



Preparing Public to Emerge the

benefits

MAGAZINE

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Pensions From Pandemic

by | **Bill Hallmark** and **Karen Zangara**

While much uncertainty remains with the COVID-19 pandemic, economic growth and strong investment returns are among the positive trends for public pension plans. How should plans position themselves to protect against new risks and take advantage of opportunities?

As the COVID-19 pandemic unfolded in 2020, causing steep drops in the stock market and a surge in unemployment, public pension plans were challenged to continue operating and delivering retirement checks while concerns about their financial condition kept building.

The S&P 500 plunged 19.6% in February and March 2020, and the unemployment rate jumped to 14.8% in April from 3.5% in January. By year-end, the death toll from COVID-19 was about 378,000, according to provisional data from the Centers for Diseases Control and Prevention (CDC). But state and local tax revenues and the capital markets appeared largely unscathed. Contrary to initial expectations, most public pension plans appear to have improved their financial condition during the pandemic.

What should plans expect when the United States forges a way out of the pandemic? How should public pension plans position themselves to protect against new risks and take advantage of opportunities? There is no single answer, but there are some principles that can be applied to various circumstances.

Initial Concerns for Public Pension Plans Did Not Materialize

Investment Markets

The stock market plunge in February and March 2020 raised fears of dire consequences for public pension plans. However, the market recovered quickly so that by June 30, 2020, investment losses were moderate compared with assumptions. The S&P 500 jumped more than 20% between March 31 and June 30, 2020. Then the market kept going up.

For the fiscal year ending June 30, 2021, investment returns for a portfolio of 60% equities and 40% fixed income earned about a 23% return,¹ far higher than any plan's assumptions. Instead of suffering painful investment losses, many public pension plans are reporting outstanding investment gains.

Economy

Unlike previous recessions, the pandemic caused an abrupt economic stop. By the end of April 2020, about 30 million people applied for unemployment. State and local governments anticipated severe revenue shortfalls, and public pension plans feared the shortfalls would have a significant impact on employment, salaries and the ability of plan sponsors to contribute.

However, the sudden economic stop did not affect everyone equally.

Some industries suffered large job losses, but others were able to transition to working from home, and the agricultural sector even expanded employment. Governments that relied on the hardest hit industries for tax revenue suffered but, overall, the dismal forecasts for government revenues did not materialize. In May 2020, the Center for Budget and Policy Priorities forecast a \$185 billion revenue shortfall for 2020 for state budgets but later estimated the actual shortfall was only about \$22 billion.² Contributions to public pension plans appear to have remained largely on track.

Demographic Impact

As of June 2021, the U.S. experienced 33.6 million confirmed cases of COVID-19 and more than 604,000 deaths, according to the Johns Hopkins Virus Resource Center.

The full impact of the pandemic on mortality extends well beyond deaths caused by COVID-19. The excess COVID-19 death rate, shown in red in Figure 1, increases with age, averaging about 17% across all ages. Non-COVID excess deaths (the difference between expected deaths during a time period and actual deaths), shown in gray in Figure 1, added substantially to the total excess mortality, particularly for ages 15 to 64. Overall, the 35-to-64 age group had the highest total excess mortality rate of almost 27%.³ An increase in mortality rates generally reduces costs for pension plans due to the shorter life spans over which pensions are paid.

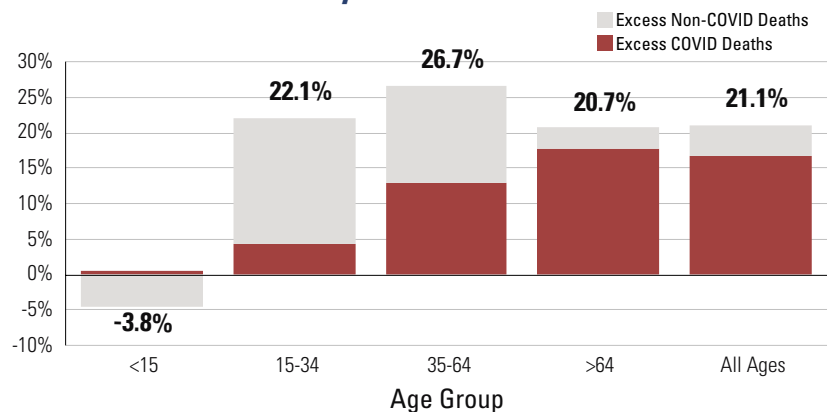
CDC reported that U.S. life expectancy dropped by 1.5 years in 2020, the largest reduction since World War II. This calculation assumes an entire life is subject to the mortality rates from 2020. Because of vaccinations and the decline of the pandemic, mortality rates are not expected to remain at 2020 levels, so the reduction in life expectancy is likely to be temporary.

