Discounting Pension Obligations for State Employees

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Nature of the Obligations

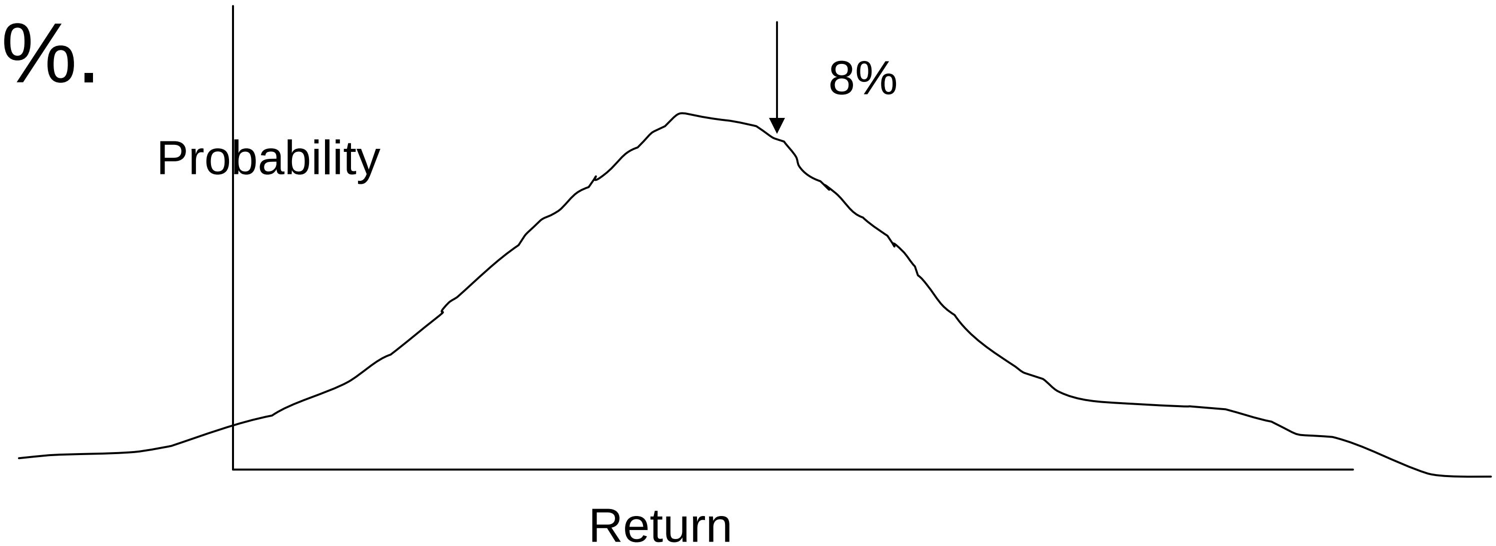
- I assume that these pension obligations are certain. They will be payable “come hell or high water.”
- The issue to be discussed is the appropriate discount rate to apply to the liabilities to determine their present value and compare the resulting number with the current value of the asset portfolio.

Current Practice

- 8% discount rate, where the 8% represents the expected net-of-expenses nominal rate of return on the portfolio. An 8% nominal rate of return translates to about a 4.5 – 5.5% real, inflation-adjusted, ROR. State assumes 4.75%.
- Is 8% a reasonable assumption regarding the expected net return on Calpers' portfolio (62% equities, 24% fixed income, 6% private equities and 8% real estate? Answer – YES
- By asset class – expected return: equities = 10%, bonds = 6%, PE = 15%, RE = 8%

