/30/2015 9/30/2016 China Brazil South Africa Russia India South Korea

Source: Bloomberg, MSCI

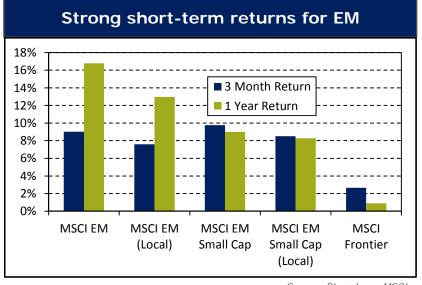
\*Standard deviation calculations based on 20 years of data, with Russia since 01/1998



Source: Bloomberg, MSCI



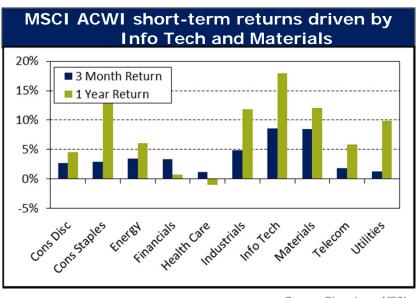
Source: Bloomberg

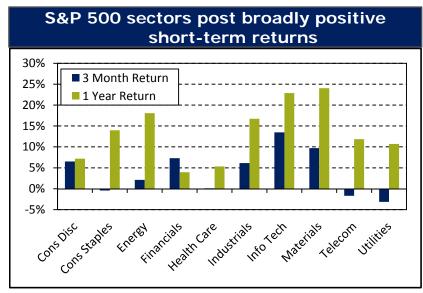


Source: Bloomberg, MSCI

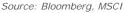


# Global Equity by Sector

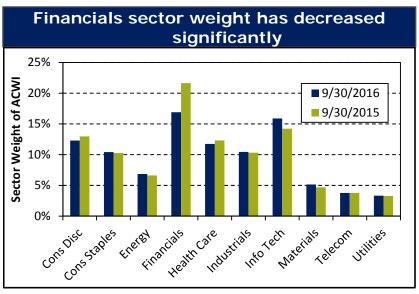




Source: Bloomberg, Standard and Poors



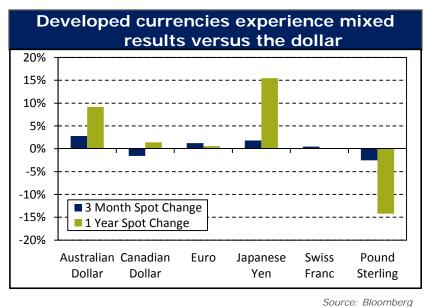


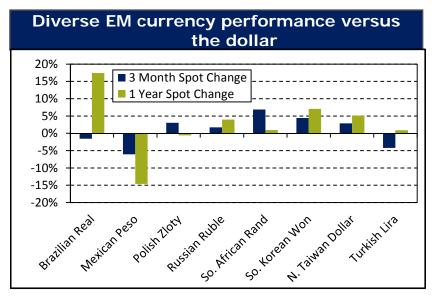


Source: Bloomberg, MSCI Source: Bloomberg, MSCI



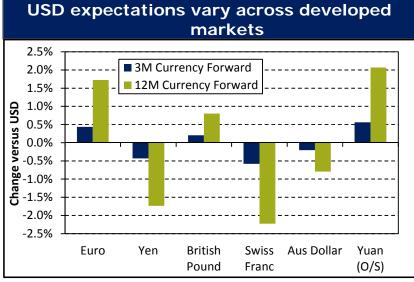
# Currencies





Source: Bloomberg





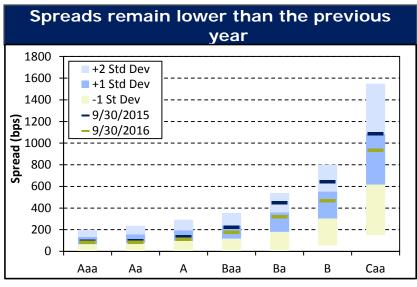
Source: Bloomberg



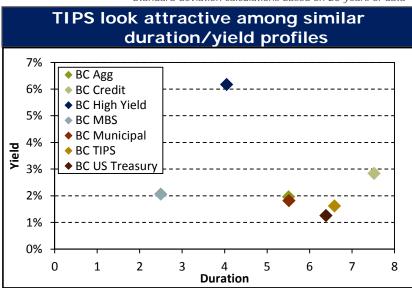
Source: Bloomberg, Federal Reserve



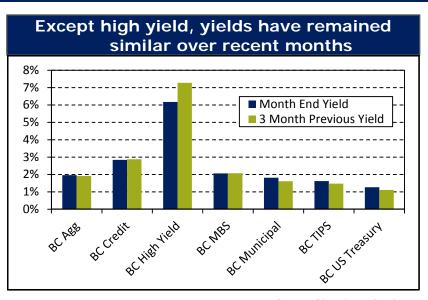
# **US Fixed Income**



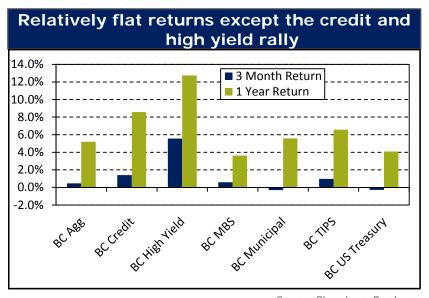
Source: Bloomberg, Barclays \*Standard deviation calculations based on 20 years of data



Source: Bloomberg, Barclays



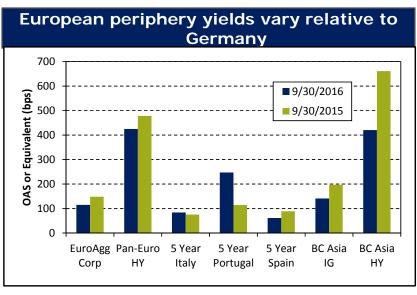
Source: Bloomberg, Barclays



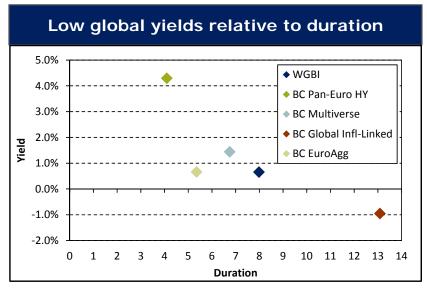
Source: Bloomberg, Barclays



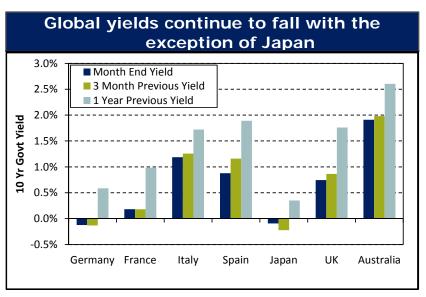
# International Developed Fixed Income



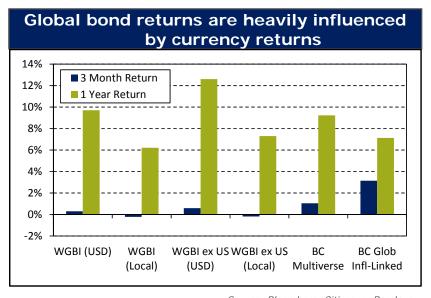




Source: Bloomberg, Citigroup, Barclays



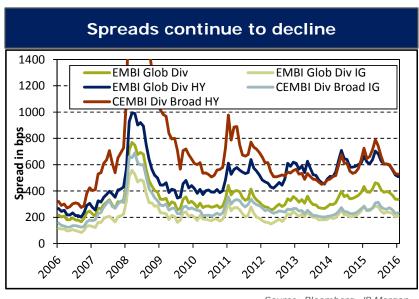
Source: Bloomberg



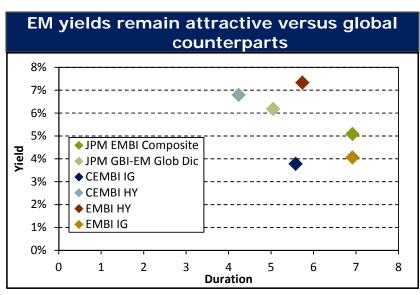
Source: Bloomberg, Citigroup, Barclays



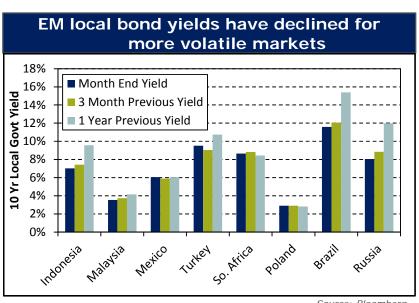
# Emerging Markets Fixed Income



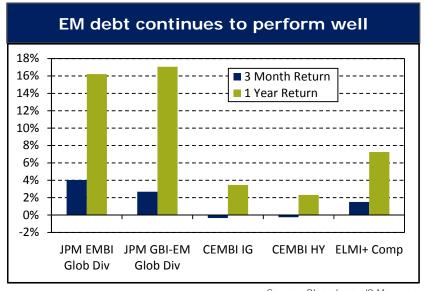
Source: Bloomberg, JP Morgan



Source: Bloomberg, JP Morgan



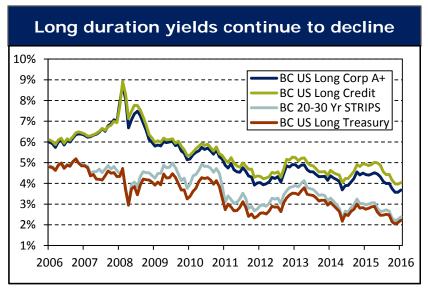
Source: Bloomberg

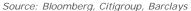


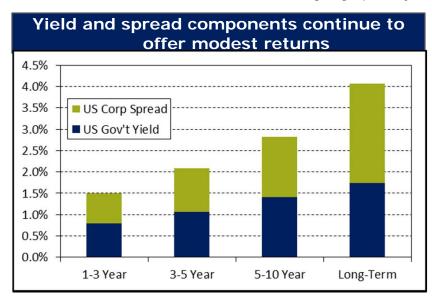
Source: Bloomberg, JP Morgan



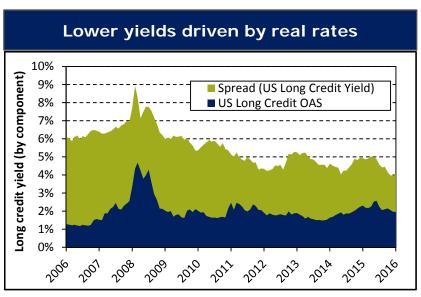
# Long Rates and Liability



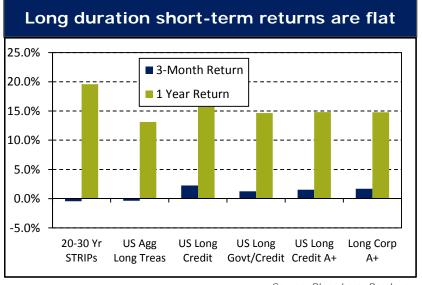




Source: Bloomberg, Barclays



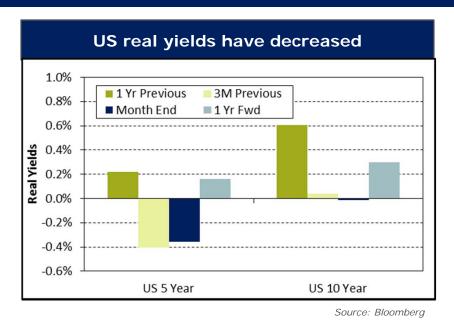
Source: Bloomberg, US Treasury, Barclays, NEPC

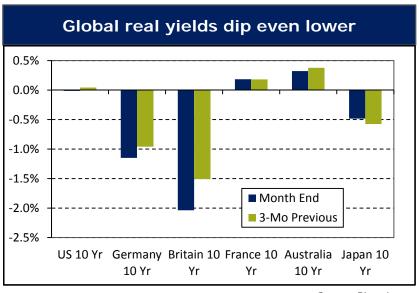


Source: Bloomberg, Barclays



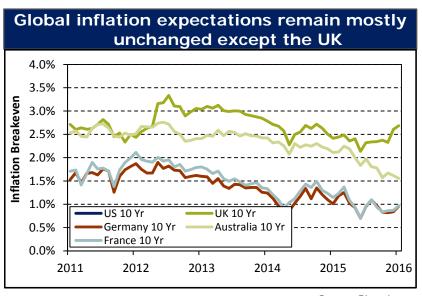
# Inflation and Real Rates





Source: Bloomberg



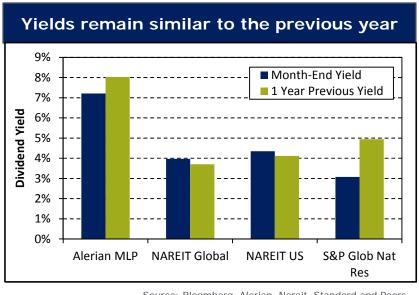


Source: Bloomberg

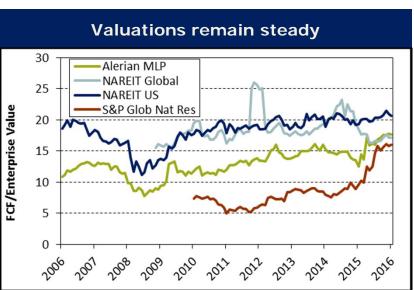
Source: Bloomberg



# Inflation Sensitive Growth Assets



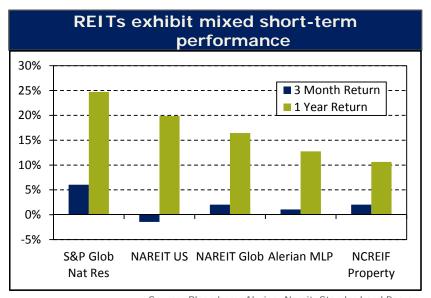
Source: Bloomberg, Alerian, Nareit, Standard and Poors



Source: Bloomberg, US Census Bureau



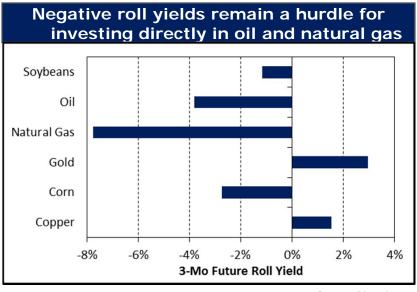
Source: NCREIF



Source: Bloomberg, Alerian, Nareit, Standard and Poors

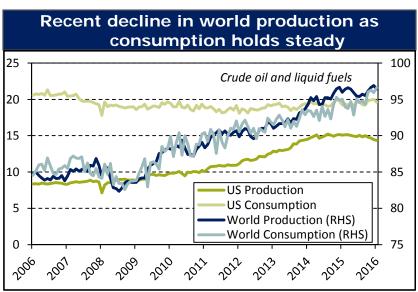


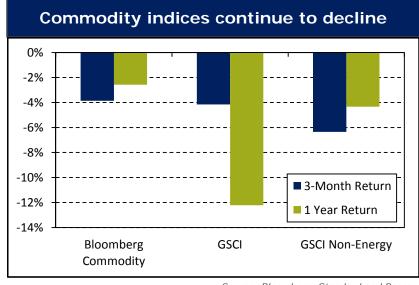
### Commodities



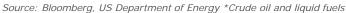








Source: Bloomberg, Standard and Poors





### Information Disclaimer

- · Past performance is no guarantee of future results.
- The goal of this report is to provide a basis for monitoring financial markets. The opinions presented herein represent the good faith views of NEPC as of the date of this report and are subject to change at any time.
- Information on market indices was provided by sources external to NEPC. While NEPC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- All investments carry some level of risk. Diversification and other asset allocation techniques do not ensure profit or protect against losses.
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## Information Disclaimer and Reporting Methodology

### **Information Disclaimer**

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- The client's custodian bank is NEPC's preferred data source unless otherwise directed. NEPC generally reconciles custodian data to manager data. If the custodian cannot provide accurate data, manager data may be used.
- Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of return are annualized when the time period is longer than a year. Performance is presented gross and/or net of manager fees as indicated on each page.
- For managers funded in the middle of a month, the "since inception" return will start with the first full month, although actual inception dates and cash flows are taken into account in all Composite calculations.
- This report may contain forward-looking statements that are based on NEPC's estimates, opinions and beliefs, but NEPC cannot guarantee that any plan will achieve its targeted return or meet other goals.







# **Ventura County Employees' Retirement Association**

**Second** Quarter 2016 Private Markets Review – Private Equity

255 State Street, Boston, MA 02109 TEL: 617.374.1300 | FAX: 617.374.1313 | www.nepc.com

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### **Information Disclosure**

- NEPC, LLC uses, as its data source, the Plan's fund manager and custodian bank or fund service company, and NEPC, LLC relies on those sources for all transactions, including capital calls, distributions, income/expense and reported values. While NEPC, LLC has exercised reasonable professional care in preparing this report, we cannot guarantee the accuracy of all source information contained within.
- This Investment Performance Analysis is provided as a management aid for the client's internal use only. Portfolio performance reported in the Investment Performance Analysis does not constitute a recommendation by NEPC, LLC.
- Information in this report on market indices and security characteristics is received from sources external to NEPC, LLC. While efforts are made to ensure that this external data is accurate, NEPC, LLC cannot accept responsibility for errors that may occur.



October 18, 2016

Board of Administration Ventura County Employees' Retirement Association 1190 South Victoria Ave., Suite 200 Ventura, CA 93003

RE: Second Quarter 2016 Private Markets Review - Private Equity

### Dear Board of Administration Members:

We are pleased to present the June 30, 2016 Private Equity Performance Report for the Ventura County Employees' Retirement Association ("VCERA" or the "Plan"). The report provides a variety of performance analyses for the overall portfolio in addition to trailing period performance and performance by investment stage, vintage year, and investment strategy.

VCERA's private equity portfolio experienced a positive quarter, earning a nominal IRR of 2.77% and a one year return of 6.66%. The annualized IRR of the private equity portfolio since inception (May 2010) was 14.28% at quarter end. Since inception, the Total Value to Paid In multiple (current valuation plus cumulative distributions, divided by total capital calls) was 1.31.

The following table presents the status of the VCERA private equity portfolio as of June 30, 2016:

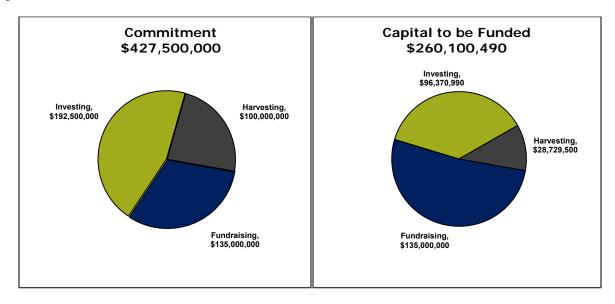
Total	Terminated Commitments	Paid In	Cumulative	Reported	Call	Distribution
Commitments		Capital	Distributions	Value	Ratio	Ratio
\$427,500,000	\$0	\$167,399,510	\$56,575,425	\$162,265,229	39%	0.34

Unfunded Commitment	Market Exposure (Reported Value + Unfunded Commitment)	Total Fund Market Value as of	Private Equity Target	Reported Value as a % of	Market Exposure as a %
	ŕ	6/30/2016	3	Total Fund	<b>Total Fund</b>
\$260,100,490	\$422,365,719	\$4,367,190,644	10%	3.7%	9.7%

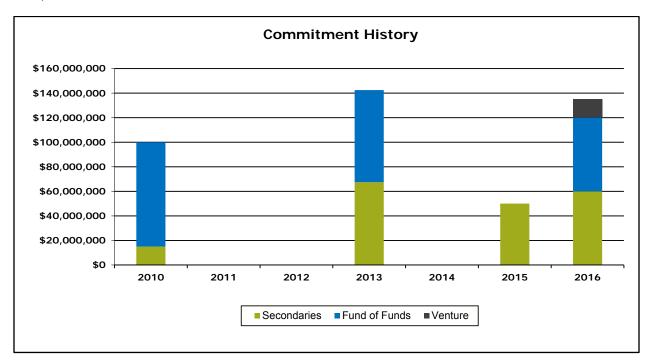
Total Value	Total Value	Internal Rate of Return
(Reported Value + Cumulative Distributions)	To	(IRR), Since Inception
(Reported Value + Cumulative Distributions)	Paid In Ratio	(May 2010)
		( ) )
\$218,840,654	1.31	14.3%



At quarter end, VCERA had commitments totaling \$427.5 million to 11 private equity funds. Of the 11 funds in the portfolio, 3 are in the fundraising stage, 3 are in the investing stage and 5 are in the harvesting stage. The following charts illustrate the program's current life cycle.

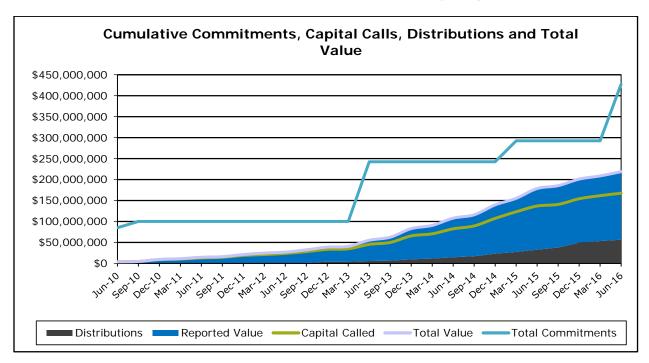


The following chart illustrates the commitment history of the private equity program since inception.

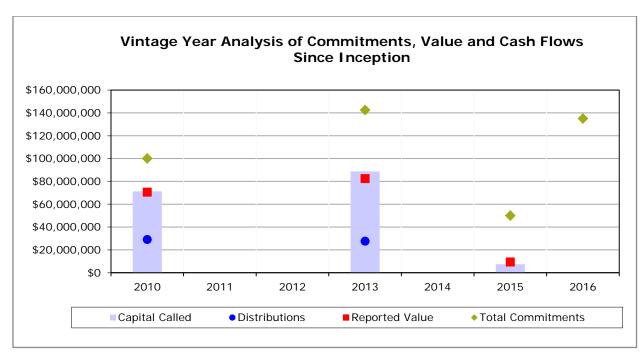




The following chart illustrates the cumulative commitment history, cumulative capital calls, cumulative distributions and reported value of the private equity program since inception.



The following chart provides an analysis of vintage year performance, comparing capital calls to distributions and reported value since inception.

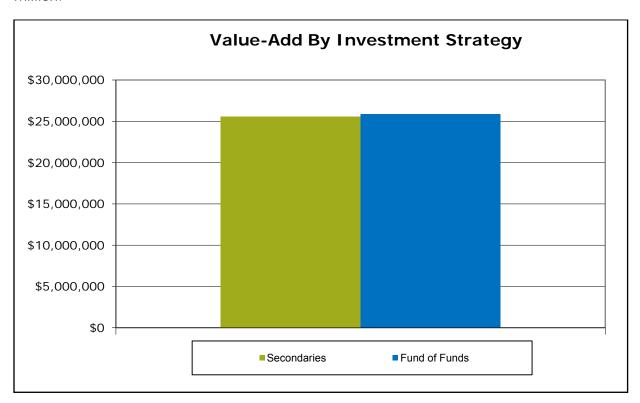




During the first quarter of 2016, the private equity portfolio funded 2 investments and received distributions from 3 funds. The summary of the cash flows is shown below.

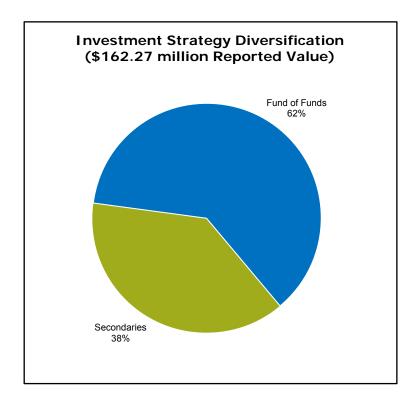
<b>Amount Funded</b>	Number of Funds	Distributions	<b>Number of Funds</b>	Net Cash/Stock
for the Quarter	Calling Capital	for the	Making	Flows for the
		Quarter	Distributions	Quarter
\$6,731,250	2	\$4,234,122	3	\$2,497,128

Since inception, the private equity program has added \$51.5 million in value. The value-add by investment strategy follows: Secondaries, \$25.6 million; and Fund of Funds, \$25.9 million.





At quarter end, the private equity portfolio was diversified by investment strategy as shown below.



We value the relationship that we have with the Ventura County Employees' Retirement Association and look forward to continued success in the future.

