Report to the Mississippi Legislature

2019 Update on Financial Soundness of the Public Employees' Retirement System

#641
December 16, 2019

PEER
MISSISSIPPI
Joint Legislative Committee on Performance Evaluation and Expenditure Review

PEER: The Mississippi Legislature's Oversight Agency

The Mississippi Legislature created the Joint Legislative Committee on Performance Evaluation and Expenditure Review (PEER Committee) by statute in 1973. A joint committee, the PEER Committee is composed of seven members of the House of Representatives appointed by the Speaker and seven members of the Senate appointed by the Lieutenant Governor. Appointments are made for four-year terms, with one Senator and one Representative appointed from each of the U.S. Congressional Districts and three at-large members appointed from each house. Committee officers are elected by the membership, with officers alternating annually between the two houses. All Committee actions by statute require a majority vote of four Representatives and four Senators voting in the affirmative.

Mississippi's constitution gives the Legislature broad power to conduct examinations and investigations. PEER is authorized by law to review any public entity, including contractors supported in whole or in part by public funds, and to address any issues that may require legislative action. PEER has statutory access to all state and local records and has subpoena power to compel testimony or the production of documents.

PEER provides a variety of services to the Legislature, including program evaluations, economy and efficiency reviews, financial audits, limited scope evaluations, fiscal notes, special investigations, briefings to individual legislators, testimony, and other governmental research and assistance. The Committee identifies inefficiency or ineffectiveness or a failure to accomplish legislative objectives, and makes recommendations for redefinition, redirection, redistribution and/or restructuring of Mississippi government. As directed by and subject to the prior approval of the PEER Committee, the Committee's professional staff executes audit and evaluation projects obtaining information and developing options for consideration by the Committee. The PEER Committee releases reports to the Legislature, Governor, Lieutenant Governor, and the agency examined.

The Committee assigns top priority to written requests from individual legislators and legislative committees. The Committee also considers PEER staff proposals and written requests from state officials and others.

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The Mississippi Legislature

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January 6, 2020

Honorable Tate Reeves, Governor
Honorable Delbert Hosemann, Lieutenant Governor
Honorable Philip Gunn, Speaker of the House
Members of the Mississippi State Legislature

On December 16, 2019, the PEER Committee authorized release of the report titled ***2019 Update on Financial Soundness of the Public Employees' Retirement System.***

Representative Becky Currie, Chair

This report does not recommend increased funding or additional staff.

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Joint Legislative Committee on Performance Evaluation and Expenditure Review

Report Highlights

December 16, 2019

2019 Update on Financial Soundness of the Public Employees' Retirement System

CONCLUSION: Financial soundness should be defined not as a point-in-time comparison of assets and liabilities, but as a multifaceted construct involving an understanding of the role of actuarial soundness in judging financial health, a broadly defined view of affordability that encompasses sustainability in consideration of all relevant environmental conditions, and an understanding of the role of risk and investment management in the long-term financial health of the system.

Background:

The Public Employees' Retirement System of Mississippi (PERS) is a defined benefits retirement plan for a majority of the employees (and/or their beneficiaries) of state agencies, counties, cities, colleges and universities, public school districts, and other participating political subdivisions. State law requires PEER to report annually to the Legislature on the financial soundness of PERS.

In addition to the PERS plan, Mississippi's public retirement system consists of five other retirement plans (or programs) that provide retirement allowances and other benefits to segments of Mississippi public employees.

The system is under the administration of the 10-member PERS Board of Trustees, which has a primary responsibility of ensuring adequate funding of the plans it administers. One means of accomplishing this task is by setting contribution rates for employers participating in the plans. For assistance in setting these rates, the PERS Board receives actuarial reports annually and works with independent actuarial advisers to develop comprehensive models that are used to project the financial position of the various plans. These models include such components as investment return assumptions, wage inflation assumptions, retirement tables, and retiree mortality tables.

Each of these components must work in concert with the others for the plan to maintain financial soundness. Underperformance in any one area can cause additional stress on other components of the plan and can lead to underperformance of the plan as a whole.

In addition to annual actuarial valuations and projection reports, the PERS Board biennially reviews the actual experience of the various plans to expected experience for reasonableness, and adjust, as necessary, the assumptions used.

Due to the timing of this year's report and a change in the release date of the PERS plan's annual valuation, this report provides a review of the PERS Board's actions (based on actuary recommendations concerning the plan's most recent experience study, and a limited review of the plan's financial stance).

This report also includes information on the use of "cost-of-living adjustments" by defined benefits plans across the country and an overview of the Mississippi Government Employees' Deferred Compensation Plan and Trust (MDC) and the results of a targeted survey of its members satisfaction.

PERS Economic Assumption Changes

The PERS Board, in consultation with its actuaries, develops an actuarial model based on such assumptions as projected investment returns, payroll increases, inflation, retirement ages, mortality rates, marriage rates, and accrued leave to project the system's future assets and liabilities. Although the PERS Board sets plan assumptions based on biennial experience studies, the plan's actual experience (e.g., investment returns or mortality rates) is a product of environmental and demographic factors.

Variances in the actual experience of the plan compared to the model's assumptions have an impact on the plan's financial condition. Therefore, the PERS Board, with assistance from its staff and other contractual advisers, endeavors to maintain the actuarial soundness of the plan by monitoring all components used in the PERS actuarial model through quarterly updates on the performance of the System's assets and annual actuarial updates in conjunction with annual projections and biennial experience reports.

Because of its most recent four-year experience study, ending June 30, 2018, the PERS Board adopted decreases in the plan's price inflation and wage inflation assumptions and adopted amendments to components of the plan's funding policy to install a method to reduce the plan's investment return assumption to the rate most recently recommended by the plan's actuary.

Assumption	FY 2019 and Future Years†	Most Recent Rate Prior to FY 2019
Price Inflation	2.75%	3.00%
Wage Inflation	3.00%	3.25%
Investment Return*	7.75%‡	7.75%

*Net of investment expense.
†The revised economic assumptions were also used in the valuation of system liabilities for FY2019.
‡The Board voted to adopt amendments to the plan's funding policy that will incrementally lower the investment return assumption rate to the rate recommended by the plan's actuary of 7.50% using the plan's future excess investment gains.

PERS Demographic Assumption and Other Assumption Changes

The demographic assumptions of the model seek to explain the effects of retirements (service and disability), withdrawals, mortality, and salary increases on the plan. These assumption levels are based on subsets of the plan members, grouped by age, gender, and years of service. These assumptions are assessed during the PERS Board's biennial experience studies to compare what happened to the membership of the plan during the evaluation period (the four-year period ending June 30, 2018) with what was expected to occur based on the assumptions used in the most recent actuarial valuations. Based on this study, the PERS Board adopted changes to many of its demographic assumptions, including adoption of the new Society of Actuaries' public retirement plan mortality tables.

Active Member to Retired Member Ratio

From FY 2009 through FY 2019, the ratio of active members to retired members decreased by approximately 36%, driven by an increasing number of retirees and a decreasing number of active members for the period. The ratio of active members to retired members fell to 1.37:1 during FY 2019 (down from 1.40:1 in FY 2018). However, for the first time since FY 2014, PERS number of active memberships remained flat.

As a maturing plan, PERS's model expects, and attempts to account for these increases, but this decrease results in the funding of future pension obligations over the payroll of fewer active members.

The PERS Board adopted a change in its assumption for the estimation of its administrative expenses (which is included in normal cost), of 0.02%, increasing the estimate from 0.23% to 0.25% of covered payroll.

Amendments to the PERS Funding Policy

During its October 2019 meeting, the PERS Board finalized the adoption of amendments to the plan's funding policy to reflect the method the PERS plan will use to lower its investment return assumption from its current rate of 7.75% to the actuary's recommended rate of 7.50%.

Unlike the one-time adoption of the plan's other assumption changes (price inflation assumption, wage inflation assumption, and demographic assumptions) the PERS Board's adoption of the change in the investment return assumption will be phased in over time utilizing any excess returns, above the current 7.75%, generated by the plan's investments in future periods.

Investment Management

FY 2019 investment manager fees of $104.1 million were less than the fees paid in FY 2018 ($104.8 million), and represented a combined investment manager expense rate of 0.36%.

For FY 2019, PERS plan's combined investment portfolio realized a return of approximately 6.87% while the market value of assets grew from approximately $28.1 billion to $28.6, an increase of approximately $0.5 billion.

PERS investment performance for FY 2019 was below the current actuarial model's target investment return of 7.75% and placed it above the median return for its peer group of 6.56%. Additionally, PERS investment performance has exceeded its peer group median for each of the past three-, five-, and 10-year periods (ranking in the top 15% over each of these periods).

Cost of Living Adjustment

Under MISS. CODE ANN. Section 25-11-112(1) (1972), PERS retirees receive a 3% cost-of-living adjustment that automatically increases annually, either by a simple or compounding method depending on the person's age and date of employment. According to information from the National Association of State Retirement Administrators December 2018 *NASRA Issue Brief: Cost-of-Living* Adjustments, like PERS, 36 of the 99 state-level public pension plans (in the survey) provide some form of compounded cost-of-living adjustment to retirees.

Mississippi Government Employees' Deferred Compensation Plan and Trust

The Legislature created the Government Employees' Deferred Compensation Plan and Trust (MDC) in 1973, later codified in MISS. CODE ANN. Section 25-14-1 et seq. (1972), as a supplementary, state-sponsored, voluntary deferred compensation plan for employees of various state and local government entities.

State Law charges the Public Employees' Retirement System (PERS) of Mississippi with the oversight and administration of MDC, which the PERS Board accomplishes through its Defined Contribution Committee. Under its authority as the administrator of the MDC, the PERS Board selects the investment options available within the plan.

Since the inception of the MDC, the PERS Board has administered the plan through a third-party administrator, currently Great-West Life & Annuity Insurance Company, who is doing business as Empower Retirement. As MDC's recordkeeper, Empower Retirement receives oversight through an annual attestation engagement audit, periodic compliance reviews from the Mississippi Secretary of State's Securities Division, and contractual metrics.

2019 Update on Financial Soundness of the Public Employees' Retirement System

Introduction

Authority, Scope, and Purpose

MISS. CODE ANN. § 25-11-101 (1972) directs the PEER Committee to:

> *…have performed random actuarial evaluations, as necessary, of the funds and expenses of the Public Employees' Retirement System and to make annual reports to the Legislature on the financial soundness of the system.*

The PEER Committee, under the authority found in MISS. CODE ANN. § 5-3-51 et seq. (1972), carried out the statutorily required review of the financial condition of the Public Employees' Retirement System (PERS). Actuarial reviews authorized by MISS. CODE ANN. Section 25-11-101 are discretionary.

This 2019 report includes an update on limited aspects of the financial performance of the System and the results of the plan's experience study as of June 30, 2018.

Additionally, the report includes information on the Mississippi Deferred Compensation Plan and issues identified by participants.

Method

To conduct this assessment, PEER:

- reviewed financial reports of the Public Employees' Retirement System;
- reviewed actuarial reports and projections and experience studies prepared for the Public Employees' Retirement System;
- reviewed investment assessments prepared for the Public Employees' Retirement System;
- interviewed personnel of the Public Employees' Retirement System, and the Mississippi Government Employees' Deferred Compensation Plan and Trust (MDC); and,
- interviewed and surveyed participants of MDC.

Background

Like all other states in the country, Mississippi provides a retirement system for public employees; and, as is the case in most states, this plan is overseen by an agency of state government that is responsible for the investment and administration of the benefit payment process.

This chapter will present:

- an overview of the Public Employees' Retirement System; and,
- the composition and responsibilities of the PERS Board of Trustees.

Overview of the Public Employees' Retirement System

Under MISS. CODE ANN. § 25-11-101 (1972), the Legislature created a retirement system to provide retirement allowances and other benefits for officers and employees in the state's service and their beneficiaries. The Board of Trustees of the Public Employees' Retirement System (PERS Board) is responsible for the administration of the System.

Mississippi's retirement systems (hereinafter collectively referred to as "System") currently consist of seven types of plans, or programs:

- The Public Employees' Retirement System of Mississippi (PERS) is a defined benefits[1] retirement plan for state agencies, counties, cities, school districts, and other participating political subdivisions.
- The Mississippi Highway Safety Patrol Retirement System (MHSPRS) is a defined benefits retirement plan designed exclusively for Mississippi Highway Safety Patrol sworn officers.
- The Mississippi Government Employees' Deferred Compensation Plan and Trust (MDC) is an IRS Section 457(b)[2] voluntary government employees' deferred compensation plan (for more information on this plan, please see pages 26-34).[3]
- Municipal Retirement Systems (MRS) are retirement plans created by 17 municipalities prior to the establishment of PERS

[1]Defined benefit plans, the most prevalent type of plan used by public employers, pay retired employees, or their beneficiaries, a defined amount through a calculation based on the plan's benefits and the employee's salary and years of service.

[2]Plans eligible under IRS Section 457(b) allow employees of sponsoring organizations (state and local governments and some nongovernmental entities) to defer income taxation on up to $19,000 (for calendar year 2019) of retirement contributions. Catch-up provisions allow an additional $6,000 in tax deferrals or up to $25,000.

[3]MDC is sponsored by the State of Mississippi and administered by the PERS Board. The PERS Board contracts with Empower Retirement (the nation's second-largest retirement services company) as a third-party administrator to perform recordkeeping and administrative functions.

whose membership was closed. The administration and members of the plans were transferred to PERS in 1987.

- The Supplemental Legislative Retirement Plan (SLRP) is a separate plan designed to provide additional benefits to members of the Legislature and the President of the Senate. It is funded by employee and employer contributions in addition to contributions to the PERS plan.
- The Optional Retirement Plan (ORP) is a 401(a) defined contribution plan[4] that certain teaching and administrative faculty at the state's universities can elect to join in lieu of becoming members of PERS.
- The PERS Board is also responsible for the administration of an optional retiree Medicare supplemental insurance program, the premiums of which are paid by the individuals who participate.

All assets, proceeds, and income of the System as defined here are held in trust (as provided for in the *Mississippi Constitution of 1890*, Section 272A) for the exclusive purpose of providing benefit payments and refunds and providing for the System's administrative expenses. Assets of the system, excluding the MDC and ORP, are invested collectively at the direction of the PERS Board of Trustees and its advisers. Assets of each member of the MDC and ORP are invested at the direction of the member.

