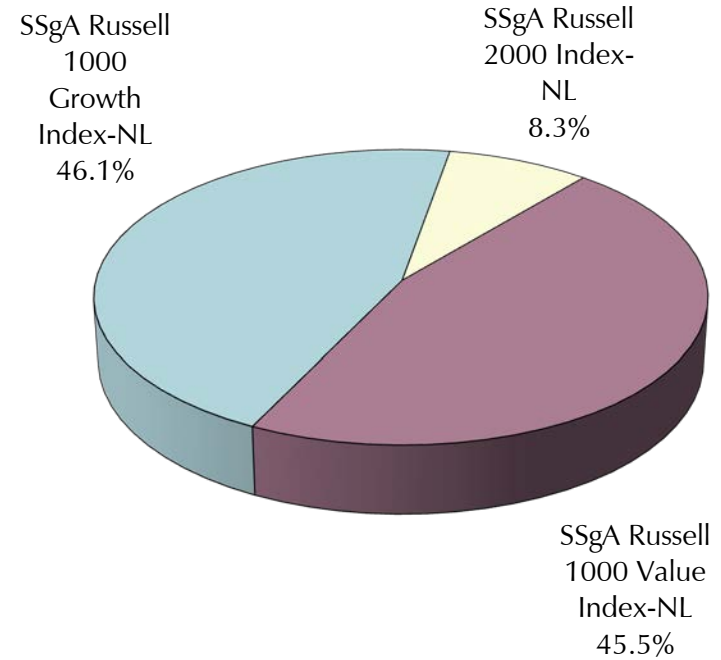
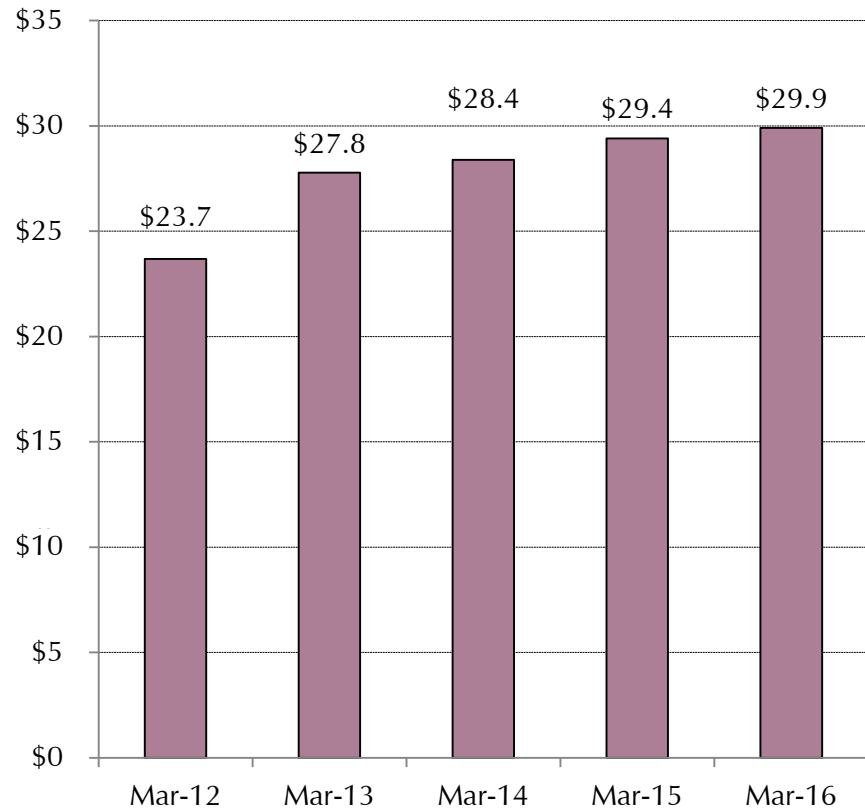