The excess mortality data is for the entire U.S., but COVID-19 hit certain communities much harder than others. The mortality impact on public pension plan members is expected to be much lower, although rates may vary considerably between different plans. Moreover, a year of excess mortality is unlikely to greatly affect the financing of an ongoing pension plan. If COVID raises mortality rates over a longer period, then public pensions could experience ongoing cost reductions.

During 2020, retirement rates may have increased, particularly for teachers and police officers. Many parents, particularly women, left their jobs because of child-care needs during the pandemic. Plans may also experience higher rates of disability, particularly among front-line workers. The impact of these changes on pension plans will vary depending on the benefit structures and whether contributions are set as a percentage of pay or a dollar amount.

FIGURE 1

2020 Excess U.S. Mortality Rates



Source: Society of Actuaries, 2020 Excess Deaths in the U.S. General Population by Age and Sex.

With the impact on contributions and demographic changes to public pension plans expected to be relatively minor, the stellar investment returns since March 2020 are likely to drive a noticeable improvement in the funded status based on the market value of assets. The level of improvement will vary, with the least well-funded plans likely to show the least improvement since they had fewer assets invested during the market's rise.

Expectations

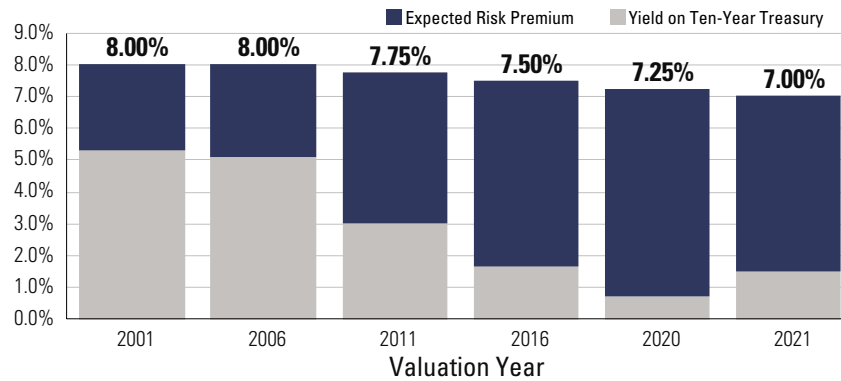
There were many reasons for optimism in the U.S. in early summer: rising vaccination rates, schools and businesses reopening, resumption of travel and a large federal stimulus jump-starting the economy. But there is still uncertainty and concern for the future.

By late summer, the pandemic was not under control around the world or in the U.S. Vaccination rates have slowed in the U.S., and the country may not reach herd immunity. The new Delta variant is spreading, and the duration of vaccine protection is unknown. Other unknowns include the implications of long-haul COVID and the availability of vaccines for younger children. The pandemic still poses risks to the economy, financial markets and the population. The shape the recovery takes may also affect government revenues and budgets supporting public pension plans for years.

One of the most important risks facing public pension plans is the continued downward pressure on discount rates. Lower discount rates or lower expected investment returns increase the cost of pensions because investment earnings are expected to pay for a smaller share of future benefits.

FIGURE 2

Downward Pressure on Discount Rates



Source: Federal Reserve, "Release H.15 Selected Interest Rates."

The expected return on assets can be thought of as a risk-free rate plus an expected risk premium. As shown in Figure 2, the yield on a ten-year Treasury, a proxy for the hypothetical risk-free rate, declined from 5.3% in 2001 to 1.6% in 2016 and to 0.7% on June 30, 2020. It has since bounced back to about 1.5% as of June 30, 2021. As a result, pension plans have had to either reduce their discount rate or increase their expected risk premium. The figure shows that plans have done both, as the median discount rate for pension plans dropped from 8.0% in 2001 to 7.0% in 2021 while the expected risk premium grew from 2.7% to 5.4%.

