SECTOR IN-DEPTH
9 July 2024

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State and Local Government – US

Unfunded pension liabilities fall for fourth year in a row, down $3 trillion from peak

State and local government unfunded pension liabilities have under our estimates fallen by more than $3 trillion, or roughly 60%, since their peak in 2020, after declining for the fourth consecutive fiscal year. Results for fiscal 2024, ended June 30, were driven by strong investment performance and higher market interest rates. June 30 is the most common annual pension funding snapshot among US public pension systems, and we estimate that most achieved low double-digit investment returns, above their targets. While pension risk indicators continue to improve, the credit quality of many governments remains exposed to potential investment volatility, particularly those with a large scale of pension assets and those already making historically high contributions.

» **Pension investment returns exceeded targets in fiscal 2024.** We estimate that most public pension systems achieved investment returns of around 11% for the fiscal year that ended June 2024, well above targets which mostly range from 6.75% to 7.25%.

» **Higher interest rates continue to drive down the present value of accrued benefits.** The "lower for longer" environment is fading further into the rearview mirror. Interest rates on high-quality fixed-income securities with duration similar to governments' pension liabilities surpassed 5% as of June 30, 2024, the first such June 30 occurrence since 2011.

» **Stronger government contributions will continue to promote asset accumulation.** Fewer governments exhibit severe annual funding weakness compared with our tread water indicator than in years past. On the other hand, historically elevated contribution levels also translate to less capacity to absorb another round of material cost hikes. Pockets of the K-12 school district sector, facing declining enrollment and the end of extraordinary federal aid, may also be challenged by lingering costs to amortize past unfunded pension liabilities.

» **Exposure to volatile investment performance is still the biggest pension risk facing governments.** Despite the opportunity afforded by higher interest rates to de-risk asset allocations, US public pension systems' investments remain heavily allocated to volatile equities and alternatives, illustrated by the drag caused by real estate on an otherwise robust 2024 investment performance.

» **Cumulative downstream effects from inflation, such as materially rising salaries for active employees, will also continue to push upward on liabilities.** On the other hand, the pace of new cost-of-living adjustment (COLA) hikes has slowed along with the rate of inflation.

Pension investment returns exceeded targets in fiscal 2024

We estimate that US public pension systems achieved investment returns near the low double-digits for the fiscal year that ended June 30, 2024, above their annual targets, which typically range from 6.75% to 7.25%. Our return estimates reflect a composite of market indexes that we select and weight to reflect an asset allocation that mimics those generally selected by US public pension systems. The most common fiscal year end used by US public pension systems is June 30.

US public pension systems in some cases exhibit substantial variation in their asset allocations. For example, with the exception of a 0.5% allocation to private equity, the Teachers Retirement System of Georgia allocates about 70% of its $93 billion of investments to public equities and the remainder to fixed-income securities, most of which are US Treasurys. In contrast, Arizona's Public Safety Personnel Retirement System allocates about 38% of its roughly $20 billion in assets to public equities, and also invests significantly in alternative asset classes. The system's allocations to private equity and private credit were 23% and 14%, respectively, as of its most recent financial statements.

Our composite suggests that US public pension systems posted returns of around 10.6% in fiscal 2024, with public equities substantially boosting results and real estate providing the most significant drag on overall performance (see Exhibit 1).

While US public pension systems have not yet posted investment results for fiscal 2024, our composite nevertheless tends to serve as a highly correlated indicator. Through the first three quarters of fiscal year 2024, our composite tracked very closely with results posted by numerous large US public pension systems, including the South Carolina Retirement System, the Public Employees' Retirement Fund (PERF) segment of the California Public Employees' Retirement System (CalPERS), the State Teachers' Retirement System of Ohio (Ohio STRS) and the Florida Retirement System (see Exhibit 2).

Exhibit 1

US public pension systems achieved low double-digit investment returns in 2024

Fiscal year-end June 30, 2024 investment returns for Moody's composite of market indexes

