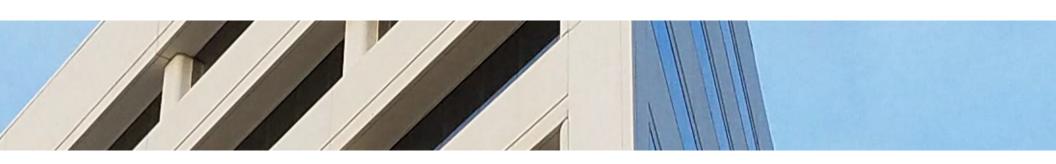


WILSHIRE ASSOCIATES

Wilshire Consulting



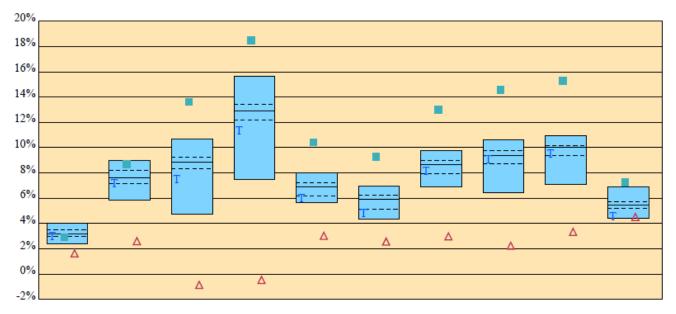
California Public Employees' Retirement System Universe Comparison Report – June 30, 2017

Wilshire Consulting Total Fund – Universe Comparison



California Public Employees Retirement Total Returns of Public Funds > \$10 Billion

Rates of Return for Periods Ending June 30, 2017



5th	Percentile
25th	Percentile
Med	lian
75th	Percentile
95th	Percentile.

Total Plan - Composites

Wilshire 5000

▲ Barclays Govt/Credit

1 Quarter	2 Quarters 3	Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
4.04 3.48 3.15 2.97 2.41	9.02 8.19 7.62 7.19 5.87	10.71 9.27 8.86 8.34 4.73	15.63 13.42 12.89 12.18 7.49	8.00 7.22 6.88 6.20 5.65	6.95 6.25 5.92 5.14 4.37	9.79 9.01 8.63 7.92 6.92	10.60 9.79 9.37 8.74 6.42	10.97 10.18 10.02 9.35 7.12	6.89 5.73 5.43 5.20 4.45
3.01 (72) 2.95 (75) 1.69 (10)	8.73 (13)		11.37 (84) 18.54 (1) -0.41 (100)	5.99 (84) 10.48 (1) 3.08 (100)	4.87 (82) 9.34 (1) 2.62 (100)		9.08 (61) 14.61 (1) 2.29 (100)	9.51 (62) 15.33 (1) 3.39 (100)	4.59 (93) 7.29 (1) 4.57 (93)

W Wilshire

Total Fund - Risk and Returns

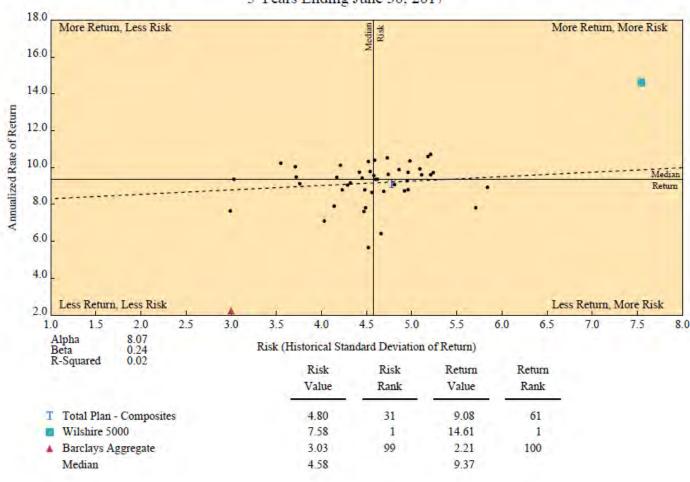
California Public Employees Retirement Risk v. Total Return of Public Funds > \$10 Billion

