pennsylvania
STATE EMPLOYEES' RETIREMENT SYSTEM

SERS White Paper - June 2020

UNDERSTANDING SERS EMPLOYER CONTRIBUTION RATE

Insights into the Methods Used to Determine the Rate and Enhance Stability

To understand how the Pennsylvania State Employees' Retirement System (SERS) employer contribution rate is calculated, it's important, first, to understand what exactly it is we are talking about.

The annual employer contribution (total annual employer cost) is expressed as a percentage of the total projected covered compensation for active members. It is an average percentage of compensation that needs to be received, in aggregate, from the employer groups participating in the pension system. The actual employer contribution rate for an employee, however, varies based on the employee's membership class of service.

SERS uses a variety of actuarial assumptions and methods, some set by statute in the State Employees' Retirement Code, and others adopted by the SERS Board, to calculate the cost of benefits, the actuarial value of assets, and the long-term liabilities of our pension system. ***Collectively, these elements are the primary inputs used to determine the annual contributions required from employers.*** They are all pieces of the employer contribution rate puzzle.

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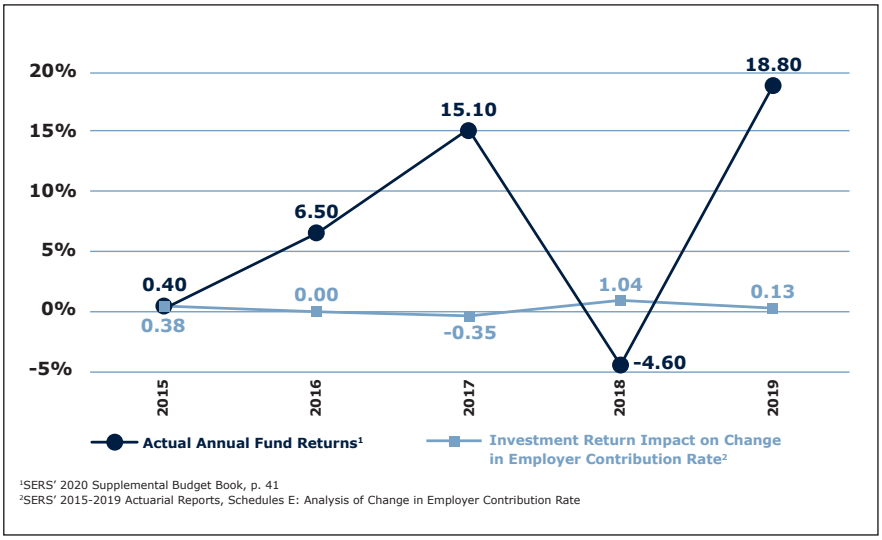
What About Investment Returns?

You may have thought that investment returns are what it's all about when it comes to determining annual employer contribution rates. And they do, of course, play a key role in determining the actuarial value of our assets and our long-term liabilities, both of which are primary inputs to the rate. However, as illustrated in Chart 1, the annual investment return for a particular year does not always impact changes to the annual employer contribution rate as much as you might think.

Why not? At its most basic level, the employer contribution rate is based on assets and liabilities, and there are several elements that impact the determination of those values. Let's start by looking at the asset piece of the puzzle.

Chart 1:
Comparison of Actual Annual SERS Fund Returns and Employer Contribution Rate Changes Due to Investment Returns



¹SERS' 2020 Supplemental Budget Book, p. 41
²SERS' 2015-2019 Actuarial Reports, Schedules E: Analysis of Change in Employer Contribution Rate

Asset Smoothing

As we know all too well, markets can be extremely volatile. Because wide swings in budgetary requirements are not easily accommodated, SERS has an actuarial method built into our funding methodology that helps dampen the impact of year-to-year market volatility on the required employer contributions. This is known as "asset smoothing." Once market assets are smoothed, the result is the actuarial value of assets. It is the **actuarial value of assets** that is used to calculate the employer contribution rate.

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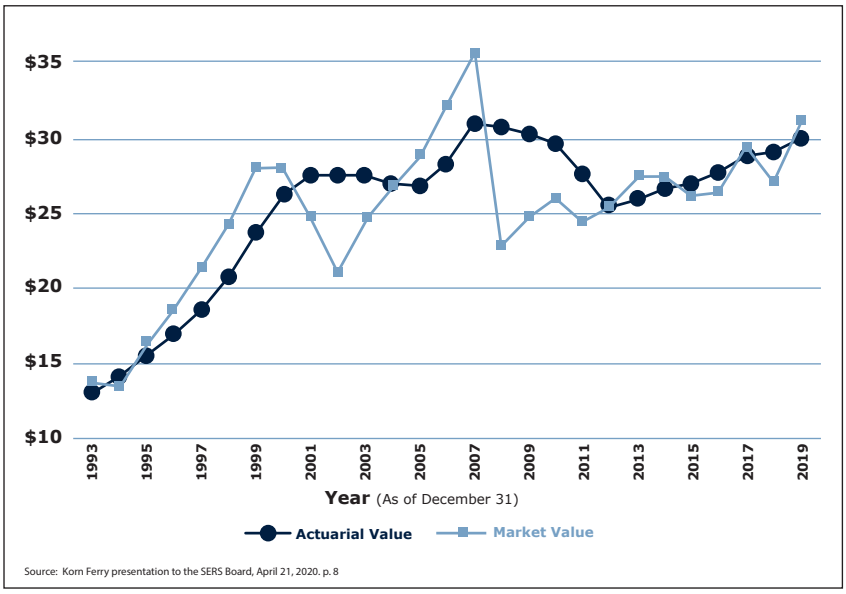
SERS uses a five-year asset smoothing method to determine the actuarial value of assets. This method requires the difference between the long-term expected return on investments and the actual market return to be recognized, at a rate of 20% per year, over five years. Applying this to our current situation, this means that the positive impact of SERS' strong 18.8% market return for calendar year 2019 is not all recognized in the 2019 valuation. Rather, this 2019 gain will be recognized, at 20% per year, over the 2019 through 2023 valuation years.