Composition and Role of the PERS Board of Trustees

Established in MISS. CODE ANN. § 25-11-15 (1972), the 10-member PERS Board of Trustees is responsible for the administration of the state's retirement system plan. In addition to administrative oversight provided by the PERS Board and staff, the Mississippi Highway Safety Patrol Retirement System is governed by its own administrative board.

Composition of the PERS Board of Trustees

The current membership of the PERS Board includes:

- the State Treasurer;
- a gubernatorial representative;
- two state employees;
- one municipal employee;
- one county employee;
- one Institutions of Higher Learning (IHL) employee;
- one public school/junior college employee; and,
- two retiree members of the PERS system.

[4]The ORP is a defined contribution plan that has fixed employee and employer contributions. These contributions are the sole financial requirement of the employer.

Except for the State Treasurer and the Governor's appointee, all trustees are elected by the various constituency employee groups they represent (i.e., state municipal, county, institutions of higher learning, public schools, and junior colleges, as well as retirees).

In addition to those members, state law provides for four legislative advisers to assist the PERS Board (two each from the Mississippi Senate and House).

The PERS Board establishes policies and procedures for the administration of the System in accordance with the laws governing the various benefit plans. This includes adopting rules and regulations necessary to implement those laws and comply with federal regulations.

Role of the PERS Board of Trustees

A primary responsibility of the PERS Board is to ensure adequate funding of the plans it administers. One means of accomplishing this task is by setting contribution rates for employers participating in the plans. For assistance setting these rates, the PERS Board receives actuarial reports annually and works with its actuarial consultants to create comprehensive models that are used to project the financial position of the various plans. These models include such factors as investment return assumptions, wage inflation assumptions, retirement tables, and retiree mortality tables.

For FY 2019 the PERS Board continued its contractual relationship with Cavanaugh Macdonald Consulting, LLC, a nationwide actuarial and health-care consulting firm that works with state and municipal retirement systems in 26 states, the District of Columbia, and Puerto Rico.

In addition to annual actuarial valuation and projection reports, the PERS Board biennially reviews the experiences of the various plans to expected experience for reasonableness and adjusts, as necessary, the assumptions used.

The PERS Board also contracts with an investment consultant to conduct asset-liability studies, provide quarterly performance reports and economic updates, and assist the PERS Board and staff in establishing the System's asset allocation policy and selection of investment management firms. The PERS Board currently contracts with Callan LLC, one of the nation's largest independently owned investment consulting firms.

PERS Board members have a fiduciary duty to manage and invest the funds of the various plans for the exclusive benefit of the members and beneficiaries in the manner provided by law. MISS. CODE ANN. § 25-11-121 (1972) provides guidelines and limitations on the types of assets the PERS Board may use as investments for the PERS plan.

Update on Financial Soundness of the Public Employees' Retirement System

"Financial soundness" should be defined not as a point-in-time comparison of assets and liabilities but as a multifaceted construct involving an understanding of the role of actuarial soundness in judging financial health, a broadly defined view of affordability that encompasses sustainability in consideration of all relevant environmental conditions, and an understanding of the role of risk and investment management in the long-term financial health of the System.

The PERS Board has adopted and implemented policies and procedures that allow it to address the major areas that contribute to the plan's financial well-being and to carry out its fiduciary responsibilities to its active members and retirees. These policies and procedures fall into the following areas:

- actuarial soundness and sustainability; and,
- risk and investment management.

"Actuarial soundness" and "sustainability" are two of the major components of financial soundness. The focus of these two concepts should be to establish a system and actuarial assumption models that can be upheld and defended in view of all relevant environmental conditions, including contractual obligations involved and the potential economic consequences of abrogating those obligations.

"Risk management" and "investment management" represent the other major contributing factors of financial soundness. These concepts are utilized to provide a long-term framework for the system that will manage the plan's long-term risk environment in ways that allow it a reasonable opportunity to collect or earn sufficient assets to meet its benefit obligations.

In previous years' reports, the PEER Committee has discussed these concepts in detail, citing from various sources (such as the PERS plan's annual valuation) and the results of the PERS Board's efforts to ensure the financial soundness of the PERS plan. Traditionally, the PERS Board accepts and releases the plan's annual valuation in their October meeting. However, the plan's actuary postponed the delivery of the plan's valuation report due to the PERS Board's decision to take additional time to study the adoption of the changes recommended by the plan's actuary in its most recent experience study. As a result, the PEER Committee can only offer a review of the PERS plan that is limited when compared to previous releases of this annual report.

This chapter will discuss:

- the actuarial soundness of the plan;
- the amendments to the PERS funding policy; and,
- the aspects of PERS investment management.

Actuarial Soundness

Because of the most recent four-year experience study, ending June 30, 2018, the PERS Board adopted a decrease of 0.25% to the plan's price inflation assumption, reducing the assumption from 3.00% to 2.75%. Reflecting this assumption change, among other factors, the PERS Board adopted a decrease of 0.25% to the wage inflation assumption for the PERS plan, reducing it from 3.25% to 3.00%, and adopted changes to the plan's funding policy to install a method for the prospective recognition of a reduction to the plan's investment return assumption, eventually lowering it to the rate most recently recommended by the plan's actuary of 7.50%. In addition, the PERS Board also adopted changes to demographic assumptions and other assumptions of the PERS plan.

The PERS Board, in consultation with its actuaries, develops an actuarial model based on such assumptions as projected investment returns, payroll increases, inflation, retirement ages, mortality rates, marriage rates, and accrued leave to project the system's future assets and liabilities. Although the PERS Board sets plan assumptions based on biennial experience studies, the plan's actual experience (e.g., investment returns or mortality rates) is a product of environmental and demographic factors.

Variances in the actual experience of the plan compared to the model's assumptions have an impact on the plan's financial condition. Therefore, the PERS Board, with assistance from its staff and other contractual advisers, endeavors to maintain the actuarial soundness of the plan by monitoring all components used in the PERS actuarial model through quarterly updates on the performance of the System's assets and annual actuarial updates in conjunction with annual projections and biennial experience reports.

Assumption Changes Based on the Most Recent Experience Study

Because of the most recent experience study conducted by the independent actuarial firm Cavanaugh Macdonald, for the four-year period ending June 30, 2018, the PERS Board adopted, at its August 2019 meeting, changes to the plan's economic and demographic actuarial assumptions, and other plan assumptions (effective July 1, 2019, for future years and elected to use the new assumptions in the calculation of system liabilities for Fiscal Year 2019).

Economic Assumptions

Because of the most recent four-year experience study, ending June 30, 2018, the PERS Board adopted decreases to the plan's price inflation and wage inflation assumptions, and adopted amendments to components of the plan's funding policy to install a method to reduce the plan's investment return assumption to the rate most recently recommended by the plan's actuary.

As a result of the most recent four-year experience study, ending June 30, 2018, the PERS Board adopted a decrease of 0.25% to the plan's price inflation assumption, reducing the assumption from 3.00% to 2.75%. Reflecting this assumption change, among other factors, the Board adopted a decrease of 0.25% to the wage inflation assumption for the PERS plan, reducing it from 3.25% to 3.00%, and adopted changes to the plan's funding policy to install a method for the prospective recognition of a reduction to the plan's investment return assumption, eventually lowering it to the rate recommended by the plan's actuary (currently 7.50%).

The economic assumptions of the model seek to explain the overall environment in which the plan will operate and estimate the broad effects on the plan. The economic assumptions of the model include factors for price inflation, wage inflation, and investment returns.[5] Following the most recent experience study, the PERS Board voted to change all three assumptions for the plan. Exhibit 1, page 8, shows a breakdown of the economic assumptions both before and after the most recent changes.

[5]The *investment return assumption* is a combination of the price inflation and real rate of return assumptions and is reported net of investment expense (i.e., expenses and fees charged by the PERS Board's hired investment managers).

Exhibit 1: PERS Economic Assumptions (before and after) the Experience Study as of June 30, 2018

Assumption	FY 2019 and Future Years**	Most Recent Rate Prior to FY 2019
Price Inflation	2.75%	3.00%
Wage Inflation	3.00%	3.25%
Investment Return*	7.75%***	7.75%

* NOTE: Net of investment expense.
** The revised economic assumptions were also used in the valuation of system liabilities for FY 2019.
*** The Board voted to adopt amendments to the plan's funding policy that will lower the investment return assumption rate to the rate recommended by the plan's actuary of 7.50%. However, the assumption will lower incrementally, in conjunction with the plan experiencing specific plan investment returns through future periods.

SOURCE: *State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2018*, Cavanaugh Macdonald Consulting, LLC, and PERS Funding Policy (revised on October 22, 2019).

Due to the timing of this year's report and a change in the release date of the PERS plan's annual valuation, the PEER Committee cannot assess the level to which these assumption changes will impact the plan.

Price Inflation

In conjunction with the June 2018 Experience Study presented at the PERS Board's April 2019 meeting and based on a recommendation from its independent actuarial adviser Cavanaugh Macdonald, the PERS Board voted, during its August 2019 meeting, to adopt a change to the price inflation assumption, lowering it 0.25%, from 3.00% to 2.75% (for FY 2019 and future years). The purpose of the price inflation assumption is an attempt to address the effect that inflation has on the cost of living over time. In other words, this assumption tries to quantify exactly how much more it will cost to live on in the future than it does today. The assumption for price inflation is important because the PERS Board, and their actuary, use it as a component in both the investment return and wage inflation assumptions.

In assessing the recommendation for price inflation, the PERS Board's independent actuarial advisers considered several factors, including historical rates over the past 50 years of the U.S. Department of Labor's Consumer Price Index, U.S. City Average, All Urban Consumers; information from fourth quarter 2018 "Survey of Professional

Forecasters”[6]; and the Social Security Administration’s Old Age, Survivor, and Disability Insurance (OASDI) trustee reports. Based on these factors, Cavanaugh Macdonald recommended a reduction of 0.25% in the plan’s price inflation assumption (lowering the assumption from 3.00% to 2.75%).

Wage Inflation

Based on the recommendation of its independent actuarial adviser, the PERS Board, at its August 2019 meeting, reduced the projected wage inflation rate from 3.25% to 3.00%.

The wage inflation assumption of the actuarial model accounts for projected salary growth over time. Salary growth is composed of two parts: the inflation component, which will be discussed in this section, and promotion or merit increases,[7] which will be described in the “Demographic Assumptions” section.

The inflation component is composed of the impact of inflation and the real rate of wage inflation,[8] which seeks to account for the overall increases in the value of labor over time.

This assumption is important to the plan because accurate projection of future salary levels helps the PERS Board and its actuary to estimate the amount of additional funds the plan can expect to receive from future employee and employer contributions.

The PERS Board’s actuarial adviser considered both real wage growth figures derived from information reported by the Social Security Administration and future projections in assessing the real rate of wage inflation. According to the historical information, real rates of wage growth have been 0.59% and 0.57% for the past 10 and 50 years, respectively. Additionally, the Social Security Administration projects a real rate of wage growth of approximately 1.20% per year.

In view of these two sources, continued actual lower than expected salary growth in the PERS plan, and the reduction in the plan’s price inflation assumption, the PERS Board, on the recommendation of its actuarial adviser, lowered the wage assumption from 3.25% to 3.00%, by reducing the inflation component of wage growth by 0.25%.

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[6] The “Survey of Professional Forecasters” is a quarterly survey of macroeconomic forecasts in the United States, published by the Philadelphia Federal Reserve Bank.

[7] Merit increases refer to salary increases given for a defined goal (such as receiving additional certifications or training), for educational attainment (earning a new degree), or for longevity and promotion.

[8] The *real rate of wage inflation* is the actual rate of inflation wages experience after the effects of price inflation are removed.

Investment Return

In conjunction with the June 2018 Experience Study presented at the PERS Board's April 2019 meeting and based on the recommendation from its independent actuarial adviser, the PERS Board, at its October 2019 meeting, finalized amendments to the plan's funding policy that will reduce the plan's investment return assumption from its existing rate of 7.75% to the rate recommended by the plan's actuary (currently 7.50%). However, unlike the changes to the price inflation and wage inflation assumptions, changes in this assumption will not be recognized at one time, but will be reduced using future period excess investment gains[9] based on parameters defined in the plan's funding policy.

Changes in the investment assumption have the largest effect on PERS unfunded actuarial accrued liabilities; a lower investment assumption demonstrates a more conservative estimate of the future performance of the plan.

The investment return assumption is used in the actuarial model to project the investment performance of the assets in the plan (i.e., what rate of return will current and future investments earn in the future) and to assign the rate at which expected benefits for active, inactive, and retired members will be discounted to the present,[10] which is important in the calculation of the System's unfunded actuarial accrued liability percentage. This assumption is designed to demonstrate the long-term perspective of investments in combination with the long-term perspective of the liabilities.

The investment return assumption is the sum of the real investment rate of return assumption[11] and the price inflation assumption. When considering PERS real investment rate of return assumption, the PERS Board considers the results of its actuarial advisers' forward-looking modeling system (calculations of estimated future investment returns of current and future investments), which are guided by the current market assumptions of the PERS Board's investment consultants and PERS asset allocation model that is set by the PERS Board. In addition to the forward-looking modeling system, the PERS Board considers the investment assumptions of other state and local pension systems in the United States:

[9] Excess investment gains are gains above the plan's investment return assumption rate.

[10] Given the effect of price inflation as discussed, if price inflation is less than 2.75% (the plans current inflation assumption), a dollar today is worth more than it will be worth in future years. Conversely, if price inflation is more than 2.75%, a dollar today is worth less than it will be in the future. Discounting is the method used to determine how much future contribution and benefit payments are worth today.

[11]The *real investment rate of return* is the return earned on investments after the effects of price inflation have been removed.

- Forward-looking modeling (using information provided by Callan's 2019 Capital Market Projection) yielded a median real investment rate of return of 4.75%.
- Forward–looking modeling (using information provided by Horizon Actuarial Services, LLC's *2018 Survey of Capital Market Assumptions)*[12] produced a mean real-investment rate of return of 5.14% (the mean return of the survey's 20-year projections was 5.10%).

