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How Much Investment Risk Should Pension Funds Take?

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Over the past several decades, public pension funds are known to have substantially changed their risk profiles, going from mostly-bonds portfolios in the 1980s to investing the bulk of their money in equities and alternative assets today. How did this happen, and how much risk taking is appropriate for those pension funds? Donald Boyd and Yimeng Yin at the Rockefeller Institute of Government provide a valuable analysis to answer these questions in a recent report.

The report contrasts the behavior of public pension plans with that of private ones. Facing declining interest rates over the past thirty years, private plans have reduced their discount rates accordingly while public plans have had their discount rates mostly stuck in the 7%-8% range.

The difference is rooted in the regulatory environment. Private pension plans in the U.S.—as well as private and public plans in Canada, the U.K., and the Netherlands—are governed by rules and standards that demand using market-valued interest rates, which reflect the risks of pension liabilities, as the discount rates for funding purposes.

U.S. *public* plans, on the other hand, can set the discount rates based on their assets' expected returns. Since it is easier to change pension assets' characteristics (by changing the investment portfolio) than to change the risks of pension liabilities, U.S. public plans have more leeway in setting the discount rates than their private counterparts. And since higher discount rates mean lower reported liabilities and lower required contributions in the short term, public plans have strong political incentives to maintain the high discount rates, despite the substantial decline in interest rates. (For more on how discount rates work, see our paper from 2015 on discount rate best practices).

By linking discount rates to expected returns on assets, public plans therefore must take ever-greater investment risk to preserve their high discount rates in the face of ultra-low interest rates. The Rockefeller report shows while state and local pension funds used to be the more conservative investors, they now hold a greater share of equity-like investments than private pension funds. According to Boyd and Yin, there was very little volatility in public pension fund portfolios in 1985 — the standard deviation of annual investment returns equaled 2.7% of state and local government tax revenue in 1985. That number rose tenfold to 27% in 2016.

This additional risk is quite significant (and also covered in similar research.)

Boyd and Yin also address a few misconceptions about investment risk, including the myth of time diversification and the belief that government can take more risk since they "never go out of business." The discussion of these misconceptions provides an important insight: that the expected return does *not* become more certain to be achieved in the long term, and that there is no guarantee that the long-run expected return itself is accurately estimated in the first place. The elusive nature

of estimating the long-run expected return therefore constitutes an important investment risk besides the ordinary return volatility.

All of this analysis leads to a major question: how much investment risk, if any, that a pension fund should take? Based on a review of academic research, the report suggests that there may be a case for public pension funds to adopt a form of asset-liability matching where pension funds would invest in assets that share the bond-like properties of pension liabilities (those liabilities ideally being valued using a market value). With this approach the values of assets and liabilities will move together, minimizing funding risk. This is also consistent with the recommendation provided in a recent draft paper written by a pension finance task force sponsored by the American Academy of Actuaries (AAA) and the Society of Actuaries (SOA).

In short, public pension funds should take far less investment risk than they are currently doing. This also implies lower return assumptions and higher required contributions. Taking these actions are not easy for many state and local governments, but they will improve the benefit security of public plan members and help ensure intergenerational equity for taxpayers.