Best regards,

Dan LeBeau Consultant Allan Martin Partner Anthony Ferrara, CAIA Senior Analyst

# Ventura County ERA Executive IRR Summary

Investment Name	Vintage Year	Commitment Amount	QTD	YTD	1 Year	3 Year	5 Year	Inception
Adams St 2010 Direct Fund	2010	8,500,000	1.36	-5.18	4.80	16.49	14.08	12.59
Adams St 2010 Non-US Dev Mkts Fund	2010	25,500,000	2.24	5.45	8.07	8.75	8.20	7.69
Adams St 2010 Non-US Emg Mkts Fund	2010	8,500,000	1.44	1.08	4.71	14.62	10.46	9.90
Adams St 2010 US Fund	2010	42,500,000	6.31	5.55	8.21	16.38	14.35	14.91
Adams St 2013 Global Fund	2013	75,000,000	1.64	0.64	5.51	4.27		3.81
Adams St 2016 Global Fund	2016	60,000,000						
Drive Capital Fund II	2016	15,000,000						
HarbourVest - Dover Street IX	2016	60,000,000						
HarbourVest – Dover Street VIII	2013	67,500,000	0.73	2.38	6.28	19.55		27.65
Pantheon Global Secondary Fund IV	2010	15,000,000	0.73	-0.69	-5.79	9.08	10.59	14.28
Pantheon Global Secondary Fund V	2015	50,000,000	9.51	12.32	18.44			19.80
Ventura County ERA	_	427,500,000	2.77	2.94	6.66	13.73	14.03	14.28

# Ventura County ERA Performance Analysis

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
1 Adams St 2010 Direct Fund	2010	8,500,000	7,837,000	663,000	6,697	4,071,592	7,797,777	11,869,369	4,025,672	92%	0.52	1.51	12.59%
2 Adams St 2010 Non-US Dev Mkts Fund	2010	25,500,000	17,697,000	7,803,000	1,589	5,557,179	15,824,635	21,381,814	3,683,225	69%	0.31	1.21	7.69%
3 Adams St 2010 Non-US Emg Mkts Fund	2010	8,500,000	6,111,500	2,388,500	0	314,436	7,510,516	7,824,952	1,713,452	72%	0.05	1.28	9.90%
4 Adams St 2010 US Fund	2010	42,500,000	29,665,000	12,835,000	15,213	10,764,481	33,373,243	44,137,724	14,457,511	70%	0.36	1.49	14.91%
5 Adams St 2013 Global Fund	2013	75,000,000	36,375,000	38,625,000	10,728	2,698,535	35,711,534	38,410,069	2,024,341	49%	0.07	1.06	3.81%
6 Adams St 2016 Global Fund	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
7 Drive Capital Fund II	2016	15,000,000	0	15,000,000	0	0		0	0	0%	0.00	0.00	N/A
8 HarbourVest - Dover Street IX	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
9 HarbourVest – Dover Street VIII	2013	67,500,000	52,312,500	15,187,500	84,954	24,859,201	46,649,981	71,509,182	19,111,728	78%	0.47	1.36	27.65%
10 Pantheon Global Secondary Fund IV	2010	15,000,000	9,960,000	5,040,000	0	8,310,001	6,050,666	14,360,667	4,400,667	66%	0.83	1.44	14.28%
11 Pantheon Global Secondary Fund V	2015	50,000,000	7,441,510	42,558,490	-137,480	0	9,346,877	9,346,877	2,042,847	15%	0.00	1.28	19.80%
Total: Ventura County ERA		427,500,000	167,399,510	260,100,490	-18,299	56,575,425	162,265,229	218,840,654	51,459,443	39%	0.34	1.31	14.28%

# Ventura County ERA Lifecycle Performance Analysis

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
1 Fundraising													
1 Adams St 2016 Global Fund	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
2 Drive Capital Fund II	2016	15,000,000	0	15,000,000	0	0		0	0	0%	0.00	0.00	N/A
3 HarbourVest - Dover Street IX	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
Subtotal: 1 Fundraising		135,000,000	0	135,000,000	0	0		0	0	0%	0.00	0.00	N/A
2 Investing													
1 Adams St 2013 Global Fund	2013	75,000,000	36,375,000	38,625,000	10,728	2,698,535	35,711,534	38,410,069	2,024,341	49%	0.07	1.06	3.81%
2 HarbourVest – Dover Street VIII	2013	67,500,000	52,312,500	15,187,500	84,954	24,859,201	46,649,981	71,509,182	19,111,728	78%	0.47	1.36	27.65%
3 Pantheon Global Secondary Fund V	2015	50,000,000	7,441,510	42,558,490	-137,480	0	9,346,877	9,346,877	2,042,847	15%	0.00	1.28	19.80%
Subtotal: 2 Investing		192,500,000	96,129,010	96,370,990	-41,798	27,557,736	91,708,392	119,266,128	23,178,916	50%	0.29	1.24	17.60%
3 Harvesting													
1 Adams St 2010 Direct Fund	2010	8,500,000	7,837,000	663,000	6,697	4,071,592	7,797,777	11,869,369	4,025,672	92%	0.52	1.51	12.59%
2 Adams St 2010 Non-US Dev Mkts Fund	2010	25,500,000	17,697,000	7,803,000	1,589	5,557,179	15,824,635	21,381,814	3,683,225	69%	0.31	1.21	7.69%
3 Adams St 2010 Non-US Emg Mkts Fund	2010	8,500,000	6,111,500	2,388,500	0	314,436	7,510,516	7,824,952	1,713,452	72%	0.05	1.28	9.90%
4 Adams St 2010 US Fund	2010	42,500,000	29,665,000	12,835,000	15,213	10,764,481	33,373,243	44,137,724	14,457,511	70%	0.36	1.49	14.91%
5 Pantheon Global Secondary Fund IV	2010	15,000,000	9,960,000	5,040,000	0	8,310,001	6,050,666	14,360,667	4,400,667	66%	0.83	1.44	14.28%
Subtotal: 3 Harvesting		100,000,000	71,270,500	28,729,500	23,499	29,017,689	70,556,837	99,574,526	28,280,527	71%	0.41	1.40	12.61%
Total: Ventura County ERA		427,500,000	167,399,510	260,100,490	-18,299	56,575,425	162,265,229	218,840,654	51,459,443	39%	0.34	1.31	14.28%

## **Ventura County ERA**

## **Vintage Year Performance Analysis**

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
2010													
1 Adams St 2010 Direct Fund	2010	8,500,000	7,837,000	663,000	6,697	4,071,592	7,797,777	11,869,369	4,025,672	92%	0.52	1.51	12.59%
2 Adams St 2010 Non-US Dev Mkts Fund	2010	25,500,000	17,697,000	7,803,000	1,589	5,557,179	15,824,635	21,381,814	3,683,225	69%	0.31	1.21	7.69%
3 Adams St 2010 Non-US Emg Mkts Fund	2010	8,500,000	6,111,500	2,388,500	0	314,436	7,510,516	7,824,952	1,713,452	72%	0.05	1.28	9.90%
4 Adams St 2010 US Fund	2010	42,500,000	29,665,000	12,835,000	15,213	10,764,481	33,373,243	44,137,724	14,457,511	70%	0.36	1.49	14.91%
5 Pantheon Global Secondary Fund IV	2010	15,000,000	9,960,000	5,040,000	0	8,310,001	6,050,666	14,360,667	4,400,667	66%	0.83	1.44	14.28%
Subtotal: 2010		100,000,000	71,270,500	28,729,500	23,499	29,017,689	70,556,837	99,574,526	28,280,527	71%	0.41	1.40	12.61%
2013													
1 Adams St 2013 Global Fund	2013	75,000,000	36,375,000	38,625,000	10,728	2,698,535	35,711,534	38,410,069	2,024,341	49%	0.07	1.06	3.81%
2 HarbourVest – Dover Street VIII	2013	67,500,000	52,312,500	15,187,500	84,954	24,859,201	46,649,981	71,509,182	19,111,728	78%	0.47	1.36	27.65%
Subtotal: 2013		142,500,000	88,687,500	53,812,500	95,682	27,557,736	82,361,515	109,919,251	21,136,069	62%	0.31	1.24	17.42%
2015													
1 Pantheon Global Secondary Fund V	2015	50,000,000	7,441,510	42,558,490	-137,480	0	9,346,877	9,346,877	2,042,847	15%	0.00	1.28	19.80%
Subtotal: 2015		50,000,000	7,441,510	42,558,490	-137,480	0	9,346,877	9,346,877	2,042,847	15%	0.00	1.28	19.80%
2016													
1 Adams St 2016 Global Fund	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
2 Drive Capital Fund II	2016	15,000,000	0	15,000,000	0	0		0	0	0%	0.00	0.00	N/A
3 HarbourVest - Dover Street IX	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
Subtotal: 2016		135,000,000	0	135,000,000	0	0		0	0	0%	0.00	0.00	N/A
Total: Ventura County ERA		427,500,000	167,399,510	260,100,490	-18,299	56,575,425	162,265,229	218,840,654	51,459,443	39%	0.34	1.31	14.28%

## **Ventura County ERA**

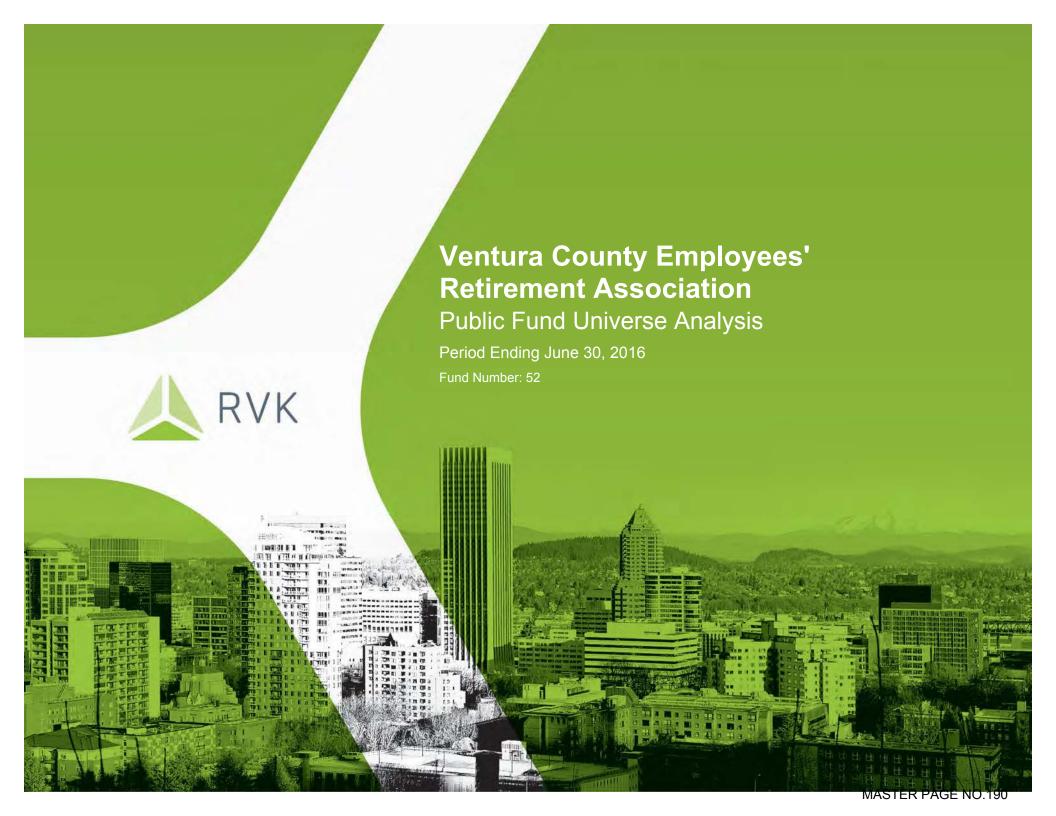
## **Investment Strategy Performance Analysis**

Investment Name	Vintage Year	Commitment Amount	Paid in Capital	Capital to be Funded	Additional Fees	Cumulative Distributions	Valuation	Total Value	Net Benefit	Call Ratio	DPI Ratio	TVPI Ratio	IRR
100 Venture													
1 Drive Capital Fund II	2016	15,000,000	0	15,000,000	0	0		0	0	0%	0.00	0.00	N/A
Subtotal: 100 Venture		15,000,000	0	15,000,000	0	0		0	0	0%	0.00	0.00	N/A
140 Secondaries													
1 HarbourVest - Dover Street IX	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
2 HarbourVest – Dover Street VIII	2013	67,500,000	52,312,500	15,187,500	84,954	24,859,201	46,649,981	71,509,182	19,111,728	78%	0.47	1.36	27.65%
3 Pantheon Global Secondary Fund IV	2010	15,000,000	9,960,000	5,040,000	0	8,310,001	6,050,666	14,360,667	4,400,667	66%	0.83	1.44	14.28%
4 Pantheon Global Secondary Fund V	2015	50,000,000	7,441,510	42,558,490	-137,480	0	9,346,877	9,346,877	2,042,847	15%	0.00	1.28	19.80%
Subtotal: 140 Secondaries		192,500,000	69,714,010	122,785,990	-52,526	33,169,202	62,047,524	95,216,726	25,555,242	36%	0.48	1.37	22.40%
170 Fund of Funds													
1 Adams St 2010 Direct Fund	2010	8,500,000	7,837,000	663,000	6,697	4,071,592	7,797,777	11,869,369	4,025,672	92%	0.52	1.51	12.59%
2 Adams St 2010 Non-US Dev Mkts Fund	2010	25,500,000	17,697,000	7,803,000	1,589	5,557,179	15,824,635	21,381,814	3,683,225	69%	0.31	1.21	7.69%
3 Adams St 2010 Non-US Emg Mkts Fund	2010	8,500,000	6,111,500	2,388,500	0	314,436	7,510,516	7,824,952	1,713,452	72%	0.05	1.28	9.90%
4 Adams St 2010 US Fund	2010	42,500,000	29,665,000	12,835,000	15,213	10,764,481	33,373,243	44,137,724	14,457,511	70%	0.36	1.49	14.91%
5 Adams St 2013 Global Fund	2013	75,000,000	36,375,000	38,625,000	10,728	2,698,535	35,711,534	38,410,069	2,024,341	49%	0.07	1.06	3.81%
6 Adams St 2016 Global Fund	2016	60,000,000	0	60,000,000	0	0		0	0	0%	0.00	0.00	N/A
Subtotal: 170 Fund of Funds		220,000,000	97,685,500	122,314,500	34,227	23,406,223	100,217,705	123,623,928	25,904,201	44%	0.24	1.27	10.66%
Total: Ventura County ERA		427,500,000	167,399,510	260,100,490	-18,299	56,575,425	162,265,229	218,840,654	51,459,443	39%	0.34	1.31	14.28%

## Ventura County ERA Transaction Summary

4/1/2016 - 6/30/2016

Date	Funding	Additional Fees	Cash	Net Cash Flow
Ventura County ERA				
Adams St 2010 Direct Fund				
05/09/2016			138,562.00	-138,562.00
Total: Adams St 2010 Direct Fund				
			138,562.00	-138,562.00
Adams St 2013 Global Fund				
04/15/2016	2,175,000.00			2,175,000.00
Total: Adams St 2013 Global Fund				
	2,175,000.00			2,175,000.00
HarbourVest – Dover Street VIII				
05/12/2016			939,729.00	-939,729.00
06/27/2016			2,255,349.00	-3,195,078.00
06/27/2016	4,556,250.00			1,361,172.00
Total: HarbourVest – Dover Street	VIII			
	4,556,250.00		3,195,078.00	1,361,172.00
Pantheon Global Secondary Fund V	,			
05/06/2016	-646,689.00			-646,689.00
05/06/2016		-15,412.00		-662,101.00
06/28/2016	-219,905.00			-882,006.00
06/28/2016		-6,044.00		-888,050.00
06/30/2016		-12,432.00		-900,482.00
Total: Pantheon Global Secondary I	Fund V			
_	-866,594.00	-33,888.00		-900,482.00



## Firm Overview



## **OVERVIEW**

RVK, Inc. ("RVK") was founded in 1985 and is one of the largest independent and employee-owned investment consulting firms in the US, providing world-class investment advice to institutional investors. We serve over 400 plans, including pension plans, defined contribution plans, endowments & foundations, insurance pools, and special purpose funds.

### **MISSION STATEMENT**

To provide best-in-class investment consulting services to a wide array of sophisticated investors.

## STRATEGIC INVESTMENT ADVICE WITH NO CONFLICTS OF INTEREST

RVK built its investment consulting practice on the principles of integrity, investment knowledge, client service, and our no conflicts of interest policy. We are exclusively focused on strategic investment consulting services and solely owned by active employees, enabling us to offer advice that is not influenced by other business activities. As a privately-held firm, with no affiliates or parent company, we provide informed and unbiased investment advice to our clients. We offer an extensive slate of consulting services and produce deliverables fully customized to meet each client's needs.

## **KEY TENETS OF OUR CULTURE**



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## **RVK BY THE NUMBERS**

- 30+ years of business
- 3 offices Portland, Chicago, New York
- \$650+ billion Full-Retainer AUA
- 90+ Investment Professionals
- **50+** Advanced Degrees and Certifications
- 100% Employee Ownership
- 100% Revenue Derived from Client Fees
- 100% Non-Discretionary Services

#### **GENERAL CONSULTING SERVICES**

- Plan Evaluation
- Strategic Asset Allocation
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- Investment Manager Search & Selection
- Performance Analysis & Reporting
- Manager Structure Analysis
- Risk Monitoring and Management
- Client Education
- Special Projects

## **SPECIALTY CONSULTING SERVICES**

- Real Estate Consulting Services
- Custody, Record keeper, Third-Party Administrator Searches
- Asset/Liability Studies
- Endowment Spending Policy Studies
- Securities Lending Reviews
- Pacing Studies
- Strategic Planning Reviews

- Outsourced CIO ("OCIO") Searches, Evaluation, and Ongoing Monitoring
- Directed Consulting Services
- Fee Reviews
- Defined Contribution Solutions Services
- Investment Operations Solutions
- Board and Investment Program Operational Reviews

FOR MORE INFORMATION ABOUT OUR SERVICES, PLEASE CONTACT:

Business.Development@RVKInc.com 503-221-4200

**Participants** 

Alameda County Employees' Retirement Association

California State Teachers' Retirement System

City of Milwaukee Employes' Retirement System

Colorado Public Employees' Retirement Association

Contra Costa County Employees' Retirement Association

District of Columbia Retirement Board

**Employees Retirement System of Texas** 

Fire and Police Pension Association of Colorado

Fort Worth Employees' Retirement Fund

Georgia Division of Investment Services

Illinois Municipal Retirement Fund

Iowa Public Employees' Retirement System

Kentucky Retirement Systems

Kern County Employees' Retirement Association

Los Angeles County Employees Retirement Association

Los Angeles Water & Power Employees Retirement Plan

Mendocino County Employees' Retirement Association

Montana Public Employees' Retirement System

Municipality of Anchorage Pre-Funding Program

Nevada Public Employees' Retirement System

Newport News Employees' Retirement Fund

Ohio Public Employees' Retirement System

Pennsylvania Public School Employees' Retirement System

Police Retirement System of Kansas City, Missouri

Sacramento County Employees' Retirement System

San Diego County Employees Retirement Association

San Joaquin County Employees' Retirement Association

San Jose Police and Fire Department Retirement Plan

Santa Barbara County Employees' Retirement System

Arlington County Employees' Retirement System

City of Fresno Retirement Systems

Civilian Employees' Retirement System of the Police Department of Kansas City,

Missouri

Confederated Tribes of the Warm Springs Tribal Council Pension Fund

County Employees' Annuity & Benefit Fund of Cook County

Educational Employees' Supplementary Retirement System of Fairfax County

Fire & Police Employees' Retirement System of Baltimore

Florida State Board of Administration

Fresno County Employees' Retirement Association

Gila River Indian Community Retirement Plan

Imperial County Employees' Retirement System

Kansas Public Employees' Retirement System

Kentucky Teachers' Retirement System

Los Angeles City Employees' Retirement System

Los Angeles Fire and Police Pension System

Marin County Employees' Retirement Association

Merced County Employees' Retirement Association

Montana Teachers' Retirement System

Municipality of Anchorage Trust Fund

New York State Common Retirement Fund

North Carolina Retirement System

Orange County Employees' Retirement System

Pennsylvania State Employees' Retirement System

Public School and Education ERS of Missouri

San Bernardino County Employees' Retirement Association

San Diego Transit Corporation Employees Retirement

San Jose Federated City Employees' Retirement System

San Mateo County Employees' Retirement Association

South Dakota Retirement System

State of Michigan Retirement Systems

State Retirement and Pension System of Maryland

State Universities Retirement System of Illinois

Texas Municipal Retirement System

Tulare County Employees' Retirement Association

Virginia Retirement System

Wyoming Retirement System

Sonoma County Employees' Retirement Association

Stanislaus County Employees' Retirement Association

State of New Jersey Pension Fund

State Teachers Retirement System of Ohio

Teachers' Retirement System of the State of Illinois

The Navajo Nation Retirement Plan

**Ventura County Employees' Retirement Association (52)** 

West Virginia Investment Management Board

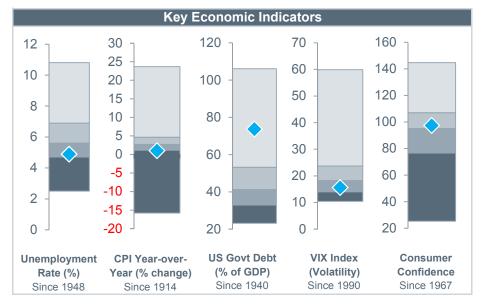
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Capital Markets Review As of June 30, 2016

## **Second Quarter Economic Environment**

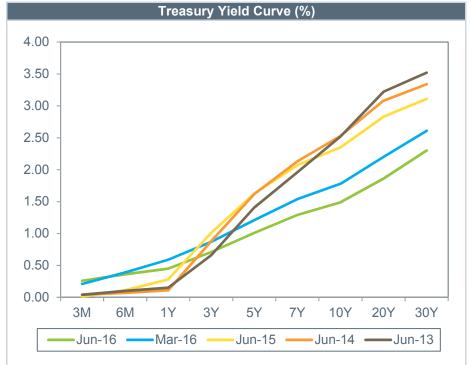
## **Key Economic Indicators**

The second quarter of 2016 was characterized by a broad based rally across commodities, a range bound US dollar, and a flight to safety on the back of the UK's referendum vote to leave the European Union. Uncertainty around Brexit dominated the news flow in late June and catalyzed a flight to safety across risk assets. Recent data show that 36% of outstanding global developed market government debt is now yielding less than 0%. However, investors continue to have an appetite for risk where yields remain positive. In developed markets, the surprise Brexit vote led to sharp initial declines in equities, though markets recovered quickly following a series of dovish statements from central banks. Long duration assets outperformed short duration, and gold rallied amid the flight to safety. In the US, probabilities for a June interest rate hike swung from as high as 35% in late May, down to 0% after disappointing May payroll numbers were released.



Economic Indicators	Jun-16		Mar-16	Jun-15	Jun-13	20 Yr
	oun-10		Mai-10	oun-10	oun-10	20 11
Federal Funds Rate (%)	0.30		0.25	0.08	0.07	2.47
Breakeven Infl 1 Yr (%)	1.17	$\blacksquare$	2.10	0.73	0.74	N/A
Breakeven Infl 10 Yr (%)	1.44	$\blacksquare$	1.63	1.89	1.99	N/A
CPI YoY (Headline) (%)	1.0		0.9	0.1	1.8	2.2
Unemployment Rate (%)	4.9	$\blacksquare$	5.0	5.3	7.5	6.0
Real GDP YoY (%)	1.2	$\blacksquare$	1.6	3.0	1.0	2.4
PMI - Manufacturing	53.20		51.80	53.10	52.30	52.20
USD Total Wtd ldx	90.64		89.84	89.96	77.58	86.76
WTI Crude Oil per Barrel (\$)	48		38	59	97	55
Gold Spot per Oz (\$)	1,322		1,233	1,172	1,235	762

Market Performance (%)	QTD	CYTD	1 Yr	5 Yr	10 Yr
S&P 500 (Cap Wtd)	2.46	3.84	3.99	12.10	7.42
Russell 2000	3.79	2.22	-6.73	8.35	6.20
MSCI EAFE (Net)	-1.46	-4.42	-10.16	1.68	1.58
MSCI EAFE SC (Net)	-2.60	-3.18	-3.67	4.84	3.57
MSCI Emg Mkts (Net)	0.66	6.41	-12.05	-3.78	3.54
Barclays US Agg Bond	2.21	5.31	6.00	3.76	5.13
BofA ML 3 Mo US T-Bill	0.07	0.15	0.19	0.09	1.04
NCREIF ODCE (Gross)	2.13	4.36	11.82	12.72	6.17
Wilshire US REIT	5.60	11.09	22.82	12.48	6.99
HFN FOF Multi-Strat	0.36	-2.83	-6.48	1.46	1.24
Bloomberg Cmdty (TR)	12.76	13.23	-13.34	-10.83	-5.59



US Equity Review
As of June 30, 2016

#### **Second Quarter Review**

#### **Broad Market**

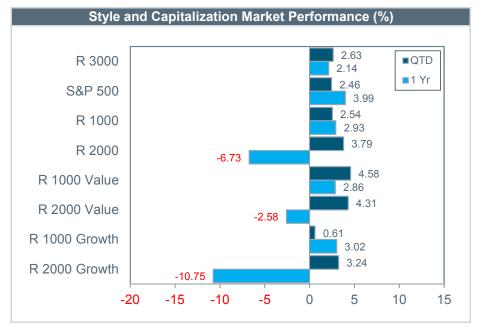
US equity markets finished the quarter in positive territory across all market capitalization ranges and styles, with the Russell 3000 Index rising 2.6%.

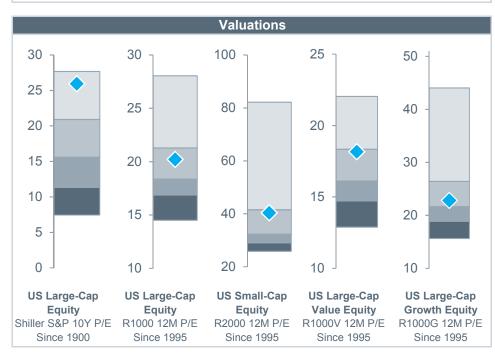
#### **Market Cap**

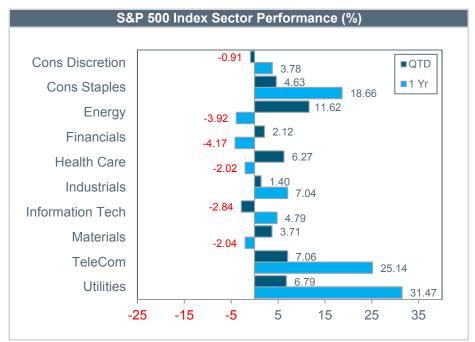
Small cap stocks outperformed larger-cap stocks this quarter, as the Russell 2000 Index outperformed the Russell 1000 Index by 125 basis points.

### **Style and Sector**

Historically stable sectors such as utilities, consumer staples, and telecommunications continued to post strong gains as market volatility persisted and notably increased in the final week of the quarter amidst the uncertainty created by the UK's EU Referendum. Additionally, value stocks outperformed their growth counterparts over the quarter.







Valuation data courtesy of Bloomberg Professional Service and Robert J. Shiller, Irrational Exuberance, Second Edition. P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.



