

DRAFT



**Massachusetts Bay
Transportation Authority**

MBTA Retirement Fund

FMCB Update

May 2017

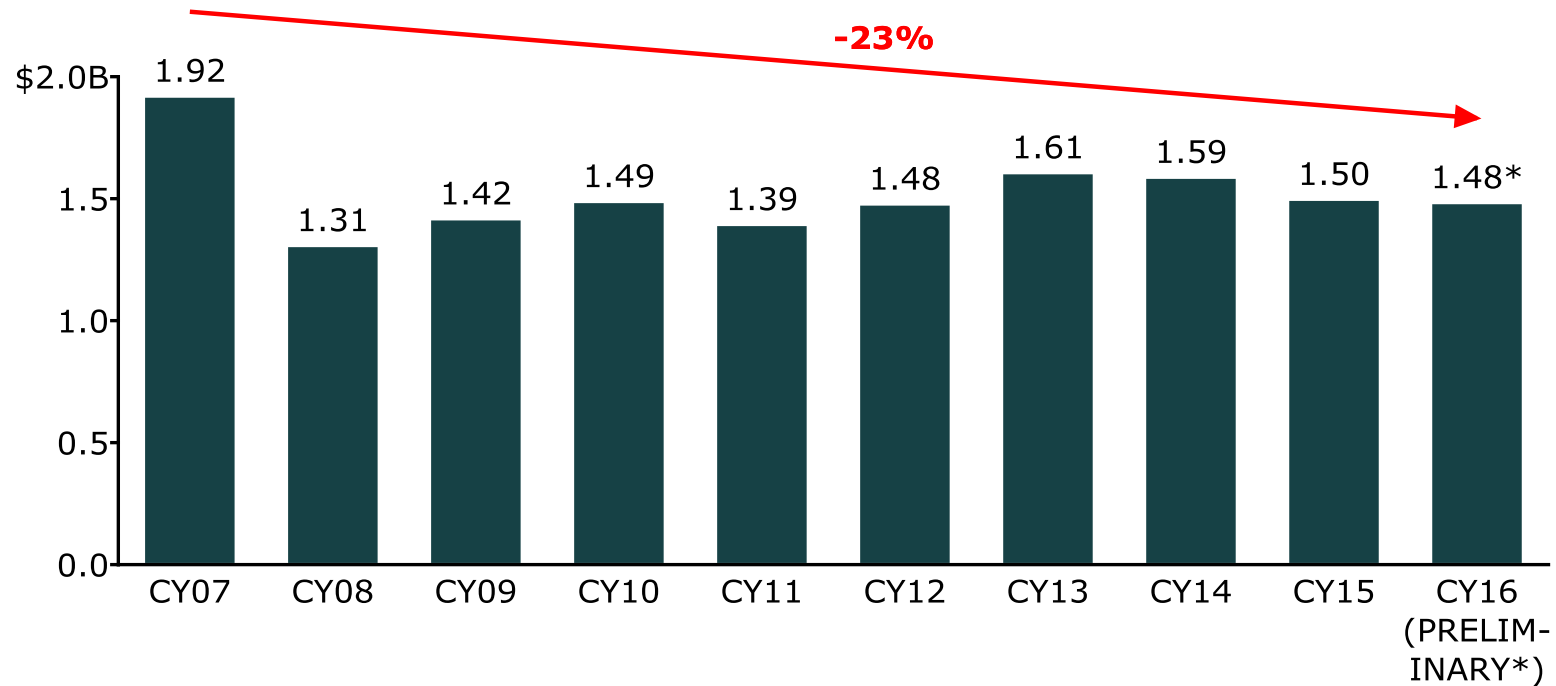
ATTORNEY-CLIENT PRIVILEGED,
FOR POLICY DEVELOPMENT PURPOSES



MBTA pension assets have declined by 23% over last 10 years...

**PRESENTED AT FMCB
JUNE 2016**

Year-end MBTARF Net Assets: Market Value
(not including unfunded liability)

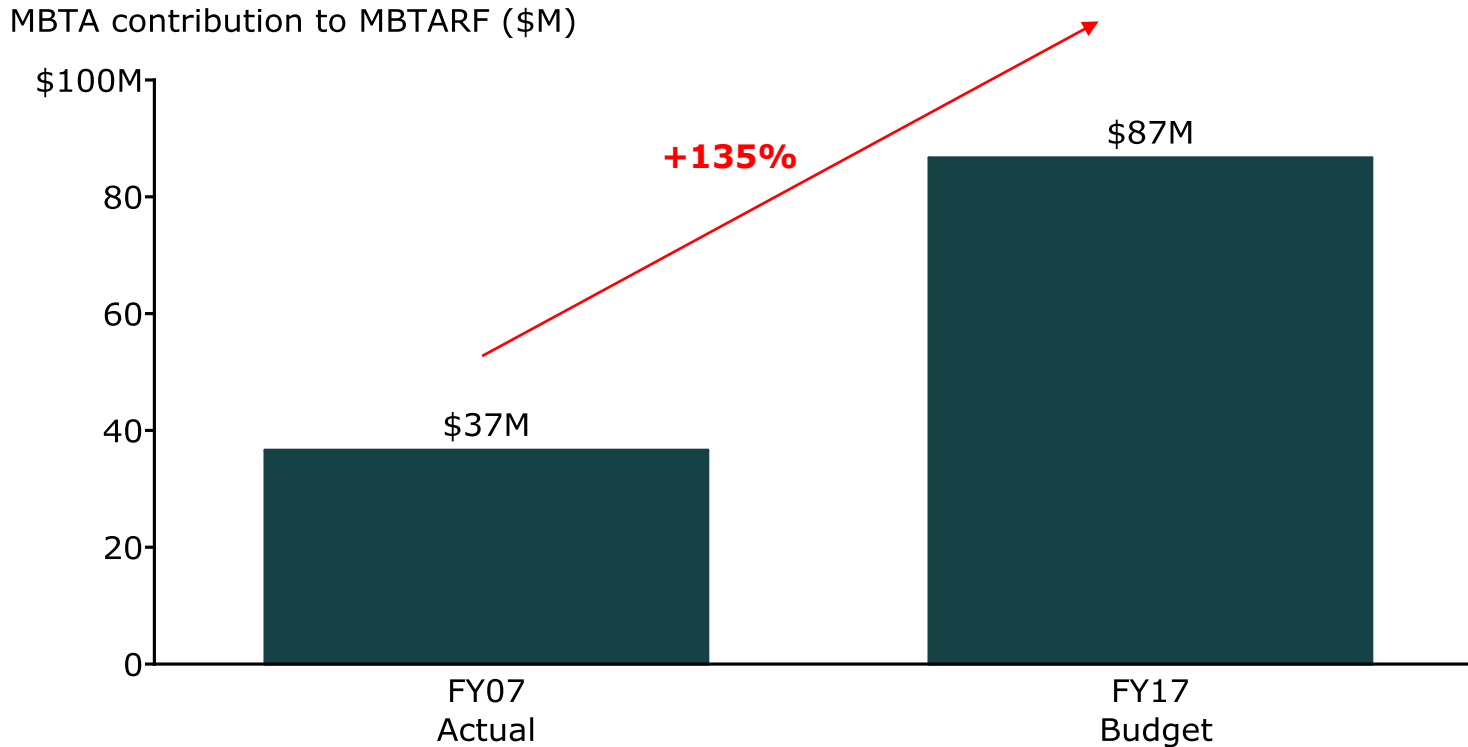


Market Funded %	92%	58%
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*Preliminary estimates as of 5/1/2017
Source: MBTA Pension Fund Data; MBTARF Annual Reports