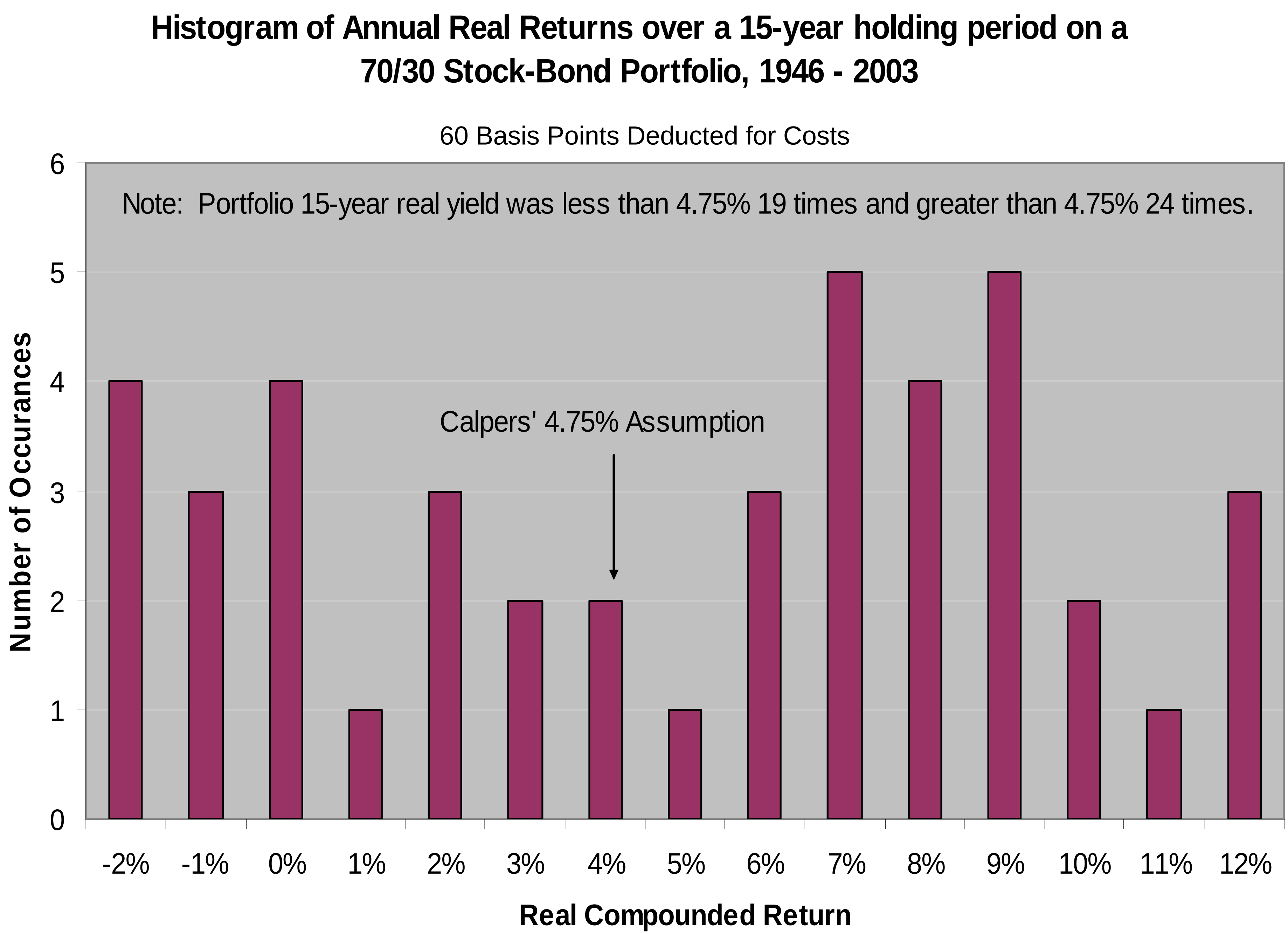
Probability that Assets Will Be Sufficient…

- If 8% is the correct value for the expected return on the portfolio, that means that there is at least a 50% chance that the assets will fail to deliver the 8%. In fact, the median or most likely outcome is less than 8%.



Mismatch of risks…

- Liabilities are certain (i.e. safe)
- Assets being used to finance liabilities are risky. They have somewhat less than a 50% percent chance of overachieving 8% and being more than adequate to finance liabilities. There is somewhat more than a 50% chance that 8% will not be achieved. The returns might be close to 8%, but they could be much lower (or much higher) even over relatively long investment horizons.


Histogram of Annual Real Returns over a 15-year holding period on a
70/30 Stock-Bond Portfolio, 1946 - 2003
60 Basis Points Deducted for Costs
Note: Portfolio 15-year real yield was less than 4.75% 19 times and greater than 4.75% 24 times.
Calpers' 4.75% Assumption
Number of Occurances
0
1
2
3
4
5
6
-2%
-1%
0%
1%
2%
3%
4%
5%
6%
7%
8%
9%
10%
11%
12%
Real Compounded Return

Safety Requires Discounting Certain Liabilities with Safe Assets

- Safe nominal corporate interest rates are approximately 6 percent nominal, 2.75 percent real. Reducing returns for administrative and management costs might leave 5.4% nominal and 2.15% real.
- The point of this that financing absolutely certain obligations with risky assets leaves the taxpayers in a risky situation. The assets have about a 50% chance of failing to achieve their expected return.

Corporations are using similar discounting methodologies and assumptions

- DB plans are rapidly losing ground in the corporate world, in part because of the risk and uncertainty about funding costs. Almost no firms are starting DB plans.
- Corporate DB liabilities are not quite as certain as state government liabilities because if things go really badly a corporation can turn its liability over to the PBGC. That is, it is not a hell or high water obligation.

Bottom Line

- The theoretically correct thing to do is to discount safe obligations with a safe discount rate. That would imply something like a 5.5% discount rate.
- CALPERS practices are mainstream. 8% is a reasonable rate for the expected rate of return. But, even if CALPERS were fully funded using that discount rate, there is a good chance that the assets will underperform the 8% benchmark and the taxpayers will face additional obligations.