Non-US Equity Review

As of June 30, 2016

#### Second Quarter Review

## **Developed Markets**

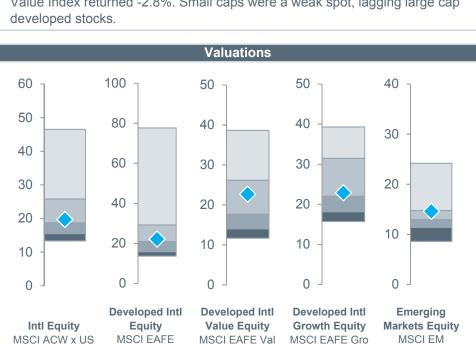
Developed international markets continue to struggle, detracting value for the quarter and underperforming domestic equities. The uncertainty created by the UK's EU referendum is expected to result in a near-term slow-down in the EU, particularly in the UK. The European Economic Union ("EMU") was the worst performing developed region.

## **Emerging Markets**

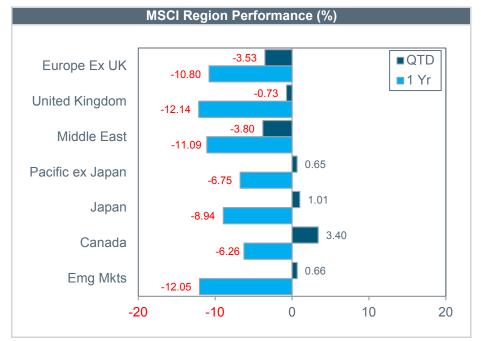
Emerging markets lagged domestic equities during the quarter, but performed better than developed international equity and have provided the highest returns among equity regions in 2016. Value underperformed growth for the quarter, but is still ahead year-to-date.

#### Market Cap & Style

The style trend continued as growth outpaced value with the MSCI EAFE Growth Index ending the quarter relatively flat at -0.1%, while the MSCI EAFE Value Index returned -2.8%. Small caps were a weak spot, lagging large cap developed stocks.









12M P/E

Since 1995

P/E metrics shown represent the 5th through 95th percentiles to minimize the effect of outliers.

12M P/E

Since 1995

12M P/E

Since 1995

All returns are shown net of foreign taxes on dividends.

12M P/E

Since 1995



12M P/E

Since 1995

Fixed Income Review As of June 30, 2016

### Second Quarter Review

#### **Broad Market**

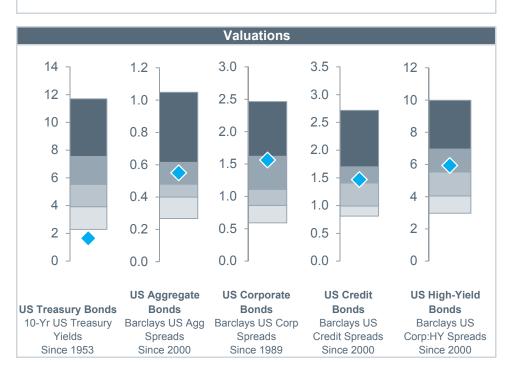
Virtually all fixed income sectors posted positive performance as interest rates fell and credits improved during the quarter. The Barclays US Agg posted a strong quarter, returning 2.21%.

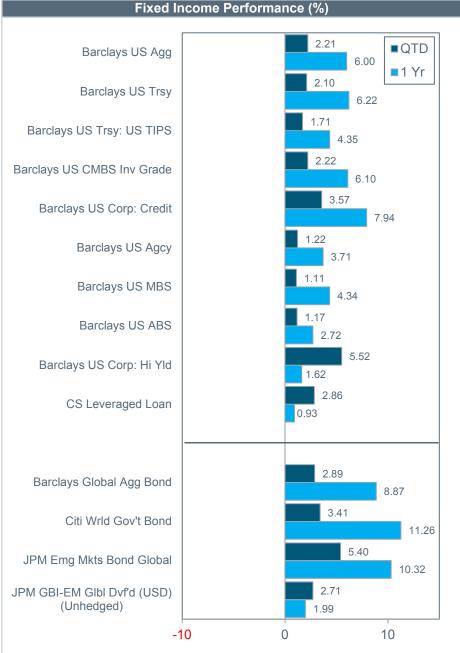
#### **Credit Market**

Utility and industrial bonds outperformed financial bonds as energy and commodity prices continued to rebound.

#### **Emerging Market Debt**

Both local currency and hard currency emerging markets debt posted strong returns for a second consecutive quarter. Emerging market debt outperformed both US and developed markets, as evidenced by the JPM Emg Mkts Bond Global Index returning 5.40% during the guarter.





Valuation data courtesy of Bloomberg Professional Service.

Valuations shown represent the 5th through 95th percentiles to minimize the effect of outliers.



Alternatives Review As of June 30, 2016

#### Second Quarter Review - Absolute Return

## **General Market - Hedge Funds**

After a poor first quarter, the hedge fund industry performed better during the second quarter of 2016, though Fund of Hedge Fund ("FoHF") portfolios are still down between 2.5% to 3.0% year-to-date based on available peer group based benchmarks. Most of the FoHF managers RVK follows closely have performed roughly in line with peers YTD, with any dispersion explained to a large degree by strategy allocation. On the direct side, multi-strategy managers as a group continued to outperform their FoHF counterparts.

## **General Market - Global Tactical Asset Allocation (GTAA)**

GTAA funds provided a dispersion in results for the second quarter, with many significantly outperforming an undiversified static portfolio of 60% US large cap equity and 40% US fixed income. Those that outperformed by the widest margins tended to follow fundamental value-oriented processes that have led to higher allocations to emerging market fixed income, high yield fixed income, and REITs.

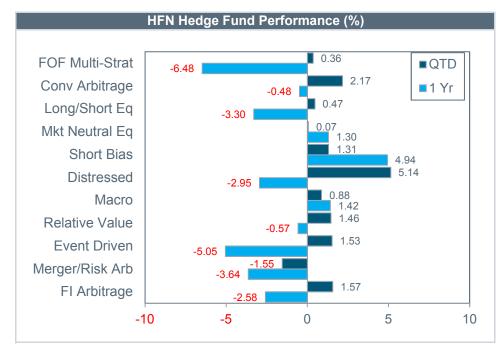
#### Second Quarter Review - Real Assets

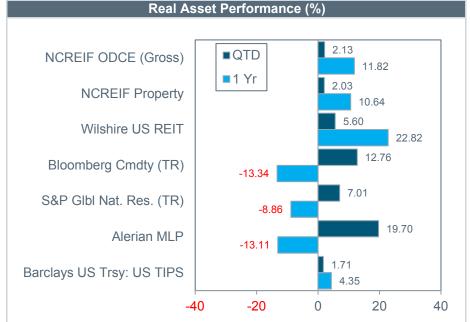
## **General Market - Diversified Inflation Strategies (DIS)**

DIS provided strong performance with relatively narrow divergence for the second consecutive quarter. Most strategies significantly outperformed major world equity and fixed income indices, in addition to TIPS. Commodities, especially energy, provided strong performance over the quarter in a welcome reprieve from the longer-term trend of negative performance.

#### **General Market - Real Estate**

Due to the prolonged low-interest rate environment occurring globally and the economic uncertainty brought upon by the recent Brexit vote, the real estate sector proved to be an attractive option during the second quarter as investors sought the perceived safe-haven of property as well as the continued strong dividends yields relative to global treasury rates. The private real estate sector experienced themes similar to listed real estate as evidenced by a preliminary 2.1% return in the NCREIF-ODCE Index during Q2.



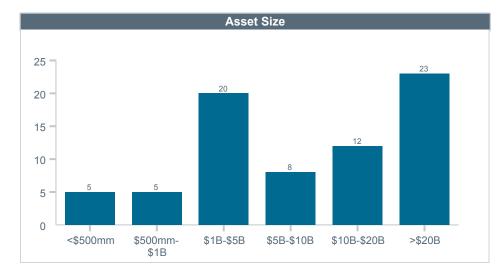


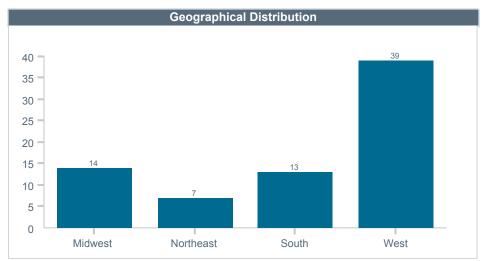
Annual Asset Class Performance As of June 30, 2016

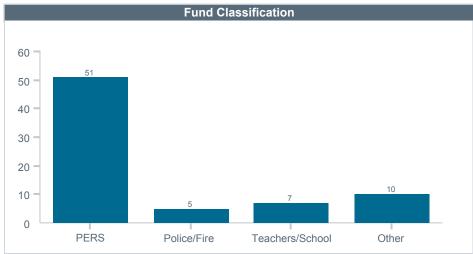
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	YTD
Best	25.91	61.34	33.16	34.00	35.97	39.38	8.44	78.51	28.60	22.49	20.00	38.82	31.78	15.02	14.33
1	16.56	55.81	31.45	26.19	32.18	16.23	5.24	58.21	26.86	15.99	18.23	32.39	19.31	9.59	13.23
	14.81	47.25	25.55	21.39	26.34	15.97	2.06	46.78	22.04	13.56	17.59	29.30	13.69	4.23	11.09
	10.25	38.59	20.25	21.36	19.31	11.63	-2.35	31.78	18.88	9.24	17.32	22.78	12.50	1.38	9.06
	5.54	36.18	18.33	13.82	18.37	11.17	-10.01	28.60	16.83	7.84	16.34	13.94	5.97	0.55	6.41
	3.58	28.97	13.06	13.54	16.32	9.91	-20.47	27.18	16.36	4.98	16.00	9.10	4.89	0.05	6.24
	3.12	28.68	11.13	6.75	15.79	6.97	-26.16	26.46	15.12	2.11	15.81	7.44	3.64	-0.81	5.31
	1.78	23.93	10.88	5.33	11.85	6.60	-33.79	18.91	15.06	0.10	10.94	1.86	3.03	-1.24	4.36
	-1.41	11.93	9.15	4.91	9.85	5.49	-35.65	11.41	10.16	-4.18	8.82	0.07	2.45	-1.44	3.84
	-6.17	9.28	8.56	4.55	4.85	5.00	-37.00	9.72	7.75	-5.55	6.98	-2.02	0.04	-3.30	2.22
	-7.83	8.39	8.46	3.07	4.33	1.87	-39.20	5.93	6.54	-12.14	4.80	-2.60	-2.19	-4.41	0.15
	-15.94	5.87	6.79	2.84	2.71	1.45	-43.38	1.92	6.31	-13.32	4.21	-8.61	-4.90	-4.47	-2.83
	-20.48	4.10	4.34	2.74	2.07	-1.57	-47.01	0.21	4.77	-15.94	0.11	-8.83	-4.95	-14.92	-3.18
Worst	-22.10	1.15	1.33	2.43	0.41	-17.55	-53.33	-29.76	0.13	-18.42	-1.06	-9.52	-17.01	-24.66	-4.42
								Davidou	Davida	NO.	FIF				
S&P 50 US Lar Cap	ge US Sr	mall (Net)		(Net) - (1	MSCI EM Net) - Int'l img Mkts	Barclays US Agg Bond - FI	Barclays US Corp: Hi Yield - F		: US - Gov/Cre	edit: (Gros	CE SS) - US F	REIT - Mu	Iti-Strat C	Bloombrg Cmdty (TR) Commod.	Mo T-Bill -

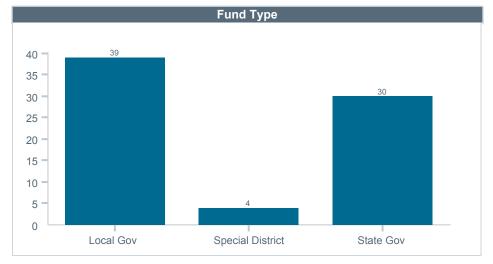
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**Universe Characteristics** 







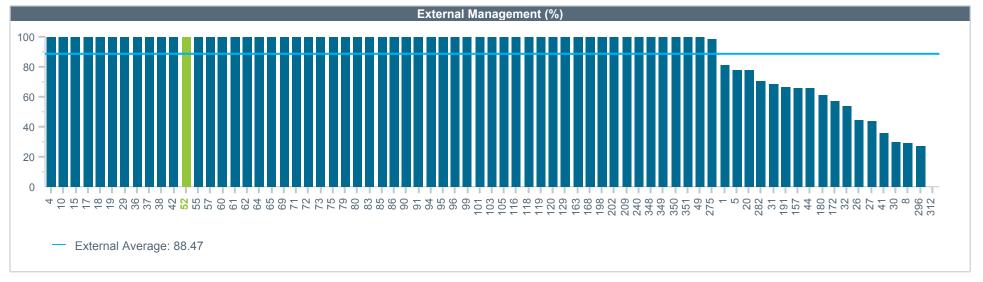


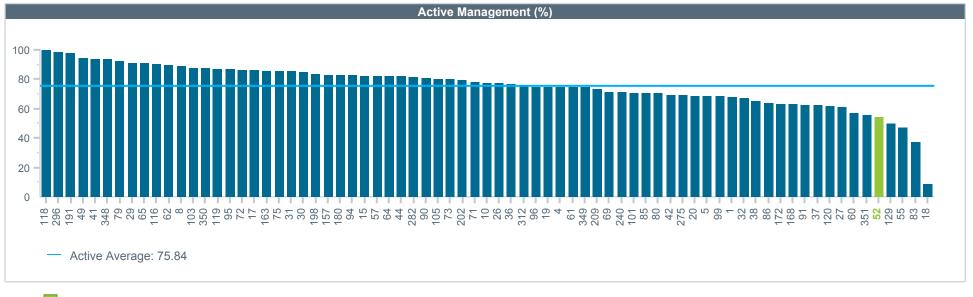
Universe: 73 funds



**Portfolio Management** 

Percentage Externally Managed & Percentage Actively Managed









Fund Number: 52 Portfolio Management Statistics

	Actively Managed (%)	Passively Managed (%)	Externally Managed (%)	Internally Managed (%)
Asset Range				
Over \$20B	75.54	24.46	75.18	24.82
\$10B-\$20B	73.18	26.82	81.24	18.76
\$5B-\$10B	72.43	27.57	97.26	2.74
\$1B-\$5B	76.78	23.22	98.91	1.09
\$500mm-\$1B	74.62	25.38	99.71	0.29
Under \$500mm	86.49	13.51	99.96	0.04
VCERA	54.68	45.32	100.00	0.00

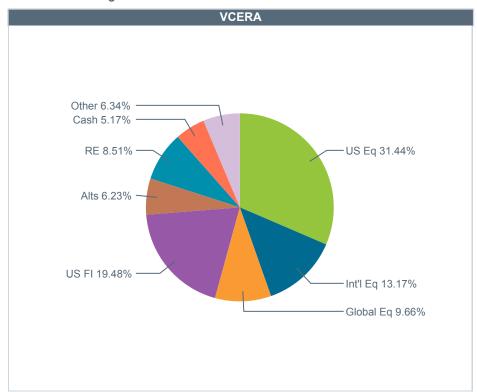
	Active Ma	nagement	External Management						
Portfolio (%)	Public Fund Universe	VCERA	Public Fund Universe	VCERA					
90 to 100	10	0	55	1					
50 to 89	59	1	11	0					
10 to 49	3	0	6	0					
Less than 10	1	0	1	0					
Total Funds Reporting	73	1	73	1					

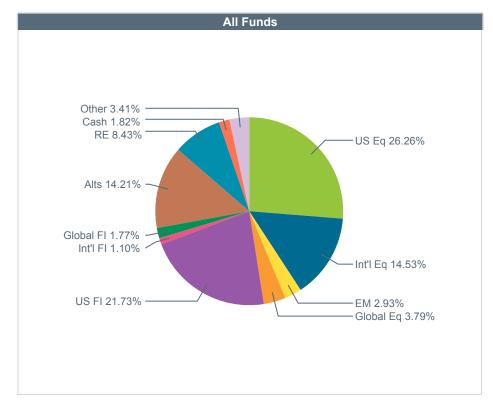
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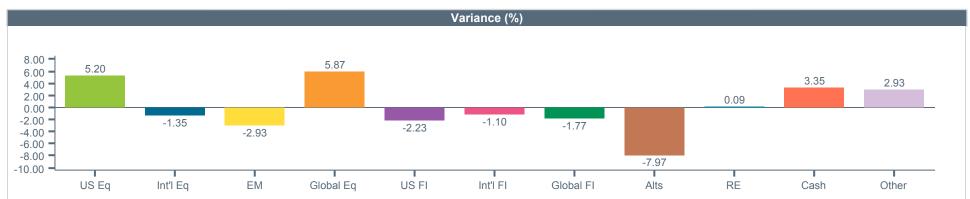
Fund Number: 52 As of June 30, 2016

