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## Taming a whale lurking in pension financing

By Bruce Deal

**A**cross the nation, major debates are breaking out about public sector pensions. In the private sector, the defined benefit pension program is just about extinct. The reality for nearly all private-sector employees, especially newly hired employees, is a 401(k) plan or similar self-directed defined contribution retirement vehicles where the risk is transferred to the employee.

In the public sector, things have often gone in the other direction. In states like California, guaranteed monthly retirement payments have not only remained in place, but in many cases the payouts were made even more generous over the past 10 to 15 years. Given the recent turmoil in financial markets and declines in investment returns, suddenly these pension obligations are getting much more attention, and rightly so.

A good place to start is to think about the pensions of public safety officers in California, which are among the most generous anywhere. Under the law, after 30 years of service, officers can generally retire at 90% of their final compensation. That monthly retire-

ment benefit will then be increased each year based on a cost-of-living increase. Consider a 25-year-old who starts working at an annual salary of \$50,000 per year. Given annual increases and promotions, let's say his salary grows at 4% per year, reaching \$156,000

Ignoring the risk to future taxpayers from generous defined benefit plans is **irresponsible**, especially in light of market turmoil, low investment returns and highly uncertain future returns.



per year 30 years later at age 55. He or she then starts drawing a pension of 90% of \$156,000, or approximately \$140,000, per year (and growing by an annual cost-of-living adjustment which we'll assume to be 2%) from age 55 until he or she dies at the national

average age of 85. So this retired officer would collect that pension a total of 30 years.

Over the career and retirement, he or she will be paid a total of \$2.8 million in salary and \$5.9 million in pension benefits. So how can this scheme possibly work? The mathematical answer is through setting aside money along the way and the magic of compounding.

At their core, pensions are nothing more than a big pot of money that builds up through annual contributions and investment earnings, hopefully reaching enough at the retirement point to last until the retiree dies. The pot of money is pooled across employees, which allows managers to plan for the average employee rather than the maximum case.

In the public sector, retirement benefit levels are established by law and are separate from the control of the pension managers. This leaves two things for pension managers to do. First, they can decide how much to ask governments to contribute — as a percentage of current salary — to the pot of money each year. Second, they can decide where to invest the money, hoping for

investment returns.

This leads to the whale that lurks ready to eat government budgets.

Smart people with spreadsheets can determine how things will work out at various levels of contributions and earnings. The \$209.7 billion California Public Employees' Retirement System currently uses 7.75% as its estimate of future investment earnings. Using that figure and solving for the unknown variable of annual contributions, one can determine that an additional amount equal to 24% of each employee's salary would need to be sent to CalPERS every year in order for the pot of money to build up during 30 working years and then last just to the point where our average public safety employee dies at age 85.

What would the pot of money look like over time? Contributions during the working years would total \$682,000. At 7.75% earnings, this grows to nearly \$2 million at the retirement age of 55 through the magic of compounding. The pot would decline rapidly during retirement due to the fact that there is no more inflow of new contributions, yet the outflow of retirement funds is not only fixed but actually growing each year by the cost-of-living adjustment.

**W**hen I first started working on insurance and annuity matters, this pension finance concept was made memorable by a clever actuary who referred to its shape of the inflow of contributions and investment growth and outflow of pension payments as "the whale."

Now one can analyze the potential for this whale to consume public budgets. As a starting point, consider what happens if the public officials diligently

set aside 24% of the salary cost each year, but the investment managers only earn 4% investment returns instead of 7.75%. CalPERS' 10-year net return, ended April 30, is an annualized 3.46%, according to the system.

Suddenly the whale does not build up to \$2.1 million and run out of money at the perfect point at age 85; instead, the whale builds up to only \$1.1 million and this is entirely used up by age 64. For the next 21 years, the taxpayers are on the hook for \$4.6 million in additional payments.

So let's say that we all agree 7.75% is overly optimistic, and instead decide that CalPERS should start using 6% or 7% as a more realistic expected future return. If one keeps contributions at the same level, the whales are still puny versions of the needed whale, running out of money at ages 69 and 75 respectively and resulting in millions of dollars in future taxpayer obligations for just this one employee.

This financing problem starts to give a sense of the value of the guarantee given to employees. To make the whale work out if earnings are 7% instead of 7.75%, contributions need to be increased from 24% to 30%, starting the first date of hiring. If earnings are 6%, contributions need to be a whopping 39% of salary cost.

Adopting a "wait-and-see" attitude only makes things worse if one turns out to be wrong. What if the government sets aside 24% for the first 15 years and only then realizes that 6% is the realistic long-term likely earnings? To make the whale big enough to last to age 85, taxpayers would need to set aside 59% of salary cost for the last 15 years of the employee's career.

Some will argue this is an overly sim-

plistic analysis, and there are certainly actuarial calculations that try to account for various factors and smooth contributions over time. But the fundamental math is rock solid, the future obligations are huge and fixed, and future returns are risky and unknown.

To avoid having an undersized whale in the face of potentially lower returns will require some combination of reducing benefits for future employees, reduced future COLA pension increases, increasing retirement age and increasing annual contributions to the pool of money. For example, if the benefit levels were reduced to 56% of final salary instead of 90%, contributing 24% of salary and earning 6% would build up a big enough whale to last until age 85. Or if our employee had to work until age 62 before retiring at 90% of final salary, 24% in contributions and 6% in earnings would be sufficient. Modifying some or all of these factors can dramatically lower the risk of an undersized whale.

Ignoring the risk to future taxpayers from generous defined benefit plans is irresponsible, especially in light of market turmoil, low investment returns and highly uncertain future returns. It may turn out that 15 or 30 years from now the 7.75% assumption would have been fine. But requiring taxpayers to take this one-sided bet creates an enormous potential for the pension whale to consume the budgets of our children and grandchildren. ■

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