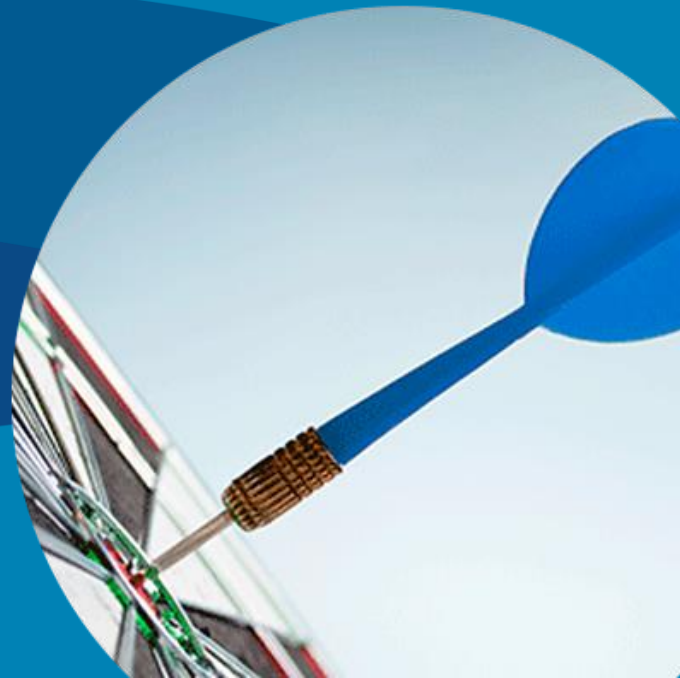




# Michigan State Employees' Retirement System and Military Retirement Provisions Pension Actuarial Valuation Results as of September 30, 2019

