

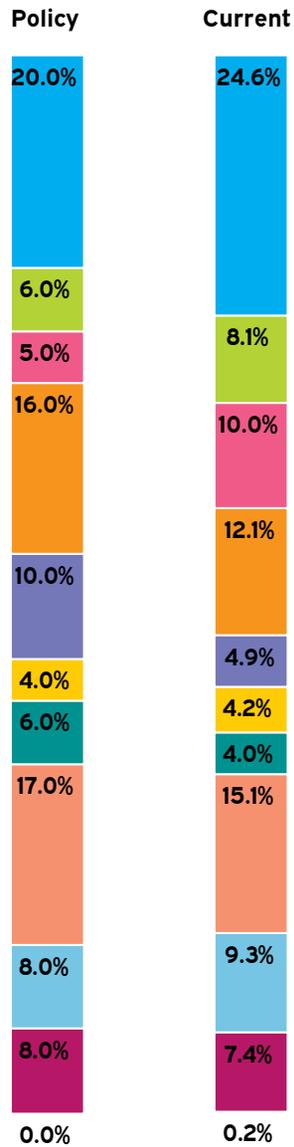
Massachusetts Housing Finance Agency Retirement System

Quarterly Review
March 31, 2024

Fund Evaluation Report

First Quarter 2024 Performance Review

Asset Allocation Compliance | As of March 31, 2024



	Current Balance (\$)	Current Allocation (%)	Policy (%)	Difference (%)	Policy Range (%)	Within IPS Range?
US Equity	61,217,457	25	20	5	15 - 25	Yes
Developed Market Equity	20,202,122	8	6	2	2 - 10	Yes
Emerging Market Equity	24,762,507	10	5	5	0 - 15	Yes
Investment Grade Bonds	29,933,332	12	16	-4	11 - 21	Yes
TIPS	12,252,730	5	10	-5	5 - 15	No
Emerging Market Bonds	10,376,370	4	4	0	1 - 7	Yes
High Yield Bonds	9,876,194	4	6	-2	3 - 9	Yes
Private Equity	37,576,905	15	17	-2	12 - 22	Yes
Real Estate	23,218,319	9	8	1	5 - 11	Yes
Infrastructure	18,411,573	7	8	-1	5 - 12	Yes
Cash	567,350	0	0	0	0 - 5	Yes
Total	248,394,859	100	100	0		

Asset Class Performance Summary									
	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	248,394,859	100.0	3.7	12.1	5.7	9.0	7.1	6.2	Jul-01
<i>60% MSCI ACWI / 40% Barclays Global Aggregate</i>			<i>4.0</i>	<i>13.7</i>	<i>2.3</i>	<i>6.2</i>	<i>5.3</i>	<i>5.8</i>	
<i>InvMetrics Public DB \$50mm-\$250mm Net (USD) Median</i>			<i>5.1</i>	<i>14.3</i>	<i>4.4</i>	<i>8.1</i>	<i>7.1</i>	<i>6.3</i>	
Total Retirement System Rank			87	77	7	13	51	59	
Domestic Equity Assets	61,217,457	24.6	9.7	28.3	9.5	14.2	12.2	8.6	Jul-01
<i>Russell 3000 Index</i>			<i>10.0</i>	<i>29.3</i>	<i>9.8</i>	<i>14.3</i>	<i>12.3</i>	<i>8.8</i>	
<i>eV US Large Cap Equity Median</i>			<i>10.2</i>	<i>26.9</i>	<i>9.7</i>	<i>13.3</i>	<i>11.4</i>	<i>8.7</i>	
Domestic Equity Assets Rank			57	46	54	39	36	58	
Total International Developed Market Equity	20,202,122	8.1	5.1	14.1	3.0	6.7	4.9	6.1	Jul-01
<i>MSCI EAFE (Net)</i>			<i>5.8</i>	<i>15.3</i>	<i>4.8</i>	<i>7.3</i>	<i>4.8</i>	<i>5.5</i>	
<i>eV EAFE Core Equity Median</i>			<i>5.3</i>	<i>14.4</i>	<i>3.4</i>	<i>7.2</i>	<i>5.0</i>	<i>6.2</i>	
Total International Developed Market Equity Rank			55	53	60	60	56	57	
International Emerging Market Equity Assets	24,762,507	10.0	11.0	39.8	4.3	8.5	4.5	2.9	Jul-07
<i>MSCI Emerging Markets (Net)</i>			<i>2.4</i>	<i>8.2</i>	<i>-5.1</i>	<i>2.2</i>	<i>2.9</i>	<i>2.3</i>	
<i>eV Emg Mkts Equity Median</i>			<i>3.0</i>	<i>9.8</i>	<i>-3.7</i>	<i>3.6</i>	<i>3.7</i>	<i>2.9</i>	
International Emerging Market Equity Assets Rank			1	1	13	9	31	52	
Investment Grade Bond Assets	29,933,332	12.1	-0.3	3.1	-1.8	1.3	2.1	3.8	Jul-01
<i>Blmbg. U.S. Aggregate Index</i>			<i>-0.8</i>	<i>1.7</i>	<i>-2.5</i>	<i>0.4</i>	<i>1.5</i>	<i>3.6</i>	
<i>eV US Core Fixed Inc Median</i>			<i>-0.5</i>	<i>2.2</i>	<i>-2.2</i>	<i>0.7</i>	<i>1.8</i>	<i>3.8</i>	
Investment Grade Bond Assets Rank			31	16	18	7	16	53	