3 Years Ending June 30, 2017 10.0 More Return, Less Risk More Return, More Risk 9.0 8.0 Annualized Rate of Return 7.0 6.0 5.0 4.0 3.0 Less Return, Less Risk Less Return, More Risk 4.5 5.0 2.0 2.5 3.0 3.5 4.0 5.5 6.0 6.5 7.5 Alpha 6.19 Risk (Historical Standard Deviation of Return) -0.11 Beta R-Squared 0.01 Risk Risk Return Return Value Rank Value Rank T Total Plan - Composites 82 4.66 38 4.87 Wilshire 5000 6.89 1 9.34 Barclays Aggregate 3.25 94 2.48 100 4.54 5.92 Median

W Wilshire

Total Fund - Risk and Returns

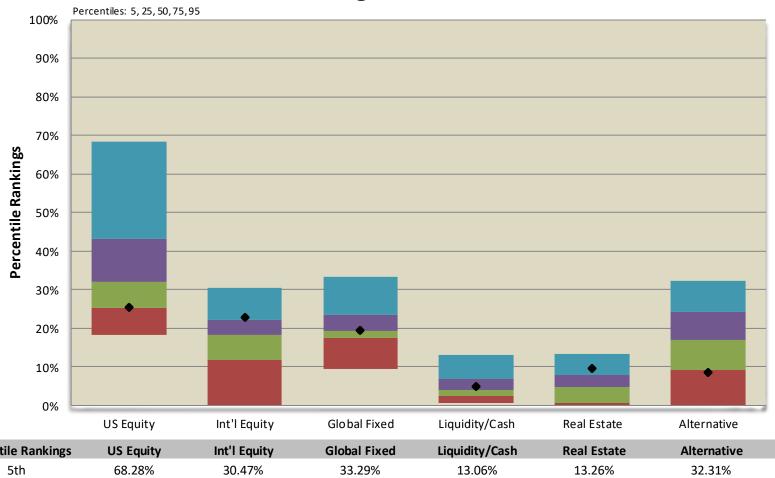
California Public Employees Retirement Risk v. Total Return of Public Funds > \$10 Billion 5 Years Ending June 30, 2017



W Wilshire

Asset Allocation Ranking - Universe Analysis

Asset Allocation Ranking of Public Funds > \$10 Billion



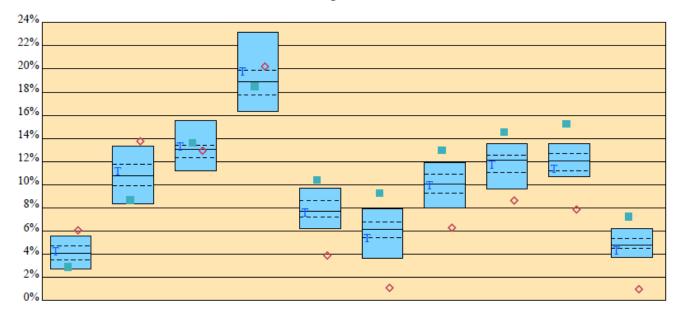
Percentile Rankings	US Equity	Int'l Equity	Global Fixed	Liquidity/Cash	Real Estate	Alternative
5th	68.28%	30.47%	33.29%	13.06%	13.26%	32.31%
25th	43.19%	22.02%	23.35%	6.88%	7.95%	24.12%
50th	32.11%	18.13%	19.30%	4.08%	4.69%	16.89%
75th	25.39%	11.66%	17.50%	2.41%	0.58%	9.14%
95th	18.37%	0.01%	9.31%	0.65%	0.00%	0.10%
CalPERS	25.40% (72)	22.87% (20)	19.43% (45)	4.79% (42)	9.44% (22)	8.48% (75)



Growth: Public Equity - Universe Comparison

California Public Employees Retirement Equity Returns of Public Funds > \$10 Billion

Rates of Return for Periods Ending June 30, 2017



5th Percentile 25th Percentile
Median
75th Percentile
95th Percentile

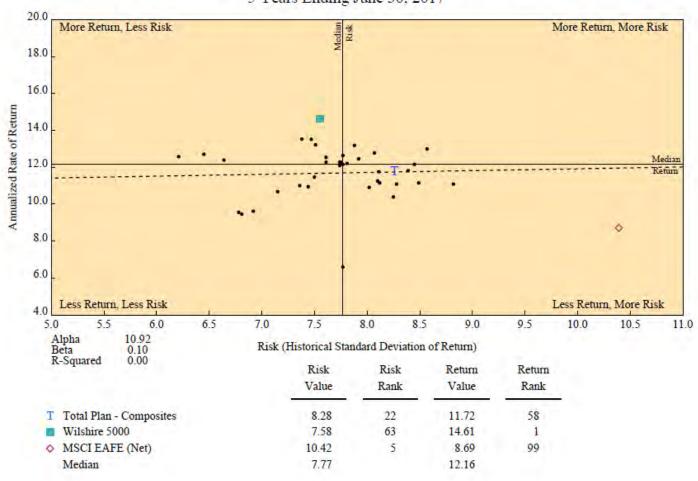
- Total Plan Composites
- Wilshire 5000
- MSCI EAFE (Net)