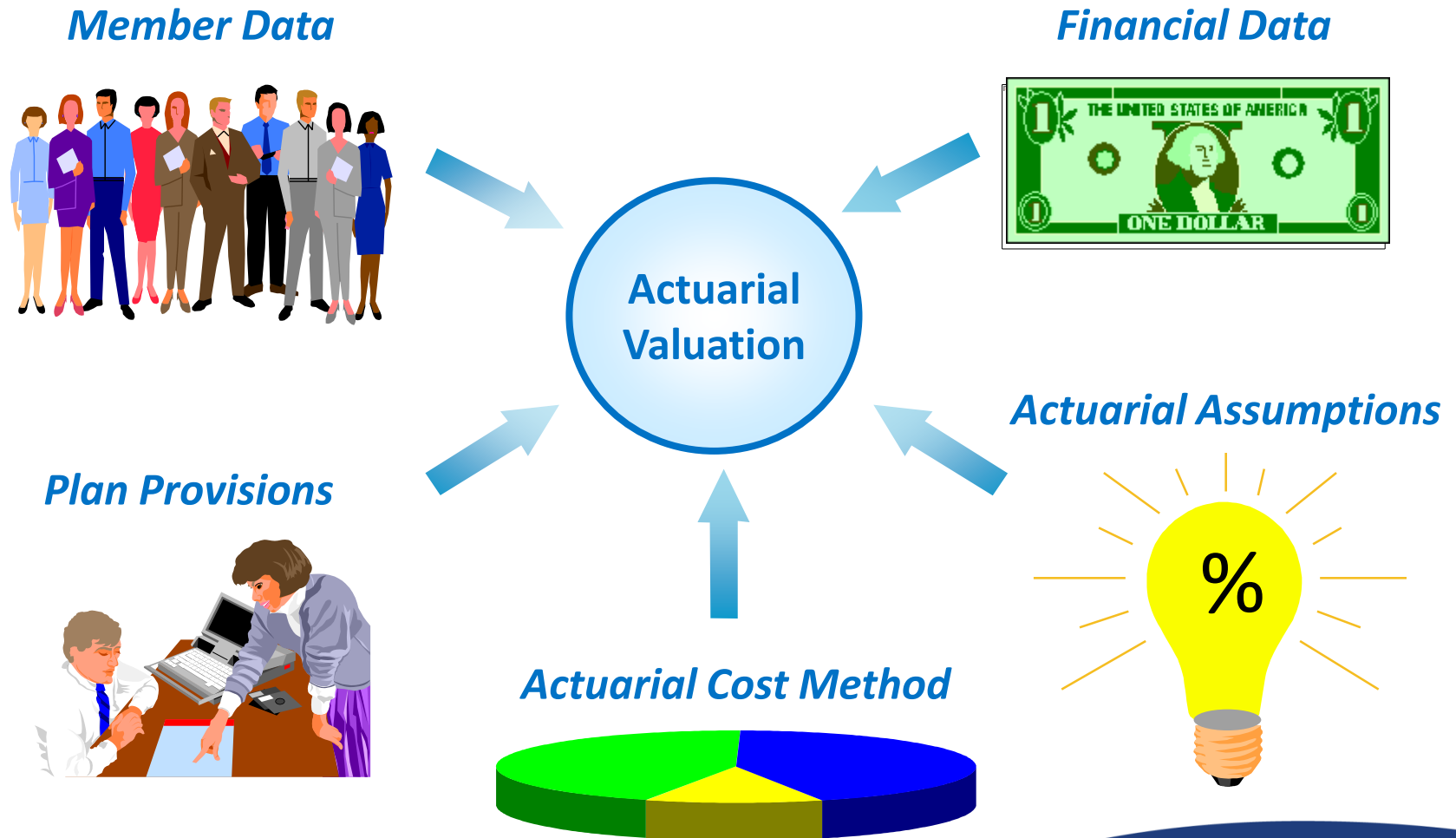


# September 30, 2019 Valuation

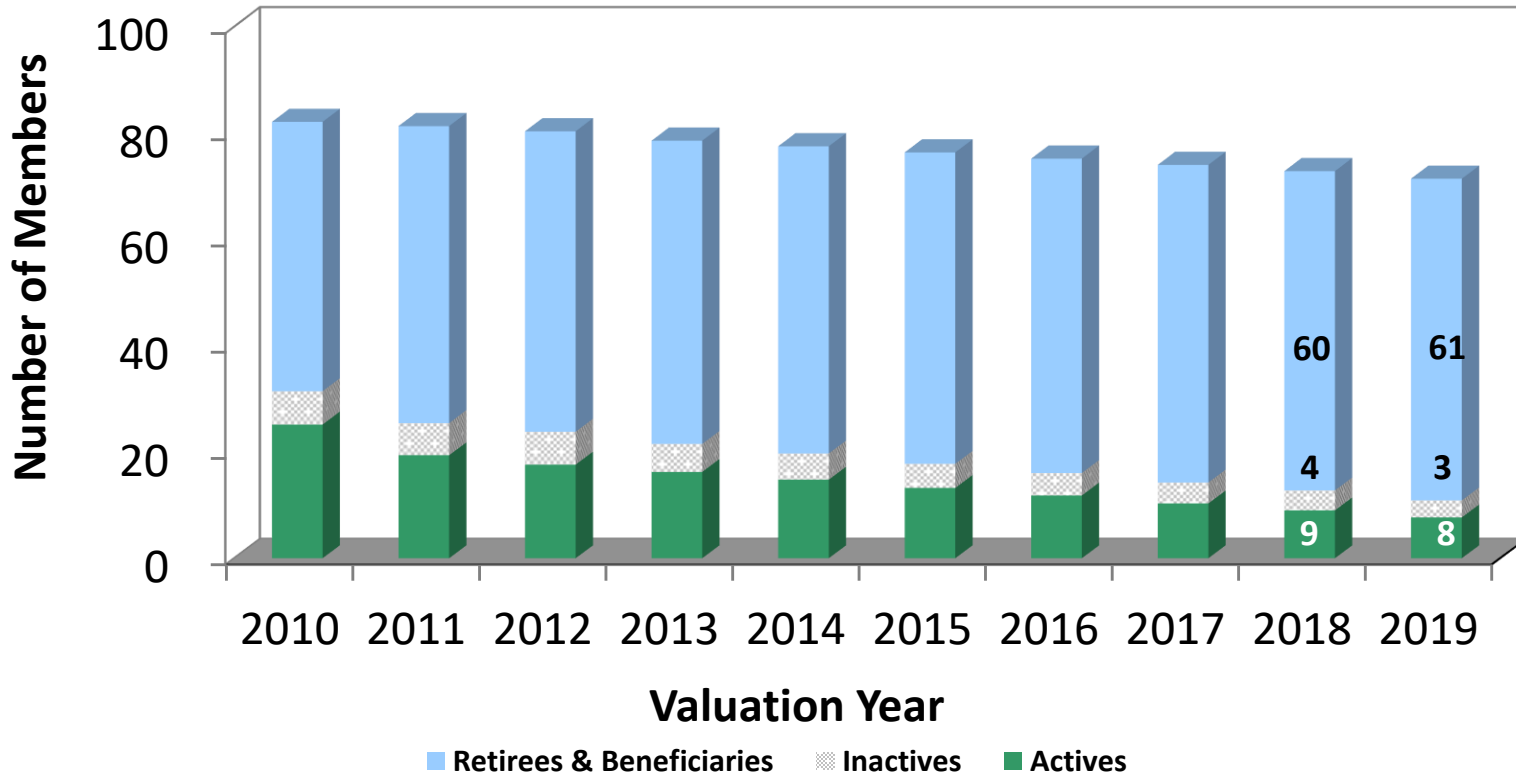
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- Purpose of the September 30, 2019 valuation for each System is twofold:
  - Determine the employer contribution for fiscal year 2022
  - Measure the System's funding progress
- Reflects the Dedicated Gains Policy adopted by the Board of Trustees
  - For SERS, the investment return assumption remains 6.70%
  - Market rate of return on assets for FY 2019 too low to trigger the provisions of the Dedicated Gains Policy
- Employer contributions included in this presentation are in addition to any reconciliation payments as required by subsection 38(5) of the SERS statute

