

State of Michigan Retirement Systems

PERFORMANCE

Investment Advisory Committee Meeting

March 9, 2017



Jon M. Braeutigam
Chief Investment Officer
Bureau of Investments

Bureau of Investments

Mission Statement

The Bureau of Investments continually strives to provide quality investment management services, broad professional expertise, and independent advice to the State Treasurer as fiduciary of the State of Michigan Retirement Systems, and various Michigan trust funds and the State's common cash.

SMRS Goals

Maintain sufficient liquidity to pay benefits.

*Meet or exceed the actuarial assumption
over the long term.*

*Perform in the top half of the public plan
universe over the long term.*

Diversify assets to reduce risk.

*Exceed individual asset class benchmarks
over the long term.*

MPSERS PENSION

Time-Weighted Rates of Return

Periods Ending December 31, 2016

	% of Portfolio 12/31/16	Ten Years ¹		Seven Years ¹		Five Years ¹		Three Years ¹		One Year		Current Quarter	
		Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank
TOTAL PLAN	100.0	5.9	7	9.4	7	10.0	13	7.1	4	7.4	75	1.9	9
Median - Greater than \$10 Billion ²		5.3		8.4		8.9		5.3		7.9		1.0	
MPSERS Total Plan Policy		6.0		9.6		10.6		7.1		10.0		1.9	
DOMESTIC EQUITIES	25.8	7.0	40	12.5	50	14.7	31	8.2	36	11.5	48	4.8	20
Median ²		6.8		12.4		14.2		8.0		11.5		3.6	
S&P 1500 Index		7.2		13.0		14.8		8.9		13.0		4.3	
INTERNATIONAL EQUITIES	15.6	1.0	87	4.2	52	6.5	59	0.0	23	4.3	37	-1.1	35
Median ²		1.7		4.3		6.7		-0.8		3.8		-1.6	
International Blended Benchmark ³		0.0		3.0		5.3		-1.7		4.5		-1.3	
PRIVATE EQUITIES	15.4	11.4	6	14.7	6	13.7	11	12.5	17	9.1	33	4.0	14
Median ²		8.7		11.1		11.0		8.6		8.3		2.8	
Alternative Blended Benchmark ⁴		10.9		17.0		19.4		14.3		18.8		4.6	
BONDS	12.8	5.4	24	4.7	59	3.6	40	4.3	34	5.7	41	-1.7	44
Median ²		5.0		4.9		3.4		3.6		4.8		-1.9	
Barclays Aggregate		4.3		3.6		2.2		3.0		2.7		-3.0	
REAL ESTATE & INFRASTRUCTURE	10.6	5.2	30	10.8	45	11.9	32	13.2	16	10.3	30	1.8	26
Median ²		3.8		10.6		11.0		10.6		8.6		0.6	
NCREIF - Property Blended Index ⁵		5.6		10.3		9.5		9.6		6.6		1.4	
NCREIF Open Fund Index Net		4.8		12.3		11.2		11.0		7.8		1.9	
REAL RETURN AND OPPORTUNISTIC	8.6					9.8		12.2		6.1		2.5	
50% (CPI +500 bps) + 50% (8% actuarial rate)						7.2		7.1		7.6		1.6	
ABSOLUTE RETURN	6.6			4.4		5.2		2.2		-0.2		0.5	
HFRI FOF Cons 1 month lagged				2.6		3.2		1.8		0.6		1.2	
CASH EQUIVALENTS	4.6	0.8		0.4		0.5		0.5		0.7		0.2	
1 Month T-Bill		0.6		0.1		0.1		0.1		0.2		0.1	

¹ Annualized Returns and Percentile Rank.

² Comparison universe is the State Street Universe comprised of Public Funds greater than \$10 Billion on the total plan level and greater than \$1 Billion for asset classes.

³ International blended benchmark is S&P Developed BMI-EPAC 50/50 prior to 1/1/2010. S&P Developed BMI-EPAC 75 USD / 25 Local, 1/1/2010 to 9/30/10. MSCI ACWI Ex USA Gross 10/1/2010 to present.

⁴ SP 500 + 300 bps thru 12/31/06. Ending market value (EMV) weighted blend of 10 yr yield + 300 bps and SP 500 + 300 bps 12/31/06 to 9/30/09. EMV weighted blend of 10 yr yield + 300 bps and SP 500 + 300 bps 3-month lagged 9/30/09 to present.

