



North Dakota Teachers' Fund for Retirement

Actuarial Valuation as of July 1, 2016

October 27, 2016

Presented By:

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Discussion Topics – Valuation and Projections



**Segal
Consulting**

- **Overview of Valuation Process**
- **Summary of Valuation Highlights**
- **Valuation Results and Projections**
- **Actuarial Audit and Update on Public Sector Topics**

Purposes of the Actuarial Valuation

- Report the Fund's actuarial assets
- Calculate the Fund's liabilities
- Determine the funding policy Actuarially Determined Contribution (ADC) for fiscal year 2017 and compare to the statutory employer contribution
- Determine the effective amortization period
- Explore the reasons why the current valuation differs from the prior valuation
- Provide information for annual financial statements

The Valuation Process

Input

Member Data
Asset Information
Benefit Provisions
Actuarial Assumptions
Funding Methodology



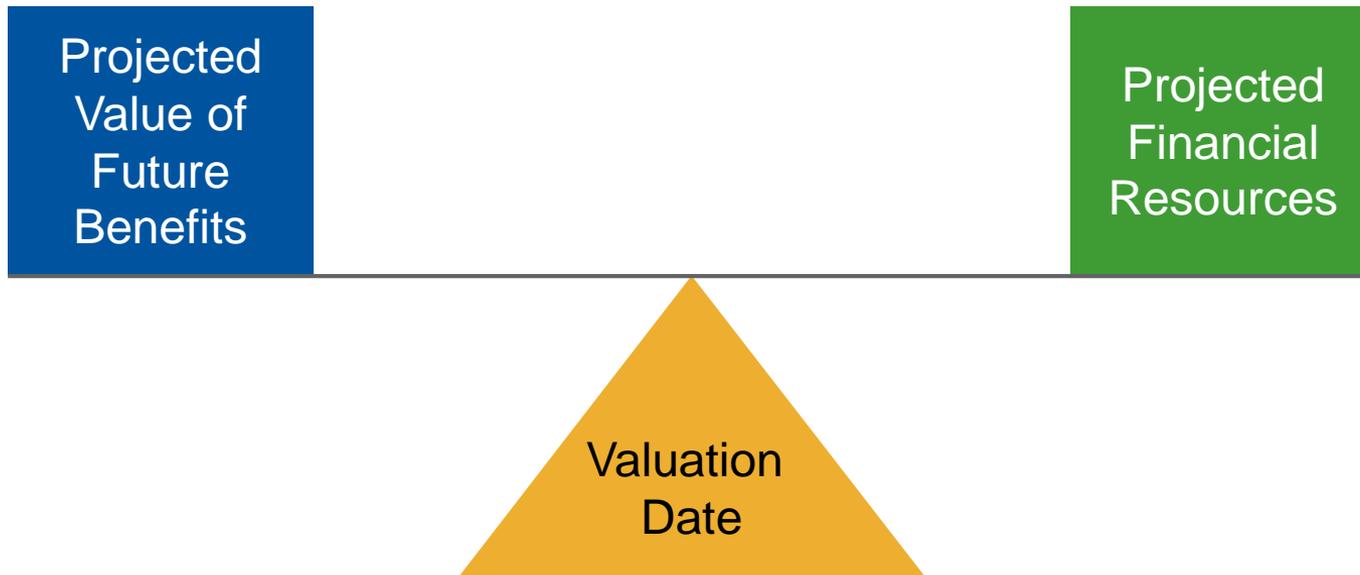
Results

Actuarial Value of Assets
Normal Cost and Actuarial Liability
Unfunded Liability and Funded Ratio
Funding Period
Actuarially Determined Employer
Contribution
Accounting Results

How is an Actuarial Valuation Performed?

- Gather data as of the valuation date
 - Participant data
 - Financial data
- Project a benefit for each member, for each possible benefit
- Utilize actuarial assumptions
 - Economic (investment return, inflation, salary raises)
 - Demographic (death, disability, retirement, turnover)
- Apply assumptions to benefits to determine a total liability and assign liabilities to service
- Apply the funding policy to determine the actuarially determined contribution (ADC)
 - Based on actuarial cost method and asset valuation method

Actuarial Balance



Over the life of a pension system,

$\text{Benefits} + \text{Expenses} = \text{Contributions} + \text{Investment Return}$

$\text{Contributions} = \text{Benefits} + \text{Expenses} - \text{Investment Return}$

Actuarially Determined Contribution vs. Funding Period

Actuarially Determined Contribution (ADC)

- Equal to the normal cost plus amortization of the unfunded actuarial accrued liability (UAAL)
- The funding policy components:
 - Entry age cost method
 - Asset valuation method – five-year smoothing period with a 20% corridor
 - Amortization period – closed 30 year period beginning July 1, 2013, as a level percentage of payroll (27 years as of July 1, 2016)

Funding Period

- Number of years that the UAAL is expected to be amortized based upon the fixed member and employer contribution rates
- Funding period is compared to the ADC's amortization period to assess the progress toward amortizing the unfunded accrued liability

The employer contribution rate is compared to the ADC as a measure of the adequacy of the employer (and member) contribution rates.

Actuarial Assumptions

Two types:

Demographic

- Retirement
- Disability
- Death in active service
- Withdrawal
- Death after retirement

Economic

- Inflation – 2.75%
- Investment return – 7.75%
- Salary increases – 14.50% for new members to 4.25% for members with 25+ years
- Payroll growth – 3.25%

Actuaries make assumptions as to when and why a member will leave active service, and estimate the amount and duration of the pension benefits paid.

Actuarial Methods

Asset Valuation Method (Actuarial Assets)

- Investment gains and losses recognized over a number of years
- TFFR uses a five-year smoothing method
- A 20% market value corridor is applied – actuarial value of assets must fall within 80% to 120% of market value)

Cost Method

- Allocation of liability to past and future service
- TFFR uses the entry age normal cost method
 - Allocates cost of member's retirement benefit over expected career as a level % of salary
 - Most common cost method among public sector retirement systems
 - Required by GASB

Amortization Method

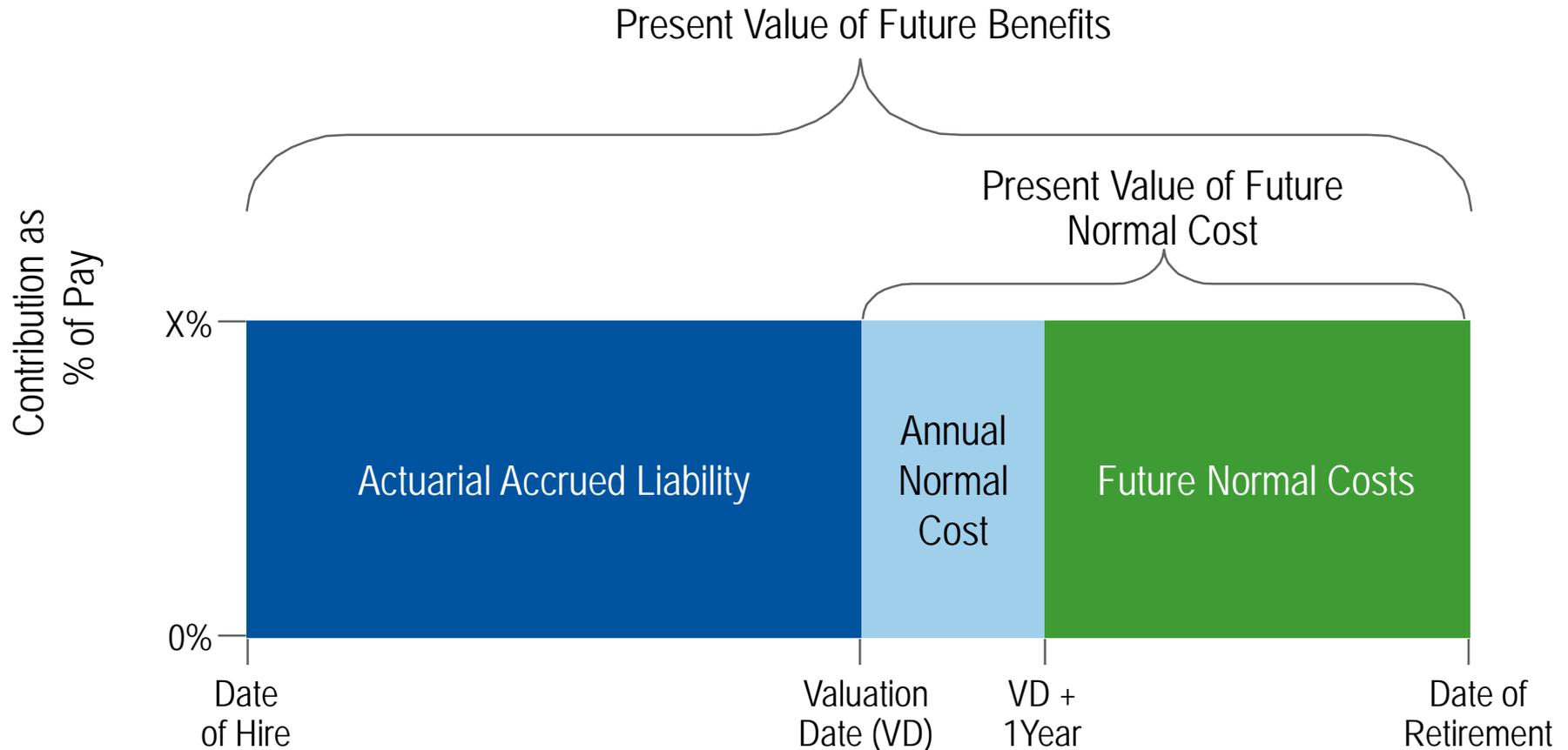
- Relies on two inputs:
 - Number of years to amortize the UAL
 - Level dollar or level percentage of payroll approach
- TFFR's amortization method:
 - 30-year closed period that began July 1, 2013
 - 27 years remaining
 - Level percentage of payroll

Entry Age Normal Cost Method

Allocates Cost Between Past and Future service

- **Normal Cost:** Cost of annual benefit accrual as a level percent of salary
- **Actuarial Accrued Liability:** Represents accumulated value of past normal costs (or difference between total cost and future normal costs)
- **Unfunded Actuarial Accrued Liability:** Actuarial accrued liability minus actuarial value of assets
- **Actuarially Determined Employer Contribution:**
 - Normal cost (net of member contributions) plus
 - Amortization payment of unfunded accrued liability over a 27-year closed period as a percent of payroll
 - 30-year closed period began July 1, 2013