**Asset Allocation** 

VCERA vs. Average of All Funds





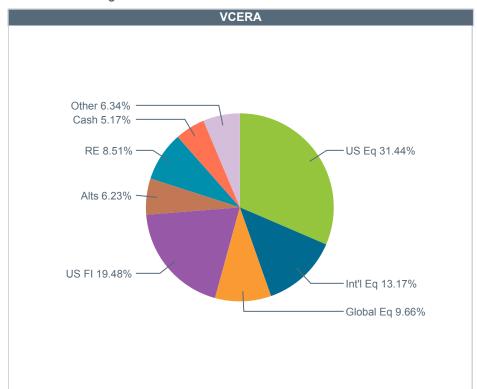


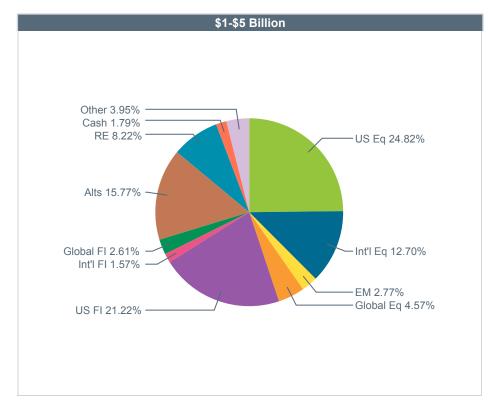


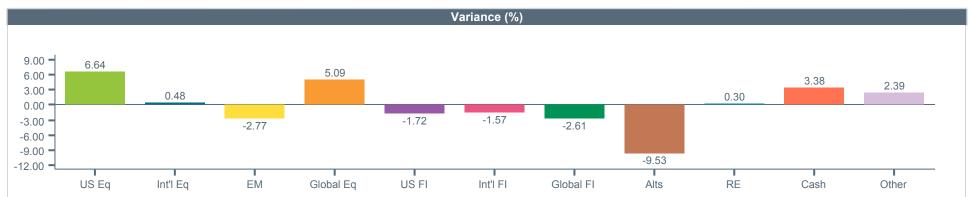
Fund Number: 52 As of June 30, 2016

**Asset Allocation** 

VCERA vs. Average of Similar Size Funds





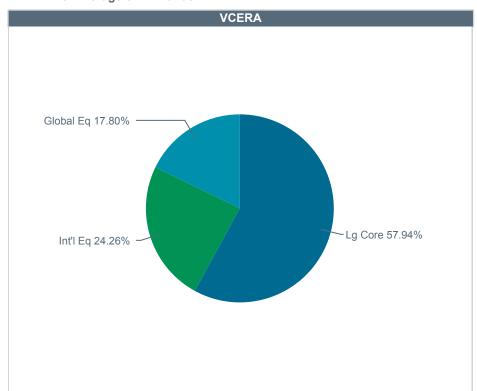


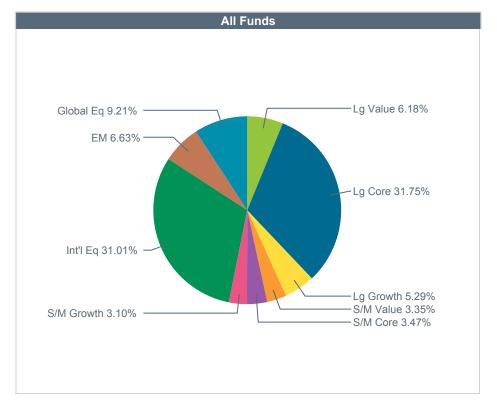


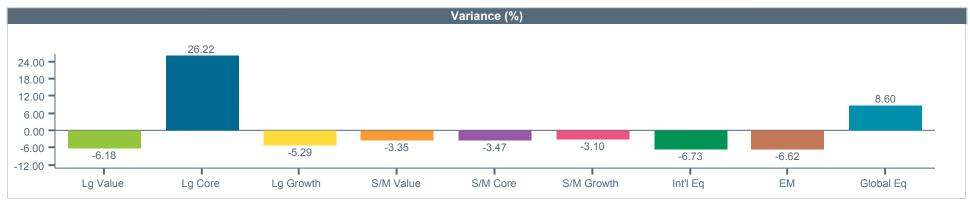
Fund Number: 52 As of June 30, 2016

**Equity Style Allocation** 

VCERA vs. Average of All Funds





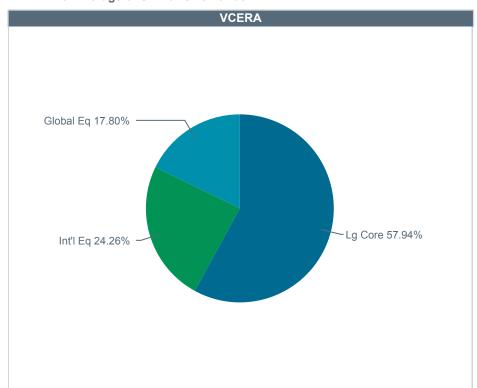


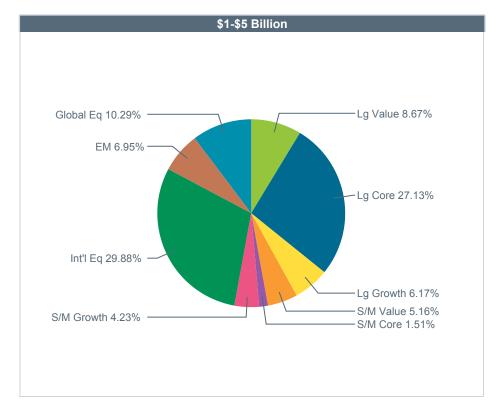


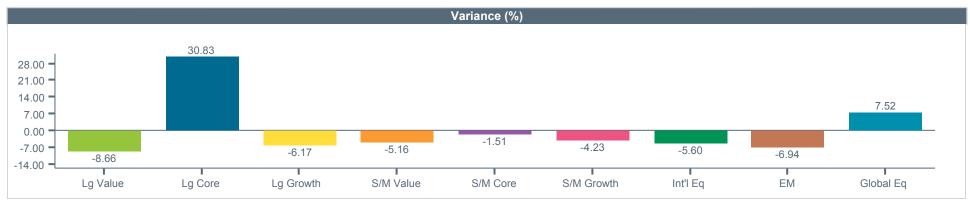
Fund Number: 52 As of June 30, 2016

**Equity Style Allocation** 

VCERA vs. Average of Similar Size Funds

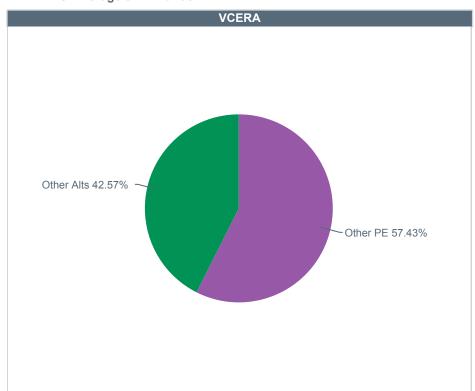


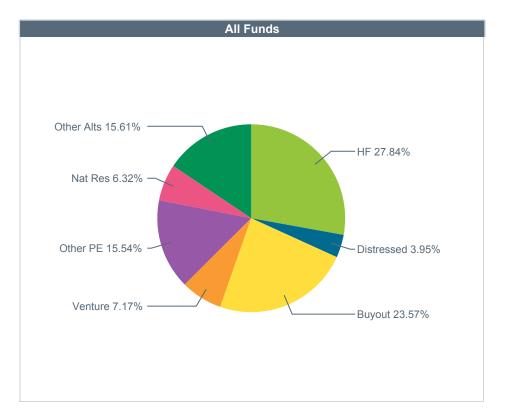


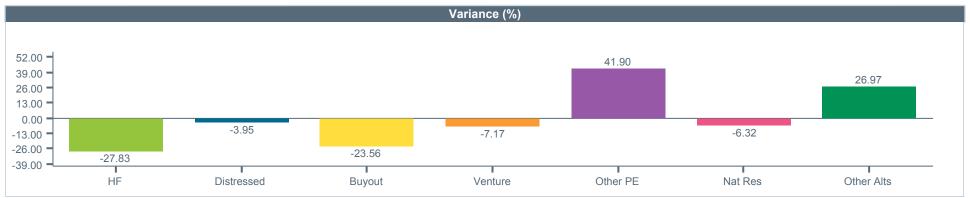




Alternatives Style Allocation VCERA vs. Average of All Funds



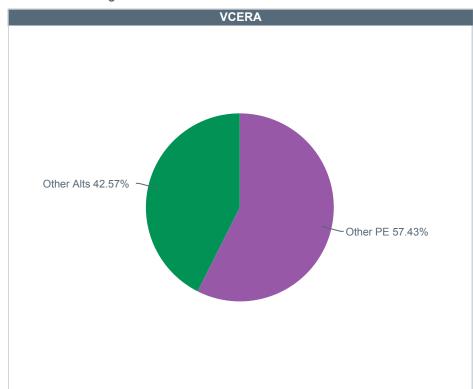


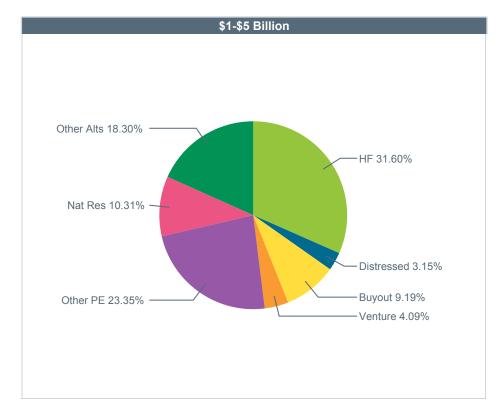


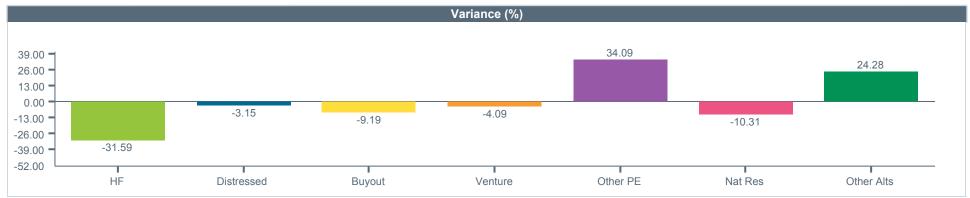


**Alternatives Style Allocation** 

VCERA vs. Average of Similar Size Funds

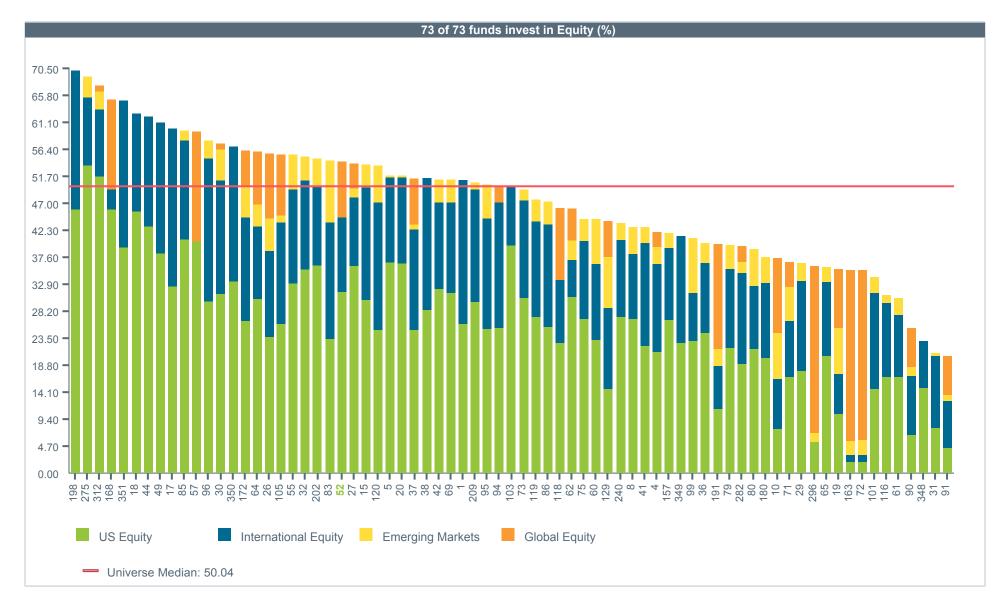




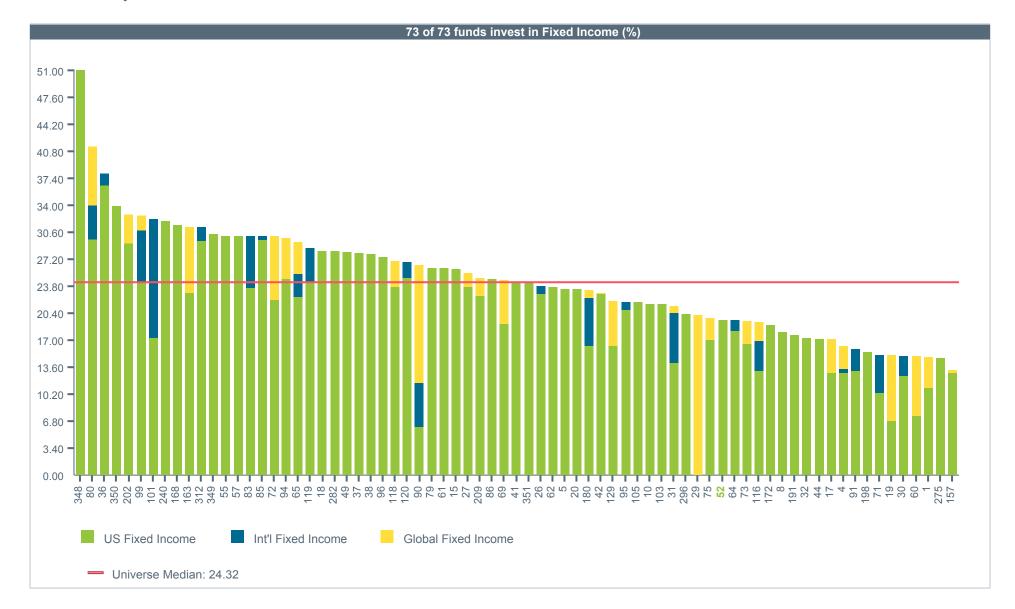




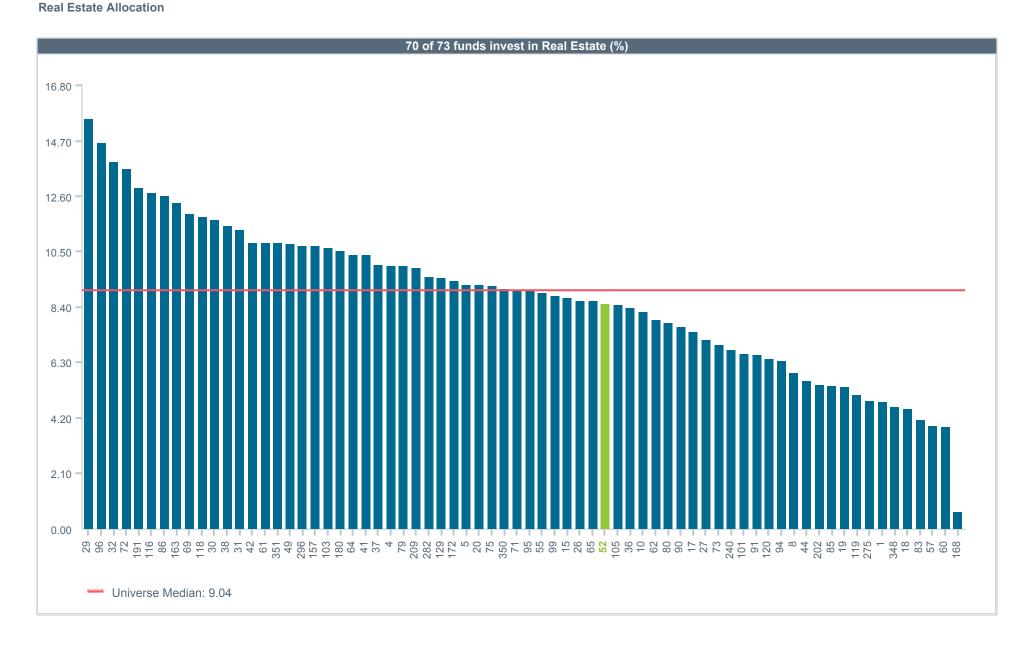
Fund Number: 52 Equity Style Allocation





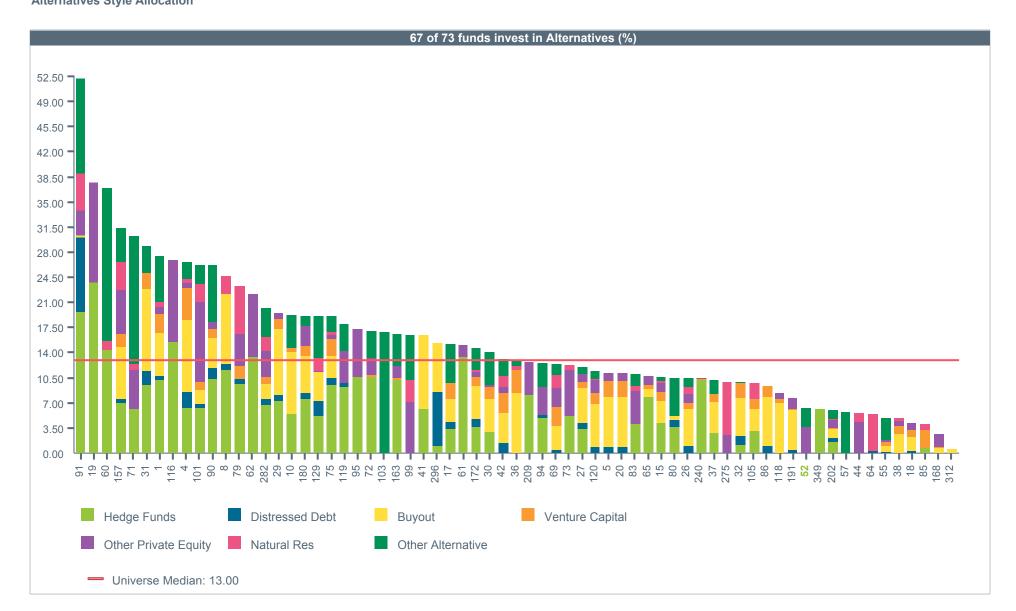




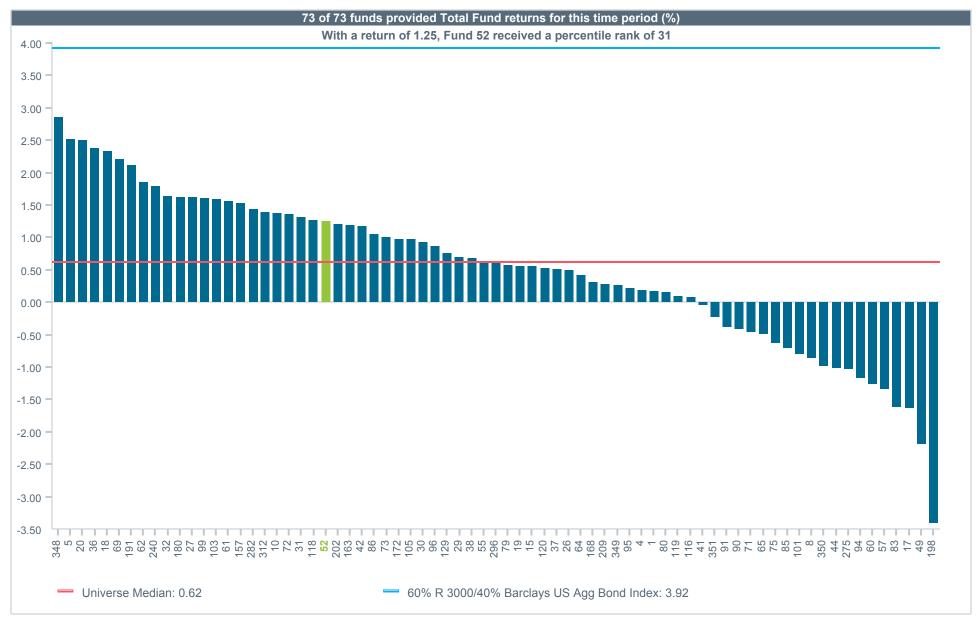


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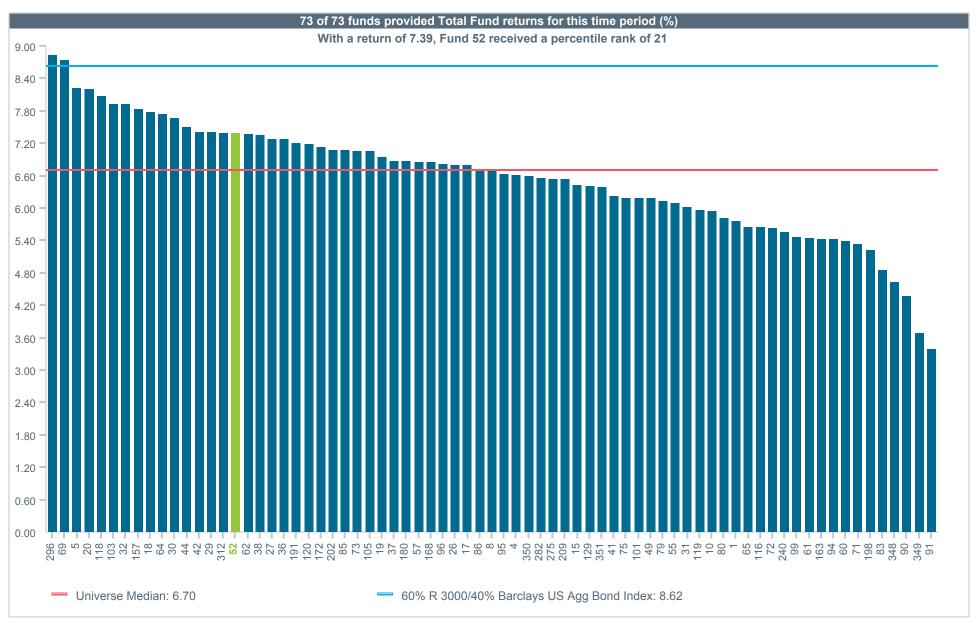






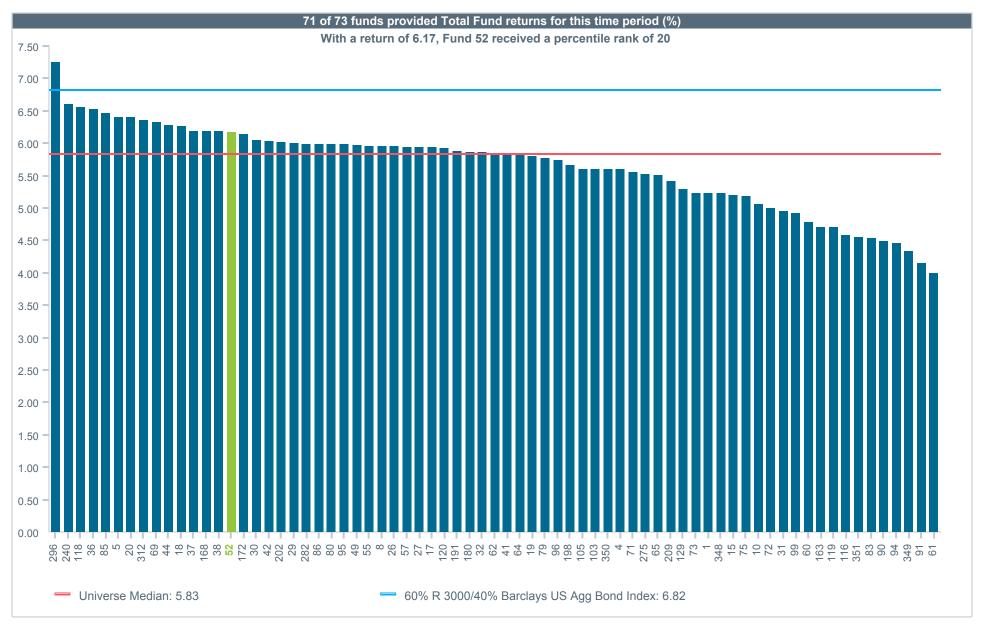
Funds with less history than the specified time period will not appear in the chart.





Funds with less history than the specified time period will not appear in the chart.





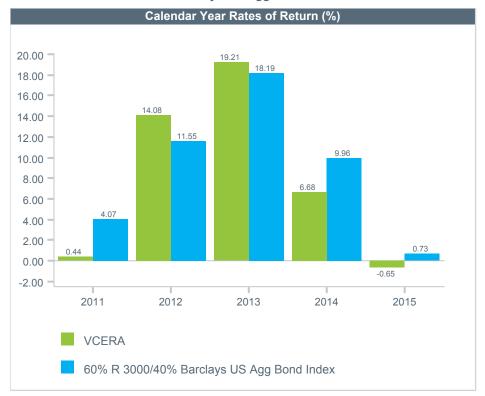
Funds with less history than the specified time period will not appear in the chart.

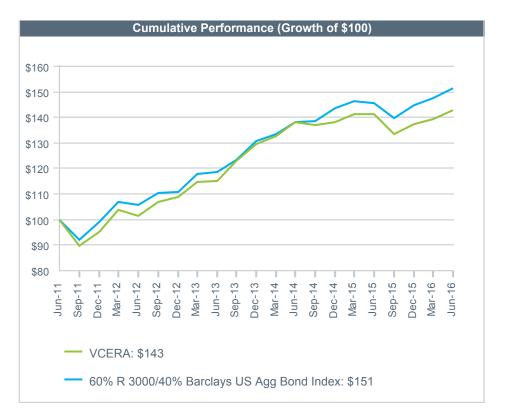


Fund Number: 52

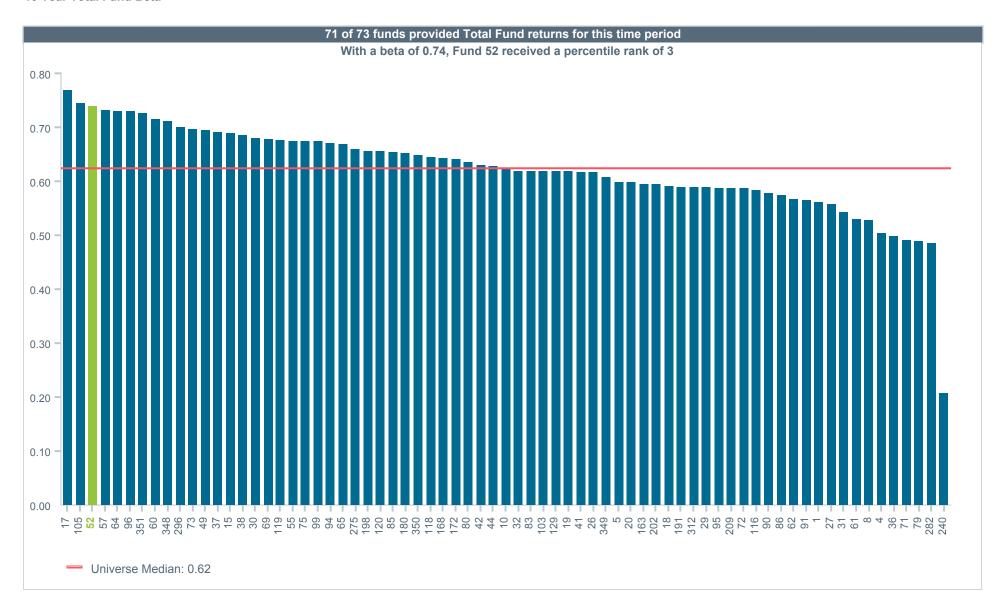
**Total Return - Total Fund** 

VCERA vs. 60% R 3000/40% Barclays US Agg Bond Index



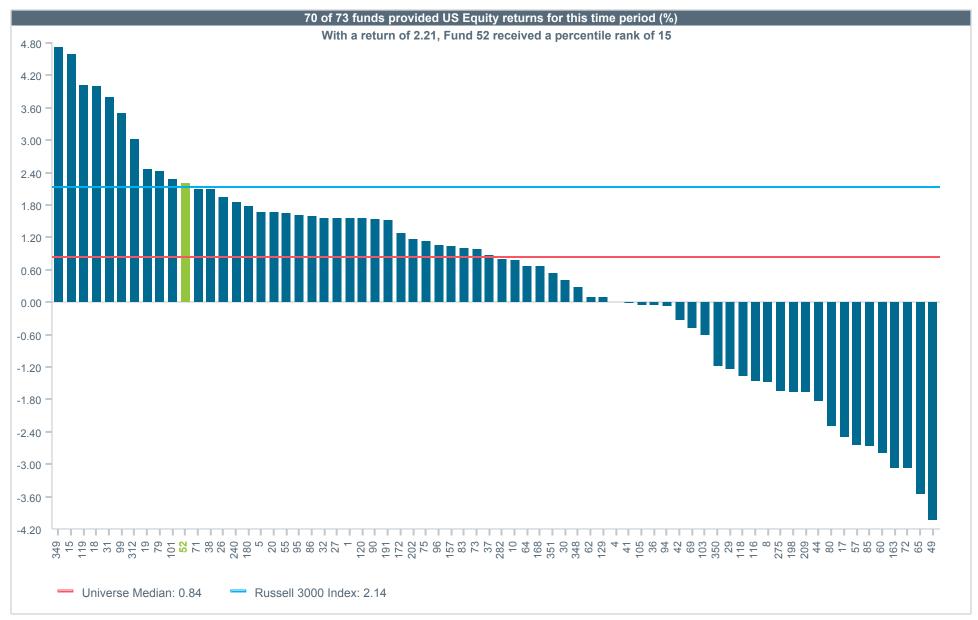


	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	1.25	7.47	7.39
60% R 3000/40% Barclays US Agg Bond Index	3.92	8.42	8.62
Variance	-2.67	-0.95	-1.23

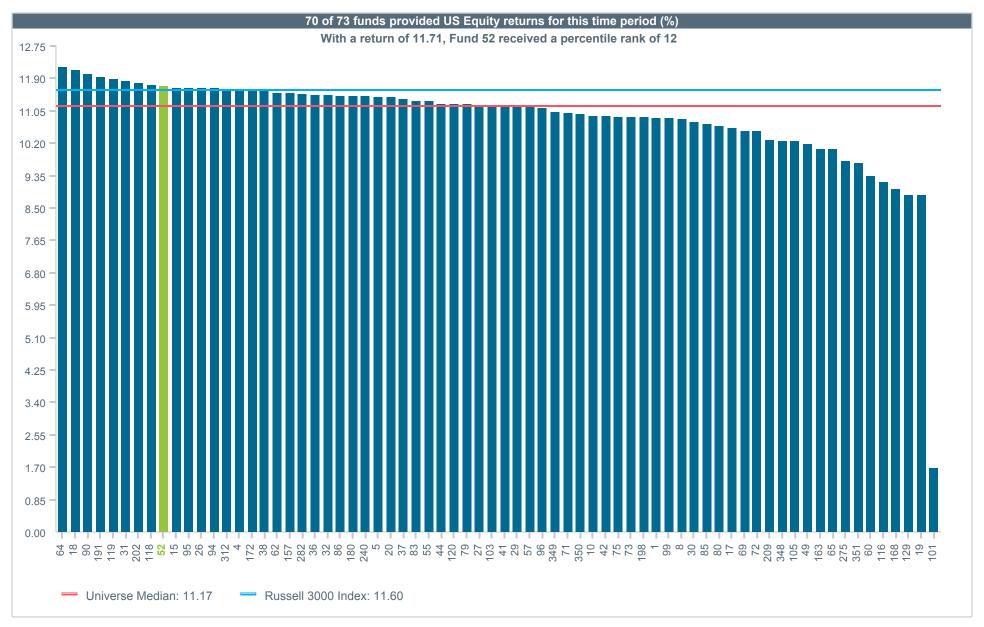


Funds with less history than the specified time period will not appear in the chart. Benchmark used is the S&P 500 Index (Cap Wtd).