1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
5.61 4.69 4.07 3.48 2.71	13.36 11.75 10.75 9.89 8.36	15.55 13.40 13.07 12.34 11.23	23.15 19.90 18.86 17.74 16.34	9.69 8.62 7.72 7.18 6.23	7.91 6.79 6.16 5.45 3.64	11.92 10.89 10.04 9.31 7.98	13.53 12.58 12.16 11.09 9.62	13.57 12.70 12.08 11.17 10.74	6.19 5.36 4.82 4.49 3.69
4.25 (37) 2.95 (91) 6.12 (1)	8.73 (91)	13.67 (17)	19.76 (30) 18.54 (58) 20.26 (13)	7.63 (52) 10.48 (1) 3.94 (100)	5.41 (75) 9.34 (1) 1.15 (99)	9.96 (55) 13.04 (1) 6.34 (99)	11.72 (59) 14.61 (1) 8.69 (100)	11.38 (60) 15.33 (1) 7.91 (100)	4.36 (79) 7.29 (1) 1.03 (100)

W Wilshire

Growth: Public Equity – Risk and Returns

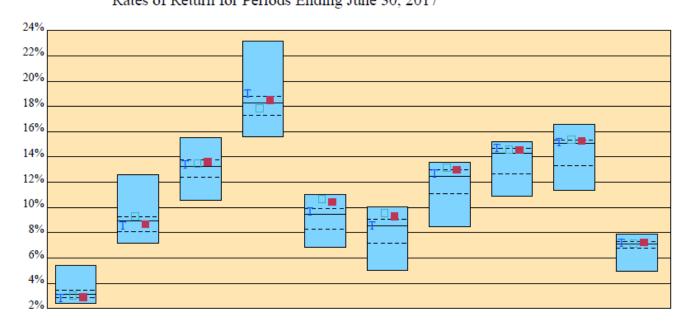
California Public Employees Retirement Risk v. Total Equity Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017





Growth: US Equity - Universe Comparison

California Public Employees Retirement US Equity Returns of Public Funds > \$10 Billion Rates of Return for Periods Ending June 30, 2017



	Percentile Percentile
Medi	an
75th	Percentile
95th	Percentile

T Total Plan - Composites

☐ S&P 500

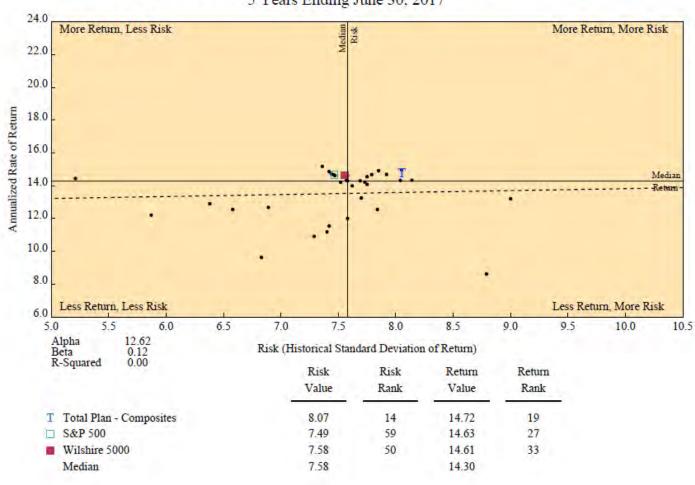
■ Wilshire 5000

1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	/ Years	10 Years	
5.39 3.45 3.12 2.88 2.43	12.58 9.29 8.94 8.06 7.16	15.56 13.75 13.24 12.42 10.58	23.16 18.81 18.30 17.29 15.57	11.05 9.95 9.44 8.28 6.88	10.02 9.10 8.54 7.21 5.05	13.56 12.97 12.44 11.10 8.48	15.18 14.68 14.32 12.68 10.91	16.60 15.33 15.10 13.29 11.36	7.90 7.29 7.14 6.77 4.97	
2.86 (75) 3.09 (52) 2.95 (66)	9.34 (22)	13.52 (36)	19.02 (22) 17.90 (63) 18.54 (38)	9.67 (36) 10.73 (5) 10.48 (5)	8.60 (47) 9.61 (11) 9.34 (14)	12.70 (36) 13.19 (14) 13.04 (22)	14.72 (19) 14.63 (28) 14.61 (34)	15.20 (39) 15.41 (17) 15.33 (25)	7.18 (35) 7.18 (35) 7.29 (30)	