While the yield on the ten-year Treasury has increased from its low levels in 2020, the Federal Reserve still plans to maintain historically low interest rates, even with some anticipated increases in 2023. If interest rates remain low, there will be continued pressure to reduce discount rates. Most capital market assumptions are lower in 2021 than in 2020, partly because of lower interest rates.

Another issue to monitor is inflation, which affects public pension liabilities through salary increases and cost-of-living adjustments (COLAs). Higher inflation may also increase interest rates and expected investment returns. Rising inflation can cause higher liabilities due to salary increases and COLAs and cause lower liabilities due to increased discount rates. The impact will vary by plan.

Inflation for the 12 months that ended May 2021 reached 5%, its highest annual level since 1992. Supply shortages and pent-up demand have caused some inflation in the near term. Over time, these imbalances are expected to work themselves out. However, given the level of federal stimulus, some believe that inflation may continue to rise, while others, including the Fed, believe the increases are temporary.

One metric economists monitor is *breakeven inflation*, the difference between the yield on a nominal Treasury security and an inflation-protected Treasury security. It represents a consensus expectation among investors of future inflation.

During the pandemic, breakeven inflation fell to about 0.7% for five years and 1.3% for 30 years (Figure 3). Those expectations have since shot up to 2.5% for five years and 2.3% for 30 years. Inflation is now expected to be higher in the short term than in the long term, which supports the hypothesis that inflation is temporary.

Future expectations for a pension plan's demographic assumptions are developed based on historical experience. Over the next several years, reviews of demographic assumptions will include the pandemic, which may not represent future experience. Certainly, mortality and mortality improvement experience are likely to have been materially affected by the pandemic, but retirement, termination and disability patterns have probably also been disrupted. The long-term impact of the pandemic is unknown, so some of this experience may represent the beginning of a new trend. Actuaries will need to be cautious before using pandemic experience to forecast the future.

Positioning for the Future

While much uncertainty remains, the recent solid investment returns provide an opportunity to better position public pension plans to withstand future risks.

Stress tests project pension assets, liabilities and contributions under scenarios in which actual future experience deviates from the actuarial assumptions to enable trustees to understand the potential risks to the plan from varying expe-

rience. Investment returns almost always represent the largest risk, but other risks such as inflation, payroll and member growth rates can also be critical. After identifying the primary risks, stress test projections can aid in understanding those risks, how likely they are to occur and what to do now to mitigate the biggest risks.

Projecting pension assets, liabilities and contributions using the assumptions from the latest actuarial valuation enables trustees to understand baseline expectations for the future and to manage contributions so that they are reasonable and fully fund the plan within a reasonably short time. However, actual experience is unlikely to exactly match the actuarial assumptions with annual deviations in investment returns, salary increases and retirement rates. These deviations from the assumptions can result in large variations from the baseline projections.

In the sample stress test shown in Figure 4, the baseline projection using the assumptions from the latest actuarial valuation shows employer contributions gradually declining over time. The moderate and significant scenarios show how much these projected employer contributions may vary depending on whether the actual experience is better or worse than expected.

Some scenarios may cause changes in future assumptions that represent a risk to the plan. For example, continued low interest rates may cause future reductions in expected investment returns. A reduction in the expected rate of return or discount rate results in higher actuarially determined contributions and is almost always the largest assumption change risk. The sample stress test in Figure 5 shows the increase in the projected employer contribution rates if the discount rate is reduced 25 basis points (0.25%) compared with the baseline projected employer contribution rates.