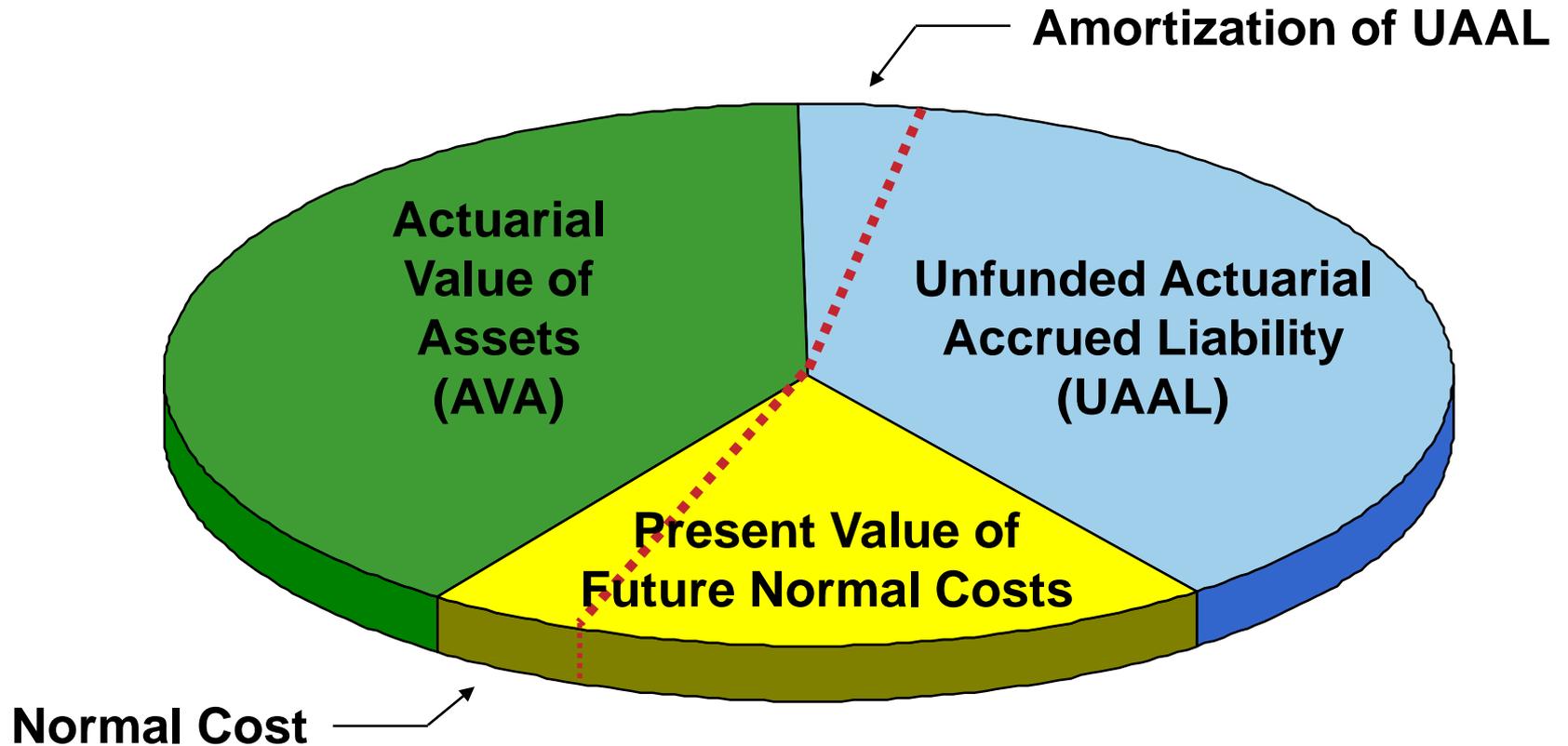
Funding Process



$$\text{Actuarial Accrued Liability} - \text{Assets} = \text{Unfunded Actuarial Accrued Liability}$$

Actuarially Determined Contribution

Present Value of Future Benefits



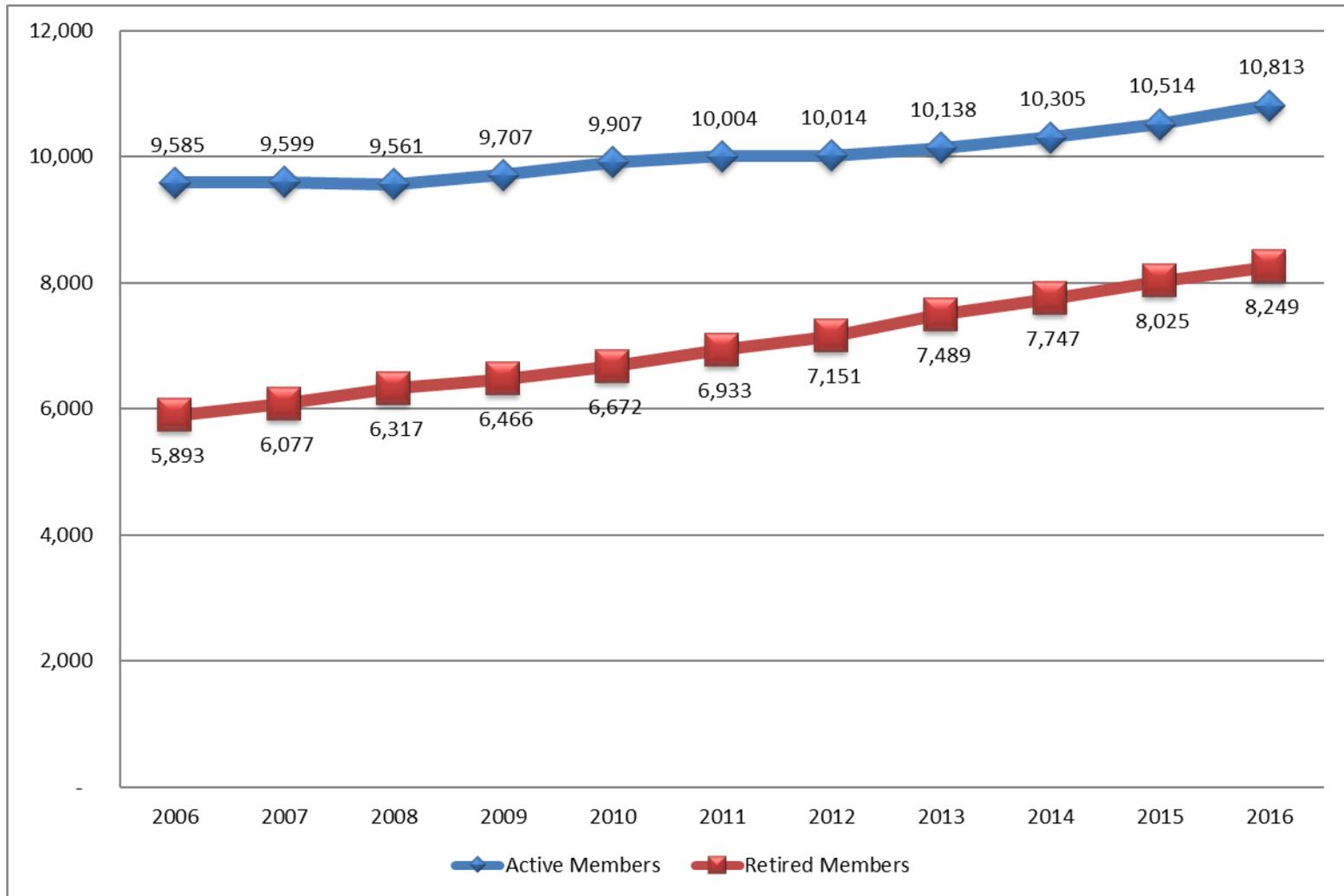
Summary of Valuation Highlights

- Market value of assets returned 0.39% for year ending 6/30/16 (Segal calculation)
 - Gradual recognition of deferred gains resulted in 6.16% return on actuarial value of assets
- Net impact on funded ratio was an increase from 61.6% (as of 7/1/15) to 62.1% (as of 7/1/16)
- Effective amortization period remained unchanged at 29 years
- Net impact on actuarially determined contribution (ADC) was an increase from 13.04 % of payroll (FY15) to 13.22% of payroll (FY16)
 - Based on the employer contribution rate of 12.75% for FY15, the contribution deficiency has increased from 0.29% of payroll to 0.47% of payroll
- GASB Net Pension Liability increased from \$1.31 billion as of 6/30/15, to \$1.47 billion as of 6/30/16

Membership

	2016	2015	Change
Active			
• Number	10,813	10,514	+2.8%
• Payroll (annualized)	\$627.0 mil	\$589.8 mil	+6.3%
• Average Age	42.3 years	42.5 years	- 0.2 years
• Average Service	12.1 years	12.4 years	- 0.3 years
Retirees and Beneficiaries			
• Number	8,249	8,025	+2.8%
• Total Annual Benefits	\$187.2 mil	\$177.4 mil	+5.5%
• Average Monthly Benefit	\$1,891	\$1,842	+2.7%

