

2019 NCPERS Public Retirement Systems Study

January 22, 2020

Study conducted by the
National Conference on Public Employee Retirement Systems and
Cobalt Community Research

Table of Contents



This study reviews funds' current fiscal condition and steps they are taking to ensure fiscal and operational integrity.

Overview	3
Who Responded	5
Fund Confidence	7
Expenses	8
Actuarial Assumptions	10
Trends in Plan Changes	13
Trends in Retirement Benefits	14
Cost-of-Living Adjustments	15
Trends in Business Practices	16
Trends in Engagement	17
Trends in Communication	18
Trends in Oversight Practices	19
Investment Returns	20
Investment Asset Allocation	22
Funded Levels	24
Sources of Funding	26
Health Plans	27
Reducing Liability	28
Innovations/Best Practices	33
Appendix A: Other Investments	37
Appendix B: 2019 Study Instrument	40

Overview

Over the last nine years, funds continue to take a serious look at the concerns and challenges that face public pensions. They continue to take serious actions to address them.

About Cobalt Community Research

Cobalt Community Research is a nonprofit research coalition created to help governments and other nonprofit organizations optimize value to their constituents. Cobalt provides high-quality tools to help them measure, benchmark, and manage their efforts through geofencing, population segmentation, and affordable evaluations. Cobalt is headquartered in Charlotte, Michigan.

Executive Summary

From September to December 2019, the National Conference on Public Employee Retirement Systems (NCPERS) undertook a comprehensive study exploring retirement practices of the public sector. In partnership with Cobalt Community Research, NCPERS has collected and analyzed the most current data available on funds' fiscal condition and steps they are taking to ensure fiscal and operational integrity.

The *2019 NCPERS Public Retirement Systems Study* includes responses from 155 state and local government pension funds with more than 12.6 million active and retired members and assets exceeding \$1.4 trillion in actuarial and market value. The majority (62 percent) were local pension funds, while 38 percent were state-wide pension funds.

NCPERS is the largest trade association for public-sector pension funds, representing approximately 500 funds throughout the United States and Canada. We are a unique network of public trustees, administrators, public officials, and investment professionals who collectively oversee nearly \$3 trillion in retirement funds managed on behalf of seven million retirees and nearly 15 million active public servants - including firefighters, law enforcement officers, teachers, and other public servants.

Founded in 1941, NCPERS is the principal trade association working to promote and protect pensions by focusing on advocacy, research, and education for the benefit of public-sector pension stakeholders.

To access the interactive *2019 NCPERS Public Retirement Systems Study* dashboard, please contact Amanda Rok, communication and social media manager, at Amanda@NCPERS.org.

To view previous editions of this report, please visit www.NCPERS.org/surveys.

2019 Key Findings

1. The overall average expense for all respondents to administer the funds and to pay investment manager fees is 55 basis points (100 basis points equals 1 percentage point). This is down from 60 basis points in the prior year. According to the *2019 Investment Company Fact Book*, the expenses of most equity funds average 55 basis points and those of hybrid funds average 66 basis points.
2. Reporting funds saw, on average, one-year returns around 4.5 percent. The five-year and 10-year average returns also hovered near or above the assumed rate of return, and the 20-year returns generally outperformed the assumed rate of return. The timing of the fiscal year-end accounts for significant difference in investment experience between funds. Funds that have a December fiscal year-end date saw one-year returns much lower than those closing at other times. Consequently, the average funded level is 71.7 percent, down from 72.6 percent in 2018.
3. The average assumed rate of return on investment for responding funds is 7.24 percent, compared with 7.34 percent last year. The inflation assumption is 2.8 percent, which is about the same as last year.
4. About 82 percent of all responding funds are considering lowering or have lowered their assumed rate of return, and 51 percent are implementing or considering higher benefit age/service requirements. Raising employee contributions continues to be a prominent strategy as well. According to the 2019 study, 55 percent of respondents do not include overtime in the benefit calculation, which is 6 percent lower than last year.
5. The average cost-of-living adjustment (COLA) offered to members was 1.6 percent, which is slightly lower than in 2018. Many responding funds did not offer a COLA in the most recent fiscal year.
6. About 72 percent of funds do not think the Supreme Court *Janus v AFSCME Council 31* case regarding the power of labor unions to collect fees from non-union members will have an impact on them.
7. While 63 percent of respondents noted that they are not having a problem attracting and retaining skilled staff as people retire, about 27 percent are starting to experience or anticipate a problem in this area.
8. Responding funds were asked if they offer a health plan. In 2019, about 52 percent offered a plan or subsidy, while about 48 percent of funds did not. In 2018, about 46 percent offered such benefits, and 54 percent did not. For funds responding in both study years, we saw a 6 percent drop in traditional coverage to 26 percent, with data suggesting a transition to a health savings account (HSA) strategy.

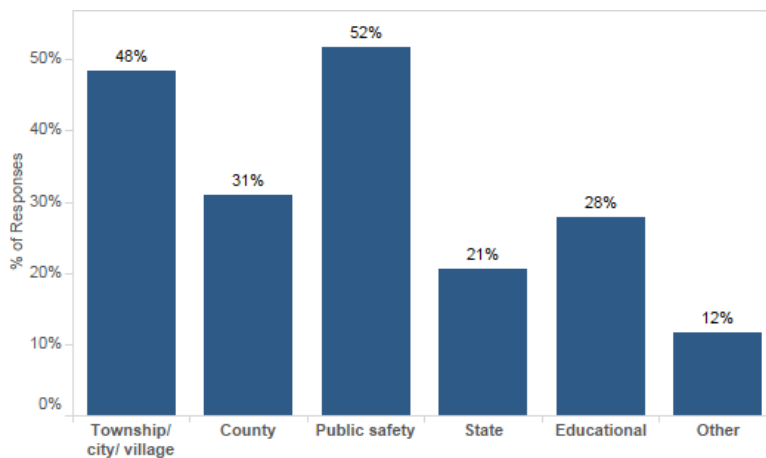
Who Responded

There were 155 public retirement funds that responded to the *2019 NCPERS Public Retirement Systems Study*. There were 167 respondents in 2018. Of the 155 respondents, 90 also completed the study in 2018.

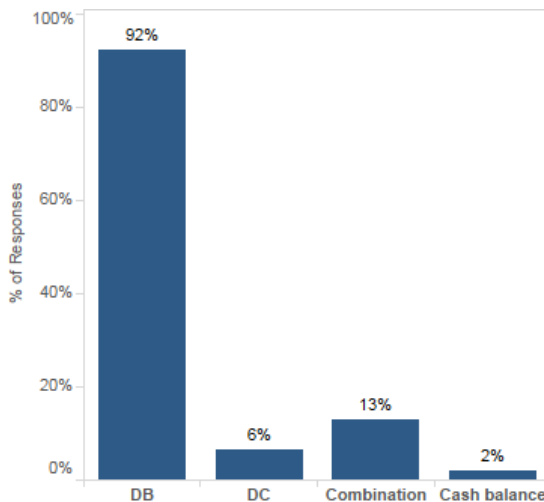
About 48 percent of all 2019 responding funds serve township, city, and village employees and beneficiaries. About 52 percent of the responding funds serve police and fire employees. The top graph shows the distribution of employee types served by the funds. The bottom graph shows response by type of plan provided. Totals may exceed 100 percent because of multiple responses.

The overall distribution of responding funds is similar to prior years.

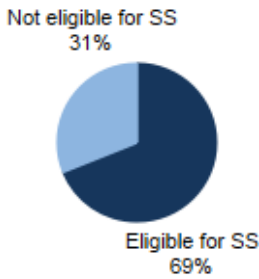
Employee/Retiree Type



Type of Plan

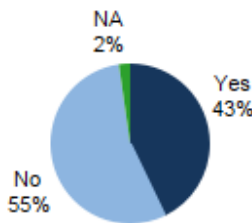


Members' Social Security Eligibility



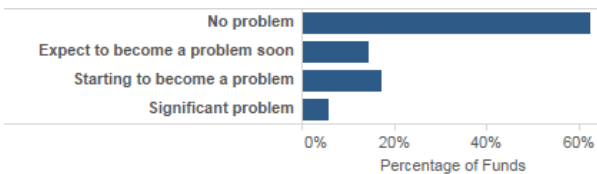
About 69 percent of responding funds have members who are eligible for Social Security, and 31 percent have members who are not eligible. In this report, breakdowns are presented for plans by their members' Social Security eligibility. Funds whose members are not eligible for Social Security tend to offer higher levels of benefits to make up for the loss of income typically supplemented by Social Security.

Includes Overtime in Benefit Calculation



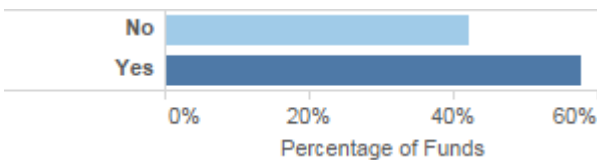
Inclusion of overtime in the calculation of a retirement benefit has been an area of interest to public funds. According to the 2019 study, 55 percent of respondents do not include overtime in the benefit calculation, which is 6 percent more than last year.

Attracting/Retaining Skilled Staff



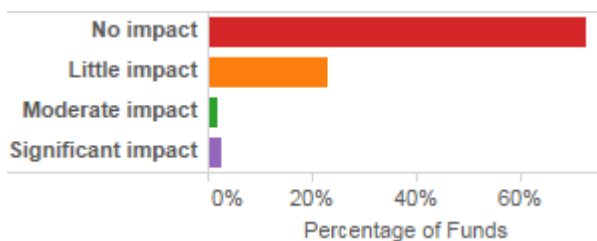
While 63 percent of respondents note that they are not having a problem attracting and retaining skilled staff as people retire, about 27 percent are starting to experience or anticipate a problem in this area.

Call and Vote via Conference Call



The ability for board members to participate and vote by phone has slipped from 69 percent in 2018 to 58 percent. When looking only at funds that participated both years, the decline was only about 2 percent.

Impact of Janus v AFSCME Council 31 Case



About 72 percent of funds do not think the Supreme Court case regarding the power of labor unions to collect fees from non-union members will have an impact on them.

Expenses

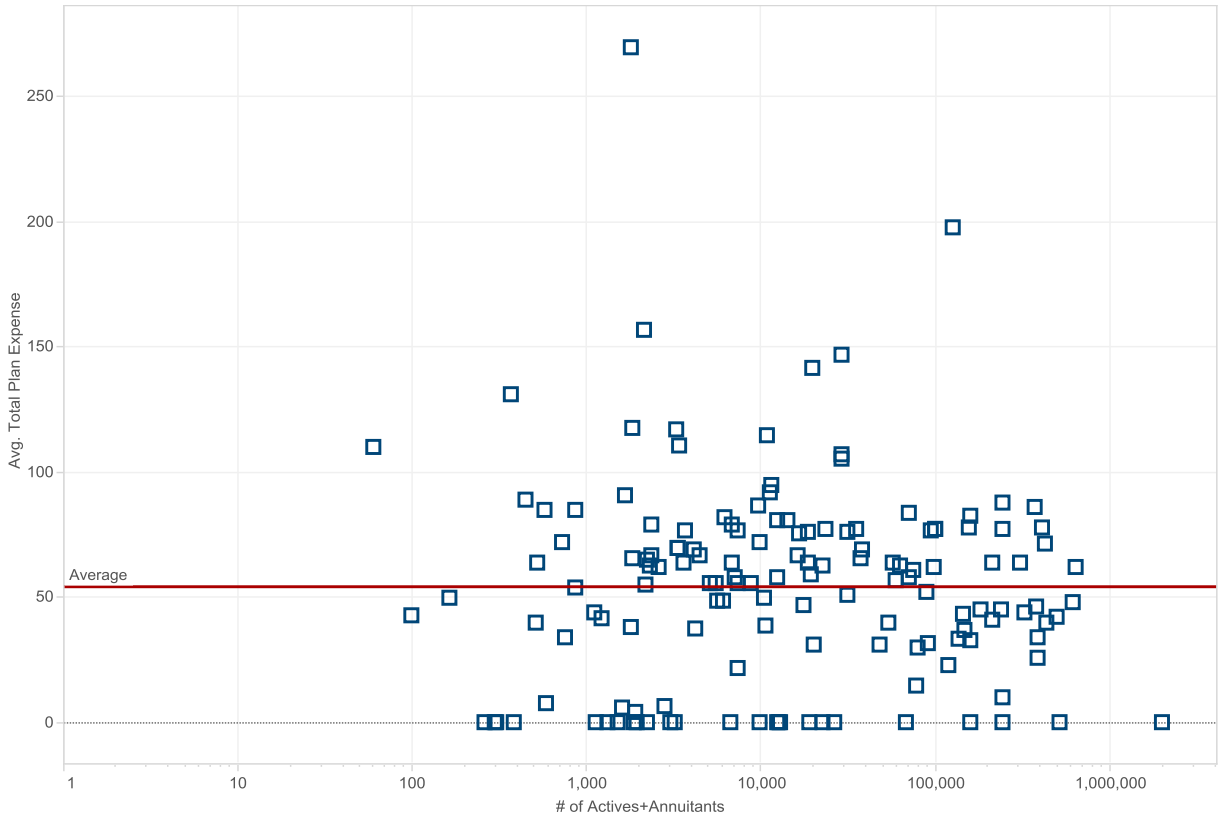
The overall average expense for all respondents to administer the funds and to pay investment manager fees is 55 basis points (100 basis points equals 1 percentage point). This is down from 60 basis points in the prior year.

According to the *2019 Investment Company Fact Book*, the expenses of most equity funds average 55 basis points and those of hybrid funds average 66 basis points.

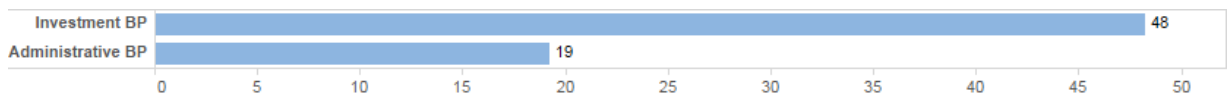
The top graph shows the distribution of total expenses (in basis points) on the vertical axis and the size of the fund (by total participants) on the horizontal. The red line represents average expense.

The bottom graph shows average administrative and investment expenses. Note: The averages below do not total the average expense above because not all funds reported both investment and administrative numbers.

2019 Total Fund Expense by Fund Size

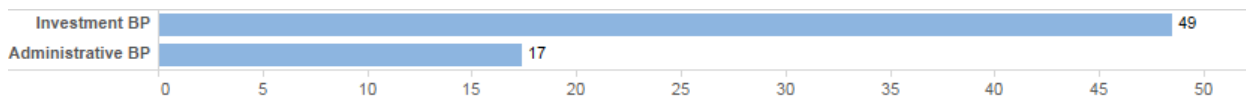


2019 Study Fund Expenses (Basis Points)

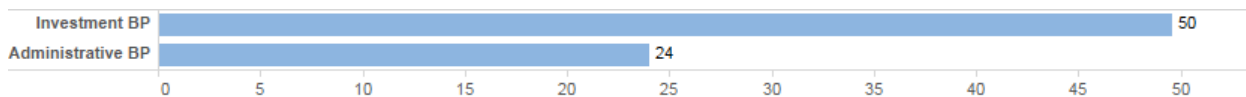


The graphs below show expenses separated by funds eligible for Social Security and those not Social Security eligible. Total expenses in basis points were 57 and 63, respectively. Administrative expenses were above last year's level for non-Social Security-eligible funds.