System Detail
As of March 31, 2016

Domestic Equity Assets
As of March 31, 2016

Massachusetts Housing Finance Agency Retirement System

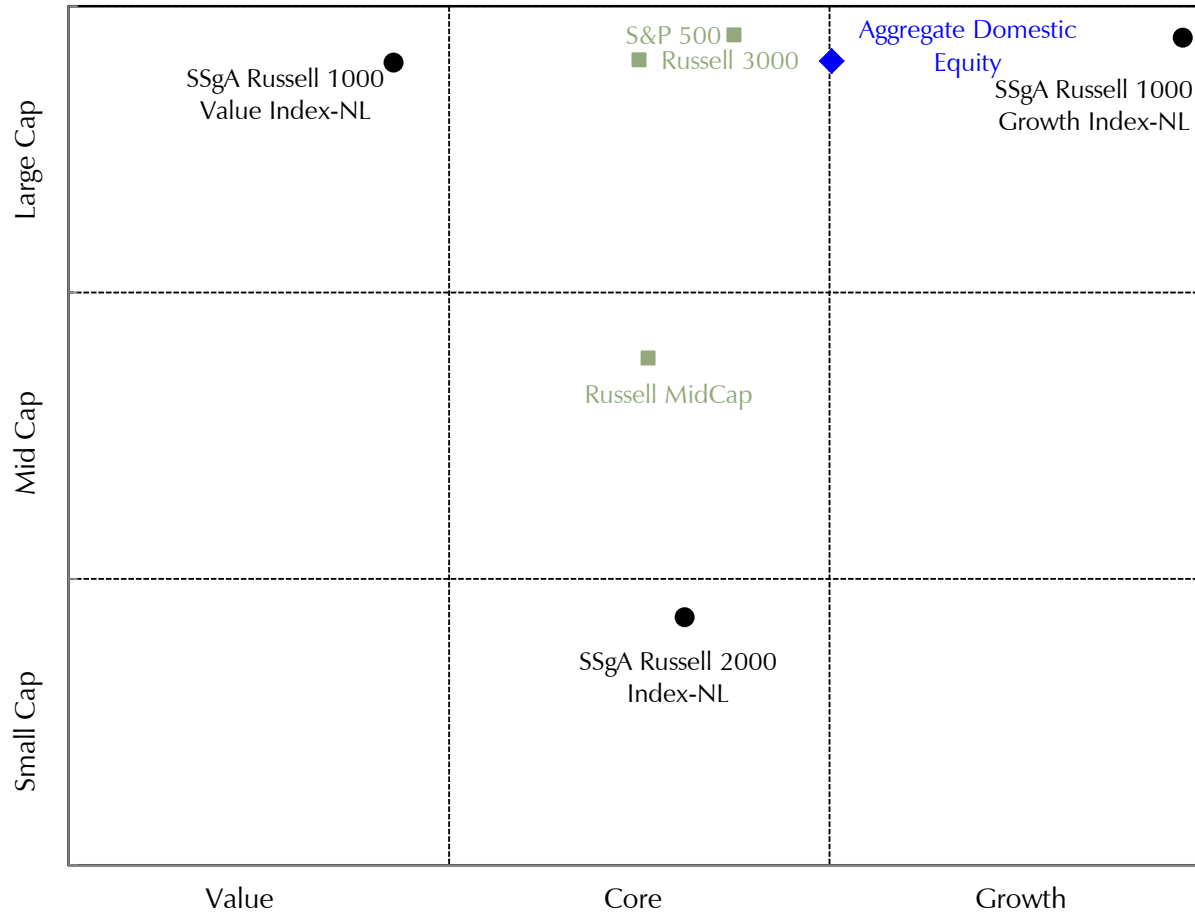
Domestic Equity Assets as of 3/31/16



Massachusetts Housing Finance Agency
Retirement System

Domestic Equity Assets
Risk as of 3/31/16

Risk: (sixty months)	Aggregate Domestic Equity 3/31/16	Russell 3000 3/31/16
Annualized Return (%)	10.9	11.0
Standard Deviation (%)	14.1	14.1
Best Monthly Return (%)	11.4	11.5
Worst Monthly Return (%)	-7.7	-7.8
Beta	1.00	1.00
Correlation to Index	1.00	1.00
Correlation to Total Fund Return	0.91	NA
Sharpe Measure (risk-adjusted return)	0.77	0.78
Information Ratio	Neg.	NA



**Massachusetts Housing Finance Agency
Retirement System**

**Domestic Equity Assets
Characteristics as of 3/31/16**

	Aggregate Domestic Equity 3/31/16	Russell 3000 3/31/16	Aggregate Domestic Equity 12/31/15
Capitalization Structure:			
Weighted Average Market Cap. (US\$ billion)	106.5	107.4	105.4
Median Market Cap. (US\$ billion)	1.4	1.4	1.4
Large (% over US\$20 billion)	69	69	69
Medium (% US\$3 billion to US\$20 billion)	23	23	23
Small (% under US\$3 billion)	8	7	8
Fundamental Structure:			
Price-Earnings Ratio	21	21	20
Price-Book Value Ratio	3.3	2.3	3.3
Dividend Yield (%)	2.1	2.1	2.1
Historical Earnings Growth Rate (%)	10	10	10
Projected Earnings Growth Rate (%)	10	10	11