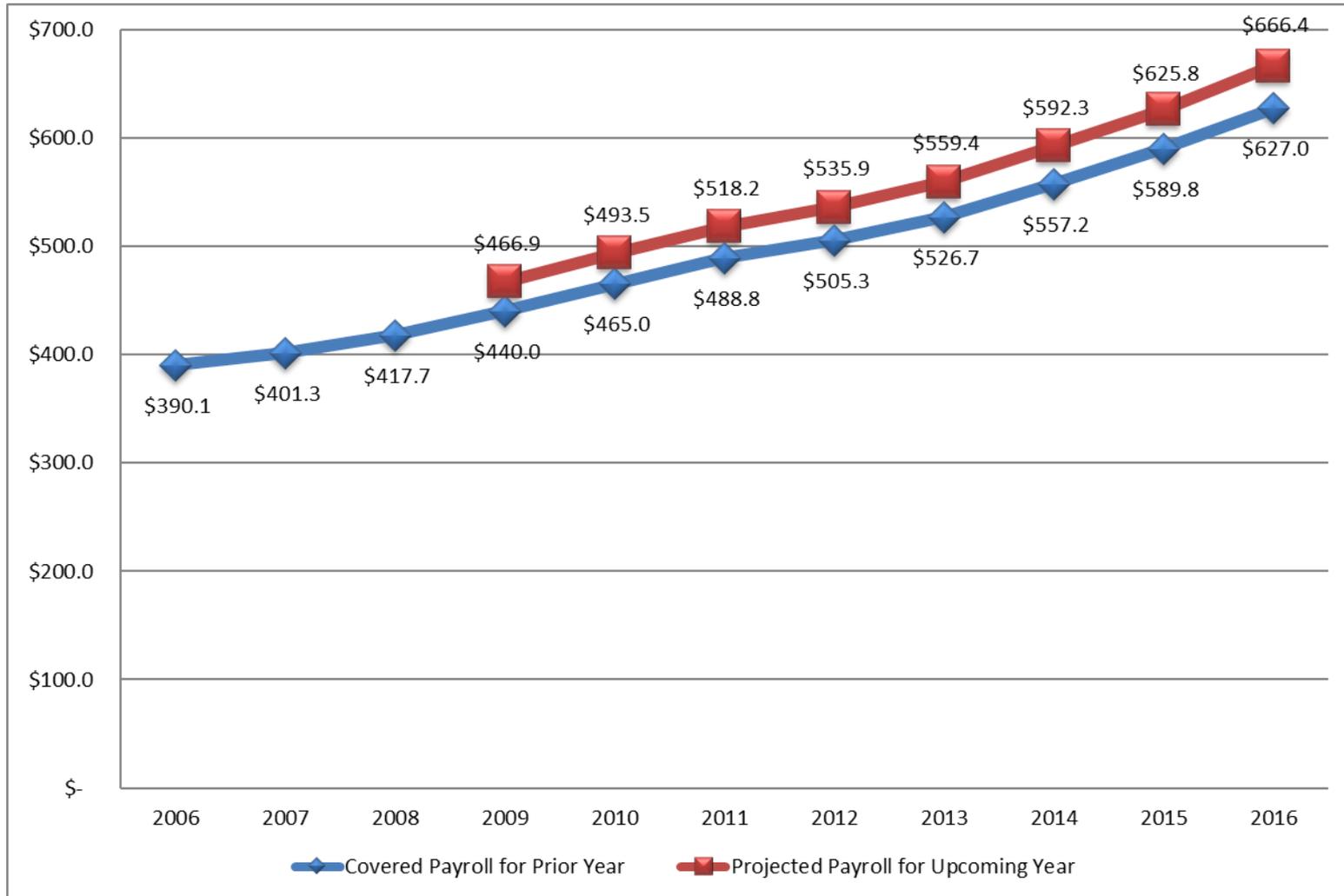
Active and Retired Membership



Since 2006, number of retirees and beneficiaries has increased 3.4% per year on average.

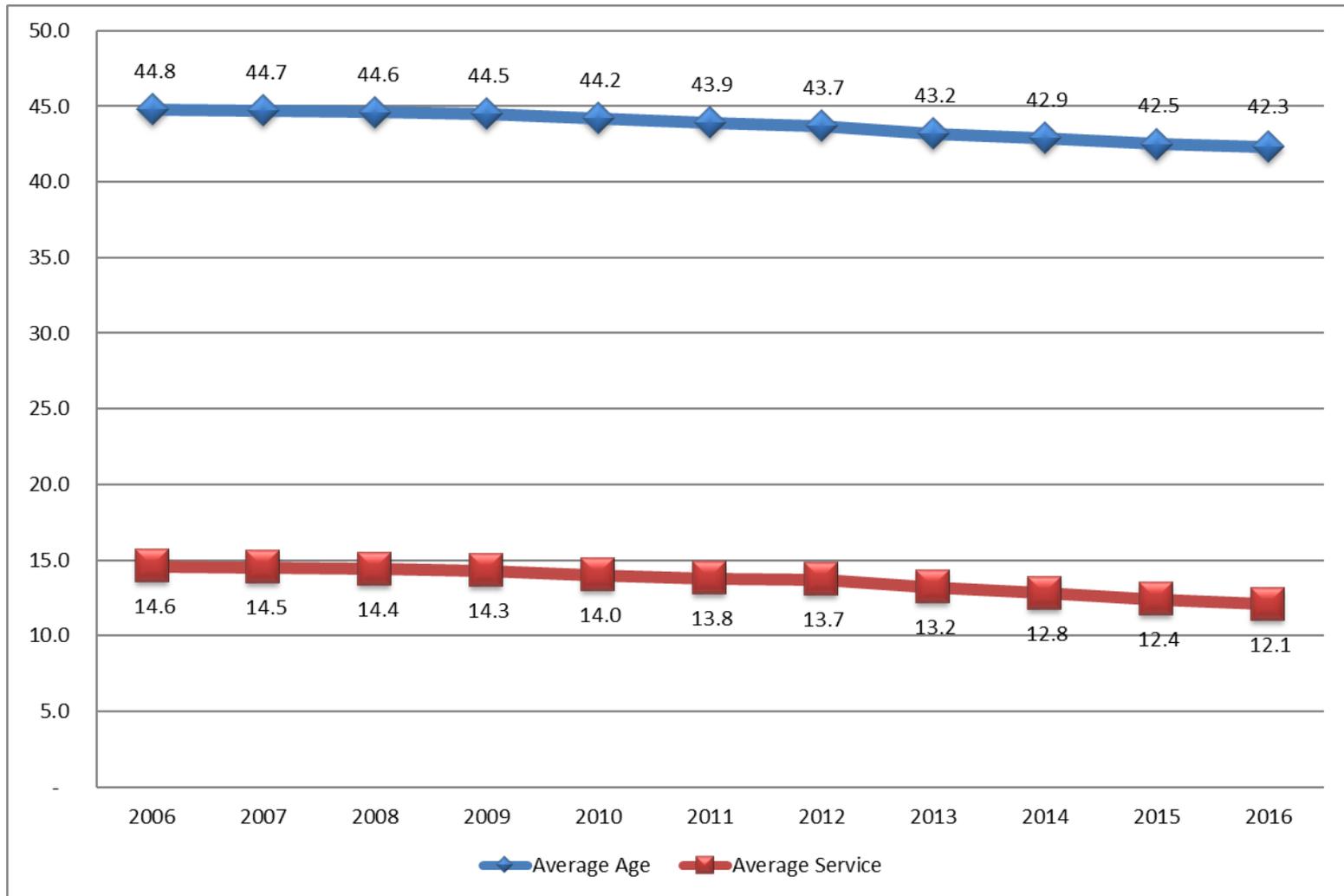
Active Payroll

\$ Millions

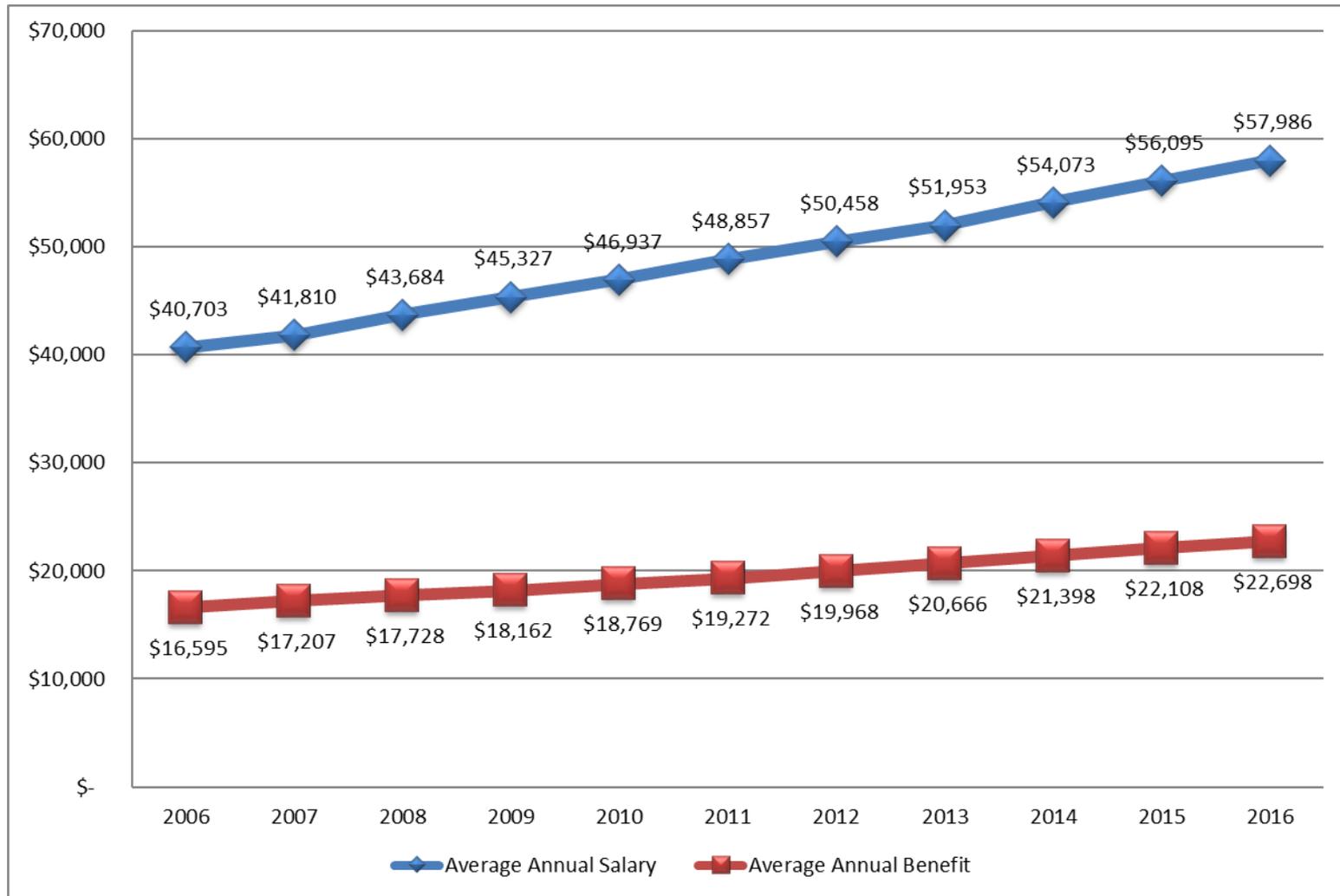


Since 2006, active payroll has increased, on average, 4.9% per year.

Average Age and Service of Active Members



Average Salary and Average Benefit



Since 2006, average salary has increased, on average, 3.6% per year. Average annual benefit has increased by 3.2% per year.