... while MBTA contributions have grown 135% over the last 10 years



Note: \$7.0M in contributions during FY07 were retroactive 'catch-up' payments for previous years in which not enough had been contributed compared with contractual obligations; these have been removed

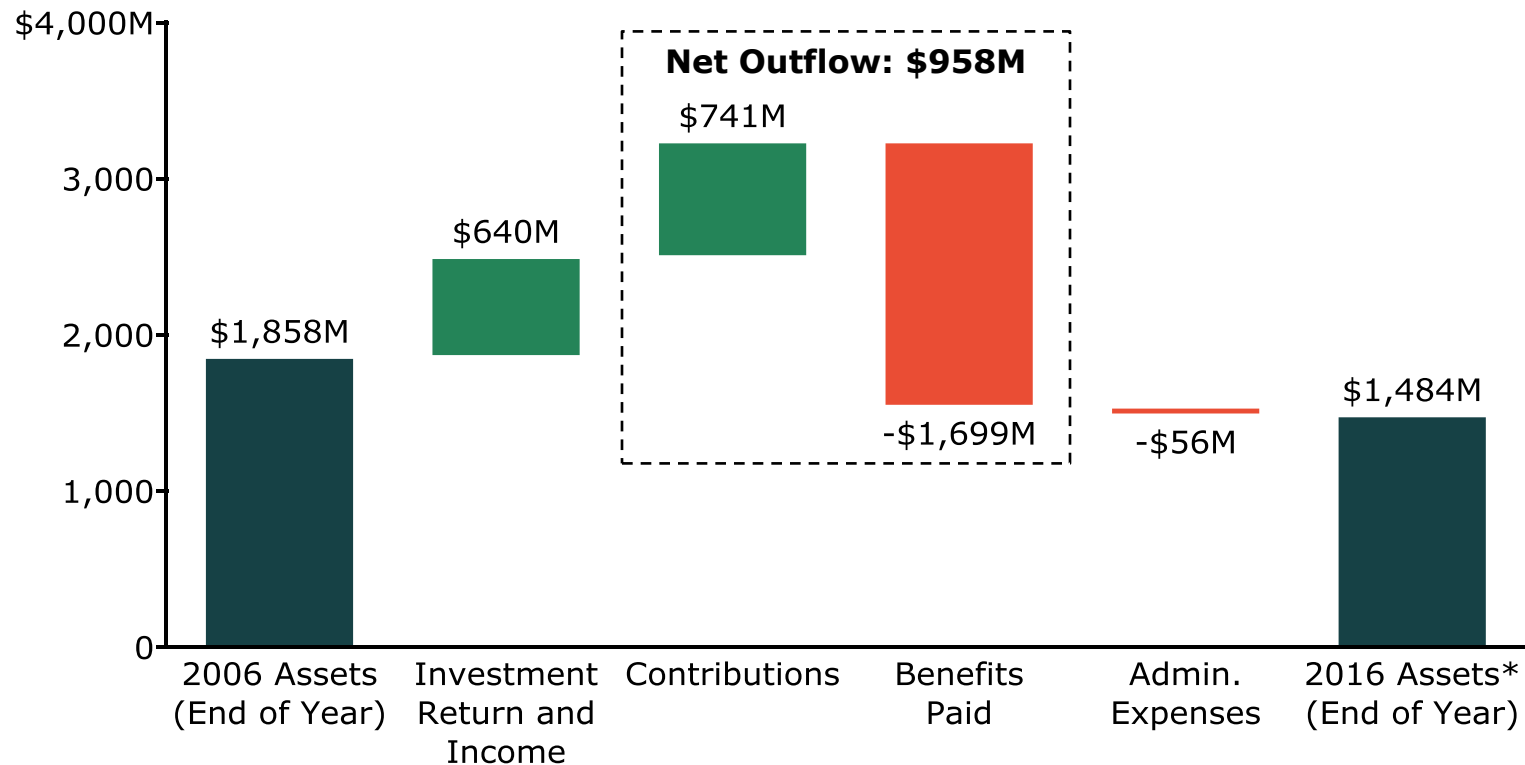
Source: MBTA Financials



Nearly \$1B in net outflows over past decade

PRELIMINARY 2016

Total Additions and Deductions from the MBTARF, 2006-2016



*2016 number preliminary until Actuarial Valuation complete, latest as of 5/1/2017

