Pennsylvania's State Employees' Retirement System

# Rate Spike and Plateau

*Causes and Potential Options*

Presented to: Joint House & Senate Republican Policy Committees

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# SERS — An Overview

## A Defined Benefit Plan

SERS is a governmental, defined benefit pension plan.

As a governmental plan, SERS is not subject to the federal Employee Retirement Income Security Act (ERISA).

As a defined benefit plan, SERS provides benefits that are determined by a fixed formula that takes into account the employee's length of service, age, compensation and a legislatively determined accrual rate.

Employees who retire before reaching Normal Retirement Age incur an early retirement reduction.

SERS' primary "plan document" is the State Employees' Retirement Code, 71 Pa.C.S. §5101 et seq.

The Retirement Code also provides death benefits, a disability retirement benefit for qualified members and survivor benefits.

Actuarial calculations are used to establish the amount of employer contributions required to provide those benefits.

2% X Class of Service Multiplier X Years of Credited Service X Final Average Salary = Maximum Annual Retirement Allowance

**The benefit for current members is a debt of the Commonwealth backed by the full faith and credit of the Commonwealth.**

**In 1983 Commonwealth Court articulated a standard that remains the law in Pennsylvania today:**

> ***Any unilateral substantial change in public employee pension benefits that constitutes a "net detriment" to the employees is a constitutionally impermissible impairment of the employment contract.***

# SERS — An Overview



### SERS Structure

- Established in 1923
- Guided by an 11-member Board
  - six gubernatorial appointees
  - four appointed legislators
  - State Treasurer (ex officio)
- Managed by an Executive Director

### As of 12/31/09

- Nearly 220,000 members
  - 110,107 Active Members
  - 109,639 Annuitants & Beneficiaries
- Assets of approximately $24.4 billion
- Average age of Retirees was 73
  (Normal Retirement only – does not include Disability or Early Retirements)

### In 2009:

- Benefit payments totaled more than $2.2 billion
- Approximately 90% of SERS members withdrew all or a portion of their Accumulated Deductions at retirement (member contributions plus 4% statutory interest on those contributions), also referred to as "Option 4 Withdrawal"

### Retired Members by Type of Benefit:

| Type of Benefit | Number | Avg. Age | Avg. Annual Pension |
|---|---|---|---|
| Normal Retirement | 53,478 | 73 | $22,700 |
| Early Retirement | 38,624 | 62 | $15,000 |
| Disability Retirement | 7,674 | 61 | $13,000 |
| Other (Beneficiary & Survivor) | 9,863 | 75 | $9,000 |

In addition to the Defined Benefit plan discussed here, SERS also administers a voluntary Deferred Compensation Plan for state employees.

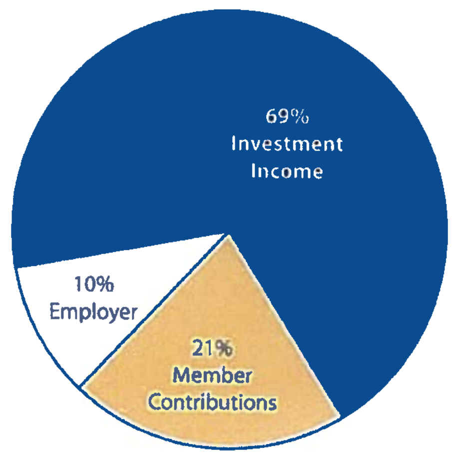
# SERS — An Overview

Defined Benefit plans are designed to remain financially sound through regular funding each year from each of three funding sources:

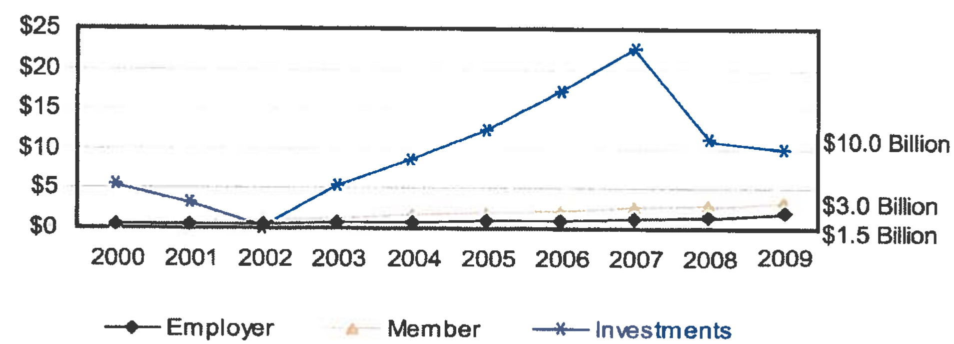
- Employee Contributions
- Employer Contributions
- Investment Earnings

Historically, investment earnings have been the primary source of funding for the System.

**SERS Funding**
*(10-Year History 2000-2009)*




**Ten-Year Cumulative Additions**
***($ billions)***



## Employee Contributions

Most employees contribute 6.25% of their salary. This rate is fixed by statute, doesn't change year to year and cannot be unilaterally increased.

## Investment Earnings

The currently assumed annual rate of return on investments is 8%. That is the rate the Board expects to earn long-term, not in any one year.

The Board establishes the assumed rate based on advice from the staff, investment consultant and actuary.

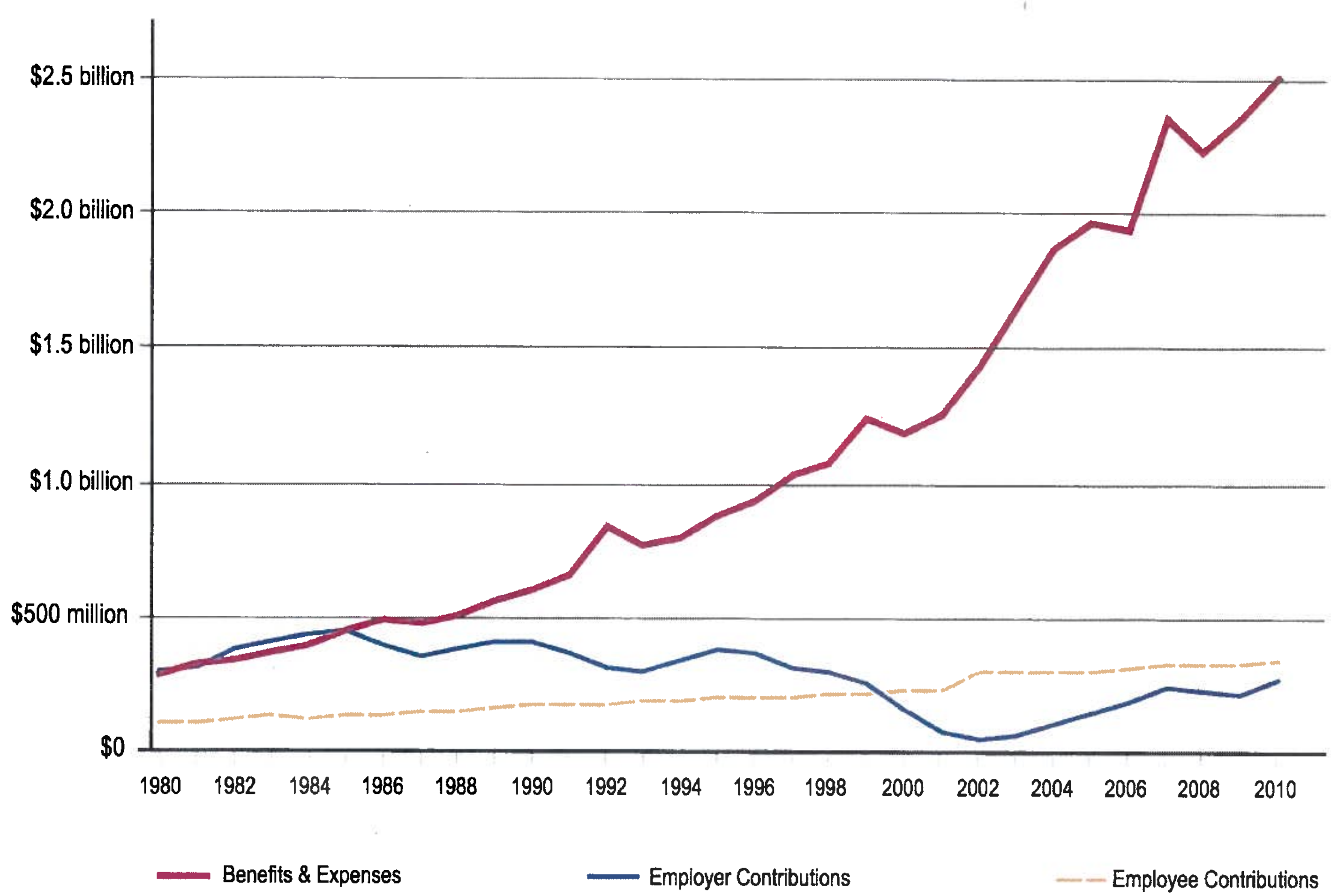
In April 2009, the Board lowered the assumed rate from 8.5% to 8%, believing the lower number to be a more realistic long-term assumption given the current market environment and the Fund's anticipated future cash flow needs.