Based on analysis of these data points, Cavanaugh Macdonald recommended no changes to the real investment rate of return, leaving it at 4.75%.

Considering this recommendation, and to reflect the recommendation of a 0.25% reduction in the price inflation assumption, Cavanaugh Macdonald recommended lowering the PERS plan's investment return assumption from 7.75% to 7.50%.

The November 2018 Public Funds Survey[13] reported the median and average investment return assumption of public pension plans in their databases as 7.38% and 7.30% respectively.

This recommended future investment rate of return of 7.50% is slightly higher than the median projected investment rate of return for other state and local pensions. According to the February 2019 National Association of State Retirement Administrators' (NASRA) *Issue Brief: Public Pension Plan Investment Return Assumptions*, overall projected investment rates of return have trended downward over approximately the past 15 years. The average investment return assumption for plans in the public plan database was 7.27% (with a median of 7.25%) for the FY 2019 period.

However, based on the parameters established in the revised funding policy, the plan's investment return assumption will remain at 7.75% for FY 2019's valuation.

Due to the method adopted by the Board for recognition of the actuary's recommendations, it is imperative that the PERS Board and its independent actuarial adviser continue to monitor the investment return assumption in future years to ensure that the investment return assumption accurately reflects market conditions and the PERS investment allocation model.

[12]Horizon Actuarial Services, LLC is an independent consulting firm specializing in providing actuarial and consulting services to multiemployer benefit plans. The 2018 Capital Market Assumptions report is a survey of 35 investment firms' outlooks on short/long-term investment returns.
[13]The Public Funds Survey is an online compendium of key characteristics of 121 of the nation's largest public retirement systems. The survey is sponsored by the National Association of State Retirement Administrators.

Demographic Assumptions

After the experience study for the period ending June 30, 2018, the PERS Board adopted changes to many of its demographic assumptions, including adoption of the new Society of Actuary public retirement plan mortality tables. The demographic assumptions of the model seek to explain the effects of retirements (service and disability), withdrawals, mortality, and salary increases on the plan.

The demographic assumption levels are based on subsets of the plan members, grouped by age, gender, and years of service. The purpose of a demographic experience study is to compare what happened to the membership of the plan during the evaluation period (the four-year period ending June 30, 2018) with what was expected to occur based on the assumptions used in the most recent actuarial valuations.

Detailed tabulations for each subset are performed for all active and retired members. If actual experience does not follow the expected results, new assumptions are recommended to better align PERS assumptions with actual experience.

For the PERS plan, the following demographic assumptions were used and evaluated:

- rates of withdrawal;
- pre-retirement mortality;
- rates of disability retirement;
- rates of service retirement;
- post-retirement mortality; and,
- rates of salary increase.

After the experience study for the period ending June 30, 2018, the PERS Board adopted changes to all its demographic assumptions.[14] A full version of the experience study may be found on the PERS website.[15]

As noted previously, each demographic assumption's values may be striated by age, gender, and years of service. To provide an example of these changes, PEER elected to discuss the changes made to the pre- and post-retirement mortality assumptions through the adoption of the new Society of Actuaries public retirement plan mortality tables and changes to the expected rates of retirement.

Mortality Tables

To more closely mirror the mortality experience of the PERS plan, and to better account for future improvements in life expectancy, the PERS Board approved at its August 2019 meeting the Cavanaugh Macdonald recommended adoption

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[14]While the demographic assumptions used for rates of salary increase were changed because of the most recent experience study, these changes were due to the reduction in the overall wage growth assumption.

[15]https://www.pers.ms.gov/Content/ExpStudies/PERS_Experience_Investigation_Report_2018.pdf?

of the new Society of Actuaries' *Pub-2010 Public Retirement Plans Mortality Tables*.

The PERS plan is a defined benefit plan that pays retired employees, or their beneficiaries, a defined amount through a calculation based on the plan's benefits and the employee's salary and years of service.

Depending on elections made by the member or their beneficiaries, this benefit can be payable for the lifetime of the member or beneficiaries. Therefore, accurately estimating the plan's future liabilities associated with these benefit payments is essential.

Because predicting how long an individual will live, either before or after retirement is impossible, the plan (and its actuary) have historically relied on the trends of the plan's existing members and on the collective trends of other defined benefits plans (primarily plans sponsored by private industry).

To help establish trend data for public sector plans, the Society of Actuaries initiated a study in 2015 that included a comprehensive review of data from 78 public plans (including plans in Mississippi). These plans provided approximately 46 million life-years of exposure and approximately 580,000 deaths.

The resulting data tables were grouped by job classifications (teachers, public safety, and general employees) and by income levels (above and below median income).

During the plan's most recent experience study, as of June 30, 2018, after comparison of the historical experience of the PERS plan and the new tables, Cavanaugh Macdonald selected the table that best fit PERS's experience.

For service retirements, the PERS plan's actuary recommended that the PERS Board adopt the 2010 below median income public safety retiree plan with the following adjustments:

- For males, increase the rate of mortality to 112% for ages 18 to 75, and 105% for ages 80 to 119.
- For females, reduce the rate of mortality to 85% for ages 18 to 65 and increase the rate to 102% for ages 75 to 119.

For disability retirements, the PERS plan's actuary recommended that the PERS Board adopt the 2010 median income disabled teachers' retiree table with the following adjustments:

- For males, increase the rate of mortality to 137% for all ages.
- For females, increase the rate of mortality to 115% for all ages.

Other Assumptions

Because of the plan's most recent experience study, for the period ending June 30, 2018, the PERS Board adopted a change to its assumption for the estimation of its administrative expenses, included in normal cost,[16] of 0.02%, increasing the estimate from 0.23% to 0.25% of covered payroll.

In addition to the larger economic and demographic assumptions, the PERS Board has adopted many other assumptions to create the valuations and projections for the PERS plan. Some of these include the accrual of unused sick leave, rates of marriage within members of the plan, and administrative expenses.

One of the allowed uses of the assets, proceeds, and income of the PERS System is for the payment of the administrative expenses for providing and operating the system. Because PERS is a pre-funded pension plan,[17] the funds placed in the trust annually must also account for these costs. Beginning in 2013, the actuarial assumptions adopted by the PERS Board have included an estimate for budgeted administrative expenses in the normal cost calculations of 0.23%.

During the most recent experience study, for the four-year period ending June 30, 2018, the plan's actuary included an evaluation of the rate of administrative expenses as a percentage of covered payroll. As seen in Exhibit 2, page 15, the plan's administrative expenses have increased approximately 20% over the four-year period while covered payroll has increased only 1.60%. This has brought the cost of administration expense as a percentage of covered payroll from approximately 0.23% to 0.27% over the four-year period.

[16] Normal cost is the annual cost of providing retirement benefits for services performed by current members. This is a shared responsibility between the member and employer.

[17] A prefunded pension plan is a pension plan that is funded concurrently with the accrual of benefits for its members, through the calculation of the normal cost.

Exhibit 2: PERS Actual Administrative Expenses as a Percentage of Payroll for Fiscal Year 2015 through Fiscal Year 2018

Fiscal Year	Administrative Expense (in thousands)	Annual Payroll (in thousands)	Percentage
2015	$ 13,523	$ 5,904,827	0.23%
2016	$ 15,166	$ 6,022,533	0.25%
2017	$ 17,056	$ 6,038,229	0.28%
2018	$ 16,264	$ 5,999,231	0.27%

SOURCE: *State of Mississippi Retirement Systems Experience Investigation for the Four-Year Period Ending June 30, 2018*, Cavanaugh Macdonald Consulting, LLC.

Because of this increase, and in keeping with their conservative approach to changes within a pension system, Cavanaugh Macdonald recommended an increase in the plan's estimated administrative expense assumption of 0.02%, raising the assumption from 0.23% to 0.25%. The PERS Board adopted this recommendation in their August 2019 meeting, for utilization in plan's annual valuation for the period ending June 30, 2019.

As this estimate is a component of the normal cost of the plan, this change reduces the contributions available to pay down the plan's unfunded actuarially accrued liability and could lead to a decrease in the plan's future projected funding status.

However, because the PERS Board includes an assumption for administrative expense in its normal cost calculation, this change could help the PERS system to more accurately estimate and accrue funds into the system to account for the total cost of member benefit accruals.

Due to the timing of this year's report and a change in the release date of the PERS plan's annual valuation, the PEER Committee cannot assess the level to which these assumption changes will impact the plan.

Active and Retired Employee Assumptions

From FY 2009 through FY 2019, the ratio of active members to retired members decreased by approximately 36%, driven by the increasing number of retirees and the decreasing number of active members. This decrease results in funding future pension obligations over the payroll of fewer active members.

The PERS plan, and all other plans administered by the PERS Board, have three types of members: active, inactive, and retired.

Active PERS members are current employees who are contributing to the plan through monthly withholding from pay. As noted previously, employee contributions represent an important revenue stream to the plan. As they continue to work, active members accrue service credits that will be used in calculating their annual payment when they become eligible to receive retirement benefits. The plan accounts for the cost of these accruals (the normal costs[18]) and funds them on a yearly basis through both employee and employer contributions.

Retired PERS members are individuals who are no longer working in a PERS-covered position and have begun receiving payments based on their retirement calculations. Inactive members are members of PERS who are no longer working in any PERS-covered position and have not retired or received a refund of contributions. An inactive member retains his or her membership and the right to future benefits, either as a refund of contributions and interest or, if vested, as a deferred retirement benefit. The spouse and dependent children of a vested inactive member may be eligible for certain survivor benefits.

Each type of member is considered within the actuarial model of the plans; however, because liabilities associated with inactive members account for such a small portion of the overall PERS plan's present value of future benefits, active and retired members and the ratio between them are of primary importance. As shown in Exhibit 3, page 17, the ratio of active members to retired members in the PERS plan decreased from 2.13:1 in FY 2009 to 1.37:1 in FY 2019, or approximately 36%. The declining ratio is attributable to a decrease in the number of active members and an increase in the number of retired members. This decrease results in funding future pension obligations over the payroll of fewer active members, a factor made more important because contributions from active members and their employers have historically comprised approximately 45% of PERS revenues (as of FY 2018[19]).

[18]Since 2013, PERS has included an estimated budgeted administrative expense of 0.23% of payroll in the normal cost calculation. For FY 2019, and future periods, PERS increased this estimate to 0.25%
[19] At the time of this report updated figures, as of June 30, 2019, were unavailable.

Exhibit 3: PERS System Active and Retiree Members for FY 2009 through FY 2019 (in Thousands) *

Member Type	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Active	168	166	162	163	162	162	158	155	153	151	151
Retiree	79	82	86	90	93	96	99	102	105	108	110
Ratio	2.13:1	2.02:1	1.88:1	1.81:1	1.74:1	1.69:1	1.60:1	1.52:1	1.46:1	1.40:1	1.37:1

*NOTE: Calculations are based on rounding to the nearest hundredth.

SOURCE: Public Employees' Retirement System of Mississippi.

Although the PERS ratio of active members to retired members has declined over the past 10 fiscal years, with a maturing plan,[20] increasing retirements are expected, and the model attempts to account for these changes. As with all the actuarial model's assumptions, the Board evaluates the assumptions for active and retired members every two years during the PERS Board's biennial experience studies.

During the presentation of the PERS Board's most recent experience study, in its April 2019 meeting, Cavanaugh Macdonald highlighted that the PERS system has experienced more service retirements[21] than expected over the previous four-year period, recommending that the PERS Board increase its retirement rate assumptions.

Amendments to the PERS Funding Policy

The PERS Board adopted amendments to the plan's funding policy changing the method the actuarial assumptions utilize to adjust to the most recent actuary recommendations. The long-term investment return assumption utilized by the plan will be reduced using future excess investment gains, above the current 7.75% rate, to reach the rate recommended by the actuary in the most recent experience study of 7.50%.

According to the National Association of State Retirement Administrators, a pension plan funding policy is a set of guidelines adopted by a pension plan that determines how much should be contributed each year by the employers and active participants of a pension plan to provide for the secure funding of benefits in a systematic fashion. One of the components of a plan's funding policy is the use of actuarial assumptions. As highlighted above, the investment return assumption is one of the economic actuarial

[20]According to Zacks Investment Research, a maturing pension plan is a plan where the number of employees and retirees is approaching equality.

[21] Service Retirements include all retirements (regardless of the years of service) not as the result of a member retiring due to becoming disabled.

assumptions utilized by the plan to project the investment performance of the assets in the plan (i.e., what rate of return will current and future investments earn in the future) and to assign the rate at which expected benefits for active, inactive, and retired members will be discounted to the present.

During its October 2019 meeting, the PERS Board finalized adoption of amendments to the plan's funding policy to reflect the method the PERS plan will use to lower its investment return assumption from its current rate of 7.75% to the actuary's recommended rate of 7.50%.

Unlike the one-time adoption of the plan's other assumption changes (price inflation assumption, wage inflation assumption, and demographic assumptions) the PERS Board's adoption of the change in the investment return assumption will be phased in over time utilizing any excess returns, above the current 7.75%, generated by the plan's investments in future periods (starting potentially with FY 2019).

According to the amended funding policy, the plan's investment assumption rate will be reduced until it reaches the rate recommended by the actuary in the most recent experience study utilizing the parameters outlined in Exhibit 4, below.

Exhibit 4: Investment Return Assumption Reduction Parameters Outlined in PERS Funding Policy

Excess Return Over Assumed Rate	Assumption Lowered by Corresponding Amount
2.00%	Five Basis Points (0.05%)
5.00%	Ten Basis Points (0.10%)
8.00%	Fifteen Basis Points (0.15%)
12.00%	Twenty Basis Points (0.20%)

SOURCE: PERS Funding Policy (revised on October 22, 2019).

For example, PERS's current investment return assumption, for the year ending June 30, 2019, is 7.75%. If PERS's investments returned 9.75% for the fiscal year, then the PERS Board would lower the plan's investment return assumption five basis points (or 0.05%) from its current 7.75% to 7.70%. Until investment returns in a future period allow for further reduction in the investment return assumption, the plan's valuations would continue to utilize the new 7.70% rate for predicting investment growth and for discounting future liabilities.