# Actuarial Valuation Process

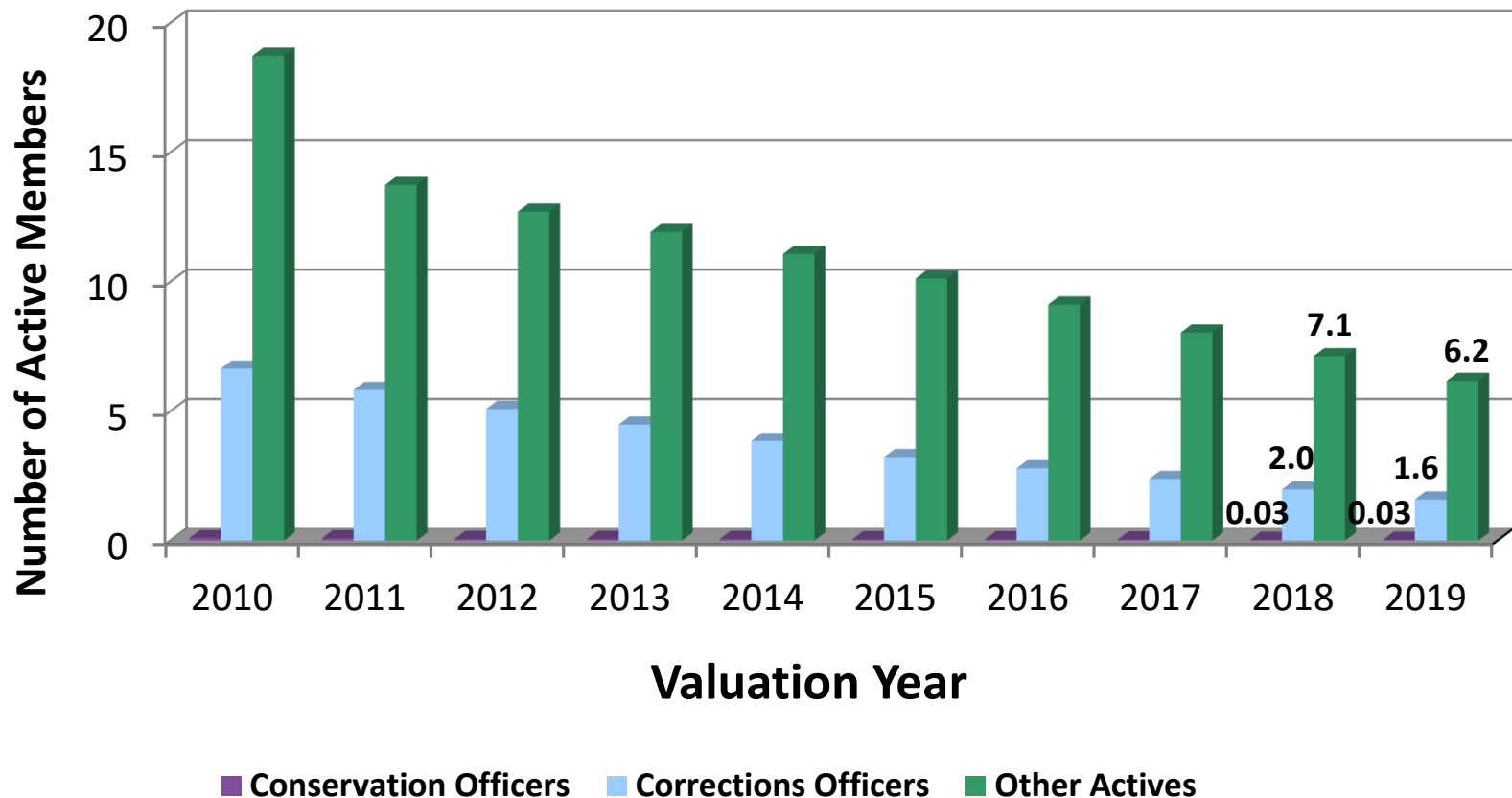


# Defined Benefit Plan Membership Data - SERS (Counts in Thousands<sup>1</sup>)



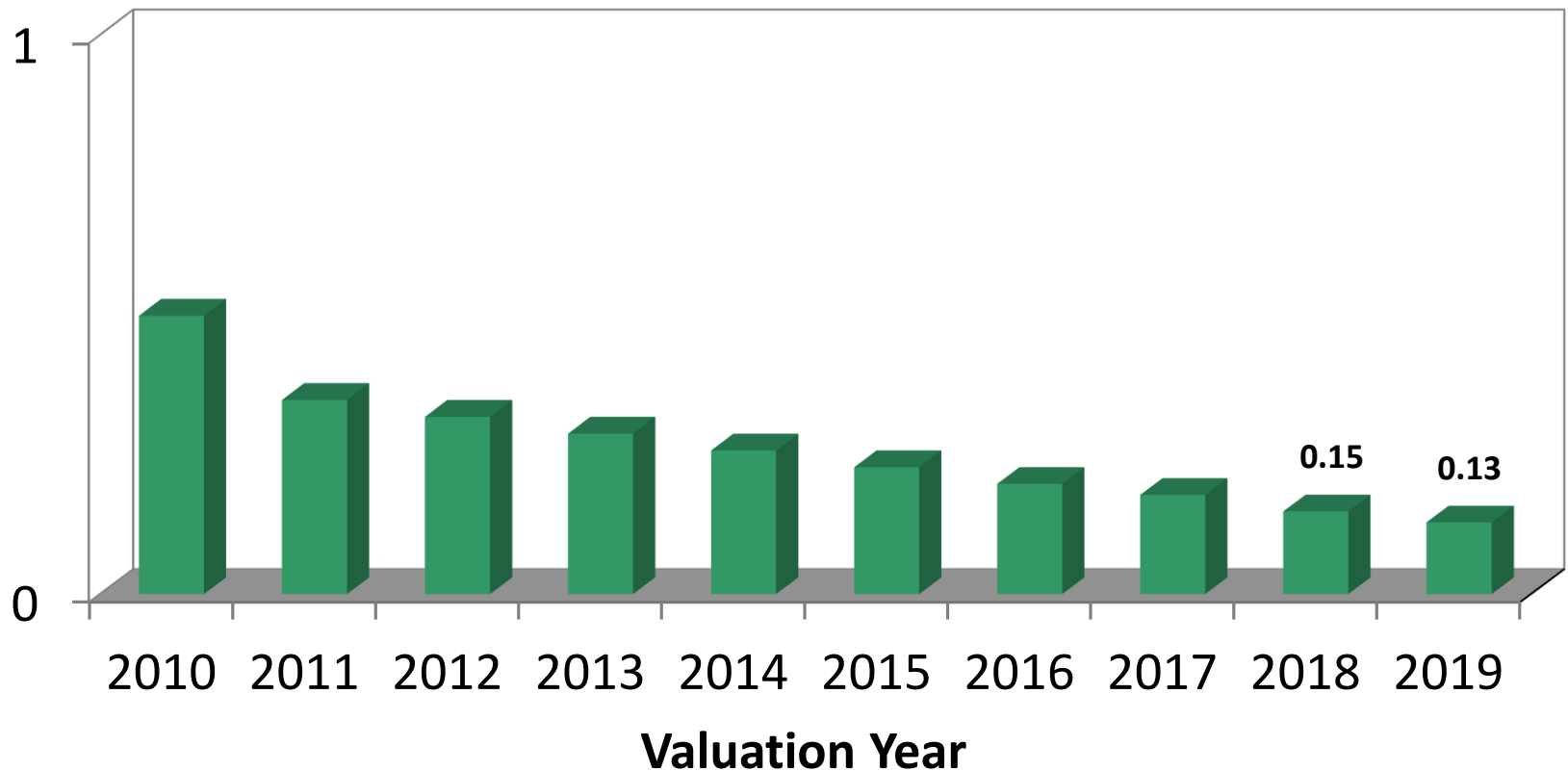
<sup>1</sup> Number counts rounded to zero decimal places

# Defined Benefit Plan Active Members by Group - SERS (Counts in Thousands)



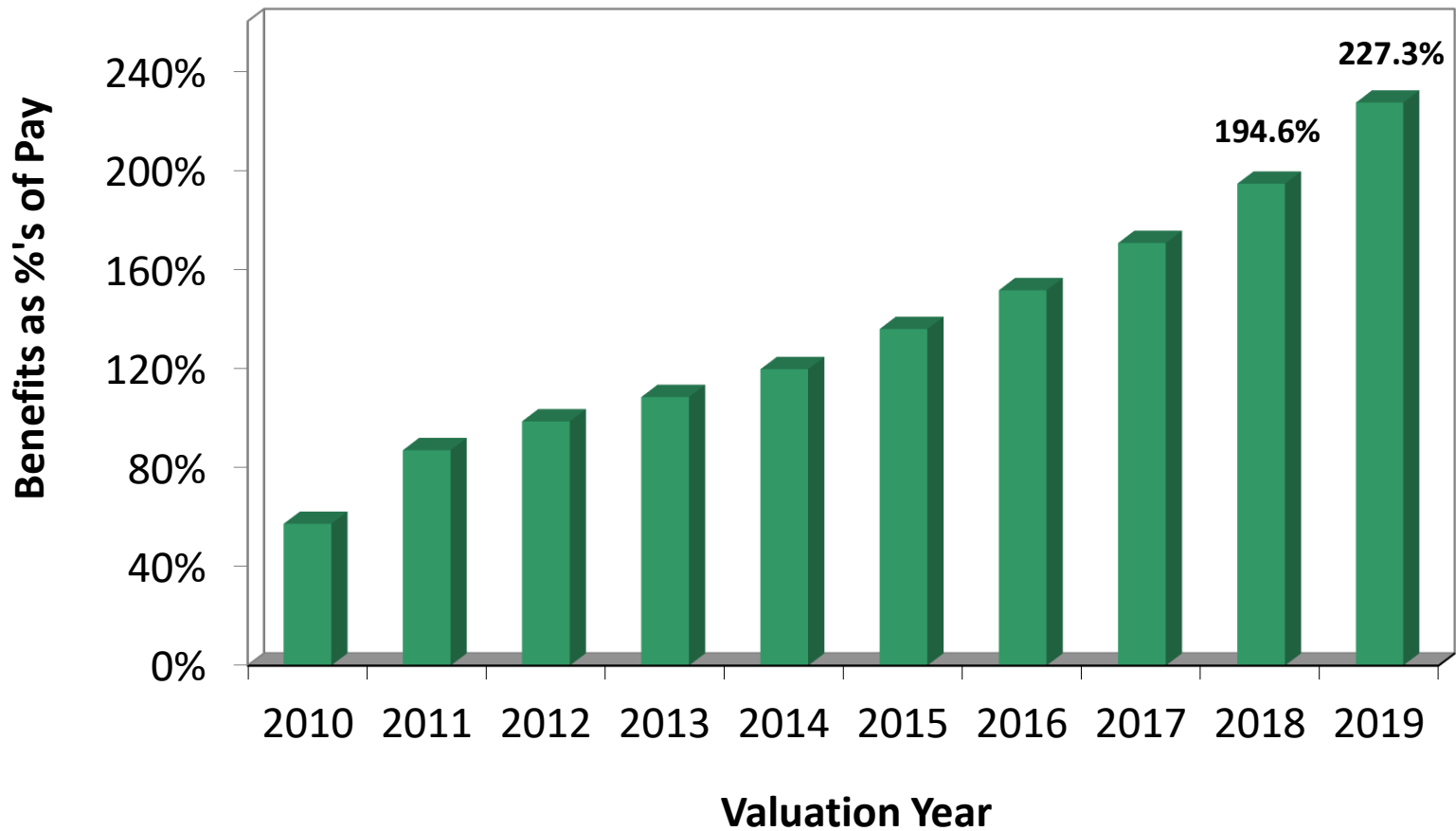
# Ratio of Active Members to Pension Benefit Recipients - SERS