## Employer Contributions

It is impossible to know how much investments will earn in any given year. The Retirement Code recognizes this and deals with it by creating a linkage between investment earnings and employer contributions. The Board adjusts the employer contribution rate each year based on actual investment returns and actuarial experience. When investment earnings exceed the 8% actuarially assumed return and the System is well funded, the Board may be able to reduce the employer contribution rate. Conversely, when investment earnings fall short of assumptions and the System is underfunded (as now), the Board may find it necessary to increase the employer contribution rate.

SERS' annual benefit payments have increased seven-fold over the last 30 years, and the amount employees contribute has tripled. But employers are paying almost $20 million per year ***less*** today than they did in 1980: an expected $284 million in 2010 versus $305.5 million in 1980.

**SERS Benefit Payments Vs. Contributions**

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## SERS Benefit Payments Vs. Contributions
*($ in thousands)*

| Calendar Year | Benefits & Expenses | Employer Contributions | Member Contributions |
|---|---|---|---|
| 1980 | $297,731 | $305,547 | $110,531 |
| 1981 | 328,701 | 325,688 | 116,283 |
| 1982 | 350,065 | 383,519 | 121,589 |
| 1983 | 371,819 | 413,810 | 135,841 |
| 1984 | 399,697 | 439,836 | 121,929 |
| 1985 | 463,708 | 460,435 | 132,695 |
| 1986 | 499,879 | 407,276 | 139,454 |
| 1987 | 490,080 | 366,463 | 147,061 |
| 1988 | 520,534 | 382,413 | 153,131 |
| 1989 | 573,129 | 416,513 | 164,653 |
| 1990 | 606,925 | 418,655 | 175,422 |
| 1991 | 664,052 | 381,347 | 182,611 |
| 1992 | 850,753 | 319,093 | 187,167 |
| 1993 | 781,324 | 304,122 | 190,360 |
| 1994 | 811,937 | 342,927 | 193,204 |
| 1995 | 894,143 | 384,506 | 201,719 |
| 1996 | 943,406 | 373,902 | 209,581 |
| 1997 | 1,037,263 | 324,093 | 212,556 |
| 1998 | 1,080,376 | 310,501 | 221,618 |
| 1999 | 1,248,494 | 270,718 | 224,928 |

| Calendar Year | Benefits & Expenses | Employer Contributions | Member Contributions |
|---|---|---|---|
| 2000 | $1,198,094 | $168,002 | $231,667 |
| 2001 | 1,266,016 | 76,710 | 240,528 |
| 2002 | 1,450,273 | 50,831 | 304,233 |
| 2003 | 1,655,992 | 68,669 | 308,014 |
| 2004 | 1,880,499 | 106,703 | 309,923 |
| 2005 | 1,966,347 | 148,375 | 305,624 |
| 2006 | 1,943,294 | 196,420 | 317,790 |
| 2007 | 2,361,116 | 243,936 | 333,818 |
| 2008 | 2,231,299 | 235,288 | 336,833 |
| 2009 | 2,298,000 | 245,000 | 348,000 |
| 2010 | 2,507,000 | 284,000 | 347,000 |
| 2011 | 2,659,000 | 436,000 | 358,000 |
| 2012 | 2,812,000 | 1,139,000 | 370,000 |
| 2013 | 2,965,000 | 1,894,000 | 382,000 |
| 2014 | 3,121,000 | 2,026,000 | 395,000 |
| 2015 | 3,274,000 | 2,050,000 | 408,000 |
| 2016 | 3,434,000 | 2,094,000 | 421,000 |
| 2017 | 3,587,000 | 2,131,000 | 435,000 |
| 2018 | 3,741,000 | 2,163,000 | 449,000 |
| 2019 | 3,893,000 | 2,191,000 | 464,000 |

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In the last decade the Fund had net investment earnings of $10 billion and received $4.6 billion in contributions. But payouts totaled more than $18 billion so the Fund value declined.

**Additions and Deductions to Plan Net Assets**
*($ millions)*

| Calendar Year | Employer Contributions | Employee Contributions | Total Contributions | Investment Earnings | Benefits and Expenses | Market Value |
|---|---|---|---|---|---|---|
| 2009[1/] | $245 | $348 | $593 | $3,368 | $(2,298) | $24,459 |
| 2008 | 235 | 337 | 572 | (11,061) | (2,231) | $22,796 |
| 2007 | 244 | 334 | 578 | 5,246 | (2,361) | $35,516 |
| 2006 | 196 | 318 | 514 | 4,730 | (1,943) | $32,053 |
| 2005 | 148 | 306 | 454 | 3,623 | (1,966) | $28,752 |
| 2004 | 107 | 310 | 417 | 3,568 | (1,880) | $26,641 |
| 2003 | 68 | 308 | 376 | 4,936 | (1,656) | $24,536 |
| 2002 | 51 | 304 | 355 | (2,731) | (1,450) | $20,880 |
| 2001 | 77 | 240 | 317 | (2,225) | (1,266) | $24,706 |
| 2000 | 168 | 232 | 400 | 585 | (1,198) | $27,880 |
| 10 YearTotal | $1,539 | $3,037 | $4,576 | $10,039 | $(18,249) | * |

*[1/]2009 Unaudited*
**Ten year net additions and deductions were $(3,634).*

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Liabilities now greatly exceed assets. The shortfall is projected to exceed $13 billion by 2012.

This Unfunded Actuarial Liability (UAL) is a debt the Commonwealth owes to SERS. It must be paid at some point.