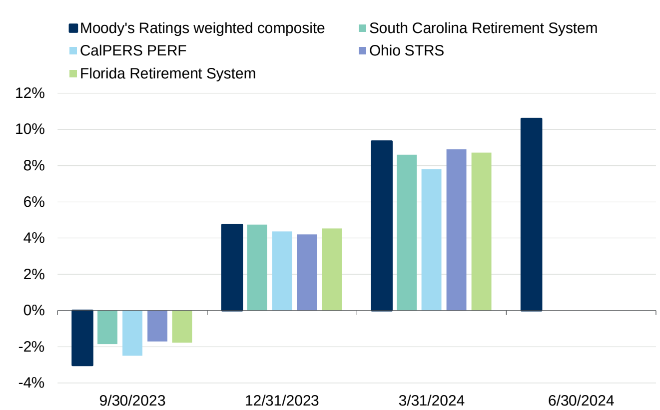
	Weight	FYE 6/30/2024
Domestic equity, large cap	36%	22.1%
Domestic equity, small cap	4%	8.4%
International equity	15%	11.2%
Emerging markets equity	5%	12.5%
Fixed income	20%	2.7%
Real estate	10%	-12.0%
Private equity	10%	6.5%
Weighted composite	**100%**	**10.6%**

Column to furthest right does not sum. Weighted composite reflects weighting of each asset class.
Sources: Various market indexes and Moody's Ratings

Exhibit 2

Our weighted composite tracked closely with returns posted by large US public pension systems through the first three quarters

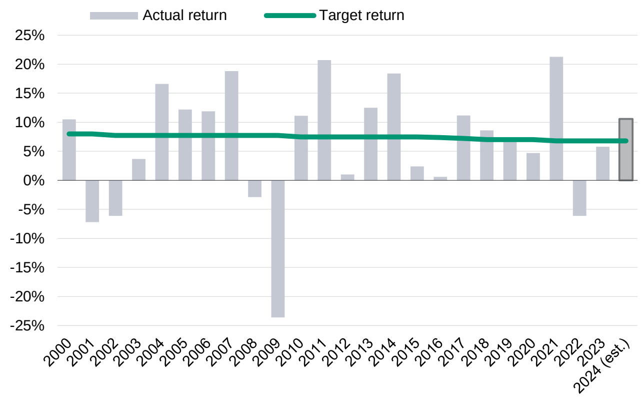
Fiscal 2024 returns to date, by quarter



Sources: Retirement System investment reports and Moody's Ratings

Applying our weighted composite as a 2024 investment return estimate for CalPERS (the largest US public pension system), the system has now likely beaten its target return in two of the past five years, and 13 of the last 25 fiscal years (see Exhibit 3). Again incorporating our 10.6% weighted composite as an estimate for fiscal 2024, CalPERS' 5-year annualized investment return is 6.9%, just above its current 6.8% target, while annualized returns over the past 10, 20 and 25 years are 6.4%, 6.8% and 6.0%, respectively, below the system's target return (see Exhibit 4).

Exhibit 3
Our composite suggests that US public pension systems have beaten their target returns in 13 of the past 25 fiscal years
CalPERS' annual investment returns versus target



Sources: CalPERS and Moody's Ratings

Exhibit 4
We estimate that CalPERS' returns are tracking above target over the past five years, but below target over 10- and 25-year horizons

Moody's estimates, applying our 2024 weighted composite	
One-year return	10.6%
5-year annualized return	6.9%
10-year annualized return	6.4%
20-year annualized return	6.8%
25-year annualized return	6.0%

Sources: CalPERS and Moody's Ratings

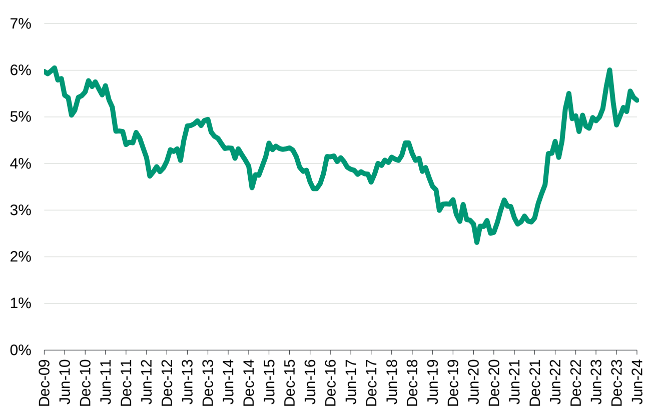
Higher interest rates continue to drive down the present value of accrued benefits

The rise in market interest rates over the past three fiscal year-end snapshots has pushed down the present market value of state and local governments' total pension liabilities substantially. Interest rates on high-quality fixed-income securities with duration similar to governments' pension liabilities surpassed 5% as of June 30, 2024, the first such June 30 occurrence since 2011 (see Exhibit 5).