Fund Expenses: Social Security Eligible

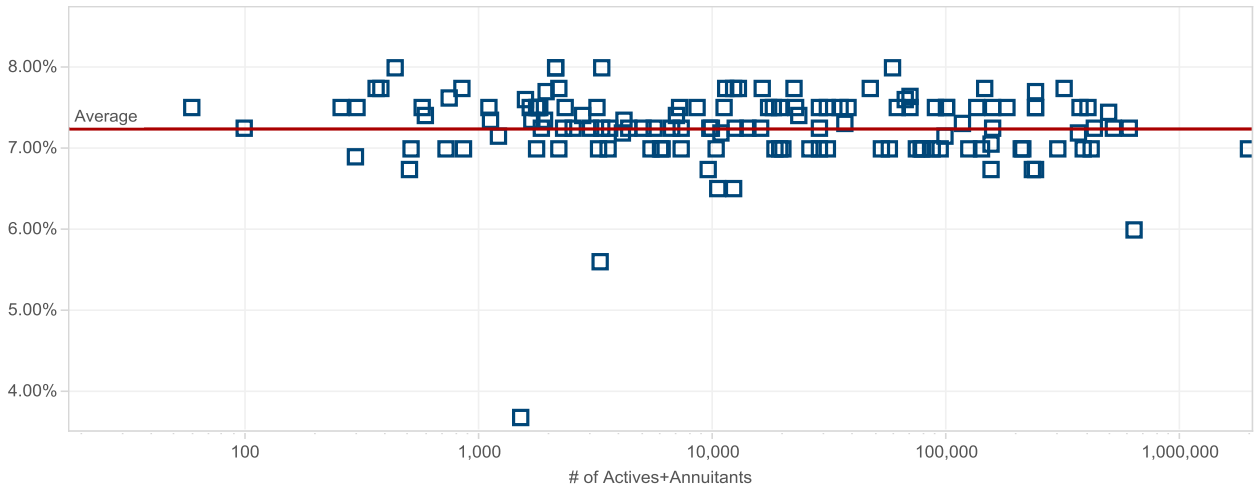


Fund Expenses: Not Social Security Eligible



Actuarial Assumptions

Investment Assumptions



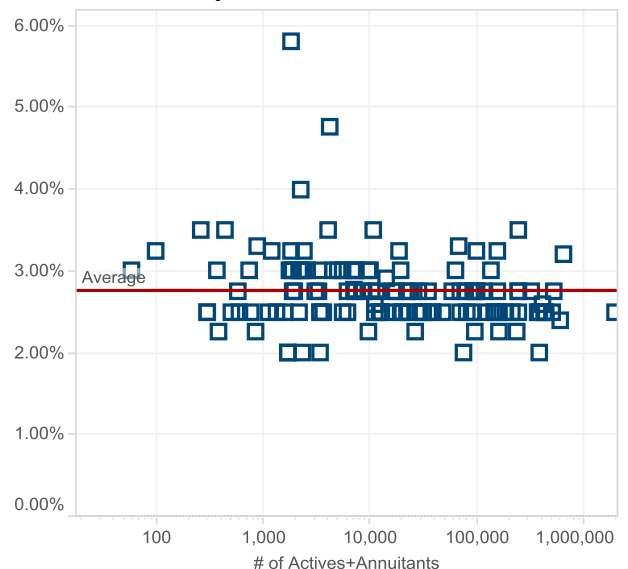
Retirement funds utilize a long-term planning horizon to ensure liabilities are fully funded at the time they are due to be paid. To help set contribution rates and measure progress toward meeting their financial obligations, funds make actuarial assumptions to estimate what investment and demographic experience is likely to be over that time horizon.

Such assumptions have powerful effects on the funded level of a plan and what the required contributions will be to pay for future benefits. Assumptions that are overly optimistic (high market returns, lower-than-expected retirement rates) tend to increase a plan's funded level and reduce the contribution rates an employer is obligated to pay today. Conversely, overly pessimistic assumptions reduce the funded level and increase short-term contribution rates.

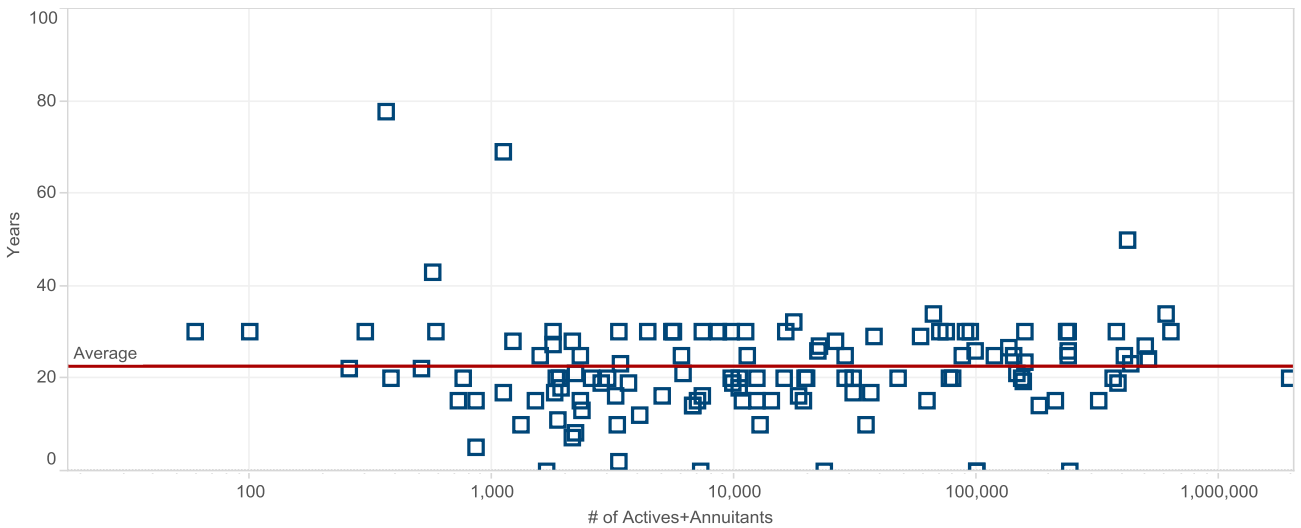
The average assumed rate on investment return for responding funds is 7.24 percent, compared with 7.34 percent last year. Plans that responded both years saw the assumption fall 0.05 percent to 7.25 percent.

The aggregated inflation assumption is 2.8 percent, which is about the same as last year.

Inflation Assumption



Amortization Period



Pension funds are designed to fund liabilities over a period of time, which ensures long-term stability and makes annual budgeting easier through more predictable contribution levels.

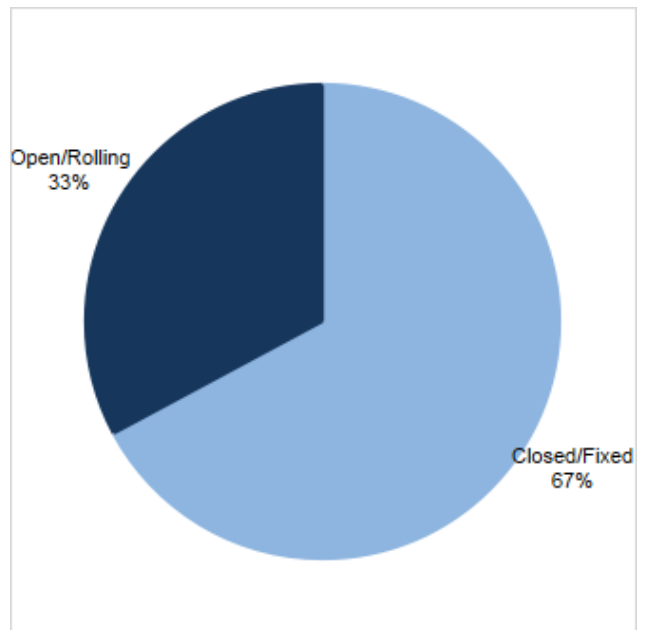
For responding funds, that period of time averages 22.4 years, which is the same as last year.

Groups can tighten their amortization period by adjusting the period in years or using a fixed (or closed) method, which pays all liabilities in a fixed time frame.

Open (or rolling) amortization periods are used to determine the actuarially required payment, but they are recalculated each year. The same number of years is used in determining the payment each year. Overall, the percentage of closed/fixed funds fell from 73 percent to 67 percent; however, funds participating in both survey years show a steady use of 73 percent.

Larger funds are much more likely to have closed/fixed amortization periods.

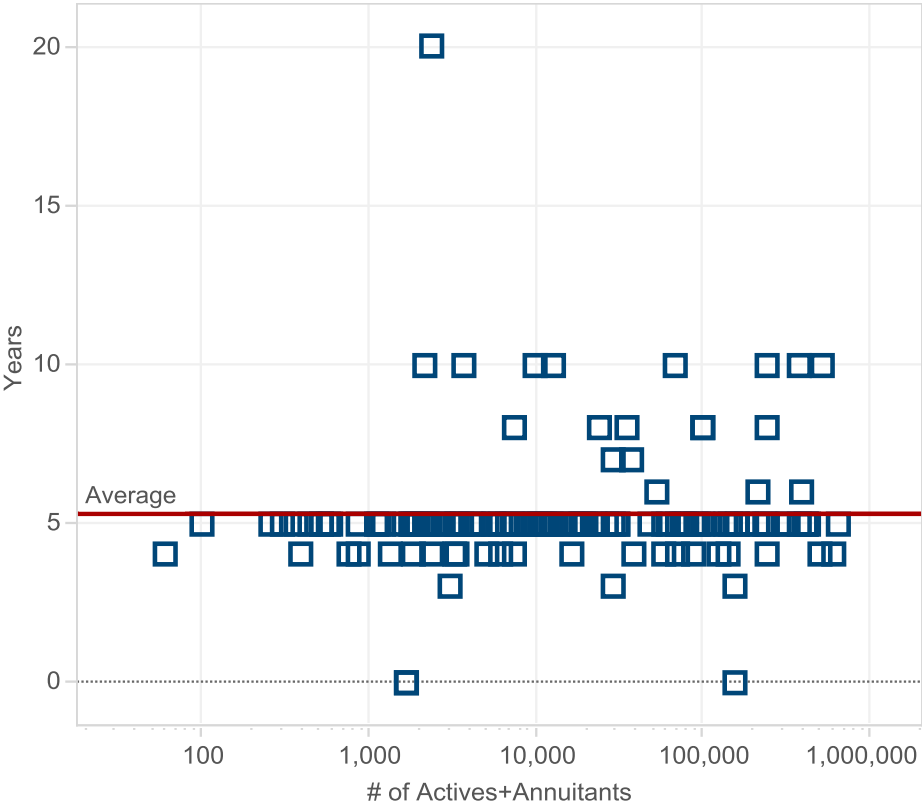
Type of Amortization Period



The investment-smoothing period is a key factor in calculating the assets currently held by the fund and the contribution levels required to continue moving toward full funding over the amortization period. By smoothing investments, funds are able to dampen sharp changes in short-term investment returns. This helps stabilize contribution levels over time without undermining the long-term integrity of the funding mechanism.

The average investment-smoothing period for respondents rose to 5.3 years from 5.1 years last year, but it remained at 5.2 for respondents to both the 2018 and 2019 studies. The distribution of responding funds on the graph below shows the majority smoothing periods of five years or less. For Social Security-eligible funds, the smoothing period averages 5.5 years. Non-Social Security-eligible funds have an average smoothing period of 4.7 years.

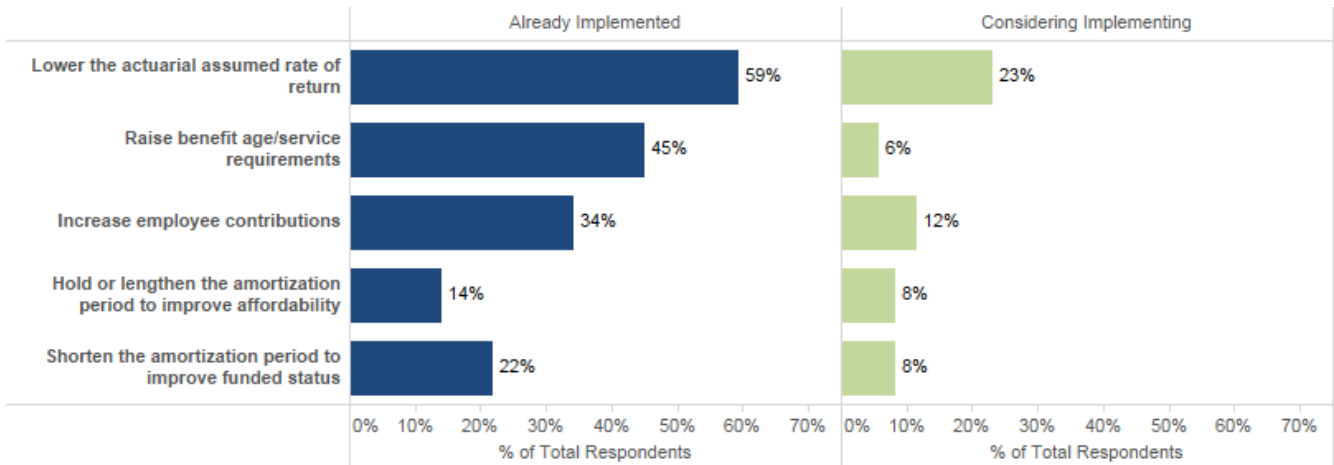
Investment Smoothing



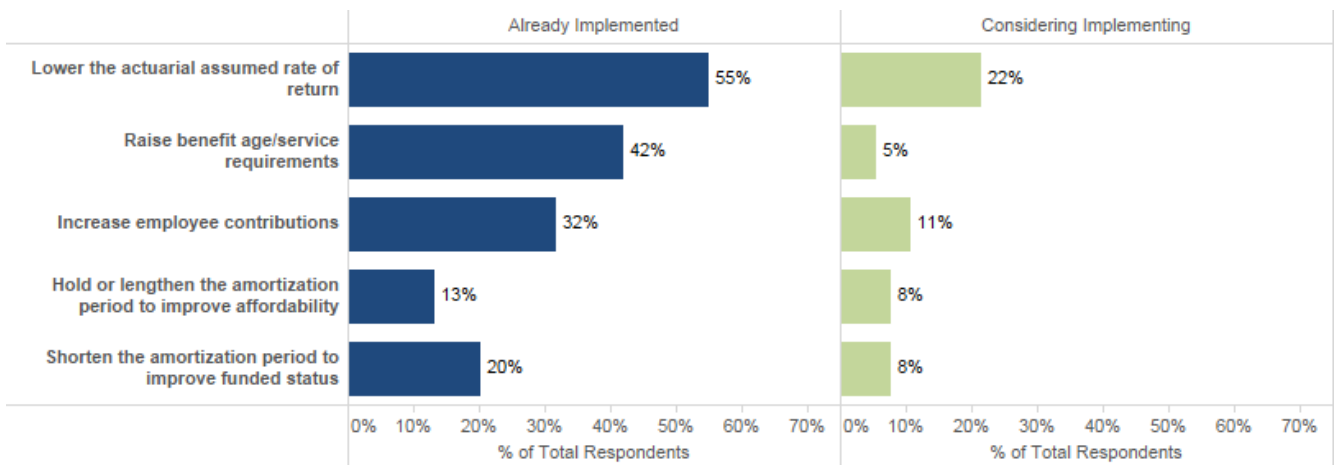
Trends in Plan Changes

As changes emerge in the political, economic, and demographic landscape, funds are adapting their design and assumptions to respond and to maintain the sustainability of the funds. It is important to note that 82 percent of all responding funds are considering lowering or have lowered their actuarial assumed rate of return, and 51 percent are implementing or considering higher benefit age/service requirements. Raising employee contributions continues to be a prominent strategy as well.