## SERS Projected Funded Status & Employer Contributions

*Assuming 8% investment return*

| | Payout Projection | Funding Status Projection | | Employer Contributions Projection | | | |
|---|---|---|---|---|---|---|---|
| Calendar Year | Benefits & Expenses ($ in billions) | Funded Ratio | UAL ($ in billions) | Fiscal Year | Employer Contribution Rate | Expected FY Payroll ($ in millions) | Expected FY Contribution ($ in millions) |
| 2008 | $2.2 | 89.0% | $3.8 | 09/10 | 4.0% | $5,660.3 | $226.4 |
| 2009 | 2.3 | 84.6 | 5.5 | 10/11 | 5.4 | 5,847.1 | 315.4 |
| 2010 | 2.5 | 79.0 | 7.7 | 11/12 | 7.8 | 6,040.1 | 472.7 |
| 2011 | 2.7 | 72.1 | 10.6 | 12/13 | 26.9 | 6,239.4 | 1,676.1 |
| 2012 | 2.8 | 65.9 | 13.1 | 13/14 | 29.5 | 6,445.3 | 1,903.5 |
| 2013 | 3.0 | 67.2 | 12.9 | 14/15 | 28.1 | 6,658.0 | 1,869.5 |
| 2014 | 3.1 | 67.9 | 13.0 | 15/16 | 27.8 | 6,877.7 | 1,913.5 |
| 2015 | 3.3 | 68.8 | 12.9 | 16/17 | 27.5 | 7,104.7 | 1,950.4 |
| 2016 | 3.4 | 69.8 | 12.8 | 17/18 | 27.0 | 7,339.1 | 1,981.6 |
| 2017 | 3.6 | 70.9 | 12.6 | 18/19 | 26.5 | 7,581.3 | 2,009.6 |
| 2018 | 3.7 | 72.0 | 12.4 | 19/20 | 26.0 | 7,831.5 | 2,037.9 |
| 2019 | 3.9 | 73.1 | 12.1 | 20/21 | 25.6 | 8,089.9 | 2,066.6 |
| 2020 | 4.1 | 74.2 | 11.8 | 21/22 | 25.1 | 8,356.9 | 2,095.9 |
| 2021 | 4.2 | 75.3 | 11.5 | 22/23 | 24.6 | 8,632.7 | 2,126.0 |
| 2022 | 4.4 | 76.3 | 11.2 | 23/24 | 24.2 | 8,917.5 | 2,157.1 |
| 2023 | 4.6 | 77.4 | 10.8 | 24/25 | 23.8 | 9,211.8 | 2,189.1 |
| 2024 | 4.8 | 78.5 | 10.4 | 25/26 | 23.4 | 9,515.8 | 2,222.2 |
| 2025 | 5.0 | 79.6 | 10.0 | 26/27 | 23.0 | 9,829.8 | 2,256.4 |
| 2026 | 5.2 | 80.7 | 9.5 | 27/28 | 22.6 | 10,154.2 | 2,291.7 |
| 2027 | 5.5 | 81.8 | 9.0 | 28/29 | 22.2 | 10,489.3 | 2,328.2 |
| 2028 | 5.7 | 83.0 | 8.4 | 29/30 | 21.8 | 10,835.5 | 2,365.9 |
| 2029 | 5.9 | 84.3 | 7.8 | 30/31 | 21.5 | 11,193.0 | 2,404.8 |
| 2030 | 6.2 | 85.5 | 7.2 | 31/32 | 21.2 | 11,562.4 | 2,445.0 |
| 2031 | 6.5 | 86.9 | 6.5 | 32/33 | 19.0 | 11,944.0 | 2,272.8 |
| 2032 | 6.7 | 88.0 | 5.9 | 33/34 | 18.0 | 12,338.1 | 2,221.7 |
| 2033 | 7.0 | 88.9 | 5.4 | 34/35 | 17.5 | 12,745.3 | 2,235.6 |

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# Employer Contribution Rate

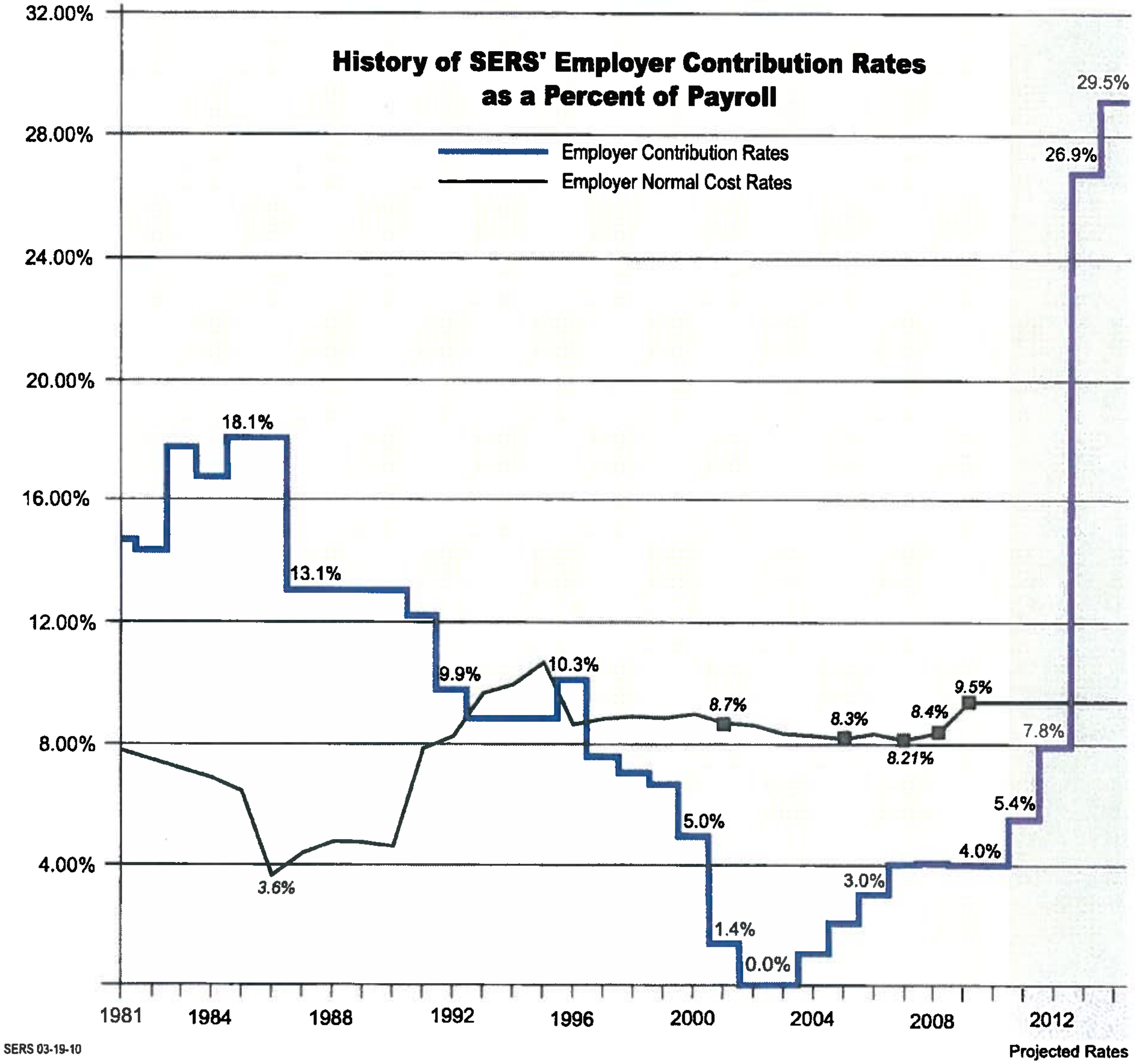


The SERS composite employer rate, which had exceeded 12% as recently as 1990 and was as high as 18% in the early 1980s, dropped to zero for two years.

Since 2003, rates have been artificially suppressed by Act 40.

For 15 years, employers have contributed well below the Employer Normal Cost rate.

Now rates are about to spike.