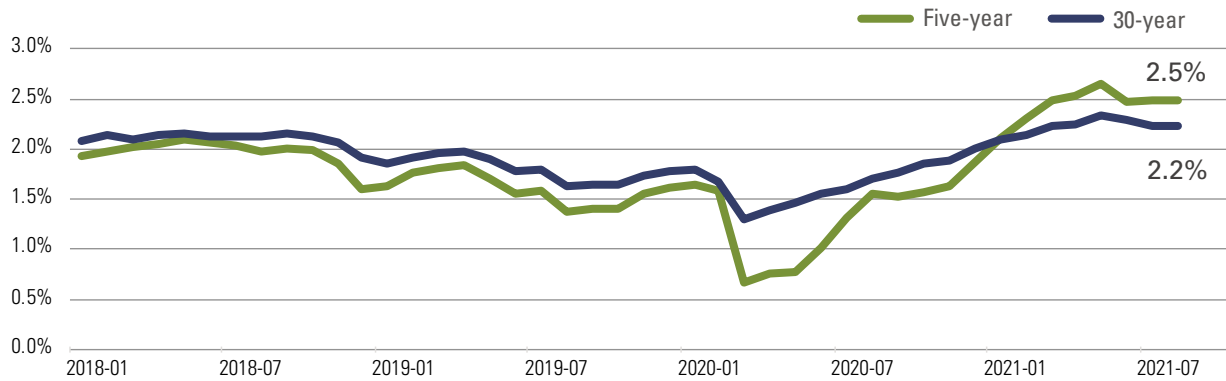
Risks related to demographic experience differing from the underlying actuarial assumptions and changes in demographic assumptions tend to have a much smaller impact unless there is a very extreme event. For example, in the last five or six years, many public pension plans made changes to their mortality assumptions that were larger than any mortality assumption change in decades. While significant, these changes typically increased the liability by around 5%. Investment returns, in contrast, routinely differ from the assumption and can change the market value of assets by far more than 5%.

takeaways

- Contrary to initial expectations, most public pension plans appear to have improved their financial condition during the pandemic.
- Many public pension plans are reporting outstanding investment gains, and contributions have remained largely on track. Demographic changes are also expected to be minor.
- One of the most important risks facing public pension plans is continued downward pressure on discount rates. Inflation is another important risk to monitor.
- Public pension plans can use stress tests, which project assets, liabilities and contributions under certain scenarios, to understand potential risks.
- Once trustees understand plan risks, they can develop policies to alleviate the biggest ones. Options include adjusting amortization or other actuarial methods to better manage the risks, changing asset allocation and/or reducing the discount rate.

FIGURE 3

Breakeven Inflation Rates



Source: Federal Reserve, "Release H.15 Selected Interest Rates."

FIGURE 4

Stress Tests
Current Actuarial Assumptions Show Employer Contribution Rates Declining Over Time

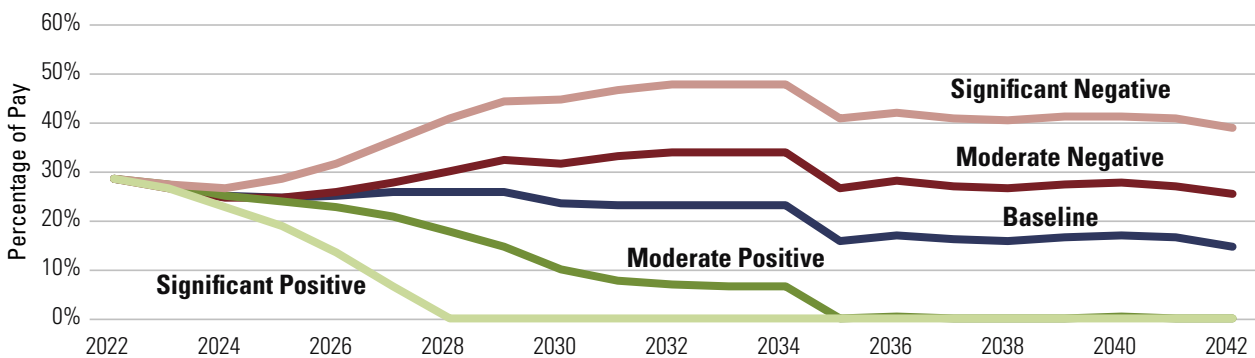
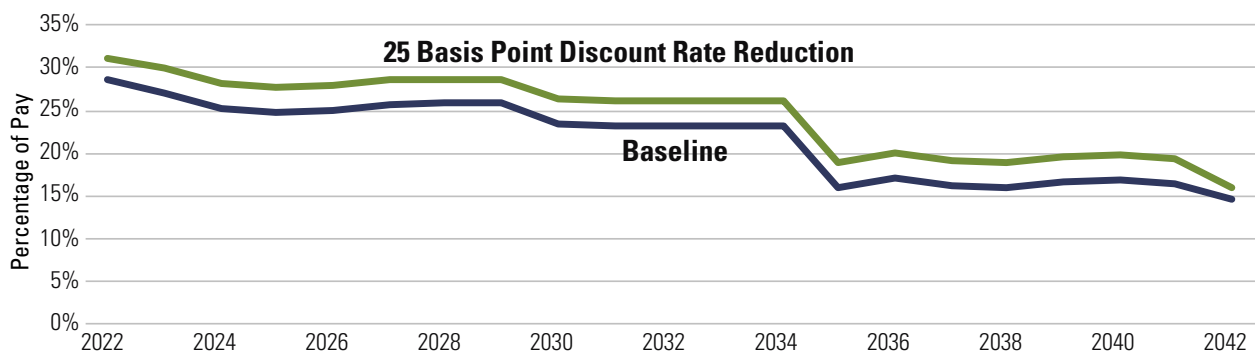