W Wilshire

Growth: US Equity - Risk and Returns

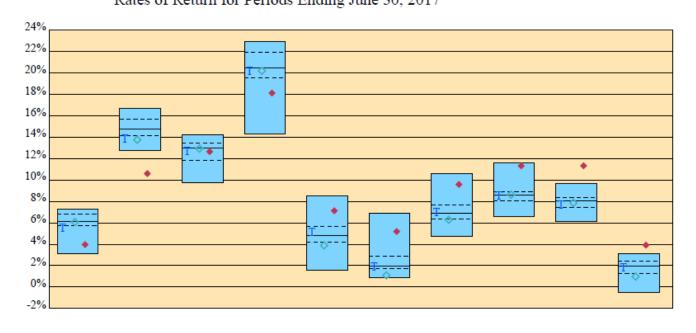
California Public Employees Retirement Risk v. US Equity Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017





Growth: International Equity - Universe Comparison

California Public Employees Retirement International Equity Returns of Public Funds > \$10 Billion Rates of Return for Periods Ending June 30, 2017



5th Percentile
25th Percentile Median
75th Percentile
95th Percentile

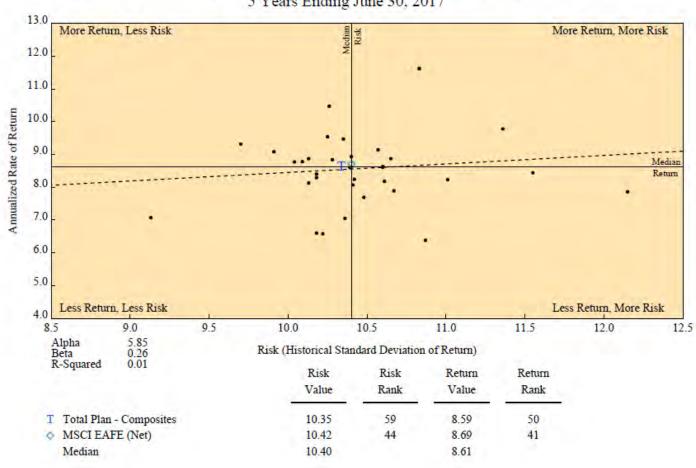
- T Total Plan Composites
- MSCI EAFE (Net)
- MSCI World (Net)

1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	/ Years	10 Years
7.26 6.80 6.11 5.71 3.15	16.71 15.70 14.73 14.14 12.78	14.24 13.43 13.03 11.84 9.74	22.96 21.94 20.49 19.55 14.28	8.52 5.63 4.82 4.23 1.57	6.93 2.87 1.95 1.71 0.89	10.62 7.66 6.93 6.36 4.71	11.62 8.93 8.61 8.07 6.60	9.65 8.40 8.02 7.46 6.11	3.09 2.45 1.95 1.25 -0.51
5.53 (81) 6.12 (47) 4.02 (87)	13.81 (84)	12.99 (50)	20.20 (53) 20.26 (53) 18.19 (84)	5.14 (33) 3.94 (78) 7.19 (8)	1.90 (50) 1.15 (90) 5.24 (5)	6.98 (44) 6.34 (78) 9.65 (5)	8.59 (50) 8.69 (40) 11.38 (5)	7.73 (62) 7.91 (58) 11.38 (1)	1.85 (65) 1.03 (81) 3.97 (1)



Growth: International Equity – Risk and Returns

California Public Employees Retirement Risk v. Non-US Equity Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017