However, the PERS investment return for the fiscal year ending June 30, 2019, was only 6.87%. As this is not above the current assumed rate of 7.75%, the funding policy does not recognize any change to the investment rate assumption, and the plan continues to utilize the current rate.

According to PERS, this assumption change methodology was chosen because:

> *Decreases in the long-term investment assumptions are made at the same time asset gains are recognized, which helps lessen the overall impact of the assumption change on the liabilities and contributions requirements.*

While PERS's actuary did recommend this assumption change methodology, among several others, the PERS Board's choice to utilize this methodology could be a cause of concern. Selection of this methodology delays implementation of the assumption reduction, and could increase the possibility of the PERS plan experiencing investment returns lower than projected. While it is impossible to predict future investment returns, as highlighted above, PERS Actuary considered several sources (including reports form PERS investment consultants) when crafting their recommendation to lower the rate.

Because of the importance of investment gains as a source of revenue for PERS, experiencing lower than expected investment returns in future periods, could be a source of future stress on the plan.

Additionally, as highlighted by PERS, adoption of this methodology lessens the impact of the assumption changes on contribution requirements of the plan. As such, a gradual, or tiered approach may not necessitate the current implementation of a contribution rate change, allowing the plan to stay at its current employer contribution rate of 17.40%.

However, if the plan's future experience necessitates a rate increase, a delay in its implementation may cause it to be larger than was first necessary.

It is critical, especially because the PERS plan did not make progress in lowering its investment return assumption to the actuarial recommendation in FY 2019, that the PERS Board and its actuary continue to monitor these assumptions and the experience of the plan.

Investment Management

For FY 2019 the PERS plan's combined investment portfolio experienced a return of 6.87%, and the market value of the System's assets was approximately $28.6 billion.

Having realized a return of approximately 6.87% in the PERS plan's combined investment portfolio, the market value of assets grew from approximately $28.1 billion to $28.6 billion during FY 2019, an increase of approximately $0.5 billion.

As presented in Exhibit 5, below, according to investment consultants Callan LLC, PERS investment performance for FY 2019 was below the current actuarial model's target investment return of 7.75% and placed it above the median return for its peer group[22] of 6.56%. Additionally, PERS investment performance has exceeded its peer group median for each of the past three-, five-, and 10-year periods (ranking in the top 15% over each of these periods).

Over the past 10 years, the PERS investment return on assets averaged 10.53%. Investment returns ranged from 0.60% during FY 2012 to 25.4% during FY 2011. Historically, PERS investment returns have averaged 6.06% over the past 20 years, 8.07% over the past 25 years, and 8.29% over the past 30 years.

Exhibit 5: Comparison of PERS Investment Performance to Peer Group of Public Pension Plans with Assets of More Than $10 Billion

Category	FY 2019	3-Year Return	5-Year Return	10-Year Return
PERS Return	6.87%	10.38%	7.06%	10.53%
Peer Group Median (midpoint)	6.56%	9.61%	6.55%	9.65%
PERS Percentile Rank	38*	9	15	12
25th Percentile*	7.37%	9.95%	6.96%	10.14%
10th Percentile*	8.17%	10.37%	7.23%	10.56%

*NOTE: In this example, 38th percentile means PERS outperformed 62% of peer group funds; 25th percentile means these returns were greater than 75% of peer group funds; 10th percentile means these returns were greater than 90% of peer group funds.

SOURCE: Callan LLC, Investment Performance Review as of June 30, 2019.

According to the February 2019 *NASRA Issue Brief: Public Pension Plan Investment Return Assumptions*, the median public pension annualized investment 10-year return for the period ending December 31, 2018, was 8.5% and the 25-year return was 7.4%.[23] PERS investment returns have exceeded the median for other public pension plans for the past 10-year period but have trailed during the past 25-year period. The volatility of the recent years' returns reinforces the principle of viewing investment returns over a long period and comparing long-term returns to investment return goals rather than focusing on a single year's returns or returns over a short period.

Because investment returns are the largest piece of a pension's funding source, when actual returns fall below projections, over time the plan must rely on other sources (contributions) to provide

[22]The PERS peer group is composed of other nationally based large pension plans (plans having greater than $10 billion in assets).

[23]At the time of publication of this report, the Public Fund Survey for the period ending June 30, 2019, had not been released.

for the difference, which could lead to decreases in the plan's assets.

Considering the importance of the investment return assumption, the PERS plan's actuary recommended a reduction in the PERS plan's investment return assumption of 0.25%, lowering the recommended assumption from 7.75% to 7.50%. The PERS Board, in its October 2019 meeting, finalized the adoption of amendments to the plan's funding policy requiring the plan to utilize future excess investment revenues, above the current projected investment revenues, to lower the plan's investment rate assumption until it reaches the rate recommended by the plan's actuary.

The plan's combined return of 6.87% was below the target return of 7.75%, so the assumption will remain at 7.75% for the annual valuation and projection report (for the year ending June 30, 2019). Even with these adjustments to the plan's assumption recommendations and funding policy, the PERS Board and its independent actuarial adviser plan to continue to monitor the investment return assumption in future years to ensure that the investment return assumption accurately reflects market conditions and the system's investment allocation model.

Asset Allocation Model

For FY 2019 the PERS Board of Trustees continued to adhere to the overall asset allocation model adopted in June 2015. This model continues to set investment-level targets for the PERS investment portfolio.

The PERS independent investment consultant periodically performs an asset/liability allocation study that considers projected future liabilities of the system, expected risk, returns of various asset classes, and statutory investment restrictions. For FY 2019 the PERS Board continued to adhere to the overall asset allocation model adopted in June 2015. The asset allocation model determines the mix of asset classes in which PERS will invest and the overall weight of each asset class within the whole portfolio.

The PERS Board of Trustees and PERS staff use this model to mitigate investment risk through diversification and to establish risk and rate of return expectations for the adopted target asset allocation mix. On a quarterly basis, the PERS Board and its staff, in consultation with its investment advisers, review the performance of each investment manager relative to the asset class's target performance level.

Exhibit 6, on page 22, presents the actual FY 2019 investment allocation compared to the model.

Exhibit 6: PERS FY 2019 Actual Asset Allocation Compared to PERS Overall Asset Allocation Model

Year	U.S. Equity	Non-U.S. Equity	Debt Investments	Real Estate	Private Equity	Global Equity	Cash
Model	27%	22%	20%	10%	8%	12%	1%
FY 2019	28%	20%	20%	10%	9%	12%	1%

SOURCE: Callan LLC, Investment Performance Review as of June 30, 2019.

As presented in Exhibit 6, PERS assets are being invested in accordance with the asset allocation model. Instances in which current investment levels do not agree with the model do not automatically constitute a cause for alarm or present the need for an immediate change in investment levels. The investment model represents targeted investment levels designed to prevent the investment portfolio from becoming too heavily weighted in a certain investment type. Market conditions may, at times, cause a prudent manager to call for slight departures from target goals. For these reasons, the PERS Board monitors investment performance, strategies, and weights throughout the year and manages the investment portfolio based on input from professional money managers, advisers, and its professional staff.

The PERS Board's decision to utilize numerous investment managers minimizes investment risk, as it prevents a large portion of plan assets being under the management of any one investment manager. For FY 2019 the PERS Board paid asset-management fees to 54 investment managers (including five that were hired and one that was terminated during FY 2019). PERS paid $104.1 million to investment managers on PERS plan assets of $28.6 billion, a combined investment management expense rate of 0.36% (the expense rate for the fiscal year ending June 30, 2018, was 0.37%).

As of June 30, 2019, Eagle Capital, a manager in the large cap domestic equity sector, had the most assets under management as a percentage of the total portfolio by any one active investment manager[24] with 3.81% (approximately $1.1 billion of the PERS plan's $28.6 billion in assets).

For more information on investment management fees, see Appendix B, page 47.

[24]Active investment management refers to a portfolio management strategy by which the manager uses various investment research, models, and systems to select the fund's specific investments with the goal of outperforming the fund investment's benchmark index (the market).

Cost of Living Adjustment

One potential benefit of retirement from public service is an annual cost of living adjustment. Mississippi, like other U.S. public pension plans, provides such a benefit to its retirees covered by PERS.

Establishment of the Cost of Living Adjustment

Under MISS. CODE ANN. Section 25-11-112(1) (1972), PERS retirees receive a 3% cost-of-living adjustment that is increased annually either by a simple or compounding method depending on the person's age and date of employment. According to information from the National Association of State Retirement Administrators, 36 of the 99 state-level public pension plans provide some form of compounded cost–of-living adjustment to retirees.

According to the National Association of State Retirement Administrators (NASRA),[25] cost-of-living adjustments (COLA) are periodic adjustments to offset or reduce the effects of inflation, which erodes the purchasing power[26] of retirement income. In the December 2018 *NASRA Issue Brief: Cost-of-Living Adjustments,*[27] NASRA highlights the effects of inflation on a retiree's benefits over time. According to NASRA's issue brief, the effect to a retiree's benefit of one percent or two percent inflation over a 20-year period is a loss in purchasing power of approximately 18% and 33% respectively.

Also, in its December 2018 issue brief, NASRA includes an appendix that details COLA provisions for state-level plans (for the full list of plan details please see Appendix A on page 35). As this appendix shows, all 99 state-level pension plans detailed contain COLA provisions[28] (72 automatic and 27 ad-hoc),[29] and while the specific benefits included in the PERS plan's design may be unique, they are not dissimilar to other state-level plans. For example, 36 of the 99 plans included in the appendix have some form of compounding within their COLA plan design.

As with retirement plan benefits, COLA plan designs are unique to each plan and sometimes for different types of members in the

[25] NASRA is a non-profit association whose members are the directors of the nation's state, territorial, and largest state-wide public retirement systems. Its mission is to serve its members in managing sustainable public employee retirement systems through research, education, and collaboration.

[26] Purchasing power refers to the effect of inflation on the value of currency over time, calculated for determining the amount of goods or services a unit of currency can buy at different points in time.

[27] For a full version go to https://www.nasra.org/files/Issue%20Briefs/NASRACOLA%20Brief.pdf.

[28] Due to Legislation changes in 2011, the Washington PERS and Teachers Plan 1 does not contain a current COLA Provision. However, retirees of Washington PERS and Teachers Plan 1prior to 2011 received automatic COLA provisions.

[29] Ad-hoc COLAs require a governing body (such as the plan's board of directors or a state's legislature) to actively approve an increase in benefits. Automatic COLAs occur without action, typically by a set rate or formula.

same plan. The differences in COLA plan designs come from many factors. Some of the factors include:

- Are COLA increases provided automatically or on an ad hoc basis?
- Are COLA increases applied in simple[30] manner, compound[31] manner, or both?
- Are the COLA increases tied to any inflation-based, or performance-based metrics?
- Are the COLA benefits tied to when a person was hired?

MISS. CODE ANN. Section 25-11-112(1) (1972) authorizes PERS retirees to receive a COLA benefit as a component of the plan's design. The law sets the rate of the COLA increase and details how the increase will be applied to the benefits currently being received by the member, as noted below.

> *Any member who is receiving a retirement allowance for service or disability retirement, or any beneficiary thereof, who has received a monthly benefit for at least one full fiscal year, shall be eligible to receive an additional benefit, on December 1 or July 1 of the year as provided in subsection three of this section, equal to an amount calculated under paragraph (a) or (b) below:*
>
> *(a) For any member who became a member of the system before July 1, 2011, the sum of:*
>
> *(i) An amount equal to three percent (3%) of the annual retirement allowance multiplied by the number of full fiscal years in retirement before the end of the fiscal year in which the member reaches age fifty-five (55), plus*
>
> *(ii) An additional amount equal to three percent (3%) compounded by the number of full fiscal years in retirement beginning with the fiscal year in which the member reaches age fifty-five (55), multiplied by the amount of the annual retirement allowance.*
>
> *(b) For any member who became a member of the system on or after July 1, 2011, the sum of:*
>
> *(i) An amount equal to three percent (3%) of the annual retirement allowance multiplied by the number of full fiscal years in retirement before the end of the*

[30] Under a simple COLA arrangement, each year's benefit increase is calculated based on the employee's original benefit at the time of his or her retirement.

[31] Under a compound COLA arrangement, the annual benefit increase is calculated based upon the original benefit as well as any prior benefit increases.

fiscal year in which the member reaches age sixty (60), plus

(ii) An additional amount equal to three percent (3%) compounded by the number of full fiscal years in retirement beginning with the fiscal year in which the member reaches age sixty (60), multiplied by the amount of the annual retirement allowance.

Under this code section, PERS members hired on or before June 30, 2011, are granted an automatic three-percent simple increase in their annual benefit for each full fiscal year in retirement until reaching the end of the fiscal year in which the member reaches age 55. After that point, the member begins receiving an automatic three-percent compounding increase for each full fiscal year. For PERS members hired after June 30, 2011 the automatic three-percent compounding increase does not begin until the fiscal year in which the member reaches age 60.

As demonstrated above, state law grants members of the PERS plan a COLA that is a combination of both simple and compounding increases. Under the California Rule[32] of public pension management, the COLA for current employees and retirees is considered a contractual right and therefore current plan members and retirees have an expectation that their COLA benefits will not be diminished. However, the Legislature has the authority to change the COLA for plan members hired in the future by amending the above code section to restructure the COLA benefit for plan members hired after a specified date.

[32] PEER Report #564, December 11, 2012, pp. 25–43.

Mississippi Government Employees' Deferred Compensation Plan and Trust

The Mississippi Government Employees' Deferred Compensation Plan and Trust (MDC) is a voluntary government employees' deferred compensation plan sponsored by the State of Mississippi.

This chapter examines the following:

- the creation of the MDC plan;
- the administration oversight of the MDC plan; and,
- information on the plan's third-party administrator.

Creation of the Government Employees' Deferred Compensation Plan and Trust (MDC)

The Legislature created the Government Employees Deferred Compensation Plan and Trust (MDC) in 1973, later codified in MISS. CODE ANN. Section 25-14-1 et seq. (1972), as a supplementary, state-sponsored, voluntary deferred compensation plan for employees of various state and local government entities.