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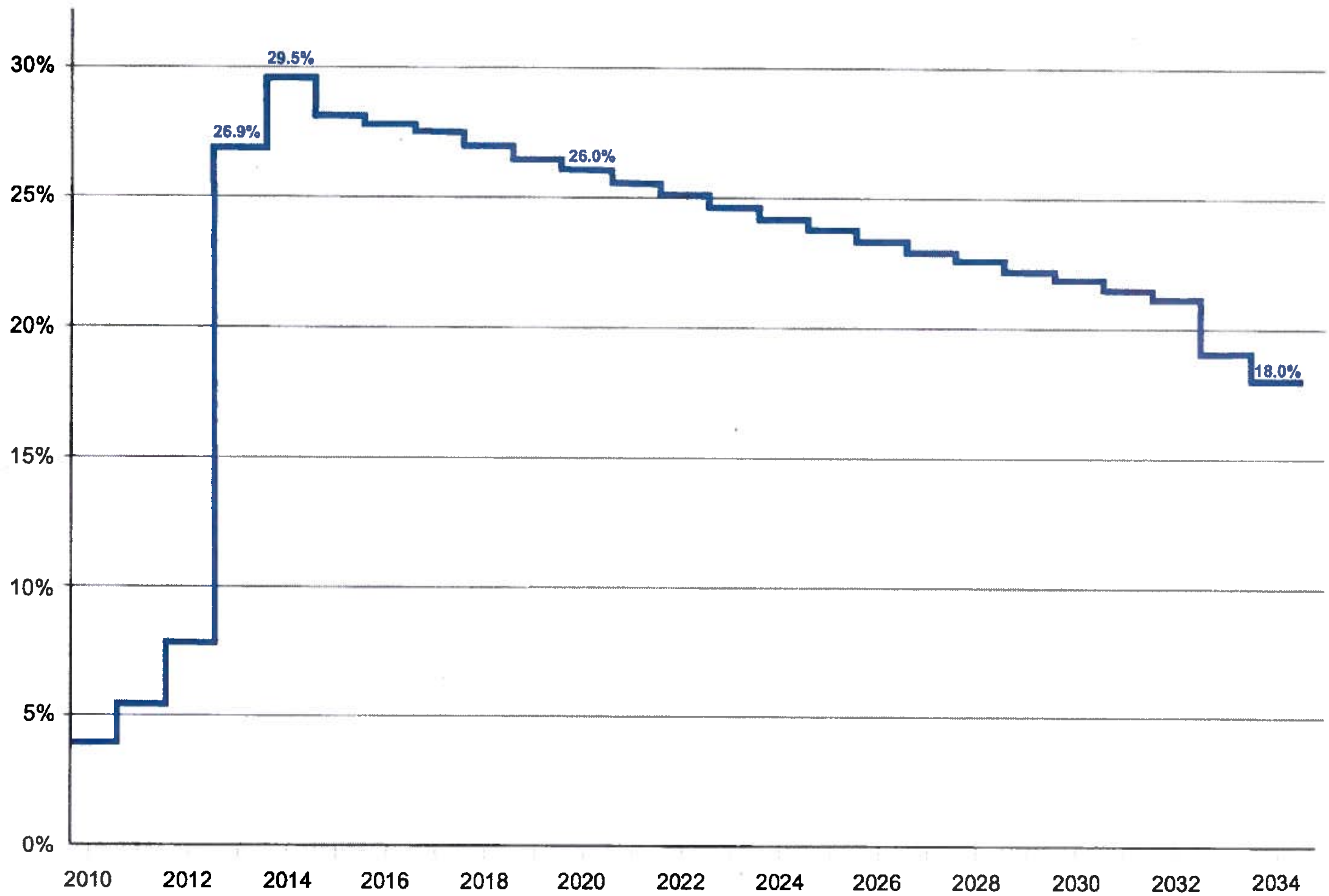
| Fiscal Year | Employer Rate |
|---|---|
| 81/82 | 14.4% |
| 82/83 | 17.9% |
| 83/84 | 16.8% |
| 84/85 | 18.1% |
| 85/86 | 18.0% |
| 86/87 | 13.1% |
| 87/88 | 13.1% |
| 88/89 | 13.1% |
| 89/90 | 13.0% |
| 90/91 | 12.3% |
| 91/92 | 9.9% |
| 92/93 | 8.9% |
| 93/94 | 8.9% |
| 94/95 | 8.9% |
| 95/96 | 10.3% |
| 96/97 | 7.7% |
| 97/98 | 7.3% |
| 98/99 | 6.7% |
| 99/00 | 5.0% |
| 00/01 | 1.4% |
| 01/02 | 0.0% |
| 02/03 | 0.0% |
| 03/04 | 1.1% |
| 04/05 | 2.0% |
| 05/06 | 3.0% |
| 06/07 | 4.0% |
| 07/08 | 4.0% |
| 08/09 | 4.0% |
| 09/10 | 4.0% |

# Employer Contribution Rate

## Projected Rate Spike and Plateau Estimates

SERS' Projected Employer Contribution Rates

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| Fiscal Year | Projected Employer Rate |
|---|---|
| 09/10 | 4.0 |
| 10/11 | 5.4 |
| 11/12 | 7.8 |
| 12/13 | 26.9 |
| 13/14 | 29.5 |
| 14/15 | 28.1 |
| 15/16 | 27.8 |
| 16/17 | 27.5 |
| 17/18 | 27.0 |
| 18/19 | 26.5 |
| 19/20 | 26.0 |
| 20/21 | 25.6 |
| 21/22 | 25.1 |
| 22/23 | 24.6 |
| 23/24 | 24.2 |
| 24/25 | 23.8 |
| 25/26 | 23.4 |
| 26/27 | 23.0 |
| 27/28 | 22.6 |
| 28/29 | 22.2 |
| 29/30 | 21.8 |
| 30/31 | 21.5 |
| 31/32 | 21.2 |
| 32/33 | 19.0 |
| 33/34 | 18.0 |
| 34/35 | 17.5 |

# Rate Spike Development & Potential Options



**The projected sharp rise in SERS' employer contribution rate from 7.8% in FY 2011/12 to an estimated 26.9% in FY 2012/13 and then nearly 30% in FY 2013/14 is primarily the result of:**

- **The unfunded liabilities created by:**
  - 2000-2002 down investment markets
  - Global economic downturn in 2008 resulting in -28.7% investment return
  - Act 2001-9 multiplier increase
  - Actuarial assumption changes
  - Act 2002-38 phased COLA
  - Demographic and salary experience
- **The change made by Act 2003-40 to SERS' actuarial funding methodologies**

## Act 40

Delayed the payment of liabilities into the future to provide fiscal relief to the state. It artificially reduced employer contribution rates in the short-term by recognizing gains over 10 years, ending FY 2011/12, but recognizing liabilities over 30 years.

As the unfunded liabilities have grown through recent investment losses and benefit enhancements, Act 40 has postponed paying for those costs.

**Due to Act 40, the current 4% Employer Contribution Rate is less than half the Employer Normal Cost.**

**Employer Normal Cost** - the amount needed from employers to fund the benefits earned by the Active Members for that year. It can be thought of as the minimum payment that would be made by employers if the System's actual experience perfectly matched its economic and demographic operating assumptions ***and*** there was no unfunded liability.

## SERS Employer Contribution Rate Is Artificially Low

Multiple costs are calculated in determining SERS employer rate but all those costs are offset by the rate-suppressing effect of Act 40. Here is the calculation behind the current rate.

### Rate-Suppressing Effect of Act 40

*Costs expressed as a percent of employer payroll*

| Expenses | | | Add To Rate |
|---|---|---|---|
| **Cost of Benefits** | | | |
| Cost to pay for benefits employees are earning this year ("Normal Cost") | | 9.51% | |
| This year's cost of Act 9 retroactive benefits (30-year amortization) | | 3.78% | |
| This year's cost to pay off COLAs previously awarded: | | | |
| Pre-2001 COLAs (COLAs granted as long ago as 1984 still have not been fully paid for) | 3.05% | | |
| 2002/2003 COLA | 1.73% | | |
| **This year's total cost of COLAs (10-year amortization)** | | 4.78% | |
| **This year's total cost to provide legislatively guaranteed benefits** | | | 18.07% |
| **Cost of Actuarial Adjustments Excluding Investments** | | | |
| This year's cost of reducing the assumed rate of return (30-year amortization) | 2.57% | | |
| This year's cost of other actuarial gains and losses (30-year amortization) | -0.68% | | |
| **This year's total cost of these Actuarial Adjustments** | | | 1.89% |
| **Cost of post 2001 Investment Performance** | | | |
| **This year's cost of post-2001 net investment losses (5-year smoothing, 30-year amortization)** | | | 4.29% |
| **2009/10 Expenses Subtotal** | | | 24.25% |
| **Rate Suppression Offset** (as of the Dec. 31, 2008 valuation) | | | |
| Reduction in this year's rate dictated by Act 2003-40 accelerated recognition of pre-2001 gains (10-year amortization) | | | -20.62% |
| **Net Actuarially Calculated Rate** | | | 3.63% |
| **Board Adopted Rate (Statutory Rate Floor)** | | | 4.00% |