Assets

- The market value of assets decreased from \$2.14 billion (as of 6/30/15) to \$2.12 billion (as of 6/30/16)
 - Segal determined the investment return was 0.39%, net of investment expenses
- The actuarial value of assets increased from \$2.13 billion (as of 6/30/15) to \$2.23 billion (as of 6/30/16)
 - Investment return of 6.16%, net of investment expenses
 - Actuarial value is 104.9% of market
 - There is a total of \$105 million of deferred net investment losses that will be recognized in future years
- The average annual return on market assets
 - 10-year average is 4.5%
 - 20-year average is 6.4%
- The average annual return on actuarial assets
 - 10-year average is 5.8%
 - 20-year average is 6.7%

Market Value of Assets (\$ in millions)

Fiscal Year Ending June 30, 2016	
Beginning of Year	\$2,142
Contributions:	
• Employer	83
• Member	76
• Service Purchases	3
• Total	162
Benefits and Refunds	(186)
Investment Income (net)	6
End of Year	\$2,124
Rate of Return	0.39%

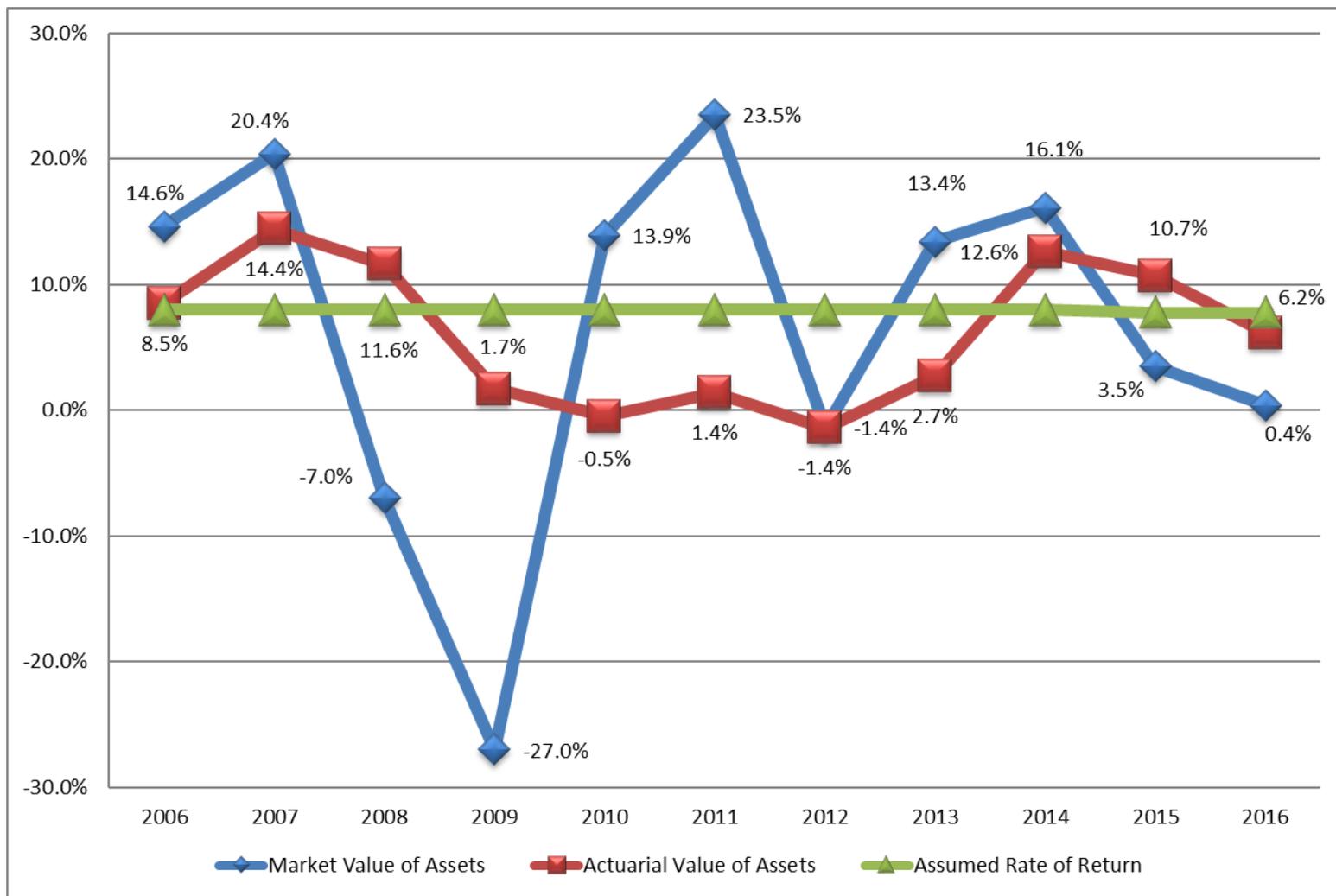
Actuarial Value of Assets (\$ in millions)

1. Market Value of Assets as of June 30, 2015	\$2,142
2. Cash Flow Items for FYE June 30, 2016	(26)
3. Expected Return	<u>165</u>
4. Expected Market Value of Assets (1) + (2) + (3)	\$2,281
5. Actual Market Value of Assets on June 30, 2016	2,124
6. Excess/(Shortfall) for FYE June 30, 2016 (5) – (4)	(157)
Excess/(Shortfall) Returns:	

Year	Initial Amount	Deferral %	Unrecognized Amount
2016	(\$157)	80%	(\$125)
2015	(93)	60%	(56)
2014	147	40%	59
2013	87	20%	17
2012	(159)	0%	<u>0</u>
7. Total			(\$105)

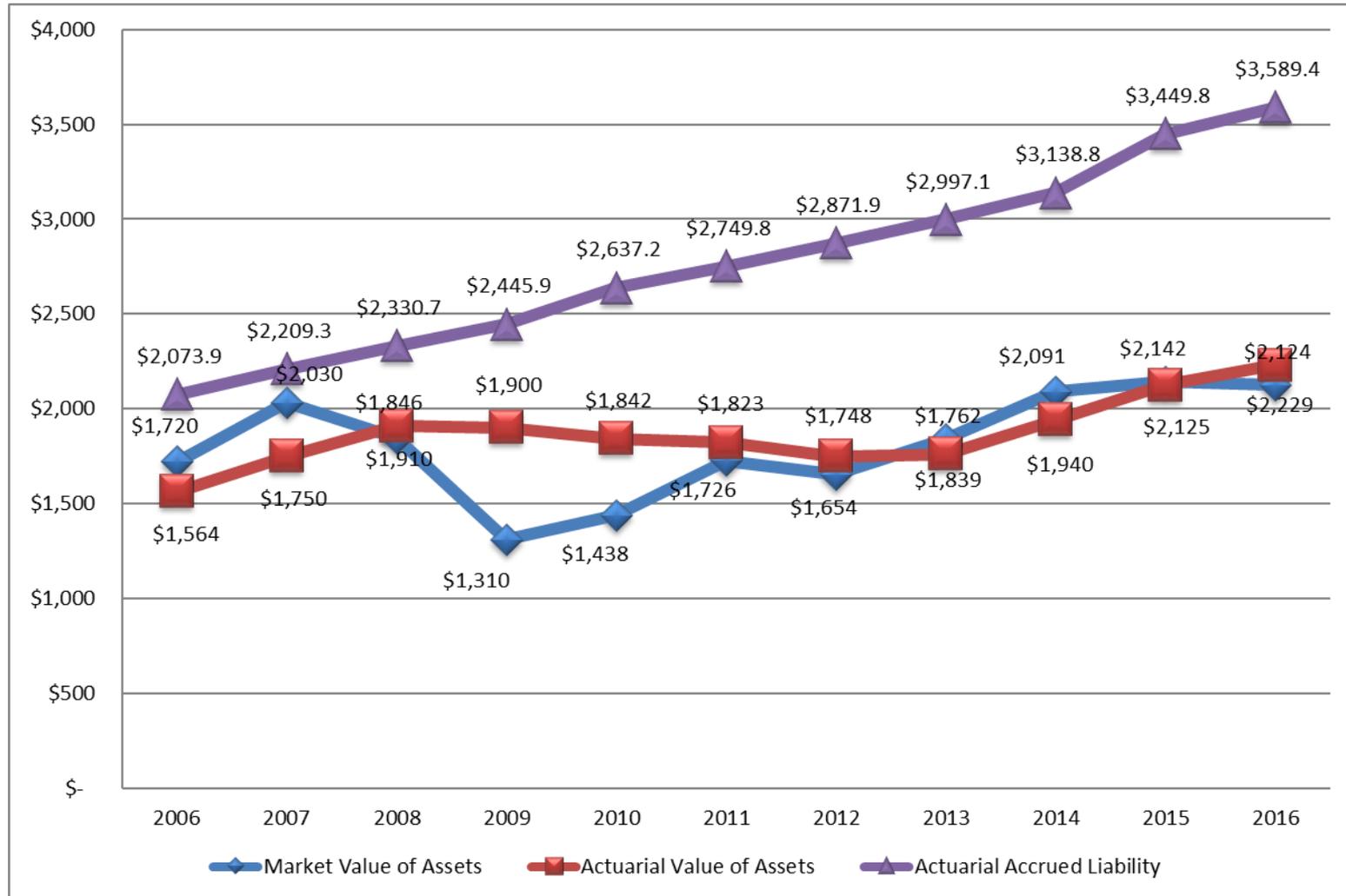
8. Actuarial Value of Assets as of June 30, 2016 (5) - (7)	\$2,229
9. Actuarial Value of Assets as a % of Market Value of Assets	104.9%