The Legislature passed the Government Employees' Deferred Compensation Plan Law, in 1973, later codified in MISS. CODE ANN. Section 25-14-1 et seq. (1972), creating the Mississippi Government Employees' Deferred Compensation Plan and Trust (MDC). The MDC is a supplementary,[33] state-sponsored, voluntary, deferred compensation plan open to employees[34] of various state and local government entities.

State law mandates that MDC be operated in accordance with guidelines established by the Internal Revenue Service. Because MDC is for employees of various state and local government entities, the plan falls under regulations established in IRS Section 457(b).

Under MISS. CODE ANN. Section 25-14-5 (1972), the Legislature grants the right for these employees, and some employers, to make contributions[35] to the plan by stating:

> *The State of Mississippi, or any state agency, county, municipality or other political subdivision may, by contract,*

[33] MISS. CODE ANN. Section 25-14-11 (1972) outlines the supplementary nature of the plan.

[34] For the purposes of this chapter, the term "employee" means any person, whether appointed, elected, or under contract, providing services for the State of Mississippi, state agencies, counties, municipalities, or other political subdivisions, for which compensation is paid.

[35] Plans eligible under IRS Section 457(b) allow employees of sponsoring organizations (state and local governments and some nongovernmental entities) to defer income taxation on up to $19,000 (for calendar year 2019) of retirement contributions. Catch-up provisions allow an additional $6,000 in tax deferrals or up to $25,000.

agree with any employee to defer, in whole or in part, any portion of that employee's income, and a county, municipality or other political subdivision, except community and junior college districts, may make contributions to the plan on behalf of actively participating members on a uniform basis through an employer contribution agreement as provided for in the Mississippi Deferred Compensation Plan and Trust Plan Document if making the contribution does not conflict with any other state law.

As highlighted in the CODE section above, counties, municipalities, and other political subdivisions (excluding community and junior college districts) may also make contributions on behalf of their employees to the plan, within the guidelines established by the IRS.

By complying with IRS guidelines for Section 457(b) plans, contributions to MDC maintain a tax-deferred status, meaning these contributions are excluded from federal taxable income until they are withdrawn from the plan. The Legislature further guaranteed the tax-deferred nature of these contributions from other types of taxes in MISS. CODE ANN. Section 25-14-5 (1972), which states:

Anything in any other law to the contrary notwithstanding, the deferred portion of the employee's compensation, the plan and the monies in the plan created by this chapter are exempt from any state, county or municipal ad valorem taxes, income taxes, premium taxes, privilege taxes, property taxes, sales and use taxes and any other taxes not so named, until the deferred compensation is paid to the employee or beneficiary and exempt from levy, garnishment, attachment or any other process whatsoever.

Administration and Oversight of MDC

State Law charges the Public Employees' Retirement System (PERS) of Mississippi with the oversight and administration of MDC, which the PERS Board accomplished through its Defined Contribution Committee. Under its authority as the administrator of the MDC, the PERS Board selects the investment options available within the plan.

The Board of Directors of PERS administers the State of Mississippi's sponsored deferred compensation plan through the authority granted under MISS. CODE ANN. Section 25-14-5 (1972) which states:

…in the administration of this plan, the Public Employees' Retirement System of Mississippi may adopt such regulations as are reasonable and necessary to assure the orderly functioning of the plan, but those regulations shall not unreasonably restrict all licensed life underwriters and insurance companies described in this section from concurrently participating in providing contracts authorized under this section.

While MDC has been the responsibility of the PERS Board since its inception, the PERS Board created the Defined Contributions Committee (by Board Resolution effective August 24, 2009) to provide additional oversight to the plan and its components. This committee handles all aspects of the oversight of MDC including development and periodic review of the plan's Investment Policy Statement (IPS). The PERS Board uses this document to summarize the underlying philosophy and the processes used to administer the investment related aspects of the MDC.

Within the IPS, the PERS Board details the plan's approach on a multitude of issues including (but not limited to):

- approval of the additions/deletions of investment options available in the plan and search criteria for the selection of new investments;
- monitoring the performance of plan investment options on a periodic basis; and,
- selection and oversight of the plan's third-party administrator.

MISS. CODE ANN. Section 25-14-5 (1972) approves the use of contributions to the plan for various types of investments. The law states:

> *Those funds may subsequently be used to purchase a fixed or variable life insurance or annuity contract authorized for purchase by the Public Employees' Retirement System of Mississippi for the purpose of protecting its obligation to the deferred compensation program for the employee from any life underwriter duly licensed by this state who represents an insurance company licensed to contract fixed and variable annuities and fixed or variable life insurance business in this state and authorized by the Public Employees' Retirement System of Mississippi to offer their products in the plan, or to purchase any investments authorized for purchase by the Public Employees' Retirement System of Mississippi under Section 25-11-121, or to invest those monies in a fund or funds maintained by a corporate trustee, which fund or funds are used as an investment media for retirement, pension or profit sharing plans that are tax qualified for that purpose.*

As the entity responsible for the MDC, the PERS Board is ultimately responsible for the selection of options provided in the plan. Because individual members of MDC direct the investment of their contributions, and because individual participants have differing investment objectives, time horizons, and risk tolerances, MDC offers a wide spectrum of investment choices.

When selecting investment options, the PERS Board endeavors to ensure that investments:

- are distinguishable and have distinct risk/return characteristics;

- are well diversified and professionally managed; and,
- have reasonable fees for the asset class and investment style.

Investment options offered within the plan undergo a vetting process like the selection of investments for the PERS plan itself, with MDC's investment consultant, Callan LLC, vetting potential options and assisting the PERS staff with creating a list of candidates that meet the search criteria. The PERS Board discusses the list of candidates and selects a group of finalists to interview. After conducting interviews with the finalists, the Board will select the best options for inclusion in the MDC plan offerings.

Just as with investments and managers of the PERS plan, the PERS Board, with the assistance of Callan LLC, and the PERS staff, monitors the performance of investment options within the MDC. The PERS Board assesses the plan's investment options on both qualitative and quantitative factors. Qualitative assessments include factors such as organizational structure and stability, changes in investment policy, and the manager's adherence to state investment objectives or styles.

Quantitative assessments include factors such as investment performance (relative to its benchmark) over a full market cycle and material changes in the investment's risk profile. Additionally, the PERS Board also employs a Watch List procedure to help monitor the quantitative performance of the plan. If any investment option fails to outperform its benchmark or peer group median for the trailing three-year period for four consecutive quarters, then the Board will consider placing it on the Watch List. Once on the Watch List, the PERS Board evaluates investment performance quarterly. Investments that have seen improved/improving performance may be removed from the list, with investments that continue to underperform considered for removal from MDC's investment options.

MDC Third-Party Administrator Oversight and Customer Service Review

Since the inception of the MDC, the PERS Board has administered the plan through a third-party administrator, currently Great-West Life & Annuity Insurance Company, who is doing business as Empower Retirement. As MDC's recordkeeper, Empower Retirement receives oversight through an annual attestation engagement audit, periodic compliance reviews from the Mississippi Secretary of State's Securities Division, and contractual metrics.

While state law charges the Board of Trustees of the Public Employees' Retirement System with the administration of the MDC plan, since its inception, the PERS Board has contracted with a third-party administrator for the recordkeeping and communication services for the plan. The PERS Board's authority to contract with an entity for administration of the plan comes from MISS. CODE ANN. Section 25-14-7 (1972) which states:

> *… The administrator of a deferred compensation program may contract with a private corporation or institution for*

providing consolidated billing and other administrative services if deemed necessary by the administrator.

Currently, the PERS Board contracts with Great-West Life & Annuity Insurance Company, who is doing business as Empower Retirement. MDC's relationship with Empower Retirement became effective with the initial contract on January 17, 2014. The PERS Board extended this contract through a three-year option extension on July 7, 2018, extending the life of the contract to December 31, 2021.

Oversight Environment

As MDC's recordkeeper, Empower Retirement receives oversight through annual attestation engagements, periodic compliance review from the Mississippi Secretary of State's Securities Division, and contractual metrics.

In its capacity as recordkeeper of MDC, Empower Retirement is required to deliver information to the PERS Board on various facets of MDC operations.[36] Included in these reports are monthly investment reports and quarterly employer plan summary reports and plan reviews. In addition, Empower Retirement is required to produce monthly investment statements for each participant, who can choose to access the statements online or have them mailed.

Because Empower Retirement is considered a service organization,[37] it must contract with an external auditor to conduct an attestation of its systems and organization controls. These engagements are regulated under Statement on Standards for Attestation Engagements (SSAE) 18,[38] and result in the issuance of a System and Organization Controls (SOC) report.

The engaged auditors utilize audit procedures and testing to provide independent assurance about the accuracy and adequacy of Empower Retirement's controls. Once this testing is complete, the auditor will issue a SOC report, with the primary objective being to provide the reader with information about the internal controls and security practices at a service organization.

In their most recent report, for the period July 1, 2017, through June 30, 2018, Empower Retirement received a clean SOC report from its attestation provider Deloitte & Touche, LLP.

As another control, Empower Retirement must register with the Mississippi Secretary of State, and comply with the Mississippi Securities Act of 2010, as outlined in MISS. CODE ANN. Section 75-71-101 et seq. (1972). To ensure compliance with these statutes, and federal regulations established by the Financial Industry

[36] Empower has agreed to act as a non-fiduciary, non-discretionary service provider to MDC.

[37] Service organizations are organizations hired by another entity to process transactions and data. Due to the nature of their interaction with the hiring entity, service organizations must be considered as a component of internal controls.

[38] The Statement on Standards for Attestation Engagements 18 was released by the American Institute of Certified Public Accountants and became effective on May 1, 2017.

Regulatory Authority (FINRA) [39]the Secretary of State's Securities Division conducts periodic compliance reviews.

Empower Retirement successfully completed its most recent compliance review, which was conducted by the Securities Division, in August 2016.

As a component of the contract, Empower Retirement agreed that all the services it provides to MDC are subject to audit by the PERS Board or its agents. During the life of the contract, PERS has not commissioned a separate audit of the plan's operations, content to rely on the various other avenues of assurance provided on Empower Retirement's operations.

Customer Service Review

As MDC's recordkeeper, Empower Retirement interacts daily with members and is required by contract to meet certain performance metrics. For CY 2015 through the first quarter of CY 2019, Empower Retirement has met or exceeded all contractual performance metrics.

As the third-party administrator providing recordkeeping and communications services, Empower Retirement must interact with members of MDC daily. These interactions can take various forms, including telephone calls, e-mails, face-to-face meetings, group seminars, or communication through an online portal.

The contract between MDC and Empower Retirement contains performance metrics that Empower Retirement is required to meet annually. These metrics include:

- all telephone calls received in the Home Office Client Service Center will be answered within an average of 90 seconds at least 90% of the time on an on-going average annual calendar year basis;
- the website availability will be maintained at an average of 95% during any prior four calendar quarters; and
- Empower Retirement will conduct a minimum of both 1,225 group meetings and 3,700 individual consultations per calendar year.

For all periods reviewed (CY 2015 through the first quarter of CY 2019) Empower Retirement met or exceeded all aspects of the contractual performance metrics.

As a staff in Mississippi, Empower Retirement currently employs five local representatives, each dedicated to a specific territory exclusively in Mississippi. These representatives work under a dedicated state director who is responsible for Empower Retirement's operations within the state. In addition to these local resources, MDC members also have access to a national customer service call center and online portal.

To assess MDC member employees' and employers' satisfaction with the services provided by Empower Retirement, PEER

[39] FINRA is a government authorized, not-for-profit organization that oversees U.S. broker-dealers.

conducted a limited survey of MDC member employees/employers. The survey focused on several areas of customer service including:

- registration/enrolling of new members;
- processing/implementation of change orders for members; deferral election and asset allocations;
- processing/implementation of member requests for cessation/resumption of deferral contribution;
- processing of members' benefit withdrawal requests; and,
- processing of members' request for account closure/transfer.

Communication of Member Changes

Members who want to make changes to their account (i.e., deferral changes, asset allocation changes, cessations, or resumptions) can make these changes through interaction with the online portal, through the national call center,[40] or through face-to-face interaction with representatives when they are on-site. When changes are made to a member's account, Empower Retirement communicates these changes to the member's employer through electronic feedback. In the case of face-to-face changes, the employer can also request a copy of the change form(s). These communications are important because in larger agencies (or agencies with multiple locations) it may not always be possible for members to personally notify agency personnel responsible for the function.

The electronic feedback, sent monthly or whatever frequency the employer chooses, notifies the employer of the changes made to the account. From these notifications, employers can make the requisite changes to their payroll submission files.

PEER's survey determined that MDC members' most frequent area of concern was breakdowns in notification of changes. When asked about this area of operations, Empower Retirement maintained that issues with communication most commonly arise due to turnover within agencies or disuse of the online system.

To limit the impact that turnover within agencies has on the communication of employee election information, Empower Retirement has created an online training video made available to employers in their plan services center (PSC), the online portal for employers enrolled in MDC. This video includes information on the importance of this method of communication, steps necessary for entities to authorize new administrators, and the importance of these changes being made in a timely manner.

[40] For data security reasons, a local representative cannot facilitate account changes.

While this training video is a great source of information on how employers can interface with the PSC, it does not address the root cause of this issue, which is that the notifications are going unnoticed either through turnover in entity personnel responsible for this payroll function or through disuse of the PSC.

Empower Retirement affirmed that its system can determine when employer personnel have not been utilizing their account on the PSC. Based on this system capability, Empower Retirement should utilize the capabilities within its system to notify its local representative (who are each responsible for a geographic area, as highlighted above) if there is a detected period of disuse by an employer in their area. Empower Retirement should further instruct these representatives to contact the affected employer and help resolve whatever communication issues have arisen.

Knowledge of the Program

As of June 30, 2019, membership in MDC was 39,283 individuals (representing a net increase of 1.41%[41] from the June 30, 2018, membership figures of 38,737). Growth in the membership of the plan could be attributed to many factors including changes in economic climates, the addition of new employers, and to communication efforts from Empower Retirement to those employees not already enrolled. However, even given these growth figures of the plan, the other main concern voiced in the survey results was an employee lack of knowledge about the availability of the plan.