2019



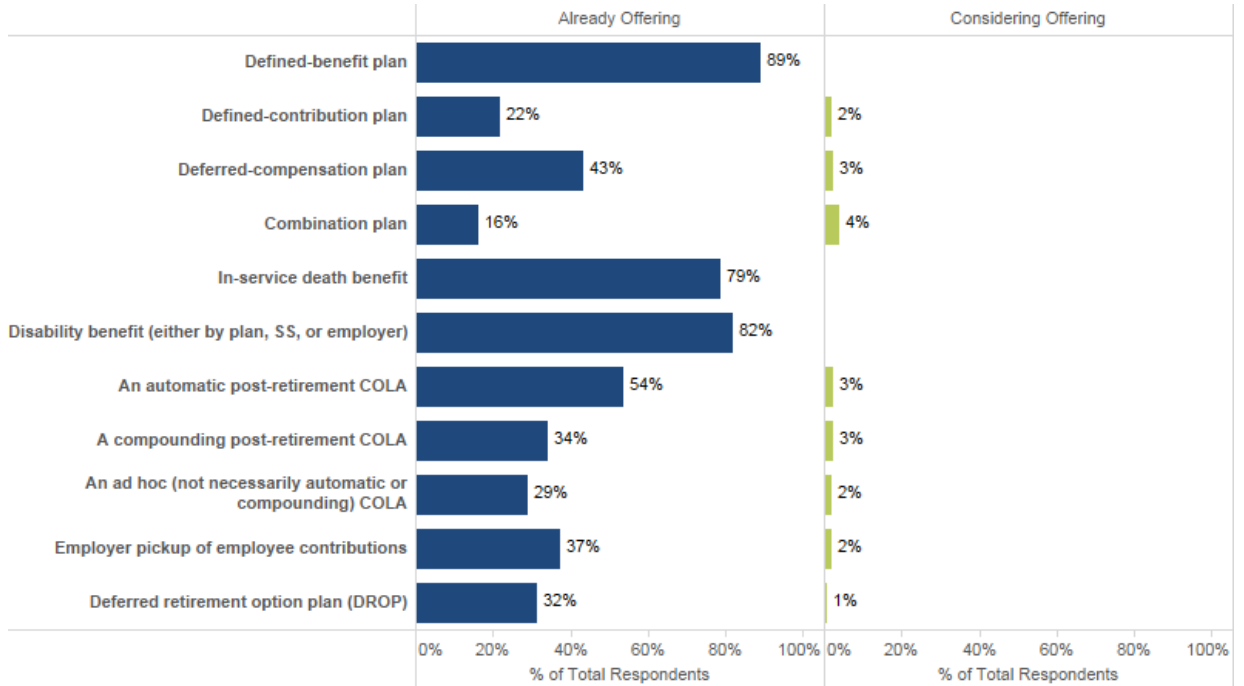
2018



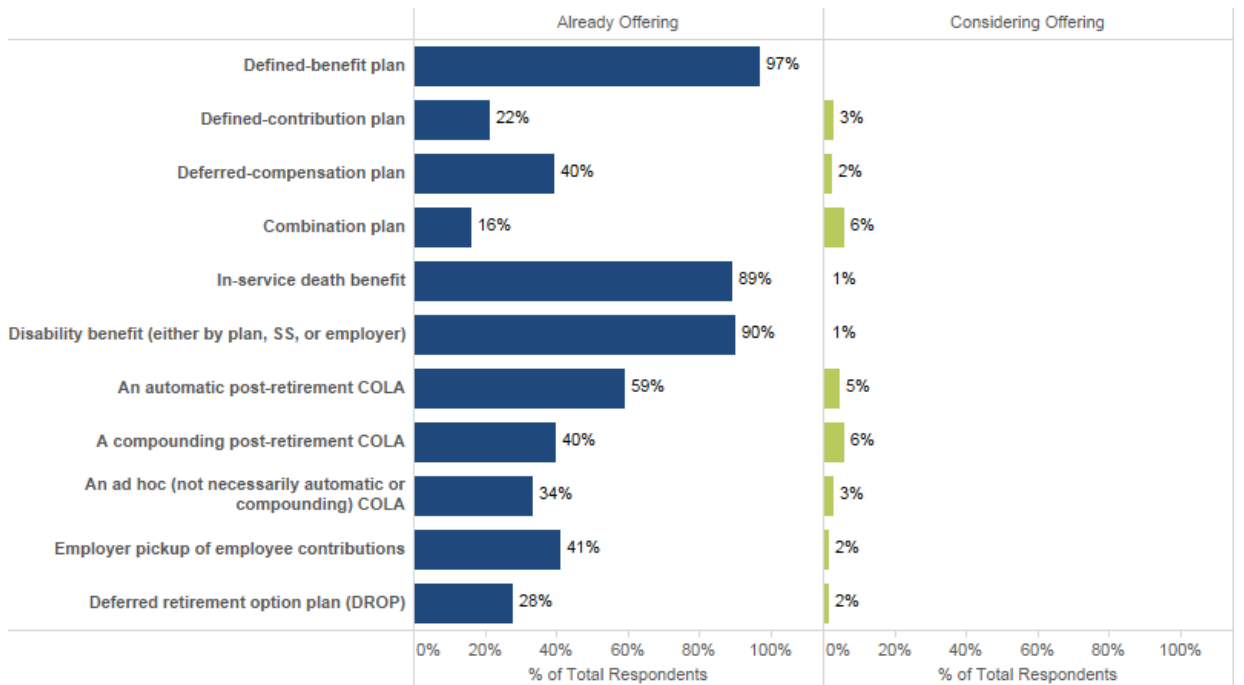
Trends in Retirement Benefits

There is minimal activity in terms of responding funds considering offering additional benefits to their members. Most funds provide a disability benefit, an in-service death benefit, and some variation of a cost-of-living adjustment (COLA). Overall, nine percent fewer respondents are offering a defined-benefit (DB) plan; however, funds responding in 2018 and 2019 show a slight increase year over year.

2019



2018

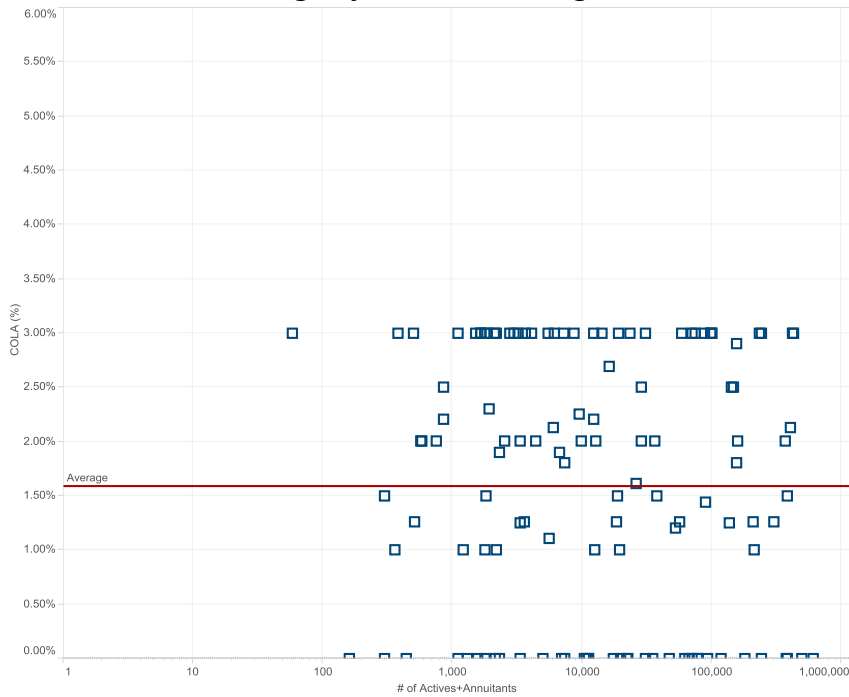


Cost-of-Living Adjustments

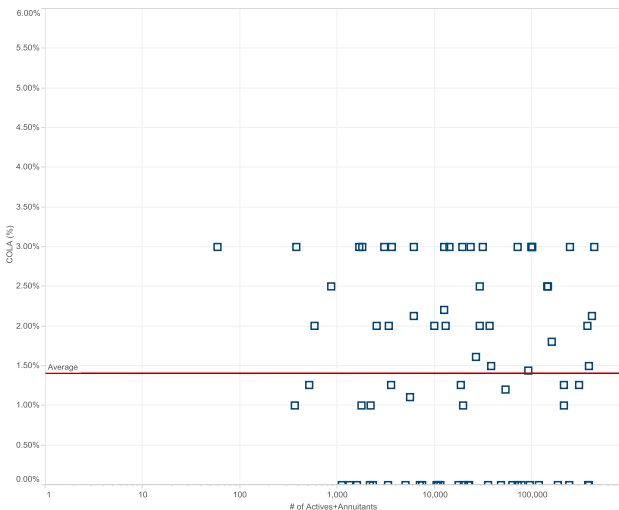
The top chart shows the distribution of funds offering various percentages of cost-of-living adjustments (COLAs). The aggregated average COLA offered to members was 1.6 percent, which is slightly lower than in 2018. Many responding funds did not offer a COLA in the most recent fiscal year.

Funds with members who are not eligible for Social Security tend to offer higher cost-of-living adjustments (2.1 percent) than those with members who are eligible for Social Security (1.4 percent).

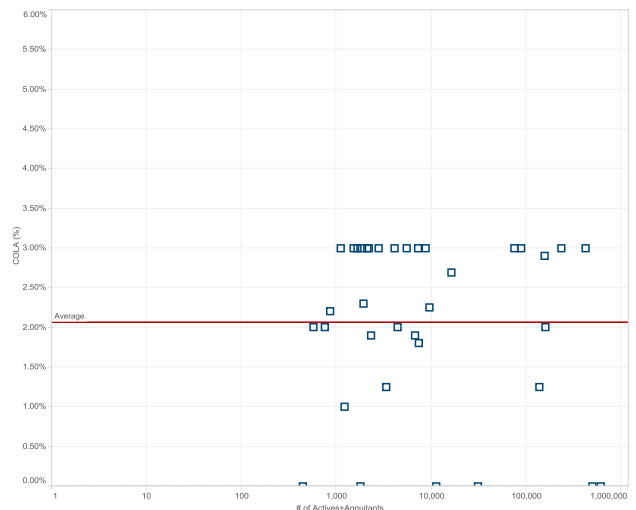
Overall Cost-of-Living Adjustment Offerings



Social Security Eligible



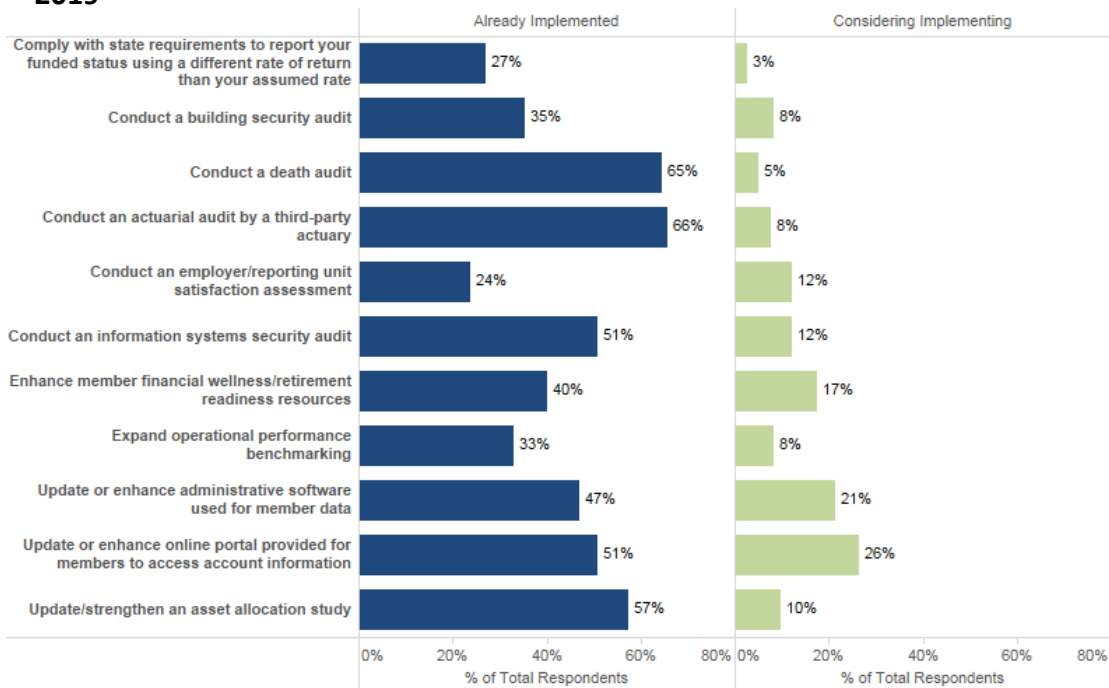
Not Social Security Eligible



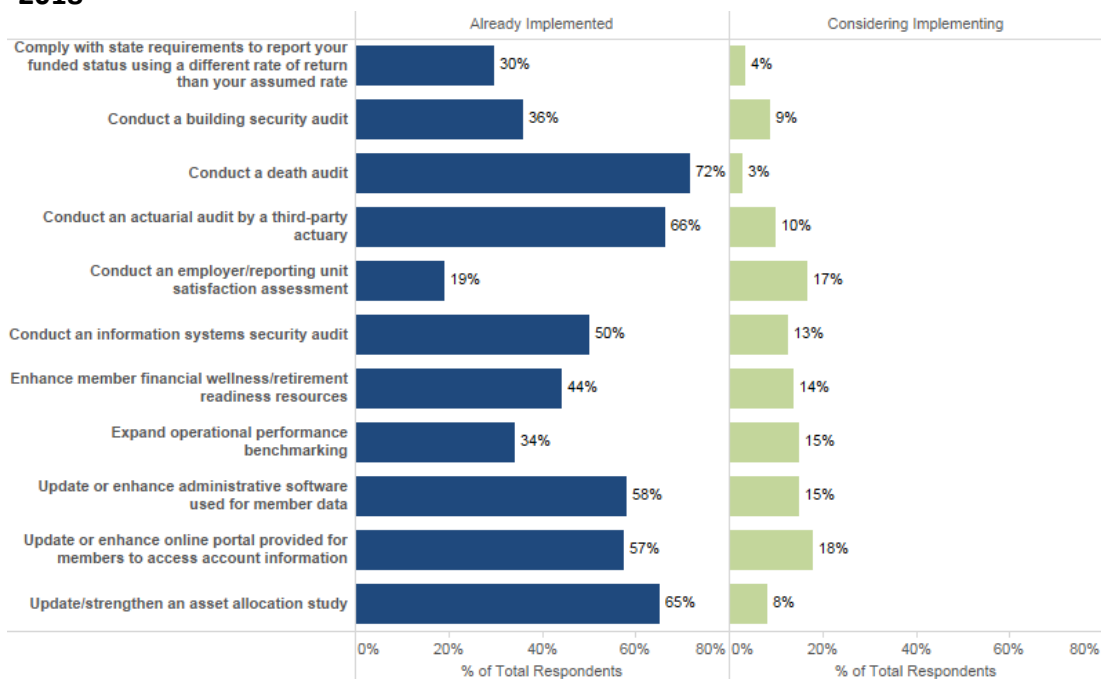
Trends in Business Practices

Conducting a death audit, updating administrative software, and updating/strengthening an asset allocation study declined in the respondent population overall; however, funds that responded in both survey years show those areas as stable. Funds also have increased implementation of an employer/reporting unit satisfaction assessment and an actuarial audit.

2019



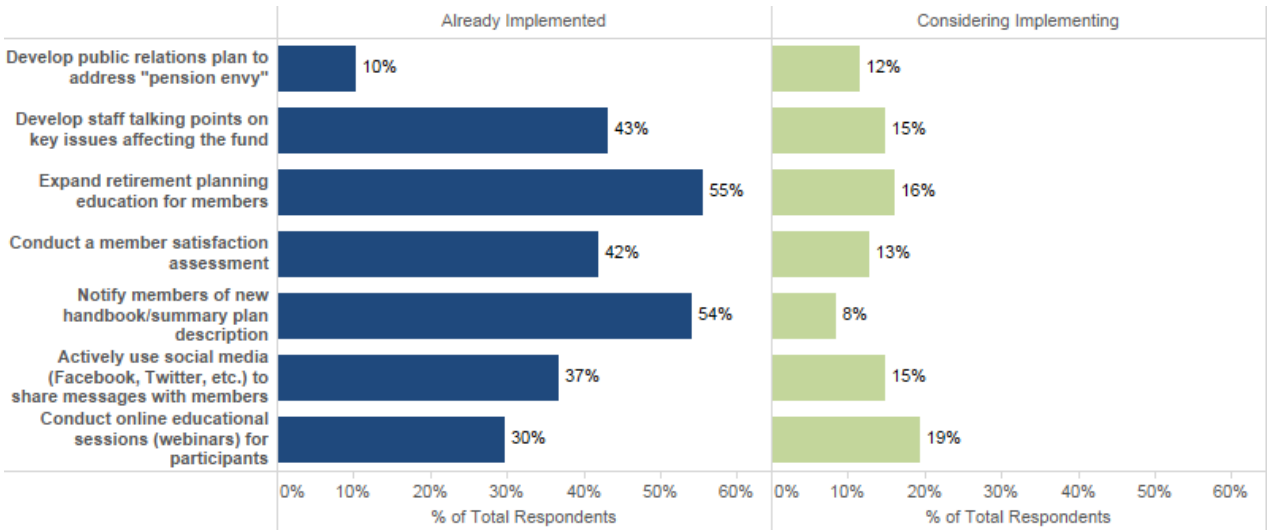
2018



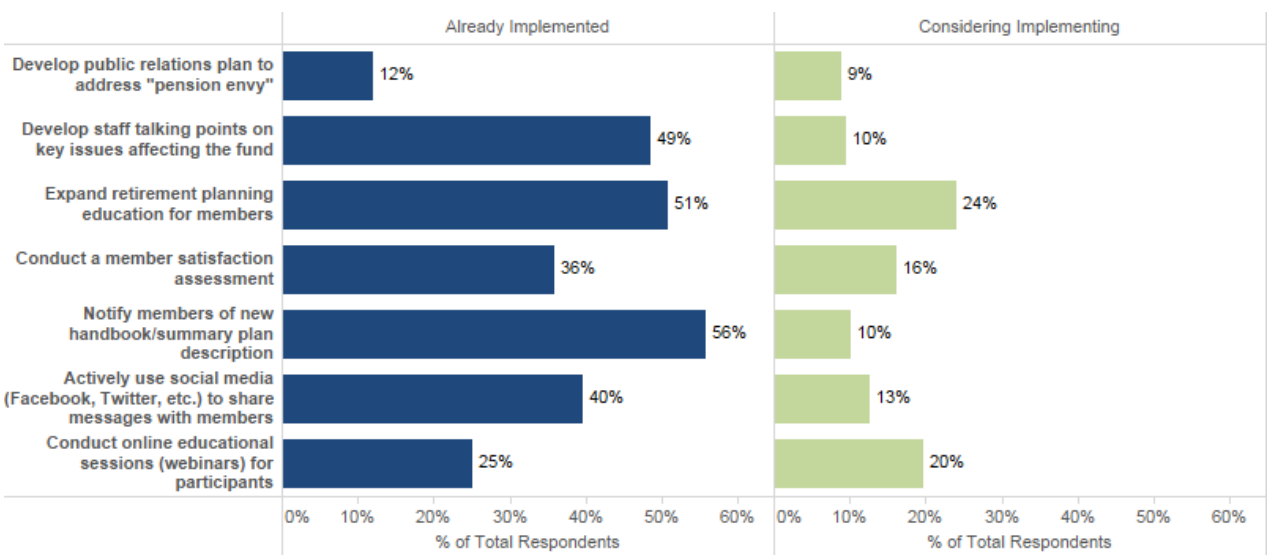
Trends in Engagement

In 2019, the three largest activities remain notification of updated handbook/summary plan descriptions, expanding retirement planning education for members, and developing staff talking points on key issues. Conducting a member satisfaction assessment has grown by 6 percent. The activity being considered by the most plans is conducting online educational sessions for participants.