Note: Administrative Expenses includes Refunds

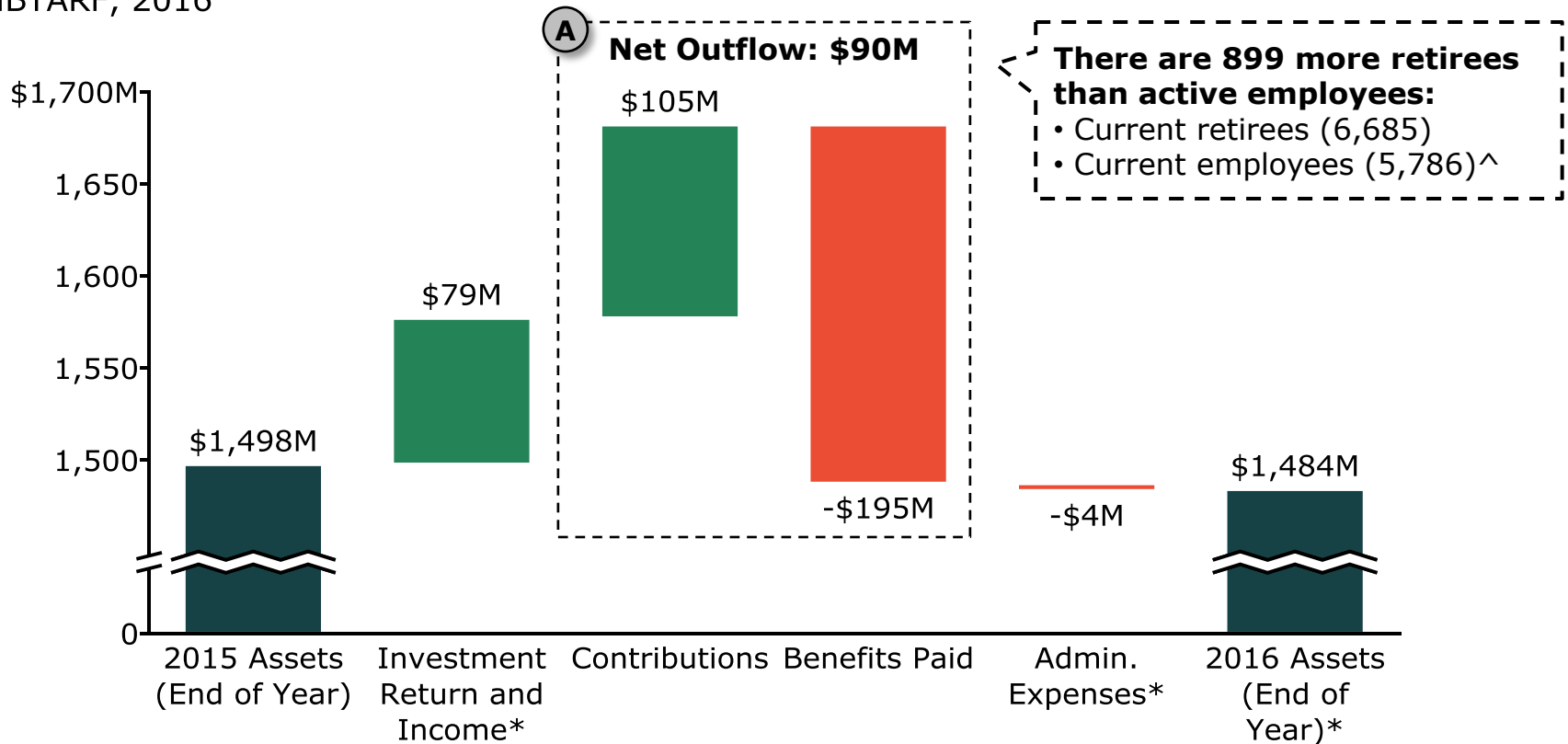
Source: MBTARF Annual Reports



Annual benefit payments now nearly double contributions

PRELIMINARY 2016

Total Additions and Deductions from the MBTARF, 2016



*Preliminary estimates as of 5/1/2017

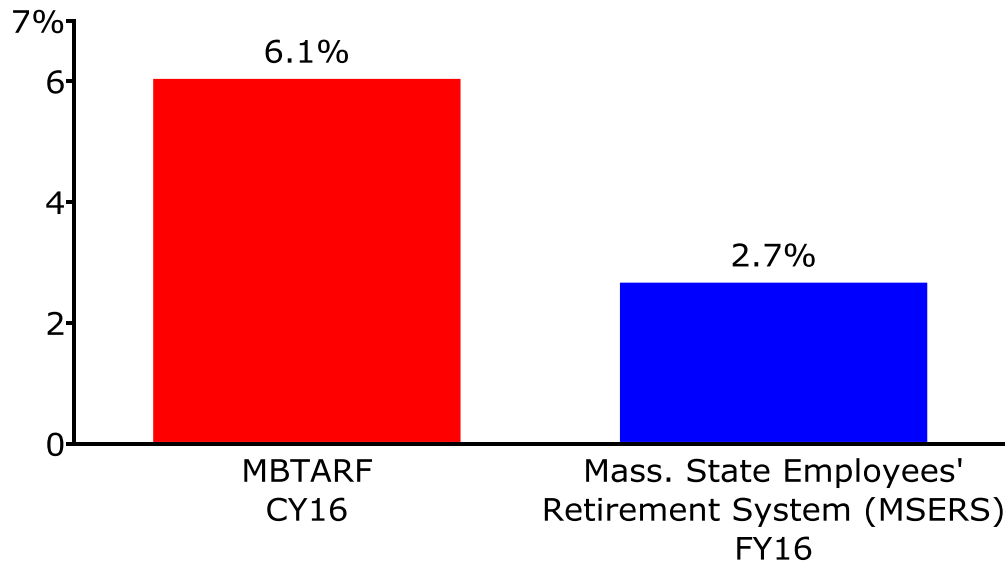
^Current retiree and active employee counts are preliminary, will be confirmed by 12/31/16 valuation when complete

Source: MBTA Pension Fund Data; MBTARF Annual Reports



MBTARF asset balance will decline in any year in which returns fall below 6.1% (net outflow %)

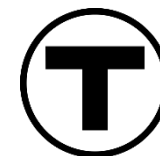
Net outflow as a % of total assets
(not including investment return)



- **MBTARF has net outflow of \$90M on net assets of \$1.5B in CY16** before investment returns
- **MSERS had net outflow of \$642M on assets of \$23.7B in FY16** before investment returns

$$\text{Net Outflow as a \% of net assets} = \frac{\text{Net Outflow}}{\text{Total Fund Assets}}$$

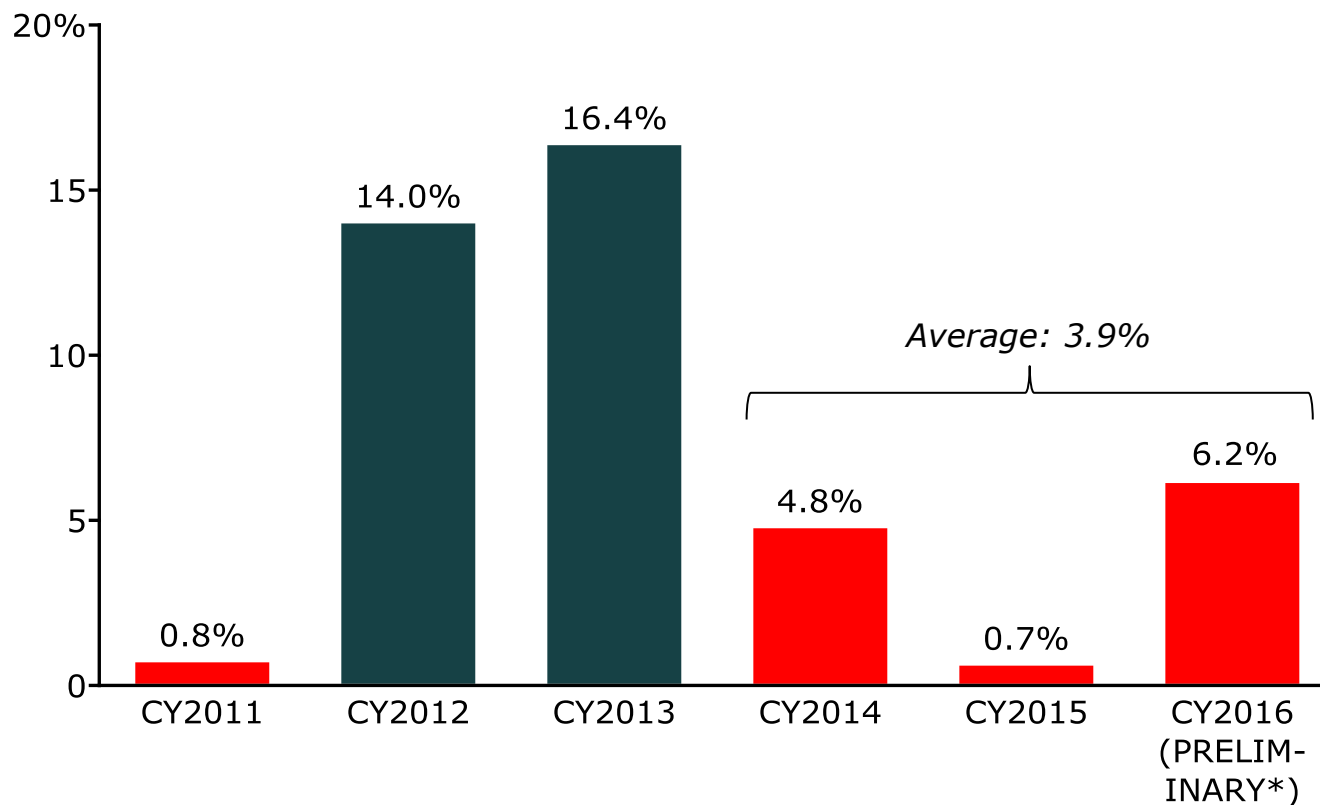
Note: PRIM invests multiple retirement systems' assets
Source: MBTA Pension Fund Data; PRIM Annual Report