Based on these concerns, PEER discussed this issue with Empower Retirement staff to ascertain how communication efforts were designed. Empower Retirement stated that due to limited contact information (i.e., e-mail addresses) for employees, they direct most of their communication efforts to/through employers. These efforts include biannual newsletters, notifications on updates to the plan through Empower Retirement's public website, the employer PSC, and various e-mail initiatives. For example, during FY 2019, MDC sent an email to all employers with a link to information about enrolling in MDC, and asked them to forward it to their employees. Based on the results of this "enrollment drive" 360 employees enrolled in the plan.

One recent change that may also impact this area is a change in the PERS marketing policy and guidelines for the deferred compensation plan. At its October 2019 meeting, the PERS Board amended its regulations to allow the PERS executive director to provide any member contact

[41] This increase in membership is reported net of current year withdrawals from the plan.

information, known by PERS, to the deferred compensation administrator (Empower Retirement) to assist in enrolling employees. In the future, as new information becomes available, this change could make communication between Empower Retirement and prospective members easier.

Empower Retirement also discussed the communication efforts of its local representatives. Empower Retirement stated that local representatives call on employers in their area to schedule group meetings and conduct face-to-face meetings as well.

In its review of the contractual performance metrics outlined above, PEER determined that Empower Retirement, through its representatives, is conducting the level of required meetings annually.

Even though Empower Retirement has successfully met its contractual requirements as outlined in the performance metrics, PEER's survey results still indicate that communication of the plan's benefits to prospective members is still an issue. PEER recommends that Empower Retirement continue to evaluate its methods of communication with current/potential employees.

Appendix A: COLA Provisions by State-Level Plan and Recent Changes[42]

Plan	COLA Provision	2009-2018 Changes
Alaska PERS	Automatic, lesser of 75% of CPI or 9%, simple, for those age 65 and above; lesser of 50% of CPI or 6% for those age 60 or having received benefits for at least 5 years; An additional in-state COLA is provided to beneficiaries who reside in Alaska. Members are eligible if they entered the PERS before 7/1/86 or entered after 6/30/86 and have attained at least age 65. The Alaska COLA is equal to the greater of 10% of their base benefits or $50.	
Alaska Teachers	Automatic, lesser of 75% of CPI or 9%, simple, for those age 65 and above; lesser of 50% of CPI or 6% for those age 60 or having received benefits for at least 5 years; An additional in-state COLA is provided to beneficiaries who reside in Alaska. Members are eligible if they entered the TRS before 7/1/86 or entered after 6/30/86 and have attained at least age 65. The Alaska COLA is equal to the greater of 10% of their base benefits or $50.	
Alabama ERS	Ad hoc as approved by the legislature.	
Alabama Teachers	Ad hoc as approved by the legislature.	
Arkansas PERS	Automatic 3% compounded.	
Arkansas State Highway Employees	Automatic, lesser of 3% or CPI, compounded.	Prior to legislation approved in2017, an annual automatic COLA of 3% was granted.
Arkansas Teachers	Automatic 3%; compounded on an ad hoc basis as determined by the Board.	2017 legislation gives the TRS board the authority to reverse a compound COLA granted in 2009 if necessary to maintain the actuarial soundness of the system.
Arizona Public Safety Personnel	Automatic, based on CPI for the Phoenix region, up to 2.0%. For new hires on or after 7/1/17, the cap is lowered to 1.5% if the system falls below 90% funded; 1.0% if below 80% funded; and the COLA is eliminated if below 70% funded.	Legislation approved in February 2016 replaces the Permanent Benefit Increase (PBI) with a traditional COLA for current and future retirees that is tied to CPI. For new hires on or after 7/1/17, the COLA is restricted or eliminated when the plan falls below 90% funded. The changes were affirmed by an amendment to the Arizona Constitution via voter referendum in May 2016.
Arizona SRS	For participants hired before 9/13/13, up to 4.0% annually, contingent on earnings associated with an actuarial investment return above 8%. For those hired thereafter, ad hoc as approved by the legislature.	2013 legislation eliminated the permanent benefit increase for members hired on or after 9/13/13.
California PERS	Automatic after two calendar years of receiving benefits and the lesser of CPI for the prior year or the employer elected COLA. Typically State retirees receive a 2% provision, while Public Agencies and Schools may have 2%, 3%, 4% or 5% COLA provisions.	

[42] Compiled from the December 2018 *NASRA Issue Brief: Cost of Living Adjustments*

Plan	COLA Provision	2009-2018 Changes
California Teachers	Automatic 2% simple, plus adjustments designed to maintain retirees' purchasing power up to 85% of their original benefit, made through a "supplemental benefits maintenance account" financed with a state contribution of about 2.5% of total creditable compensation.	Members who performed creditable service on or after 1/1/14 will have their existing improvement factor guaranteed in exchange for contribution increases. The improvement factor cannot be reduced for these members. For members who retired prior to 1/1/14, the Legislature will continue to reserve the right to reduce the improvement factor, a right that has never been exercised.
University of California	Automatic, equal to the full increase in CPI up to 2%, plus 75% of the increase in CPI over 4%. The maximum COLA provided is 6%.	
Colorado Affiliated Local	Based on election of individual participating employers.	
Colorado Fire & Police Statewide	Ad hoc as approved by board.	
Colorado Local Government, School, and State	Retiree COLA for 2018 and 2019 is equal to 0.0%. For active employees and retirees who did not receive a COLA as of 5/01/18, COLAs are paid after three years of retirement. The COLA cap, currently 1.50%, may be changed through the provisions of an auto-adjust mechanism which is triggered dependent upon the ratio of total contributions made to the determination of total required contributions (based on a layered, 30-year amortization approach). If this ratio falls below 98% or above 120%, the COLA cap may be reduced or increased by up to 0.25% in any one year, but cannot fall below 0.50% or exceed 2.00%. COLA provisions vary by date of hire; Those hired before 1/1/07, have an automatic increase equal to the COLA cap. Those hired on or after 1/1/07, are awarded the lesser of the effective COLA Cap and the average of the monthly CPI-W amounts for the prior calendar year; provided the cost of the COLA does not exceed 10% of each division's annual increase reserve.	2018 legislation suspended the COLA for two years, increased the waiting period for new hires to receive a COLA from one year to three, and thereafter reduced the automatic COLA cap from 2.0% to 1.5%, and tied payment of future COLAs to the length of the plan's amortization period. 2010 legislation reduced the COLA from automatic 3.5%. The law was challenged, and upheld by the CO Supreme Court in 2014.
Connecticut SERS	Minimum of 2.0% up to a maximum 7.5% calculated based on the following formula: 60% of the annual increase in the CPI-W up to 6.0% and 75% of the annual increase in the CPI-W over 6.0%. For employees who retire after 6/30/22, the minimum COLA is reduced to the actual change in CPI-W, if the change is <2.0%. The previous formula applies if the change in CPI-W is >2.0%.	A 2011 agreement between the state and public-sector unions reduced the minimum COLA for employees who retire after 10/1/11. A 2017 agreement made further changes for employees who retire after 6/30/22.
Connecticut Teachers	For members hired on or after 7/1/07, COLA equal to Social Security COLA, with a maximum of 1.0% if investment return is <8.5%; a maximum of 3.0% if return is between 8.5%-11.5%; and limited to 5.0% if return is >11.5%. For members who retired before 9/92, automatic, based on CPI, with 3% minimum and 5% max, compounded; for those who retired after 9/92, COLA is equal to the Social Security COLA, with a maximum of 1.5% if	

Plan	COLA Provision	2009-2018 Changes
	investment return is <8.5% and a maximum of 6.0% if returns are at least 8.5%.	
DC Police & Fire	Automatic based on CPI, up to 3%, compounded, for members hired on or after 11/10/96. Automatic, based on CPI, compounded (uncapped) for members hired before 11/10/96.	
DC Teachers	Automatic based on CPI, up to 3%, compounded, for members hired on or after 11/1/96. Automatic, based on CPI, compounded (uncapped) for members hired before 11/1/96.	
Delaware State Employees	Ad hoc as approved by the general assembly.	
Florida RS	Automatic 3%, compounded.	2011 legislation terminated the automatic 3% compounded COLA for all service credits earned after 7/1/11.
Georgia ERS	Ad hoc as approved by the ERS board.	
Georgia Teachers	Automatic 1.5% every 6 months as long as CPI increases, compounded.	
Hawaii ERS	Automatic, 1.5% simple, for those hired on or after 7/1/12; 2.5% simple for those hired before 7/1/12.	The automatic COLA was reduced from 2.5% to 1.5%, simple, for those who become members of the system after 6/30/2012.
Iowa Municipal Fire & Police	Automatic, 1.5% compounded. An additional fixed COLA is provided based on length of retirement. For members retired fewer than 5 years, an additional $15 is applied. For members retired 5-10 years, $20. For members retired 10-15 years, $25. For members retired 15-20 years, $30. For members retired more than 20 years, $35. No COLA is provided to members who terminate prior to becoming eligible for retirement.	
Iowa PERS	No COLA-type payments for members retiring after 6/30/90. Those who retired prior to 7/1/90 are eligible for "thirteenth check" that may be adjusted annually by the lesser of CPI or 3%.	
Idaho PERS	Automatic 1% compounded (as long as CPI rises at least 1%), plus discretionary COLA if the CPI is greater than 1%. Total COLA (mandatory plus discretionary) cannot exceed 6%. The Board also has the discretion to award a retroactive COLA to make up for prior years when the full CPI was not awarded.	
Illinois Municipal	Automatic 3%, simple, for those hired before 1/1/11; for those hired after 12/31/10, lesser of 3% or half of CPI, simple, upon attainment of the later of age 67 or one year after retirement.	2010 legislation reduced the COLA for new hires on or after 1/1/11 from automatic 3%, simple.
Illinois State Employees, Teachers, and State Universities	Those hired before 1/1/11 receive an automatic COLA of 3%, compounded, upon attainment of the latter of age 61 or one year after retirement. Those hired after 12/31/10 receive a COLA of the lesser of 3% or one-half of the CPI, not compounded, upon attainment of the later of age 67 or one year after retirement.	2018 legislation directs the system to offer, from 1/1/19 until 6/30/21, a COLA buyout for retiring members hired before 1/1/11. These members may elect to forfeit their rights to the current 3% annual compound

Plan	COLA Provision	2009-2018 Changes
		COLA in exchange for a 1.5% simple COLA and a lump sum payment equal to 70% of the difference between the estimated present value of the 3% COLA and the estimated present value of the 1.5% COLA. 2010 legislation reduced the COLA for new hires from automatic, 3% compounded. 2013 legislation reduced the COLA formula for current workers and new hires. The law was challenged and rejected by the IL Supreme Court in 2015.
Indiana PERF	Ad hoc as approved by the legislature.	
Indiana Teachers	Ad hoc as approved by the legislature.	
Kansas PERS	Ad hoc as approved by the legislature; the new cash balance for employees hired after 12/31/14 provides for an optional self-funded COLA as an annuity payment option at retirement.	2012 legislation removed automatic 2% COLA originally provided for those hired after 6/30/09; also created optional self-funded COLA in cash balance plan for new hires after 12/31/14.[4]
Kentucky County	Automatic, tied to CPI, not to exceed 1.5% after 12 months of retirement, compounded. Because of legislation described in the right-hand column, payment of COLA is unlikely in the foreseeable future.	2011 legislation suspended retiree COLAs for 2012 and 2013; 2013 legislation mandates that a COLA be granted only if the system is over 100% funded or if the legislature prefunds the COLA. A challenge to the 2013 law was dismissed in 2014.
Kentucky ERS	Automatic, tied to CPI, not to exceed 1.5% after 12 months of retirement, compounded. Because of legislation described in the right-hand column, payment of COLA is unlikely in the foreseeable future.	2011 legislation suspended retiree COLAs for 2012 and 2013; 2013 legislation mandates that a COLA be granted only if the system is over 100% funded or if the legislature prefunds the COLA. A challenge to the 2013 law was dismissed in 2014.
Kentucky Teachers	Automatic 1.5% compounded.	
Louisiana SERS	Subject to approval by the legislature and contingent upon funding available in COLA account consisting of excess investment returns; COLA amount is based on plan funded percentage and investment returns; COLA amount ranges from the lesser of 1.5% or CPI-U (55% funded) to the lesser of 3.0% or CPI-U (80% funded), if certain actuarial rates of return are met; COLA applies only to first $60,000 of benefit, indexed to CPI; minimum COLA eligibility at age 60, if retired at least one year; COLAs may be granted only every other year until system is at least 85% funded; participants may elect retirement option providing an actuarially reduced benefit with auto annual 2.5% COLA beginning at age 55.	2014 legislation tied the amount of future COLAs to the plan's funded status, limited COLAs to every other year if funds are available, and capped deposits into the accounts from which COLAs are funded.

[4] Legislation creating Kansas PERS Tier 3 passed in 2012 eliminated the Tier 2 COLA. The only employees eligible to receive the Tier 2 COLA are those who were retired and returned to work on or after 6/30/09 and who will retire before 7/1/12.