2019



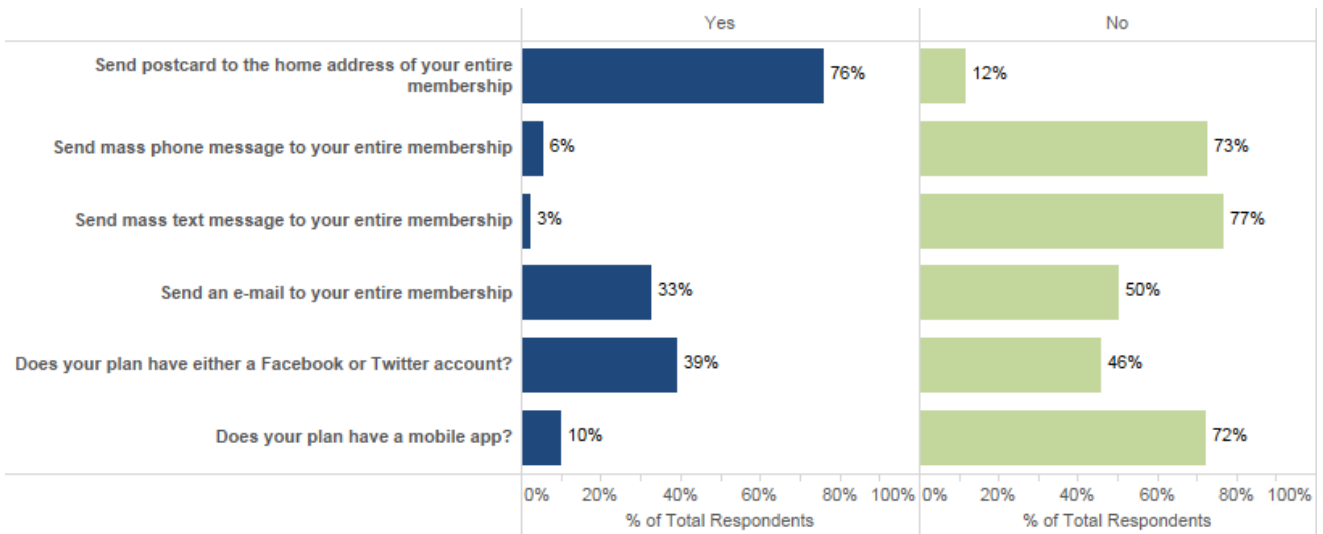
2018



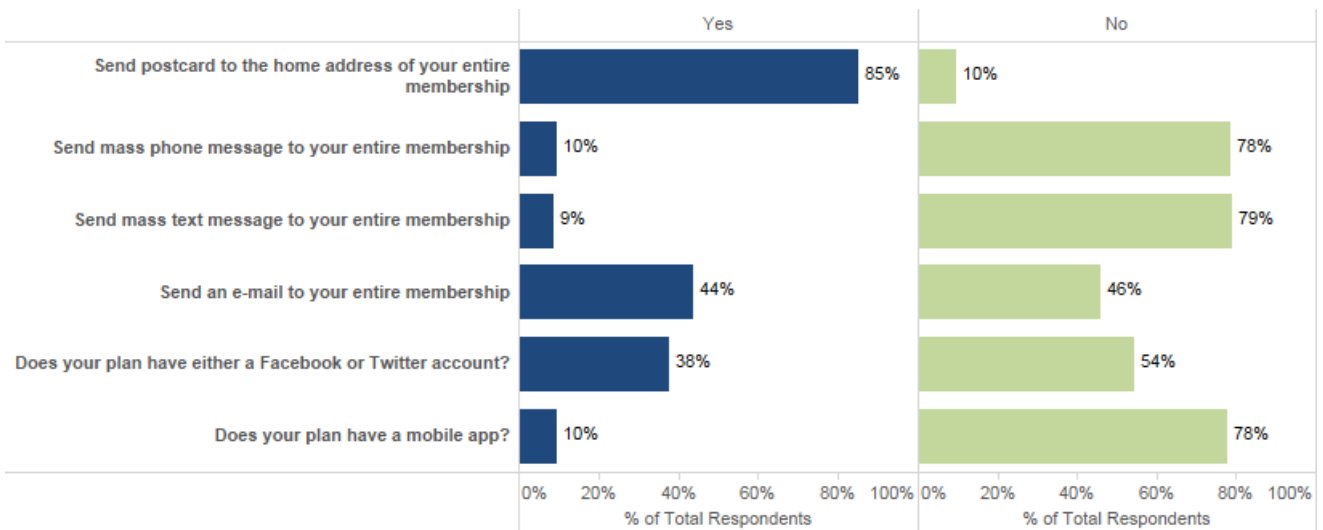
Trends in Communication

For funds that responded to both of the past two surveys, communication capabilities are very similar to 2018, with a slight decline in use of Facebook and Twitter. Overall, responding funds also showed a decline in sending postcards to home addresses and sending e-mail messages to the entire membership.

2019 Communication Capabilities



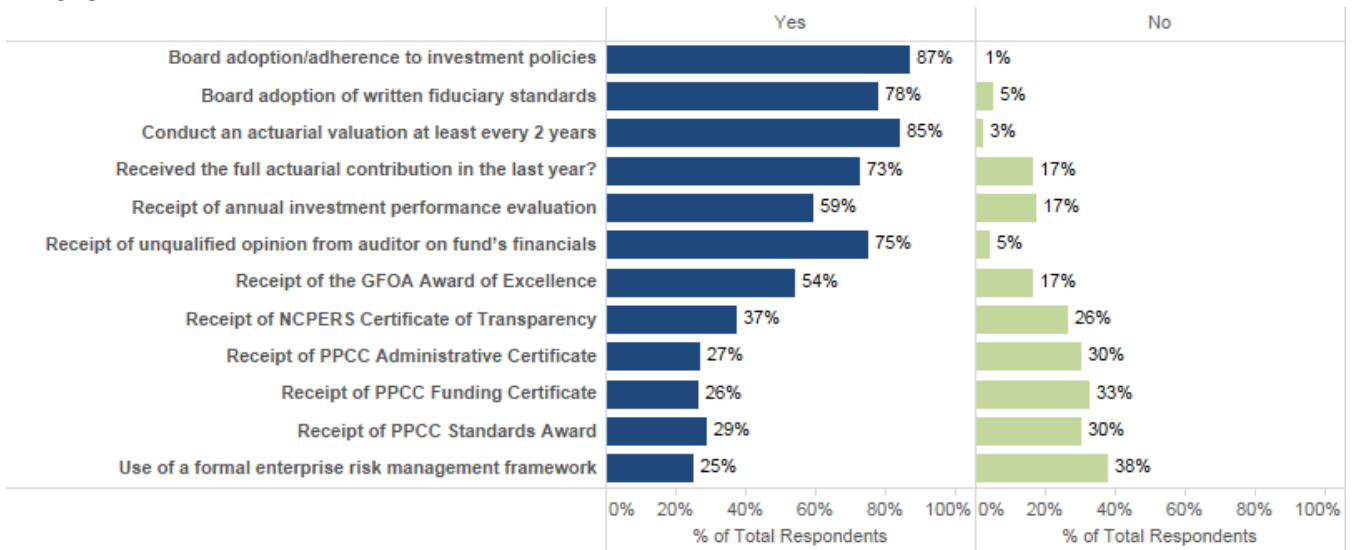
2018 Communication Capabilities



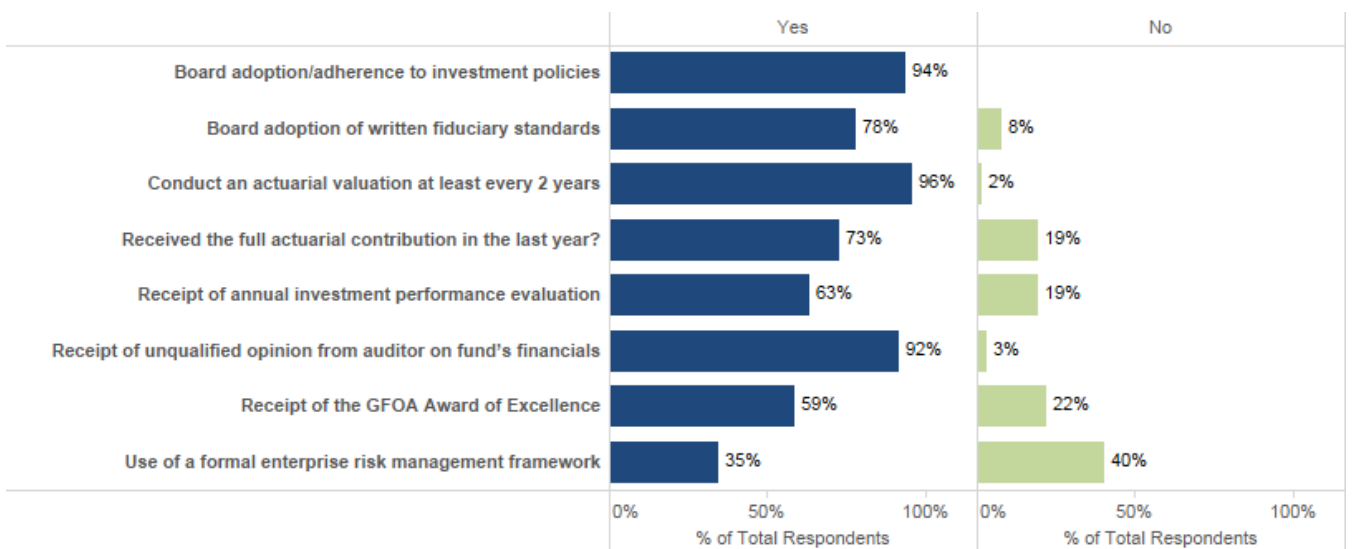
Trends in Oversight Practices

Overall, responding funds showed a slight decrease in the use of several oversight practices; however, among funds that responded in both years, most practices increased slightly compared with 2018. This is especially seen in board adoption of written fiduciary standards, which rose by 7 percent.

2019



2018

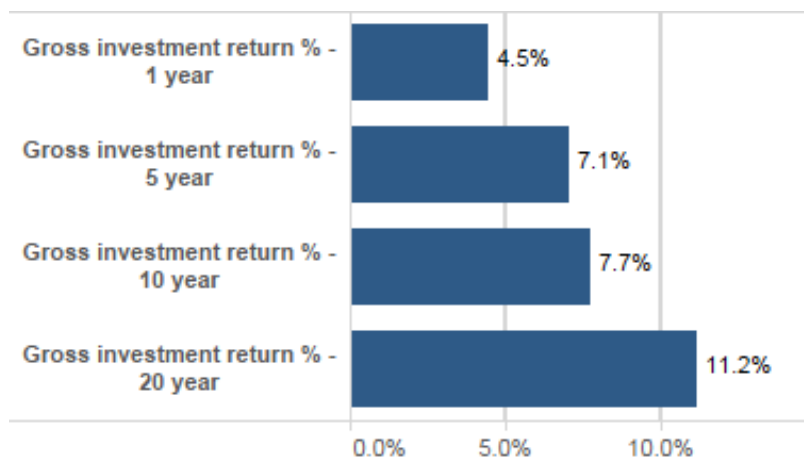


Investment Returns

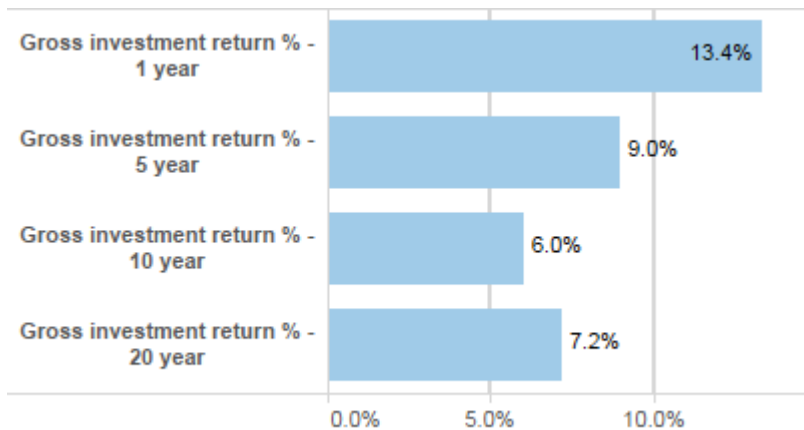
Reporting funds saw, on average, one-year returns around 4.5 percent. The five-year and 10-year average returns also hovered near or above the assumed rate of return, and the 20-year returns are generally outperforming the assumed rate of return. Funds responding in both years report five-year and 20-year returns just below the assumed rate of return, and 10-year return slightly above.

It is important to note not all responding funds have the same fiscal year-end date. The timing of fiscal year-end accounts for significant difference in investment experience between funds. Funds that have a December fiscal year-end date saw one-year returns much lower than those closing at other times.

2019 Study Investment Returns

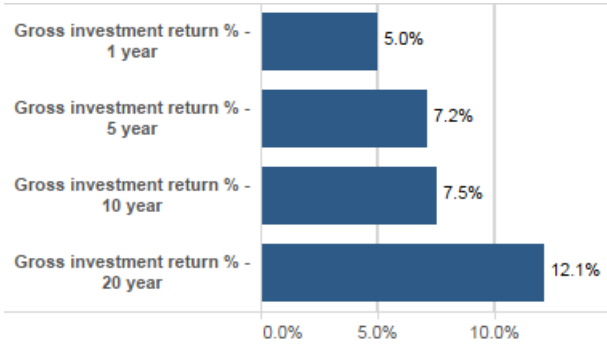


2018 Study Investment Returns

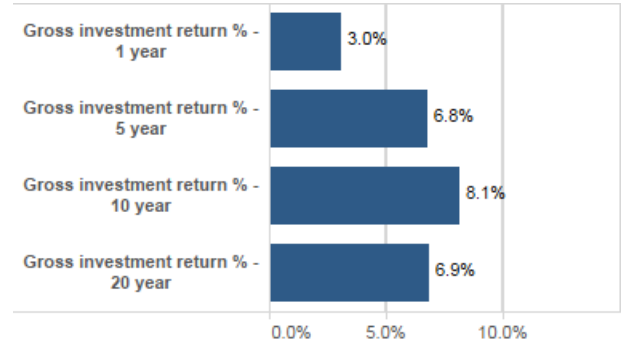


Funds with members who are Social Security eligible reported higher one-year returns than non-Social Security-eligible funds.

2019 Returns: Social Security Eligible

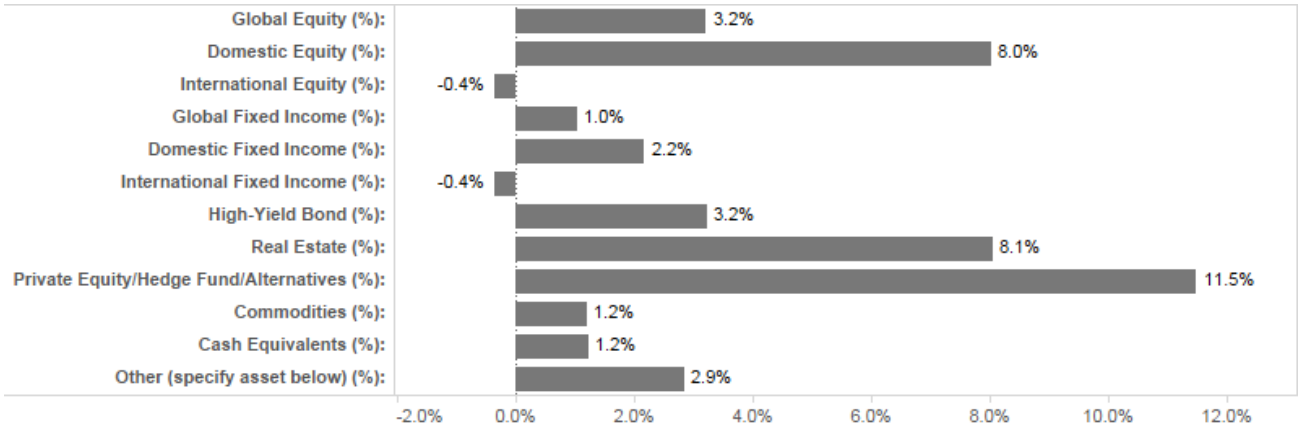


2019 Returns: Not Social Security Eligible



The graph below shows the one-year gross investment returns based on the various asset classes in which responding funds are invested. Private equity/hedge fund/alternatives, real estate and domestic equity saw the largest returns.