**Massachusetts Housing Finance Agency
Retirement System**

**Domestic Equity Assets
Diversification as of 3/31/16**

Diversification:	Aggregate Domestic Equity 3/31/16	Russell 3000 3/31/16	Aggregate Domestic Equity 12/31/15
Number of Holdings	2,955	2,973	2,985
% in 5 largest holdings	9	9	9
% in 10 largest holdings	15	15	14

Largest Five Holdings:

Apple
Microsoft
ExxonMobil
General Electric
Johnson & Johnson

% of Portfolio

2.8
2.0
1.6
1.4
1.4

Economic Sector

Technology Equipment
Software & Services
Energy
Capital Goods
Pharmaceuticals & Biotech.

Massachusetts Housing Finance Agency
Retirement System

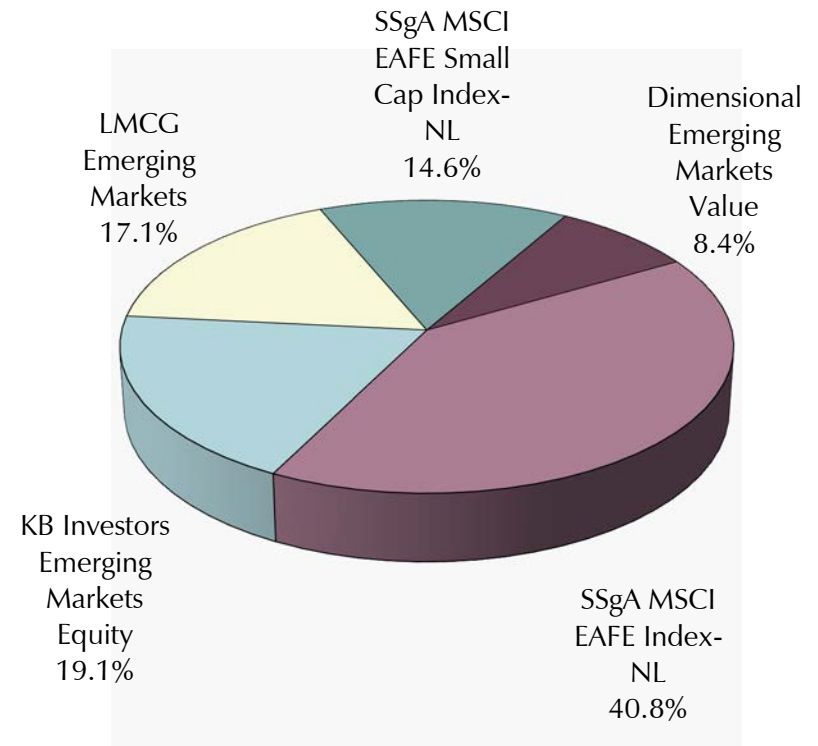
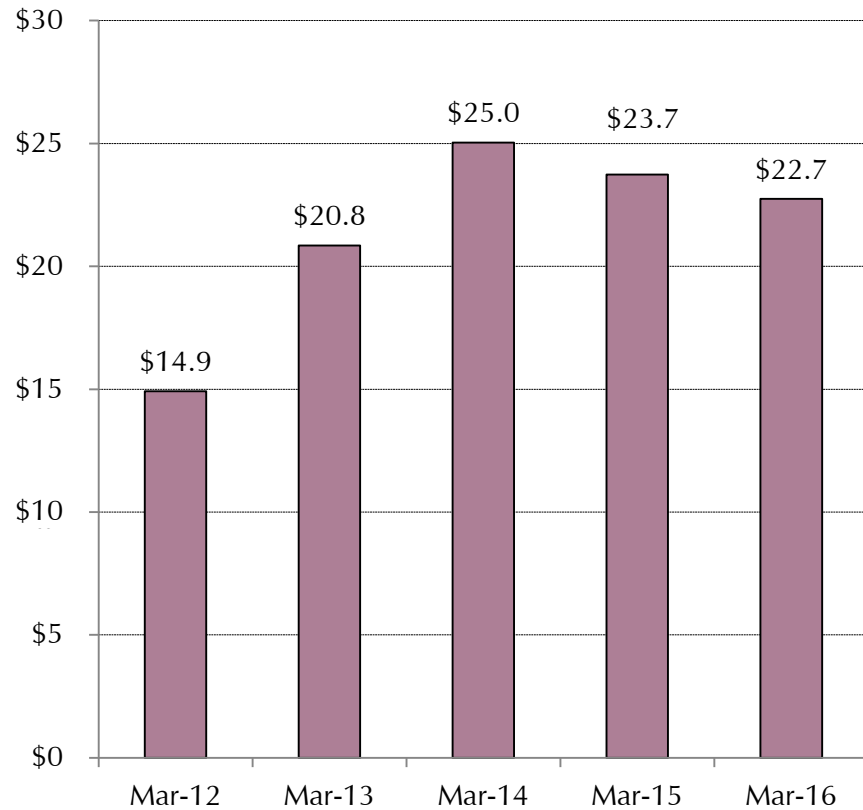
Domestic Equity Assets
Sector Allocation as of 3/31/16