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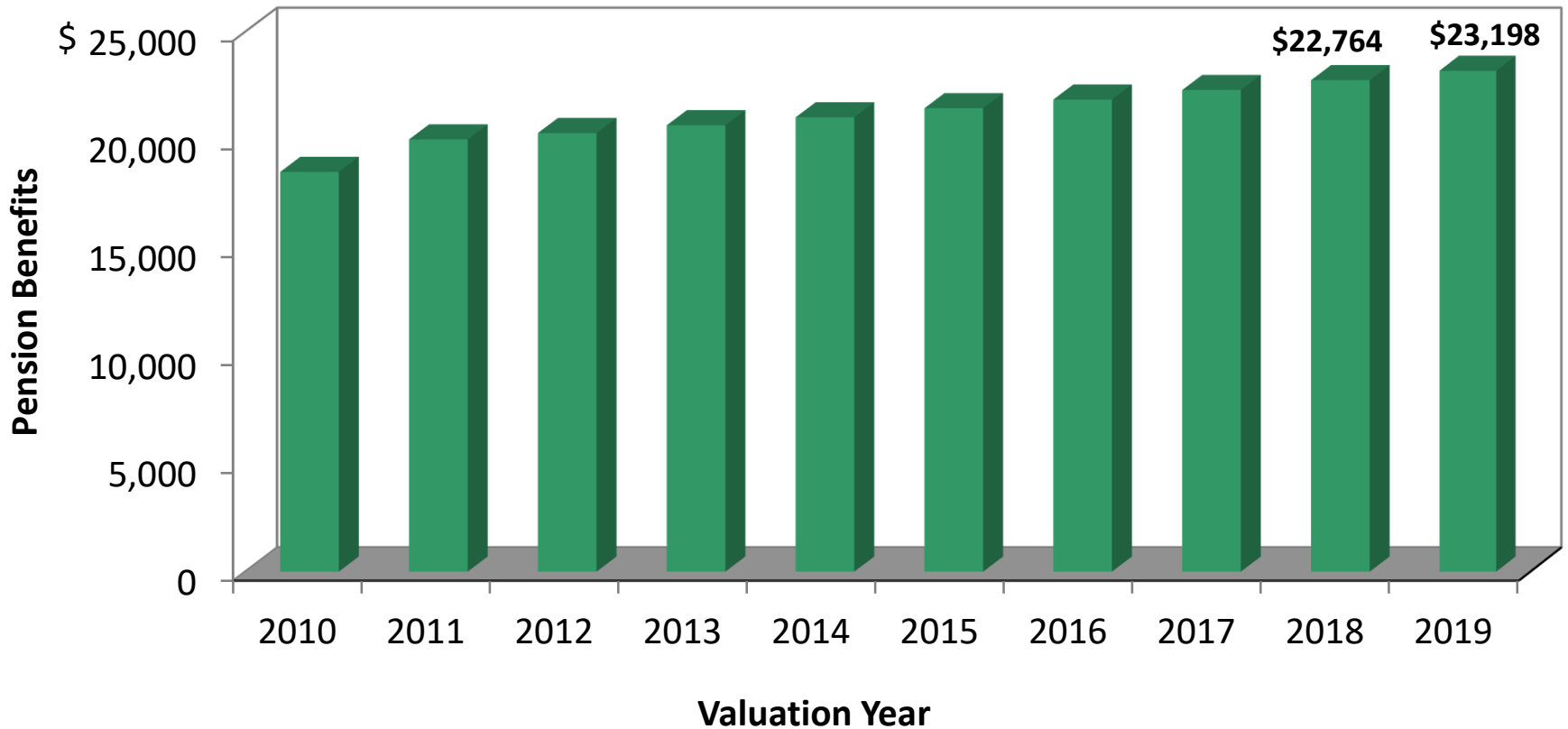


# Pension Benefits Expressed as Percents of Active Member Pay - SERS

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# Average Annual Pensions - SERS





# Total Benefit Payments by Plan Year - SERS

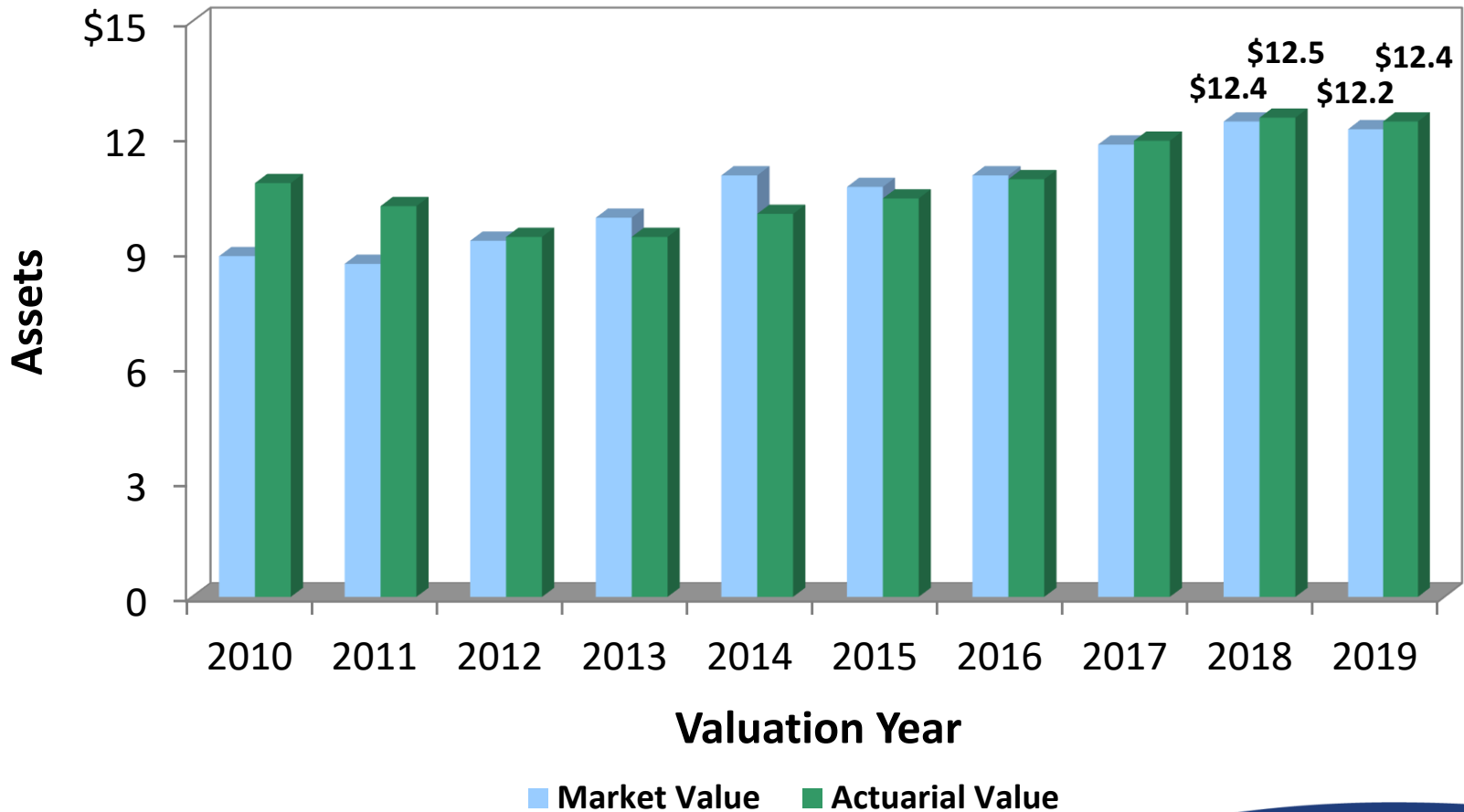
(Amounts in Millions)