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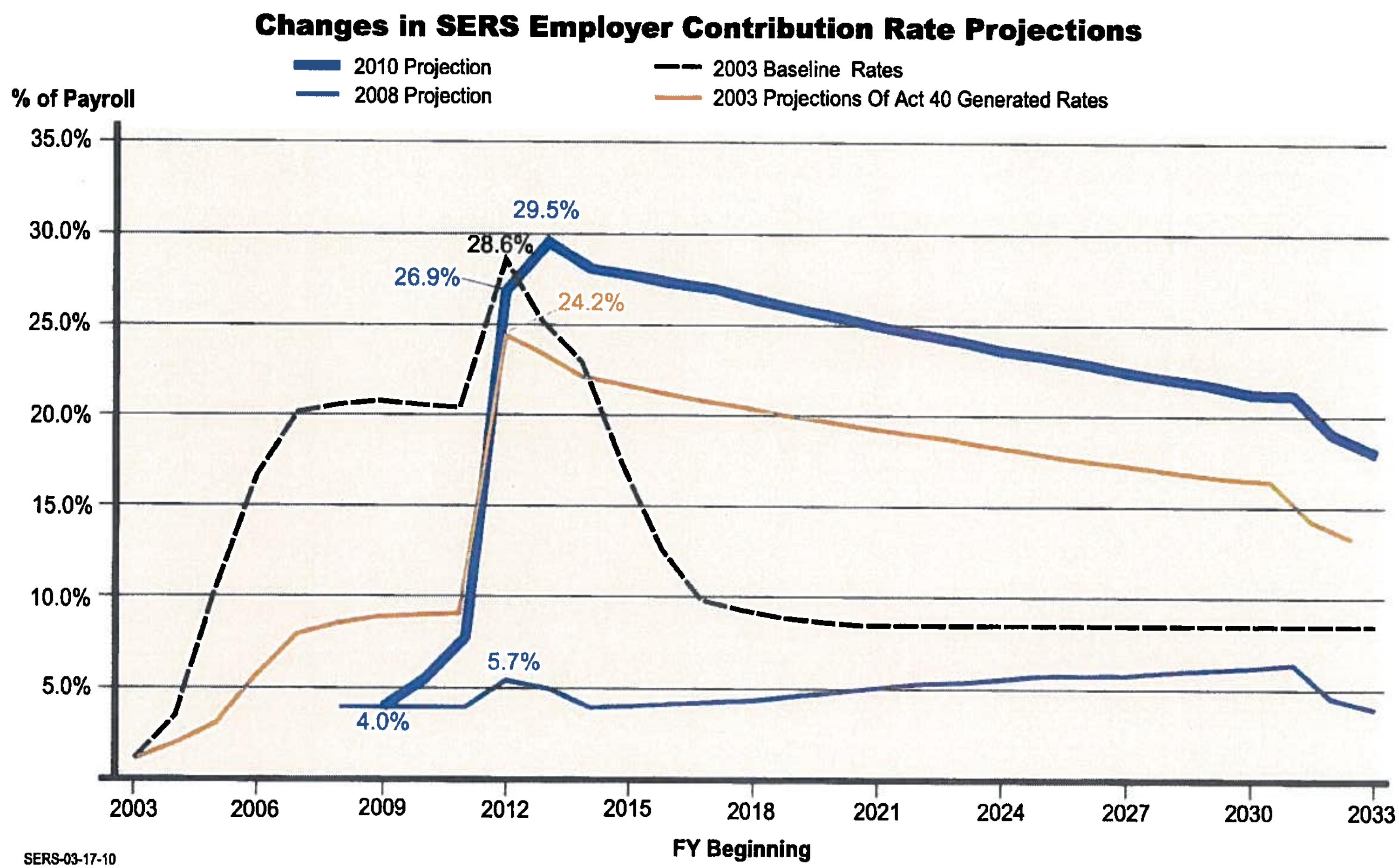
The Commonwealth also was facing a SERS rate spike in 2003. Act 40 was passed as a way to postpone the spike, in hopes another bull market would close the funding gap. That was happening – until the 2008 global economic collapse caused the spike to return.



# Rate Spike Development & Potential Options

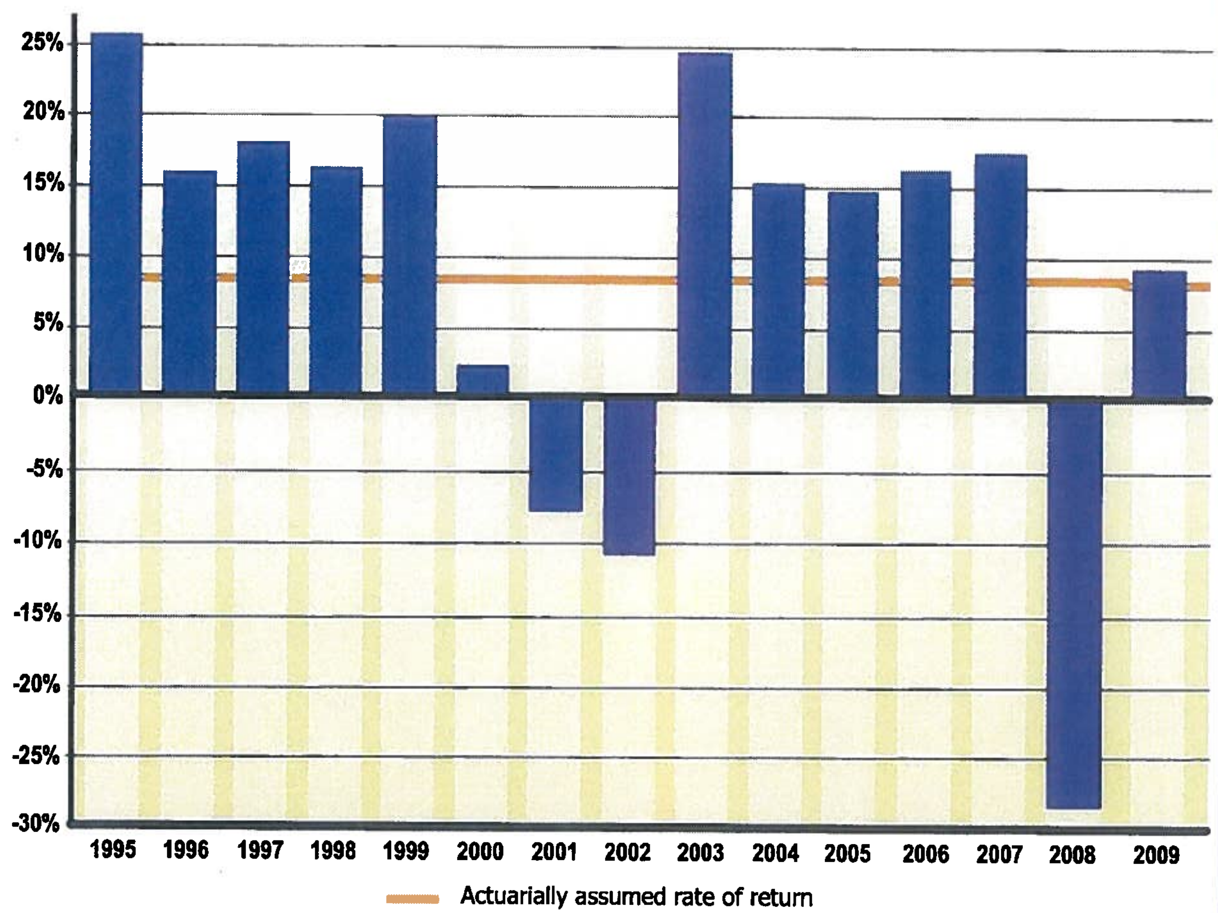
Investment performance varies widely year-to-year but long-term performance has closely matched expectations. SERS' 20-year annualized return is 8.6%.