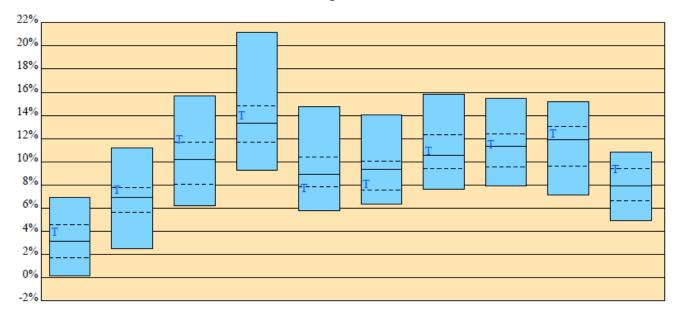




Growth: Private Equity - Universe Comparison

California Public Employees Retirement Private Equity Returns of Public Funds > \$10 Billion

Rates of Return for Periods Ending June 30, 2017



5th Percentile 25th Percentile
Median
75th Percentile
95th Percentile

T Total Plan - Composites

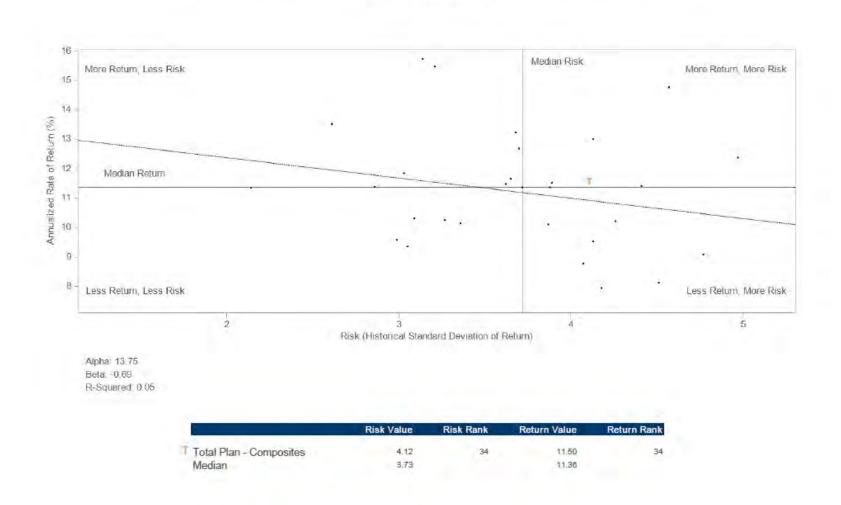
1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
6.95 4.60 3.13 1.73	11.22 7.76 6.90 5.62	15.65 11.72 10.21 8.04	21.19 14.83 13.32 11.70	14.76 10.38 8.92 7.87	14.02 10.06 9.35 7.55	15.82 12.33 10.56 9.40	15.47 12.38 11.35 9.53	15.22 13.03 11.90 9.60	10.86 9.41 7.93 6.62
0.17	2.52	6.20	9.29	5.78	6.36	7.65	7.94	7.11	4.95
3.95 (33	7.63 (27) 11.96 (17)	14.01 (33)	7.73 (75)	8.13 (68)	10.98 (37)	11.50 (28)	12.47 (29)	9.35 (25)



Growth: Private Equity - Risk and Return

California Public Employees Retirement Risk vs Total Private Equity Returns of Public Funds > \$10 Billion

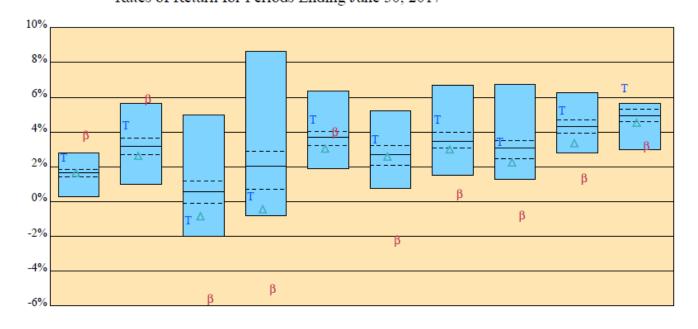
5 Years Ending June 30, 2017



Wilshire Consulting Income - Universe Comparison



California Public Employees Retirement Fixed Income Returns of Public Funds > \$10 Billion Rates of Return for Periods Ending June 30, 2017