Sector Allocation (%):	Aggregate Domestic Equity 3/31/16	Russell 3000 3/31/16	Aggregate Domestic Equity 12/31/15
Financials	18	17	19
Energy	6	6	6
Utilities	4	3	3
Industrials	11	11	11
Telecommunication Services	2	2	2
Materials	3	3	3
Health Care	14	14	15
Consumer Staples	9	9	9
Consumer Discretionary	13	14	13
Information Technology	20	20	20

**International Equity Assets
As of March 31, 2016**

Massachusetts Housing Finance Agency Retirement System

International Equity Assets as of 3/31/16



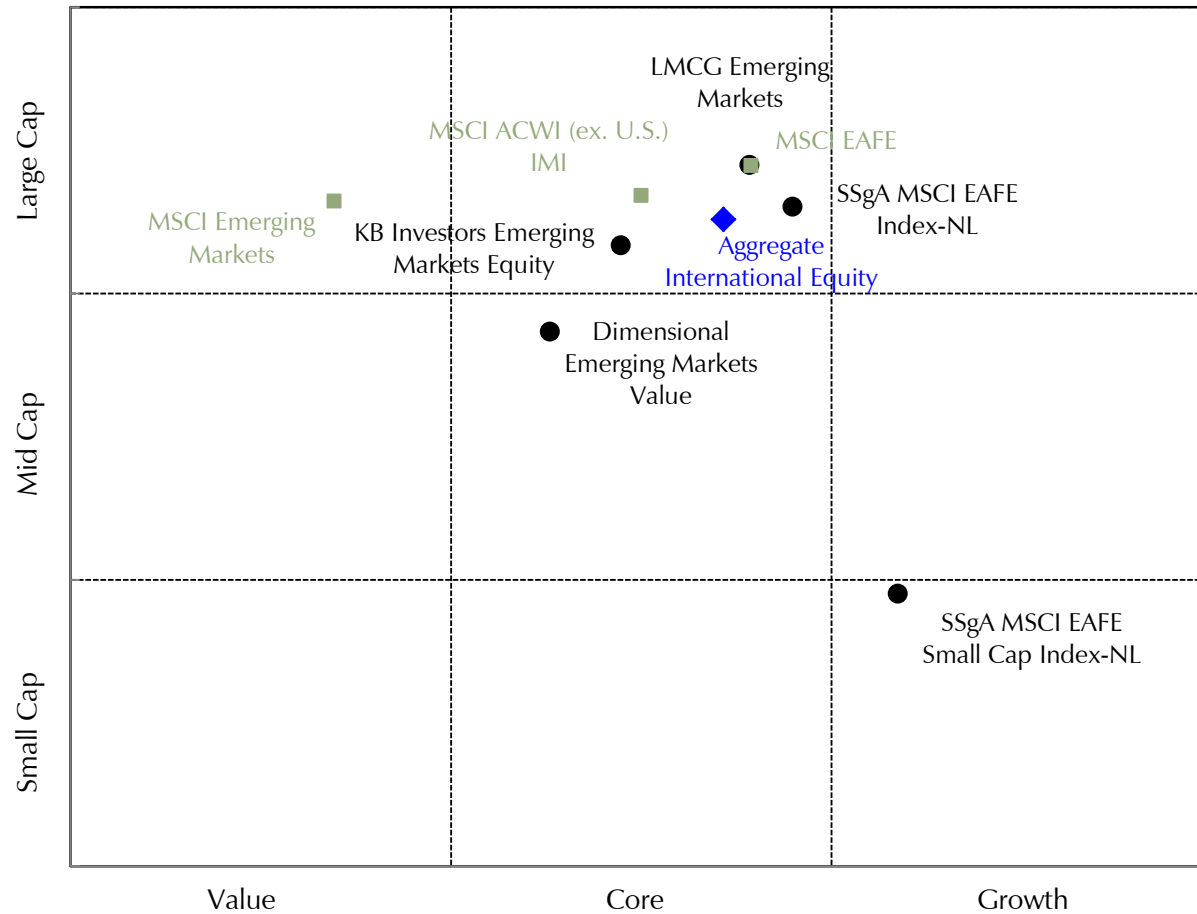
Massachusetts Housing Finance Agency
Retirement System