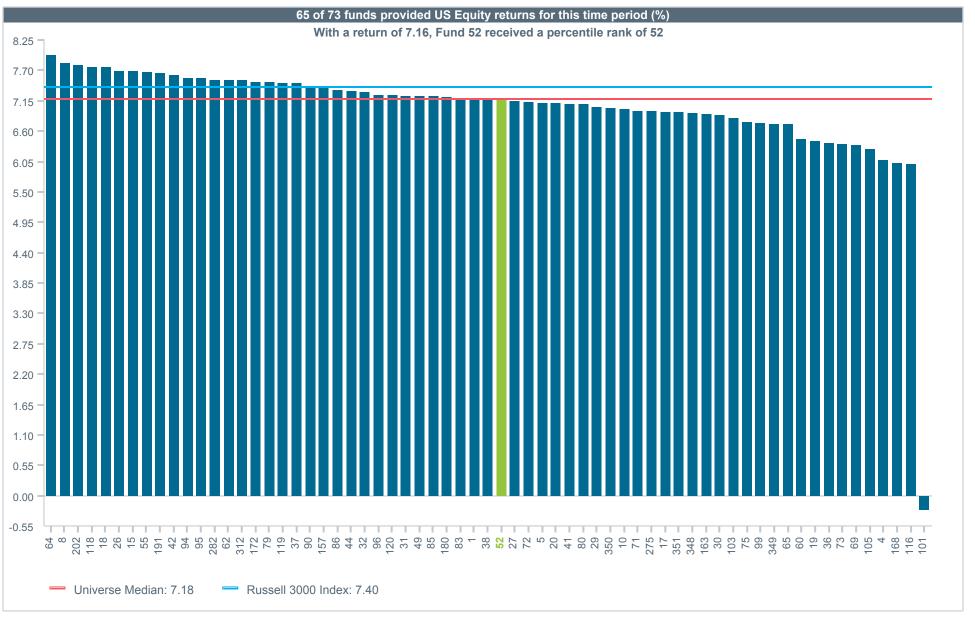








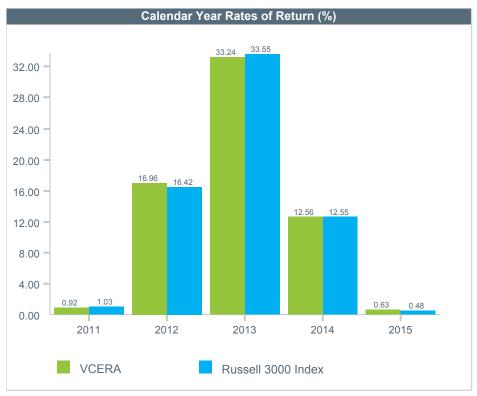
10 Year Annualized US Equity Returns

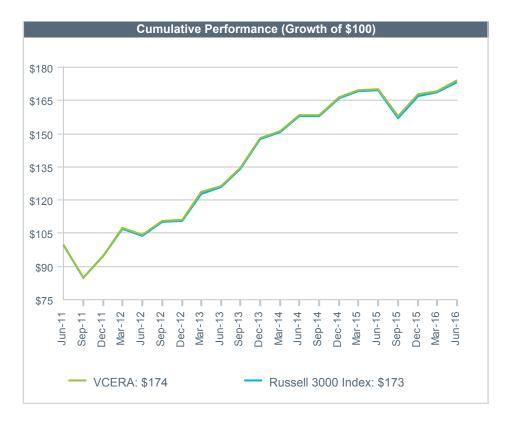




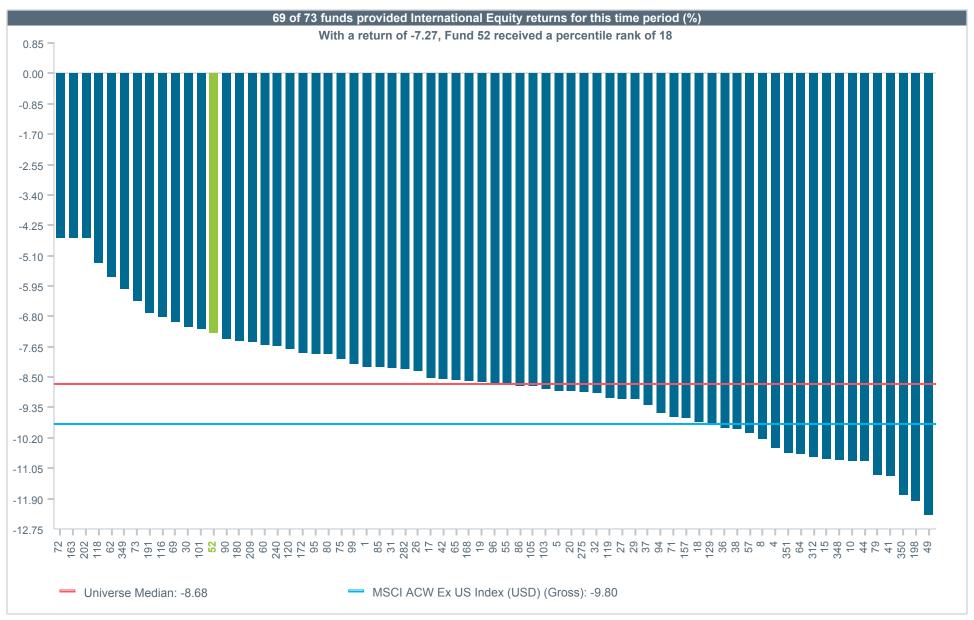
Fund Number: 52
As of June 30, 2016

Total Return - US Equity VCERA vs. Russell 3000 Index

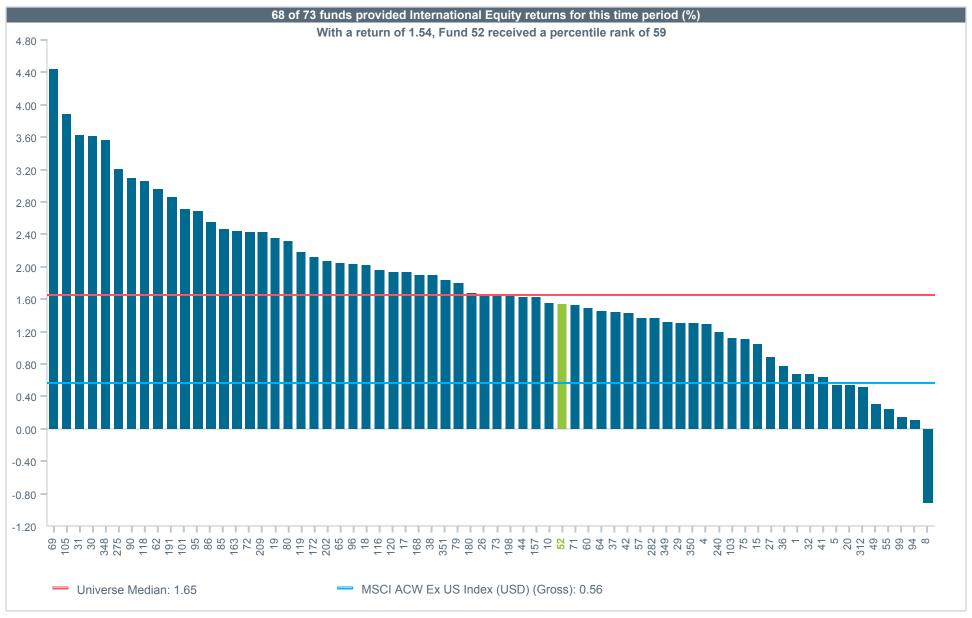




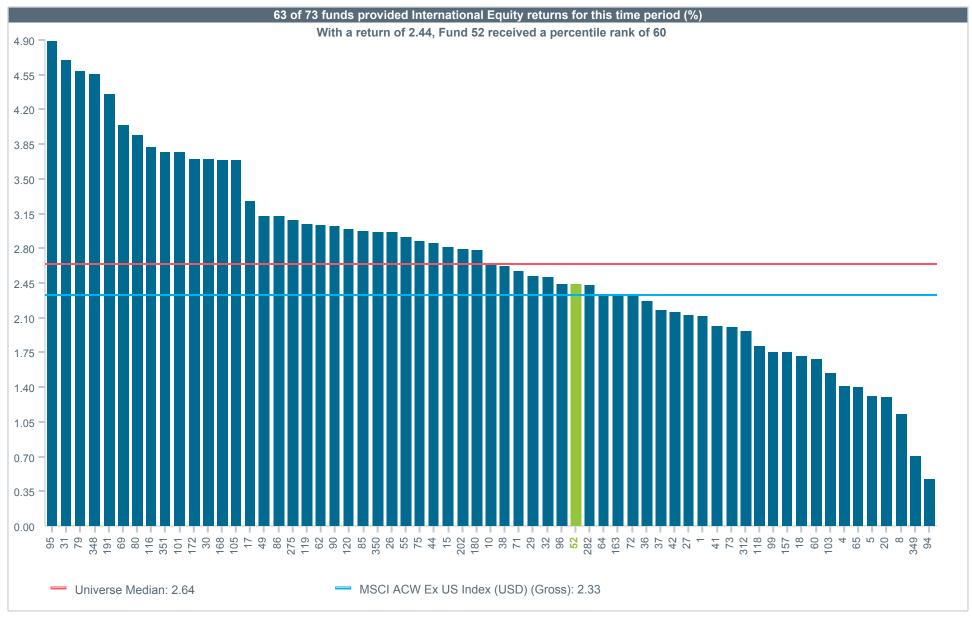
	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	2.21	11.18	11.71
Russell 3000 Index	2.14	11.12	11.60
Variance	0.07	0.06	0.11









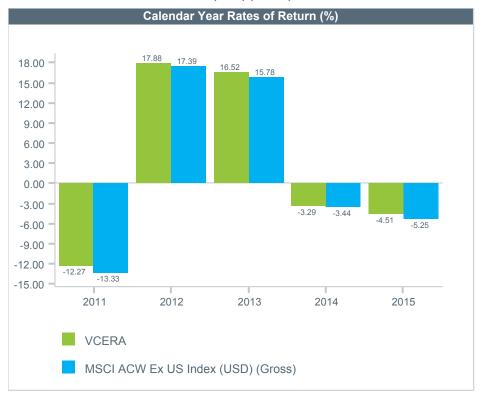


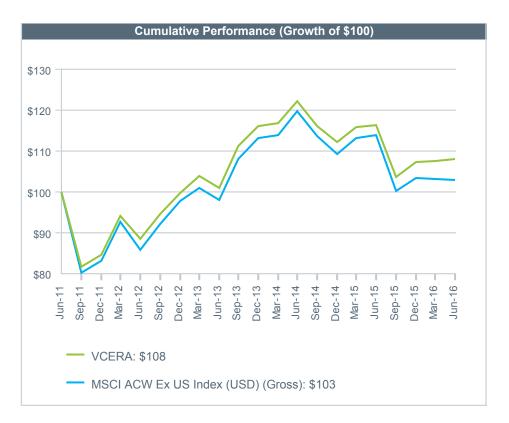


Fund Number: 52
As of June 30, 2016

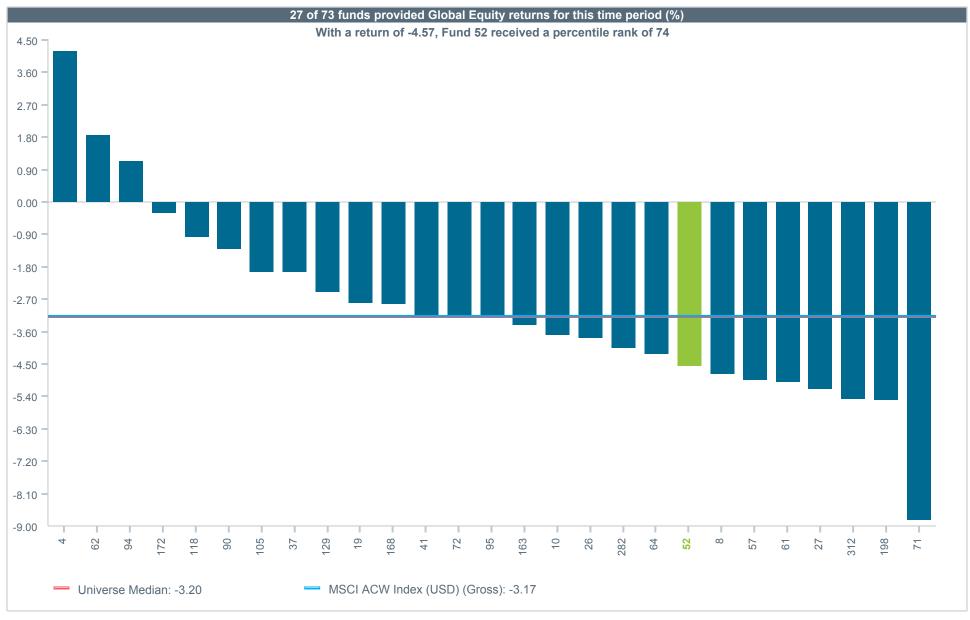
**Total Return - International Equity** 

VCERA vs. MSCI ACW Ex US Index (USD) (Gross)

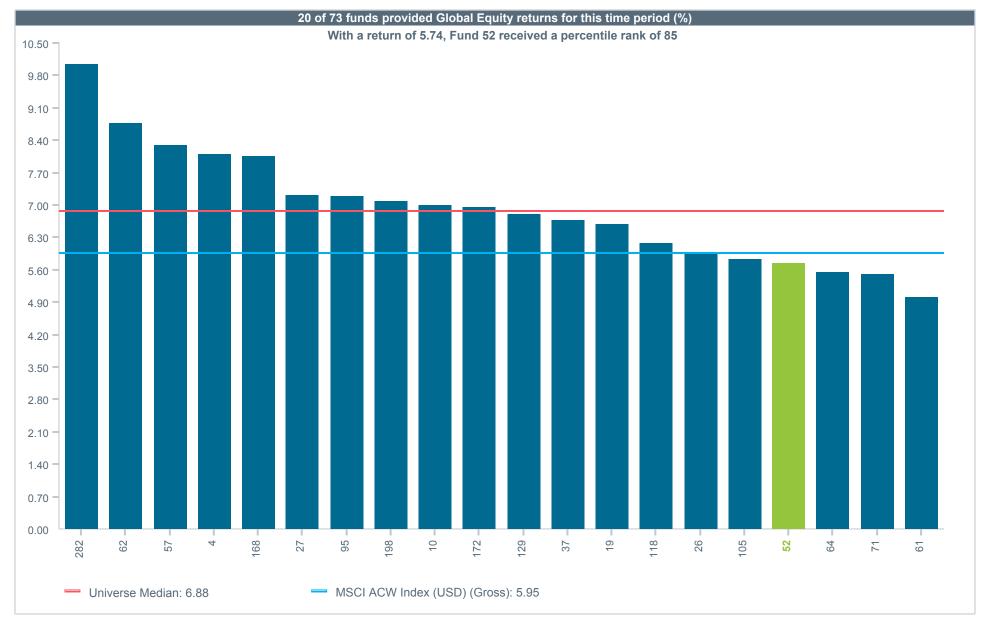




	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	-7.27	2.24	1.54
MSCI ACW Ex US Index (USD) (Gross)	-9.80	1.62	0.56
Variance	2.53	0.62	0.98

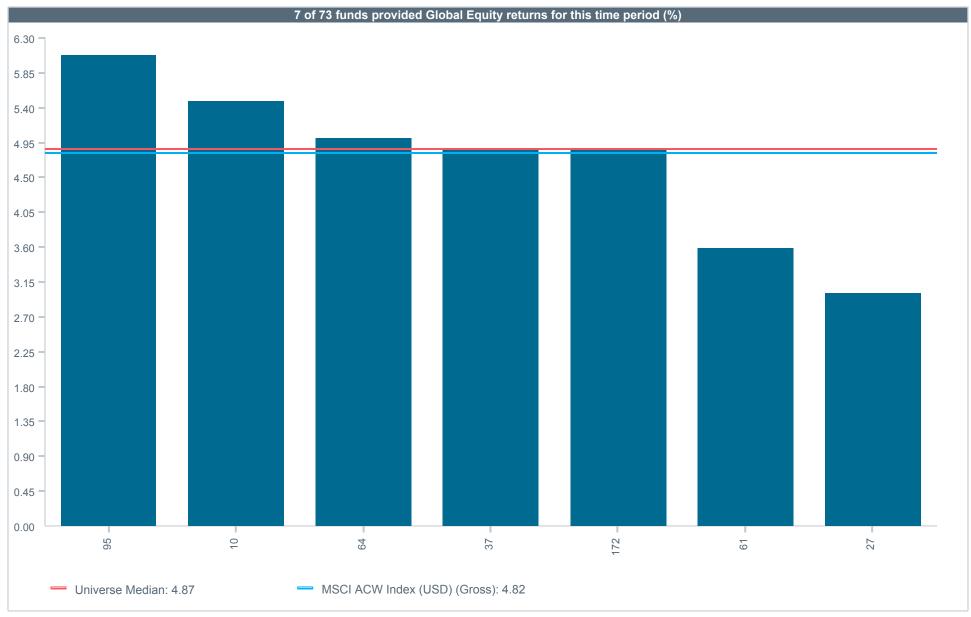












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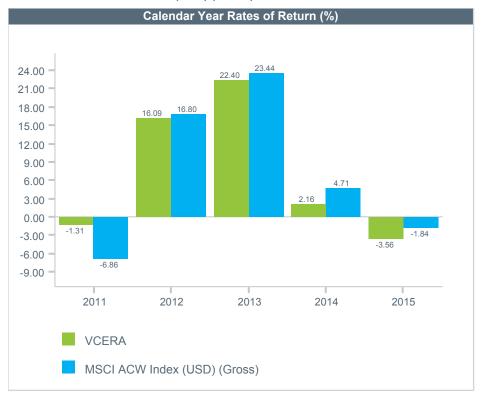


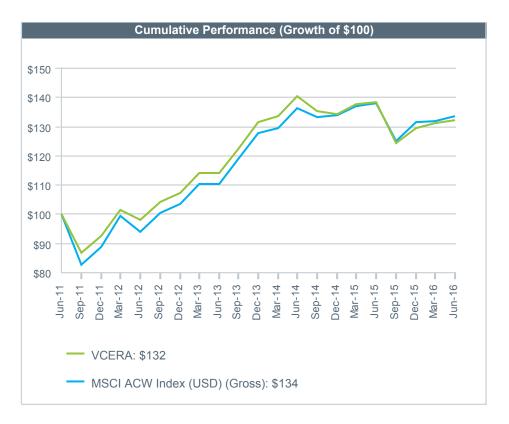
Fund Number: 52

As of June 30, 2016

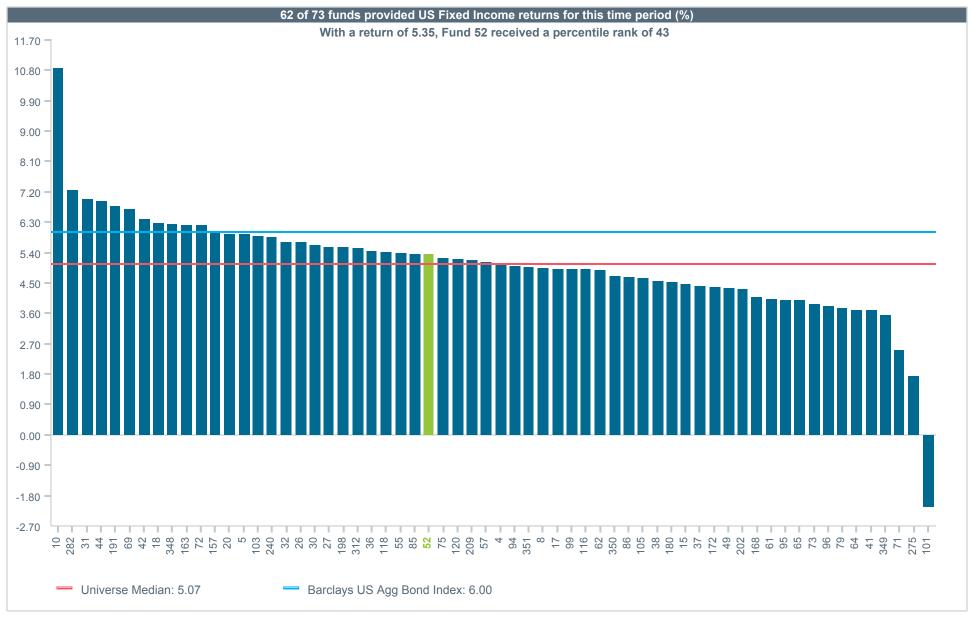
**Total Return - Global Equity** 

VCERA vs. MSCI ACW Index (USD) (Gross)

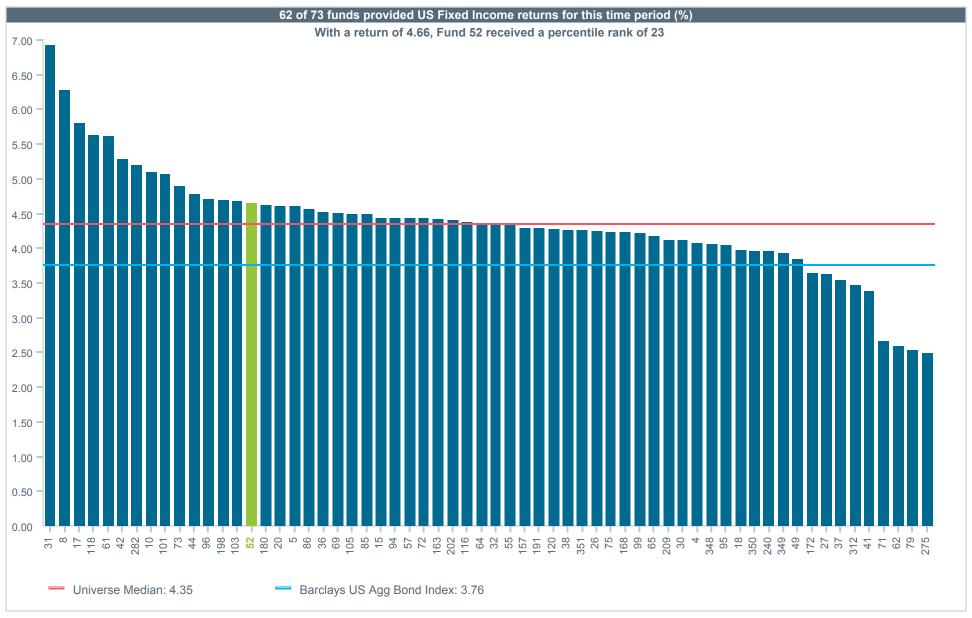




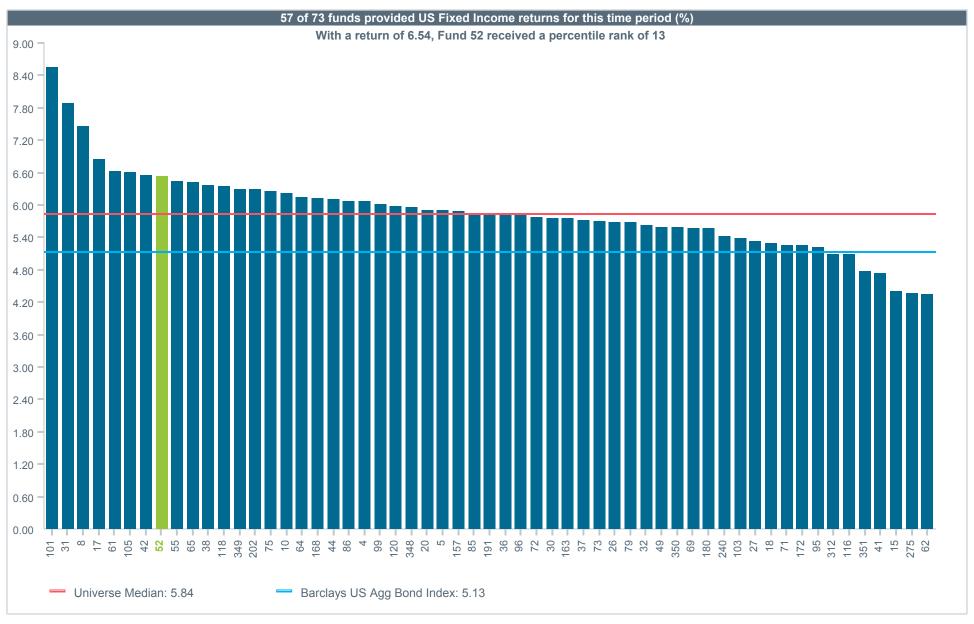
	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	-4.57	5.06	5.74
MSCI ACW Index (USD) (Gross)	-3.17	6.60	5.95
Variance	-1.40	-1.54	-0.21









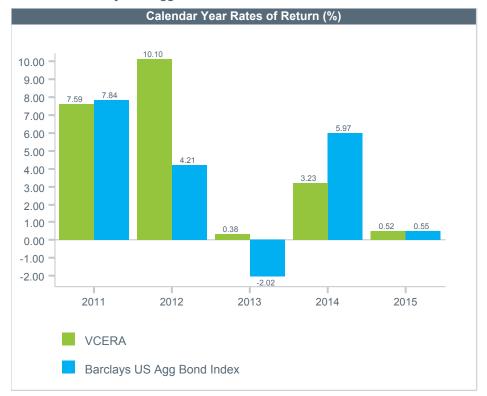


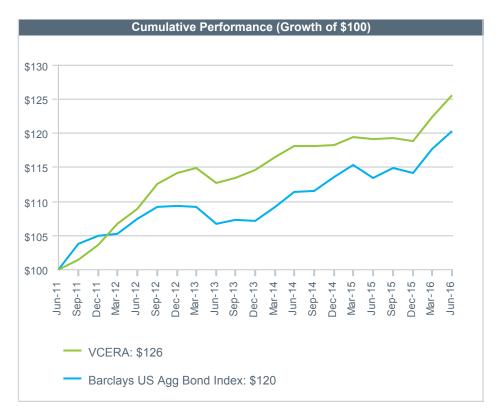


Fund Number: 52
As of June 30, 2016

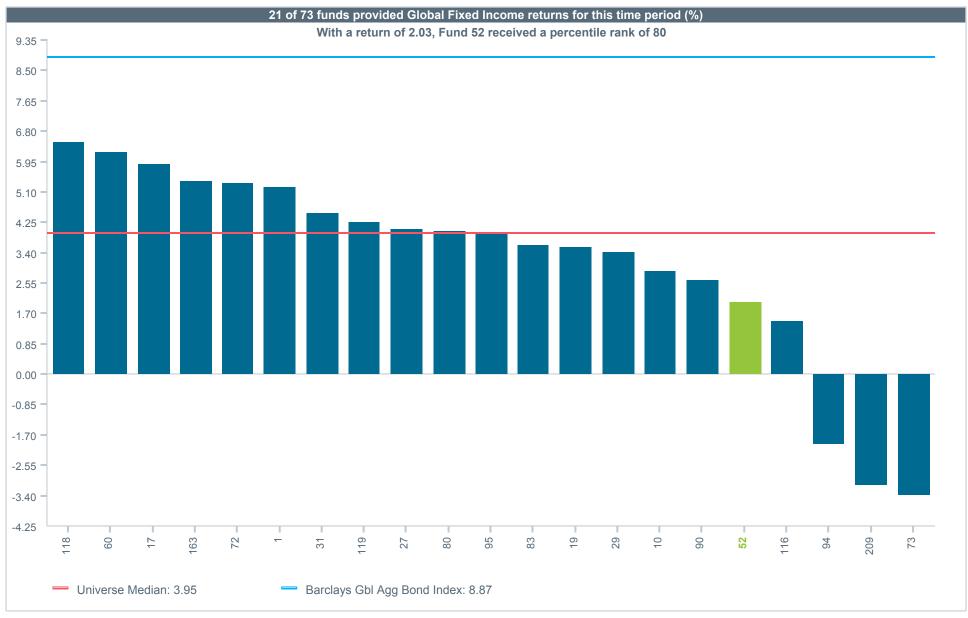
**Total Return - US Fixed Income** 

VCERA vs. Barclays US Agg Bond Index

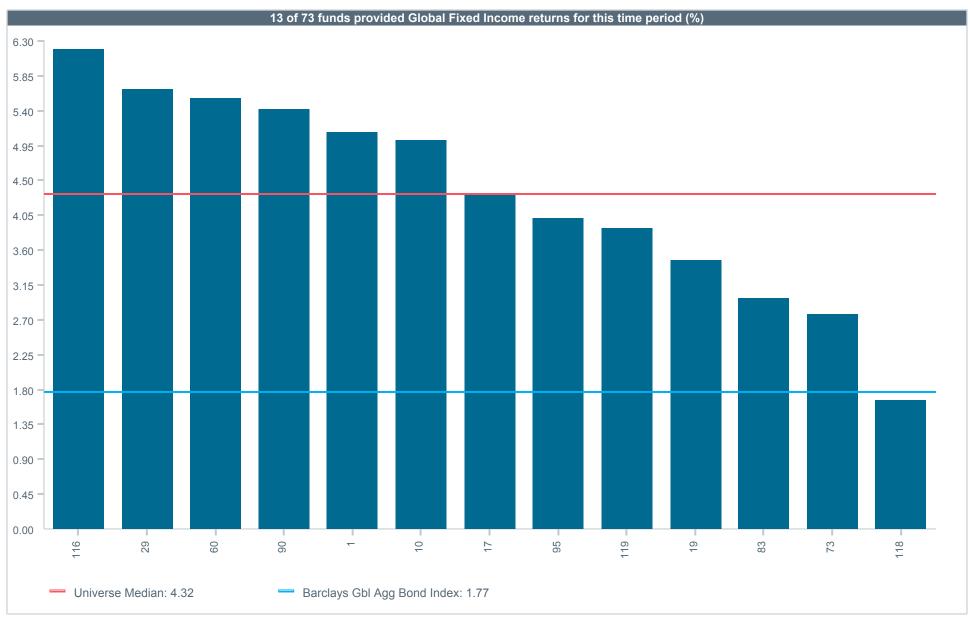




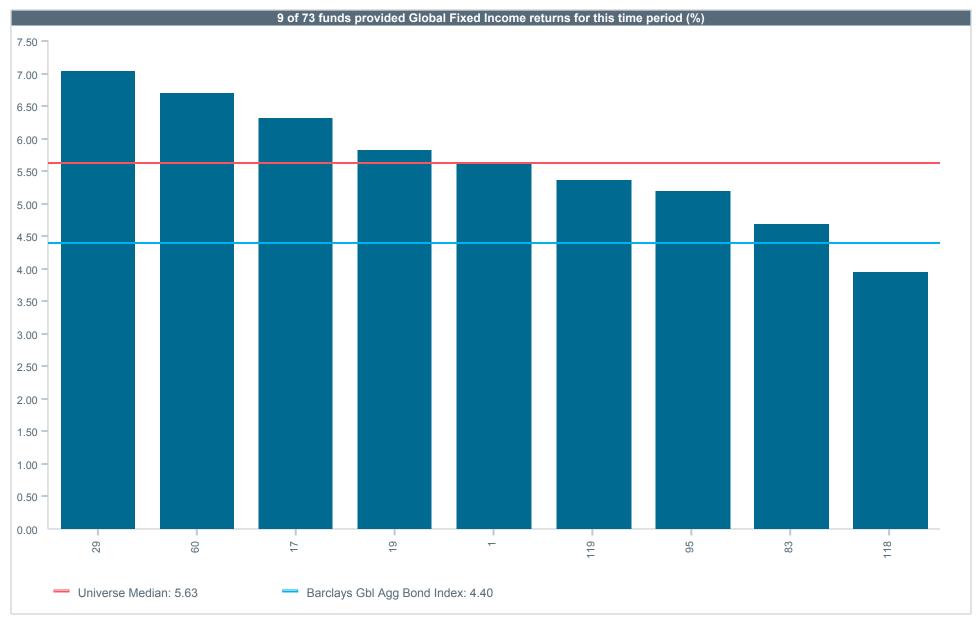
	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	5.35	3.65	4.66
Barclays US Agg Bond Index	6.00	4.06	3.76
Variance	-0.65	-0.41	0.90