Total pension liabilities are the market value of accrued benefit promises, independent of the assets set aside to pay for them. Taking into consideration our 10.6% investment return estimate for fiscal year 2024, and also applying the FTSE pension liability index (PLI) of 5.35% as of June 30, 2024, we estimate that state and local governments' adjusted net pension liabilities (ANPLs) have now fallen to about $2.5 trillion in aggregate, down almost 60% from a peak of $6 trillion in 2020. By comparison, we estimate that net pension liabilities reported under Governmental Accounting Standards Board rules (GASB NPLs) have now fallen to just below $1 trillion, reflecting a median discount rate of 6.9%.

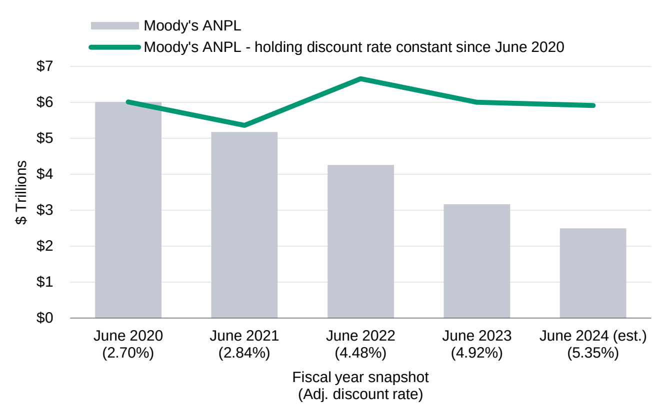
The FTSE PLI has risen by 265 basis points since June of 2020. The FTSE PLI is a high-grade corporate bond index with duration similar to pension liabilities, and the increase in rates is almost entirely responsible for the steep decline in ANPLs. For example, if we were to keep discount rates constant since June 2020 (i.e., apply a 2.7% discount rate), we would size state and local governments' ANPLs at $5.9 trillion instead of $2.5 trillion (see Exhibit 6).

Exhibit 5
Adjusted pension discount rates have been above 4.5% since mid-2022...
FTSE Pension Liability Index



Source: Society of Actuaries

Exhibit 6
...which has pushed down ANPLs by more than $3 trillion in aggregate



Sources: Board of Governors of the Federal Reserve System and Moody's Ratings

Stronger government contribution levels will continue to promote asset accumulation

Far fewer governments exhibit material contribution shortfalls relative to our tread water indicator than in years past, in many cases because of multiyear increases in contributions. Our tread water indicator is the contribution required by governments to prevent their reported unfunded pension liability from growing, year-over-year, in nominal dollars.

Using the more than 3,000 K-12 school districts that we rate as an illustrative example, in fiscal 2015 reporting, 52% had a “tread water gap,” meaning their pension contributions fell below our tread water indicator. More than 12% of the K-12 school districts in our rated portfolio had a tread water gap that amounted to more than 2.5% of operating revenue in the same year, while slightly more than 2% have a tread water gap that was more than 5% of their revenue.

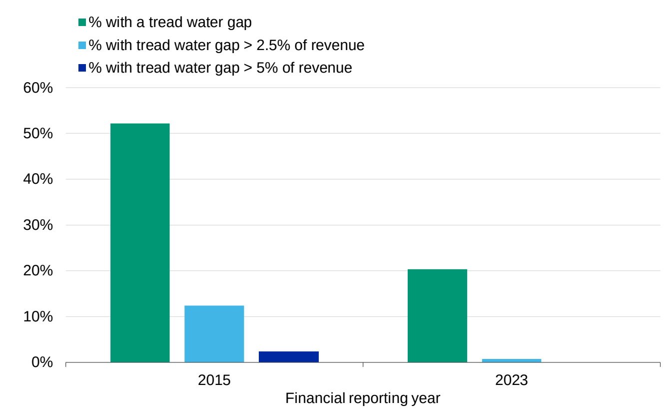
As of their most recently available fiscal 2023 financial reporting, the portion of K-12 schools we rate with a tread water gap declined substantially. Only 20% had a tread water gap, while slightly less than 1% had a tread water gap amounting to more than 2.5% of operating revenue. We currently have no K-12 school districts in our database with a fiscal 2023 tread water gap that amounts to more than 5% of revenue (see Exhibit 7).