FIGURE 5

Stress Tests
Impact of 25 Basis Point Rate Reduction on Employer Contribution Rates



Once trustees understand these risks, they can develop policies to alleviate the biggest ones. In some cases, they may adjust amortization or other actuarial methods to better manage the risks, but often real reductions in the risk require changes to the asset allocation and/or reductions in the discount rate, both of which increase contributions in the near term.

The difficulty for trustees is that policies that materially reduce the likelihood of extreme costs are usually more expensive in the near term. If these near-term costs are too high, it may be difficult to take the desired actions to reduce risk in the future. The ideal time to make these policy changes is following good investment performance, when funded status has improved and contribution rates would decline, offsetting at least some of the additional cost of the policy change.

The appropriate actions to take depend on the circumstances of the individual plan and its sponsors. Here are some thoughts to consider:

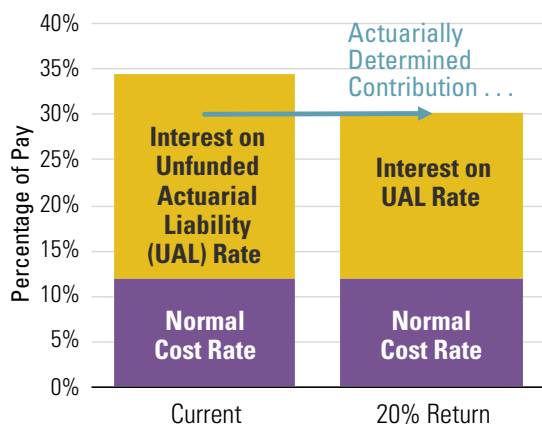
Underfunded Plans

Even with the handsome investment returns for the most recent year, most public pension plans are not 100% funded. The *unfunded actuarial liability (UAL)* is the difference between the plan's liability and its assets, and plans should have a strategy to close this gap within a reasonable period. Underfunded plans need to assess the adequacy and affordability of the current contribution level:

- **Contribution adequacy:** Plans should compare the contribution with the normal cost rate or the cost of additional benefits accrued for the current year divided by payroll plus interest on the UAL, referred to as the *tread water rate*. If the contribution is below tread water, the contribution is inadequate to reduce the UAL. Instead of using investment gains to reduce contributions, plans should consider shortening the amortization period or making other changes to increase the contributions above the tread water rate. At a minimum, they should not reduce the contribution rate until it exceeds the tread water rate (Figure 6).
- **Contribution affordability:** Assessing the affordability of contributions is a matter of judgment. If pension contributions impair the ability of plan sponsors to fund essential services provided by the governmental entity, they may not be affordable for more than a temporary period. It may then be necessary to use the investment gains solely to reduce employer contributions. If contributions are above the tread water rate and are considered affordable, there is room for a blended approach in which investment gains provide some reduction in contributions but are also used to accelerate amortizations, reduce the discount rate or strengthen other assumptions so the plan is better able to withstand future risks.

FIGURE 6

Don't Reduce Contribution Rates Until They Exceed Tread Water



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Education

67th Annual Employee Benefits Conference

October 17-20, Denver, Colorado

Virtual option available.