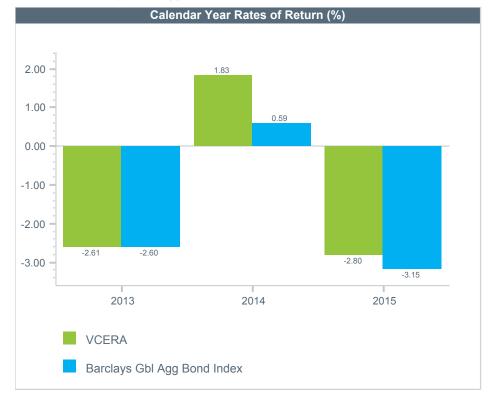


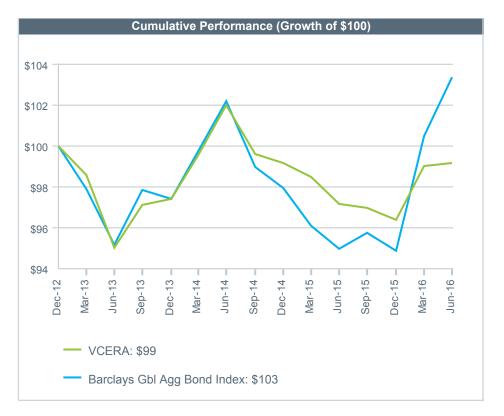


Fund Number: 52 As of June 30, 2016

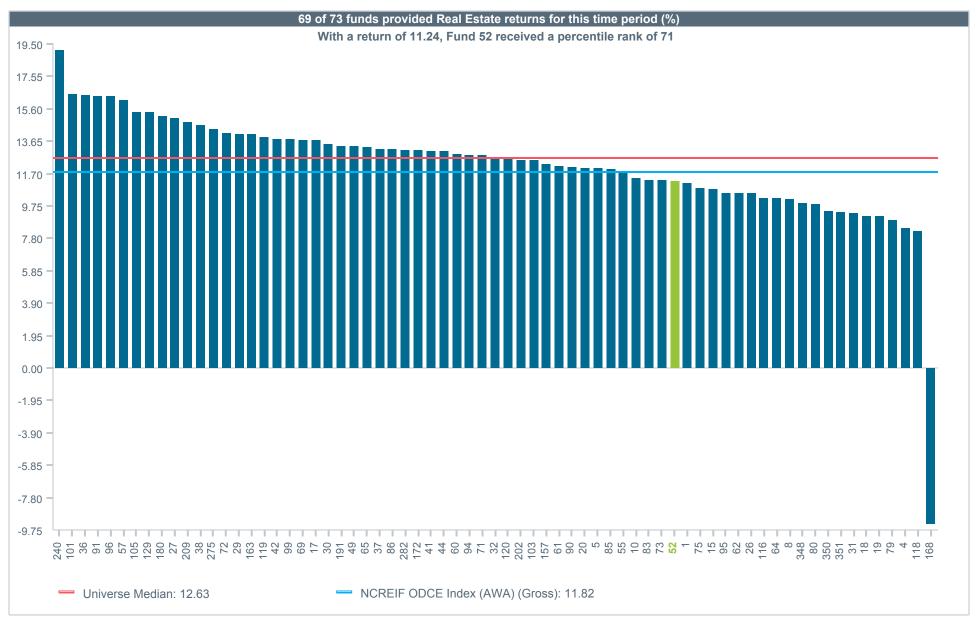
Total Return - Global Fixed Income

## VCERA vs. Barclays Gbl Agg Bond Index

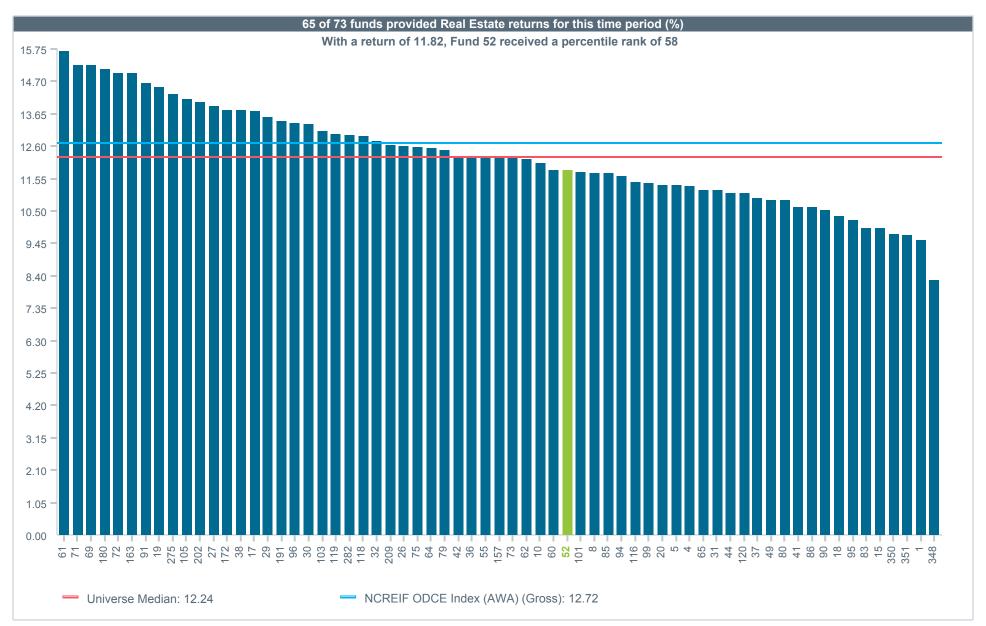




	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	2.03	1.42	N/A
Barclays Gbl Agg Bond Index	8.87	2.80	N/A
Variance	-6.84	-1.38	N/A

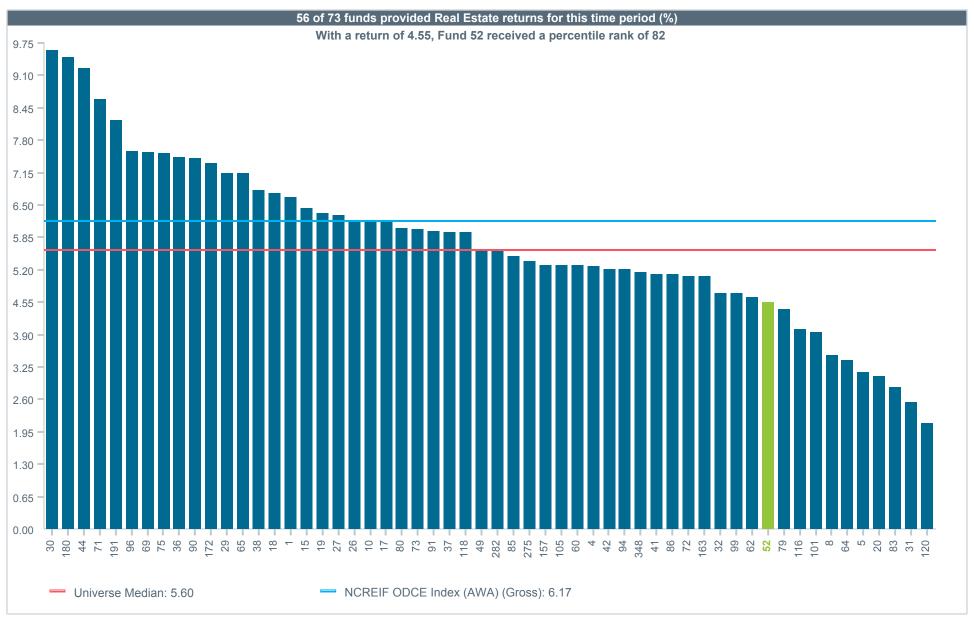








10 Year Annualized Real Estate Returns

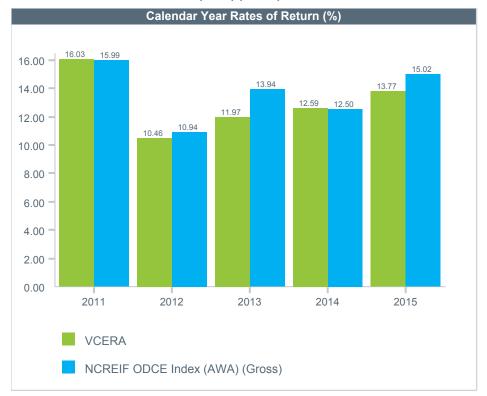


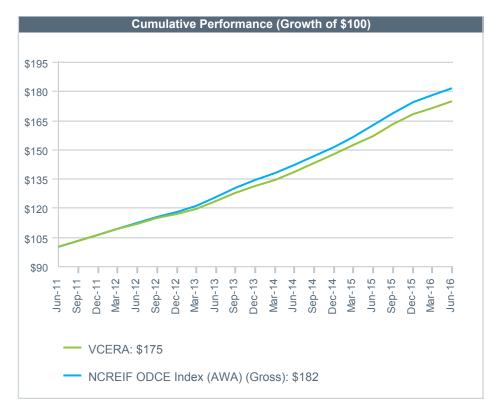


Fund Number: 52 As of June 30, 2016

**Total Return - Real Estate** 

VCERA vs. NCREIF ODCE Index (AWA) (Gross)

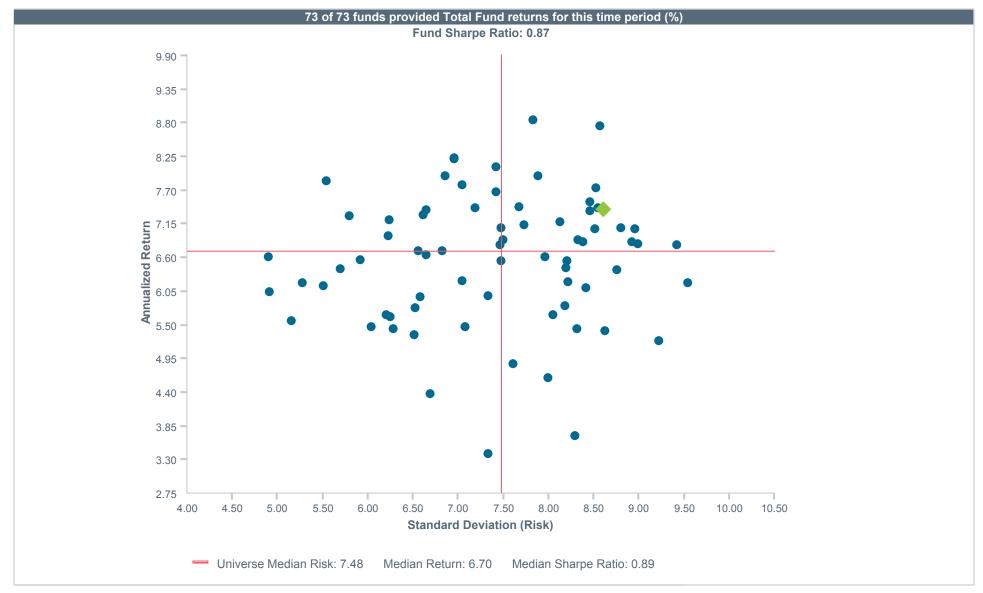




	Annualized Returns (%)		
	1 Year	3 Years	5 Years
VCERA	11.24	12.15	11.82
NCREIF ODCE Index (AWA) (Gross)	11.82	13.00	12.72
Variance	-0.58	-0.85	-0.90

Risk/Return Analysis

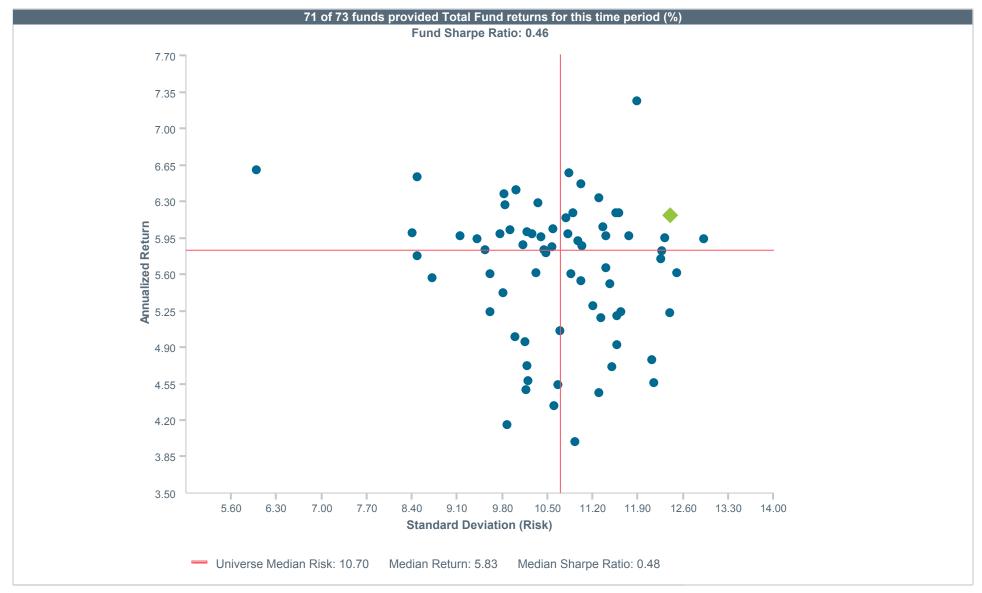
**5 Year Annualized Total Fund Returns vs. Standard Deviation** 





Risk/Return Analysis

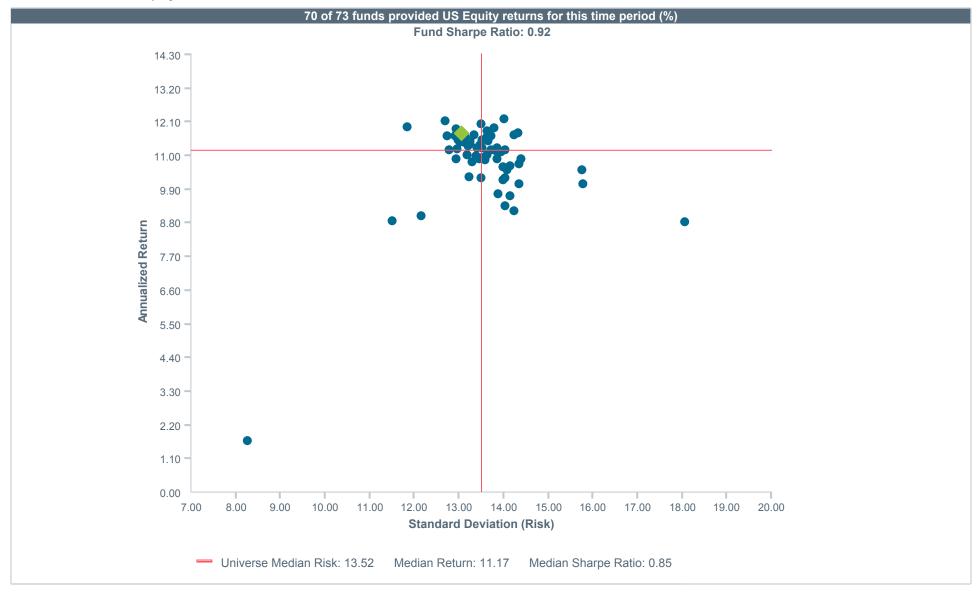
10 Year Annualized Total Fund Returns vs. Standard Deviation





Risk/Return Analysis

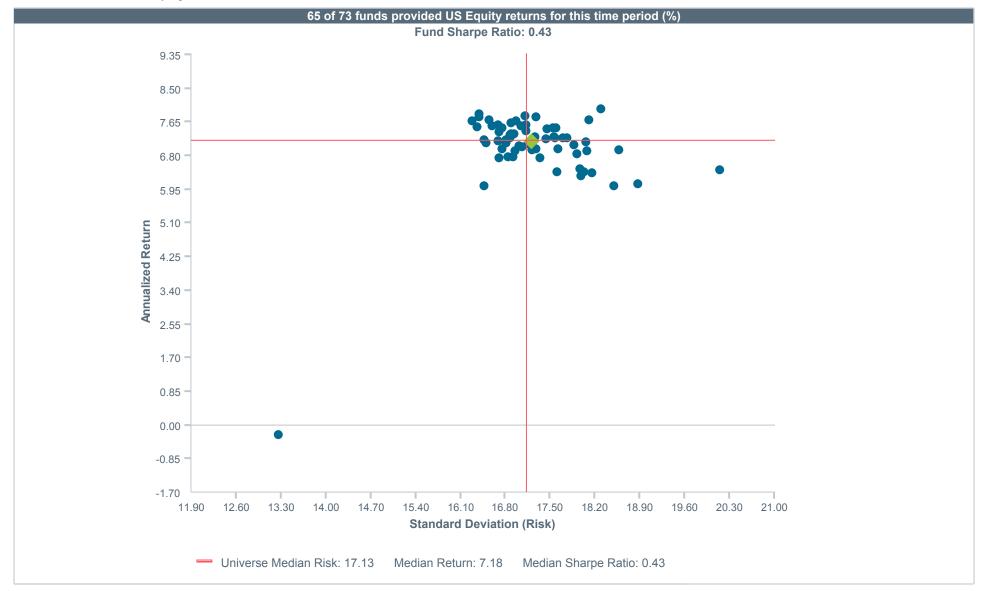
5 Year Annualized US Equity Returns vs. Standard Deviation





Risk/Return Analysis

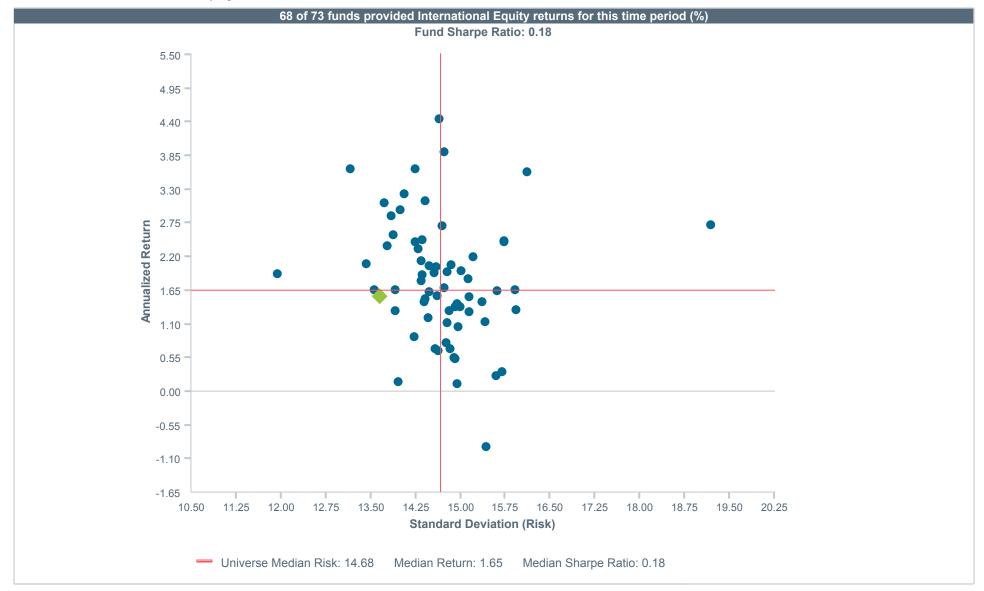
10 Year Annualized US Equity Returns vs. Standard Deviation





Risk/Return Analysis

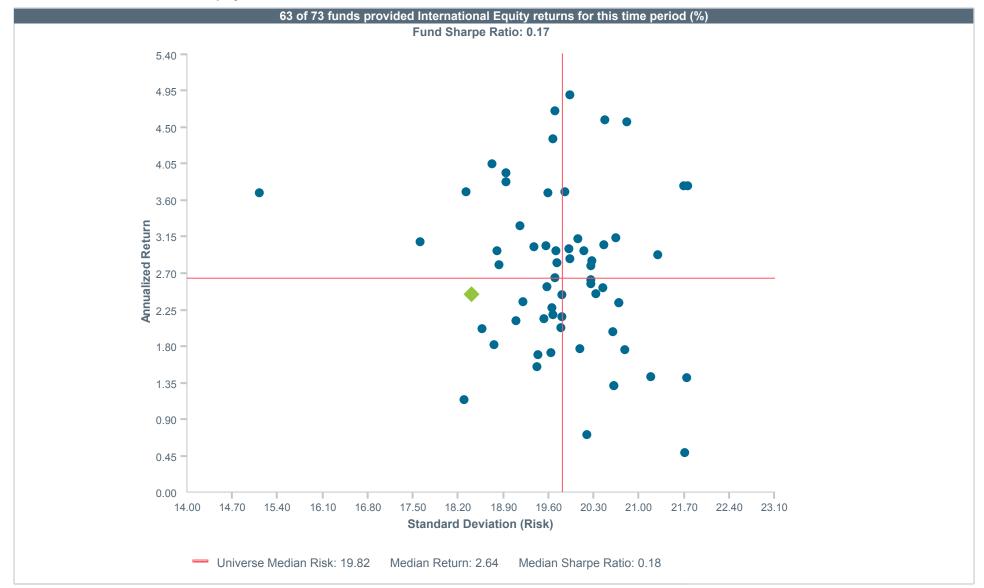
5 Year Annualized International Equity Returns vs. Standard Deviation





Risk/Return Analysis

10 Year Annualized International Equity Returns vs. Standard Deviation

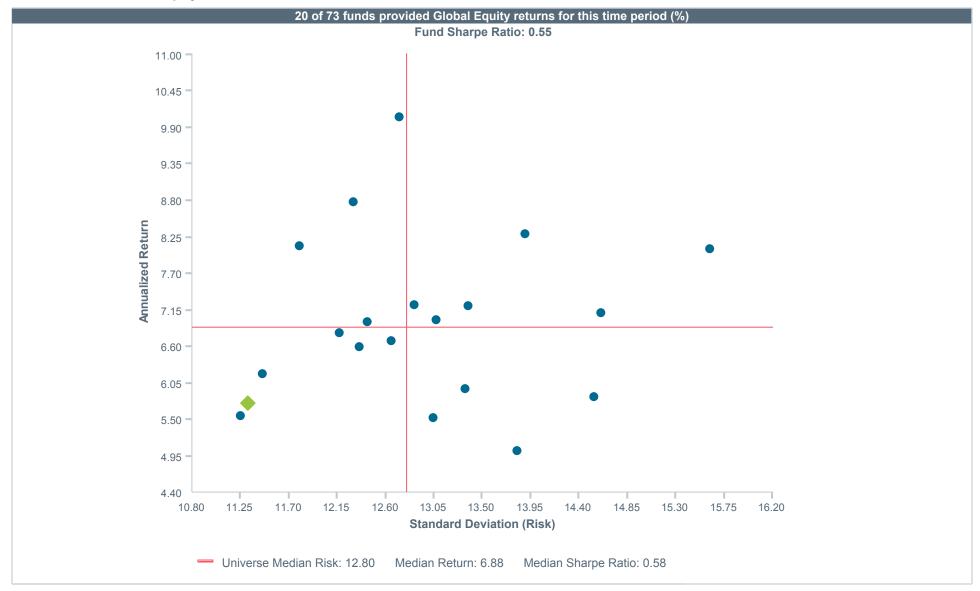


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Risk/Return Analysis

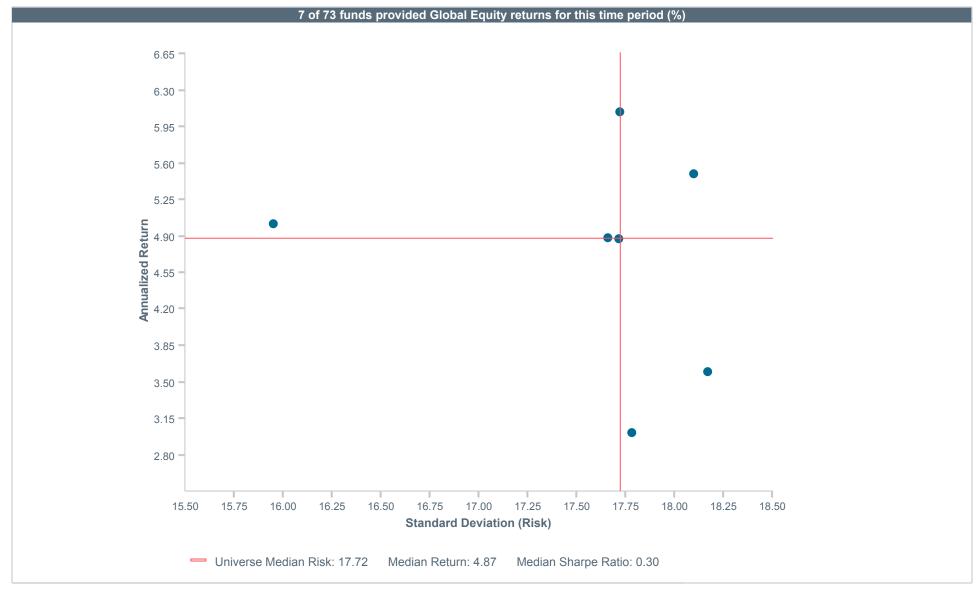
5 Year Annualized Global Equity Returns vs. Standard Deviation