In some cases, a key driver of fewer and smaller tread water gaps has been consistent and material hikes in government pension contributions. In addition to K-12 school districts, other local governments, such as cities, have absorbed materially higher per unit pension costs than a decade ago. For example, government contributions to one of the largest police pension systems administered by the Arizona Public Safety Personnel Retirement System amounted to 34% of payroll (i.e., a pension contribution of 34 cents for every dollar of active employee salary) in the year ended June 30, 2014, an amount that rose to 91% of payroll as of fiscal 2023. Fiscal 2022 and 2023 represented a positive funding turning point: tread water gaps for this illustrative system flipped to -2% and -16% of payroll, respectively, meaning contributions surpassed our tread water indicator after about a decade of annual shortfalls (see Exhibit 8).

Exhibit 7

The proportion of governments with material pension tread water gaps has fallen...

Percentage of K-12 school districts we rate with a given tread water gap

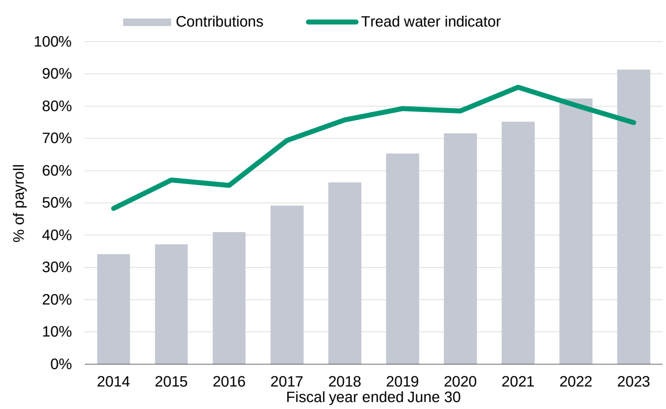


A government with a tread water gap has contributions below our tread water indicator
Source: Moody's Ratings

Exhibit 8

...in many cases due to substantially higher contributions than in years past

Example Arizona city police pension funding, as percentage of payroll



Sources: Arizona Public Safety Personnel Retirement System and Moody's Ratings

Pension contributions that are closer to or exceed our tread water indicator are better for government credit quality than the opposite - i.e. those that systematically increase unfunded liabilities. When governments contribute “more and sooner” toward their pension liabilities, they promote more rapid asset accumulation and reduce the risk of challenging pension cost hikes arising in the future.

The continual demographic maturing of US public pension systems – meaning they are increasingly retiree-heavy – results in annual benefit outflows that are often rising in both nominal and relative terms. A growing scale of benefit outflows tends to drive non-investment cash flow (NICF) into a negative position, meaning benefit outflows exceed contributions coming in. Higher contributions from governments help to counteract the drag on asset accumulation that occurs from the combination of what would otherwise be materially negative NICF and annual investment return volatility.

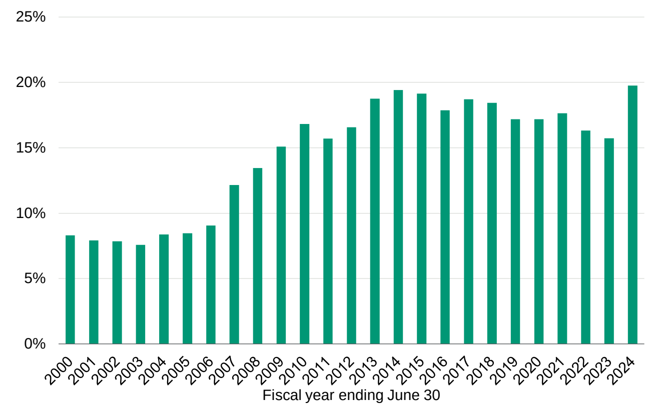
But the downside to what are, in many current cases, historically high government contributions is potential difficulty accommodating another round of cost hikes, which could be required in the case of an event such as a major market decline.

As an illustrative example, the Actuarially Determined Contribution (ADC) for governments that participate in the Teachers Retirement Association of Minnesota (MN TRA) reached 20% of payroll (i.e., active employee salaries) in fiscal 2024, more than double the rate at the beginning of this century (see Exhibit 9). Concurrently, the scale of MN TRA's assets at the end of fiscal 2023 stood near its highest level ever: 466% of payroll (see Exhibit 10). The scale of assets to payroll, often referred to as an “asset volatility ratio,” provides an indication of the sensitivity of government contributions to adverse investment performance. The higher the asset volatility ratio, the more that government contributions must rise in response to a given level of investment loss.

Exhibit 9

Many governments face historically high pension contribution requirements...