Investment returns will not be adequate to rescue the fund

PRELIMINARY 2016

Main Fund Annual Rate of Net Return



*Preliminary estimates as of 5/1/2017

Source: MBTA Pension Fund Data; MBTARF Annual Reports

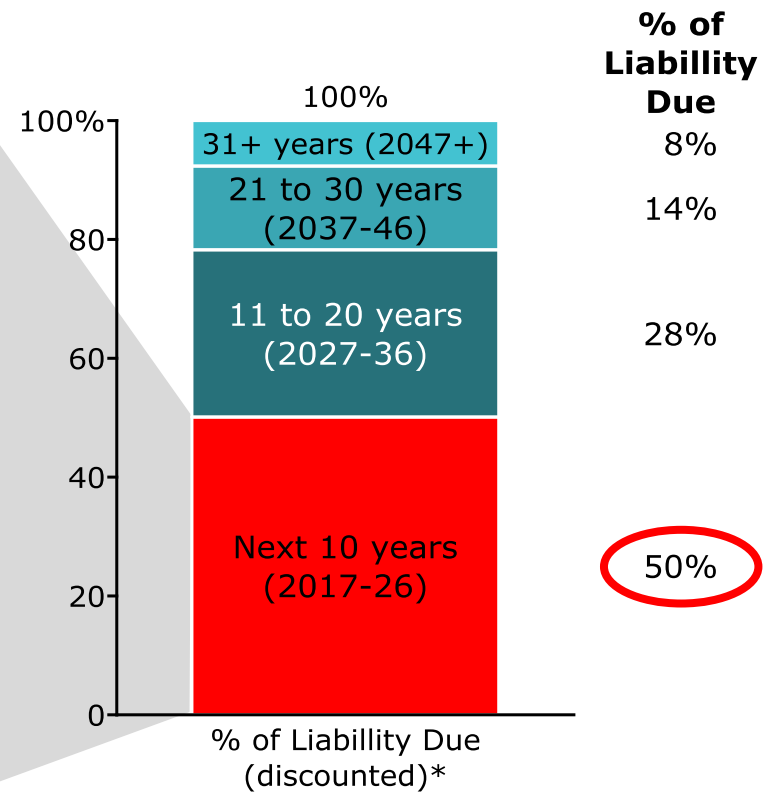
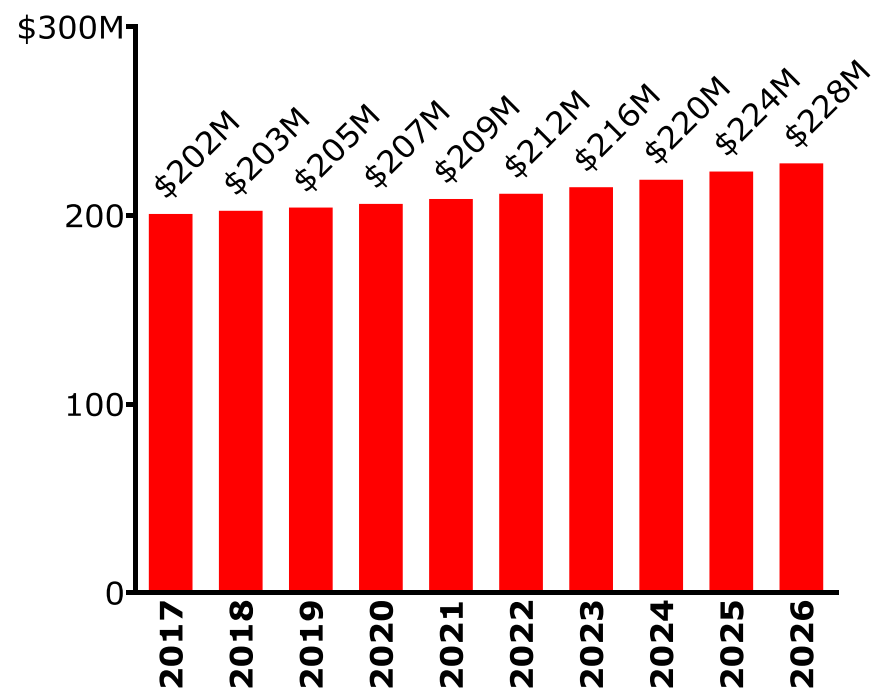


Next 10 years of returns are critical

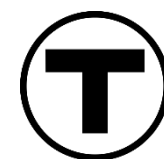
MBTA TO PAY \$2.1B IN BENEFITS TO RETIREES OVER NEXT TEN YEARS

\$2.1B IN BENEFITS OVER NEXT TEN YEARS COMPRISES HALF THE TOTAL ACCRUED LIABILITY OF THE MBTARF

Annual Projected MBTARF Benefits (2017-2026, Undiscounted)



*Based on a 7.75% rate for discounting

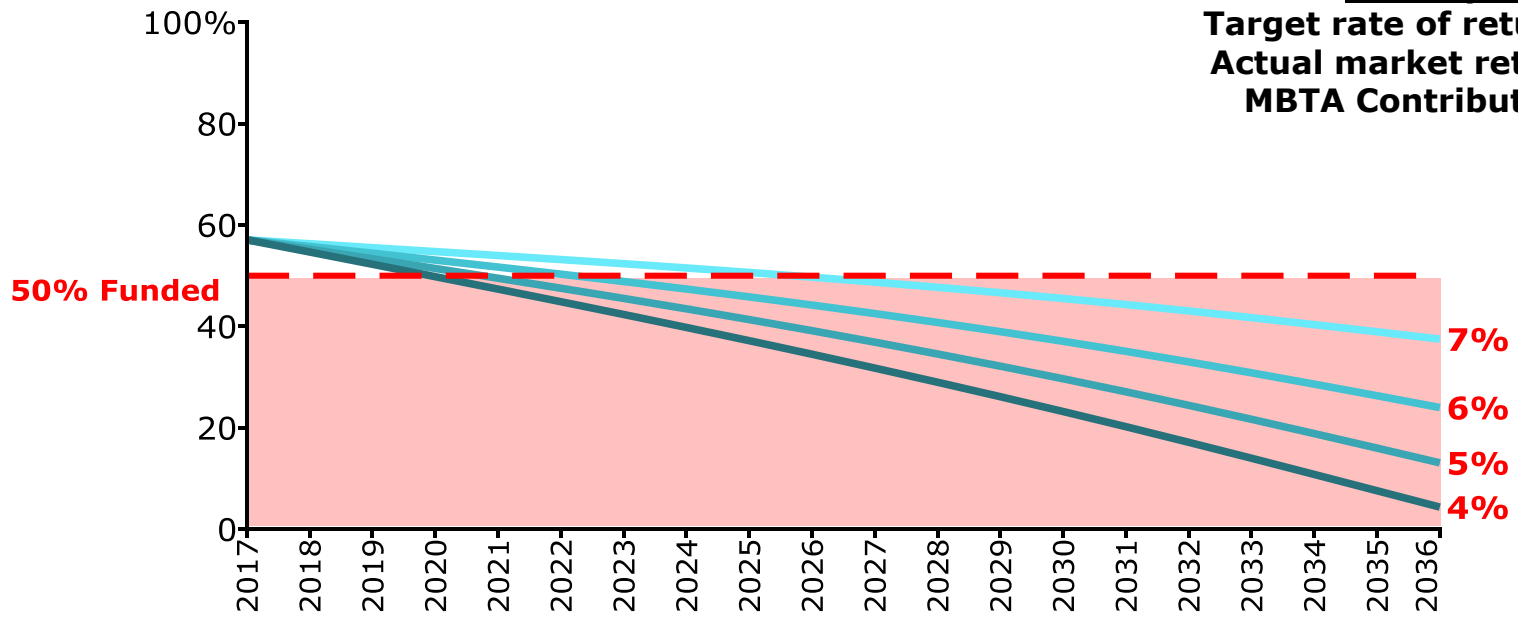


If MBTARF continues to generate only 4%-5% returns, funding level likely to fall below 50% within 5 years