International Equity Assets
Risk as of 3/31/16

Risk: (sixty months)	Aggregate International Equity 3/31/16	MSCI ACWI (ex. U.S.) IMI 3/31/16
Annualized Return (%)	-1.4	0.6
Standard Deviation (%)	16.6	16.0
Best Monthly Return (%)	10.1	10.3
Worst Monthly Return (%)	-11.9	-11.3
Beta	1.05	1.00
Correlation to Index	0.99	1.00
Correlation to Total Fund Return	0.96	NA
Sharpe Measure (risk-adjusted return) ¹	Neg.	0.03
Information Ratio	Neg.	NA

¹ A negative Sharpe ratio indicates that the portfolio underperformed the risk-free rate during the sample period.





**Massachusetts Housing Finance Agency
Retirement System**

**International Equity Assets
Characteristics as of 3/31/16**

	Aggregate International Equity 3/31/16	MSCI ACWI (ex. U.S.) IMI 3/31/16	Aggregate International Equity 12/31/15
Capitalization Structure:			
Weighted Average Market Cap. (US\$ billion)	34.1	40.6	34.7
Median Market Cap. (US\$ million)	961	1,156	962
Large (% over US\$20 billion)	40	50	39
Medium (% US\$3 billion to US\$20 billion)	40	36	39
Small (% under US\$3 billion)	20	13	22
Fundamental Structure:			
Price-Earnings Ratio	15	16	15
Price-Book Value Ratio	1.4	1.4	1.5
Dividend Yield (%)	3.4	3.2	3.0
Historical Earnings Growth Rate (%)	8	8	10
Projected Earnings Growth Rate (%)	10	8	10

**Massachusetts Housing Finance Agency
Retirement System**

**International Equity Assets
Diversification as of 3/31/16**

	Aggregate International Equity 3/31/16	MSCI ACWI (ex. U.S.) IMI 3/31/16	Aggregate International Equity 12/31/15
Diversification:			
Number of Holdings	5,424	6,095	5,462
% in 5 largest holdings	5	4	5
% in 10 largest holdings	8	7	8
Largest Five Holdings:			
	% of Portfolio	Economic Sector	
Taiwan Semiconductor	1.2	Semiconductors	
China Construction Bank	1.1	Banks	
Nestle	0.8	Food, Beverage & Tobacco	
Industrial and Commercial Bank of China	0.8	Banks	
Hon Hai Precision	0.8	Technology Equipment	