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
High Yield Bond Assets	9,876,194	4.0	1.9	10.8	1.3	4.1	4.3	5.7	Feb-05
<i>Credit Suisse High Yield Index</i>			<i>1.7</i>	<i>11.2</i>	<i>2.5</i>	<i>4.1</i>	<i>4.3</i>	<i>6.1</i>	
<i>eV US High Yield Fixed Inc Median</i>			<i>1.5</i>	<i>10.4</i>	<i>2.3</i>	<i>4.0</i>	<i>4.1</i>	<i>5.8</i>	
High Yield Bond Assets Rank			28	31	88	42	35	55	
TIPS Assets	12,252,730	4.9	0.0	0.3	-0.6	2.4	2.2	3.5	Jul-07
<i>Blmbg. U.S. TIPS Index</i>			<i>-0.1</i>	<i>0.5</i>	<i>-0.5</i>	<i>2.5</i>	<i>2.2</i>	<i>3.5</i>	
<i>eV US TIPS / Inflation Fixed Inc Median</i>			<i>0.1</i>	<i>0.5</i>	<i>-0.4</i>	<i>2.6</i>	<i>2.1</i>	<i>3.5</i>	
TIPS Assets Rank			63	59	64	61	49	40	
Emerging Market Debt Assets	10,376,370	4.2	2.3	14.1	-0.3	1.4	0.0	-1.0	Mar-13
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			<i>-0.1</i>	<i>8.1</i>	<i>-1.5</i>	<i>0.5</i>	<i>1.4</i>	<i>0.9</i>	
Real Estate Assets	23,218,319	9.3	-1.7	-9.6	3.5	3.9	7.0	5.5	Apr-05
<i>NCREIF ODCE (Net)</i>			<i>-2.6</i>	<i>-12.0</i>	<i>2.5</i>	<i>2.6</i>	<i>5.8</i>	<i>5.6</i>	
Private Equity Assets	37,576,905	15.1	0.6	4.4	14.1	19.3	13.4	8.8	Oct-03
<i>Preqin Private Equity 1Q Lagged</i>			<i>0.0</i>	<i>6.8</i>	<i>13.2</i>	<i>16.0</i>	<i>14.3</i>	<i>13.4</i>	
Infrastructure Assets	18,411,573	7.4	-1.1	4.5	10.1	9.4	--	9.6	Oct-18
<i>CPI +3% (Unadjusted)</i>			<i>2.6</i>	<i>6.6</i>	<i>8.8</i>	<i>7.3</i>	<i>5.9</i>	<i>7.1</i>	
Cash	567,350	0.2							

Trailing Net Performance									
	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total Retirement System	248,394,859	100.0	3.7	12.1	5.7	9.0	7.1	6.2	Jul-01
<i>60% MSCI ACWI / 40% Barclays Global Aggregate</i>			4.0	13.7	2.3	6.2	5.3	5.8	
<i>InvMetrics Public DB \$50mm-\$250mm Net (USD) Median</i>			5.1	14.3	4.4	8.1	7.1	6.3	
Total Retirement System Rank			87	77	7	13	51	59	
Domestic Equity Assets	61,217,457	24.6	9.7	28.3	9.5	14.2	12.2	8.6	Jul-01
<i>Russell 3000 Index</i>			10.0	29.3	9.8	14.3	12.3	8.8	
<i>eV US Large Cap Equity Median</i>			10.2	26.9	9.7	13.3	11.4	8.7	
Domestic Equity Assets Rank			57	46	54	39	36	58	
SSgA Russell 1000 Value Index-NL	27,782,235	11.2	9.0	20.2	8.0	10.3	9.0	7.9	Jan-05
<i>Russell 1000 Value Index</i>			9.0	20.3	8.1	10.3	9.0	7.9	
<i>eV US Large Cap Value Equity Median</i>			9.1	22.0	9.5	11.6	9.6	8.4	
SSgA Russell 1000 Value Index-NL Rank			52	62	72	73	70	73	
SSgA Russell 1000 Growth-NL	28,251,131	11.4	11.4	39.0	12.5	18.5	15.9	12.4	Jul-07
<i>Russell 1000 Growth Index</i>			11.4	39.0	12.5	18.5	16.0	12.5	
<i>eV US Large Cap Growth Equity Median</i>			12.6	37.5	9.5	15.7	14.0	11.2	
SSgA Russell 1000 Growth-NL Rank			63	45	17	11	10	13	
SSgA Russell 2000 Index-NL	5,184,091	2.1	5.2	19.7	0.0	8.1	7.6	10.5	Aug-10
<i>Russell 2000 Index</i>			5.2	19.7	-0.1	8.1	7.6	10.5	
<i>eV US Small Cap Core Equity Median</i>			6.0	19.2	4.1	10.4	8.7	11.8	
SSgA Russell 2000 Index-NL Rank			69	48	92	89	78	76	

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Total International Developed Market Equity	20,202,122	8.1	5.1	14.1	3.0	6.7	4.9	6.1	Jul-01
<i>MSCI EAFE (Net)</i>			5.8	15.3	4.8	7.3	4.8	5.5	
<i>eV EAFE Core Equity Median</i>			5.3	14.4	3.4	7.2	5.0	6.2	
Total International Developed Market Equity Rank			55	53	60	60	56	57	
SSgA MSCI EAFE Index-NL	15,646,328	6.3	5.9	15.6	5.0	7.6	5.1	6.5	Aug-10
<i>MSCI EAFE (Net)</i>			5.8	15.3	4.8	7.3	4.8	6.3	
<i>eV EAFE Core Equity Median</i>			5.3	14.4	3.4	7.2	5.0	7.0	
SSgA MSCI EAFE Index-NL Rank			43	35	25	39	47	69	
SSgA MSCI EAFE Small Cap Index-NL	4,555,793	1.8	2.4	10.6	-1.2	5.0	4.7	7.2	Aug-10
<i>MSCI EAFE Small Cap (Net)</i>			2.4	10.4	-1.4	4.9	4.7	7.2	
<i>eV EAFE Small Cap Core Median</i>			3.8	10.9	0.0	6.1	5.4	8.1	
SSgA MSCI EAFE Small Cap Index-NL Rank			63	54	62	60	61	70	
International Emerging Market Equity Assets	24,762,507	10.0	11.0	39.8	4.3	8.5	4.5	2.9	Jul-07
<i>MSCI Emerging Markets (Net)</i>			2.4	8.2	-5.1	2.2	2.9	2.3	
<i>eV Emg Mkts Equity Median</i>			3.0	9.8	-3.7	3.6	3.7	2.9	
International Emerging Market Equity Assets Rank			1	1	13	9	31	52	
GQG Partners Emerging Markets	24,762,507	10.0	11.0	39.8	4.3	10.5	--	10.5	Apr-19
<i>MSCI Emerging Markets (Net)</i>			2.4	8.2	-5.1	2.2	2.9	2.2	
<i>eV Emg Mkts Equity Median</i>			3.0	9.8	-3.7	3.6	3.7	3.6	
GQG Partners Emerging Markets Rank			1	1	13	5	--	6	