Similarly, the negative impact of less than expected returns SERS might experience in calendar year 2020, would also be recognized over five years, 20% per year, in this case, over the 2020 through 2024 valuation years. This smoothing method not only means that market gains and losses are not all recognized in one year, it also means that each year contains 20% of the market gains and losses of the previous four years. The result provides a smoothing effect on the actuarial value of the assets, as shown in Chart 2. And remember, it is the actuarial value of assets that is directly used to determine the employer contribution rate.

Chart 2:
SERS Actuarial (5-Year Smoothed) & Market Values of Assets



Source: Korn Ferry presentation to the SERS Board, April 21, 2020. p. 8

That said, the actuarial value of assets is only one piece of the annual employer contribution rate puzzle. Other pieces include (i) the normal cost of benefits, which is the level percentage of compensation needed to fund the benefits earned by new active members over the period of their expected service if all assumptions are met, and (ii) the amortization of the unfunded liability. The normal cost of benefits, in fact, has decreased significantly for new members starting with Act 2010-120 and most recently with Act 2017-5. The normal cost of benefits now represents only a small portion (less than 5%), of the 2020-2021 total employer contribution rate. The largest portion, (95%) is the payment towards the unfunded liability. Let's look at the unfunded liability piece of the puzzle and see what it involves.

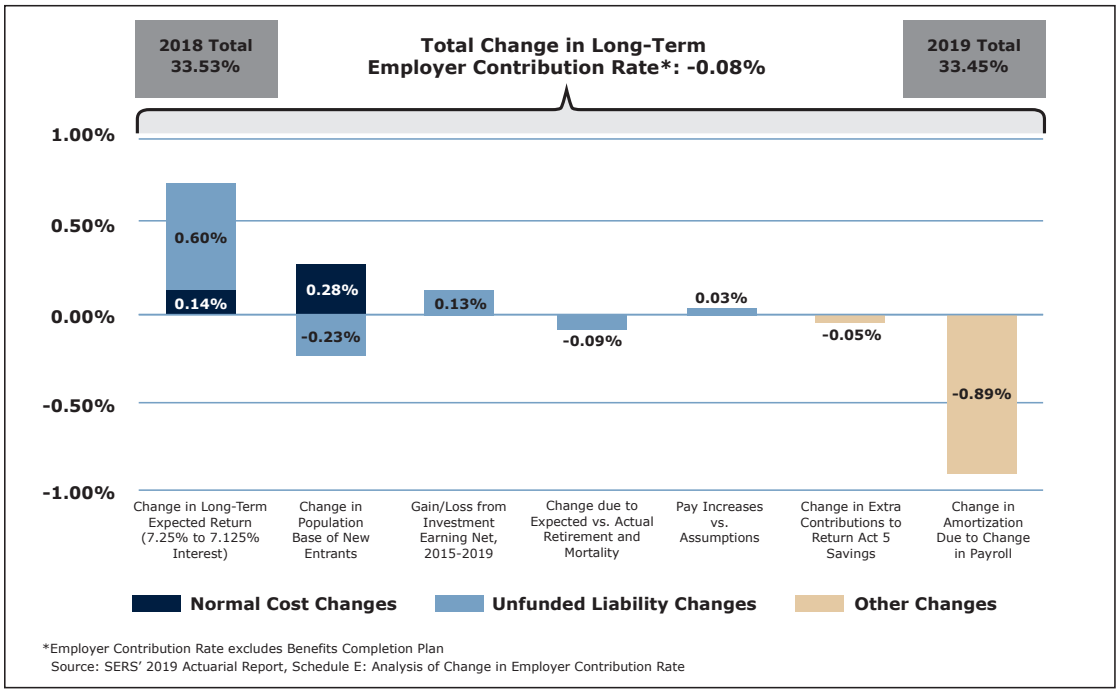
Amortization of Unfunded Liabilities

Liabilities are based upon actuarial assumptions adopted by the State Employees' Retirement Board. These assumptions include demographic assumptions, such as employee turnover, timing of commencement of retirement benefits, death, etc., and the more important assumptions known as economic assumptions. Economic assumptions include the investment rate of return assumption and the salary growth assumptions. Liabilities are impacted when actual experience differs from these assumptions. Each year, the change in the value of unfunded liabilities can be significant, reaching billions of dollars. SERS' amortization method, however, requires that most changes to the unfunded liability be amortized over 30 years, resulting in stabilization of the impact of these changes. Otherwise, these changes could have massive impacts, either good or bad, on the employer contribution rate each year.