MN TRA actuarially determined contributions as percentage of payroll

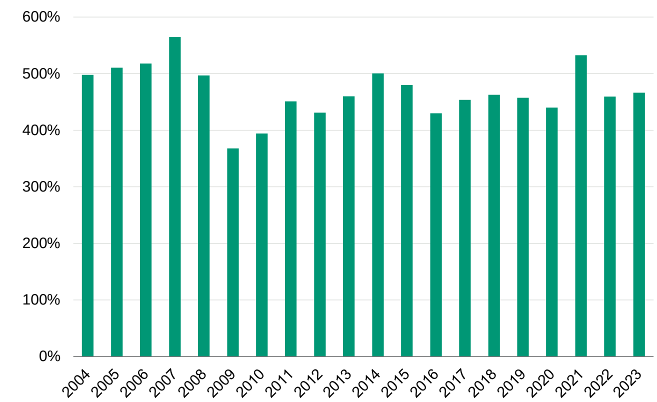


Source: Teachers Retirement Association of Minnesota

Exhibit 10

...concurrent with near-historic contribution sensitivity to investment losses

MN TRA asset volatility ratio (assets as percentage of payroll)



Source: Teachers Retirement Association of Minnesota

Pockets of the K-12 school district sector are experiencing credit quality headwinds, in some cases reflecting drops in enrollment concurrent with the end of extraordinary federal aid. Strong fiscal 2024 pension investment performance will drive moderate declines in their future pension costs compared with baseline expectations, but these entities are still unlikely to receive material relief from pension contribution requirements because of the lingering costs to amortize past unfunded pension liabilities.

Exposure to volatile investment performance is still the biggest pension risk facing governments

Earlier this year, we assessed that a steep investment market decline is the primary event that would reignite pension risks for US state and local governments. While fiscal 2024 has now closed and continued a multiyear trend of falling pension risks for governments, our assessment remains unchanged.

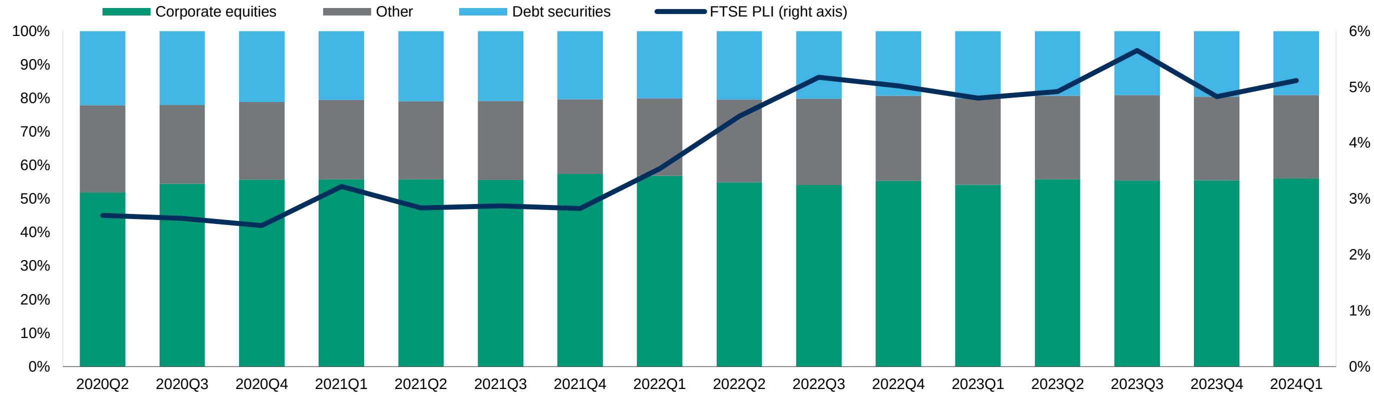
US public pension systems' allocations to “risk-on” assets such as equities and alternatives remain high, even though higher interest rates have offered public pension systems an opportunity to shift their allocations toward lower-volatility asset classes such as high-grade fixed income with less sacrifice of return potential. Our composite, weighted to reflect typical US public pension system asset allocations, is heavily weighted toward asset classes with high volatility such as public and private equities, and real estate. The significantly negative returns that we estimate for real estate for fiscal 2024 illustrates this point.

The June data release of the Federal Reserve's “Financial Accounts of the US,” which covers up to a March 2024 snapshot, shows little deviation from historical allocations to equities and fixed income since interest rates have risen. While the FTSE PLI increased by 241 basis points from June 2020 to March 2023, US public pension asset allocations have remained essentially unchanged, with equities averaging 55% of assets across the Fed's snapshots, and debt securities comprising 20% on average over the same period (see Exhibit 11).