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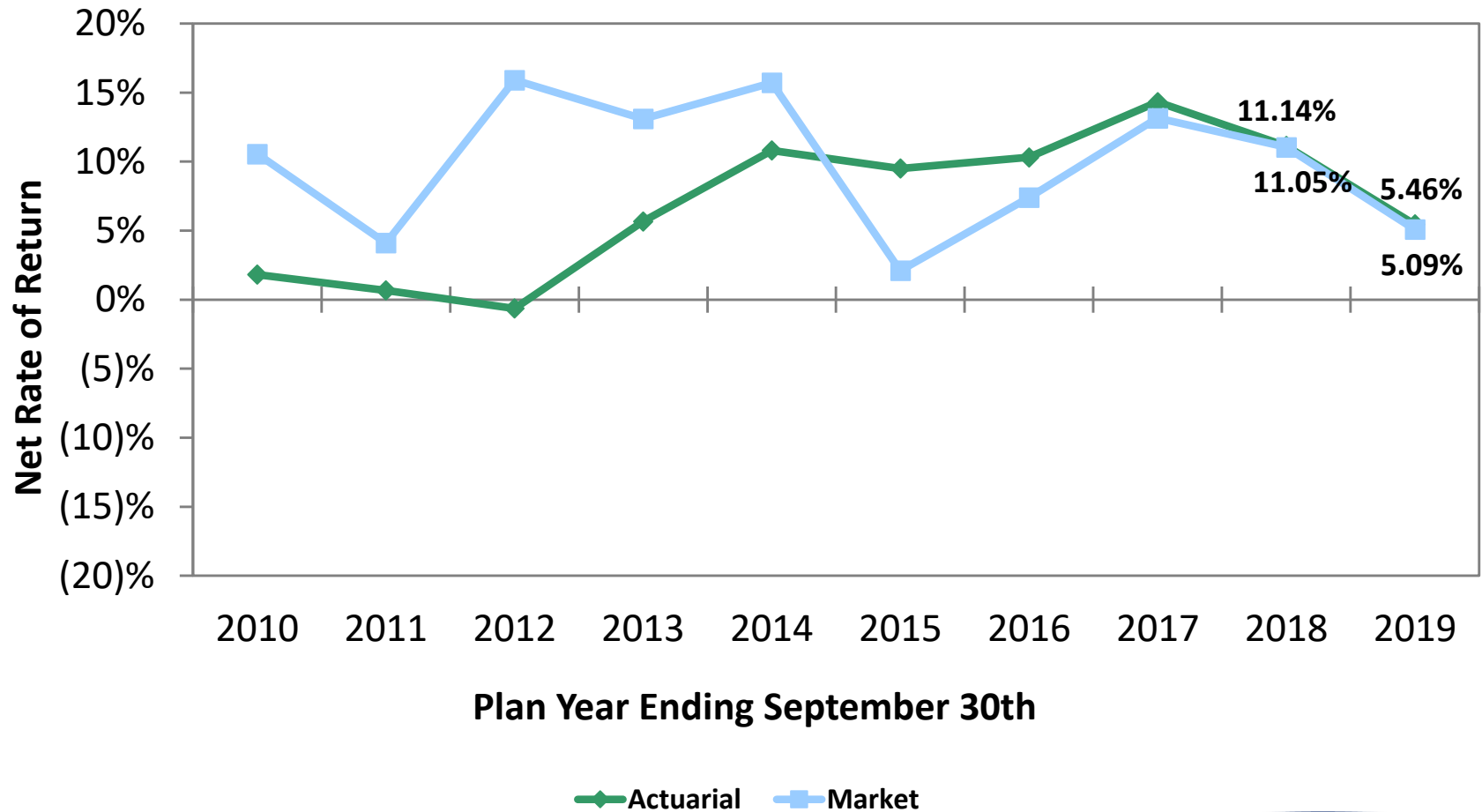


# Growth of Pension Assets - SERS

(Amounts in Billions)