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Investment Grade Bond Assets	29,933,332	12.1	-0.3	3.1	-1.8	1.3	2.1	3.8	Jul-01
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	1.7	-2.5	0.4	1.5	3.6	
<i>eV US Core Fixed Inc Median</i>			-0.5	2.2	-2.2	0.7	1.8	3.8	
Investment Grade Bond Assets Rank			31	16	18	7	16	53	
Longfellow Investment Grade Bond	29,933,332	12.1	-0.3	3.1	-1.8	1.3	--	1.4	Sep-17
<i>Blmbg. U.S. Aggregate Index</i>			-0.8	1.7	-2.5	0.4	1.5	0.7	
<i>eV US Core Fixed Inc Median</i>			-0.5	2.2	-2.2	0.7	1.8	1.0	
Longfellow Investment Grade Bond Rank			31	16	18	7	--	10	
High Yield Bond Assets	9,876,194	4.0	1.9	10.8	1.3	4.1	4.3	5.7	Feb-05
<i>Credit Suisse High Yield Index</i>			1.7	11.2	2.5	4.1	4.3	6.1	
<i>eV US High Yield Fixed Inc Median</i>			1.5	10.4	2.3	4.0	4.1	5.8	
High Yield Bond Assets Rank			28	31	88	42	35	55	
Lord Abbett High Yield Core	9,876,194	4.0	1.9	10.8	1.3	--	--	3.7	Jul-19
<i>Blmbg. U.S. Corp: High Yield Index</i>			1.5	11.2	2.2	4.2	4.4	3.9	
<i>eV US High Yield Fixed Inc Median</i>			1.5	10.4	2.3	4.0	4.1	3.7	
Lord Abbett High Yield Core Rank			28	31	88	--	--	51	

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
TIPS Assets	12,252,730	4.9	0.0	0.3	-0.6	2.4	2.2	3.5	Jul-07
<i>Blmbg. U.S. TIPS Index</i>			-0.1	0.5	-0.5	2.5	2.2	3.5	
<i>eV US TIPS / Inflation Fixed Inc Median</i>			0.1	0.5	-0.4	2.6	2.1	3.5	
TIPS Assets Rank			63	59	64	61	49	40	
SSgA TIPS-NL	12,252,730	4.9	0.0	0.3	-0.6	2.4	2.1	3.5	Jul-07
<i>Blmbg. U.S. TIPS Index</i>			-0.1	0.5	-0.5	2.5	2.2	3.5	
<i>eV US TIPS / Inflation Fixed Inc Median</i>			0.1	0.5	-0.4	2.6	2.1	3.5	
SSgA TIPS-NL Rank			63	58	64	62	53	42	
Emerging Market Debt Assets	10,376,370	4.2	2.3	14.1	-0.3	1.4	0.0	-1.0	Mar-13
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>			-0.1	8.1	-1.5	0.5	1.4	0.9	
Metlife Emerging Markets Debt	4,331,467	1.7	1.4	11.1	0.2	1.9	--	2.6	Nov-16
<i>MetLife Custom Benchmark</i>			0.7	8.0	-0.9	1.3	2.3	2.0	
Aberdeen Emerging Markets Bond Fund	6,044,903	2.4	2.9	16.4	-0.6	1.1	--	2.3	Dec-16
<i>JPM EMBI Global Diversified</i>			2.0	11.3	-1.4	0.7	3.0	2.3	
Real Estate Assets	23,218,319	9.3	-1.7	-9.6	3.5	3.9	7.0	5.5	Apr-05
<i>NCREIF ODCE (Net)</i>			-2.6	-12.0	2.5	2.6	5.8	5.6	
Intercontinental U.S. REIF	9,299,087	3.7	-3.9	-16.1	0.6	2.2	--	5.9	Oct-14
<i>NCREIF ODCE (Net)</i>			-2.6	-12.0	2.5	2.6	5.8	5.5	
AEW Core Property Trust	9,900,596	4.0	-1.1	-7.9	4.3	3.7	--	5.9	Oct-14
<i>NCREIF ODCE (Net)</i>			-2.6	-12.0	2.5	2.6	5.8	5.5	
AEW Partners IX, L.P.	4,018,636	1.6	2.4	4.7	-5.1	--	--	-5.1	Apr-21
<i>NCREIF ODCE (Net)</i>			-2.6	-12.0	2.5	2.6	5.8	2.5	

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Private Equity Assets	37,576,905	15.1	0.6	4.4	14.1	19.3	13.4	8.8	Oct-03
<i>Preqin Private Equity 1Q Lagged</i>			<i>0.0</i>	<i>6.8</i>	<i>13.2</i>	<i>16.0</i>	<i>14.3</i>	<i>13.4</i>	
Ascent Venture Partners - Fund V	633,627	0.3							
Ascent Venture Partners - Fund VI	1,505,248	0.6							
Constitution Capital Partners Ironsides III	4,959,064	2.0							
Constitution Capital Partners Ironsides IV	3,148,166	1.3							
Constitution Capital Partners Ironsides V	2,779,556	1.1							
Constitution Capital Direct IV	1,265,149	0.5							
Constitution Capital Direct V	4,213,806	1.7							
Constitution Capital Co-Investment Fund VI, L.P.	4,245,075	1.7							
Goldman Sachs PEP 2005	103,475	0.0							
HarbourVest Partners VIII	23,057	0.0							
HarbourVest Partners IX	2,558,907	1.0							
HarbourVest X Buyout Fund	5,724,125	2.3							
HarbourVest Partners XI	5,102,311	2.1							
HarbourVest Fund XII	1,315,339	0.5							

Constitution Capital Partners Ironsides III, IV, and V, Goldman Sachs PEP 2005, and HarbourVest Partners XI and XII market values are as of 9/30/2023 adjusted for subsequent cash flows.