In 10 of the 13 years prior to the global economic collapse of 2008, SERS' investment program resulted in returns in excess of the actuarial assumed rate of return, ranging as high as 25.2%.

That performance allowed the Fund to meet obligations while lowering employer contribution rates.

The global economic downturn of 2008, however, had a serious adverse impact on the Fund. The 2009 return once again exceeded the Fund's assumed long-term rate of return but it is not reasonable to expect future returns strong enough to eliminate the underfunding.

**SERS Investment Performance**
(In percent, net of fees)



# Rate Spike Development & Potential Options



**Fundamentally, there are only three ways to address the rate spike and plateau funding issues:**

1. **Increase Funding**
2. **Decrease Liabilities**
3. **Defer Liabilities**

# Rate Spike Development & Potential Options



### Increase Investment Returns

**Unlikely under current market conditions**

Current projections are based on long-term assumed return of 8% per year.

### Increase Employee Contributions

- **Can only occur prospectively for new members entering the System**
  The Courts have ruled that pension benefits are contracts with the existing members of the System, regardless of vesting, and subject to constitutional impairment of contract prohibition (Article I, Section 17)
- **Would not have an impact on existing unfunded liabilities of the System**

### Increase Employer Contributions

- **Employer Rates are already projected to increase significantly in FY 2012/13 and are expected to stay above 20% well into the future**

  Unlikely the state can afford even higher costs without significant and perhaps prohibitive tax increases

## Seek Other Sources of Funding

- **Federal Stimulus Funds**
  Unclear if these funds can legally be directly used to fund pension contributions

- **Dedicate revenue from an existing revenue source to supplement employer contributions**
  - Example: HB 2307 (Barbin) Johnstown Flood Tax reallocation
  - Disadvantage: Denies the General Fund of revenue

- **Pension Obligation Bond (POB)**
  POBs are debt instruments through which the state borrows money from investors in the bond market. The lump sum the government receives from the sale of the bonds is then used to fund all or a portion of the Unfunded Liabilities of the pension System.
  - Significant risk involved to the state if the pension plan's investment returns are less than the debt costs on the bond issue
  - Potential legal issue whether the Commonwealth can issue a POB – may require the approval of the voters in a referendum

### One-Time Cash Infusion Projections

Additional Infusion Required In 2009 To Reduce Contributions Below Target
*($ in billions)*

| | Amount Needed (30-Yr Amortization) | | Amount Needed (10-Yr Amortization) | |
|---|---|---|---|---|
| **Target Percent of Payroll** | **To Keep 2012/13 Contribution Rate Below Target** | **To Keep All Future Contribution Rates Below Target** | **To Keep 2012/13 Contribution Rate Below Target** | **To Keep All Future Contribution Rates Below Target** |
| <20% | $4.5 | $6.3 | $2.7 | $10.6 |
| <15% | $7.6 | $9.5 | $4.5 | $12.9 |
| <10% | $10.6 | $13.0 | $6.4 | $15.3 |

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# Rate Spike Development & Potential Options

## Potential Options - Decrease Costs/Liabilities

### Convert To A Defined Contribution or Hybrid Plan

- **Can only occur prospectively for new members entering the System**
  The Courts have ruled that pension benefits are contracts with the existing members of the System, regardless of vesting, and subject to constitutional impairment of contract prohibition (Article I, Section 17)
- **Savings, if any, depend on benefit structure of new plan**

### Modify/Cut Benefit

- **Can only occur prospectively for new members entering the System**
  The Courts have ruled that pension benefits are contracts with the existing members of the System, regardless of vesting, and subject to constitutional impairment of contract prohibition (Article I, Section 17)
- **Table (right) shows impact of reducing current 2.5%/year benefit accrual rate to 2% or 1%**
- **Raising vesting period from 5 years to 10 often mentioned as a solution but has almost no impact on rates (see table)**

**Each would reduce the long-term liability of the System, but have no impact on the current unfunded liability.**

**SERS Future Cost Reduction Options & Resulting Rate Projections***

*Applied to New Entrants Into the System*

| Year | Fiscal Year | Current Law | Ten-Year Vesting | 2% Multiplier | 1% Multiplier |
|---|---|---|---|---|---|
| 2008 | 2009/2010 | 4.0 | 4.0 | 4.0 | 4.0 |
| 2009 | 2010/2011 | 5.4 | 5.4 | 5.2 | 4.7 |
| 2010 | 2011/2012 | 7.8 | 7.8 | 7.5 | 7.0 |
| 2011 | 2012/2013 | 26.9 | 26.8 | 26.5 | 25.9 |
| 2012 | 2013/2014 | 29.5 | 29.5 | 29.2 | 28.4 |
| 2013 | 2014/2015 | 28.1 | 28.1 | 27.7 | 26.8 |
| 2014 | 2015/2016 | 27.8 | 27.8 | 27.4 | 26.4 |
| 2015 | 2016/2017 | 27.5 | 27.4 | 26.9 | 25.9 |
| 2016 | 2017/2018 | 27.0 | 27.0 | 26.5 | 25.4 |
| 2017 | 2018/2019 | 26.5 | 26.5 | 25.9 | 24.7 |
| 2018 | 2019/2020 | 26.0 | 26.0 | 25.4 | 24.1 |
| 2019 | 2020/2021 | 25.6 | 25.5 | 24.9 | 23.6 |
| 2020 | 2021/2022 | 25.1 | 25.0 | 24.4 | 23.0 |
| 2021 | 2022/2023 | 24.6 | 24.6 | 23.9 | 22.4 |
| 2022 | 2023/2024 | 24.2 | 24.1 | 23.4 | 21.9 |
| 2023 | 2024/2025 | 23.8 | 23.7 | 23.0 | 21.4 |
| 2024 | 2025/2026 | 23.4 | 23.3 | 22.5 | 20.9 |
| 2025 | 2026/2027 | 23.0 | 22.9 | 22.1 | 20.4 |
| 2026 | 2027/2028 | 22.6 | 22.5 | 21.7 | 19.9 |
| 2027 | 2028/2029 | 22.2 | 22.1 | 21.3 | 19.4 |
| 2028 | 2029/2030 | 21.8 | 21.8 | 20.9 | 19.0 |
| 2029 | 2030/2031 | 21.5 | 21.4 | 20.5 | 18.6 |
| 2030 | 2031/2032 | 21.2 | 21.1 | 20.2 | 18.2 |
| 2031 | 2032/2033 | 19.0 | 19.0 | 18.0 | 16.0 |
| 2032 | 2033/2034 | 18.0 | 17.9 | 17.0 | 14.9 |
| 2033 | 2034/2035 | 17.5 | 17.5 | 16.5 | 14.3 |