Exhibit 11

US public pension asset allocations have yet to shift in any significant way, despite rising rates

Asset allocation of state and local government defined benefit pension funds vs. FTSE PLI



Sources: Board of Governors of the Federal Reserve System and Moody's Ratings

Cumulative downstream effects from inflation, such as materially rising salaries for active employees, will also continue to push upward on liabilities

While not as significant a risk as exposure to investment return volatility, the effects of inflation continue to represent a pension risk for governments, primarily because of upward pressure on government employee wages. Higher interest rates result in a lower point-in-time market value of liabilities by pushing up the discount rates used to determine the *present value* of benefits, but they do not on their own change the *projected benefit cash flows*. Inflation, on the other hand, can cause projected benefit cash flows to grow through two primary mechanisms: higher cost-of-living adjustments (COLAs) and higher-than-assumed growth in active employee salaries.

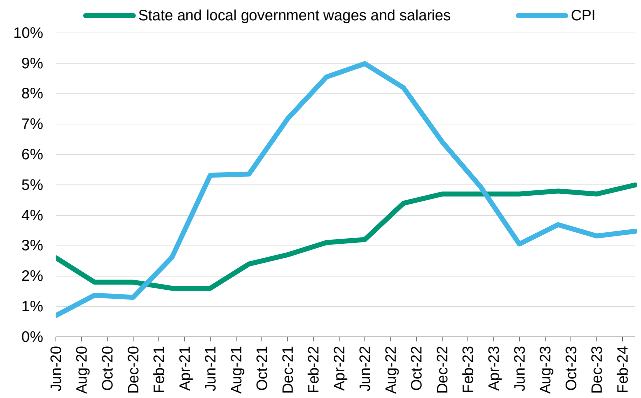
The most recent peak in inflation occurred in 2022, when the Consumer Price Index for Urban Consumers showed year-over-year growth above 5% in each month from June 2021 through December 2022. During this period rising public pension COLAs caused “actuarial losses” (i.e., new unfunded liabilities) to materialize in a number of cases. For example, the Connecticut State Teachers' Retirement System posted an $806 million actuarial loss associated with higher-than-assumed COLAs in fiscal 2022, about 2% of total liabilities at the beginning of that year. During the peak inflation of 2022, however, state and local government employee salaries and wages were not yet rising at this year's pace. According to the US Bureau of Labor Statistics, state and local government wages and salaries are now growing at the fastest annual pace in recent history, at 5% (see Exhibit 12).

This pace of wage growth exceeds the annual growth in payroll often assumed in US public pension systems' actuarial valuations, and thus generates an actuarial loss because employees' final salaries are a key input into the formula that ultimately determines pension payouts in retirement. For example, the Public Employees' Retirement Association of Colorado (CO PERA) posted an actuarial liability experience loss of $1.2 billion across its five different “divisions” during its fiscal year that ended December 31, 2023. Of the $1.2 billion, $792 million was attributable to pay increases for employees in all five divisions that exceeded what was assumed for actuarial valuation purposes (see Exhibit 13).

Exhibit 12

The pace of inflation has slowed, but growth in state and local government salaries is still catching up

Percentage change from 12 months prior

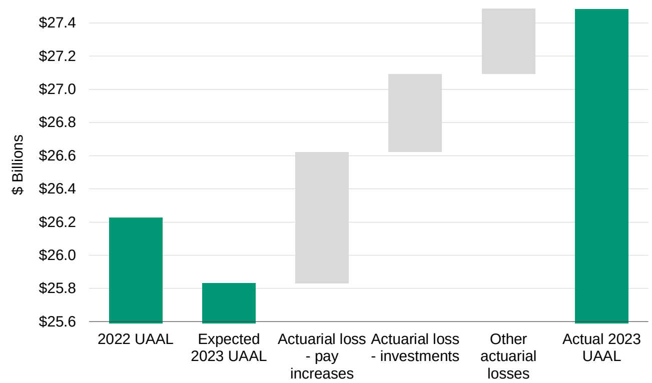


Source: US Bureau of Labor Statistics

Exhibit 13

Higher-than-expected pay increases were the largest driver of growth in reported unfunded liabilities for CO PERA

CO PERA actuarial experience, fiscal year ending December 31, 2023



UAAL stands for "unfunded actuarial accrued liability"

Source: Public Employees Retirement Association of Colorado

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