Asset Allocation & Performance | As of March 31, 2024

	Market Value \$	% of Portfolio	QTD (%)	1 Yr (%)	3 Yrs (%)	5 Yrs (%)	10 Yrs (%)	Inception (%)	Inception Date
Infrastructure Assets	18,411,573	7.4	-1.1	4.5	10.1	9.4	--	9.6	Oct-18
<i>CPI +3% (Unadjusted)</i>			<i>2.6</i>	<i>6.6</i>	<i>8.8</i>	<i>7.3</i>	<i>5.9</i>	<i>7.1</i>	
IFM Global Infrastructure (U.S.), L.P.	18,411,573	7.4	-1.1	4.5	10.1	9.4	--	9.6	Oct-18
<i>CPI +3% (Unadjusted)</i>			<i>2.6</i>	<i>6.6</i>	<i>8.8</i>	<i>7.3</i>	<i>5.9</i>	<i>7.1</i>	
Cash	567,350	0.2							
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	Calendar Year Performance								
	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)
Total Retirement System	11.2	-8.6	16.2	14.1	17.4	-3.2	14.3	9.6	-2.7
<i>60% MSCI ACWI / 40% Barclays Global Aggregate</i>	<i>15.4</i>	<i>-17.3</i>	<i>8.8</i>	<i>14.0</i>	<i>18.6</i>	<i>-6.0</i>	<i>17.1</i>	<i>5.7</i>	<i>-2.5</i>
Domestic Equity Assets	24.3	-18.2	25.2	21.5	30.8	-5.6	20.9	13.0	0.4
<i>Russell 3000 Index</i>	<i>26.0</i>	<i>-19.2</i>	<i>25.7</i>	<i>20.9</i>	<i>31.0</i>	<i>-5.2</i>	<i>21.1</i>	<i>12.7</i>	<i>0.5</i>
SSgA Russell 1000 Value Index-NL	11.4	-7.6	25.1	2.8	26.5	-8.3	13.7	17.2	-3.8
<i>Russell 1000 Value Index</i>	<i>11.5</i>	<i>-7.5</i>	<i>25.2</i>	<i>2.8</i>	<i>26.5</i>	<i>-8.3</i>	<i>13.7</i>	<i>17.3</i>	<i>-3.8</i>
SSgA Russell 1000 Growth-NL	42.7	-29.2	27.5	38.4	36.3	-1.8	30.1	7.1	5.5
<i>Russell 1000 Growth Index</i>	<i>42.7</i>	<i>-29.1</i>	<i>27.6</i>	<i>38.5</i>	<i>36.4</i>	<i>-1.5</i>	<i>30.2</i>	<i>7.1</i>	<i>5.7</i>
SSgA Russell 2000 Index-NL	17.0	-20.3	14.9	19.9	25.5	-11.0	14.6	21.4	-4.5
<i>Russell 2000 Index</i>	<i>16.9</i>	<i>-20.4</i>	<i>14.8</i>	<i>20.0</i>	<i>25.5</i>	<i>-11.0</i>	<i>14.6</i>	<i>21.3</i>	<i>-4.4</i>
Total International Developed Market Equity	16.6	-16.4	10.9	9.2	23.1	-14.8	27.3	1.6	2.0
<i>MSCI EAFE (Net)</i>	<i>18.2</i>	<i>-14.5</i>	<i>11.3</i>	<i>7.8</i>	<i>22.0</i>	<i>-13.8</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>
SSgA MSCI EAFE Index-NL	18.5	-14.2	11.4	8.2	22.4	-13.6	25.4	1.3	-0.6
<i>MSCI EAFE (Net)</i>	<i>18.2</i>	<i>-14.5</i>	<i>11.3</i>	<i>7.8</i>	<i>22.0</i>	<i>-13.8</i>	<i>25.0</i>	<i>1.0</i>	<i>-0.8</i>
SSgA MSCI EAFE Small Cap Index-NL	13.4	-21.1	9.9	12.2	24.7	-17.8	33.0	2.2	9.4
<i>MSCI EAFE Small Cap (Net)</i>	<i>13.2</i>	<i>-21.4</i>	<i>10.1</i>	<i>12.3</i>	<i>25.0</i>	<i>-17.9</i>	<i>33.0</i>	<i>2.2</i>	<i>9.6</i>
International Emerging Market Equity Assets	30.3	-21.2	-1.5	24.6	15.8	-17.9	31.8	11.7	-17.9
<i>MSCI Emerging Markets (Net)</i>	<i>9.8</i>	<i>-20.1</i>	<i>-2.5</i>	<i>18.3</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>
GQG Partners Emerging Markets	30.3	-21.2	-1.5	33.9	--	--	--	--	--
<i>MSCI Emerging Markets (Net)</i>	<i>9.8</i>	<i>-20.1</i>	<i>-2.5</i>	<i>18.3</i>	<i>18.4</i>	<i>-14.6</i>	<i>37.3</i>	<i>11.2</i>	<i>-14.9</i>