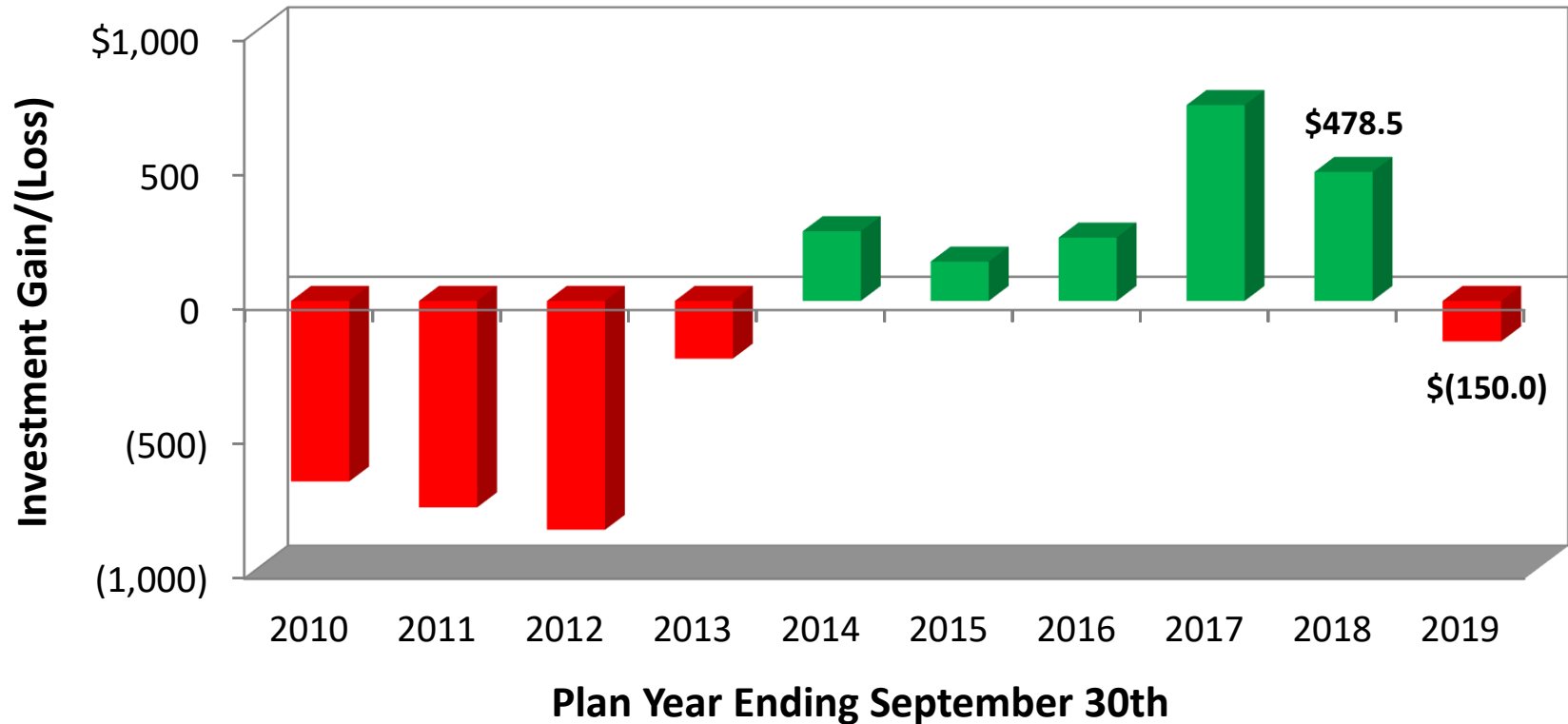


# Actuarial & Market Net Rates of Return - SERS



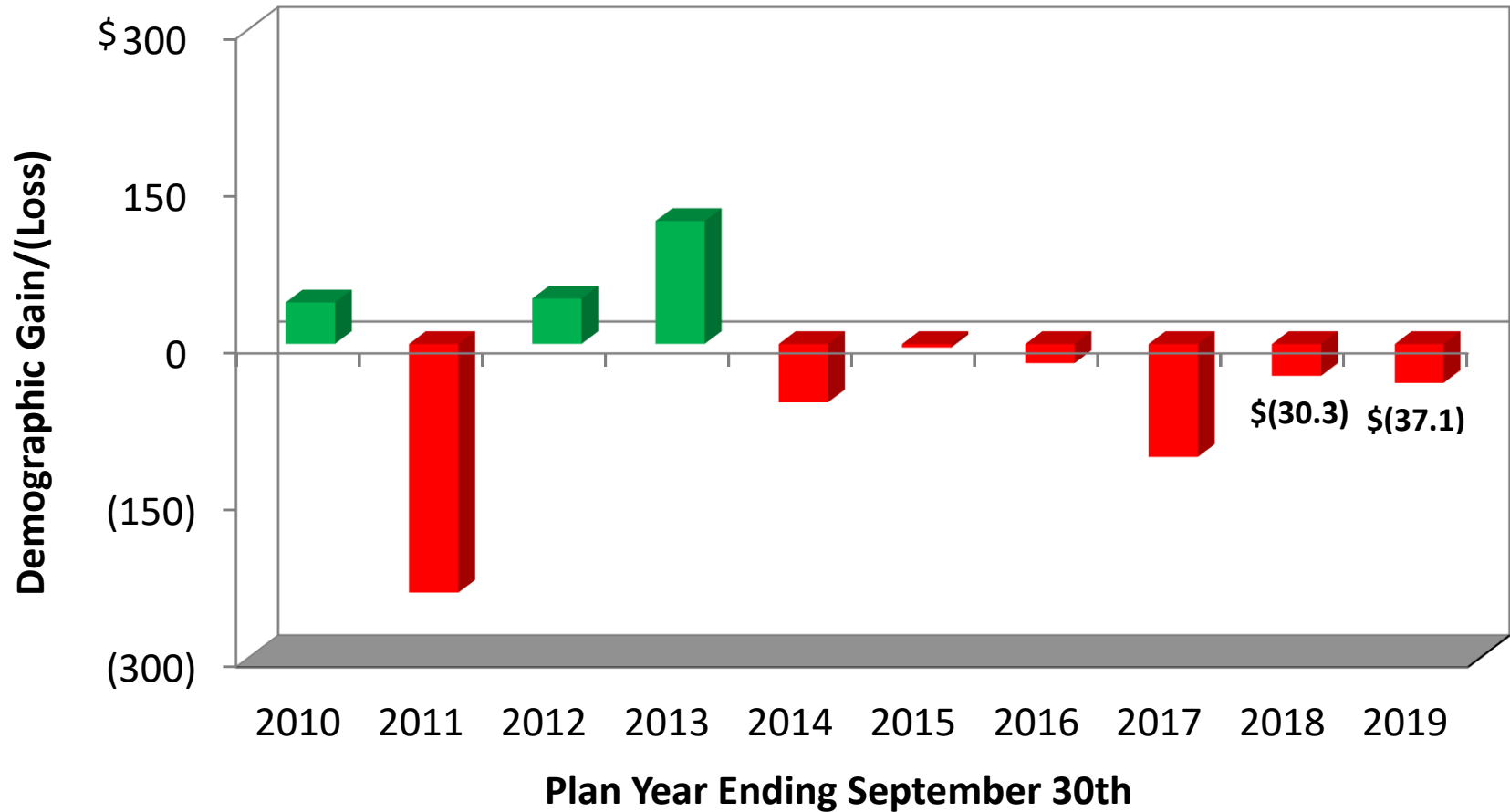
# Investment Gain/(Loss) – SERS

(Amounts in Millions)



# Demographic Gain/(Loss)- SERS

(Amounts in Millions)