ESTIMATED MBTARF FUNDING PERFORMANCE WITH CONSTANT CURRENT CONTRIBUTION RATE

MBTARF Percentage of Plan Funded

Assumptions:
Target rate of return: 7.75%
Actual market return: 4-7%
MBTA Contribution: 18%

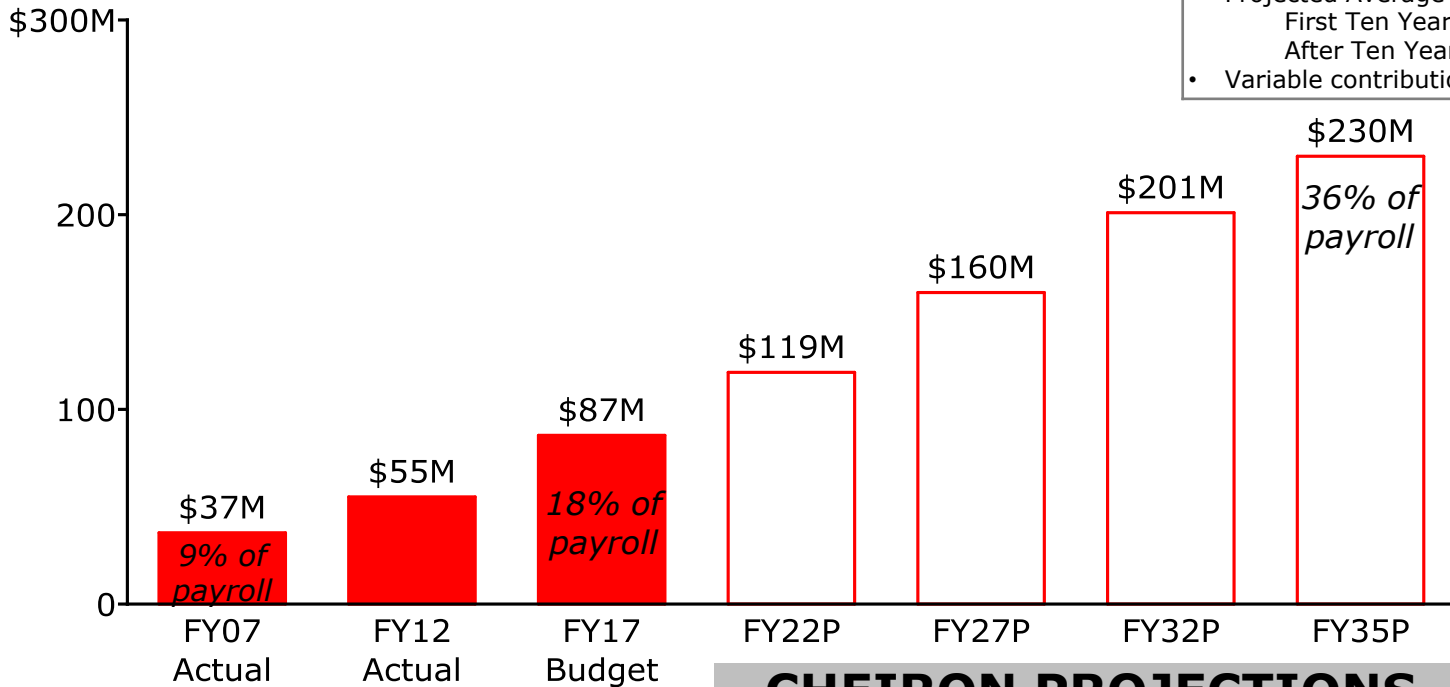


- KEY ASSUMPTIONS:**
- Employer Contribution Rate = 18%
 - Employee Contribution Rate = 6%
 - 2016 Preliminary Return = 6.2
 - Target rate of return (discount rate) = 7.75%
 - Current Plan Provisions
 - Funded ratios shown were based upon market value of assets



Without action, the MBTA annual contribution could grow to \$200M+ and consume 36% of payroll

MBTARF contribution (\$M)



KEY ASSUMPTIONS:

- Target rate of return (discount rate) = 7.75%
- Current Plan Provisions
- Projected Average Annual Rate of Return:
 - First Ten Years: 4%
 - After Ten Years: 7%
- Variable contribution rate

CHEIRON PROJECTIONS

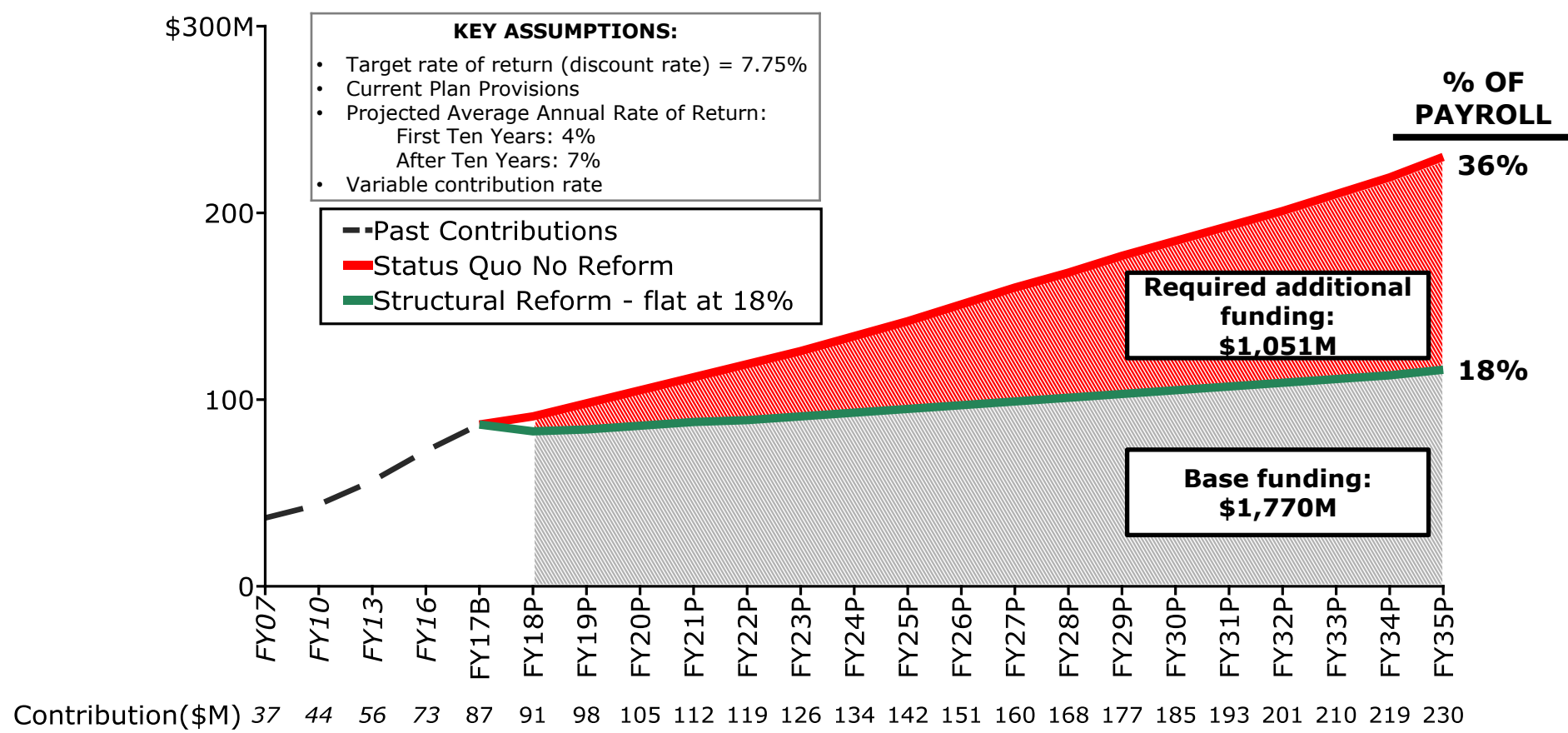
Note: \$7.0M in contributions during FY07 were retroactive 'catch-up' payments for previous years in which not enough had been contributed compared with contractual obligations; these have been removed