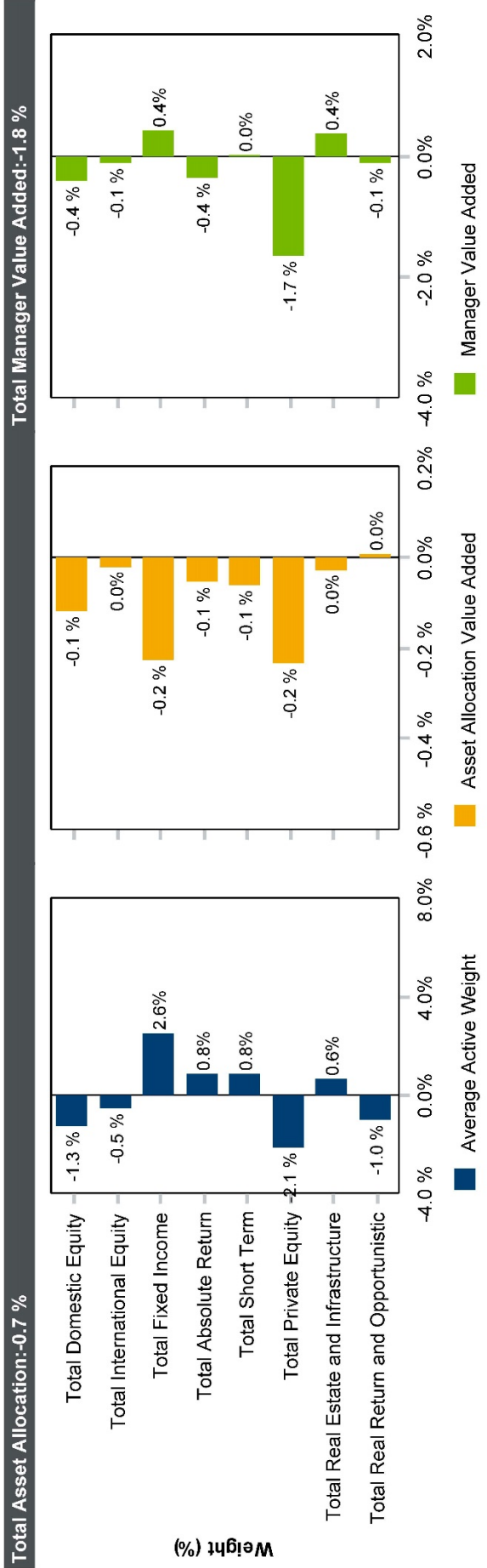
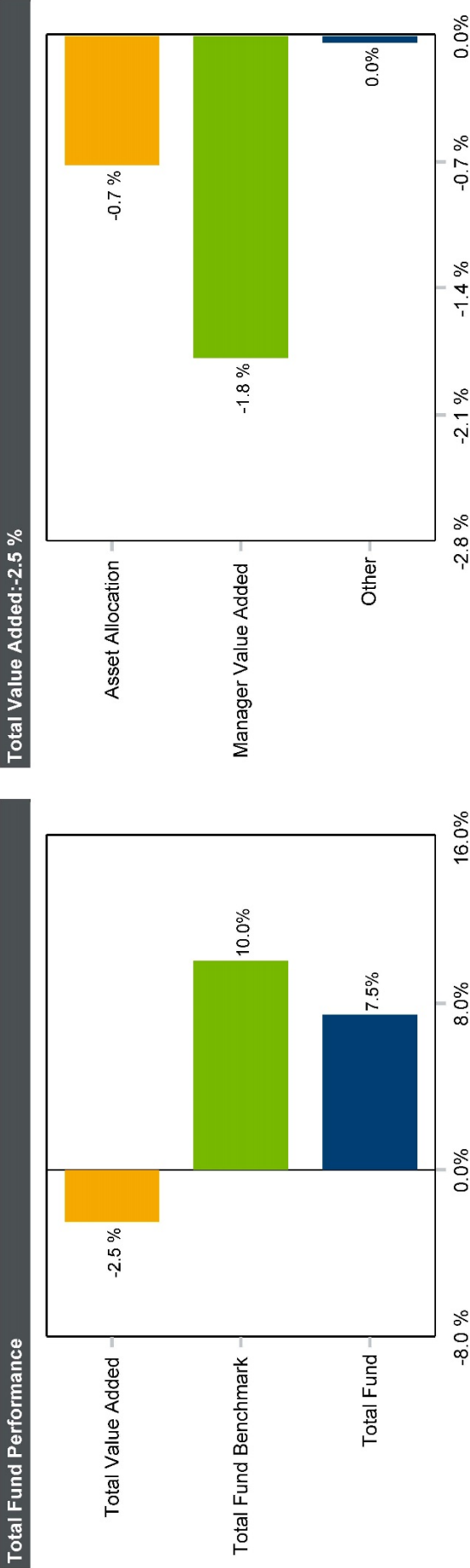
⁵ NCREIF - Property Blended Index is NPI minus 75 bps prior to October 2005, NPI minus 130 bps current.