5th Percentile 25th Percentile
Median
75th Percentile
95th Percentile

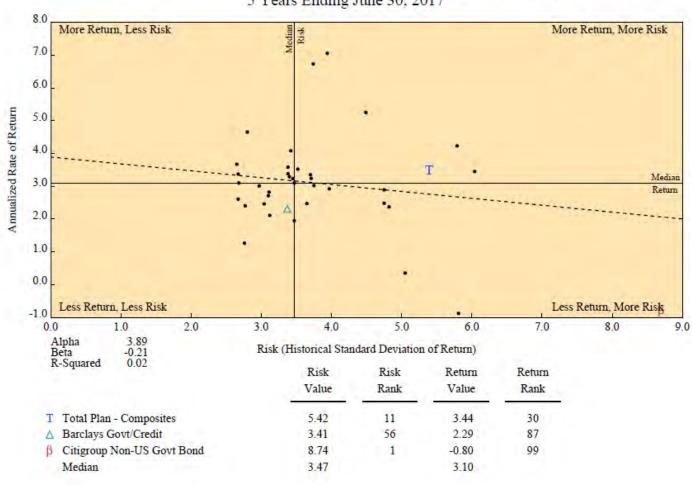
- T Total Plan Composites
- △ Barclays Govt/Credit
- β Citigroup Non-US Govt Bond

I Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	/ Years	10 Years
2.79 1.84 1.64 1.41 0.27	5.67 3.63 3.18 2.71 0.99	4.97 1.19 0.56 -0.11 -2.00	8.66 2.87 2.03 0.71 -0.83	6.35 4.02 3.68 3.22 1.90	5.21 3.21 2.69 2.10 0.74	6.69 4.00 3.48 3.07 1.51	6.73 3.52 3.10 2.48 1.26	6.25 4.72 4.32 3.96 2.80	5.65 5.32 4.95 4.58 2.99
2.53 (5 1.69 (40 3.81 (1	2.66 (75)	-0.81 (83)	0.30 (83) -0.41 (88) -5.01 (100)	4.72 (8) 3.08 (78) 3.99 (25)	3.58 (14) 2.62 (56) -2.20 (99)	4.74 (14) 3.03 (78) 0.46 (96)	3.44 (28) 2.29 (88) -0.80 (99)	5.23 (13) 3.39 (83) 1.36 (100)	6.51 (1) 4.57 (75) 3.21 (94)

Wilshire Consulting Income - Risk and Returns



California Public Employees Retirement Risk v. Total Fixed Income Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017

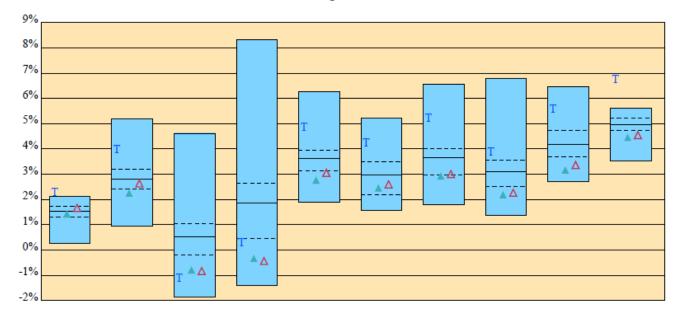


Wilshire Consulting US Income - Universe Comparison



California Public Employees Retirement US Fixed Income Returns of Public Funds > \$10 Billion