Risk/Return Analysis

10 Year Annualized Global Equity Returns vs. Standard Deviation

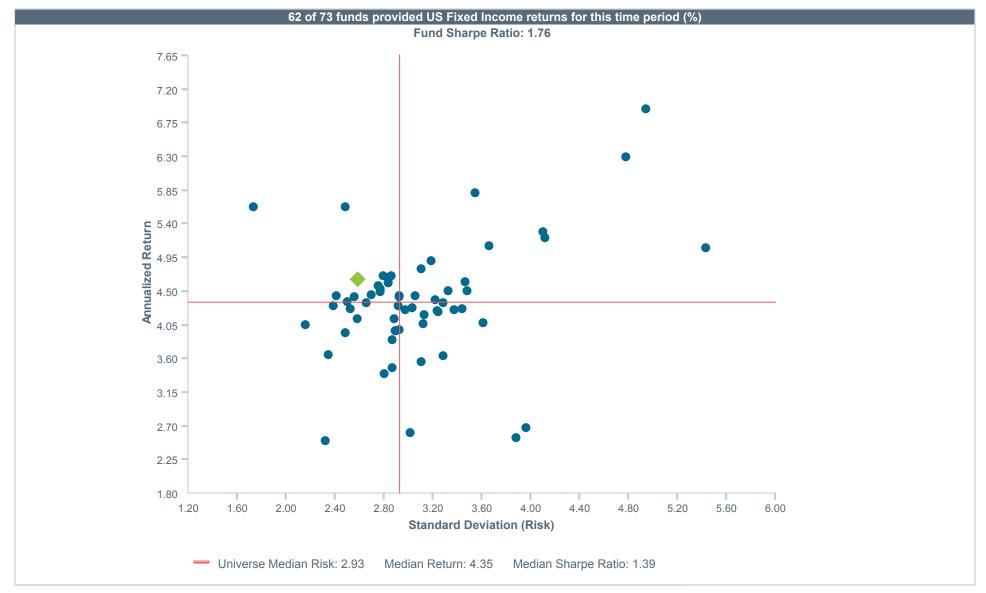






Risk/Return Analysis

5 Year Annualized US Fixed Income Returns vs. Standard Deviation

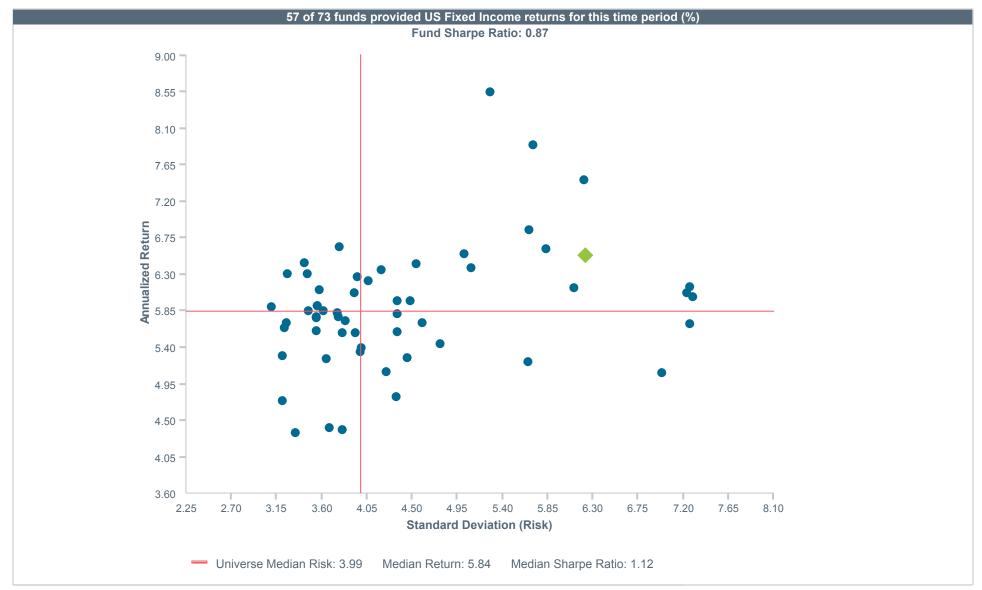






Risk/Return Analysis

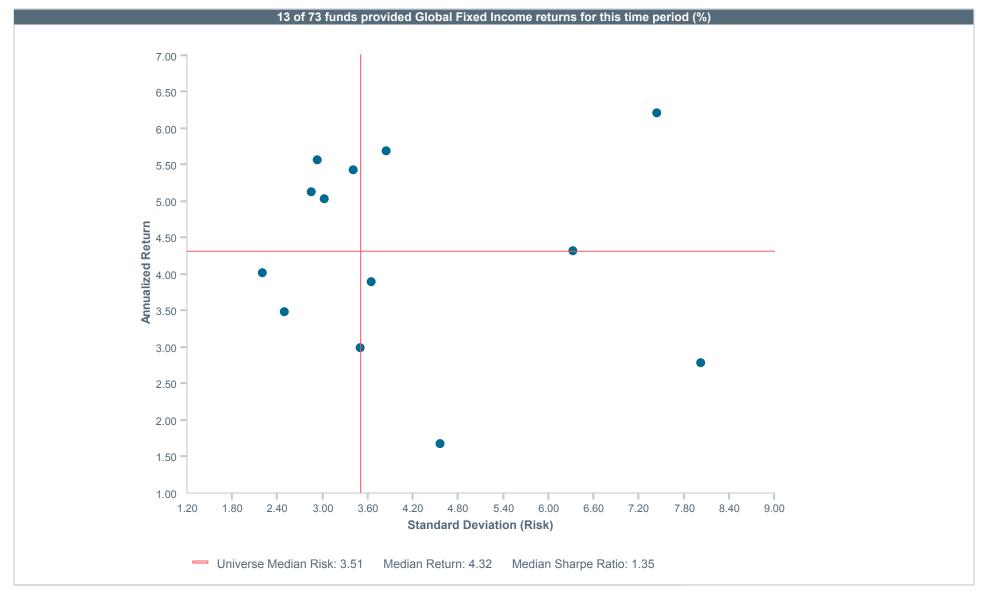
10 Year Annualized US Fixed Income Returns vs. Standard Deviation





Risk/Return Analysis

5 Year Annualized Global Fixed Income Returns vs. Standard Deviation

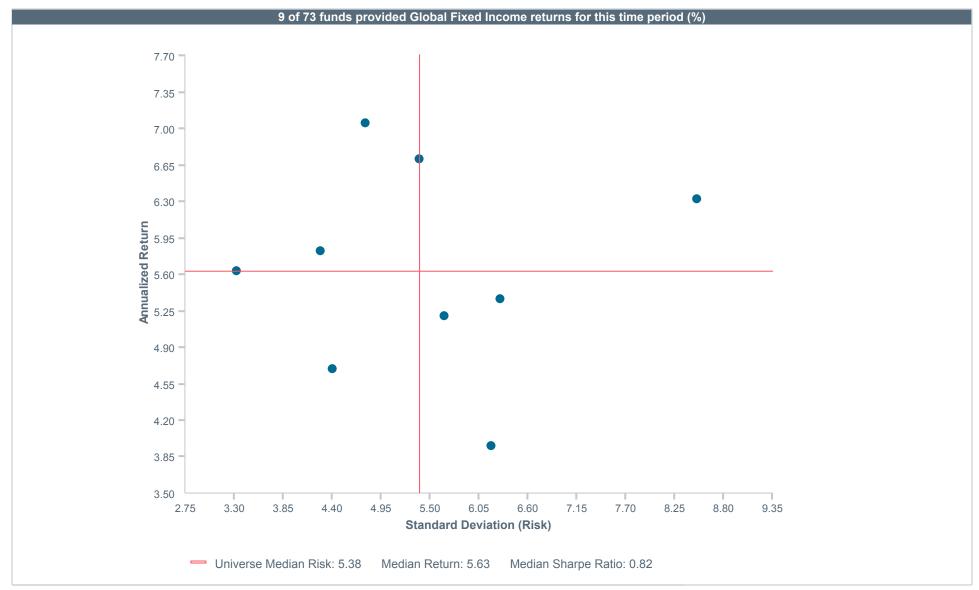


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Risk/Return Analysis

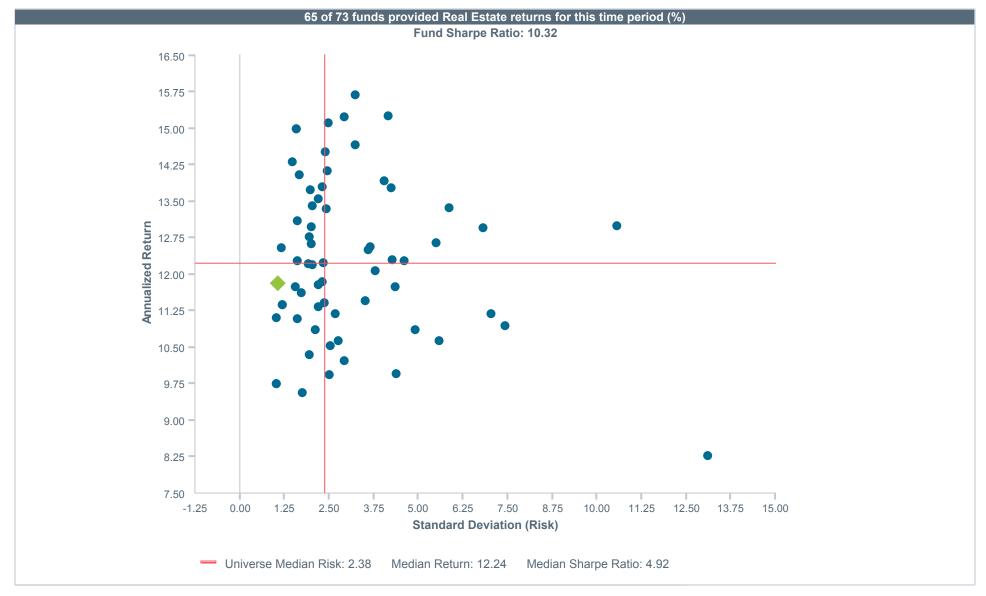
10 Year Annualized Global Fixed Income Returns vs. Standard Deviation





Risk/Return Analysis

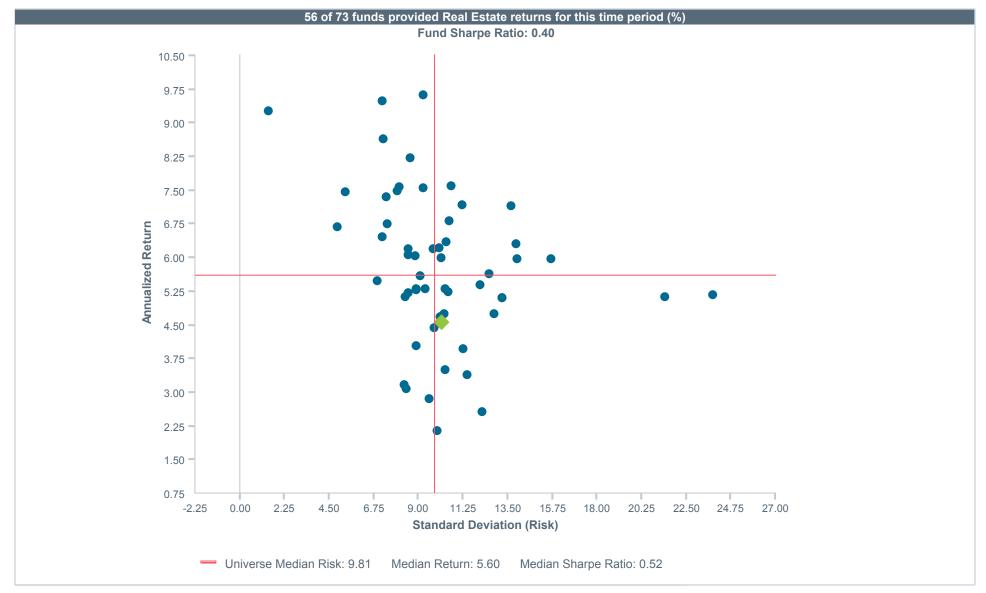
5 Year Annualized Real Estate Returns vs. Standard Deviation





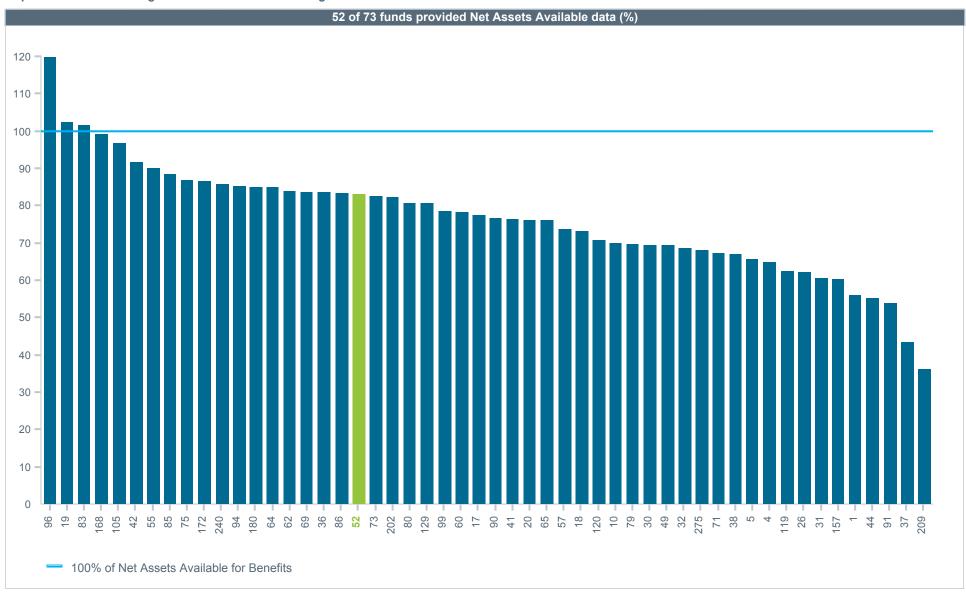
Risk/Return Analysis

10 Year Annualized Real Estate Returns vs. Standard Deviation





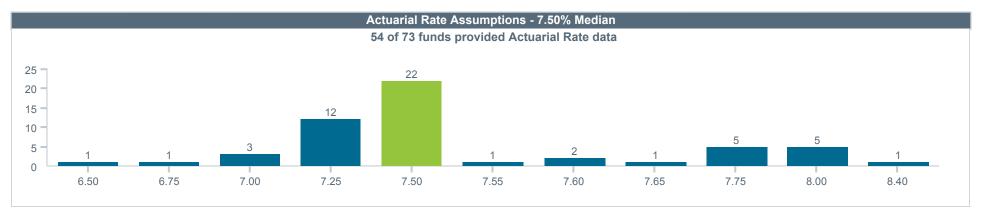
Fund Number: 52
Net Assets Available For Benefits
Expressed as a Percentage of the Pension Benefit Obligation

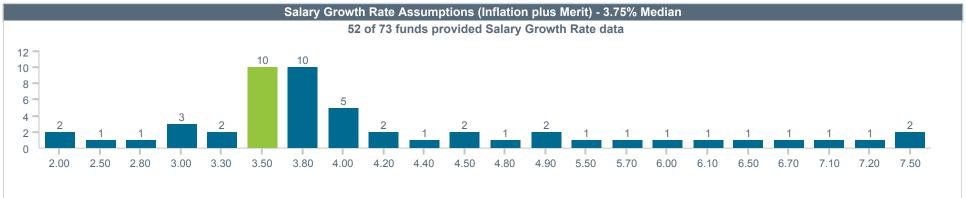


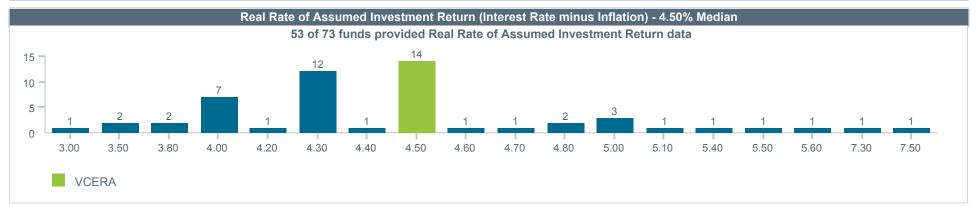
Funds that did not provide data will not appear in the chart.



Fund Number: 52 Actuarial Assumption Rates





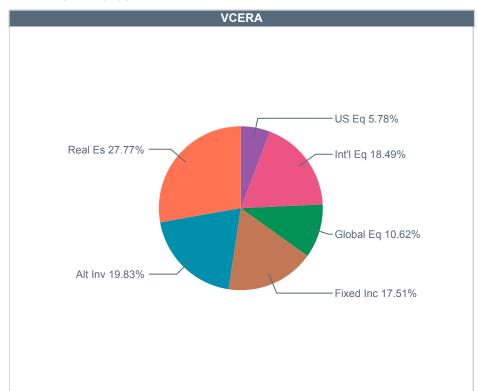


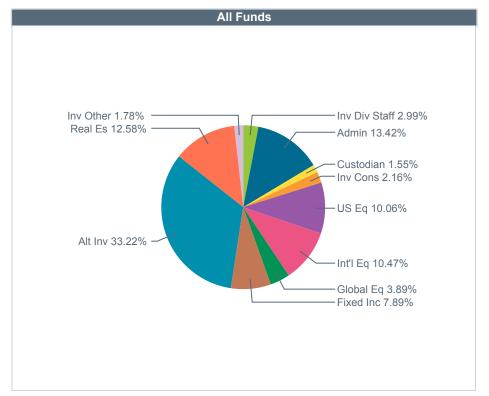
Funds that did not provide data will not appear in the chart.

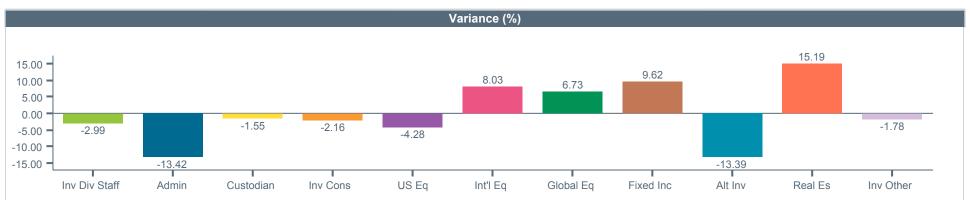


**Total Administrative and Investment Fees** 

**VCERA vs. All Funds** 







Allocations shown may not sum up to 100% exactly due to rounding.



Fund Number: 52

Total Fund Fee Summary in Basis Points VCERA vs. Average by Asset Range

55 of 73 funds provided fee data for this time period

Administrative Expenses	VCERA	Under \$500 Million	\$500mm - \$1 Billion	\$1 - \$5 Billion	\$5 - \$10 Billion	\$10 - \$20 Billion	Over \$20 Billion
Internal Inv. Div. Staff	0.00	2.16	0.00	2.16	0.74	0.77	1.92
Actuary	0.00	2.49	1.05	0.59	0.24	0.12	0.12
Legal	0.00	1.68	1.06	0.84	0.27	0.25	0.15
Consultant	0.00	0.15	0.00	0.21	0.09	0.09	0.13
Audit	0.00	0.87	0.43	0.23	0.10	0.06	0.08
Other Professional	0.00	0.00	0.46	0.25	0.07	0.17	0.54
General Administrative	0.00	22.93	7.93	7.84	4.78	4.69	3.20
Total Administrative Expenses	N/A	30.28	10.94	12.12	6.29	6.15	6.15
Investment Expenses	VCERA	Under \$500 Million	\$500mm - \$1 Billion	\$1 - \$5 Billion	\$5 - \$10 Billion	\$10 - \$20 Billion	Over \$20 Billion
Custodial	0.00	0.53	3.90	1.31	0.49	0.52	0.31
Investment Consulting	0.00	3.41	2.11	2.07	0.60	0.74	0.45
US Equity	1.49	0.26	9.62	8.83	6.31	2.84	2.70
International Equity	4.76	3.86	8.55	6.37	6.31	5.54	4.09
Global Equity	2.73	0.00	0.00	1.76	5.73	1.73	1.40
Fixed Income	4.51	0.00	5.99	5.19	4.17	3.64	3.45
Real Estate	7.15	0.00	8.07	6.86	8.01	4.60	7.15
Other Investment Management	0.00	0.00	0.00	1.16	1.03	1.01	0.80
Total Investment Expenses (ex. Alt Inv)	20.63	8.07	38.24	33.55	32.66	20.63	20.36
Alternative Investments	5.10	0.00	3.25	16.34	14.34	17.45	22.29
Total Investment Expenses	25.74	8.07	41.49	49.89	47.00	38.07	42.65
Total Expenses	25.74	38.35	52.43	62.01	53.30	44.22	48.80



Addendum and Glossary

As of June 30, 2016

### **Miscellaneous Comments**

- Performance shown is gross of fees, with the exception of the following:
  - Funds 31, 49, 350, and 351: Performance shown is net of fees.
  - Funds 5 and 20: Performance shown is net of fees, except for Total Fund performance.
- Performance shown is calculated using quarterly performance provided by participating public funds.
- Performance shown may differ from a fund's actual performance due to rounding.
- Net Assets Available for Benefit includes funding percentage valuation as of dates between June 2015 and June 2016.
- Allocations shown reflect dedicated managers/mandates rather than actual exposure, with the exception of the following:
  - Funds 1, 29, and 119: Performance shown for Global Fixed Income includes US and Non-US exposure.
  - Funds 4, 42, and 64: Performance shown for US Fixed Income includes US and Non-US exposure.

### **Glossary of Terms**

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

**Return** - Compounded rate of return for the period.

%Return - The time-weighted rate of return of a portfolio for a specified time period.

**Sharpe Ratio** - Represents the excess rate of return over the risk-free return (i.e., BofA ML 3 Mo US T-Bill Index), divided by the standard deviation of the excess return. The result is the absolute rate of return per unit of risk. The higher the value, the better the product's historical risk-adjusted performance.

**Standard Deviation** - A statistical measure of the range of a portfolio's performance. The variability of a return around its average return over a specified time period. Calculation is based on quarterly periodicity.

PORTLAND CHICAGO NEW YORK

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**MASTER PAGE NO.262** 

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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: RECOMMENDATION TO AUTHORIZE ADDITIONAL FUNDING FOR LEGAL EXPENSE WITH NOSSAMAN FOR PRIVATE INVESTMENTS

Staff recommends that the Board authorize additional funding in the amount of \$125,000 for legal work in private investments through the end of fiscal year 2016 - 2017.

### Background

The Board approved \$25,000 for legal work for a separate account private equity manager at its meeting of April 18, 2016. To ensure vintage year 2016 private equity exposure, the Board approved an additional \$60,000 for legal work for allocations of \$60 million to Harbourvest's Dover Fund IX, \$60 million to Adams Street's 2016 Global Private Equity Fund, and \$15 million to Drive Capital Fund II at its meeting of May 16, 2016.

Documents for all three investment partnerships were reviewed, negotiated, and executed timely. Subsequent to each fund's closing, the general partners circulated side letters with Most Favored Nations (MFN) clauses, each giving clients the opportunity to review clauses other limited partners had negotiated, and to opt in for any that were desirable. A legal review of the options will require additional work which had not been budgeted originally, at an estimated cost of \$5,000.

In addition, we believe it advisable to prepare standardized documents including a side letter template, and updated Placement Agent Policy and forms, at a total estimated cost of \$10,000. Finally, I anticipate identifying up to four private equity investments before the end of the fiscal year at an estimated legal cost of \$25,000 per partnership, plus the need for additional legal consulting at an estimated cost of \$10,000 as we move forward with the development of the private equity program.

I believe that this recommendation is in the best interest of VCERA, and therefore recommend the following:

RECOMMENDED: THAT THE BOARD AUTHORIZE UP TO \$125,000 ADDITIONAL FUNDING FOR PRIVATE EQUITY PROGRAM LEGAL WORK THROUGH THE END OF FISCAL YEAR 2017.

Sincerely, Daniel P. Yallagher

Dan Gallagher

Chief Investment Officer

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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: BOARD OF RETIREMENT MEETING(S) FOR DECEMBER 2016

**Dear Board Members:** 

Typically, the Board of Retirement meets on the 1<sup>st</sup> and 3<sup>rd</sup> Mondays of each month. The bylaws allow the meeting schedule to be changed if approved by a majority of the Board.