*Assumes no future COLAs
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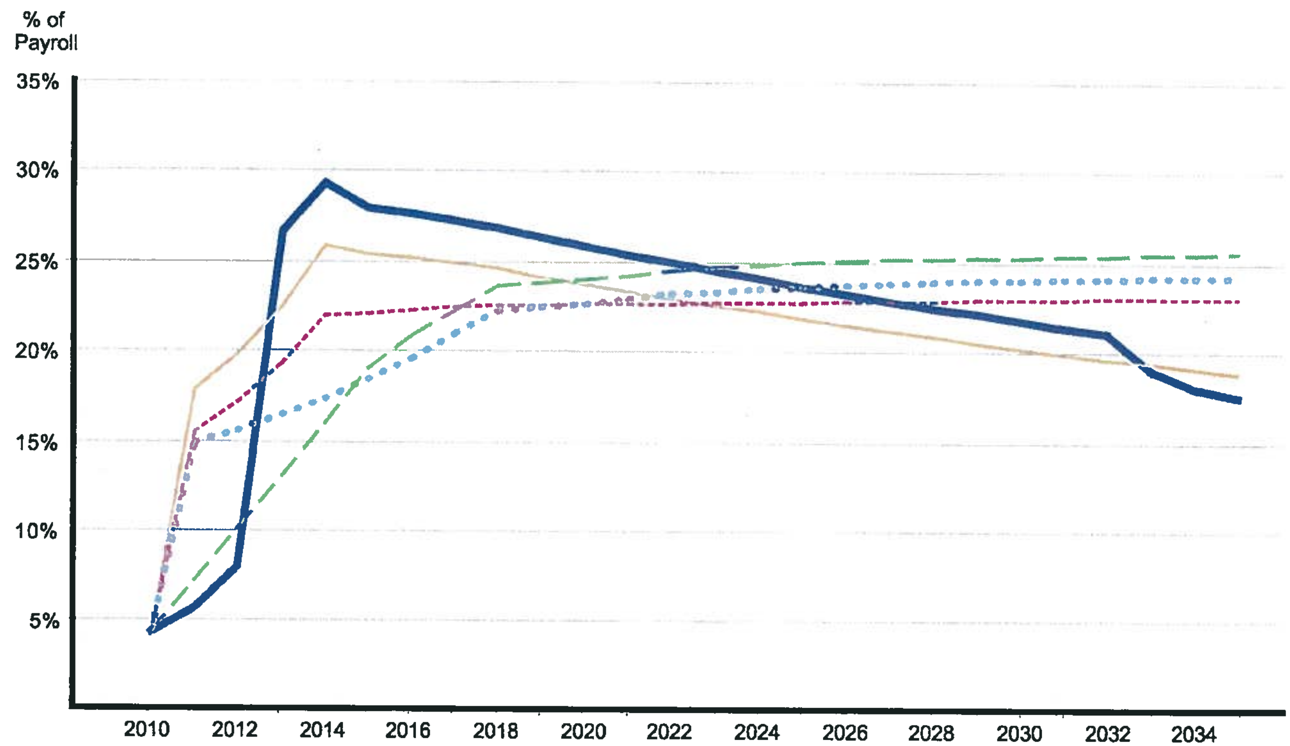
# Rate Spike Development & Potential Options



## Make Multiple Adjustments To Actuarial Funding Methods

- No single change or combination of changes resolves the rate spike
- Any changes that defer rate increases also increase total costs. Deferring debt adds to debt




**Entry Age Normal Cost Method**
*(current method)*

| Funding Alternatives | | | | | | Fiscal Year Employer Contributions ($ in millions) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 10/11 | | 11/12 | | 12/13 | | 13/14 | | Max Rate Through 34/35 | |
| Option | Amortization Level $ or % | Asset Smoothing | Collar | Liability Fresh Start | Asset Fresh Start | Rate | $ | Rate | $ | Rate | $ | Rate | $ | Rate | $ |
| Current | $ | 5 | No | No | No | 5.4% | $315.4 | 7.8% | $472.7 | 26.9% | $1,676.1 | 29.5% | $1,903.5 | 29.5% | $1,903.5 |
| 1 | $ | 5 | No | Yes | No | 17.8 | 1,042.3 | 19.9 | 1,199.5 | 22.6 | 1,408.7 | 26.0 | 1,674.8 | 26.0 | 1,674.8 |
| 2 | % | 5 | No | Yes | No | 15.5 | 905.2 | 17.1 | 1,034.8 | 19.3 | 1,205.6 | 22.1 | 1,422.4 | 23.2 | 2,954.3 |
| 3 | % | 10 | No | Yes | No | 14.9 | 868.2 | 15.6 | 939.0 | 16.4 | 1,024.3 | 17.3 | 1,115.5 | 24.4 | 3,105.1 |
| 4 | % | 10 | 3% | Yes | No | 7.0 | 409.3 | 10.0 | 604.0 | 13.0 | 811.1 | 16.0 | 1,031.2 | 25.7 | 3,273.5 |

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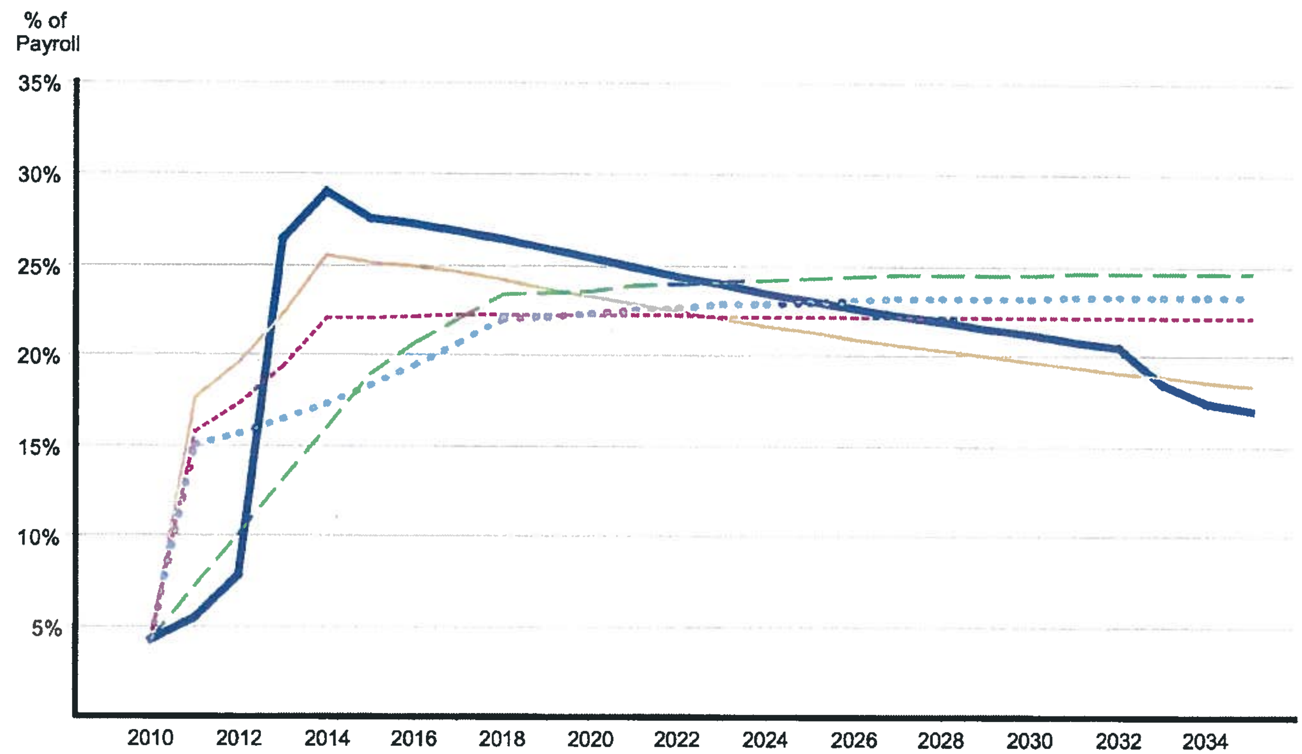
# Rate Spike Development & Potential Options



**Make Multiple Adjustments To Actuarial Funding Methods**

**This slide presents the same options as the previous slide but also replaces the current "entry age normal" method of calculating normal cost with the "projected unit credit" method. This is another means of deferring liabilities.**




**Projected Unit Credit Cost Method**

| Funding Alternatives | | | | | | Fiscal Year Employer Contributions ($ in millions) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 10/11 | | 11/12 | | 12/13 | | 13/14 | | Max Rate Through 34/35 | |
| Option | Amortization Level $ or % | Asset Smoothing | Collar | Liability Fresh Start | Asset Fresh Start | Rate | $ | Rate | $ | Rate | $ | Rate | $ | Rate | $ |
| Current | $ | 5 | No | No | No | 5.3% | $308.0 | 7.7% | $463.2 | 26.7% | $1,664.4 | 29.3% | $1,889.5 | 29.3% | $1,889.5 |
| 5 | $ | 5 | No | Yes | No | 17.7 | 1,034.8 | 19.7 | 1,190.0 | 22.4 | 1,397.0 | 25.8 | 1,660.7 | 25.8 | 1,660.7 |
| 6 | % | 5 | No | Yes | No | 15.7 | 920.3 | 17.3 | 1,046.7 | 19.5 | 1,214.0 | 22.1 | 1,427.1 | 22.4 | 1,646.7 |
| 7 | % | 10 | No | Yes | No | 15.1 | 881.4 | 15.7 | 949.0 | 16.5 | 1,030.8 | 17.4 | 1,118.2 | 23.4 | 2,987.8 |
| 8 | % | 10 | 3% | Yes | No | 7.0 | 409.3 | 10.0 | 604.0 | 13.0 | 811.1 | 16.0 | 1,031.2 | 24.8 | 3,161.2 |