Plan	COLA Provision	2009-2018 Changes
Louisiana Teachers	Subject to approval by the legislature and contingent upon funding available in COLA account consisting of excess investment returns; COLA amount is based on plan funded percentage and investment returns; COLA amount ranges from the lesser of 1.5% or CPI-U (55% funded) to the lesser of 3.0% or CPI-U (80% funded), if certain actuarial rates of return are met; COLA applies only to first $60,000 of benefit, indexed to CPI; minimum COLA eligibility at age 60, if retired at least one year; COLAs may only be granted every other year until system is at least 85% funded; participants may elect retirement option providing an actuarially reduced benefit with auto annual 2.5% COLA beginning at age 55.	2014 legislation tied the amount of future COLAs to the plan's funded status, limited COLAs to every other year if funds are available, and capped deposits into the accounts from which COLAs are funded.
Massachusetts SERS	Ad hoc, typically based on CPI up to 3% applied to first $13,000 of benefit, subject to legislative approval and enactment. Must be retired one full fiscal year before being eligible for COLA.	Effective 2011, increased benefit to which COLA applies from first $12,000 of benefit to $13,000.
Massachusetts Teachers	Ad hoc, typically based on CPI up to 3% applied to first $13,000 of benefit, subject to legislative approval and enactment. Must be retired one full fiscal year before being eligible for COLA.	Effective 2011, increased benefit to which COLA applies from first $12,000 of benefit to $13,000.
Maryland PERS and Teachers	For service earned after 6/30/2011, automatic based on CPI, capped at 2.5% or the increase in CPI if the recent calendar year market value rate of return was greater than or equal to the assumed actuarial investment return of 7.45%. If that threshold is not met, COLA is the lesser of 1.0% or the increase in CPI. COLA on service prior to 7/1/2011 is automatic based on CPI, capped at 3.0%.	For service earned after 6/30/2011, COLA was lowered from CPI up to 3%, compounded, to CPI capped at 2.5%, or 1%, depending on investment return.
Maine Local	Based on individual employer election. If provided, based on CPI up to 2.5%. Those who retire on or after 9/1/2019 qualify for a COLA after 24 months of retirement, and may have their COLA reduced or frozen if the plan's costs exceed established member and employer contribution rate caps of 9.0% and 12.5%, respectively.	In 2018 the board approved a reduction to the maximum COLA from 3.0% to 2.5% for current retirees, and extended the COLA waiting period from 12 to 24 months, and provided for the possible reduction or freezing of future COLA if the plan's cost exceed established member and employer contribution rate caps. Effective 7/1/2014, the COLA of CPI up to 4% compounded, was reduced to up to 3%. Members who retire on or after 9/1/2015 qualify for a COLA after twelve months of retirement rather than 6 months, as previously in effect.
Maine State and Teacher	COLA is based on the CPI up to 3% applicable to the first $20,000 of benefit, indexed for inflation beginning in 2011.	Effective 7/1/2011, the COLA of CPI up to 4% compounded, was suspended for three years, after which the cap and portion of the benefit to which the COLA applies was reduced. A legal challenge to the law was dismissed in 2014. 2015 legislation provided a minimum COLA of 2.55% for FY 16 and FY 17. Beginning in FY 18 the CPI-based COLA was reinstated.

Plan	COLA Provision	2009-2018 Changes
Michigan Municipal	Employers may elect to provide a COLA, on a one-time basis or as an automatic adjustment.	
Michigan Public Schools	Automatic 3% simple; those hired after 6/30/10 are not eligible for a COLA.	Employees hired after 6/30/10 participate in a hybrid plan that does not provide a COLA.
Michigan SERS	Automatic 3% simple up to $300 annually.	
Minnesota PERF	Automatic, compounded, equal to 50% of inflation with a floor of at least 1.0% if inflation is 2.0% or lower, and a cap of 1.5% if inflation is higher than 3.0%.	2018 legislation replaced the previous COLA, which was tied to the plan's funding level, with an inflation-based COLA. 2010 legislation reduced auto-COLA from 2.5%. The law was challenged, and upheld in a final ruling issued in 2011.
Minnesota State Employees	Automatic, 1.0% compounded, increasing to 1.5% on 1/1/24.	2018 legislation replaced the previous COLA, which was tied to the plan's funding level, with a fixed percentage COLA. 2010 legislation reduced auto-COLA from 2.5%. The law was challenged, and upheld in a final ruling issued in 2011.
Minnesota Teachers	Automatic, 1.0% compounded from FY 19-23, increasing by 0.1% from FY 24-28 to 1.5%.	2018 legislation replaced the previous COLA, which was tied to the plan's funding level, with a fixed percentage COLA. 2010 legislation reduced auto-COLA from 2.5%. The law was challenged, and upheld in a final ruling issued in 2011.
Missouri DOT and Highway Patrol	80% of CPI up to 5% compounded; those hired before 8/28/97 receive a min. of 4% and a max. of 5% compounded, up to 65% of original benefit, and then 80% of CPI up to 5% thereafter.	
Missouri Local	Contingent upon investment return, with a max of the lower of 4% or cumulative CPI since retirement.	
Missouri Teachers and PEERS	When the Consumer Price Index for Urban Consumers (CPI-U) for the previous fiscal year is between 0% and 2%, no COLA is provided when the CPI-U is cumulatively below 2%. A 2% COLA is provided when the cumulative CPI-U reaches 2% or more. The cumulative calculation resets after a COLA is provided. A COLA of 2% is paid when the change in CPI-U is between 2% and 5%; and a COLA of 5% is paid when the CPI is 5% or greater, subject to a lifetime cap of 80%.	In 2016 the Board changed the auto, compounded COLA from compounded at 2% if CPI-U is between 0% and 5%; 5% if CPI-U is 5% or higher, and no COLA is given if CPI-U is less than 0%; subject to a lifetime cap. In 2017 the Board again changed the COLA policy to add a cumulative calculation to the formula.
Missouri State Employees	80% of CPI up to 5% compounded; those hired before 8/28/97 receive a min. of 4% and a max of 5% compounded, up to 65% of original benefit, and then 80% of CPI up to 5% thereafter.	Per 2017 legislation, the COLA for members hired on or after 1/1/11 who terminate employment before becoming eligible for retirement is delayed until the second anniversary of the member's annuity start date.

Plan	COLA Provision	2009-2018 Changes
Mississippi PERS	Automatic, 3% simple, until age 60, then compounded thereafter, for those hired on or after 7/1/11; Automatic, 3% simple, until age 55, then compounded thereafter, for those hired before 7/1/11.	2011 legislation increased the age at which COLA compounding begins from 55 to 60.
Montana PERS	Automatic, ranging from 0 to 1.5% compounded, depending on the plan's funded status, beginning 12 months after onset of annuity, for those hired on or after 7/1/13; 1.5% for those hired between 7/1/07 and 6/30/13; 3.0% compounded for those hired before 7/1/07.	2011 legislation reduced the automatic guaranteed annual benefit adjustment (GABA) for retired, active and newly hired members from 1.5% compounded and tied its provision to PERS' funding ratio. The law was challenged in court, and a 2015 ruling reversed the changes for retired and active members and upheld for new hires.
Montana Teachers	Automatic, ranging from 0.5% to a maximum of 1.5%, compounded, depending on the plan's funded status, beginning 36 months after onset of annuity, for those hired on or after 7/1/13; 1.5% for those hired before 7/1/13. Automatic 1.5% compounded beginning 3 years after onset of annuity.	2011 legislation reduced the automatic guaranteed annual benefit adjustment (GABA) for retired, active and newly hired members from 1.5% compounded and tied its provision to TRS' funding ratio. The law was challenged in court, and a 2015 ruling reversed the changes for retired and active members and upheld for new hires.
North Carolina Local Government	Ad hoc as approved by the Board, with certain limitations. The Board may grant COLAs up to a maximum of 4%, provided that the COLA does not exceed the year-over-year increase in the CPI and that the cost of the increase is paid for with investment gains. COLAs in excess of these provisions must be approved by the legislature.	
North Carolina Teachers and State Employees	Ad hoc as approved by the legislature.	
North Dakota PERS	Ad hoc as approved by the legislature.	
North Dakota Teachers	Ad hoc as approved by the legislature.	
Nebraska Schools	Based on CPI, up to 1% compounded for employees hired on or after 7/1/13; Based on CPI, up to 2.5%, compounded for other members.	2013 legislation created a new tier for those hired on or after 7/1/13. This tier features a reduced maximum COLA.
Nebraska State and County Cash Balance	Participants may elect at retirement to convert their cash balance account to a monthly annuity with a built-in annual COLA of 2.5%.	
New Hampshire Retirement System	Ad hoc as approved by the legislature.	

Plan	COLA Provision	2009-2018 Changes
New Jersey PERS, Police & Fire, and Teachers	COLA suspended until the plan funding level reaches 80%, after which a panel will assess the prudence of paying a COLA.	2011 legislation suspended the automatic COLA that was based on 60% of CPI. The law was challenged, and upheld in a final ruling issued in 2016.
New Mexico PERA	Automatic 2.0% compounded. Retirees earning $20,000 or less receive a COLA of 2.5%.	2013 legislation reduced the automatic COLA from 3% compounded.
New Mexico Teachers	COLA is based on the change in CPI. If the change in CPI is less than 2.0%, the COLA is equal to the change in CPI. If the change in CPI is greater than 2.0%, the COLA is equal to one-half of the change in CPI, but not less than 2.0% nor more than 4.0%. In 2013, COLAs for all current and future retirees were reduced until ERB is 100% funded. When the funded ratio is 90% of less, the COLA for retirees whose annuity is at or below the median retirement benefit and who have 25 or more years of service credit at retirement will be reduced by 10%. For all other retirees, the reduction is 20%. When the funded ratio exceeds 90% and is less than 100%, the COLA for retirees who have 25 or more years of service credit at retirement and whose annuity is at or below the median retirement benefit will be reduced by 5%. For all other retirees, the reduction is 10%.	2013 legislation reduced the COLA depending on retiree length of service and size of benefit. All COLA reductions cease upon ERB's attainment of a 100% funding level. The law was challenged, and upheld by the NM Supreme Court in 2013.
Nevada Police Officer and Firefighter and Regular Employees	After 3 years of receiving benefits, automatic COLA of 2% annually, rising gradually to 5% annually, compounded, after 14 years of benefits; the compounded COLA is capped by the lifetime CPI for the period of retirement, i.e., it may not exceed inflation.	2015 legislation reduced the COLA for employees hired on or after 7/1/15. Newly hired workers will receive a COLA of 2% after 3 years of receiving benefits, 2.5% after 6 years, and the lesser of 3% or the preceding year's increase in CPI after 9 years and thereafter.
New York State Teachers	Automatic, based on one-half of the increase in the annual CPI, applied to first $18,000 of annual pension, compounded; must be 62 and retired for 5 years, or 55 and retired for 10 years, to receive COLA; COLA is a minimum of 1% and a maximum of 3%.	
New York State & Local ERS and Police & Fire	Automatic, based on one-half of the increase in the annual CPI, applied to first $18,000 of annual pension, compounded: must be 62 and retired for 5 years, or 55 and retired for 10 years, to receive COLA; COLA is a minimum of 1% and a maximum of 3%.	
Ohio PERS	For those who retired on or before 1/1/13, automatic, 3%, simple. Retirees receive a COLA beginning 12 months after their effective date of retirement. Beginning in 2019, the COLA for those who retired on or after 2/1/13 is based on CPI with a cap of 3.0%, simple. The first COLA is paid 12 months after their effective date of retirement.	2012 legislation tied COLA to CPI, up to 3% for all active members. Legislation includes a five-year transition period. Members retiring within the first five years after 1/7/13 are eligible for a simple 3% COLA until 12/31/18. In 2017, the PERS Board approved a proposal that would change future COLAs for current and future retirees. Beginning in 2019, COLAs would be based on CPI, with a cap of 2.25%, simple, with the first COLA

Plan	COLA Provision	2009-2018 Changes
		paid to future retirees delayed until their second pension anniversary. The proposal includes a two-year delay for those who retired beginning in 2010 and ending on 1/1/13. If PERS' amortization period increases to more than 30 years, COLA is frozen for the following calendar year. If inflation exceeds 3% and the system is fully funded, the Board may increase the COLA to 3%. The 2017 changes are subject to approval by the Ohio Legislature. The proposal will be revisited in the 2019-2020 legislative session.
Ohio Police & Fire	Lesser of 3% or the CPI, automatic, simple; COLA delayed until age 55 for all members except survivors and those receiving permanent disability benefits.	Per 2012 legislation, COLA reduced and tied to CPI; onset delayed for nearly all members.
Ohio School Employees	As of 1/1/18, COLA no longer statutorily guaranteed, but is discretionary, based on board approval. If the board chooses to provide a COLA, the COLA is tied to the change in CPI-W and is capped at 2.5%, though the board may approve a COLA above 2.5% if the board's actuary is in agreement. Board may also lower COLA below CPI-W upon actuary's recommendation. As a result of this new authority, the board took action to suspend COLAs for three years (until 1/1/21), and delay COLA onset for new benefit recipients an additional three years (until 4th benefit anniversary).	Per legislation effective September 2017, the automatic, 3% simple retiree COLA was replaced with a discretionary COLA tied to CPI-W. Per March 2018 legislation, board determines COLA onset for new benefit recipients.
Ohio Teachers	The COLA is currently 0%. By a vote of the STRS Ohio board in April 2017 in order to preserve the fiscal integrity of the pension fund, a reduction from 2% to 0% went in to effect 7/1/17. Pursuant to that board vote, not later than the next quinquennial actuarial experience review, the board will evaluate whether an upward adjustment to the COLA is payable without materially impacting the fiscal integrity of the retirement system.	Per 2012 legislation, members who retire on or after 8/1/13 qualify for a 2% simple COLA beginning on the fifth anniversary of their retirement. In 2017, the STRS board voted to reduce the COLA to 0% to keep the system's funding period to no more than 30 years and maintain the fiscal integrity of the system.
Oklahoma PERS	Ad hoc as approved by the legislature; subject to required funding.	The Legislature approved a provision in 2011 requiring future COLAs to be funded, which effectively rules out COLAs for the foreseeable future. Prior to this legislative action, a 2% COLA had regularly been approved.
Oklahoma Teachers	Ad hoc as approved by the legislature; subject to required funding.	The Legislature approved a provision in 2011 requiring future COLAs to be funded, which effectively rules out COLAs for the foreseeable future. Prior to this legislative action, a 2% COLA had regularly been approved.