Source: MBTA Financials; Cheiron Projections



Without action, MBTARF could require \$3B in taxpayer funding over next 20 years

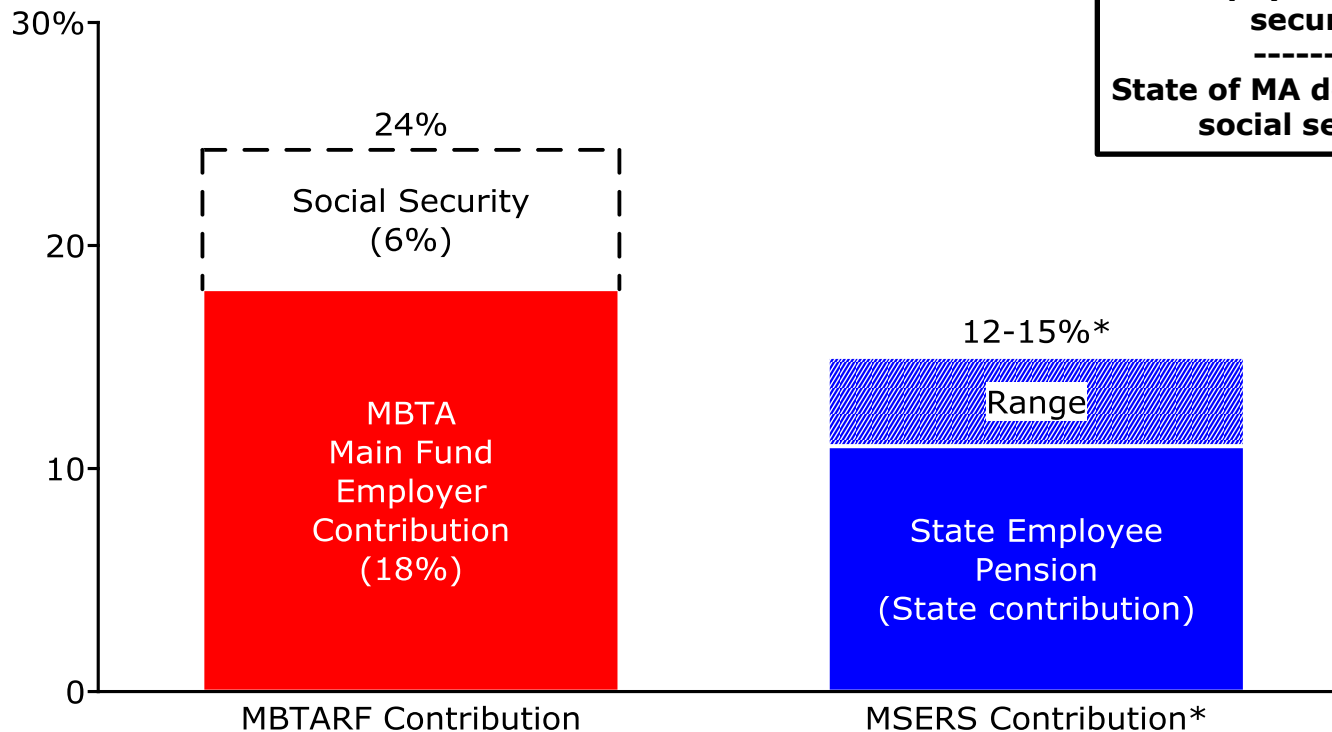
MBTARF Contribution Scenarios





Unlike other state employees and teachers (who don't receive social security), MBTA employees receive both a full pension and social security

FY17 employer contribution to retirement fund



MBTA pays 6.2% social security

State of MA does not pay social security

*High range of state employer contribution calculated for MBTA by ANF, Low side of range from 12/15/16 Boston Globe article 'Report proposes major overhaul of retirement benefits for new MBTA Employees'; Estimated amount based on allocation of total lump sum pension payment by Commonwealth to PRIM for state employees varies based on calculation method



MBTARF plan design provides added incentive to retire young

Years of service x Annual Multiplier = Pension % of Highest Wages

<u>Years of service</u>	<u>Age at retirement</u>	<u>Employer</u>	<u>Annual multiplier*</u>	<u>Pension % of highest wages</u>
25	55	MBTA	2.46%	61.5%
		State	N/A—min age 60	N/A—min age 60
25	60	MBTA	2.46%	61.5%
		State	1.45%	36.3%
25	65	MBTA	2.46%	61.5%
		State	2.20%	55.0%
32	67	MBTA	2.46%	75% ^
		State	2.50%	80%

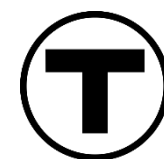


Because MBTA pension multiplier does not grow with age, benefits for early retirees are significantly higher than those for state employees