# Gain/(Loss) by Type of Activity - SERS

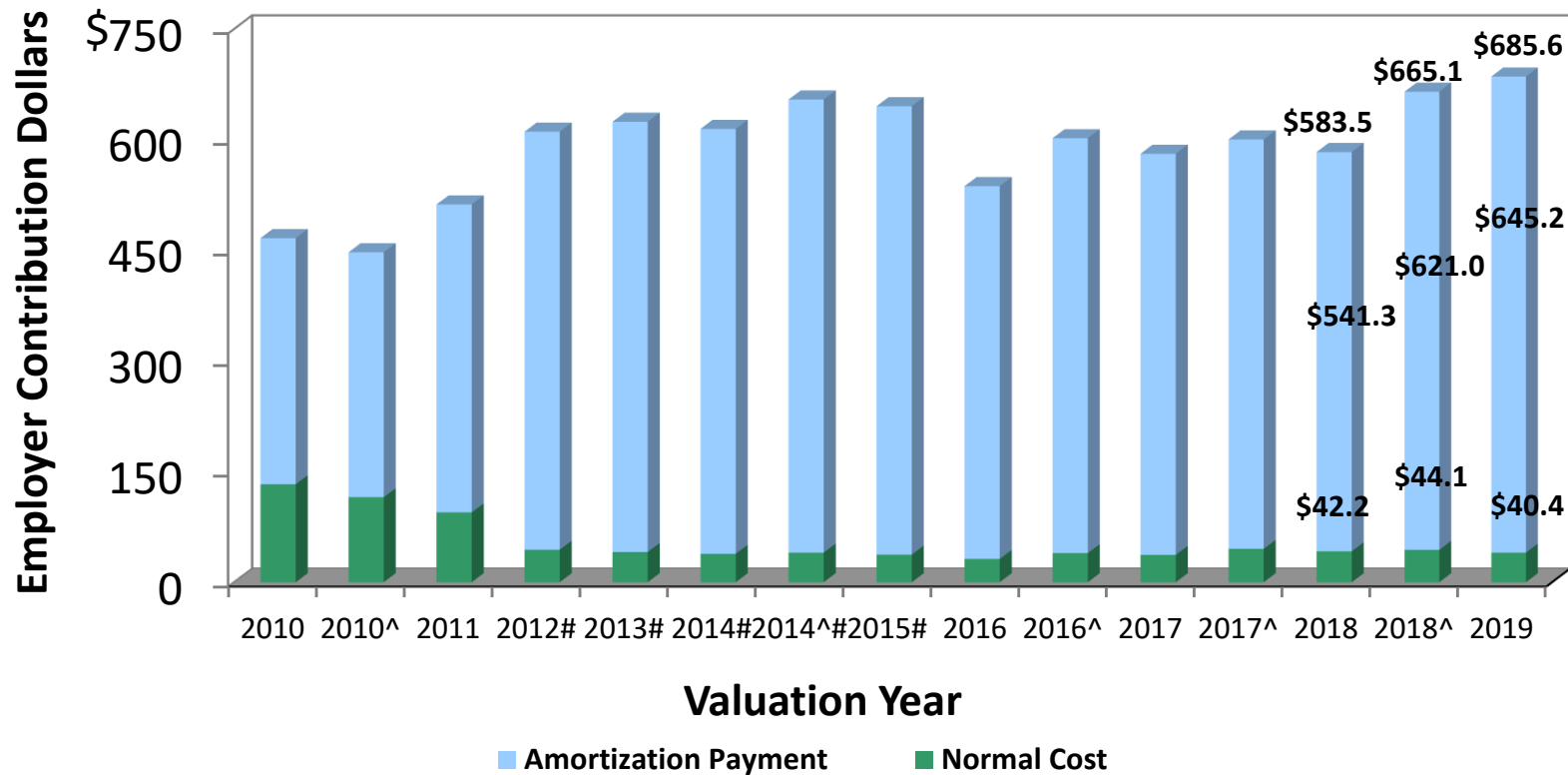
## (Amounts in Millions)

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Plan Year Ending 9/30	2019	2018	2017	2016	2015
Rehires	\$ 0.00	\$ 0.00	0.00	\$ (4.90)	\$ (9.95)
Retiree Deaths	12.02	(2.67)	(9.63)	0.87	3.40
Investments	(149.97)	478.52	726.40	235.04	145.96
Pay Increases	(37.07)	3.29	(59.91)	12.64	39.61
Withdrawals	10.44	(0.92)	2.40	(3.04)	(1.30)
Retirements	(19.06)	(25.42)	(29.69)	(13.85)	(31.33)
Other	(3.44)	(4.53)	(10.80)	(9.89)	(3.62)
<b>Total</b>	<b>(187.08)</b>	<b>448.27</b>	<b>618.77</b>	<b>216.87</b>	<b>142.77</b>

# Employer Contribution Dollars - SERS

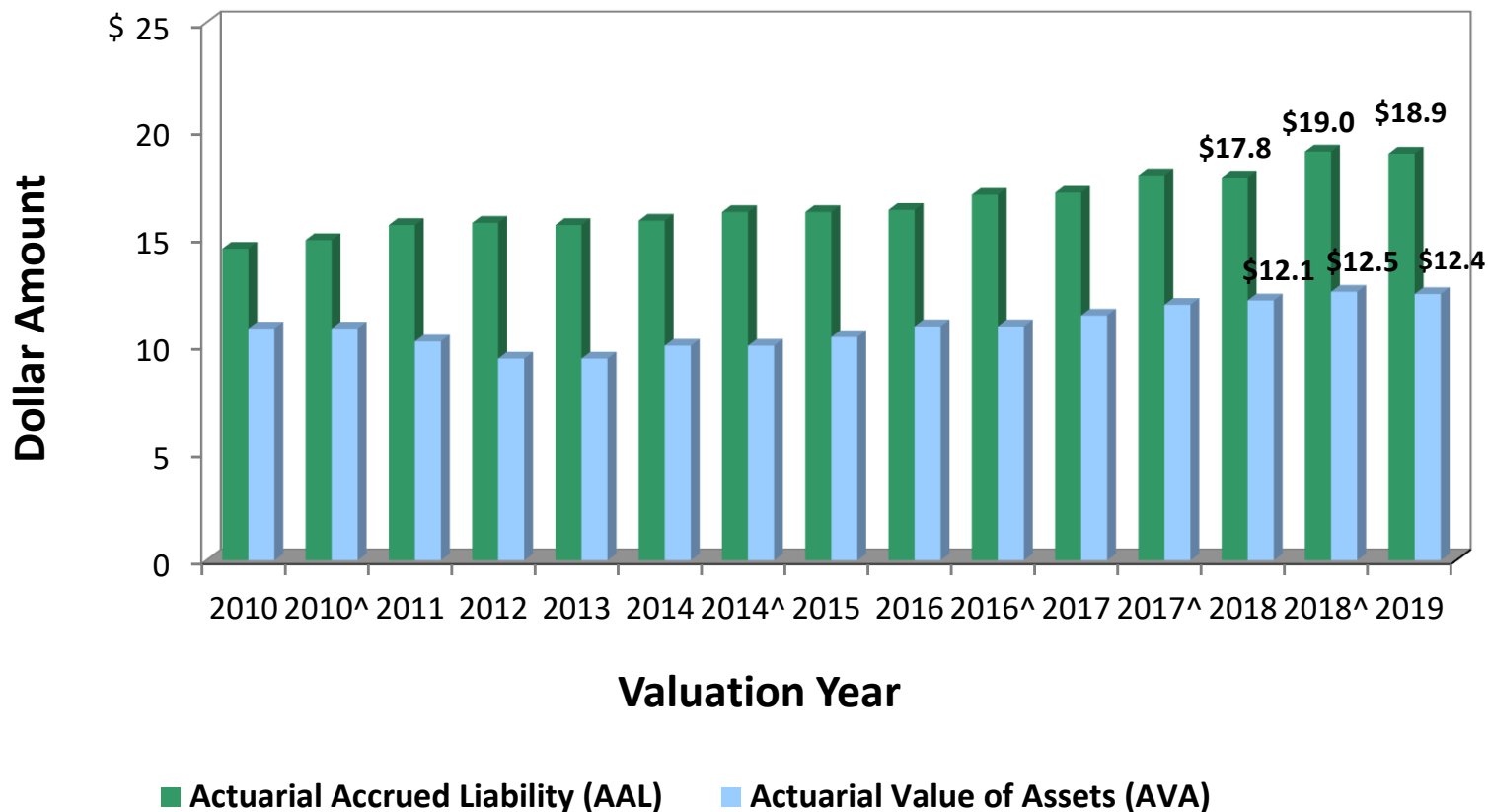
## Valuation as of September 30 (Amounts in Millions)