One-Year Gross Investment Returns

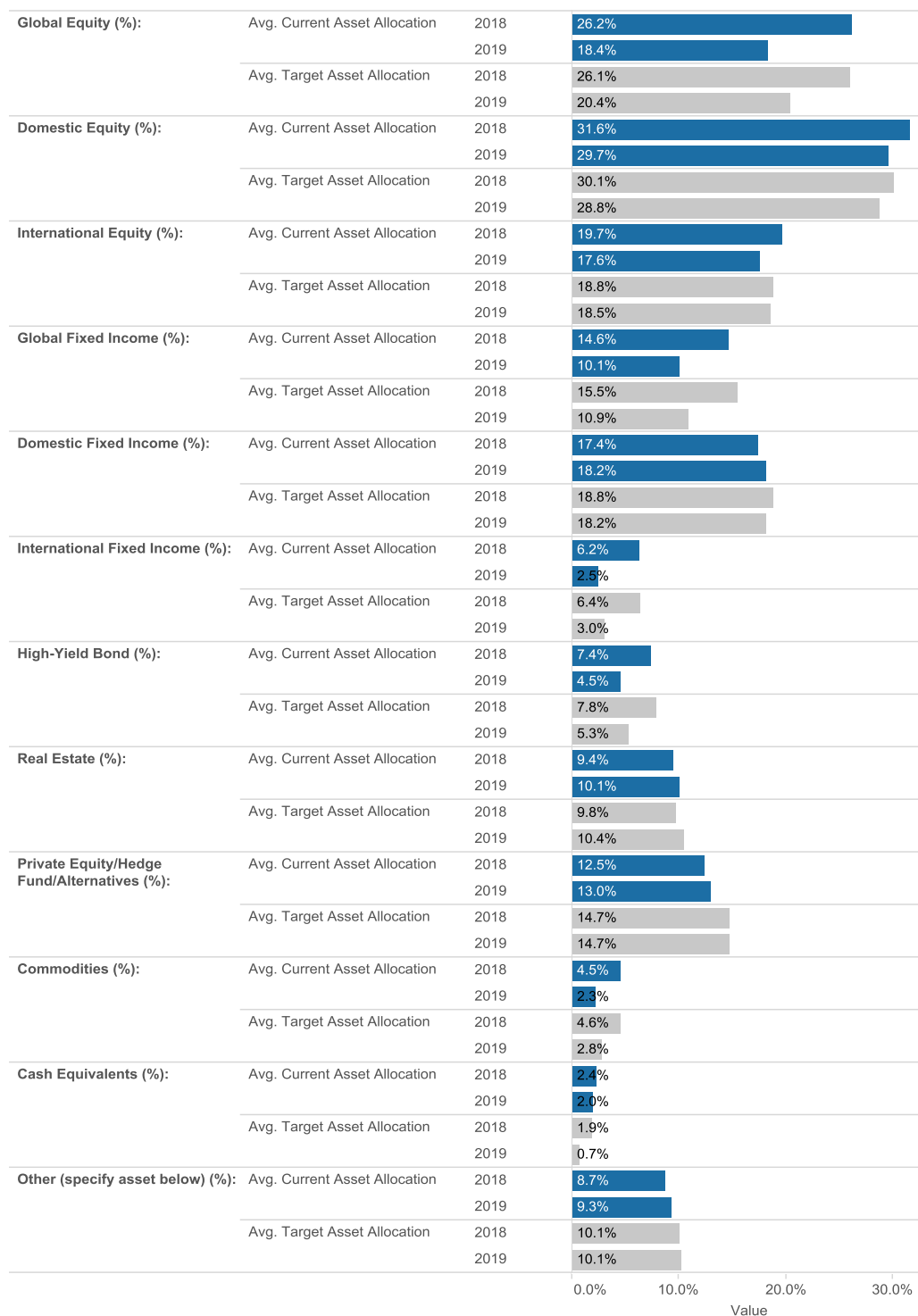


Investment Asset Allocation

Responding funds had asset class allocations similar to those of 2018. There continues to be a decrease in allocation to global equities, global fixed income, and international fixed income.

Allocation by Class and Year

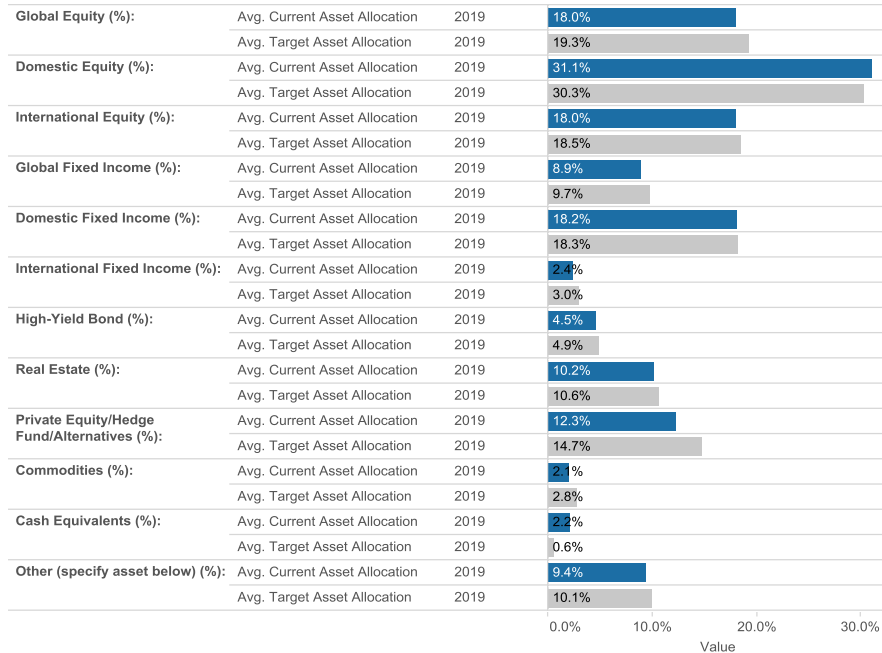
Note: Average allocations in each asset class do not total 100 percent because of the way individual allocations were reported.



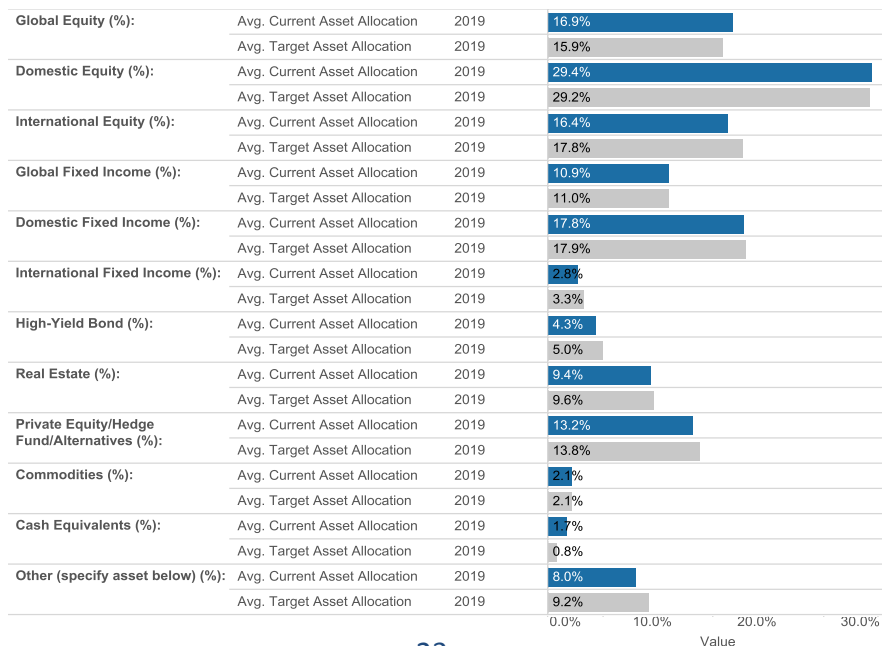
Below are two graphs that show the asset allocations for those funds that reported higher-than-average one-year and 10-year investment returns.

Funds with the highest returns had allocations similar to funds with lower allocations. The major impact on returns appears to be the timing of fiscal year-end, as funds with a December close had a much lower return than those closing in other periods.

Highest One-Year Return



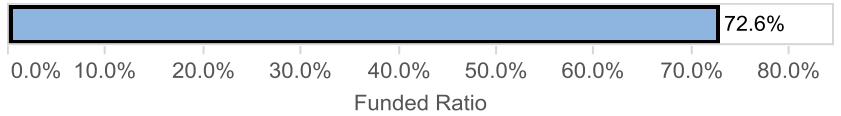
Highest 10-Year Return



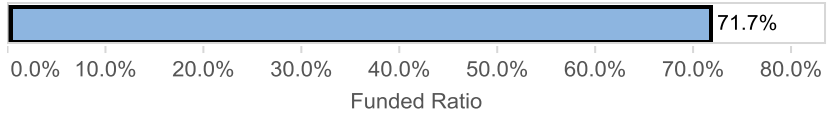
Funded Levels

The average funded level is 71.7 percent, down from 72.6 percent in 2018. Funds eligible for Social Security tended to have higher funded levels.

2018 Funded Level

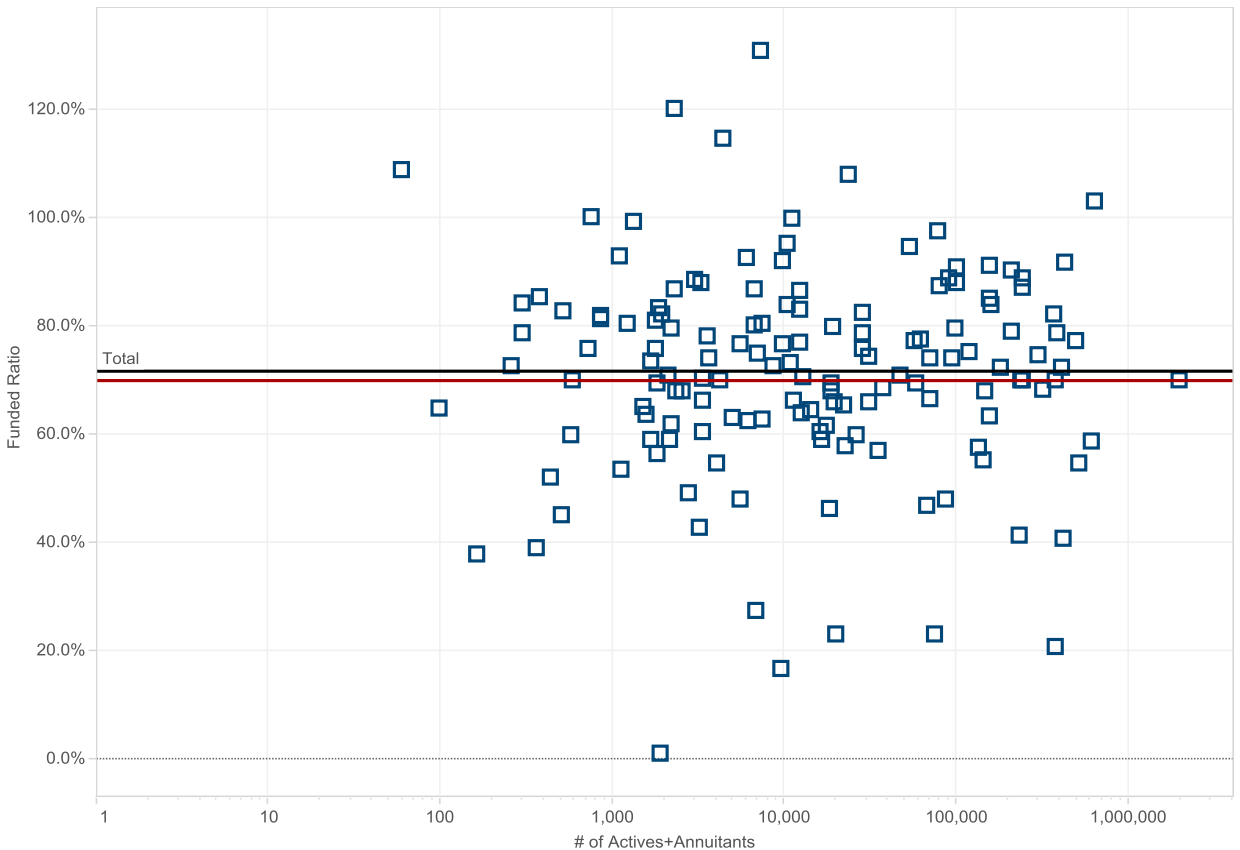


2019 Funded Level



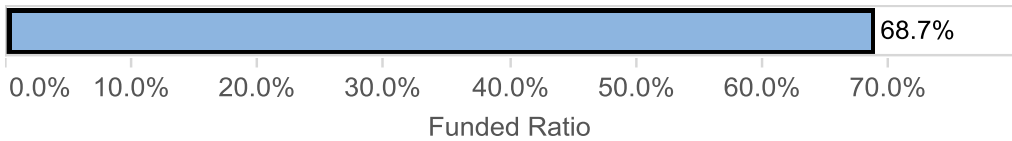
The bottom graph shows the distribution of funded levels and fund size. The vertical axis shows level of funding, and the horizontal axis shows the size of the fund by total active and retired participants. The black center line denotes the average of 71.7 percent, and the red center line denotes the 70 percent funding target that Fitch Ratings considers to be adequate.

2019 Funded Level Distribution



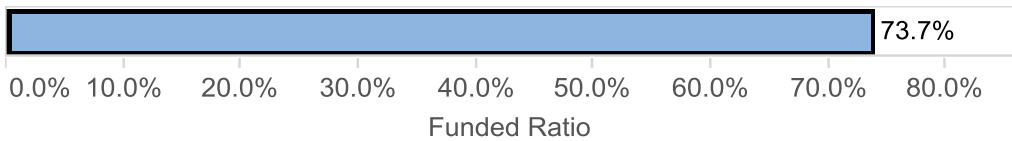
Many funds include members who are not eligible to receive Social Security at the time of retirement. For this reason, such funds often have higher benefit levels to offset the loss of this source of retirement income. Those funds that include such members report an average funded level of 68.7 percent, which is below the 69.4 percent in the 2018 study.

Funds Not Eligible for Social Security



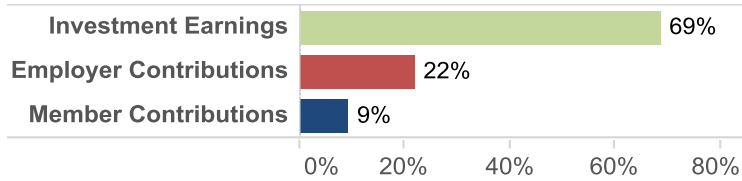
The graph below shows the funded level for those funds that include members who are eligible for Social Security. The average funded level for this group is 73.7 percent, down from 75.0 percent in the 2018 study.

Funds Eligible for Social Security



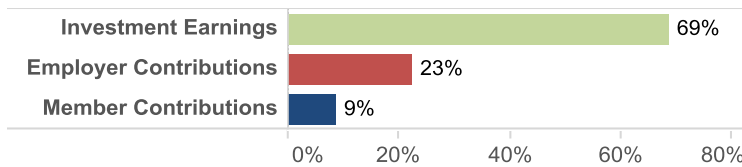
Sources of Funding

Overall Sources of Revenue



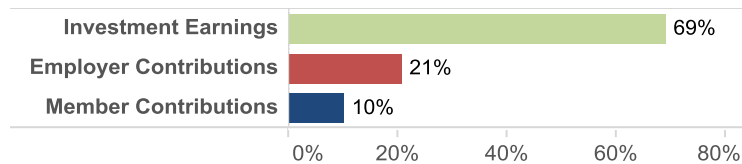
Income used to fund pension programs generally comes from three sources: member contributions, employer contributions, and investment returns. The first chart to the left shows the proportion of funding provided through each of these sources based on reported data.

Social Security Eligible



Investment returns are by far the most significant source of revenue (69 percent). This is the same as in 2018, as are the member and employer shares of total revenue.

Not Social Security Eligible



The next two graphs show funds disaggregated by Social Security eligibility. Non-social Security-eligible funds reported a slightly higher share of revenue from members and employers.

Contribution Rates as a Percentage of Payroll

	2018	2019
Member Contributions	9%	9%
Employer Contributions	22%	22%
All Contributions	31%	31%

Contribution rates as a percentage of payroll were stable, and they declined slightly for employers for those funds that responded for both 2018 and 2019.