Source: State Street Analytics; the NCREIF - NPI (Property Index) source is NCREIF; the S&P BMI-EPAC Index source is S&P.

1 Year Ending December 31, 2016

Total Fund Attribution

Total Michigan vs. Total Fund Benchmark



Cumulative and Consecutive Total Fund Returns

MPSERS										
Cumulative For Years Ending 12/31/16										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MPSERS	7.4	5.1	7.1	9.4	10.0	8.9	9.4	9.7	5.3	5.9
Public Plan - Median (> \$10 billion)*	7.9	4.2	5.3	7.8	8.9	7.6	8.4	9.2	4.8	5.3
Rank	75	13	4	10	13	7	7	22	23	7
bp Difference - Median	-44	92	183	160	109	130	103	56	53	60
Consecutive For Years Ending										
	12/16	12/15	12/14	12/13	12/12	12/11	12/10	12/09	12/08	12/07
MPSERS	7.4	2.8	11.3	16.4	12.6	3.3	12.7	12.1	-24.2	11.1
Public Plan - Median (> \$10 billion)*	7.9	0.5	7.1	15.8	13.3	1.3	12.7	17.5	-25.2	9.5
Rank	75	3	4	39	70	9	54	83	41	18
bp Difference - Median	-44	234	426	57	-71	206	-5	-543	98	161

MSERS										
Cumulative For Years Ending 12/31/16										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSERS	7.5	5.1	7.1	9.4	10.0	8.8	9.4	9.7	5.2	5.8
Public Plan - Median (> \$1 billion)*	7.9	4.1	5.2	7.8	8.8	7.6	8.4	9.3	4.9	5.4
Rank	66	15	3	8	14	8	9	28	28	15
bp Difference - Median	-40	97	194	157	119	127	91	37	33	40
Consecutive For Years Ending										
	12/16	12/15	12/14	12/13	12/12	12/11	12/10	12/09	12/08	12/07
MSERS	7.5	2.8	11.3	16.3	12.6	3.2	12.5	11.9	-24.4	11.0
Public Plan - Median (> \$1 billion)*	7.9	0.3	6.9	15.4	13.2	1.2	13.1	18.5	-25.6	9.4
Rank	66	2	3	40	68	16	67	86	34	13
bp Difference - Median	-40	245	444	83	-57	193	-57	-663	118	159

*State Street Public Funds Universe

Cumulative and Consecutive Total Fund Returns

MSPRS										
Cumulative For Years Ending 12/31/16										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MSPRS	7.5	5.1	7.1	9.3	9.9	8.8	9.4	9.6	5.2	5.8
Public Plan - Median (> \$1 billion)*	7.9	4.1	5.2	7.8	8.8	7.6	8.4	9.3	4.9	5.4
Rank	67	15	4	8	16	8	8	29	28	14
bp Difference - Median	-43	95	192	153	114	126	91	32	32	42
Consecutive For Years Ending										
	12/16	12/15	12/14	12/13	12/12	12/11	12/10	12/09	12/08	12/07
MSPRS	7.5	2.8	11.3	16.2	12.5	3.3	12.6	11.5	-24.2	11.2
Public Plan - Median (> \$1 billion)*	7.9	0.3	6.9	15.4	13.2	1.2	13.1	18.5	-25.6	9.4
Rank	67	3	3	40	72	13	67	89	31	12
bp Difference - Median	-43	244	440	75	-64	208	-50	-701	140	180

MJRS										
Cumulative For Years Ending 12/31/16										
	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	10 Year
MJRS	7.4	5.1	7.0	9.1	9.8	8.6	9.1	9.2	5.0	5.6
Public Plan - Median (> \$1 billion)*	7.9	4.1	5.2	7.8	8.8	7.6	8.4	9.3	4.9	5.4
Rank	68	16	4	14	19	16	18	53	43	26
bp Difference - Median	-44	95	184	134	98	108	70	-6	14	24
Consecutive For Years Ending										
	12/16	12/15	12/14	12/13	12/12	12/11	12/10	12/09	12/08	12/07
MJRS	7.4	2.8	11.0	15.6	12.5	3.1	12.2	9.9	-23.3	11.0
Public Plan - Median (> \$1 billion)*	7.9	0.3	6.9	15.4	13.2	1.2	13.1	18.5	-25.6	9.4
Rank	68	3	3	49	72	16	73	90	24	13
bp Difference - Median	-44	244	417	18	-68	182	-87	-862	235	160

*State Street Public Funds Universe