Asset Returns



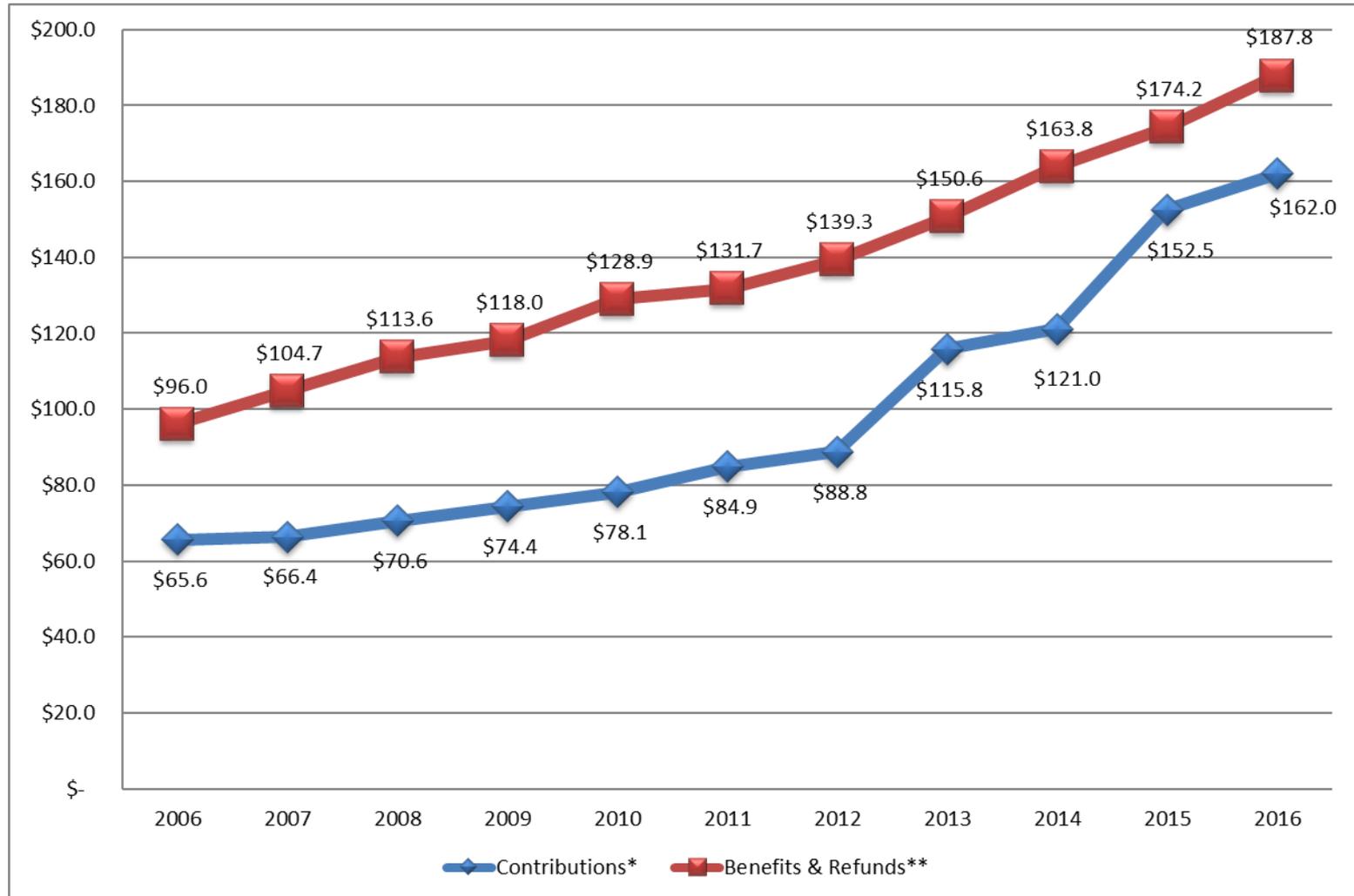
Market and Actuarial Values of Assets Compared to Actuarial Accrued Liability

\$ Millions



Contributions vs. Benefits and Refunds

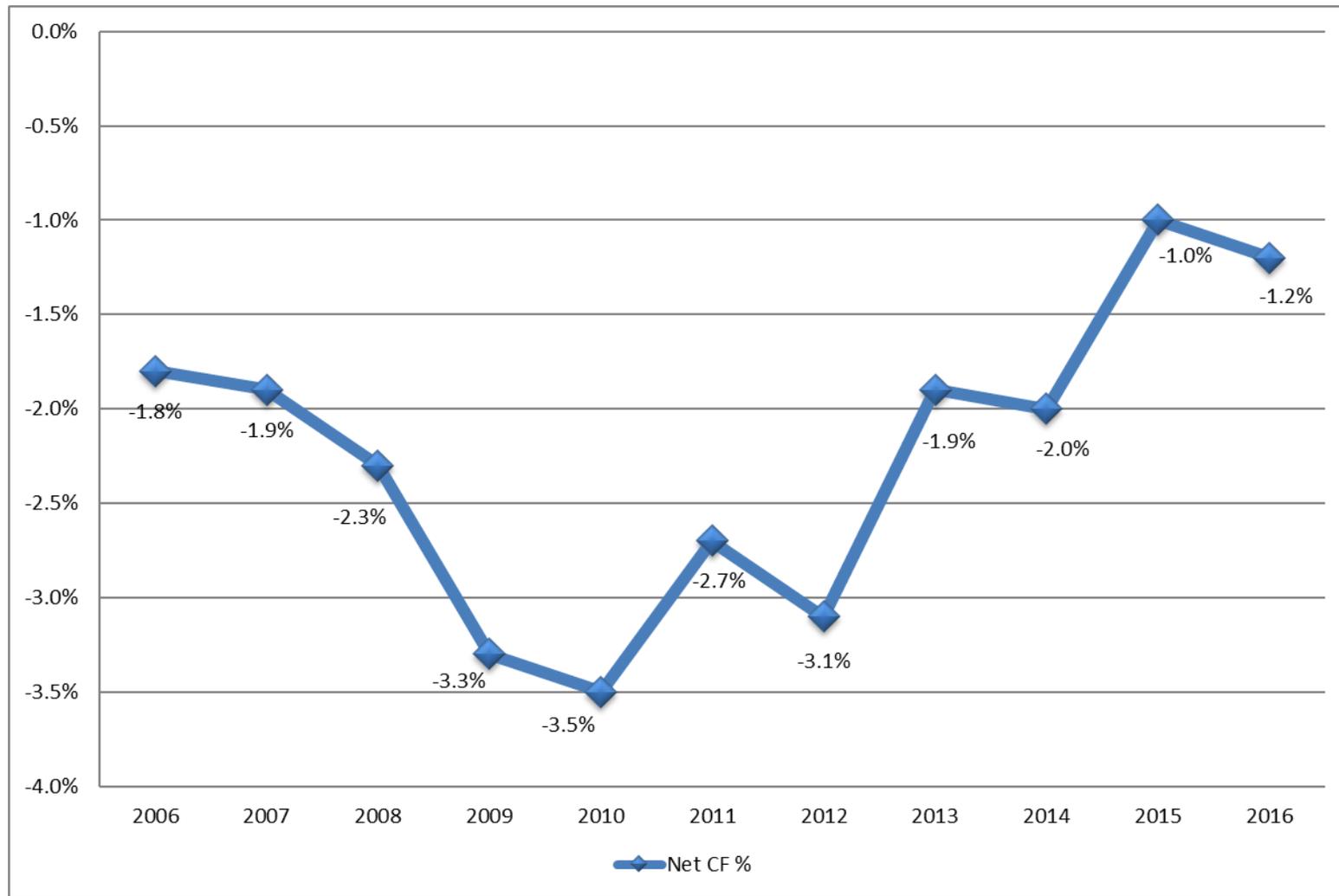
\$ Millions



* Includes member and employer contributions, and service purchases

** Includes administrative expenses

Net Cash Flow as a % of Market Value



Valuation Results (\$ in millions)

	July 1, 2016	July 1, 2015
Actuarial Accrued Liability:		
• Active Members	\$1,523	\$1,490
• Inactive Members	90	85
• Retirees and Beneficiaries	<u>1,976</u>	<u>1,875</u>
Total	\$3,589	\$3,450
Actuarial Assets	<u>2,229</u>	<u>2,125</u>
Unfunded Accrued Liability	\$1,360	\$1,325
Funded Ratio	62.1%	61.6%

Actuarially Determined Contribution

	For the Year Beginning	
	July 1, 2016	July 1, 2015
Normal Cost Rate	12.04%	11.63%
Member Rate	<u>11.75%</u>	<u>11.75%</u>
Employer Normal Cost Rate	0.29%	-0.12%
Amortization of UAAL	<u>12.93%</u>	<u>13.16%</u>
Actuarially Determined Contribution	13.22%	13.04%
Employer Rate	12.75%	12.75%
Contribution Sufficiency/(Deficiency)	(0.47%)	(0.29%)

Net Pension Liability (\$ in millions)

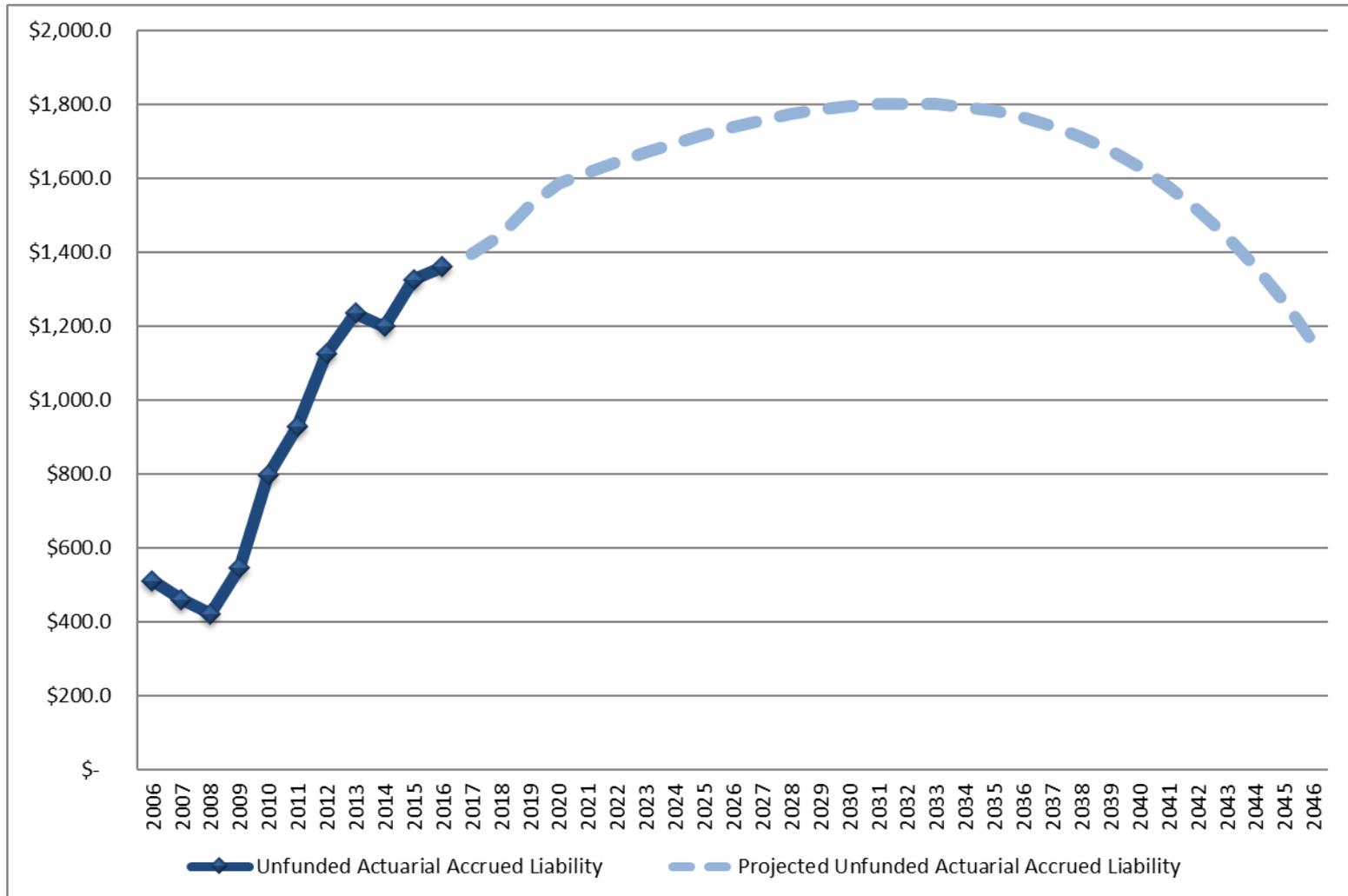
Collective TFFR	June 30, 2016	June 30, 2015
Total Pension Liability at 7.75%	\$3,589	\$3,450
Fiduciary Net Plan Position (i.e., MVA)	2,124	2,142
Net Pension Liability (NPL)	1,465	1,308
Sensitivity to changes in discount rate		
<ul style="list-style-type: none"> • 1% decrease (6.75%) 	\$1,900	\$1,728
<ul style="list-style-type: none"> • Current discount rate (7.75%) 	1,465	1,308
<ul style="list-style-type: none"> • 1% increase (8.75%) 	1,103	957