*Uses age rates for state employees hired after 4/2/2012

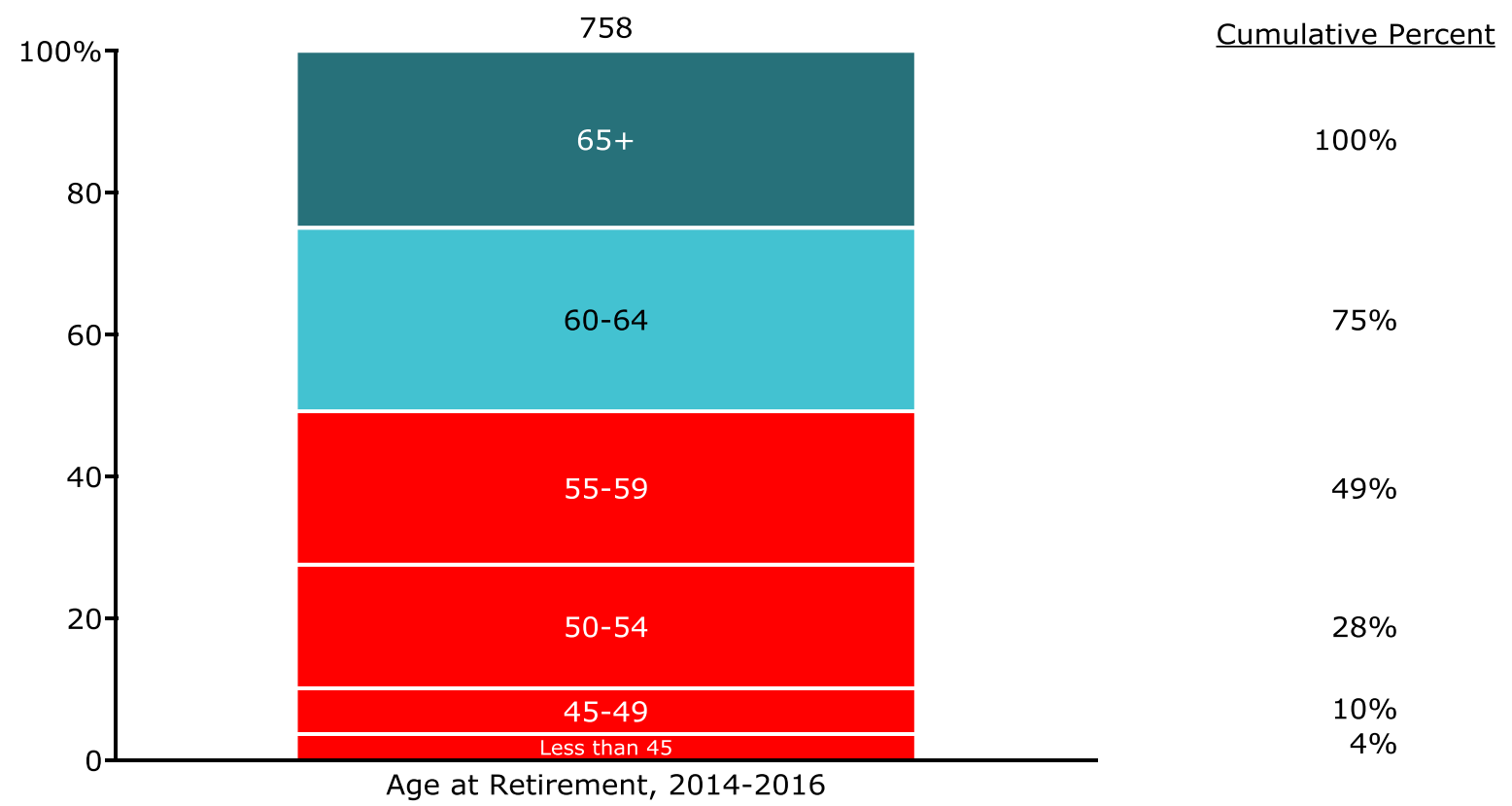
^Calculation produces result >75%, which is adjusted down to maximum benefit

Note: MBTARF benefits do not get automatic COLAs; retirees in State systems do (those covered by Chapter 32)



Unsustainable Plan Design: Half of MBTA employees retire and begin drawing pension benefits in their 50s

Retired MBTA employee count, 2014-2016





MBTA employees earn significantly more in post-retirement pension benefits than state employees and teachers at all ages

EXAMPLE: FINAL AVERAGE EARNINGS \$80,000 | 25 YEARS OF SERVICE

COMPARISON OF MBTA PENSION BENEFIT WITH STATE AND TEACHERS BENEFIT

AGE AT RETIREMENT	TEACHERS AND STATE EMPLOYEES (HIRED SINCE 4/2012)	MBTARF MULTIPLIER (2.46%)	SOCIAL SECURITY	TOTAL RETIREMENT BENEFIT (SS+MBTARF)
60	\$29,000	\$49,200		\$49,200 (\$66,600 at Age 62)
61	\$32,000	\$49,200		\$49,200 (\$66,600 at Age 62)
62	\$35,000	\$49,200	+\$17,400	\$66,600
63	\$38,000	\$49,200	+\$18,600	\$67,800
64	\$41,000	\$49,200	+\$19,800	\$69,000
65	\$44,000	\$49,200	+\$20,700	\$69,900
66	\$47,000	\$49,200	+\$22,300	\$71,500
67	\$50,000	\$49,200	+\$23,800	\$73,000



“Status Quo” is not an option:
Retirees are at risk without pension reform

1. The MBTA Retirement Fund is in crisis and without significant external financing it is on track to run out of money
2. Market returns are not likely to rescue the pension, and one bad investment year would be crippling
3. MBTA cannot afford the financial burden of uncontrolled pension contribution growth
4. The longer that action is deferred, the worse the choices will get for MBTA/State



Next steps

- Seek input from a broad array of stake-holders on ideas for putting the MBTA RF on a sustainable path for current employees and retirees
- Meet with Carmen's Union to begin discussions on their ideas for a path forward – collaboration between the Union and MBTA will be critical to any workable solution
- Vet and report publicly on all ideas and proposals, using a third-party to quantify and validate potential scenarios