Asset Allocation & Performance | As of March 31, 2024

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)
Investment Grade Bond Assets	6.8	-13.1	-0.2	9.2	8.9	-0.1	3.5	2.7	0.8
<i>Blmbg. U.S. Aggregate Index</i>	<i>5.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>
Longfellow Investment Grade Bond	6.8	-13.1	-0.2	9.2	8.9	-0.1	--	--	--
<i>Blmbg. U.S. Aggregate Index</i>	<i>5.5</i>	<i>-13.0</i>	<i>-1.5</i>	<i>7.5</i>	<i>8.7</i>	<i>0.0</i>	<i>3.5</i>	<i>2.6</i>	<i>0.5</i>
High Yield Bond Assets	12.1	-13.0	5.8	8.6	15.5	-3.7	6.8	11.5	-0.2
<i>Credit Suisse High Yield Index</i>	<i>13.6</i>	<i>-10.6</i>	<i>5.5</i>	<i>5.5</i>	<i>14.0</i>	<i>-2.4</i>	<i>7.0</i>	<i>18.3</i>	<i>-4.9</i>
Lord Abbett High Yield Core	12.1	-12.9	5.8	8.6	--	--	--	--	--
<i>Blmbg. U.S. Corp: High Yield Index</i>	<i>13.4</i>	<i>-11.2</i>	<i>5.3</i>	<i>7.1</i>	<i>14.3</i>	<i>-2.1</i>	<i>7.5</i>	<i>17.1</i>	<i>-4.5</i>
TIPS Assets	3.9	-12.0	5.9	10.9	8.4	-1.3	3.0	4.6	-1.4
<i>Blmbg. U.S. TIPS Index</i>	<i>3.9</i>	<i>-11.8</i>	<i>6.0</i>	<i>11.0</i>	<i>8.4</i>	<i>-1.3</i>	<i>3.0</i>	<i>4.7</i>	<i>-1.4</i>
SSgA TIPS-NL	3.9	-12.0	5.9	10.9	8.4	-1.3	2.9	4.4	-1.4
<i>Blmbg. U.S. TIPS Index</i>	<i>3.9</i>	<i>-11.8</i>	<i>6.0</i>	<i>11.0</i>	<i>8.4</i>	<i>-1.3</i>	<i>3.0</i>	<i>4.7</i>	<i>-1.4</i>
Emerging Market Debt Assets	13.3	-15.3	-4.0	5.5	14.9	-7.1	13.1	10.0	-15.2
<i>50% JPM EMBI GD / 50% JPM GBI-EM</i>	<i>11.9</i>	<i>-14.8</i>	<i>-5.3</i>	<i>4.0</i>	<i>14.3</i>	<i>-5.2</i>	<i>12.7</i>	<i>10.2</i>	<i>-7.1</i>
Metlife Emerging Markets Debt	12.6	-13.3	-3.7	6.1	14.5	-6.6	13.4	--	--
<i>MetLife Custom Benchmark</i>	<i>10.7</i>	<i>-13.5</i>	<i>-2.9</i>	<i>5.4</i>	<i>13.7</i>	<i>-4.0</i>	<i>10.6</i>	<i>10.0</i>	<i>-3.8</i>
Aberdeen Emerging Markets Bond Fund	13.8	-16.6	-4.0	5.0	15.3	-7.5	12.7	--	--
<i>JPM EMBI Global Diversified</i>	<i>11.1</i>	<i>-17.8</i>	<i>-1.8</i>	<i>5.3</i>	<i>15.0</i>	<i>-4.3</i>	<i>10.3</i>	<i>10.2</i>	<i>1.2</i>

Asset Allocation & Performance | As of March 31, 2024

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)
Real Estate Assets	-10.6	7.8	19.4	0.5	8.1	8.3	8.4	9.0	13.8
<i>NCREIF ODCE (Net)</i>	<i>-12.7</i>	<i>6.5</i>	<i>21.0</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>	<i>14.0</i>
Intercontinental U.S. REIF	-16.0	7.4	20.0	1.0	8.2	9.3	7.5	10.9	12.7
<i>NCREIF ODCE (Net)</i>	<i>-12.7</i>	<i>6.5</i>	<i>21.0</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>	<i>14.0</i>
AEW Core Property Trust	-10.3	7.8	20.8	0.3	5.1	6.6	6.6	7.6	12.8
<i>NCREIF ODCE (Net)</i>	<i>-12.7</i>	<i>6.5</i>	<i>21.0</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>	<i>14.0</i>
AEW Partners IX, L.P.	6.5	5.6	--	--	--	--	--	--	--
<i>NCREIF ODCE (Net)</i>	<i>-12.7</i>	<i>6.5</i>	<i>21.0</i>	<i>0.3</i>	<i>4.4</i>	<i>7.4</i>	<i>6.7</i>	<i>7.8</i>	<i>14.0</i>
Private Equity Assets	3.0	11.1	46.1	25.3	15.7	13.7	11.8	6.3	0.8
<i>Preqin Private Equity 1Q Lagged</i>	<i>9.2</i>	<i>2.9</i>	<i>44.7</i>	<i>17.0</i>	<i>10.2</i>	<i>15.7</i>	<i>18.0</i>	<i>10.2</i>	<i>10.9</i>
Ascent Venture Partners - Fund V									
Ascent Venture Partners - Fund VI									
Constitution Capital Partners Ironsides III									
Constitution Capital Partners Ironsides IV									
Constitution Capital Partners Ironsides V									
Constitution Capital Direct IV									
Constitution Capital Direct V									
Constitution Capital Co-Investment Fund VI, L.P.									
Goldman Sachs PEP 2005									
HarbourVest Partners VIII									

Asset Allocation & Performance | As of March 31, 2024

	2023 (%)	2022 (%)	2021 (%)	2020 (%)	2019 (%)	2018 (%)	2017 (%)	2016 (%)	2015 (%)
HarbourVest Partners IX									
HarbourVest X Buyout Fund									
HarbourVest Partners XI									
HarbourVest Fund XII									
Infrastructure Assets	8.4	8.2	17.4	3.1	14.6	--	--	--	--
<i>CPI +3% (Unadjusted)</i>	<i>6.4</i>	<i>9.6</i>	<i>10.2</i>	<i>4.4</i>	<i>5.3</i>	<i>5.0</i>	<i>5.2</i>	<i>5.1</i>	<i>3.7</i>
IFM Global Infrastructure (U.S.), L.P.	8.4	8.2	17.4	3.1	14.6	--	--	--	--
<i>CPI +3% (Unadjusted)</i>	<i>6.4</i>	<i>9.6</i>	<i>10.2</i>	<i>4.4</i>	<i>5.3</i>	<i>5.0</i>	<i>5.2</i>	<i>5.1</i>	<i>3.7</i>
Cash									
Cash STIF									

Benchmark History

From Date	To Date	Benchmark
Metlife Emerging Markets Debt		
02/01/2002	Present	30.0% JPM GBI-EM Global Diversified, 35.0% JPM CEMBI Broad Diversified Index, 35.0% JPM EMBI Global Index (USD)