Valuation Results – Comments

- The actuarial accrued liability increased from \$3.45 billion (as of 6/30/15) to \$3.59 billion (as of 6/30/16)
- The unfunded actuarial accrued liability (UAAL) increased from \$1.32 billion to \$1.36 billion
- The funded ratio on an AVA basis increased from 61.6% to 62.1%
 - On a market value basis, the funded ratio decreased from 62.1% to 59.2%
- The actuarially determined contribution (ADC) increased from 13.04% of payroll to 13.22% of payroll
 - This increase was primarily due actual investment experience less than expected
 - Results in a contribution deficiency of 0.47% when compared to 12.75% employer contribution
 - The effective amortization period is 29 years

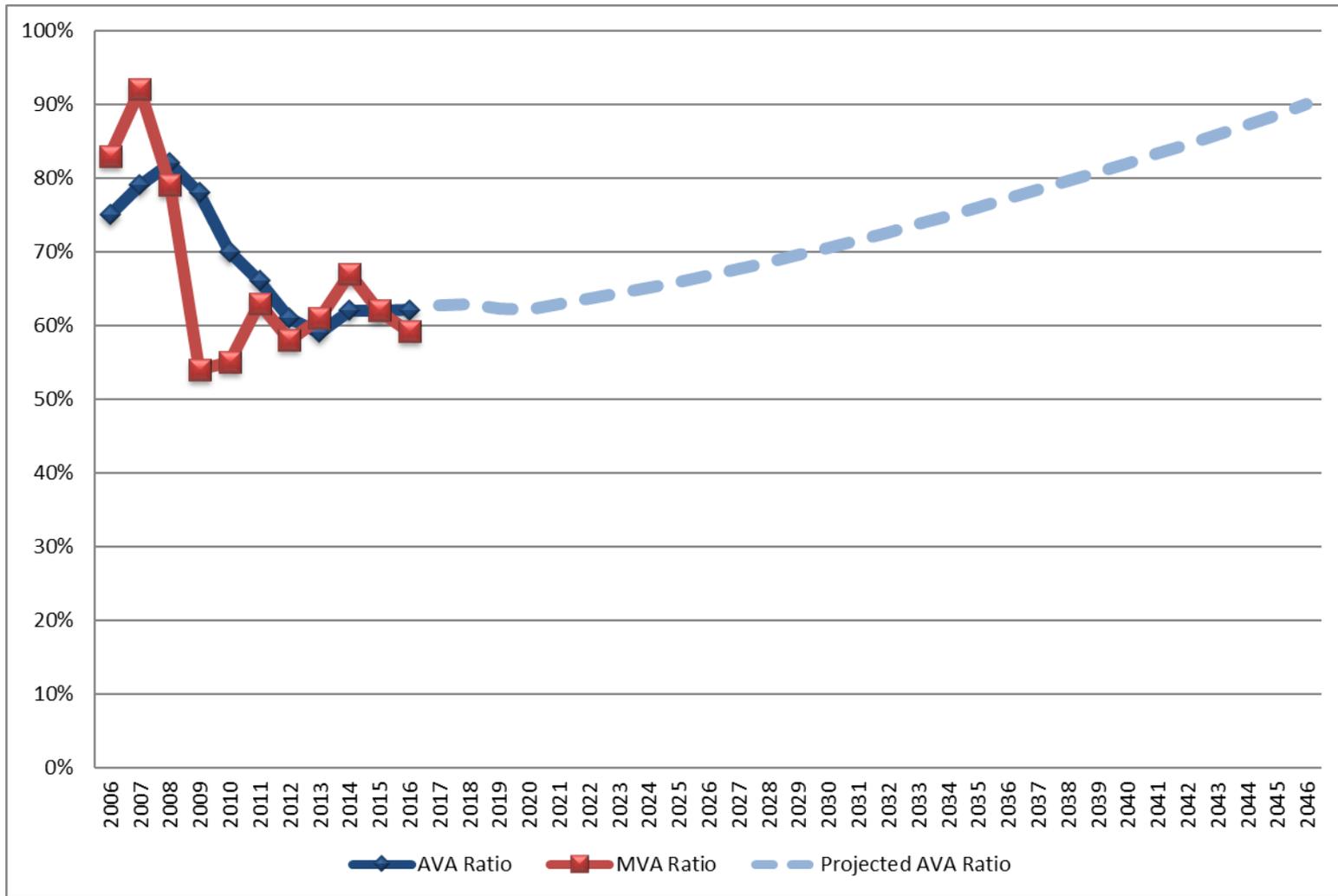
Unfunded Actuarial Accrued Liability

\$ Millions



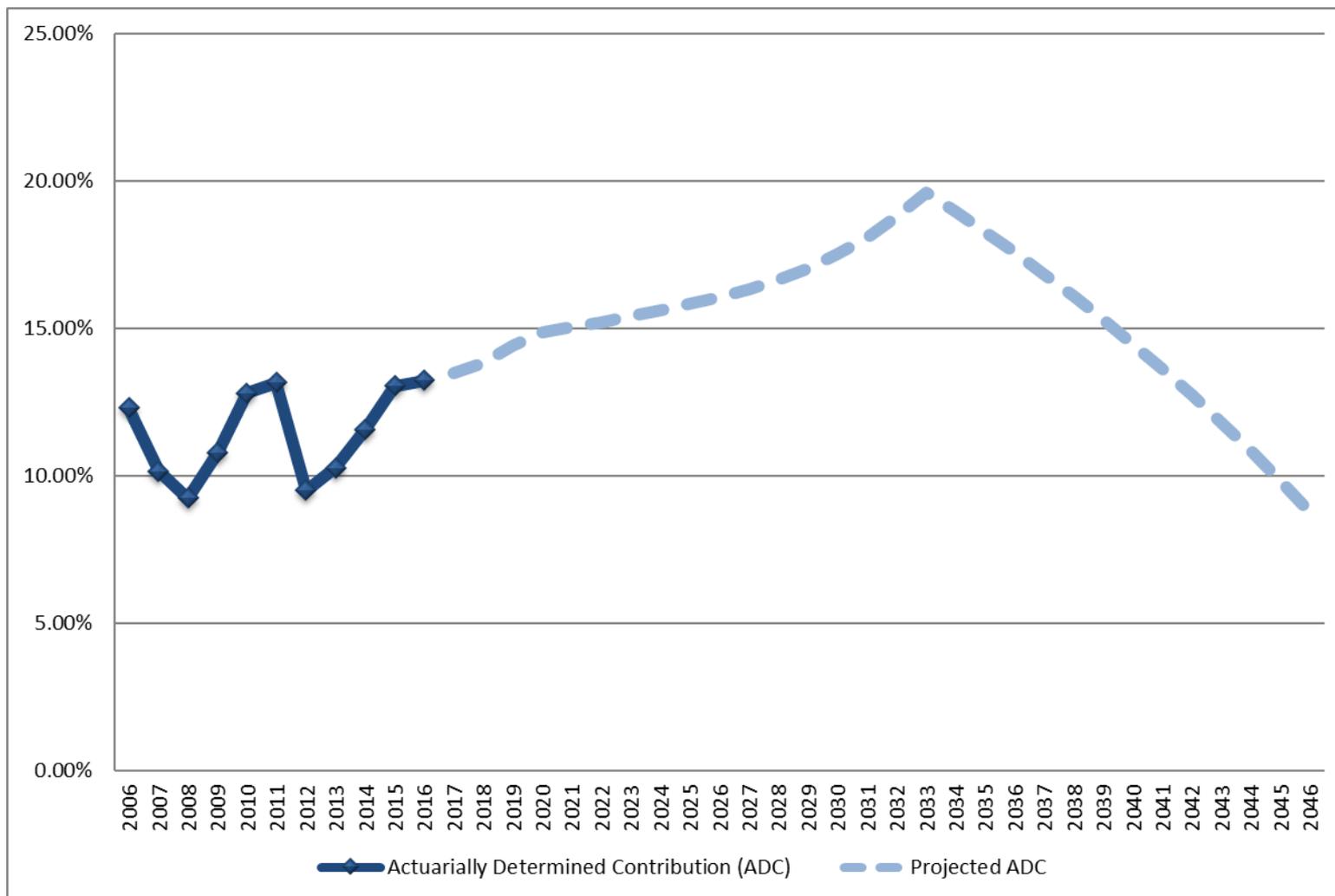
Projection based on all assumptions, including 7.75% investment return, realized as expected

Funded Ratios



Projection based on all assumptions, including 7.75% investment return, realized as expected

Actuarially Determined Contribution (ADC)