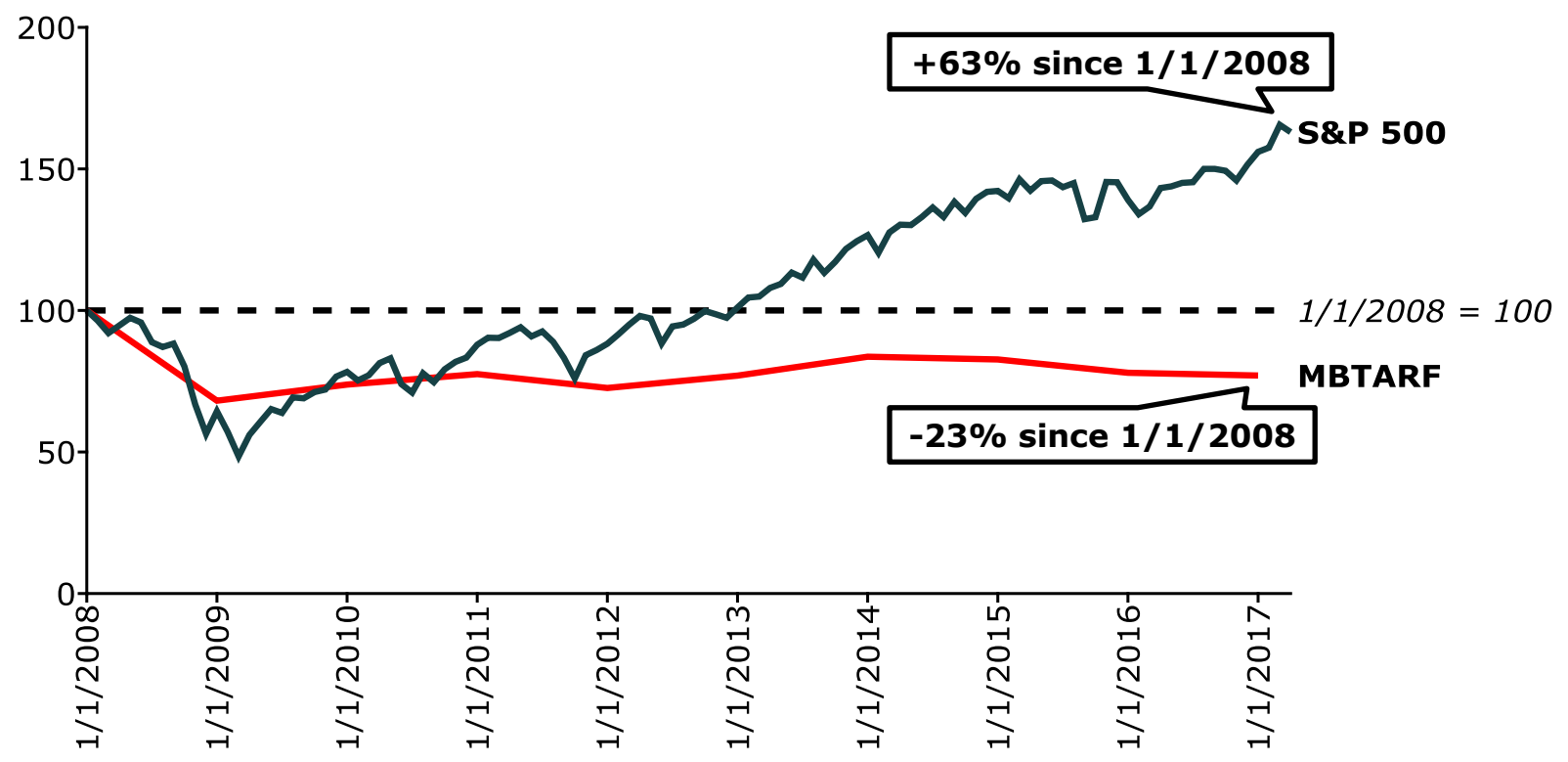


Appendix



While the broader market has recovered from the 2009 downturn, the MBTARF portfolio has failed to keep pace

S&P 500 and MBTARF valuations





MBTARF return expectations: Fund should ensure sustainability with returns of 4% over the next 10 years

CONSERVATIVE EVALUATION OF MBTARF PORTFOLIO ESTIMATES 4% RETURN OVER 10 YEARS

EQUITY	Source	% Alloc	Geometric Return	Volatility	Arithmetic Return
Domestic - Large	RA	18%	2.60%	14.3%	3.62%
Domestic - Small	RA	7%	2.40%	19.0%	4.21%
International	RA	11%	7.30%	16.9%	8.73%
Emerging	RA	2%	8.90%	23.2%	11.59%
Global	BNY	5%	6.40%	16.5%	7.76%
FIXED INCOME					
Core	RA	8%	2.70%	3.8%	2.77%
TIPS	RA	3%	3.00%	6.2%	3.19%
Mortgage	BNY	3%	2.70%	2.5%	2.73%
Multi-sector	BNY	8%	2.57%	10.4%	3.10%
Bank Loans	RA	2%	3.90%	8.1%	4.23%
Real Estate Debt	BR	1%	3.15%	8.8%	3.54%
Cash	BNY	2%	1.50%	0.0%	1.50%
ALTERNATIVES					
Hedge Funds	BNY	10%	4.30%	6.3%	4.50%
Real Estate	BNY	9%	4.00%	5.0%	4.13%
Private Equity	BNY	8%	7.90%	17.8%	9.48%
Risk Parity	Est	3%	5.00%	10.0%	5.50%
Estimated Portfolio		100%	4.46%	11%	5.07%
Uncertainty for Alternatives			-0.30%		
Net Expected Geometric Return			4.16%		

Notes: 100 bps reduction for alternative risk; BNY net of fees, RA gross of fees

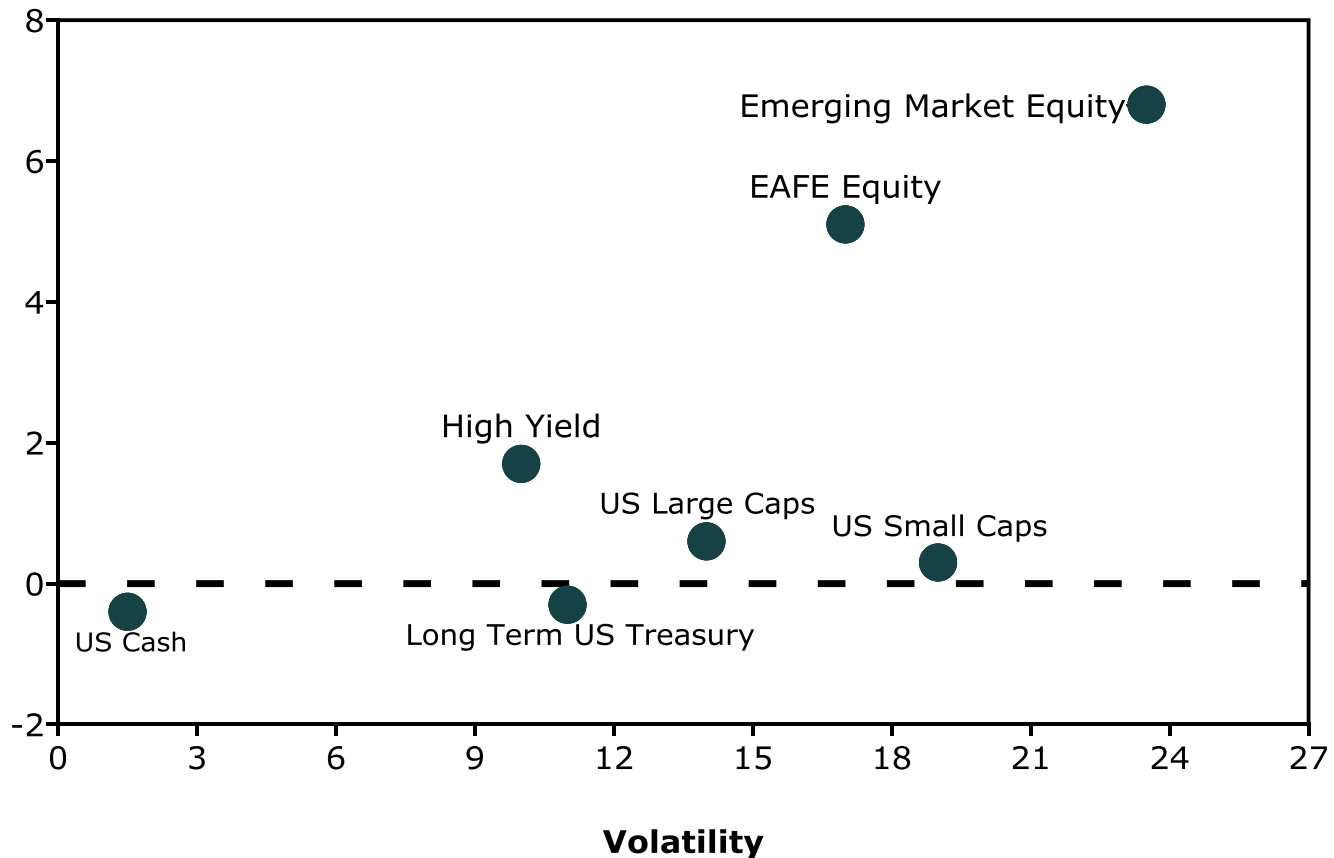
EXPERT RECOMMENDS ASSUMING 4% RETURN FOR NEXT TEN YEARS, BUT ENSURING SUSTAINABILITY AT EVEN LOWER RETURNS

- Due to high benefit liability (50% of total) due over the next ten years, returns over that period are critical for determining future funding levels
- A reasonable annual return expectation for MBTARF over the next 10 years is 4-5%
- Optimistic forecasts results in an expectation of 5.2% over 10 years
- Lower returns are possible and full sustainability would require that the plan survive returns lower than 4% in the next 10 years.
- **Recommended that the baseline evaluation of MBTARF use 4% returns for the next 10 years to stress test the fund under various scenarios and develop a rescue strategy**



Global Investing: 10-year outlook poor for most asset classes

10-Year Real Expected Returns



Source: Barron's—May 15, 2017, "Global Investing: Taking a Long View", projections from Research Affiliates