Rates of Return for Periods Ending June 30, 2017



5th Percentile 25th Percentile
Median
75th Percentile
95th Percentile

T Total Plan - Composites

Barclays Aggregate

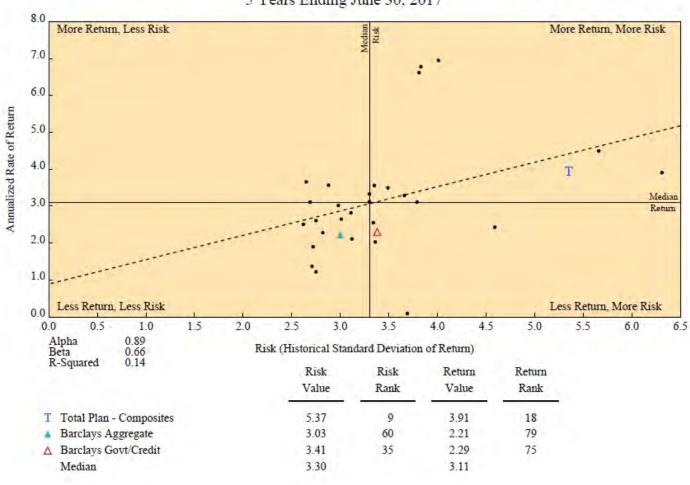
▲ Barclays Govt/Credit

1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
2.13	5.19	4.62	8.34	6.26	5.24	6.55	6.78	6.45	5.63
1.72	3.20	1.04	2.66	3.95	3.50	4.01	3.57	4.74	5.21
1.53	2.82	0.52	1.87	3.61	2.96	3.67	3.11	4.17	4.95
1.30	2.42	-0.20	0.47	3.12	2.19	2.98	2.51	3.70	4.72
0.25	0.95	-1.85	-1.39	1.90	1.56	1.81	1.37	2.70	3.52
2.31 (1)) 4.01 (8)	-1.09 (81)	0.32 (75)	4.87 (9)	4.26 (15)	5.23 (15)	3.91 (17)	5.61 (5)	6.77 (1)
1.45 (63)) 2.27 (75)	-0.77 (81)	-0.31 (87)	2.79 (78)	2.48 (60)	2.95 (75)	2.21 (83)	3.19 (79)	4.48 (75)
1.69 (27	2.66 (56)	-0.81 (81)	-0.41 (87)	3.08 (78)	2.62 (60)	3.03 (71)	2.29 (79)	3.39 (79)	4.57 (75)

Wilshire Consulting US Income – Risk and Returns



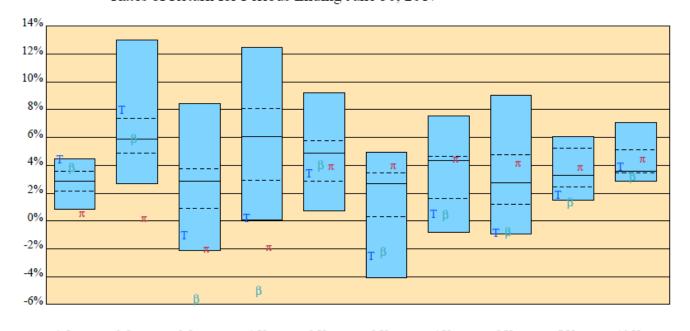
California Public Employees Retirement Risk v. US Fixed Income Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017



Wilshire Consulting International Income – Universe Comparison

W Wilshire

California Public Employees Retirement International Fixed Income Returns of Public Funds > \$10 Billion Rates of Return for Periods Ending June 30, 2017

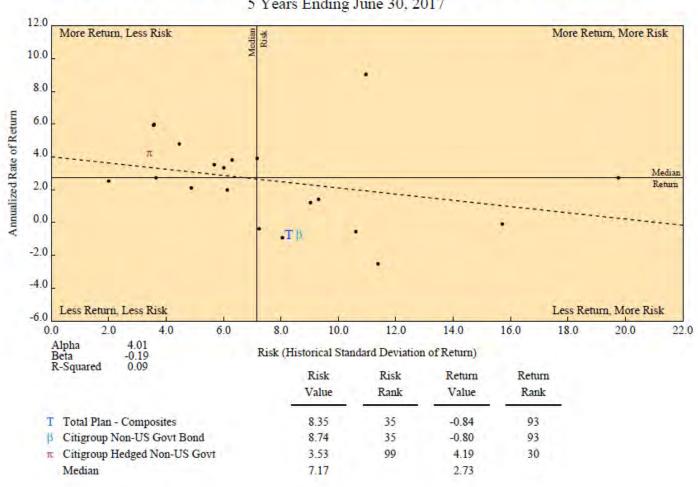


		1 Quarter	2 Quarters	3 Quarters	1 Year	2 Years	3 Years	4 Years	5 Years	7 Years	10 Years
	5th Percentile 25th Percentile Median 75th Percentile 95th Percentile	4.49 3.60 2.88 2.13 0.82	13.03 7.37 5.90 4.90 2.69	8.46 3.76 2.87 0.93 -2.12	12.49 8.07 6.05 2.92 0.05	9.23 5.75 4.87 2.87 0.73	4.96 3.43 2.67 0.29 -4.08	7.57 4.65 4.34 1.59 -0.80	9.03 4.79 2.73 1.21 -0.93	6.06 5.23 3.29 2.42 1.50	7.05 5.12 3.57 3.44 2.84
β	Total Plan - Composites Citigroup Non-US Govt Bond Citigroup Hedged Non-US Govt	4.43 (5) 3.81 (19) 0.60 (99)	8.02 (19) 5.91 (46) 0.24 (99)	. ,	0.20 (92) -5.01 (100) -1.87 (99)	3.45 (71) 3.99 (67) 3.98 (67)	-2.51 (79) -2.20 (79) 4.00 (9)	0.50 (79) 0.46 (79) 4.49 (25)	-0.84 (93) -0.80 (93) 4.19 (30)	1.88 (91) 1.36 (99) 3.88 (37)	3.92 (33) 3.21 (87) 4.51 (33)