Contribution Rates – Respondents in Both Years

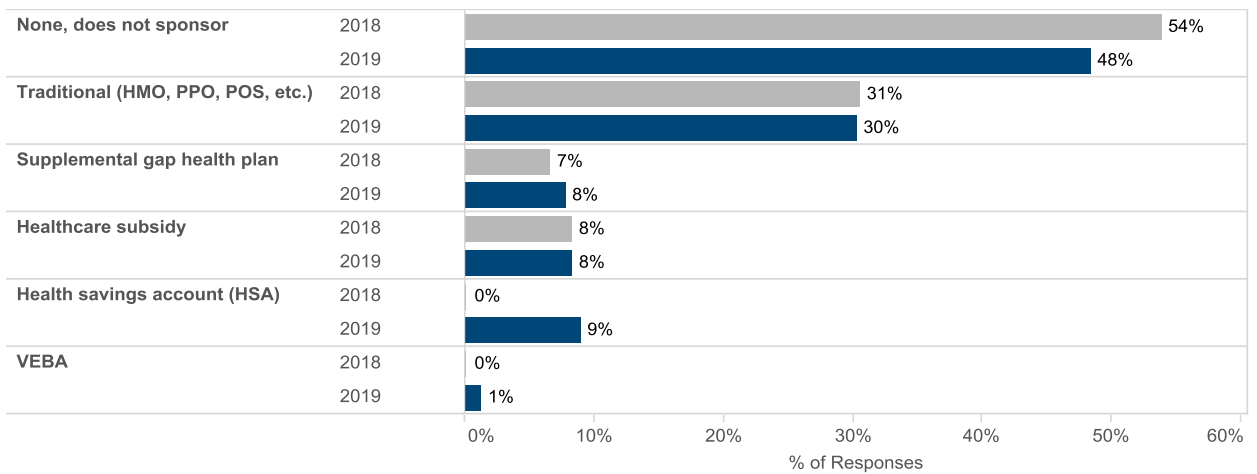
	2018	2019
Member Contributions	9%	10%
Employer Contributions	24%	23%
All Contributions	33%	33%

Health Plans

Responding funds were asked whether or not the plan sponsor offers a health plan. In 2019, about 52 percent offered a plan or subsidy, while about 48 percent of funds did not sponsor a plan. In 2018, about 46 percent offered such coverage, and 54 percent did not. For funds responding in both study years, we saw a 6 percent drop in traditional coverage, to 26 percent. While the health savings account (HSA) and voluntary employees' beneficiary association (VEBA) options are new this year, these may be the plans to which these funds are transitioning.

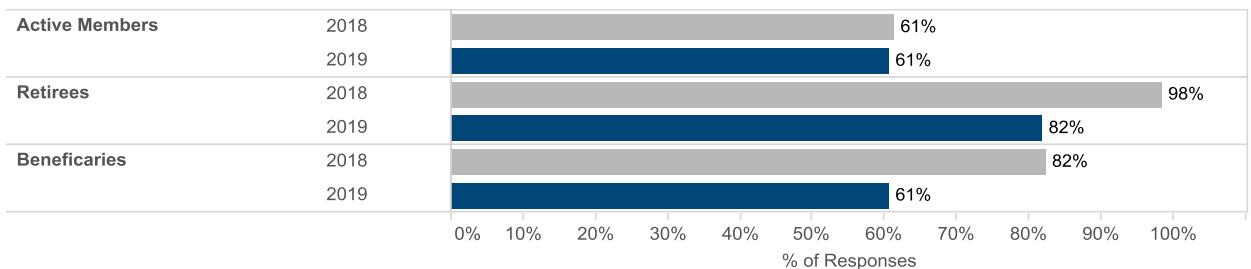
What type of health plan does your pension plan sponsor?

Note: Totals may exceed 100 percent because of multiple health benefits offered



The funds that do sponsor a health plan or subsidy were also asked to report which types of members are eligible to participate. About 61 percent of the sponsors with a health plan or subsidy are also open to the sponsor's active members, 82 percent include retirees, and 61 percent include beneficiaries. Overall, these numbers are lower than in 2018. In addition, we see a reduction in eligibility for retirees and beneficiaries when looking at the population of funds that responded to both of the 2019 and 2018 studies. This may be driven by the transition to subsidy and HSA-style benefits.

Who is eligible for the health plan?



Continued

- Beginning at 30 years; the amortization is reducing by one year annually due the plan being closed to new members.
- Benefit changes, increase contributions, attend funding conferences, make changes in investments.
- Broaden the number and type of investment holding trying to spread the risk and enhance the ability to earn over a wider variety of investments. In addition, the board has requested and been granted a (4) four year implementation of contribution increases at the rate of .25 per year beginning with 2018 and ending in 2021 whereby the contribution rate will be 9% employee/employer match.
- Changed asset allocation.
- Changed asset allocation policy, increased member contributions.
- Changed retirement eligibility (service/age). Contribution rate increases.
- Closed amortization period, employer makes 100% of ARC.
- Closed amortization schedule, 18-year layering of annual UAAL changes.
- Closed the amortization period to 30 yr. closed, reduced assumed rate from 8% to 7.5% for 2019, raised contribution rate for employees to 8%, raised vesting to 8 years for new hires 1-1-2013 & beyond, min age of 50 for Rule of 75 for all new hires 1-1-2016 onward.
- Closed the amortization schedule and ensure all employers remit the full actuarial required contribution.
- Closer control of liabilities; limit creation of new employee positions, practice employee attrition.
- Continue funding actuarially required contribution.
- Continue to evaluate benefit structure and make small adjustments. Most recent legislative session, we implemented changes that decreased the UAL by about \$50 million.
- Continue to evaluate every two years once a re-evaluation is completed.
- Continue to make the required contribution per the actuarial valuation.
- Continue to work with actuary and investment consultants to make sure plan is funded.
- Contribute more than ADC.
- Contribution rate increase for members & employers.
- Current amortization period is 29 years, funding policy goal is to be 100% funded. We have increased funding and established a new tier of membership in 2013 with reduced benefits for new hires.
- Currently reviewing COLA; currently directing all contributions to fund pension and none to fund health care.
- Currently working through strategy options but no decisions have been made.
- Cut COLAs for beneficiaries and future beneficiaries, increased member and employer contributions, and cut future benefits for new hires.
- Decreased amortization years, restructured investment guidelines, negotiated lower management fees.
- Education to members and funding sources as to what creates liability beyond investment returns.
- Employer additional payment towards UAAL, employees contribute towards UAAL -- these are employer strategies, not SCERA strategies
- Employer contributions are restricted from being used to fund discretionary benefits (such as health care) until the pension fund reaches funding goals of 70%, 80%, and 90%.
- Employer pays additional UAAL payments, plan provisions changed in 2013 to lower benefit accrual and pensionable compensation limits, employees contribute towards payment of UAAL.
- Employers are allowed (and encouraged) to pay additional contributions toward their unfunded liability.
- Encourage employers to make early contributions and also allow employers to contribute to reserve fund to smooth out contribution volatility.
- Established a retirement sustainability taskforce to look at alternatives and possibilities.
- Focus on funding and management.
- Format funding policy in code to fund at actuarially recommended levels.
- Fraud prevention measures, measures to ensure correct benefit calculations and payments, enhanced financial reporting, conservative actuarial assumptions.
- Funding plan with government through fiscal responsibility act.
- Funding policy goal is to be 100% funded and board will not support any benefit enhancements unless the proposal includes funding for the benefit enhancement.
- Funding policy is determined by the Illinois state legislature.
- Funding policy review and work with plan sponsor on long-term financial sustainability.
- Funding policy that at least funds the ADC but does not reduce the rate until 105% funded.
- Funding policy that both funds the ADC and does not reduce the rate until 105% funded.
- Funding rehabilitation plan.
- Funding rehabilitation program.

Continued

- Have worked with county to strengthen their funding policy and to guarantee that they not lower their contribution rate until the plan(s) are fully funded.
- Having actuary conduct experience studies reviewing the current assumptions for their accuracy.
- Having municipality contribute a payment out of free cash.
- In 2015 and 2016 the board redesigned DROP to be actuarially neutral. Also, an experience study is in process to provide better information generally about the plan for the board to assess what, if any, next steps are in order to improve funding.
- In 2017, the Texas legislature required a funding corridor that forces certain adjustments, including benefit adjustments, if the city's contribution exceeds a certain level.
- In 2018, the general assembly lowered COLAs for current and future retirees, raised member and employer contributions, increased age and service requirements for new hires, and created a closed 30-year funding corridor that will automatically adjust COLAs, member, and employer contributions to maintain amortization schedule.
- Increase employer contributions.
- Increase in employee contributions.
- Increase required contribution and reduced amortization period.
- Increase to employer's contribution for the current fiscal year.
- Increased contributions.
- Increased contributions raise the retirement age.
- Increased employee, employer, and state contributions were part of 2018 legislative package.
- Increased employer and employee contributions, revised asset allocation mix, reduced amortization period.
- Increased employer contributions over 4 years (2017--2020); 2012 new tier of new members with lower benefit multipliers, higher vesting and age requirements, higher member contributions, lower post-retirement benefits, lower average final compensation, restricted eligible compensation to base pay.
- Increased member and employer contributions until plan reaches 100% funding; raised benefit eligibility age and service requirements and raised final average salary period and vesting requirements for new tier of members.
- Increased member and employer contributions until plan reaches 100% funding; raised benefit eligibility age and service requirements; raised FAS period and vesting requirements.
- Increased member contributions for new members, changed asset allocation.
- Increasing member and employer contributions (total contributions are greater than the normal cost).
- Introduce legislation to increase contributions. Recently made plan design changes for new employees (lower multiplier, higher "rule", eliminated health credit).
- Legislation to increase contributions. Legislation to transfer/increase funding.
- Level dollar method of funding and use of a CIO to address investment practices.
- Lower assumed payroll growth to increase employer contributions; allow employers to make additional payments to reduce the unfunded liability; using 10-year layered amortization for new tier of employees.
- Lower benefit tiers.
- Lowering investment rate of return to 7.70% effective 9/30/2018 from 7.75% as of 9/30/2017.
- Maine addressed the unfunded liability of the State Employees and Teacher Plan in the 1980s when the funding level was less than 20% with a Constitutional amendment that has served to bring the funding to 81.4% as of 6-30-18. The constitution mandates that required contributions be made every year, that no new unfunded liabilities other than experience losses can be created, that experience losses are amortized over 20 years (10 years until 2017), and that the unfunded liability as of 1996 be fully paid in 31 years. These provisions enable Maine to boost plan funding by retaining the extraordinary market gains of the 1990s. As plan funding moves toward full funding, Maine PERS is also moderating assumptions and investment practices to protect the existing funding rather than aggressively grow the funding. For example, the discount rate or earnings assumption has been periodically lowered over the last 10 years from 7.75% to 6.75%, and other assumptions reviewed in view of protecting the funding. Investments are risk-based instead of targeting maximum returns. We are currently evaluating our practices and assumptions as we move toward an increasingly mature plan to help protect funding and retiree benefits.
- Making annual required contributions, looking at investment funds to look for opportunities to get better return.
- MEABF is governed by state statute and as such is the administrator of the fund. Any changes to the benefit structure are generated by the plan sponsor and enacted by state legislature.
- Meet with our financial advisors and ensure that our asset allocation is set accordingly to ensure highest returns.
- Middlesex County Retirement is a multi-employer retirement system. Some units make additional payments toward their unfunded liability.
- Multiple employer agent plan; new employers joining regularly with unfunded AAL affects overall plan funded ratio slightly.
- New contribution policy based on future pension surtax.
- New tier added in 2012 and investment reallocation along with new investment managers. Discount rate was lowered in small increments in conjunction with good market yield years.

Continued

- Our board of trustees is studying and evaluating the annual COLA as well as many other areas to possibly make changes to help reduce the unfunded liability.
- Our plan was new as of 2/1/2013. We are on track to be fully funded within 10 years if not sooner. The city continues to pay 100% of the required contributions.
- Passed legislative update to increase employer contribution and added mandate to not reduce employer contribution even if greater than ARC until the system is fully funded.
- Payment of actuarially determined employer contribution (ADEC) is required including a closed amortization period not to exceed 25 years. Additional employer contributions are permitted to reduce liability.
- Payment of ADEC is required, including a closed amortization period not to exceed 25 years. Additional employee contributions are permitted.
- Pension reforms 2012: Increased employer contributions, lower benefit multiplier, higher age and service eligibility requirements, lower post retirement increases, longer average final compensation period, higher member contribution.
- Plan design changes are accomplished through legislation and assumption changes are adopted by the FRS Assumptions conference comprised of representatives from the Governors Office and the Florida Legislature.
- Plan design changes increased contributions.
- Positive net cash flow.
- Primary employer paying additional contributions towards unfunded liability.
- PSERS has consistently advocated for payment of the full ADC and for additional funding to the plan to accelerate UAL amortization.
- Reallocation of assets long-term steady returns with lower volatility, more long-range strategies, terminating marginally performing investments.
- Recent legislation passed to increase employer contribution to cover or exceed ARC.
- Recent pension reform gave board authority to establish a COLA consistent with the change in CPI-W versus an automatic 3% simple COLA. Previous pension reform included changes to age and length of service requirements. Established a board-approved funding policy to provide guidelines for funding pension liability and health care programs.
- Reduce administration and investment costs; employers paying additional contributions towards unfunded liability.
- Reduce multiplier, reduced COLA, started employer contributions.
- Reduce the rate of return assumption.
- Reducing the amortization by one each year until 2026, then switching to a rolling 15-year period.
- Reducing the amortization period by one year until 2026, then switching to a rolling 15-year period.
- Reduction of investment return assumption, bargaining of benefit changes.
- Several years ago, an additional contribution rate was placed on employers to pay the unfunded liability for the underfunded legacy plans.
- Shortened amortization period, lowered assumed rate of return, increased employer & employee contribution rates.
- Significant plan design changes were put in place through pension reform, including development of the hybrid retirement plan. Statutory requirement to fund the full board-certified rates (fiscal year 2017 for the state plans and 2018 for the teachers).
- State contributions under state law are too low to begin reducing the unfunded liability. The board certifies both the amount required under state law and the amount required under an actuarial process (different cost method, shorter amortization) that does begin reducing the unfunded liability. This approach is needed because our funded status is low.
- State intends to continue funding 100% of ADC going forward. State budget adopted in 2018 provides full funding for 2019 and 2020 fiscal years. Closed amortization period. State considering advanced funding beyond actuary's recommended ADC.
- State statute requires employer funding as a level percent of payroll to achieve 90% by 2059.
- State statutes require certain surplus funds to be appropriated to the UAL. Changes in plan design for new members since 2006 are designed to limit accumulation of UAL.
- Statutory requirement for state funding of normal cost as a continuing appropriation and dedicated local property tax for employer contribution. Statutory requirement for 90% funding status by 2059.
- Steadily reducing the assumed rate of return so our required contributions increase.
- Steady stream of employer and employee contributions over last several years has reduced the unfunded liability and increased the funded ratio to an all-time high of 97.7%.

Continued

- The board adopted a funding policy to enhance communications and transparency with the legislature, plan members and retirees regarding the board's position on plan funding strategy.
- The board adopted a funding policy with a scorecard component. The scorecard is a risk tool to gauge the financial and economic status of the plan.
- The board recently adopted a new funding policy to address the system's unfunded actuarial accrued liability.
- The board recently concluded a five-year actuarial study which included several recommendations. The board is reviewing for possible implementation.
- The city has agreed to pay additional yearly contributions to help with bringing the unfunded liability down.
- The city has been paying over the required contribution amount to pay down certain bases of the unfunded liability.
- The city makes additional fixed contributions to eliminate the unfunded liability over 5 years.
- The County of Tulare issued \$250 million in pension obligation bonds to reduce the UAAL.
- The fund is governed by Illinois state statute.
- The GERS has submitted legislation for reduction of active member benefits and indefinitely suspended the COLA, raised the employee and employer contribution rates up to the limits allowed by law.
- The governor and General Assembly have focused on reducing plan costs and liabilities with a multipronged approach that included: accelerating repayment of deferred contributions, estimated to save \$60.5 million over six years; funding 100% of actuarially determined contribution rates earlier than anticipated, saving \$232 million over 20 years.
- The only step has been to shorten the amortization period from 30 years to 20 years.
- The State of Kansas sold \$1.0 billion in bonds in 2015 and deposited the proceeds into the KPERS Trust Fund. This was in addition to regular contributions.
- The system has kept contribution rate stable and not decreased it to the ADC each year. Which allows the fund to improve overall financial health.
- This plan is a pay-as-you-go plan that was closed in 1995. The state has a well-established plan to get to 100% funded around 2035.
- Tied age requirement to Social Security. Implemented DC for new hires with mandatory annuity.
- Tier A / Tier B.
- TRA recently reduced COLAs; increased employee and employer contributions (2018 legislative session).
- Trustees are working with the City and the actuary to address this issue.
- Two of our three employers are making supplemental contributions to accelerate the paydown of their unfunded liability.
- We are a regional retirement system comprising 71 employer units. We accept additional payments toward unfunded liability made by the individual units.
- We ensure that we collect employer and member contributions.
- We have implemented a little more risk with our investment strategy.
- We have implemented a new asset allocation in order to ideally achieve a higher rate of return. We have also adjusted COLA and employee contributions.
- We have kept contribution rate stable and not decreased it to the ADC each year, which allows the fund to improve overall financial condition.
- We have utilized a reserve fund to maintain our employer contribution rate at a level above what the actuarially determined rate would call for.
- We've increased contribution rates and reduced benefits (tier II), and reduced certain small benefits (like death benefits for non-vested inactive members, and reduced interest accrual for non-vested inactive members).
- With the plan's 95.3% funded ratio, we feel that traditional amortization will be sufficient to reach full funding over the next 15 years.
- With the plan's 95.3% funded ratio, we feel that traditional amortization will be sufficient to reach full funding over the next 14 years.
- Work closely with plan sponsors and other stakeholders to make plan changes that will allow the plan to be more sustainable in the long run.
- Worked with county to firm up and enhance the employer contribution.
- Working with members to develop legislative package to improve sustainability.