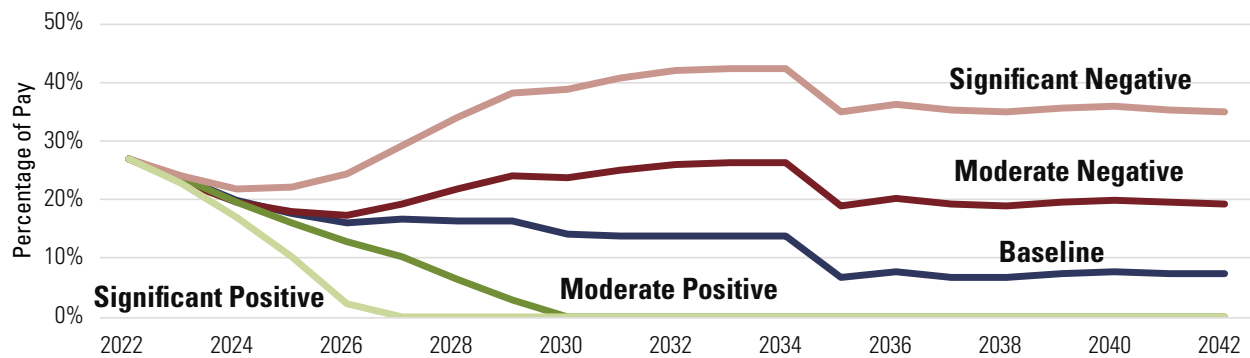
Visit www.ifebp.org/usannual for more details.

Overfunded Plans

With the recent investment returns, some plans will approach or exceed 100% funding for the first time in decades. These plans could consider reducing the risk in their investment portfolios. Plans conduct a cost-benefit analysis in order to select the level of risk for a plan's investment portfolio, and the trade-offs become very different as the plan exceeds 100% funding. Better investment returns cannot reduce contributions below \$0, so any tangible benefits of higher investment returns may be deferred far into the future. Conversely, investment losses may trigger immediate increases in contri-

FIGURE 7

Employer Contribution Rates Can't Go Below Zero Fully Funded Plans May Want to Reassess Risk Levels Depending on Future Investment Returns



Contributions. As a result, there may be less value in taking more investment risk than when the plan was less well-funded (Figure 7).

Conclusions

Actuaries have become accustomed to delivering gloomy forecasts, but today there are many reasons for optimism. The U.S. appears to be emerging from the worst of the pandemic; fiscal year ending June 30, 2021 investment returns were excellent; and the economy is growing relatively rapidly.

However, there is considerable uncertainty about the worldwide pandemic, economic growth and future investment returns. Plans should examine their sensitivity to these risks and consider using some of the benefits of the good investment experience to position themselves to better withstand future risks. 📌

Endnotes

1. Author's calculation based on iShares.com data for the total return on the iShares Core S&P 500 ETF and the iShares Core US Aggregate Bond ETF. Calculations assume monthly rebalancing.

2. Michael Leachman, "Projected State Shortfalls Grow as Economic Forecasts Worsen." May 20, 2020, www.cbpp.org/blog/projected-state-shortfalls-grow-as-economic-forecasts-worsen.

3. *2020 Excess Deaths in the U.S. General Population by Age and Sex*, Society of Actuaries, Rick Leavitt, May, 2021. While this study did not analyze the sources of the excess non-COVID deaths, preliminary data from the Centers for Disease Control and Prevention (CDC) indicates increases in deaths in 2020 due to heart disease, unintentional injuries, strokes, Alzheimer's disease and diabetes. F. B. Ahmad and R.N. Anderson, "The Leading Causes of Death in the U.S. for 2020." *JAMA*. 2021;325 (18):1829-1830. doi:10.1001/jama.2021.5469.

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Bill Hallmark ASA, EA, FCA, MAAA,

is a consulting actuary at Cheiron Inc. He is a nationally respected retirement consultant with more than three decades of experience

advising pension plans. He often speaks about public pension plans at industry conferences. Hallmark has held various positions with professional organizations, including vice president of pensions for the American Academy of Actuaries. He is an associate of the Society of Actuaries, an enrolled actuary under the Employee Retirement Income Security Act (ERISA), a fellow of the Conference of Consulting Actuaries and a member of the American Academy of Actuaries.



Karen Zangara, FSA, EA, MAAA, is

a principal consulting actuary at Cheiron Inc. She has more than two decades of experience as an actuarial consultant working with public, Taft-Hartley and single employer pension plans. She helps plan sponsors understand the potential risks their plans face and provides annual actuarial valuation results. She is a fellow of the Society of Actuaries, a member of the American Academy of Actuaries and an enrolled actuary under ERISA.



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