Wilshire Consulting International Income – Risk and Returns



California Public Employees Retirement Risk v. Non-US Fixed Income Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017

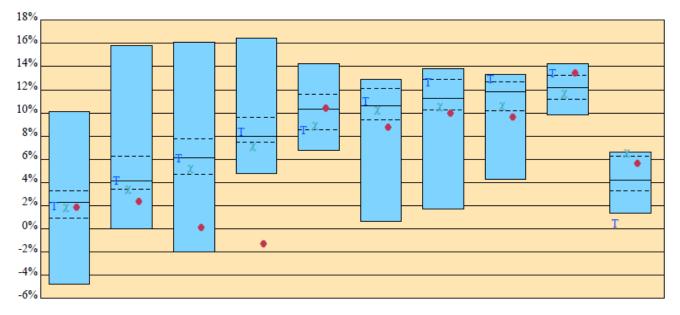


Wilshire Consulting Real Estate – Universe Comparison



California Public Employees Retirement Real Estate Returns of Public Funds > \$10 Billion

Rates of Return for Periods Ending June 30, 2017



5th Percentile 25th Percentile
Median
75th Percentile
95th Percentile

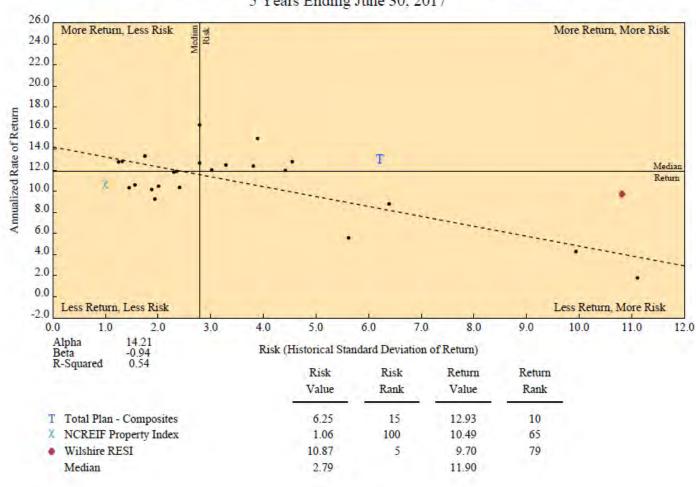
- T Total Plan Composites
- NCREIF Property Index
- Wilshire RESI

1 Quarter	2 Quarters	5 Quarters	1 1 eai	2 rears	5 Tears	4 rears	5 Tears	/ rears	10 Tears
10.09	15.83	16.13	16.49	14.23	12.88	13.81	13.35	14.25	6.60
3.25	6.25	7.75	9.61	11.64	12.09	12.91	12.68	13.25	6.30
2.30	4.16	6.15	8.00	10.30	10.60	11.27	11.82	12.17	4.18
0.90	3.44	4.73	7.45	8.57	9.41	10.26	10.17	11.21	3.27
-4.79	-0.00	-1.98	4.77	6.80	0.62	1.70	4.29	9.80	1.34
1.96 (57)) 4.19 (46	6.10 (50)	8.36 (35)	8.54(75)	11.00 (37)	12.63 (30)	12.93 (5)	13.43 (18)	0.46 (99)
	,	,	. ,	` '	, ,	` '		` '	, ,
1.75 (64)) 3.33 (75)	5.11 (64)	6.98 (79)	8.79 (70)	10.16 (65)	10.43 (70)	10.49 (60)	11.58 (56)	6.42 (15)
1.91 (60)	2.42 (78)	0.17 (92)	-1.23 (99)	10.47 (41)	8.82 (75)	10.03 (79)	9.70 (81)	13.50 (18)	5.70 (31)

W Wilshire

Real Estate – Risk and Returns

California Public Employees Retirement Risk v. Total Real Estate Returns of Public Funds > \$10 Billion 5 Years Ending June 30, 2017



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