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- CalSTRS administers a three-part hybrid system that includes traditional DB, CB, and voluntary DC plans.
- COAERS recently launched a multi-asset strategic partnership with BlackRock in order to garner best in class insights into asset allocation and risk management.
- Communication, by providing and enhancing the employee portal whereby any active member can access their account and see the balance, contributions plus interest, cash out value, and potential monthly benefit as of normal retirement age, (65), and perform their own future dated projection.
- Comparing fees with other systems and see if we are being overcharged.
- Consolidated recordkeepers, decreased plan expenses, Added Financial Wellness plan to assist participants achieve retirement goals, executed a Beneficiary Campaign that received recognition for participant education and effective communication.
- Continue to enhance security for member portal. Created two-step process for account setup, which includes sending a time-sensitive PIN to the address we have on file and requiring stronger passwords for existing accounts.
- Continued Executive Workshops. Board Member investment educational series (voluntary).
- Contracted with an independent third party to perform a Governance and Asset allocation review.
- Created a matched 457 with annuity and life insurance to bridge time between separation and collection of first pension check at Social Security age.
- Created from the ground up a mandatory defined contribution plan pursuant to legislative direction.
- Customer Service Improvements The multi-year effort to upgrade the pension administration system was successfully completed in March 2018. This mission critical system is used by PSERS' professionals, members, and employers to execute PSERS' primary pension administration functions for its members. This upgrade included for members and employers the ability to conduct transactions for themselves which would have previously required staff intervention and to view correspondence from PSERS such as letters, newsletters, Statement of Accounts and 1099Rs online. Since April 2018 more than 100,000 members have created a Member Self-Service (MSS) account and have conducted more than 50,000 transactions for themselves with the most common action being to update their nomination of beneficiaries. This new system also enables members to select their preference for how they would like PSERS to communicate with them and 98% of all MSS accounts have opted to go paperless and receive information from PSERS electronically.
- Developed educational presentations, online materials, and dedicated web page for members approaching retirement as part of a multi-year effort to expand education and outreach to members, retirees, and employers. Also developed and posted financial literacy content for members and retirees on website.
- Developing an outreach campaign for potential/eligible members who are currently not enrolled in the pension.
- Disaster Recovery Plan - We created a formal plan to continue operations if something were to occur at our main office. We test out the DR site on a regular basis and have employees rotate at least 1 per year.
- Disaster recovery site and plan. We have staff test the site by working there at least one day per year.
- Enhance online user security features beyond username and password. Executive Workshops held throughout the state for city officials, with presentations by Trustees and key staff.
- Establishment of a formal funding policy.
- Focus on outreach as identified in Strategic Plan, promoting a message of the real purpose and value of a DB plan to all stakeholders, legislators, local, state and national conference audiences, and media to counter attacks on DB plans.
- Gemini is a multi-year initiative that encompasses a complete re-write of our pension administration system. The current system has been in use since 2003. It has become increasingly difficult to update and maintain. The PAS is the backbone of our organization and performs all of our core functions for over 417,000 members and 990 school districts and employers, such as recording contributions and service, processing benefits, generating monthly member payroll and supporting the portals that our members and their employers use to work with TRS. In order to be able to launch its new defined contribution retirement plan, the System must upgrade the current frequency in which school districts and other employers report member information to TRS. Instead of an annual report, employers will now be required to report member data at the end of each pay period. This change to pay-period reporting will be the first aspect of Gemini to be developed, tested and implemented.
- Have provided members with online access to their accounts.
- Hired third party investment firm to perform an Independent Evaluation study on the Fund's investment performance and strategies.
- Idaho PERSI has recently re-located staff within our main office building in order to free up space to create an on-site member/employer training/education center. We plan for this space to be outfitted for face-to-face educational opportunities, and with the technological capabilities necessary for multi-media presentations and remote (webinar, etc.) participation via the internet. In order to have on-site capabilities, we are in the process of expanding available off-street parking to accommodate future guest populations.
- If we have a best practice story, I think it is the reserve fund noted above. It has maintained a stable contribution rate (albeit a high one) so employers have confidence for budgeting and the reserve has further reinforced our funding by holding the rate above where it would be absent the reserve fund.
- Implemented an immunization program for benefit shortfalls.

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- In 2016, we shifted from self-insured health care for the eligible over 65 retirees to a health care exchange market offering connectivity to the exchange via a vendor selected by OPERS. Additionally, we provide an allowance to this group to cover eligible health care costs, including, but not limited to, the premiums on medical plans obtained through the market. Prior to implementation of this plan change, health care costs had grown to approximately \$1.8 billion annually. Subsequent to this change, costs have declined annually by approximately \$600 million.
- In 2017 IMRF was awarded the ILPEX Gold Award for performance excellence. This qualified us to apply for the Baldrige Award in 2018. Our application has been reviewed and we have been awarded a site visit from Baldrige in Oct. 2018.
- In 2017 IMRF won the ILPEX Gold award for performance excellence. This qualified us to apply for the Baldrige Award in 2018. We were awarded a site visit from Baldrige in 2018 and again in 2019.
- In 2018, the Board conducted a "Governance Effectiveness Assessment" to ensure it was following governance best practices. The assessment yielded suggested next steps to improve the Board's overall effectiveness.
- In November 2017 NYSTRS began offering members the ability to file for retirement online. By fiscal year end, more than half of all retirement applications received were filed online. The electronic application is designed to ensure a member cannot inadvertently miss a step or make a mistake that would cause the paper application to be rejected. Also, because electronic filing requires the creation of a secure member account, the percentage of members with an account increased.
- In our current benefit tier, the 401(k) plan has an employer match. Members must save at least 5% of pay to receive the maximum 3% match. In 2014 we changed the default contribution rate for new hires from 1% of pay to 5% of pay. Since then, the percentage of active members saving enough to receive the full employer match has increased from less than 20% of the population to more than 70% of the population.
- In recent years COAERS has moved toward an outcome-oriented investment model that focuses foremost on the achievement of the Fund's strategic objectives. This evolution has meant shifting Board attention and Staff resources toward asset allocation and risk management, which are widely acknowledged as the key drivers of long-term investment success. This effort has also involved a rethink of existing processes such as manager selection, which has in turn led from a shift from the traditional "beauty contest" approach to manager selection to a "Premier List" model that helps mitigate the churn that is typical in institutional rosters. These changes have enabled the System to focus much more closely on the long-term sustainability of the System and the fulfillment of promises made to its beneficiaries.
- Interactive data dashboard.
- Investments is using Bloomberg Port/Port+ for improved risk management. We are in negotiations with XTP to improve cost transparency. Administration is adopting Concur for expense management and BoardDocs for board agenda and document management. Benefits has contracted for additional death reporting services. We have updated websites for the public and employers.
- Issue debt certificates to lower or eliminate unfunded liability while interest rates are at historic lows.
- MainePERS recently balanced the risks in the local governments plan by adopting a model that shares the same risks in a different manner between employees, employers and retirees. MainePERS staff, and advisory committee and our actuary dedicated 2 ½ years to developing and sharing the proposed changes with stakeholders before the changes were adopted. The goals of these changes were to have a high degree of certainty that basic benefits could be paid throughout member and retiree lifetimes. Our modeling suggests the auto-trigger approach that determines how market downturns will be handled ahead of time will protect the benefits in this plan.
- Make the governance structure as apolitical as possible.
- Methods to monitor retiree benefit compliance (i.e. reemployment, disability, children, widows).
- Middlesex County Retirement System employs a part-time social security consultant to deliver educational programs regarding social security benefits, the Government Pension Offset, and Windfall Elimination Provision. Further, MCRS educates its employer units through Advisory Council meetings, attendance at Boards of Selectmen/Finance Committee meetings, and onsite Employer Training Programs.
- Modify Investment Allocation to minimize downside risk.
- New closed 30-year amortization funding corridor, see #11.
- Next Generation Managers.
- On-boarding Private Market analytics and fee verification services.
- Our plan started experimenting with having staff available to members and retirees after hours to make our agency more accessible.
- Recently developed strategic plan working with Board and staff.
- Related to the scorecard above, STRS Ohio is using Monte Carlo simulations to provide probability analysis of funded ratios and funding periods 10 years in the future.
- Related to the scorecard above, STRS Ohio is using Monte Carlo simulations to provide probability analysis of funded ratios and funding periods 10 years in the future.
- Separate funding mechanism for postretirement benefit increases.
- Solicit retirees to fill seasonal positions at the Parks and Zoo.
- Started new program that pairs Defined Contribution plan with our supplemental savings program to function as a single, flexible plan with multiple benefits: (1) Employers can require mandatory participation in the DC portion of this plan, (2) Employers can incentive employee savings through matching pre-tax contributions.

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- The Fund continues to host education and retirement seminars for its members.
- THE FUND IS IN THE PROCESS OF ENHANCING CYBER SECURITY AND DATA SECURITY.
- The MEABF performs an annual Signature Verification process to ensure that Pension Benefits are being sent/used to the intended recipient. This program has retrieved over-payments to non-members and identified fraudulent activity.
- The Plan is exploring advanced investment risk management techniques with the hopes to deploy them in the coming years.
- The Plan worked quickly with City Council to change the plan after 2011 which kept the Plan from ever falling below 80% funded.
- Use early warning to identify payee accounts, multiple death notification services, and a third-party personal verification via interview to check verify and protect payments to retiree population.
- Use of a more effective long-term investment allocation model.
- Use of "Alive and Well" Letters annually, as databases alone are insufficient to prevent overpayments. Increasing terms of board member service from 2 or 3 years, to 4 years. Implementation of Board: Education Policy, Code of Conduct, Code of Ethics Policy. Annual Pension Status mailing, along with annual benefit statement.
- Virtual Desktop and soft phone implementation as cloud-based disaster recovery plan.
- VRS's comprehensive financial wellness program is aimed at helping members make informed and educated decisions on everyday financial matters while saving for the future. The program includes interactive courses, personalized action plans and content recommendations based on the member's interests as well as their demographics and history. VRS is in the midst of a multi-year modernization program which is phasing out the legacy system, RIMS and replacing it with VNAV. VRS continues the final phase of its technology modernization project by developing new technology systems to support interactions with VRS members. The new system allows members to electronically request refunds and initiate a service purchase request, and in the future will allow members to manage beneficiaries and file for retirement on-line. A redesigned benefit estimator allows members to easily create VRS retirement benefit estimates based on different retirement dates or payout options. VRS introduced a new goal-based retirement planner where members can input a benefit scenario and add other sources of income and expenses, including income taxes, health insurance and living expenses. Based on their individualized retirement goals, the planner helps members project their income and expenses in retirement and take a broader view of life after work.
- We are anticipating completing a CAFR report.
- We are in the process of launching an online member resource portal called "Ask Rob" (Retirement Options and Benefits). We are excited about this project, as it replaces our annual paper booklet.
- We conduct regional training programs throughout the year. The two-hour programs focus on the public retirement plan benefits and the interplay with Social Security, WEP and GPO.
- We define stakeholders broadly. Beyond just members and beneficiaries. We conduct a summer social, affidavit breakfast, union visits, council visits and annual meeting as communication/engagement practices. We have others related to plan change, business practice and oversight.
- We moved benefit payments to our custody bank. This allows us to make one-time payments electronically (refunds, etc.) and to withhold income taxes for all states that have them (Wyoming does not; 80% of our payments are within Wyoming, but 20% reside out of state, usually in states that have an income tax); we will also save money vs. the state controller. We also implemented performance pay for our investment professionals. They will receive extra pay if they achieve excellence as defined by besting certain investment benchmarks. We hope that this will improve retention and recruiting for our investment team and thus lead to better returns.
- We recently implemented a custom-developed pension administration system, built from the ground-up. We used a mixture of consultants and staff on the project.
- We recently overhauled our employer web portal, which streamlined the payroll reporting process. We saw a 114% increase in remitted revenue for April 2018 (when the new portal was launched) vs. April 2017.
- We successfully initiated a step towards tying retiree increases to an inflation index. This has not previously been done in Minnesota. Prior to that change, the annual post-retirement increase was dependent on plan funding status.
- Weekly death match run to post date of death to database. When an identified retiree has no continuing benefit and the last benefit payment has been issued, the account is automatically closed and a letter to the member's estate automatically generated to confirm no further benefit eligibility.
- Whiteboard training video.

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- Domestic Fixed Income comprised of Core/Core Plus Fixed Income = 8.6%, United States Treasury = 7.2% and Public Credit = 2.4% Private Equity/Hedge Fund/ Alternatives comprised of Real Assets = 12.8%, SSgA Real Asset Overlay Proxy =5.3%, Commodities = (8.1%), Absolute Return - Diversifying = 0.3%, Private Credit = 5.6%, Private Equity = 24.0%, and Opportunities = 5.3%.
- Dynamic asset.
- Emerging Equity.
- Emerging Markets Bonds (4.5/5/7), Real Return (7.4/8/10.8), Absolute Return (10.9/10/6.4).
- Emerging Markets, Total Timberland, Total PCS.
- Energy MLPs.
- For returns we calculate returns separate for private equity, hedge funds and private credit.
- Global Asset Allocation.
- Global Asset Allocation and for Hedge Fund Alternatives, it is an opportunistic allocation that has a 0-6% possible allocation, funds taken from the fixed income and equity portion of the portfolio. We also have an overlay strategy for our cash.
- Global Listed Infrastructure.
- Global options, inflation protection, long treasuries, systematic trend following.
- GTAA.
- Hedge fund.
- Hedge fund of funds, MLP, multi asset income fund.
- Hedge Funds classified separately. Private Equity/Alternatives reported separately above.
- Hedge Funds, TIPS, MLP's.
- High Yield & Alternative Credit included in "Other".
- Hybrid.
- Inflation Protection.
- Inflation Sensitive (1.81%, 2.0%, 9.09%); Risk Mitigating Strategies (8.69%, 9.0%, -8.9%); Innovative Strategies (0.21%, 0.0%, 5.91%).
- Infrastructure.
- Infrastructure 0 for current for end of year 17; we wanted 5%.
- Infrastructure 3.1% current, 3% target; private credit 3.8% current, 8% target; cash held for overlay 2.6%; 1-yr returns: Infrastructure 18.1%; private credit 8.5%.
- Infrastructure, Multi-Asset Funds, Derivative Positions.
- infrastructure, Multi Asset Strategies.
- Infrastructure, Risk Parity.
- International Equity - Dev xus: 19; International Equity - EM: 23; Domestic Fixed Income - US Debt Index: 0.1; Domestic Fixed Income - US TIPS: -0.7; International Fixed Income - Dev: -0.4; International Fixed Income - EM: 8; High Yield Bond - HY: 16; High Yield Bond - Bank Loan: 3.
- International Equity - Dev xus: 19; International Equity - EM: 23; Domestic Fixed Income - US Debt Index: 0.1; Domestic Fixed Income - US TIPS: -0.7; International Fixed Income - Dev: -0.4; International Fixed Income - EM: 8; High Yield Bond - HY: 16; High Yield Bond - Bank Loan: 3.
- Investment grade credit and mortgage backed securities.
- Investment grade credit, Mortgage backed securities, Diversified Strategies.
- LIQUID DIVERSIFYING ASSETS.
- Master Limited Partnership.
- Master Limited Partnerships.
- Master Limited Partnerships.
- MLP.
- MLP 5%, emerging markets 9%.
- MLP's.
- MLPs, private credit.
- Multi-asset.
- Multi-asset - GTAA and Risk Parity.
- multi-asset class strategies.
- Multi-asset including real assets, opportunistic private market and risk mitigation strategies.
- Multi-Asset: Risk Parity, GTAA.
- Mutual TIPS 5.31%, Emerging public market equities (7%).
- Natural resources and infrastructure/investment return is net of fees.
- Natural Resources.
- NOTE: PSERS Reports investment returns net of net of fees. Current and target allocations differ from the asset classes shown in this survey. Data will be supplied separately via email.
- Note: cash is invested in an overlay program using stock and bond index futures producing a return equivalent to a 60% stock / 40% composite bond portfolio.
- Opportunistic Fixed Income.
- Opportunity Fund includes timber, tactical, credit, risk-parity, and other opportunistic strategies.
- Other = Global Asset Allocation. International FI is defined as Emerging Market Debt.
- Other classes include multi-asset strategies 95.4% return) and opportunistic strategies (13.0% return).
- Other is floating rate debt.
- Other is TIPS and Liquid Diversifying.
- Other- timber and infrastructure.
- OTHER: Column 1 Infrastructure 2.9 and Risk Parity 4.6 OTHER Column 2 Infrastructure 4 Risk Parity 5 OTHER Column 3 Infra 5.03 Risk parity 12.35.
- Other: timber and infrastructure.
- Other=emerging markets; note domestic equity includes 20% SMID CAP and 29.6% Large CAP; Large CAP returned 29.6% & SMID CAP 20.0%.
- preferred/convertible securities.
- Privat Credit.
- Private Credit.
- Private credit, MLPs.
- Private Credit, MLP's and Real Assets (Infrastructure, Timberland and Agriculture. Current and Target allocation info as of 6/30/19. Returns on 1st page as of 12/31/18.
- Private Credit. Also please note a cash contribution was received at year end, therefore zero return for cash equivalents.
- Private Equity - 10% allocation; return 15.18%; Hedge Funds - 10% allocation; return 2.58%; Private Credit - 3.5%; return 6.19%.
- Private Equity excludes hedge funds, hedge funds included separately under "other".
- Public Real Assets and Opportunistic Credit.