**Massachusetts Housing Finance Agency
Retirement System**

**International Equity Assets
Sector Allocation as of 3/31/16**

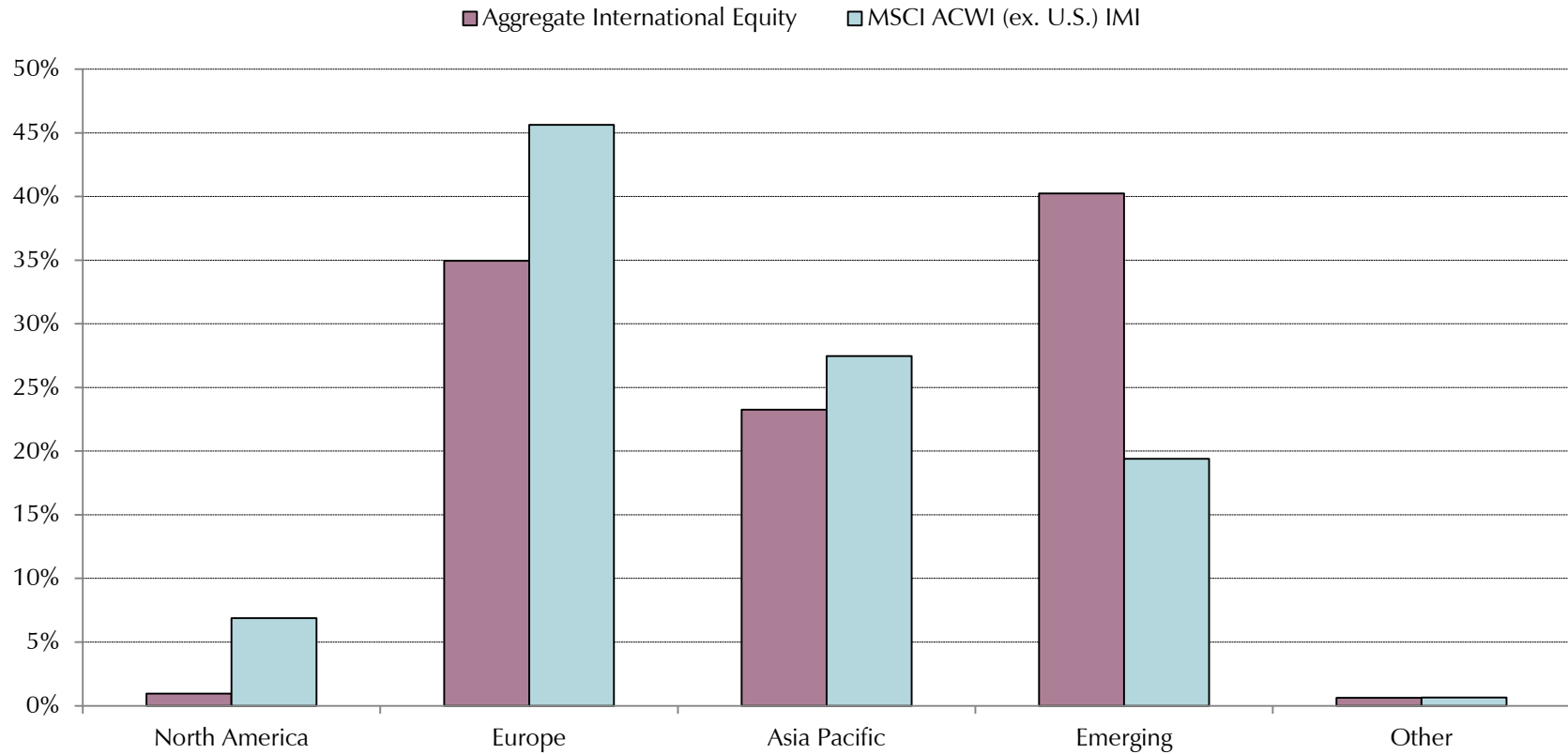
Sector Allocation (%):	Aggregate International Equity 3/31/16	MSCI ACWI (ex. U.S.) IMI 3/31/16	Aggregate International Equity 12/31/15
Information Technology	12	9	11
Financials	26	25	27
Materials	8	7	8
Energy	6	6	6
Telecommunication Services	5	5	4
Industrials	12	13	13
Utilities	3	3	3
Consumer Discretionary	12	13	13
Consumer Staples	9	11	9
Health Care	7	9	7

Massachusetts Housing Finance Agency
Retirement System

International Equity Assets
Country & Region Breakdown as of 3/31/16

	Aggregate International Equity 3/31/16 (%)	MSCI ACWI (ex. U.S.) IMI 3/31/16 (%)		Aggregate International Equity 3/31/16 (%)	MSCI ACWI (ex. U.S.) IMI 3/31/16 (%)
North America	0.9	6.9	Emerging	40.2	19.4
Europe	34.9	45.6	China	7.2	2.8
Italy	1.4	1.7	Taiwan	6.8	2.9
Denmark	1.0	1.4	South Korea	6.6	3.5
Sweden	2.0	2.3	Brazil	3.4	1.3
Spain	1.6	2.2	South Africa	3.1	1.5
Netherlands	2.3	3.3	India	3.3	1.8
Germany	4.8	6.3	Turkey	1.6	0.3
Switzerland	4.7	6.3	Mexico	1.9	1.0
France	4.4	6.3	Russia	1.3	0.7
United Kingdom	9.6	12.2	Other	0.6	0.6
Asia Pacific	23.3	27.5			
Hong Kong	4.9	4.4			
Australia	3.8	4.9			
Japan	13.5	16.8			