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# Rate Spike Development & Potential Options

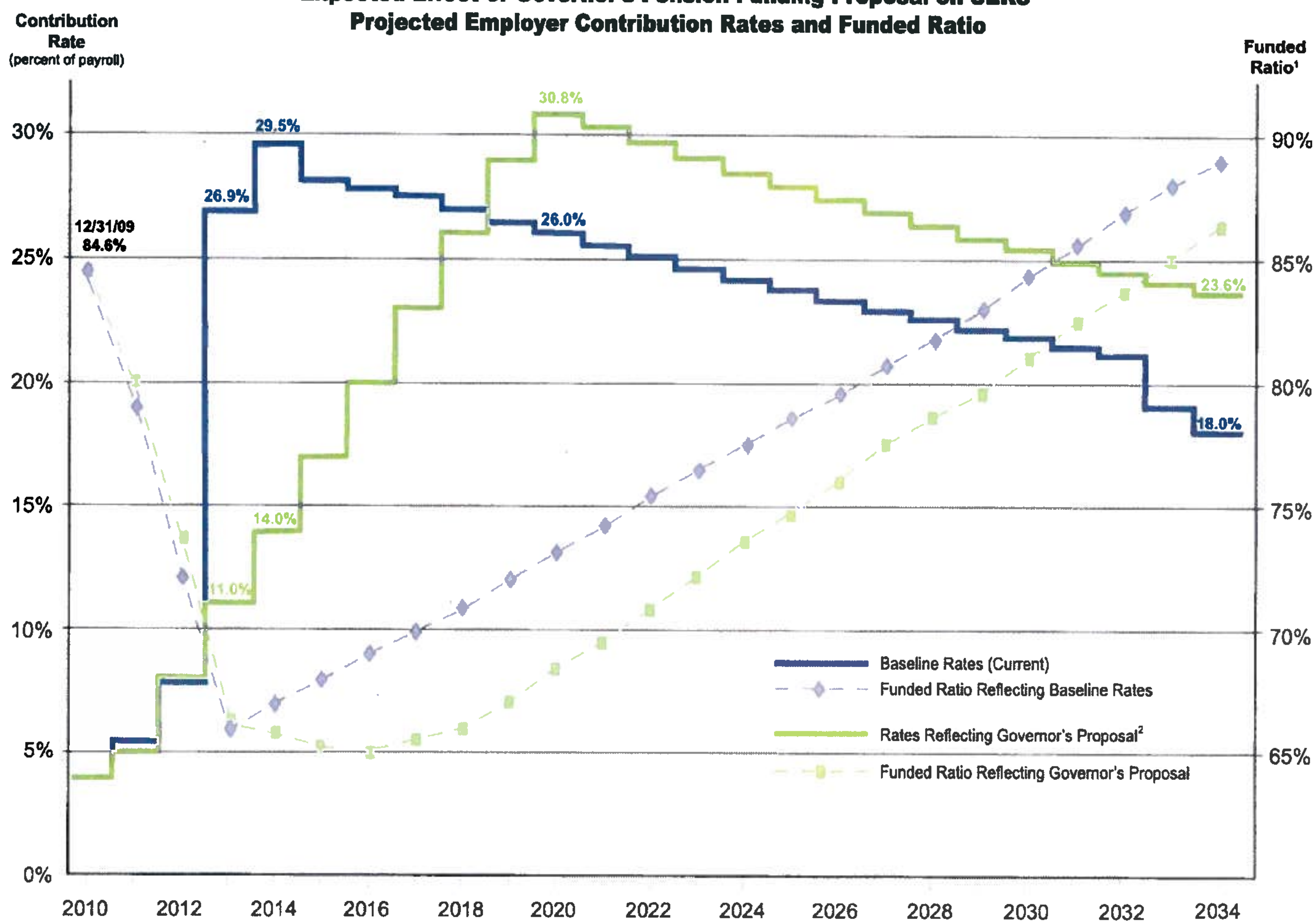


In his 2010-11 budget proposal, Governor Rendell proposed a pension funding method involving:

- **an actuarial "fresh start" of the System's liabilities**
- **an incremental phase-in to higher contributions by capping employer rate increases** at:
  - 1% of payroll in FY 2010/11
  - 3% each year thereafter

Because rate increases would be phased in, debt would be further deferred

**Expected Effect of Governor's Pension Funding Proposal on SERS' Projected Employer Contribution Rates and Funded Ratio**

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[1]Funded Ratio calculated annually in the actuarial valuations as of 12/31

[2]Governor's proposal including a Liability Fresh Start with 1% and 3% Collars

**Expected Effect of Governor's Pension Funding Proposal on SERS' Projected Employer Contribution Rates and Funded Ratio**

| | | Baseline | | Governor's Proposal | |
|---|---|---|---|---|---|
| Year | Fiscal Year | Employer Contribution Rate | Funded Ratio | Employer Contribution Rate | Funded Ratio |
| 2008 | 09/10 | 4.0% | 89.0% | 4.0% | 89.0% |
| 2009 | 10/11 | 5.4 | 84.6 | 5.0 | 84.6 |
| 2010 | 11/12 | 7.8 | 79.0 | 8.0 | 80.0 |
| 2011 | 12/13 | 26.9 | 72.1 | 11.0 | 73.6 |
| 2012 | 13/14 | 29.5 | 65.9 | 14.0 | 66.2 |
| 2013 | 14/15 | 28.1 | 67.2 | 17.0 | 65.8 |
| 2014 | 15/16 | 27.8 | 67.9 | 20.0 | 65.2 |
| 2015 | 16/17 | 27.5 | 68.8 | 23.0 | 65.1 |
| 2016 | 17/18 | 27.0 | 69.8 | 26.0 | 65.4 |
| 2017 | 18/19 | 26.5 | 70.9 | 29.0 | 66.0 |
| 2018 | 19/20 | 26.0 | 72.0 | 30.8 | 67.0 |
| 2019 | 20/21 | 25.6 | 73.1 | 30.3 | 68.3 |
| 2020 | 21/22 | 25.1 | 74.2 | 29.7 | 69.6 |
| 2021 | 22/23 | 24.6 | 75.3 | 29.1 | 70.9 |
| 2022 | 23/24 | 24.2 | 76.3 | 28.5 | 72.2 |
| 2023 | 24/25 | 23.8 | 77.4 | 27.9 | 73.5 |
| 2024 | 25/26 | 23.4 | 78.5 | 27.4 | 74.7 |
| 2025 | 26/27 | 23.0 | 79.6 | 26.9 | 76.0 |
| 2026 | 27/28 | 22.6 | 80.7 | 26.3 | 77.3 |
| 2027 | 28/29 | 22.2 | 81.8 | 25.9 | 78.6 |
| 2028 | 29/30 | 21.8 | 83.0 | 25.4 | 79.8 |
| 2029 | 30/31 | 21.5 | 84.3 | 24.9 | 81.1 |
| 2030 | 31/32 | 21.2 | 85.5 | 24.5 | 82.4 |
| 2031 | 32/33 | 19.0 | 86.9 | 24.0 | 83.7 |
| 2032 | 33/34 | 18.0 | 88.0 | 23.6 | 85.0 |
| 2033 | 34/35 | 17.5 | 88.9 | 23.2 | 86.3 |