– Continued

- Rates Global Fixed Income not tracked separate from Total Global Credit ** PE - 16.6, HF - 5.88, Alt. - 9.29.
- Rates Global Fixed Income not tracked separately from Total Global Credit ** PE: 16.60, HF: 5.88, Alt.: 9.29.
- Real Assets.
- Real Assets (MLPs and Infrastructure).
- Real Assets 7.5%.
- Real Assets and Risk Parity.
- Real Estate Debt (2.0% 1-yr return), Private Debt (13.7% 1-yr return).
- Real Return.
- Real Return Current Allocation 8.6%, Real Return Target 10% and Real Return Investment Return 1.96. Absolute Return Current Allocation 5.71%, Absolute Return Target 10% and investment return 5.52%.
- Real return, absolute return, and other real assets.
- REIS Composite & Real Assets Composite.
- Risk Diversifying, Opportunistic.
- Risk Parity.
- Risk Parity (8.2 vs. 8.0) Infrastructure (2.7 vs 2.0) MLPs (4.1 vs 4.0)
Note: PSERS reports net of fee returns only. Gross returns not available.
- Risk Parity + MLP's.
- Risk Parity allocation of 13.1% target of 14% with return of -6%; Crisis Risk Offset allocation of 18% with target of 20%, return of 0.2%; Credit allocation of 11.3% with target of 14%, return of 3%.
- Risk Parity Strategy. Has been terminated in mid-2019.
- Risk Parity, GTAA, Other Pension Assets, and Rebalancing.
- Stabilized Growth = 31.9%, Traditional Growth = 32.8%, Noncore Real Estate = 2.4%, Private Equity = 7.7%, Crisis Risk Offset = 12.9%, Opportunities = 0.2%, Principal Protection = 8.3%, Real Return = 3.1%, Other = 0.9%.
- Strategic.
- Strategic Investments.
- Tangible assets portfolio and Innovation portfolio.
- Target Date Fund (OSGP) *Alternatives 11.03%.
- This is the cumulative performance of the portfolio.
- Timber.
- Timber & Infrastructure.
- Timber 2.2% (2.2% actual) and Infrastructure 5.8% (4.7% actual) targets.
- Timber, Farmland.
- TIPS = 8.93% current, 10.00% Target; MLPs = 5.21% current, 5.00% target. TIPS net return = 1.80%, MLPs net return = -0.24%; Commodities was a net return.
- TIPS = 9.31% actual, 10% target. MLPs = 5.35% actual, 5% target. TIPS net of fee return = 1.80%, MLPs net of fee return = -0.22%. Commodities was net of fee as well.
- We are part of the State of MA-PRIT Fund.

Appendix B: 2019 Study Instrument



National Conference on Public Employee Retirement Systems
The Voice for Public Pensions



2019 NCPERS PUBLIC EMPLOYEE RETIREMENT SYSTEMS STUDY

Please share your feedback so we can continue to provide the most up-to-date data addressing retirement issues for public pension plans across the nation. Your most recent Comprehensive Annual Financial Report will help answer most questions.

If you administer more than one plan, please copy this survey for each and note the name of the fund. If you are a multiple employer plan, you may use aggregate numbers from your CAFR and respond to the questions in the generally applicable way for most of the plans you administer.

Please enter your ID number from the cover email:

Plan name:

What type of plan is this? **(Mark all that apply.)**

- Defined Benefit Plan (Traditional Pension Plan)*
 Combination Plan (Blends Defined Benefit & Defined Contribution)
 Defined Contribution Plan (Mandatory Retirement Account)
 Cash Balance Plan

Plan Statistics

1. Fund statistics **from most recently completed fiscal year** (if applicable). Please do not use commas, dollar signs or percentage marks in the field - it is numeric only.

Total number of members (actives + deferred + retirees + beneficiaries):

Total number of staff who administer the fund (full-time equivalent):

Fiscal year of your CAFR referenced for this survey (MM/DD/YYYY):

Market value of plan assets (\$ in thousands from actuarial valuation):

Plan fiduciary net position (a) (\$ in thousands from actuarial valuation):

Total pension liability (b) (\$ in thousands from actuarial valuation):

Current funded ratio (a divided by b) (%):

Cost of Living Adjustment (COLA) offered by plan in last fiscal year (%):

Did your plan receive the full (100%) actuarially determined contribution in the last fiscal year? Yes No

Member contributions as percent of payroll (%):

Employer contributions as percent of payroll (%):

Investment manager expenses (basis points):

Administrative expenses (basis points):

Investment assumption/discount rate (%):

Inflation assumption (%):

Investment smoothing period (years):

Amortization period (years):

Type of amortization period: *Open/Rolling* *Closed/Fixed*

Gross investment return % (1 year):

Gross investment return % (5 year):

Gross investment return % (10 year):

Gross investment return % (20 year):

Current and Target Asset Allocation / Investment Return

2. For each of the asset classes below, please specify your **CURRENT** and **TARGET** asset allocation and your **1 YEAR GROSS INVESTMENT RETURN (%)** for each asset class. **Please note:** percentages for asset allocation should equal 100%.

CURRENT asset allocation:	TARGET asset allocation:	Gross investment return % (1 yr):
Global Equity (%): <input style="width: 50px;" type="text"/>	Global Equity (%): <input style="width: 50px;" type="text"/>	Global Equity (%): <input style="width: 50px;" type="text"/>
Domestic Equity (%): <input style="width: 50px;" type="text"/>	Domestic Equity (%): <input style="width: 50px;" type="text"/>	Domestic Equity (%): <input style="width: 50px;" type="text"/>
International Equity (%): <input style="width: 50px;" type="text"/>	International Equity (%): <input style="width: 50px;" type="text"/>	International Equity (%): <input style="width: 50px;" type="text"/>
Global Fixed Income (%): <input style="width: 50px;" type="text"/>	Global Fixed Income (%): <input style="width: 50px;" type="text"/>	Global Fixed Income (%): <input style="width: 50px;" type="text"/>
Domestic Fixed Income (%): <input style="width: 50px;" type="text"/>	Domestic Fixed Income (%): <input style="width: 50px;" type="text"/>	Domestic Fixed Income (%): <input style="width: 50px;" type="text"/>
International Fixed Income (%): <input style="width: 50px;" type="text"/>	International Fixed Income (%): <input style="width: 50px;" type="text"/>	International Fixed Income (%): <input style="width: 50px;" type="text"/>
High Yield Bond (%): <input style="width: 50px;" type="text"/>	High Yield Bond (%): <input style="width: 50px;" type="text"/>	High Yield Bond (%): <input style="width: 50px;" type="text"/>
Real Estate (%): <input style="width: 50px;" type="text"/>	Real Estate (%): <input style="width: 50px;" type="text"/>	Real Estate (%): <input style="width: 50px;" type="text"/>
Private Equity/Hedge Fund/ Alternatives (%): <input style="width: 50px;" type="text"/>	Private Equity/Hedge Fund/ Alternatives (%): <input style="width: 50px;" type="text"/>	Private Equity/Hedge Fund/ Alternatives (%): <input style="width: 50px;" type="text"/>
Commodities (%): <input style="width: 50px;" type="text"/>	Commodities (%): <input style="width: 50px;" type="text"/>	Commodities (%): <input style="width: 50px;" type="text"/>
Cash Equivalents (%): <input style="width: 50px;" type="text"/>	Cash Equivalents (%): <input style="width: 50px;" type="text"/>	Cash Equivalents (%): <input style="width: 50px;" type="text"/>
Other (specify asset below) (%): <input style="width: 50px;" type="text"/>	Other (specify asset below) (%): <input style="width: 50px;" type="text"/>	Other (specify asset below) (%): <input style="width: 50px;" type="text"/>

If you entered an "Other" asset class above, please specify the other class(es) in which your fund is currently invested:

3. Which **retirement benefits** below does your plan offer or is considering offering? Please skip individual items below if not applicable.

	Already Offering	Considering Offering
Defined Benefit Plan (traditional pension plan in which the benefit is defined by a formula based on service and average wages)	<input type="checkbox"/>	<input type="checkbox"/>
Defined Contribution Plan (retirement account such as a 403(b) or 401(k) in which an employer's contribution is specified and employee participation is generally mandatory)	<input type="checkbox"/>	<input type="checkbox"/>
Deferred Compensation Plan (tax-deferred retirement savings account such as a 457 in which employee participation is voluntary)	<input type="checkbox"/>	<input type="checkbox"/>
Combination Plan (blends Defined Benefit and Defined Contribution elements)	<input type="checkbox"/>	<input type="checkbox"/>
In-service death benefit	<input type="checkbox"/>	<input type="checkbox"/>
Disability benefit provided either within the plan, by Social Security or by employer	<input type="checkbox"/>	<input type="checkbox"/>
An automatic post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
A compounding post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
An ad hoc (not necessarily automatic or compounding) post-retirement adjustment of payments (e.g. COLA)	<input type="checkbox"/>	<input type="checkbox"/>
Employer pick up of employee contributions	<input type="checkbox"/>	<input type="checkbox"/>
Deferred Retirement Option Plan (DROP - in all forms)	<input type="checkbox"/>	<input type="checkbox"/>

4. Which **retirement plan changes** below have been implemented or are being considered by the plan or plan sponsors? Please skip individual changes below if not applicable.

	Already Implemented	Considering Implementing
Lower the actuarial assumed rate of return	<input type="checkbox"/>	<input type="checkbox"/>
Raise benefit age/service requirements	<input type="checkbox"/>	<input type="checkbox"/>
Increase employee contributions	<input type="checkbox"/>	<input type="checkbox"/>
Hold or lengthen the amortization period to improve affordability	<input type="checkbox"/>	<input type="checkbox"/>
Shorten the amortization period to improve funded status	<input type="checkbox"/>	<input type="checkbox"/>

5. Which **business practices** below have been implemented or are being considered by the plan or plan sponsors? Please skip individual items below if not conducted.

	Already Implemented	Considering Implementing
Conduct a death audit	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an actuarial audit by a third party actuary (includes replication of valuation and opinion on actuarial assumptions)	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an information systems security audit	<input type="checkbox"/>	<input type="checkbox"/>
Conduct a building security audit	<input type="checkbox"/>	<input type="checkbox"/>
Update/strengthen an asset allocation study	<input type="checkbox"/>	<input type="checkbox"/>
Expand operational performance benchmarking	<input type="checkbox"/>	<input type="checkbox"/>
Update or enhance administrative software used for member data	<input type="checkbox"/>	<input type="checkbox"/>
Update or enhance online portal provided for members to access account information	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an employer/reporting unit satisfaction assessment	<input type="checkbox"/>	<input type="checkbox"/>
Comply with new State statutory or regulatory requirements to report your funded status based on a rate of return different from your assumed rate of return	<input type="checkbox"/>	<input type="checkbox"/>
Enhance member financial wellness/retirement readiness resources	<input type="checkbox"/>	<input type="checkbox"/>

6. Which **communications and member engagement practices** below have been implemented or are under consideration by the plan or plan sponsors? Please skip individual practices below if not conducted.

	Already Implemented	Considering Implementing
Develop public relations plan to address "Pension Envy"	<input type="checkbox"/>	<input type="checkbox"/>
Develop staff talking points on key issues affecting the fund	<input type="checkbox"/>	<input type="checkbox"/>
Expand retirement planning education for members	<input type="checkbox"/>	<input type="checkbox"/>
Conduct a member satisfaction survey	<input type="checkbox"/>	<input type="checkbox"/>
Notify members of updated handbook/summary plan description (electronically or paper)	<input type="checkbox"/>	<input type="checkbox"/>
Actively use social media (Facebook, Twitter, etc.) to share messages with members	<input type="checkbox"/>	<input type="checkbox"/>
Conduct online educational sessions (webinars) for participants	<input type="checkbox"/>	<input type="checkbox"/>

7. Which of the following **communication methods** does your plan or plan sponsor have the ability to conduct?

	Yes	No
Capacity to send a postcard to the home address of your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send a mass phone message to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send a mass text message to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Capacity to send an e-mail to your entire membership	<input type="checkbox"/>	<input type="checkbox"/>
Does your plan have a Facebook or Twitter account?	<input type="checkbox"/>	<input type="checkbox"/>
Does your plan have a mobile app?	<input type="checkbox"/>	<input type="checkbox"/>

8. Which **oversight practices** below have been implemented? Please skip individual practices below if not conducted.

	Yes	No
Receipt of the GFOA Award of Excellence for the most recent award cycle	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of NCPERS Certificate of Transparency	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of PPCC Standards Award	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of PPCC Administrative Certificate	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of PPCC Funding Certificate	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of an unqualified opinion from the auditor on the fund's financial statements, internal controls, and compliance with applicable laws and regulations	<input type="checkbox"/>	<input type="checkbox"/>
Conduct an actuarial valuation at least every 2 years	<input type="checkbox"/>	<input type="checkbox"/>
Board adoption and adherence to written investment policies	<input type="checkbox"/>	<input type="checkbox"/>
Board adoption of written fiduciary standards	<input type="checkbox"/>	<input type="checkbox"/>
Receipt of annual investment performance evaluation from an outside independent investment review entity	<input type="checkbox"/>	<input type="checkbox"/>
Use of a formal enterprise risk management framework	<input type="checkbox"/>	<input type="checkbox"/>

9. How satisfied are you with your plan's readiness to address retirement trends and issues over the next 2 years?

Very Dissatisfied= 1 2 3 4 5 6 7 8 9 Very Satisfied= 10

10. If you have an unfunded accrued actuarial liability, what strategies have you put in place to reduce it beyond traditional amortization?

11. Think about best practices. Please share a success story or plan innovation you are considering that other plans may like to learn about

12. Which categories best describe your innovation or best practice story above? **(Please mark all that apply.)**

Retirement benefit Business practice Oversight practice

Plan change Communication/ engagement practice Investment

Questions about your fund (your responses will be confidential)

13. What type of employees/beneficiaries does your fund serve? **(Please mark all that apply.)**

Local (township/city/village) Public safety Educational

County State Other

14. What type of health plan does your pension plan sponsor? **(Please mark all that apply.)**

None, does not sponsor (skip to Q16) Healthcare subsidy

Traditional (HMO, PPO, POS, etc.) Health Savings Account (HSA)

Supplemental gap health plan Voluntary Employees' Beneficiary Association (VEBA)

15. Who is eligible for the health plan? **(Please mark all that apply.)** Active members Retirees Beneficiaries

16. Are your members eligible for Social Security coverage? Yes No

17. Are your members eligible for Medicare coverage? Yes No

18. Do you include overtime in the calculation of the retirement benefit? Yes No N/A

19. How much of an impact on your fund will the US Supreme Court decision in the Janus v AFSCME Council 31 case have? Significant impact Little impact

Moderate impact No impact

20. Does your plan allow Board Members the ability to participate via conference call and vote? Yes No

21. How is your fund's current ability to attract and retain skilled employees as your staff retire? Significant problem Expect to become a problem soon

Starting to become a problem No problem

22. Which role(s) best describe your relationship to the fund? **(Please mark all that apply.)** Staff Plan consultant

Board member/ trustee Other

23. May we contact you if we have additional questions? Yes No

24. Please provide your name and email so we may provide access to the interactive comparison dashboard.

This concludes the study. Thank you for your time and cooperation.

For more information:

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