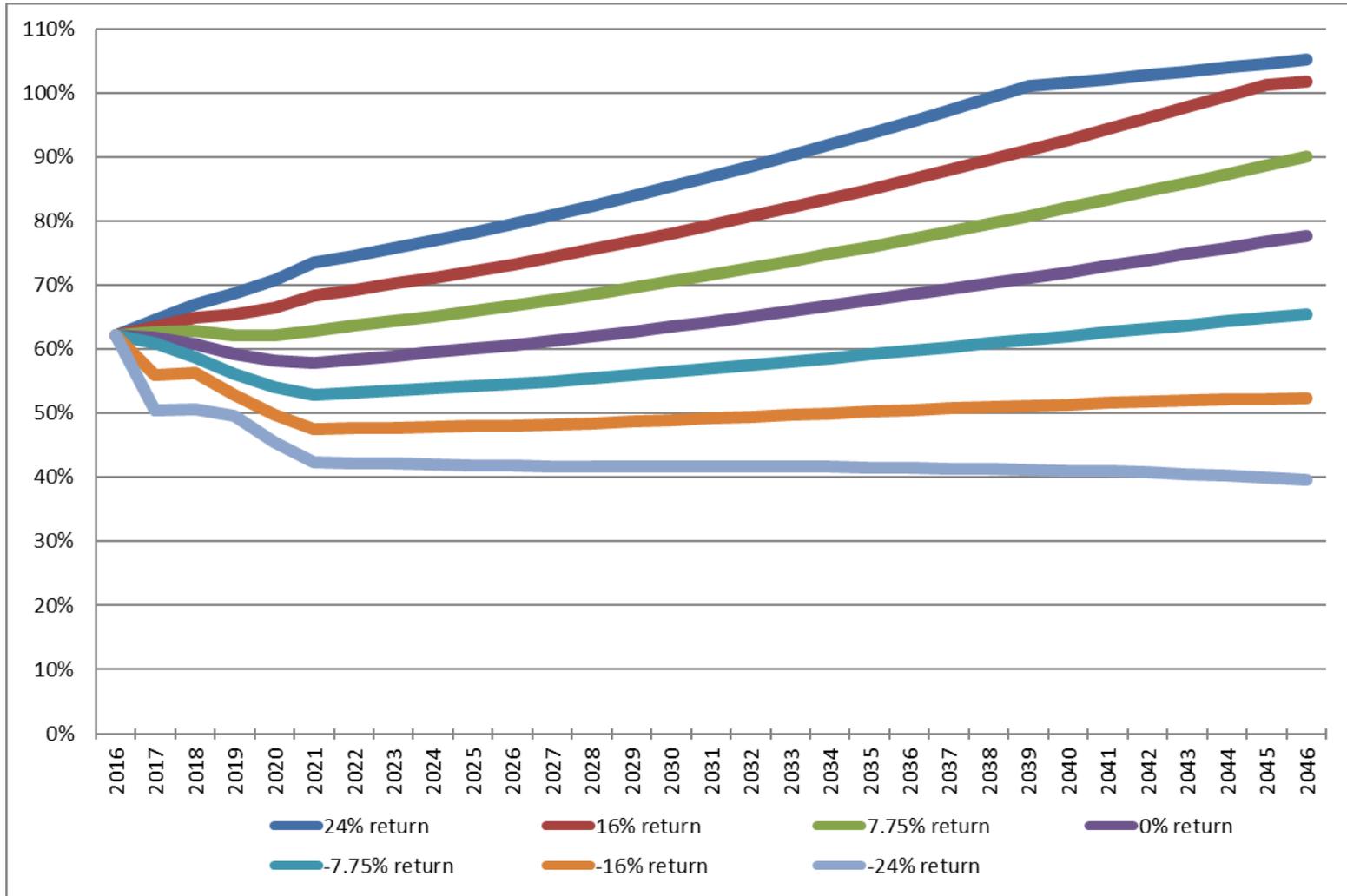
- Prior to 2005, the ADC calculation was based on a 20-year open amortization period.
- From 2005 - 2012, the calculation of the ADC was based on a 30-year open level percentage of payroll amortization.
- Beginning in 2013, the period is 30-year closed. In 2033, when the remaining period reaches 10 years, it is assumed to operate as 10-year open
- * 2012 and 2013 reflect the actuarial present value of contribution increases effective July 1, 2014.

Projection based on all assumptions, including 7.75% investment return, realized as expected

Sensitivity Projections

- Projections of estimated funded ratios for 30 years
 - Based on FY16 investment return scenarios ranging from -24% to +24%
 - Assumes Fund earns 7.75% per year in FY17 and each year thereafter
 - Additional projections assuming Fund earns 6.75% or 8.75% per year every year
 - Administrative expenses increase by 2.75% each year
 - All other experience is assumed to emerge as expected
- Includes contribution rates from HB 1134
 - Member rate is 11.75% for FY16 and thereafter
 - Employer rate is 12.75% for FY16 and thereafter
 - Increases “sunset” back to 7.75% once the funded ratio reaches 100% (based on actuarial assets)

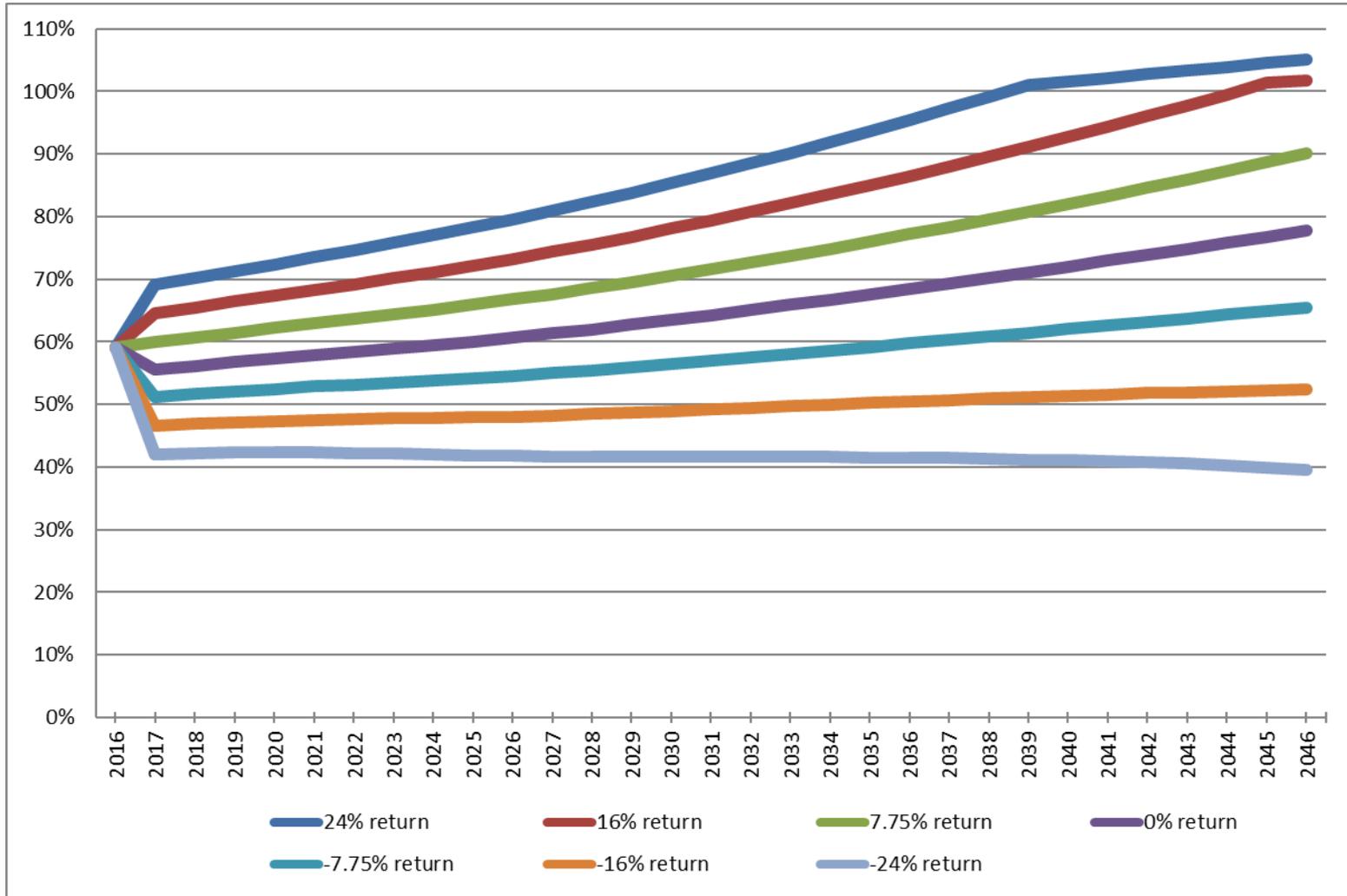
Projected Funded Ratios (AVA Basis)



Projected Funded Ratios (AVA Basis)

Valuation Year	24% for FY2017	16% for FY2017	7.75% for FY2017	0% for FY2017	-7.75% for FY2017	-16% for FY2017	-24% for FY2017
2016	62%	62%	62%	62%	62%	62%	62%
2017	64%	64%	63%	62%	61%	56%	51%
2018	67%	65%	63%	61%	59%	56%	51%
2019	69%	66%	62%	59%	56%	53%	50%
2020	71%	67%	62%	58%	54%	50%	46%
2021	73%	68%	63%	58%	53%	47%	42%
2026	80%	73%	67%	61%	55%	48%	42%
2031	87%	79%	72%	64%	57%	49%	42%
2036	95%	86%	77%	68%	60%	50%	41%
2041	102%	94%	83%	73%	63%	52%	41%
2046	105%	102%	90%	78%	65%	52%	40%

Projected Funded Ratios (MVA Basis)



Projected Funded Ratios (MVA Basis)

Valuation Year	24% for FY2017	16% for FY2017	7.75% for FY2017	0% for FY2017	-7.75% for FY2017	-16% for FY2017	-24% for FY2017
2016	59%	59%	59%	59%	59%	59%	59%
2017	69%	65%	60%	56%	51%	47%	42%
2018	70%	66%	61%	56%	52%	47%	42%
2019	71%	66%	61%	57%	52%	47%	42%
2020	72%	67%	62%	57%	52%	47%	42%
2021	73%	68%	63%	58%	53%	47%	42%
2026	80%	73%	67%	61%	55%	48%	42%
2031	87%	79%	72%	64%	57%	49%	42%
2036	95%	86%	77%	68%	60%	50%	41%
2041	102%	94%	83%	73%	63%	52%	41%
2046	105%	102%	90%	78%	65%	52%	40%