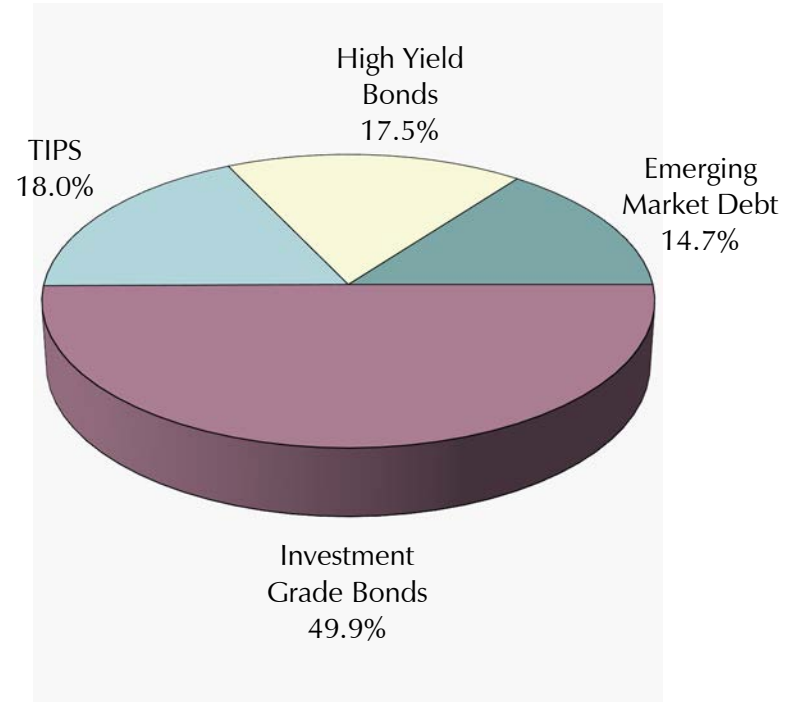
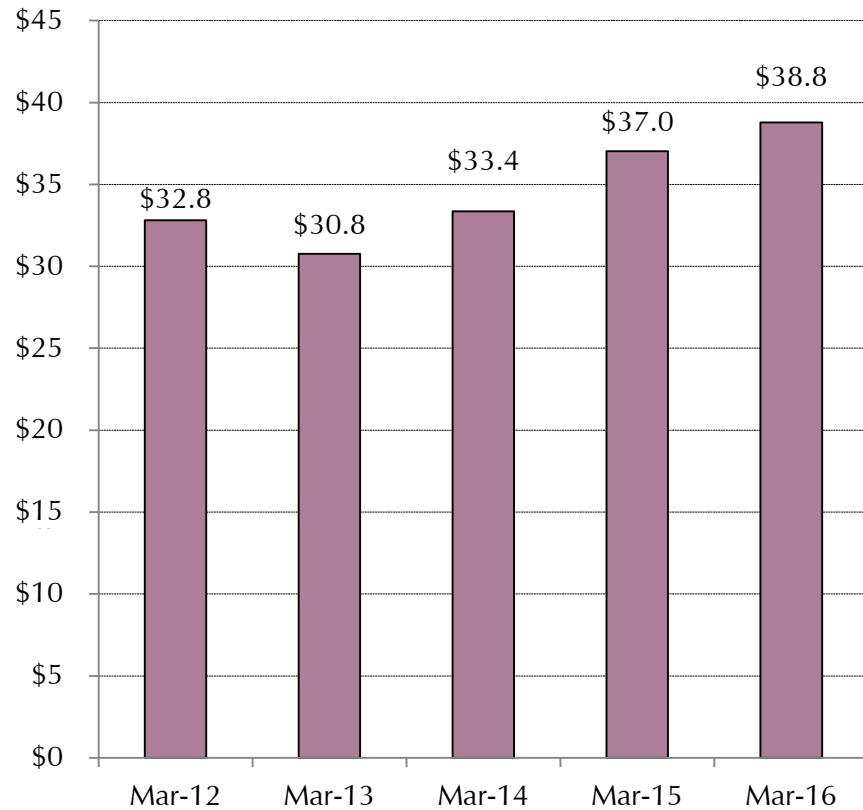