In the month of December 2016, staff recommends combining the Disability meeting on December 5<sup>th</sup> and the Business meeting on December 19<sup>th</sup> into one meeting on December 12<sup>th</sup>. There are no investment presentations scheduled in December, and one meeting on the 12<sup>th</sup> may better allow for holiday travel schedules.

<u>RECOMMENDATION:</u> APPROVE A CHANGE TO THE 2016 BOARD OF RETIREMENT MEETING SCHEDULE TO ALLOW FOR ONE DECEMBER MEETING ONLY, AND SCHEDULE THAT MEETING FOR DECEMBER 12, 2016.

Sincerely,

Linda Webb

Retirement Administrator

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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: BOARD OF RETIREMENT MEETING CALENDAR FOR 2017

**Dear Board Members:** 

Near the end of each calendar year, the Board of Retirement adopts a meeting schedule for the following year. This schedule reflects provisions in the bylaws (last modified in 1999) that the Board meet on the 1<sup>st</sup> and 3<sup>rd</sup> Mondays of each month. The bylaws provide for meetings to be scheduled differently if approved by a majority of the Board. August is traditionally the "dark" month with no scheduled meeting and the Board has a retreat in September or October.

With 23 meetings per year on a typical Board calendar, it can create difficulty when legal holidays or other factors trigger meetings on consecutive Mondays. In addition, combining two meetings into one when practical will slightly reduce the overall number of meetings, in response to Board member comments and feedback.

Bearing this in mind, staff has prepared 2 proposed versions of the 2017 Board meeting calendar. The first follows the traditional format with 23 meetings and 2 occasions where consecutive Monday meetings occur. The second allows for 21 meetings, with the months of April and December having one combined meeting. It also moves the July disability meeting from the 3<sup>rd</sup> to the 10<sup>th</sup> to better accommodate Independence Day and moves the business meeting to the 4<sup>th</sup> Monday of the month to avoid meeting on consecutive Mondays.

Staff's preference is for the 2<sup>nd</sup> version, which we believe will allow for better efficiency and preparation time when bringing the Board items for consideration. In instances, it can likely allow for better attendance as well.

<u>RECOMMENDATION:</u> APPROVE ONE OF THE PROPOSED BOARD CALENDARS FOR 2017, OR DIRECT STAFF TO IMPLEMENT ALTERNATE CALENDAR.

Sincerely.

Linda Webb

Retirement Administrator

### 2017 Rolling Calendar Options for Consideration

Meeting Date	Investment Material Deadline	Meeting
1/9/2017	12/30/2016	Disability
1/23/2017	1/13/2017	Business
2/6/2017	1/27/2017	Disability
2/27/2017	2/17/2017	Business
3/6/2017	2/24/2017	Disability
3/20/2017	3/10/2017	Business
4/3/2017	3/24/2017	Disability
4/17/2017	4/7/2017	Business
5/1/2017	4/21/2017	Disability
5/15/2017	5/15/2017	Business
6/5/2017	5/26/2017	Disability
6/19/2017	6/9/2017	Business
7/3/2017	6/23/2017	Disability
7/17/2017	7/7/2017	Business
9/11/2017	9/1/2017	Disability
9/18/2017	9/8/2017	Business
10/2/2017	9/22/2017	Disability
TBD	TBD	Investment
10/16/2017	10/6/2017	Business
11/6/2017	10/26/2017	Disability
11/20/2017	10/27/2017	Business
12/4/2017	11/24/2017	Disability

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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura. CA 93003

SUBJECT: RECOMMENDATION TO CONTINUE TO ENGAGE LINEA SOLUTIONS FOR

**DEFECT RESOLUTION, TESTING AND SYSTEM ENHANCEMENT SUPPORT** 

FOR THE PERIOD OF 11/25/2016 - 4/14/2017.

**Dear Board Members:** 

In July, the Board approved a Statement of Work (SOW) to allow 2 Linea resources to continue supporting VCERA staff for the PAS project until the end of the scheduled warranty period, November 22, 2016. Specifically, Linea was to assist in defect testing, Member Self Service (MSS) management and rollout and extensive support on implementing enhancements related to tax compliance provisions. This work continues, and the Technical Analyst who has been on-site for the entire project in particular is a key to success in our efforts. Our research indicates that other retirement systems utilizing V3 retained on-site support for a significant period following system launch.

Staff is pursuing a vigorous defect resolution plan with Vitech, with the goal of resolving all warranty period defects by April 14, 2017, which is the one-year anniversary of Go-Live. The Linea Technical Analyst has been an integral part of tracking, testing and staging for defect resolution, as well as managing the tracking software. He is also working to transfer knowledge and skill to our internal staff for back-end queries and other technical training. In addition, we have established a timeline for the rollout of Member Self-Service to our members, and the Technical Analyst is needed for success of this effort as well.

The proposed SOW that is provided is more detailed about the scope of the work to be completed. Staff is striving to be mindful of both overall project costs and the need to eliminate reliance on outside resources over time. The system implementation is still in critical phases, however, and will be for some time; VCERA also must weigh the danger of eliminating the support too quickly.

This request reflects the cost to continue working with the Technical Analyst until April 14, 2017 and the Project Support resource until December 23, 2017 as detailed in the provided SOW.

<u>RECOMMENDATION</u>: APPROVE ATTACHED STATEMENT OF WORK FOR LINEA SOLUTIONS IN AN AMOUNT NOT TO EXCEED \$178,825.

Staff will be pleased to answer any questions at the November 21, 2016 business meeting.

Sincerely.

Linda Webb

Retirement Administrator



Organization	VCERA			
Project	Post Implementation Services 2016-2017			
Subject	Statement of Work			
Written by	Brian Colker			
Date	11/16/2016			
Doc #	VC-SOW-10			
Vers.	1.0	Page	1 of 2	

### **Statement of Work – VCERIS Post-Implementation Services**

This Statement of Work details services to be provided under Linea Solutions ("Linea") Master Services Agreement for general consulting services. Linea has been asked to provide post go-live services to assist VCERA with the defect management process, the design, implementation and testing of the IRS Model Regulation enhancements, the development of VCERIS support technical and business processes, and the training of VCERA's incoming IT Manager, Subject Matter Experts (SMEs) and other staff in all aspects of V3. Specifically, Linea will provide the following services:

- **IRS Model Regulations support.** Linea consultants will collaborate with VCERA and Vitech on the design, testing, and implementation of the IRS Model Regulations enhancements.
- Warranty Period Defect Resolution and Management. Linea consultants will work with Vitech and VCERA SMEs and IT staff to analyze and test the fixes that Vitech provides for previously reported defects. Linea consultants will assist with defect tracking, documentation, reporting, solution design, and execution, and work to transfer knowledge to VCERA staff. Linea will also assist with the transition from the SmartBear defect tracking system to Jira, Vitech's production defect solution to allow VCERA to manage independently in the future.
- VCERA staff support. As required, Linea consultants will provide on-site support to VCERA Benefits and Fiscal staff in resolving issues with V3, including ad hoc training, issue analysis, and enhancement requests, while working to transfer these support responsibilities to VCERA IT staff and SMEs.
- **Technical training and transition.** Linea consultants will work with VCERA's IT staff and SMEs to assist with training on project activities and on the technical aspects of supporting and maintaining V3 including routine back-end query development, required system maintenance tasks and troubleshooting.
- **Support Process Development.** Linea consultants will collaborate with VCERA to develop and document VCERIS support processes.

The duration of these services will be 11/28/2016 - 4/14/2017. Linea will employ two resources for the period 11/28/2016 - 12/31/2016, and then a single consultant from 1/1/2017 - 4/14/2017.

The estimated hours are presented below:

Area / Resource	Est. Hours	Est. Cost
Project Support Staff: Kevin Choi (\$100 / per hour)	160	\$16,000
Technical Analyst: Gerald Clark (\$200 / per hour)	736	\$147,200
Travel costs (estimated)		\$15,625
Total Not-To-Exceed Costs	896	\$178,825

LINEASOLUTIONS 2701 Ocean Park Blvd, Ste 251 Santa Monica, CA 90405 T 310.331.8133 - F 310.807.4356 lineasolutions.co



VCERA			
Post Implementation Services 2016-2017			
Statement of Work			
Brian Colker			
11/16/2016			
VC-SOW-10			
1.0	Page	2 of 2	
	Post Implementation Services Statement of Work Brian Colker 11/16/2016 VC-SOW-10	Post Implementation Services 2016-2017 Statement of Work Brian Colker 11/16/2016 VC-SOW-10	

These services will be provided on a time and materials basis. VCERA should note that the not-to-exceed amounts are for the <u>total costs</u>; Linea consultants may expend more or less hours in a given area or on a specific task. Travel expenses will be billed as actual, notwithstanding section 3.1 of the Master Services Agreement. All expenses will be reasonable and billed according to Linea travel expense policy. This will be furnished to the Retirement Administrator upon request.

LINEA SOLUTIONS, INC.	VCERA
By: Brian Colker, CFO	By: Tracy Towner, Chairman of the Board
Date:11/21/2016	Date:

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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: REQUEST TO DELETE TWO (2) PROGRAM ADMINISTRATOR II
ALLOCATIONS AND ADD TWO (2) SENIOR PROGRAM
ADMINISTRATOR ALLOCATIONS

**Dear Board Members:** 

As VCERA works to transition fully to the new V3 pension administration system and pursue a higher level of member service and data integrity, our operational needs are changing. The warranty period for the PAS project is ending soon and staff will transition from "project" mode to our new "operational" mode – and as part of this shift, we must work to reduce our reliance on outside resources.

Provided is a memorandum from Chief Operations Officer Julie Stallings about a important step in stabilizing our operations going forward. The request for the elimination of two (2) of our existing Program Administrator II positions in favor of the addition of two (2) Senior Program Administrator positions is in line with this strategy. The Senior Program Administrator level is used by the County for employees with considerable years of experience who perform this detailed level of work.

I support the COO's request, and believe this to be the logical next step toward VCERA eliminating regular support from contracted resources. I also believe the level of the allocation to be appropriate, given the complexity of the work.

NOTE: If the Board approves the following staff recommendation, please note that because both positions report to the same Staff Services Manager II, and the Management Resolution provides for a salary difference of 7.5% difference between staff and supervisor, implementation would trigger a slight increase for the supervisor as well in the amount of \$1,500 per year.

### **RECOMMENDATIONS:**

1. Approve the deletion of two allocations with the following payroll title and salary range:

Job Code	Description	FTE	Salary (S) Range (Annual)
00623	Program Administrator II	2.0	\$63,416.31 – \$88,791.53 (S)

2. Approve the addition of two allocations with the following payroll title and salary range:

Job			
Code	Description	FTE	Salary (S) Range (Annual)
	Senior Program		
01174	Administrator	2.0	\$74,616.12 - \$104,472.82 (S)

3. Authorize Staff to process the following Budgetary Adjustments for FY 2016-17:

INCREASE - Salaries & Employee Benefits

\$ 8,400\*

DECREASE - Contingency

\$ 8,400\*

\*reflects the slight increase to Staff Services Manager II to allow for 7.5% salary difference.

Staff will be pleased to answer any questions at the November 21, 2016 Business meeting.

Sincerely,

Linda Webb

**Retirement Administrator** 

### **MEMORANDUM**

August 22, 2016

To: Linda Webb, Retirement Administrator

From: Julie Stallings, Chief Operations Officer 35

Subject: Request for Senior Program Administrator Positions in Support of

**VCERIS and Improved Business Processes** 

I am requesting two FTE Senior Program Administrator positions for the purpose of maintaining the functional aspects of the V3 pension administration system, in coordination with the elimination of two FTE Program Administrator II positions. This request is due to need for a higher level of work and expertise required for V3 management, maintenance and development. In addition to the technical system maintenance that will be performed by an I.T. Manager, V3 has a large number of required functional tasks as well; the load is too great for one staff member to manage. It is also critical to create redundancy in this area within the organization. In researching the various job classifications, the best fit for our needs is Senior Program Administrator.

Throughout the entire V3 project, 2 key staff members (both of whom are Program Administrator IIs like their Operations colleagues) have participated in the development of nearly every aspect of the V3 pension administration system. They both have extensive knowledge of V3 as well as VCERA's core business processes. They provide guidance by troubleshooting system issues encountered by staff, explain and demonstrate workarounds for system functionality, and assist staff with work processes and the application of operational policies.

In addition to this work, these two positions have absorbed System Administration tasks that are outside the scope of the Program Administrator II job classification. Transitioning such work from Vitech and Linea resources to VCERA staff is key in reducing, and eventually eliminating, our reliance on outside vendors for system maintenance. It is also critical for VCERA to employ key trainers and mentors for the V3 system who can support development of new and changing business processes. In short, such roles are instrumental in training and oversight and Operations will continue to require this level of expertise and support going forward.

The V3 system requires maintenance in two distinct categories: *functional* system maintenance tasks and *technical* system maintenance tasks.

### **Functional System Maintenance**

Specifically, there are currently 157 functional system maintenance tasks that these positions are performing that occur on a regular basis. Even when VCERA acquires an

IT Manager, these tasks would still need to be completed by individuals who have indepth understanding of operational business rules, calculations and processes to better identify inconsistencies and trends. These tasks include the processing, validating and updating of data as part of importing bi-weekly transmittals from VCERA's participating employers. Both positions' duties ensure that V3 receives, and therefore contains, accurate data, rates and formulas for the accurate and compliant calculation of retirement benefits. They generate and validate batches, imports, exports, and queries regularly. Other responsibilities include the development of policies and procedures relating to V3 and the Assima Training Tool, support of Benefit Managers by generating reports and queries to monitor workloads and productivity, maintain and update document templates.

### **Technical System Maintenance**

Until the IT Manager is hired and fully trained, these positions are supporting technical tasks as well, such as maintaining user access, roles and security components within V3, and managing 25 distinct technical system maintenance tasks.

The salary range for a Senior Program Administrator classification is \$74,616 - \$104,473. If this request is approved, then two FTE Program Administrator II positions would be eliminated, resulting in no net change in total staff.

### **Existing Classification:**

Program Administrator II	\$63,416.31 - \$88,791.54

### Proposed Classification:

Sr. Program Administrator	\$74,616.12 - \$104,472.82
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Because the two employees serving are receiving a salary within the new range, they would receive a 5% increase upon promotion to Senior Program Manager, with eligibility for an additional 5% increase in 6 months.

Because both positions report to the same Staff Services Manager II, and the Management Resolution provides for a salary difference of 7.5% difference between staff and supervisor, implementation would trigger a slight increase for the supervisor as well.

Thank you for considering my requests.

1190 South Victoria Avenue, Suite 200 Ventura, CA 93003-6572

(805) 339-4250 • Fax: (805) 339-4269 http://www.ventura.org/vcera

November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: AUTHORIZATION FOR TRUSTEE BIANCHI TO ATTEND THE ILPA INSTITUTE LEVEL I – PRIVATE EQUITY COURSE MARCH  $6^{TH}$  –  $8^{TH}$ , 2017 IN SAN FRANCISCO, CALIFORNIA

**Dear Board Members:** 

Trustee Bianchi requests authorization to attend the ILPA Institute Level I – Private Equity course in San Francisco, California March 6<sup>th</sup> – 8<sup>th</sup>, 2017. The estimated the cost to attend is approximately \$3,939, including registration, airfare, lodging and other related expenses.

VCERA staff will be pleased to respond to any questions you may have on this matter at November 21, Business Meeting.

Sincerely,

Linda Webb

Retirement Administrator

# LEVEL I

## THE UNIVERSITY OF CHICAGO **BOOTH SCHOOL OF BUSINESS**

The ILPA Institute Level I program is an introductory course designed exclusively for institutional investors who are new to the private equity industry or who wish to gain a broader understanding of the asset class. The Level I program offers a comprehensive overview of investing in private equity.

Investment professionals working at many different organization types can benefit from the Level I program. Past participants have included representatives from public and private pension funds, family offices, foundations, endowments, insurance companies and government organizations who are investing or considering investing in private equity.

COU	RSF	DATE	AND	FFFS

March 6-8, 2017 June 14-16, 2017 September 11-13, 2017

(Chicago, IL) (London, UK)

\$2,599

\$3,199

\$5,299

(San Francisco, CA)

Member early bird rate

Deadlines

December 23, 2016 March 24, 2017 June 23, 2017

(San Francisco, CA) (Chicago, IL) (London, UK)

Member regular rate Non-member rate

REGISTRATION LINK http://ilpa.org/level-i/

### PROGRAM LEVEL

Overview

### PRE-REQUISITE

No pre-requisites are required to attend the program

#### PRE-READING

Reading materials will be sent to participants prior to the start of the session. These will include 3-4 hours of course preparation and

required reading.

### **DELIVERY METHOD**

Group-Live

### **EDUCATIONAL CREDITS**

Earn 20 CFA CE Credit Hours / 24.5 CPE Credits

### COURSE OVERVIEW

# COURSE OUTLINE

Participants will examine key investment principles, explore the role of private equity partnerships and learn the skills necessary to design and build strategies for investing in the asset class. Participants will learn in a highly interactive and hands-on environment. All classroom discussions are focused on ensuring participants solidify and broaden their understanding of private equity.

#### **KEY LEARNING OUTCOMES**

- Articulate how private equity investing fits as part of an asset allocation model: explain the benefits and costs (risks) of investing in the asset class.
- Explain how different sub-classes of private equity behave differently/similarly in a private equity portfolio and portfolio construction techniques.
- Describe the historical and expected returns of private equity and its sub-classes.
- Apply different methods of measuring private equity returns and describe benchmarking techniques.
- Construct a quantitative and qualitative private equity due diligence plan.
- Describe the different fund reporting standards with UK GAAP, IFRS and US GAAP.
- Demonstrate how to analyze different sections within standard private equity reports to monitor performance and/or activity of a private equity fund.
- Describe typical fund structures and important aspects to consider in regard to private equity investing.
- Identify key terms and conditions in limited partnership agreements and other documents.
- Describe the conflicts of interest that a general partner may face as an investor, service
  provider, administrator of a private equity fund and how this may also create principal/
  agent conflicts between the general partner and the limited partners.
- Describe general differences that may exist between partnerships or entities governed by the laws of Delaware, the Cayman Islands, Guernsey and other jurisdictions.
- Describe the illiquidity risk associated with a private equity portfolio and the impact on a broader investment portfolio.
- Describe different methods of measuring private equity risk at the private equity fund level and as part of a broader investment portfolio level.
- Describe different valuation techniques that direct investors (e.g., general partners) may
  use to analyze a potential investment and identify key considerations and factors related
  to one or more private equity sub-class (e.g., venture capital and buyout transactions).
- Articulate how limited partners can use the valuation techniques and templates as part of their own investment process, from due diligence to secondaries to co-investments.

#### PRIVATE EQUITY OVERVIEW

- Equity and debt capital markets
- Evolution and classes of PE

### EVALUATING A PRIVATE EQUITY FUND AND FUNDRAISING

- Available tools/benchmarking/ returns modeling
- Qualitative and quantitative due diligence

#### INVESTING IN LIMITED PARTNERSHIPS

- Key economic considerations
- Compensation incentives in LPAs
- Implications of different fees and terms on the net returns to LPs

### FUND STRUCTURE, GOVERNANCE, AND LPAs

- Governing documents
- Delaware/other regulatory considerations
- Non-Delaware/non US-considerations
- Key terms

### PRIVATE EQUITY REPORTING AND ACCOUNTING

- Reports from the general partner
- The audit
- Accounting standards
- Valuation guidelines
- Reconciling financial statements

### PRIVATE EQUITY AND RISK

- Diversification and multiple sources of risk
- Historical returns
- Measures of risk and return
- The impact of limited liquidity on portfolio design

### **DUE DILIGENCE AND VALUATION**

- Valuation and monitoring
- How to access the economics and evaluate the profit formula
- Valuation techniques
- Designing the appropriate securities and financing strategy
- When should the general partner exit

# A LOOK INSIDE THE CLASSROOM



I enjoyed the Level I program offered in London and found it a very complete and excellent course led by motivated and experienced speakers. It was time well spent with the instructors as they shared their research, personal experiences and outlooks on private equity.

Carlos Garcia Rivas, Portfolio Manager, APG Asset Management

The ILPA Institute Level I program provided an excellent private equity curriculum and met all my expectations. The program content was valuable and the diverse coverage of investments, legal and fund accounting was outstanding. I would encourage this program be taken by everyone, even those with a few years of private market experience based on the in-depth analysis of PE/VC investments. I truly enjoyed the program and would recommend it to all of my peers, particularly those in public pensions.

Scott Forrest, Director of Investment Operations,
 South Carolina Retirement System Investment Commission

The ILPA Institute Level I was a very informative program where the enthusiastic and passionate speakers did a great job reviewing all aspects of private equity. As a newcomer to private equity I felt all of the segments were very effective in providing curriculum that will be beneficial to my future in the industry. I would recommend this program to my peers who are both beginners to private equity investing, as well as to those who are more experienced.

James Walker, Business Analyst, GF Private Equity Group, LLC









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November 21, 2016

Board of Retirement Ventura County Employees' Retirement Association 1190 South Victoria Avenue, Suite 200 Ventura, CA 93003

SUBJECT: AUTHORIZATION FOR CIO DAN GALLAGHER TO ATTEND THE ILPA INSTITUTE LEVEL II – PRIVATE EQUITY COURSE JANUARY  $23^{RD}$  –  $24^{TH}$ , 2017 IN SAN FRANCISCO, CALIFORNIA

**Dear Board Members:** 

CIO Dan Gallagher requests authorization to attend the ILPA Institute Level II – Private Equity Level II, Module 2, Portfolio Construction course in San Francisco, California January 23 - 24, 2017. The estimated the cost to attend is approximately \$3,100, including registration, airfare, lodging and other related expenses.

VCERA staff will be pleased to respond to any questions you may have on this matter at November 21, 2016 Business meeting.

Sincerely,

Linda Webb

Retirement Administrator

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# LEVEL II



# PORTFOLIO CONSTRUCTION

The ILPA Institute Level II Module 2 program has been crafted to enable participants to examine different approaches to program and portfolio design. Strategic considerations and practical techniques have been incorporated into the module's core learning objectives. Elements of this Level II module include the examination of key objectives behind allocating capital to private investments and portfolio construction for private assets, techniques of portfolio assessment and related measurements, and the resources required to execute and support a private investment program. The module's objectives will be delivered in an interactive manner, allowing participants to directly identify and manage nuances of various approaches to private equity portfolio construction and execution.

#### **COURSE DATE AND FEES**

January 23-24, 2017 (San Francisco, CA) September 14-15, 2017 (London, UK)

Member early bird \$1,499

Deadline November 25, 2016 (Chicago)

June 23, 2017 (London, UK)

Member regular rate \$1,999 Non-member rate \$3,499

### **REGISTRATION LINK**

http://ilpa.org/module-2/

### **PROGRAM LEVEL**

Advanced - Level II courses can be taken in any order.

### WHO SHOULD ATTEND

Experienced investment professionals working at many different organization types can benefit from the Level II program. Past participants have included representatives from public and private pension funds, family offices, foundations, endowments, insurance companies and government organizations who are investing or considering investing in private equity.

#### PRE-REQUISITE

Three or more years of experience directly managing and monitoring a private equity program. Applicants with less than three years of experience are required to have completed the ILPA Institute Level I program and submit a letter of endorsement on company letterhead (sample letter available at ilpa.org). The letter of endorsement will establish that the applicant exhibits managerial and leadership potential. They must also demonstrate a level of professional poise and financial acumen necessary to contribute to a senior learning environment. Candidates will be accepted based on availability and subject to ILPA review.

### PRE-READING

Reading materials will be sent to participants prior to the start of the session. These will include 2-4 hours of required reading, course preparation as well as suggested readings.

### **DELIVERY METHOD**

Group-Live

### **EDUCATIONAL CREDITS**

Earn 12 CFA CE Credit Hours / 15 CPE Credits

### COURSE OVERVIEW

# COURSE

This Level II module will provide mid-to-senior level participants with an analysis of the strategic considerations and techniques used to design and manage private equity investment programs. Through this intensive two-day program, participants will obtain a comprehensive understanding of portfolio level deliberations as well as the core skills and methods that provide a programmatic approach to portfolio design, program execution and risk management.

### **KEY LEARNING OUTCOMES**

- Describe the role of private investments in a portfolio and evaluate the key elements of private equity investing that impact program and portfolio objectives.
- Identify and describe different private investment programs and portfolio strategies including but not limited to sub-strategy, investment structure, geography and their suitability for meeting program objectives.
- Differentiate between several private investment performance measurement techniques. Describe why these comparisons may or may not be appropriate and the implications of such.
- Describe types of private equity risk at a portfolio level, including correlations, and how each type of risk may be measured and the concerns that a practitioner may have with these measures.
- Describe and evaluate techniques for allocation and liquidity management for a private investment program.
- Identify organization and overall resource requirements for executing and monitoring a private investment program, including articulation of considerations for any third-party service provisioning.
- Describe how private equity data, analytical tools and techniques may be used in regard to quantitative modeling and assessments, and program forecasting.

### ESTABLISHING PRIVATE INVESTMENT PROGRAM OBJECTIVES

- Asset allocation and the role that private investments serve in a portfolio
- Traditional allocation analysis and considerations unique to private investments
- Broad private investment sector allocations
- Private investments compared to other asset classes
- Compatibility of private investment strategies and desired objectives
- Risk/return opportunities and liquidity needs at a portfolio level
- Measuring and assessing expected/actual portfolio risk and returns
- Risk assessment and management

# DESIGNING, DEVELOPING AND EXECUTING A PRIVATE INVESTMENT PROGRAM

- Private investment strategies
- Investment considerations and diligence across geographies, strategies and styles
- Allocation approaches within private investments
- Organization, coordination and resource management
- Approaches for programs of varying degrees of maturity
- In-house and/or outsourcing program decisions
- Observation and incorporation of macro perspectives
- Risk assessment and management
- Cash/liquidity management

### ASSESSING AND MONITORING PRIVATE INVESTMENT PROGRAM PERFORMANCE

- Private investment performance measurement techniques
- Commitment pacing and risk/return modeling
- Compatibility of private equity strategies and desired objectives
- Investment monitoring practices at an investment and program level
- Monitoring of cash flow and distribution waterfalls
- Managing GP/LP dynamics