Risk Return Statistics		
	3 Yrs (%)	5 Yrs (%)
	Total Retirement System	Total Retirement System
RETURN SUMMARY STATISTICS		
Maximum Return	4.6	5.7
Minimum Return	-4.4	-6.5
Return	5.7	9.0
Excess Return	3.4	7.0
Excess Performance	3.5	2.8
RISK SUMMARY STATISTICS		
Beta	0.6	0.7
Upside Risk	6.5	7.4
Downside Risk	5.1	5.2
RISK/RETURN SUMMARY STATISTICS		
Standard Deviation	8.1	8.7
Sortino Ratio	0.6	1.3
Alpha	4.2	4.6
Sharpe Ratio	0.4	0.8
Excess Risk	8.1	8.8
Tracking Error	5.7	5.2
Information Ratio	0.5	0.4
CORRELATION STATISTICS		
R-Squared	0.9	0.9
Actual Correlation	0.9	0.9

Fund	Vintage Year	Committed	Called	Distributed	Fair Value	Net IRR ¹
AEW Partners IX, L.P.	2019	\$5.0	\$3.7	\$0.1	\$3.9	6.6%
Ascent Venture Partners – Fund V	2011	\$1.0	\$1.0	\$0.9	\$0.6	6.2%
Ascent Venture Partners – Fund VI	2015	\$1.0	\$1.5	\$0.0	\$1.5	0.6%
Constitution Capital Partners Ironsides III ³	2014	\$5.0	\$5.8	\$7.7	\$5.8	25.8%
Constitution Capital Partners Ironsides IV ³	2016	\$3.3	\$3.2	\$3.3	\$3.3	28.7%
Constitution Capital Partners Ironsides V ³	2020	\$2.5	\$2.2	\$0.3	\$2.8	24.2%
Constitution Capital Direct IV	2016	\$3.3	\$3.8	\$4.7	\$1.6	18.1%
Constitution Capital Direct V	2019	\$2.5	\$2.9	\$0.7	\$4.4	30.9%
Constitution Capital Co-Investment Fund VI, L.P.	2021	\$4.0	\$3.6	\$0.1	\$4.3	9.9%
Goldman Sachs PEP 2005 ²	2006	\$3.0	\$2.9	\$3.7	\$0.1	4.5%
HarbourVest Partners VIII	2006	\$2.5	\$2.4	\$4.3	\$0.0	10.6%
HarbourVest Partners IX	2010	\$5.0	\$4.4	\$6.8	\$2.9	17.9%
HarbourVest X Buyout Fund	2016	\$6.5	\$5.6	\$4.4	\$5.7	22.1%
HarbourVest Partners XI ³	2019	\$5.0	\$4.1	\$1.2	\$5.0	25.4%
HarbourVest Fund XII ³	2019	\$4.0	\$1.0	\$0.0	\$1.1	23.5%

¹ As of December 31, 2023.

² Goldman Sachs PEP 2005 data is as of June 30, 2023.

³ As of September 30, 2023, due to statement availability.

Appendices

Corporate Update | 1Q.2024





7
Offices



240+
Employees



250+
Clients



\$1.8T
Assets Under Advisement



\$300B
Assets in Alternative Investments



98%
Client Retention Rate



5:1
Client | Consultant Ratio

Meketa Investment Group is proud to work for over 20 million American families everyday!

UPCOMING EVENTS



Q2 Investment Perspectives Webcast
July 2024



Evolving Asia: Japan, India and EM Ex-China
September 2024

Client and employee counts as of March 31, 2024; assets as of September 30, 2023.
Client retention rate is one minus the number of clients lost divided by the number of clients at prior year-end.

THOUGHT LEADERSHIP



Read our February Connectives “From Philosophy to Fees”

As an institutional investor, venturing into the realm of outsourcing investment management responsibilities to an Outsourced Chief Investment Officer (OCIO), the decision carries significant weight and must align with the institutional investor’s overarching goal: ensuring the sustainability of long-term promises to beneficiaries or constituents.

In this paper we discuss five questions that the institution may ask during the selection process of an OCIO provider. It is important for an entity to answer from their unique perspective. These questions not only reflect the depth of due diligence required but also encourage alignment with a fund’s strategic objectives and risk appetite.

Read more here:

<https://meketa.com/news/meketa-connectives-from-philosophy-to-fees/>



Read our recent white paper “European Buyouts”

The European buyout market possesses characteristics that are unique from the US market, which may present a different set of opportunities to investors. Having one broad geographical basket that encompasses the numerous countries in Europe may bring potential challenges, but might also offer opportunities to develop competitive advantages for managers who are ingrained in the ecosystem and have access to local networks.

In this research note, we focus on the buyout market, as it tends to be the most prominent private equity strategy in Europe. While there are venture capital and growth equity strategies that focus on Europe, they comprise only a small portion of Europe’s private equity market.

Read more here:

<https://meketa.com/leadership/european-buyouts/>



Read the second installment in our Japan 2.0 series “The Case for Japanese Equities”

Part one of this series (“[Japan 2.0: A New Paradigm?](#)”) discussed the history of the Japanese economy, summarizing the evolution of Japan’s economic boom of the 1980s through the decades of weak economic growth and low inflation from the 1990s to the present.

In this paper, we focus on equity market reforms in Japan designed to boost shareholder returns, activism, raise stock market valuations, promote mergers and acquisitions (“M&A”), and unlock trillions of household savings held in cash.

Read more here:

<https://meketa.com/leadership/japan-2-0-the-case-for-japanese-equities-part-ii/>

MEKETA VALUES COMMUNITY

On February 3, Meketa East participated in *Cycle for Survival*. This is the 5th year that Team Meketa has participated in this event, where 100% of the proceeds go directly to cancer research.

Cycle for Survival is the official rare cancer fundraising program of Memorial Sloan Kettering Cancer Center (MSK). Since 2007, the community has raised more than \$376M for rare cancer research at MSK, fueling countless lifesaving advances benefiting people around the world.