The Puzzle, Solved

Putting the pieces of the employer contribution rate puzzle together, Chart 3, illustrates each piece of the 2020-2021 employer contribution rate and its impact on the overall rate. Note that the items in light blue directly impact the amortization of the unfunded liability, which directly impacts the employer contribution rate.

Chart 3:
Components of the 2018 to 2019 Employer Contribution Rate Change
Each component either adds to or subtracts from the 2018 rate, resulting in a 0.08% decrease in the 2019 employer contribution rate.



*Employer Contribution Rate excludes Benefits Completion Plan
Source: SERS' 2019 Actuarial Report, Schedule E: Analysis of Change in Employer Contribution Rate

In Chart 3, you will find two pieces (in tan) classified as *Other Changes*: the *Change in Extra Contributions to Return Act 5 Savings*, and *Change in Amortization Due to Change in Payroll*.

The *Change in Extra Contributions to Return Act 5 Savings* relates to the funding "plow-back" feature of Act 2017-5. To accelerate the funding of SERS, Act 5 included a provision whereby, in any future fiscal year in which there was projected to be savings as a result of Act 5, additional employer contributions equal to the amount of that annual savings would be assessed as a percentage of all SERS' covered compensation. For the 2020-2021 year, that value is 0.66% of payroll, 0.05% of payroll less than the "plow-back" assessed for the 2019-2020 year.

The *Change in Amortization Due to Change in Payroll* relates to the fact that the amortization payments are level dollar amounts over the remaining applicable amortization periods and the employer cost is determined as a percent of payroll. So, the numerator in the amortization calculation is the fixed (level) dollar amount to be paid and the denominator is the employer payroll. When the employer payroll (denominator) changes, the resulting percentage changes. In the case of 2020-2021, the growth in SERS payroll results in the percentage required being less. You will see that this element has the largest impact on the 2020-2021 employer contribution rate.

The element with the next largest impact on the 2020-2021 employer contribution rate is the change in the long-term expected return from 7.25% to 7.125%. This investment rate of return assumption change, made by the SERS Board in June 2019 effective with the 2019 valuation, was based upon a detailed analysis of capital market projections, SERS asset classes, and the probability of achieving a number of specific return rates.

The *Gain/Loss from Investment Earnings, Net, 2015-2019* has the third largest net impact on the 2020-2021 employer contribution rate. The remaining impacts are a result of differences in other assumptions from actual experience.

Putting It All Together

So here you have it, all the elements that comprise the annual employer contribution rate for 2020-2021.

Hopefully, this discussion provides you with a better understanding of what comprises the annual employer contribution rate and how and why one year's investment return doesn't necessarily dictate what happens to the following fiscal year's contribution rate. Why is that so? Because when determining investment gains and losses, one year's market return is smoothed into the assets over five years and the current year's actuarial gains and losses include 20% of each of the previous four years' gains and losses, and because there are other significant pieces to the employer contribution rate puzzle.

The Timing of it All

SERS operates, for the most part, on a calendar year basis. The employer contribution rates are set, however, for the subsequent July 1 to June 30 fiscal year. Therefore, as an example, the results of the calendar year 2019 valuation were used to set the FY 2020-21 employer contribution rates. Continuing on, the results of the calendar year 2020 valuation will be used to set the FY 2021-22 employer contribution rates.

The Bottom Line

As you can see, there are many pieces to the employer contribution rate puzzle. And there are actuarial methods in place to temper the impacts of changes or differences in any one of those pieces.

Another vitally important piece of the puzzle is the impact of not paying actuarially required contributions. One of the most important actions the Administration and the General Assembly can take to keep the unfunded liability in check, is to continue to pay the required contributions.

Since 2016, the General Assembly and the Wolf Administration have made all actuarially required payments. Previously, that was not the case, and, over the years, it has cost the fund and the Commonwealth dearly.

As with our previous white papers, we offer this discussion to provide insights that will assist our colleagues in the General Assembly and the Administration in better understanding what can be very complex and even arcane issues – but ones that are vitally important, not only to the members and participants in Pennsylvania's retirement systems, but also to taxpayers.

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Our purpose is to offer our specialized expertise and share our knowledge of sound actuarial practices and effective funding policies with those who make laws and set public policy.

We look forward to your comments and questions, and to the opportunity to discuss these issues in greater detail. In addition, we continue to be open to exploring alternative approaches and suggestions, and to providing any technical and other assistance, as needed.

Thank you in advance for your review and consideration of these important issues.

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