Plan	COLA Provision	2009-2018 Changes
Oregon PERS	Automatic, based on CPI, up to 2.0%, compounded, for benefits earned as of 10/1/13 or earlier. Automatic, based on CPI up to 1.25% on the first $60,000 in benefits and 0.15% on amounts above $60,000 for benefits earned after 10/1/13.	2013 legislation lowered the maximum COLA applied to future benefit accruals for retired members as well as current employees and new hires from 2% to 1.25% on the first $60,000 in benefits, and 0.15% on amounts above $60,000. The law also provided for supplementary COLA payments depending on benefit levels over six years The law was challenged and partially rejected as an unconstitutional adjustment to COLA as it pertains to benefits earned prior to the law's effective date. The court also invalidated the supplementary payments.
Pennsylvania School Employees	Ad hoc as approved by the general assembly.	
Pennsylvania State ERS	Ad hoc as approved by the general assembly.	
Rhode Island ERS	Effective 7/1/15, annual COLA is comprised of the sum of two elements; 1) 50% of the 5-year average investment return of the retirement system, less 5.5%, with a floor of 0% and a cap of 4%., and 2) the lesser of 3% or the increase in CPI for the previous year. The COLA produced by the sum of these elements is subject to a floor of 0% and a cap of 3.5% and is applied to the first $25,855 of retirement allowance, such amount is indexed annually in the same percentage as determined above. The COLA commences upon the later of the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. A COLA is granted annually if the plan is at least 80% funded. If the plan funding is below 80%, the COLA is granted every four years until 80% funding is reached.	For members not eligible to retire as of 9/30/09, the law changed the COLA for all members from 3% compounded annually to the COLA provided under a 2005 reform, applicable to non-vested members, which is the lower of either the CPI or 3% and requires a full 3-year anniversary from the date of retirement for receipt of the COLA. The Rhode Island Legislature again in 2011 revised the COLA provisions, effective 7/1/12. A challenge to the law was settled in mediation in 2015.
Rhode Island Municipal	Effective 7/1/15, annual COLA is comprised of the sum of two elements; 1) 50% of the 5-year average investment return of the retirement system, less 5.5%, with a floor of 0% and a cap of 4%., and 2) the lesser of 3% or the increase in CPI for the previous year. The COLA produced by the sum of these elements is subject to a floor of 0% and a cap of 3.5%, and is applied to the first $25,855 of retirement allowance, with such amount indexed annually in the same percentage as determined above. The COLA commences upon the third anniversary of the date of retirement or the date on which the retiree reaches his or her Social Security retirement age, whichever is later. A COLA is granted annually as long as the plan is at least 80% funded. If the plan funding is below 80% the COLA is granted every four years until 80% funding is reached.	The Rhode Island Legislature in 2011 revised COLA provisions from automatic 3% non-compounded, effective 7/1/12. A challenge to the law was settled in mediation in 2015.

Plan	COLA Provision	2009-2018 Changes
South Carolina Police	Automatic, based on CPI up to 1% annually, subject to an annual cap of $500.	Per 2012 legislation, COLA is subject to an annual cap.
South Carolina RS	Automatic, 1% annually, subject to an annual cap of $500.	Per 2012 legislation, COLA is subject to an annual cap.
South Dakota RS	Effective 7/1/18, if the system is fully funded or greater, COLA is equal to CPI-W with a minimum of 0.5% and a maximum of 3.5%. If the system is less than fully funded, COLA is equal to CPI-W with a minimum of 0.5% and a maximum equal to a "restricted COLA maximum" which is to be calculated at a level necessary to restore the system to full funding.	2017 legislation modified the COLA formula, effective 7/1/18, to equal CPI-W with a minimum of 0.5%, and a maximum depending on the system's funded status.
TN Political Subdivisions	Participating employers may choose from 1 of 2 options: a) no COLA; b) automatic based on CPI, up to 3%, compounded.	
TN State and Teachers	Automatic based on CPI, up to 3% compounded.	2013 legislation provides for the potential reduction or suspension of the COLA if employer cost or unfunded liability thresholds are exceeded.
Texas County & District	Ad hoc, approved by individual employers. Employers can choose no COLA, a flat % COLA (limited based on CPI), or a CPI-based COLA (10% - 100% of CPI), compounded.	
Texas ERS and LECOS	Ad hoc as approved by the legislature; per state law, plan's amortization period must be less than 31 years for legislature to approve a COLA.	
Texas Municipal	Based on individual employer election; employers may choose no COLA or one based on 30%, 50%, or 70% of CPI, compounded.	
Texas Teachers	Ad hoc, as approved by the legislature; per state law, plan's amortization period must be less than 31 years for legislature to approve a COLA.	
Utah Noncontributory	For those hired before 7/1/11, automatic based on CPI up to 4.0%, simple; for those hired after 6/30/11, based on CPI up to 2.5%, simple.	Legislature reduced maximum COLA for those hired after 6/30/11 from 4% to 2.5%.
Virginia Retirement System	Automatic based on CPI for the first 3%, and one-half of the next 4% of CPI, with an annual cap of 5%, compounded; effective 1/1/13, COLAs for non-vested active members are based on the first 2% of CPI and one-half of the next 1%, with an annual cap of 3%, compounded.	Effective 1/1/2013, COLAs for non-vested members are capped at 3% rather than 5%; for early retirees, COLA onset is delayed until July 1 one year following retirement.
Vermont State Employees	Automatic based on CPI, up to 5%, compounded.	
Vermont Teachers	Automatic based on one-half of CPI, up to 5%, compounded.	
Washington LEOFF Plan 1	Automatic, full CPI, compounded.	

Plan	COLA Provision	2009-2018 Changes
Washington LEOFF Plan 2	Automatic based on CPI, up to 3% compounded.	
Washington PERS and Teachers Plan 1	None.	2011 legislation eliminated automatic COLA which provided a postretirement benefit increase based on a $/years of service calculation. The law was challenged and upheld by the WA Supreme Court in 2014.
Washington PERS, School Employees, and Teachers Plan 2/3	Automatic, based on CPI, up to 3%, compounded.	
Wisconsin Retirement System	Dividend adjustment provided based on investment returns, and can increase or decrease, but not below base benefit.	
West Virginia PERS	Ad hoc as approved by the legislature.	
West Virginia Teachers	Ad hoc as approved by the legislature.	
Wyoming Public Employees	Effective 7/1/12, the COLA is removed until the actuarial funded ratio reaches 100 percent "plus the additional percentage the retirement board determines is reasonably necessary to withstand market fluctuations."	Prior to 7/1/12, COLAs were ad hoc and linked to perceived affordability.

COLA provisions listed above are in effect as of December 2018.

Appendix B: PERS Investment Management Fees, FY 2019 & FY 2018

CLASS	MANAGER	FY 19 (thousands)	FY 18 (thousands)
U.S. Equity	ARTISAN PARTNERS (LARGE CAP GROWTH)	2,300	2,348
U.S. Equity	BOSTON COMPANY (MID CAP)	1,988	2,532
U.S. Equity	DIMENSIONAL FUND ADVISORS (SMALL CAP VALUE)	1,253	1,534
U.S. Equity	EAGLE CAPITAL (LARGE CAP CORE)	6,374	6,380
U.S. Equity	NORTHERN TRUST (LARGE CAP VALUE – PASSIVE) — Hired Q2 FY 2018	39	23
U.S. Equity	NORTHERN TRUST (RUSSELL MID CAP - PASSIVE) — Hired Q4 FY 2019	2	-
U.S. Equity	NORTHERN TRUST (S&P 500 - PASSIVE)	163	198
U.S. Equity	RIVERBRIDGE (SMALL CAP GROWTH)	2,416	2,745
U.S. Equity	STATE STREET GLOBAL ADVISORS (LARGE CAP VALUE – PASSIVE) — Terminated Q2 FY 2018	–	63
U.S. Equity	WEDGEWOOD PARTNERS (LARGE CAP GROWTH)	1,980	2,208
U.S. Equity	WELLINGTON (MID CAP VALUE)	1,992	2,276
U.S. Equity	WELLINGTON (SMALL CAP CORE)	2,290	2,871
Non-U.S. Equity	ARROWSTREET CAPITAL (ALL COUNTRIES X-US)	3,187	3,423
Non-U.S. Equity	BAILLIE GIFFORD (ALL COUNTRIES X-US)	2,620	2,854
Non-U.S. Equity	BLACKROCK HEDGED EAFE (DEVELOPED MARKETS – PASSIVE) — Terminated Q2 FY 2018	–	298
Non-U.S. Equity	FIDELITY INSTITUTIONAL ASSET MANAGEMENT — Terminated Q2 FY 2019	576	2,163
Non-U.S. Equity	FISHER INVESTMENTS (EMERGING MARKETS)	3,521	3,982
Non-U.S. Equity	LAZARD ASSET MANAGEMENT (EMERGING MARKETS)	2,042	2,381
Non-U.S. Equity	MARATHON (ALL COUNTRIES X-US) — Hired Q4 FY 2016	3,669	3,621
Non-U.S. Equity	MONDRIAN (SMALL CAP DEVELOPED MARKETS)	2,114	2,192
Non-U.S. Equity	NORTHERN TRUST EAFE (DEVELOPED MARKETS – PASSIVE) — Hired Q2 FY 2018	199	113
Non-U.S. Equity	PRINCIPAL GLOBAL (SMALL CAP INTERNATIONAL) — Hired Q2 FY 2019	922	-
Debt Investments	ALLIANCEBERNSTEIN (GLOBAL FIXED INCOME)	1,646	1,570
Debt Investments	BLACKROCK (CORE – PASSIVE) —Terminated Q2 FY 2018	–	91
Debt Investments	LOOMIS SAYLES (CORE PLUS)	1,780	1,684
Debt Investments	MANULIFE (CORE)	855	788
Debt Investments	NORTHERN TRUST (CORE – PASSIVE) — Hired Q2 FY 2018	110	58
Debt Investments	PACIFIC INVESTMENT MANAGEMENT CO. (CORE)	864	789
Debt Investments	PACIFIC INVESTMENT MANAGEMENT CO. (GLOBAL)	1,704	1,616
Debt Investments	PRUDENTIAL (CORE PLUS)	1,392	1,342
Debt Investments	WELLINGTON (EMERGING MARKETS)	2,605	2,524

CLASS	MANAGER	FY 19 (thousands)	FY 18 (thousands)
Real Estate	AEW PARTNERS VI, LP	181	212
Real Estate	AEW PARTNERS VII, LP	203	237
Real Estate	AEW PARTNERS VIII, LP	400	400
Real Estate	AG CORE PLUS FUND II LP	2	29
Real Estate	AG CORE PLUS FUND III LP	147	151
Real Estate	AG CORE PLUS FUND IV LP	568	375
Real Estate	AG CORE PLUS VALUE X LP — Hired Q4 FY 2019	465	-
Real Estate	CENTERSQUARE	780	873
Real Estate	COHEN & STEERS	1,189	1,237
Real Estate	HANCOCK TIMBER FUND	1,121	1,126
Real Estate	HEITMAN VALUE PARTNERS II LP*	-	8
Real Estate	HEITMAN VALUE PARTNERS III LP	265	355
Real Estate	HEITMAN VALUE PARTNERS IV LP — Hired Q3 FY 2019	99	-
Real Estate	INVESCO VALUE ADD FUND IV LP	492	453
Real Estate	INVESCO VALUE ADD FUND V LP — Hired Q3 FY 2019	188	-
Real Estate	JP MORGAN STRATEGIC PROPERTY FUND	5,101	4,814
Real Estate	PRINCIPAL GLOBAL INVESTORS	6,152	5,064
Real Estate	TA REALTY ASSOCIATES FUND X LP	762	597
Real Estate	TA REALTY ASSOCIATES FUND XI LP	1,421	550
Real Estate	UBS TRUMBULL PROPERTY FUND	2,658	3,265
Real Estate	UBS TRUMBULL PROPERTY GROWTH & INCOME FUND	2,061	1,769
Real Estate	WESTBROOK X LP	436	499
Private Equity	GROSVENOR & PATHWAY CAPITAL MAN - PRIVATE EQUITY	13,781	13,090
Global Equity	ACADIAN	3,160	3,176
Global Equity	EPOCH	4,220	4,392
Global Equity	HARDING LOEVNER	3,452	3,420
Global Equity	LONGVIEW PARTNERS	4,185	4,018
		104,092	104,777

* NOTE: While PERS paid no investment management fees to this manager during Fiscal Year 2019, PERS relationship with this manager/investment is still ongoing.

SOURCE: PERS Staff and PERS Fiscal Year 2018 *Comprehensive Annual Financial Report.*

Agency Response

Providing Benefits for Life

December 9, 2019

Mr. James Barber
Executive Director
Joint Committee on Performance Evaluation and Expenditure Review
Woolfolk Building, Suite 301-A
501 North West St.
Jackson, MS 39201

Dear Mr. Barber:

Thank you for the opportunity to review and discuss the draft of the PEER Report titled *2019 Update on Financial Soundness of the Public Employees' Retirement System* (PERS). Most of our comments surrounding PERS were provided earlier in our meeting or in the previous written response, including those about the timing of actuarial reports. As a reminder, the experience study was not the sole driver of the actuarial valuation completion date change. We enjoyed working with your staff and appreciate the work your office does in support of PERS, which often verifies and validates many of our observations and actions. As acknowledged in the Report, the PERS Board of Trustees has adopted and implemented policies and procedures that allow it to address the major areas that contribute to the plan's financial well-being and to carry out its fiduciary responsibilities to its active members and retirees. PERS realizes the importance of the funds entrusted to us because we understand how significantly our work affects families across the state of Mississippi.

As the retirement administrator for the state of Mississippi, it is our goal to help all public employees reach retirement security after a career in public service. The Mississippi Deferred Compensation Plan (MDC) is a voluntary tool available to Mississippi public employees to assist in reaching their personal retirement savings goals. We will continue our efforts to improve the growth and success of the program through improved metrics and new initiatives. Likewise, we are considering increased audit and oversight of this area and will work with our external auditors to evaluate the implementation guidance for GASB 84 with regard to our MDC responsibilities. As the administrator of MDC, PERS continues to work with our third-party recordkeeper to enhance the visibility of MDC with our members. We began incorporating MDC account balances on the PERS annual member statements in 2017, and we recently expanded our regulations to allow additional data-sharing to assist in MDC enrollment. MDC is also included in employer trainings conducted by PERS across the state each year as well as the pre-retirement full-day seminars and early career/new employee seminars offered by PERS. The third-party recordkeeper continues to increase engagement with public employers across the state through electronic communications and face-to-face meetings, and additional controls are being implemented to ensure that employers utilize the MDC plan services center properly and regularly.

We acknowledge and appreciate the diligence and effort you and your staff expended in compiling this report, and we respect the professional way the review was conducted. Please contact me at 601-359-2241 if you need further information. Thank you.

Sincerely,

H. Ray Higgins, Jr.
Executive Director

cc: PERS Board of Trustees

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