MEMORIAL SLOAN KETTERING | EQUINOX



MEKETA IN THE NEWS

Infrastructure Investor

Going deep on due diligence

By Amy Carroll | 2.1.24

[Read full article here](#)

Lisa Bacon, principal at Meketa Investment Group, adds: “Succession planning is something that we have always paid a lot of attention to, but a number of funds have recently either had a third party come in to take a passive stake as a way of supporting a transition or have sold the whole firm.

“We are starting to see a lot more examples of how this can play out and so it is an area we are looking at very closely.”

Bacon also points to inflation linkage as an important aspect of due diligence in the current environment. Gordon Bajnai, head of global infrastructure at Campbell Lutyens agrees: “Resilience to high inflation is something LPs are examining carefully, and I have to say most quality managers are standing up to that scrutiny well.”

Despite an understanding that firms need fees to operate, Infrastructure Investor’s LP Perspectives 2024 Study shows management fees are coming under pressure. “We always try to get the best deals we can for our clients, including a first close discount,” says Bacon.

Pensions&Investments

US retirement plans recover half of 2022 losses amid no-show recession Douglas Appell | 2.12.24

[Read full article here](#)

That dispersion is unsurprising, given corporate sponsors' various mixes of growth assets and liability-driven investment hedges, noted Jonathan Camp, a Chicago-based managing principal with consulting firm Meketa Investment Group advising clients on LDI programs.

In the wake of last year's big rebound in equity markets, corporate clients with large exposures to growth assets would have reported relatively strong gains. But even clients with large LDI programs — liable to suffer a decline in assets in a rising rate environment — had reason to be “very, very happy with their results in 2023,” as higher discount rates reduced their liabilities, leaving funded status intact, Camp said.

Many big corporate plans, meanwhile, have taken additional steps in recent years — such as pension risk transfers to insurance companies — to accelerate the drop in their DB assets, Camp noted.

WSJ PRO PRIVATE EQUITY

Liquidity Chase: Funds and Investors Create Their Own Path to Exits

Some fund investors are taking matters into their own hands

By JENNIFER ROSSA | 2024

[Read full article here](#)

“Leverage on top of leverage should always get people’s attention,” said John Haggerty, director of private-markets investments at Meketa Investment Group. However, Haggerty added that when he sees GPs use these facilities, they generally think carefully about how much debt is healthy for the portfolio. Meketa has six or seven debt-related items in a roughly 90-item checklist for limited partnership agreements related to issues that include use case, amount and the permission required for debt, he said, up from two or three a few years ago.

Celebrating this Quarter

Meketa expands employee ownership with new shareholders.

Principals Zachary Driscoll and Stephanie Sorg have joined the firm's ownership group, bringing the total number to more than 70 shareholders.



Zachary Driscoll, CFA



Stephanie Sorg, CAIA

Read the full article here:

<https://meketa.com/news/meketa-investment-group-expands-employee-ownership-team-2/>

"Meketa is a people-first organization and our employee ownership is a testament to our commitment to not only recognize but also reward the hard work, dedication, and innovation our team continues to bring to the table every day. As we continue to grow and evolve, our employees remain our most valuable asset," said Stephen McCourt, Managing Principal and Co-Chief Executive Officer, Meketa.

"Last year provided an incredible opportunity for us to continue connecting with clients and offering our hand in partnership. Our success is directly linked to our clients entrusting us with the stewardship of their assets. I am incredibly optimistic about what Meketa and our clients can accomplish as we continue to focus on helping them achieve their long-term financial goals," said Peter Woolley, Managing Principal and Co-Chief Executive Officer, Meketa.



Meketa releases our 2024 diversity, equity, and inclusion ("DEI") annual questionnaire results summary

In 2020 as a next step in our commitment to Diversity, Equity, and Inclusion (DEI), Meketa Investment Group formally launched a new initiative to gather data from public and private market asset management firms within our proprietary database. The initiative focused on evaluating asset management firm's efforts to understand DEI more thoroughly within their organizations. 2023 marks the fourth year in a row we have asked firms to complete our questionnaire to report on their work in this area, and we are excited to share with you the results of these findings today.

We are pleased to report that our 2024 questionnaire was more extensive and garnered a higher participation rate from asset managers, further deepening the insights gleaned from last year's analysis. As we remain committed to making the institutional investment industry more resilient and equitable, we look forward to continuing this initiative on an annual basis and sharing the results with our clients and the marketplace for years to come.

Read the full article here:

<https://meketa.com/leadership/2023-diversity-equity-and-inclusion-annual-questionnaire-results-summary/>

Disclaimer, Glossary, and Notes

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PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

Credit Risk: Refers to the risk that the issuer of a fixed income security may default (i.e., the issuer will be unable to make timely principal and/or interest payments on the security).

Duration: Measure of the sensitivity of the price of a bond to a change in its yield to maturity. Duration summarizes, in a single number, the characteristics that cause bond prices to change in response to a change in interest rates. For example, the price of a bond with a duration of three years will rise by approximately 3% for each 1% decrease in its yield to maturity. Conversely, the price will decrease 3% for each 1% increase in the bond's yield. Price changes for two different bonds can be compared using duration. A bond with a duration of six years will exhibit twice the percentage price change of a bond with a three-year duration. The actual calculation of a bond's duration is somewhat complicated, but the idea behind the calculation is straightforward. The first step is to measure the time interval until receipt for each cash flow (coupon and principal payments) from a bond. The second step is to compute a weighted average of these time intervals. Each time interval is measured by the present value of that cash flow. This weighted average is the duration of the bond measured in years.

Information Ratio: This statistic is a measure of the consistency of a portfolio's performance relative to a benchmark. It is calculated by subtracting the benchmark return from the portfolio return (excess return), and dividing the resulting excess return by the standard deviation (volatility) of this excess return. A positive information ratio indicates outperformance versus the benchmark, and the higher the information ratio, the more consistent the outperformance.

Jensen's Alpha: A measure of the average return of a portfolio or investment in excess of what is predicted by its beta or "market" risk. $\text{Portfolio Return} - [\text{Risk Free Rate} + \text{Beta} * (\text{market return} - \text{Risk Free Rate})]$.