^ Revised actuarial assumptions and/or methods.  
 # Includes ERI payment.



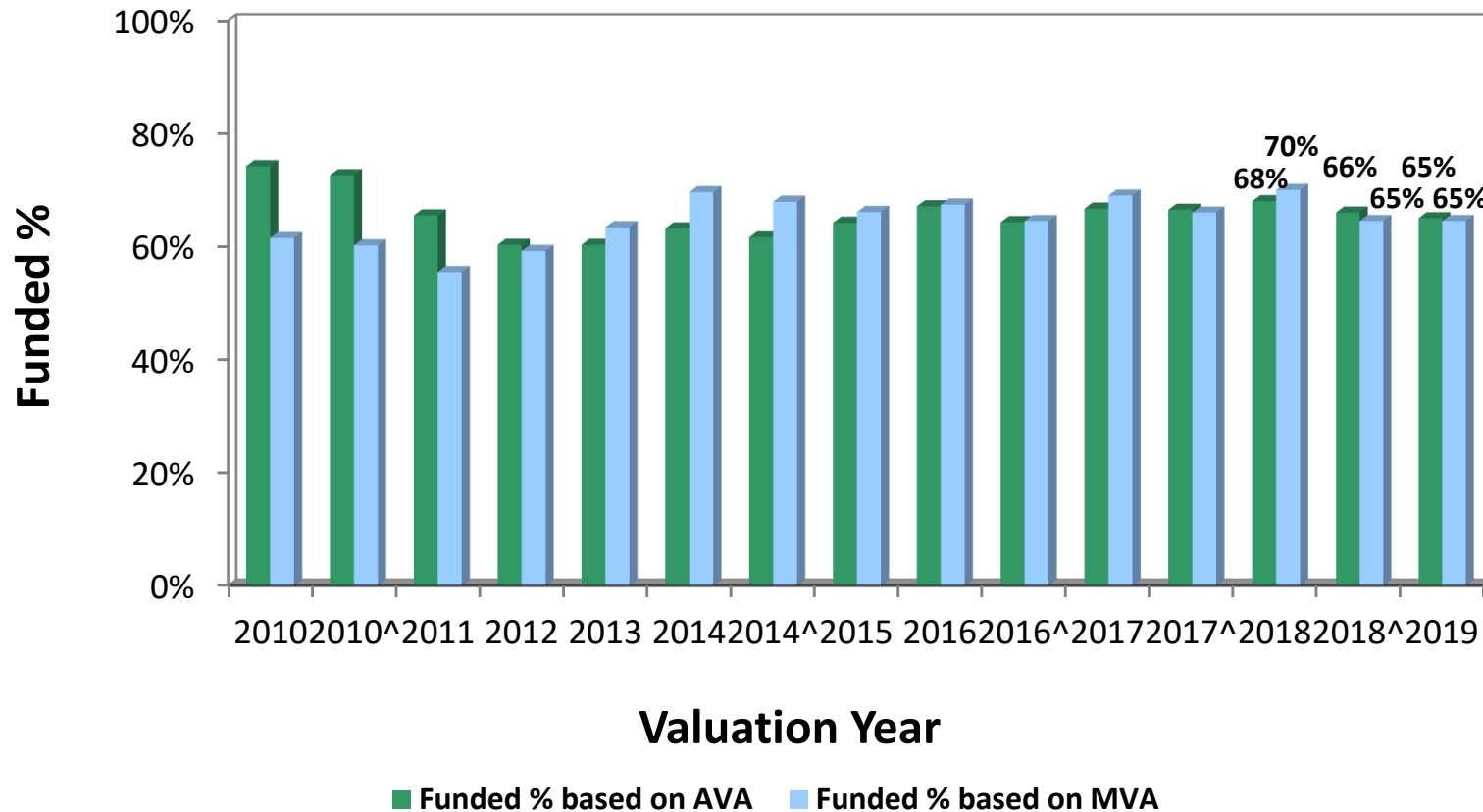
# Actuarial Accrued Liability Compared to Actuarial Value of Assets – SERS (Amounts in Billions)



<sup>^</sup> Revised actuarial assumptions and/or methods.



# Retirement System Funded % Based on Actuarial Value and Market Value of Assets - SERS



<sup>^</sup> Revised actuarial assumptions and methods.

# Military Retirement Provisions

## Select Valuation Results

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	Results as of	
	<u>September 30, 2019</u>	<u>September 30, 2018</u>
Total Computed Employer Contribution	\$ 874,280	\$ 657,103
Amortization Period of UAAL (years)	17	18
Total Accrued Liability	\$ 60,386,206	\$ 56,801,686
Funding Value of Assets	<u>56,518,623</u>	<u>17,213,520</u>
Unfunded Actuarial Accrued Liabilities (UAAL)	\$ 3,867,583	\$ 39,588,166
	Plan Membership as of	
	<u>September 30, 2019</u>	<u>September 30, 2018</u>
Current Employees	10,682	10,554
Retired Members Including Beneficiaries	4,529	4,455
Inactive Employees	<u>1,036</u>	<u>911</u>
<b>Total Participants</b>	<b>16,247</b>	<b>15,920</b>



# Military Retirement Provisions

## Other Annual Valuation Comments

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- Valuation results
  - Based upon a 6.75% discount rate -unchanged from last year due to the market rate of return & Dedicated Gains Policy
  - Normal cost component includes an administrative expense contribution of \$223,363.
  - Actuarial loss on the 3 new Special Duty officers
  - Reflects a large employer contribution (\$41.0 million)
  - Funding percent increased from 30.3% to 93.6%

# Disclaimers

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- This presentation is intended to be used in conjunction with the September 30, 2019 pension annual actuarial valuation reports issued for SERS and MRP in 2020. This presentation should not be relied on for any purpose other than the purpose described in the valuation report.
- This presentation shall not be construed to provide tax advice, legal advice or investment advice.
- The actuaries submitting this presentation (Mita D. Drazilov and Louise M. Gates) are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.