**Fixed Income Assets
As of March 31, 2016**

Massachusetts Housing Finance Agency Retirement System

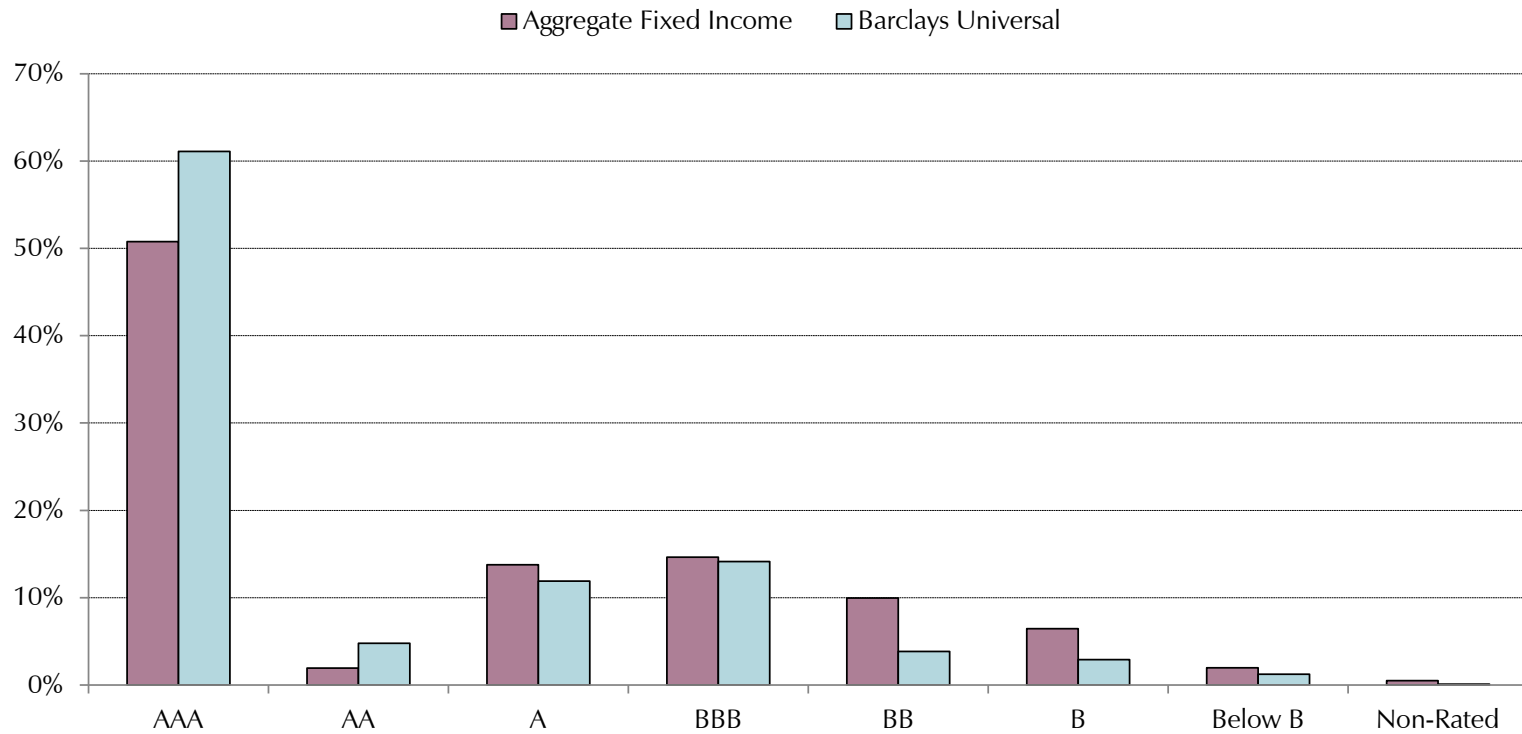
Fixed Income Assets as of 3/31/16



**Massachusetts Housing Finance Agency
Retirement System**

**Fixed Income Assets
Characteristics as of 3/31/16**

Duration & Yield:	Aggregate Fixed Income 3/31/16	Barclays Universal 3/31/16	Aggregate Fixed Income 12/31/15
Average Effective Duration (years)	5.1	5.3	5.1
Yield to Maturity (%)	3.5	2.7	4.0



**Massachusetts Housing Finance Agency
Retirement System**

**Fixed Income Assets
Diversification as of 3/31/16**

	Aggregate Fixed Income 3/31/16	Barclays Universal 3/31/16	Aggregate Fixed Income 12/31/15
Market Allocation (%):			
United States	83	83	84
Foreign (developed markets)	3	10	3
Foreign (emerging markets)	15	7	14
Currency Allocation (%):			
Non-U.S. Dollar Exposure	15	0	13
Sector Allocation (%):			
U.S. Treasury-Nominal	10	31	12
U.S. Treasury-TIPS	18	0	18
U.S. Agency	2	2	2
Mortgage Backed	13	24	14
Corporate	34	31	33
Bank Loans	0	0	0
Local & Provincial Government	0	1	0
Sovereign & Supranational	14	8	14
Commercial Mortgage Backed	1	2	1
Asset Backed	3	0	4
Cash Equivalent	3	0	2
Other	1	0	1