Market Capitalization: For a firm, market capitalization is the total market value of outstanding common stock. For a portfolio, market capitalization is the sum of the capitalization of each company weighted by the ratio of holdings in that company to total portfolio holdings; thus it is a weighted-average capitalization. Meketa Investment Group considers the largest 65% of the broad domestic equity market as large capitalization, the next 25% of the market as medium capitalization, and the smallest 10% of stocks as small capitalization.

Market Weighted: Stocks in many indices are weighted based on the total market capitalization of the issue. Thus, the individual returns of higher market-capitalization issues will more heavily influence an index's return than the returns of the smaller market-capitalization issues in the index.

Maturity: The date on which a loan, bond, mortgage, or other debt/security becomes due and is to be paid off.

Prepayment Risk: The risk that prepayments will increase (homeowners will prepay all or part of their mortgage) when mortgage interest rates decline; hence, investors' monies will be returned to them in a lower interest rate environment. Also, the risk that prepayments will slow down when mortgage interest rates rise; hence, investors will not have as much money as previously anticipated in a higher interest rate environment. A prepayment is any payment in excess of the scheduled mortgage payment.

Price-Book Value (P/B) Ratio: The current market price of a stock divided by its book value per share. Meketa Investment Group calculates P/B as the current price divided by Compustat's quarterly common equity. Common equity includes common stock, capital surplus, retained earnings, and treasury stock adjusted for both common and nonredeemable preferred stock. Similar to high P/E stocks, stocks with high P/B's tend to be riskier investments.

Price-Earnings (P/E) Ratio: A stock's market price divided by its current or estimated future earnings. Lower P/E ratios often characterize stocks in low growth or mature industries, stocks in groups that have fallen out of favor, or stocks of established blue chip companies with long records of stable earnings and regular dividends. Sometimes a company that has good fundamentals may be viewed unfavorably by the market if it is an industry that is temporarily out of favor. Or a business may have experienced financial problems causing investors to be skeptical about its future. Either of these situations would result in lower relative P/E ratios. Some stocks exhibit above-average sales and earnings growth or expectations for above average growth. Consequently, investors are willing to pay more for these companies' earnings, which results in elevated P/E ratios. In other words, investors will pay more for shares of companies whose profits, in their opinion, are expected to increase faster than average. Because future events are in no way assured, high P/E stocks tend to be riskier and more volatile investments. Meketa Investment Group calculates P/E as the current price divided by the I/B/E/S consensus of twelve-month forecast earnings per share.

Quality Rating: The rank assigned a security by such rating services as Fitch, Moody's, and Standard & Poor's. The rating may be determined by such factors as (1) the likelihood of fulfillment of dividend, income, and principal payment of obligations; (2) the nature and provisions of the issue; and (3) the security's relative position in the event of liquidation of the company. Bonds assigned the top four grades (AAA, AA, A, BBB) are considered investment grade because they are eligible bank investments as determined by the controller of the currency.

Sharpe Ratio: A commonly used measure of risk-adjusted return. It is calculated by subtracting the risk free return (usually three-month Treasury bill) from the portfolio return and dividing the resulting excess return by the portfolio's total risk level (standard deviation). The result is a measure of return per unit of total risk taken. The higher the Sharpe ratio, the better the fund's historical risk adjusted performance.

STIF Account: Short-term investment fund at a custodian bank that invests in cash-equivalent instruments. It is generally used to safely invest the excess cash held by portfolio managers.

Standard Deviation: A measure of the total risk of an asset or a portfolio. Standard deviation measures the dispersion of a set of numbers around a central point (e.g., the average return). If the standard deviation is small, the distribution is concentrated within a narrow range of values. For a normal distribution, about two thirds of the observations will fall within one standard deviation of the mean, and 95% of the observations will fall within two standard deviations of the mean.

Style: The description of the type of approach and strategy utilized by an investment manager to manage funds. For example, the style for equities is determined by portfolio characteristics such as price-to-book value, price-to-earnings ratio, and dividend yield. Equity styles include growth, value, and core.

Tracking Error: A divergence between the price behavior of a position or a portfolio and the price behavior of a benchmark, as defined by the difference in standard deviation.

Yield to Maturity: The yield, or return, provided by a bond to its maturity date; determined by a mathematical process, usually requiring the use of a “basis book.” For example, a 5% bond pays \$5 a year interest on each \$100 par value. To figure its current yield, divide \$5 by \$95—the market price of the bond—and you get 5.26%. Assume that the same bond is due to mature in five years. On the maturity date, the issuer is pledged to pay \$100 for the bond that can be bought now for \$95. In other words, the bond is selling at a discount of 5% below par value. To figure yield to maturity, a simple and approximate method is to divide 5% by the five years to maturity, which equals 1% pro rata yearly. Add that 1% to the 5.26% current yield, and the yield to maturity is roughly 6.26%.

$$\frac{5\% \text{ (discount)}}{5 \text{ (yrs. to maturity)}} = 1\% \text{ pro rata, plus } 5.26\% \text{ (current yield)} = 6.26\% \text{ (yield to maturity)}$$

Yield to Worst: The lowest potential yield that can be received on a bond without the issuer actually defaulting. The yield to worst is calculated by making worst-case scenario assumptions on the issue by calculating the returns that would be received if provisions, including prepayment, call, or sinking fund, are used by the issuer.

NCREIF Property Index (NPI): Measures unleveraged investment performance of a very large pool of individual commercial real estate properties acquired in the private market by tax-exempt institutional investors for investment purposes only. The NPI index is capitalization-weighted for a quarterly time series composite total rate of return.

NCREIF Fund Index - Open End Diversified Core Equity (NFI-ODCE): Measures the investment performance of 28 open-end commingled funds pursuing a core investment strategy that reflects funds' leverage and cash positions. The NFI-ODCE index is equal-weighted and is reported gross and net of fees for a quarterly time series composite total rate of return.

Sources: [Investment Terminology](#), International Foundation of Employee Benefit Plans, 1999.

[The Handbook of Fixed Income Securities](#), Fabozzi, Frank J., 1991

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Throughout this report, numbers may not sum due to rounding.

Returns for periods greater than one year are annualized throughout this report.

Values shown are in millions of dollars, unless noted otherwise.