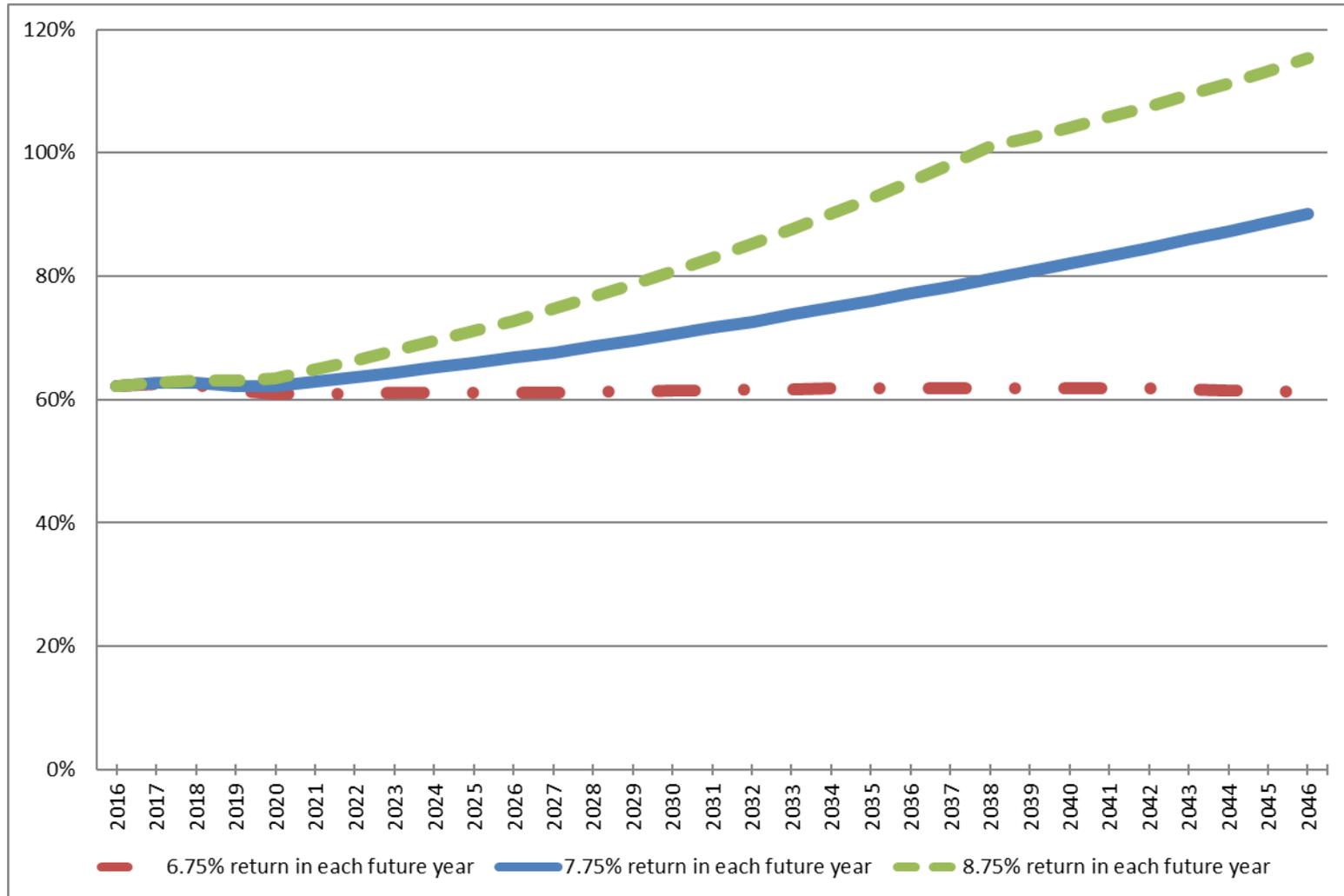
Projected Margin (AVA Basis)

Valuation Year	24% for FY2017	16% for FY2017	7.75% for FY2017	0% for FY2017	-7.75% for FY2017	-16% for FY2017	-24% for FY2017
2016	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%	-0.47%
2017	-0.06%	-0.37%	-0.70%	-1.01%	-1.32%	-3.09%	-4.99%
2018	0.48%	-0.27%	-1.04%	-1.77%	-2.49%	-3.42%	-5.45%
2019	0.76%	-0.43%	-1.65%	-2.80%	-3.95%	-5.17%	-6.36%
2020	1.20%	-0.42%	-2.10%	-3.68%	-5.25%	-6.93%	-8.56%
2021	1.95%	-0.13%	-2.27%	-4.28%	-6.29%	-8.43%	-10.51%
2026	2.83%	-0.19%	-3.30%	-6.22%	-9.14%	-12.25%	-15.27%
2031	4.41%	-0.37%	-5.29%	-9.92%	-14.55%	-19.47%	-24.25%
2036	9.18%	2.31%	-4.77%	-11.43%	-18.09%	-25.18%	-32.05%
2041	4.33%	8.09%	-0.81%	-9.16%	-17.51%	-26.41%	-35.03%
2046	5.57%	4.19%	4.04%	-6.52%	-17.09%	-28.34%	-39.25%

* The projected margin is based on a 30-year closed period starting July 1, 2013. Once the period declines to 10 years remaining, the projected margin is based on a 10-year open period.

** If an overfunding exists, the surplus is amortized over a 30-year open period.

Projected Funded Ratios (AVA Basis) Actual Returns +1% or -1% of Assumed



Projected Funded Ratios (AVA Basis)

Actual Returns +1% or -1% of Assumed

Valuation Year	6.75% Return in Each Future Year	7.75% Return in Each Future Year	8.75% Return in Each Future Year
2016	62%	62%	62%
2017	63%	63%	63%
2018	62%	63%	63%
2019	61%	62%	63%
2020	61%	62%	64%
2021	61%	63%	65%
2026	61%	67%	73%
2031	62%	72%	83%
2036	62%	77%	95%
2041	62%	83%	106%
2046	61%	90%	115%

Actuarial Review of July 1, 2015 Valuation

- Cavanaugh Macdonald Consulting completed its review in July 2016
 - Concluded that Segal's work provides an appropriate assessment of the health and funding requirements of TFFR
 - Offered comments and suggestions for Segal to consider
- Actuarial assumptions
 - Certain suggestions will be implemented with the next experience study
 - Provide formal report in addition to presentation
 - Study retirement experience with results weighted by liability
 - Other minor suggestions will be considered
- Actuarial methods
 - Date of hire was adjusted for approximately 1,000 members who have a break in service
 - NO impact on total liability, but minimal difference in the allocation of the liability between past and future service
 - Liability for deferred vested death benefit was adjusted resulting in immaterial reduction of liability

Actuarial Review of July 1, 2015 Valuation (continued)

- Valuation report
 - Modified some language related to description of actuarial assumptions
 - Showed derivation of investment gain/loss on the market value of assets
 - Included source of high quality tax-exempt general obligation municipal bond rate for GASB discount rate determination

Segal is pleased that the actuarial review confirms that the calculations are accurate and the valuation is in compliance with Actuarial Standards of Practice.

Public Sector Topics In the News

- Society of Actuaries' mortality study for public sector plans
 - Preliminary results expected in late 2017
- Actuarial Standards Board – Pension Task Force Report issued in June and suggests potential changes for ASB to consider
 - Solvency liability would be disclosed with all funding valuations
 - Present value of accrued benefits discounted at U.S. Treasury Rates
 - Actuary should calculate and disclose a reasonable ADC
 - Normal cost based on each member's benefits
 - No perpetual negative amortization (where contribution is less than the normal cost plus interest on the UAAL)
 - Other suggested disclosures:
 - Assessment of when assets are expected to be depleted
 - Amortization period for fixed rate plans
 - Whether contribution is less than normal cost plus interest on the UAAL

Public Sector Topics In the News (continued)

- Actuarial Standards Board – Second Exposure Draft on Assessment and Disclosure of Risk
 - Intention is to provide additional information to intended users of the risks of future experience differing from the assumptions
 - Would apply when performing an actuarial funding valuation or a pricing valuation of a proposed change
 - Steps that actuary would need to take:
 - Identify the risks
 - Include an assessment of the risks identified
 - » Scenario tests – impact of one possible event, several simultaneous events, or several sequential events
 - » Sensitivity tests – impact of change in actuarial assumption or method
 - » Stochastic modeling
 - » Stress test – impact of adverse changes in one or a few factors
 - Recommend a more detailed assessment if actuary believes it would be beneficial to intended users

Glossary

Actuarial Accrued Liability For Actives: The equivalent of the accumulated normal costs allocated to the years before the valuation date.

Actuarial Accrued Liability For Pensioners: The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Actuarial Cost Method: A procedure allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability that are used to determine the Actuarially Determined Contribution.

Actuarial Gain or Actuarial Loss: A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., The plan's assets earn more than projected, salary increases are less than assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results yield in actuarial liabilities that are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. Each such amount or series of amounts is adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.), multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Glossary

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of benefit amounts expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age, anticipated future compensation, and future service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would be provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB, such as the ADC and the NPL.

Actuarial Value of Assets: The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly plans use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values that have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

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Amortization Payment: The portion of the pension plan contribution, or ADC, that is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Fund is calculated including:

- (a) Investment return - the rate of investment yield that the Fund will earn over the long-term future;
- (b) Mortality rates - the death rates of employees and pensioners; life expectancy is based on these rates;
- (c) Retirement rates - the rate or probability of retirement at a given age;
- (d) Turnover rates - the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement;
- (e) Salary increase rates - the rates of salary increase due to inflation and productivity growth

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example, if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

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Experience Study: A periodic review and analysis of the actual experience of the Fund that may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or Amortization Period: The term “Funding Period” is used in two ways. First, it is the period used in calculating the Amortization Payment as a component of the ADC. Second, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on the statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and GASB 68: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

Investment Return: The rate of earnings of the Fund from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

Margin: The difference, whether positive or negative, between the statutory employer contribution rate and the Actuarially Determined Contribution (ADC) as defined by GASB.

Net Pension Liability: The Net Pension Liability is equal to Total Pension Liability minus Plan Fiduciary Net Position.

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Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits that are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability, or retirement.

Plan Fiduciary Net Position: Market value of assets.

Total Pension Liability: The actuarial accrued liability based on the blended discount rate as described in GASB 67/68.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.