To: **Michigan State Senators P. Pavlov and M. Jansen**
From: **Josh B. McGee, Ph.D., Vice President for Public Accountability Initiatives**
Subject: **Response to Questions from the Michigan Legislature**
Date: **07-13-2012**

Summary

Both hybrid and defined contribution (DC) retirement savings plans can be structured to provide a secure retirement for employees and to meet the needs of modern government employers. When deciding on a retirement savings plan, policy makers should fully weigh the benefits of a particular plan structure against its costs and risks. However, it is too often the case that policy makers lack sufficient information to adequately evaluate retirement policy alternatives. This has been the case in Michigan where legislators have struggled with important questions as they consider closing the Michigan Public School Employees Retirement System's (MPSERS) hybrid plan (defined benefit-defined contribution) and placing new public school employees in a defined contribution retirement savings plan.

Two questions have arisen that are of particular policy importance:

1) *How risky is the defined benefit (DB) portion of the hybrid plan, and what are the cost implications of this risk?*

2) *If the state closes its DB pension plan, does it have to accelerate amortization payments on the unfunded liability, and if not, what are the credit implications for the state?*

It is important for policy makers to understand that the DB portion of the hybrid retirement plan is risky. The majority of the benefit promised to employees under the DB is funded through the plan's investment returns. When returns underperform, cost rises. A complete analysis of DB cost must incorporate plan risk.

The discussion section below details the probability of achieving various investment returns and the cost implications of missing the plan's investment target. Using the risk parameters for MPSERS's target portfolio, the plan has a 62 percent chance of achieving an average investment return that is greater than or equal to its target, 7 percent, over 20 years and a 65 percent chance over 30 years. If the plan were to realize an average return of 6 percent instead of its assumed 7 percent over a long period, average annual cost would increase by between 3 and 5 percent of payroll. A relatively small miss on investment returns can lead to significant cost increases. Policy makers must decide whether they are comfortable with this risk and its cost implications, or if they would prefer to further de-risk the state's public employee retirement systems.

In recent years, expanding unfunded liabilities and rising cost have led several states to make changes that limit future retirement liabilities and de-risk their public employee retirement systems. Across the board, credit ratings agencies have viewed these changes as credit positive. Yet some continue to argue that accounting rules create short-term costs that restrict states' ability to make these types of credit positive reforms, and that deviations from these rules could have negative credit implications. The Laura and John Arnold Foundation's Policy Perspective *"GASB Won't Let Me"- A False Objection to Public Pension Reform* (2012) debunks this notion. The discussion section below contains more information on this issue.

The most apropos example from the paper for Michigan's current policy choice is that of Alaska. The legislature closed the state's DB in 2005 and placed new employees in a DC. Alaska initially accelerated payments on its unfunded liability, but in the second year after the change, they moved back to an increasing payment schedule. Alaska's credit rating was subsequently upgraded both in 2008 and 2012. The state now boasts the highest rating (AAA) from Standard and Poor's (S&P). Far from having negative credit consequences, the changes the state made to its retirement savings system were cited as one of the primary reasons for the upgrades.

Public employee retirement policy is both technically complex and politically charged. It is important that policy makers are able to fully consider the implications of the choices that they face, a task that can be quite difficult when bombarded with a host of competing claims. This memo seeks to provide a measure of clarity for the key question at hand:

Does the current hybrid pension plan deliver benefits that fit the state's education workforce needs at a reasonable level of cost and risk, or would a DC, similar to the one currently provided for other state employees, be a better fit?

Discussion

Question 1 – Traditional DB Plan Risk

Traditional DB plans promise an average investment return equal to the plan's investment return assumption. The system's estimate of the plan sponsor's annual cost (normal cost) is predicated on this assumption. If the plan fails to achieve investment returns that on average meet or beat its investment return assumption, the plan sponsor must increase its contributions to deliver the promised benefits. The plan sponsor's annual cost is, therefore, fully dependent on investment performance, which is inherently risky.

Too often the plan sponsor's annual cost estimate is presented in a way that leads policy makers to believe that the cost of a traditional DB is more predictable or certain than it truly is. This has been the case in Michigan. The Office of Retirement Services (ORS) memo on DC cost dated

08-23-11 acknowledges that the cost of the DB portion of the hybrid plan is dependent on an average annual investment return of 7 percent. However, the memo fails to provide any measure of the uncertainty associated with a 7 percent investment return promise. The ORS compares the risky contribution estimates for the current hybrid plan to the riskless contributions of a DC. This is a flawed approach that can lead to incorrect conclusions. A more complete approach would provide an analysis of the risk associated with a 7 percent return promise and an explanation of the cost implications of that risk.

R.V. Kuhns & Associates, Inc. provided measures of risk associated with various portfolio configurations for MPSERS in its June 2011 report (link provided in references section). Page 27 of this report provides the key numbers. MPSERS's target portfolio has an expected annual investment return of 7.94 percent with a standard deviation of 13.59. If we make the assumption that the plan's returns are normally distributed (bell shaped) and stationary, we can easily predict the probability of achieving an average annual return of 7 percent or greater over a long period. The table below provides the probability of achieving various investment returns over 20-year and 30-year time horizons. Given the parameters above, the probability the plan achieves at least a 7 percent average annual investment return is 62 percent over 20 years and 65 percent over 30 years.

Investment Return	Probability the plan gets at least this average return over 20 yrs.	Probability the plan gets at least this average return over 30 yrs.
5.00%	83%	88%
5.25%	81%	86%
5.50%	79%	84%
5.75%	76%	81%
6.00%	74%	78%
6.25%	71%	75%
6.50%	68%	72%
6.75%	65%	68%
7.00%	62%	65%
7.25%	59%	61%
7.50%	56%	57%
7.75%	52%	53%
8.00%	49%	49%
8.25%	46%	45%
8.50%	43%	41%
8.75%	39%	37%
9.00%	36%	33%

So, what about the cost implications of missing the investment return target? The cost of lower (or higher) than anticipated investment returns over a long period is dependent on three values: 1) total annual contributions, 2) the size of the asset base,[1] and 3) the magnitude of the investment return miss. Of these three, the size of the asset base, specifically the size of the asset base relative to payroll, has the largest cost implications. This ratio can be thought of as the system's leverage. Investment return misses on a small base relative to payroll will only slightly increase annual cost; however, as the base grows, so does the cost of long-term investment return misses.

Given the importance of leverage, it is imperative to analyze the system in steady state when estimating the cost. Using figures for a system that has not yet matured, as the ORS did in its memo, will understate the cost of investment return misses because the asset base of new plans grows dramatically over the first few years of its existence. This is the case for the hybrid system that currently has assets that are less than payroll, but by 2041 it will have assets that are greater than 3.5 times payroll. In steady state, we would expect the ratio of assets to payroll to be roughly constant.

The table below provides estimates for the increase in annual cost that would be necessary to make up for long-term investment return misses.[2] The table provides these estimates for two different ratios of assets to payroll. The column on the left presents figures for a system that has leverage roughly equal to the current level for the full MPSERS (assets/payroll of 6.5, the current ratio for MPSERS is 6.41), and the column on the right presents figures for a system that is similar to the predicted values for the MPSERS hybrid in 2041 (asset/payroll of 3.5). If a plan in steady state with an asset to payroll ratio of 3.5 realized an average annual investment return of 6 percent rather than 7 percent in the long-term, annual employer contribution would need to be 3.19 percent of payroll higher to deliver the same benefits level. Importantly, this value is larger than the 3.08 percent of payroll difference between employer contributions to the hybrid system versus the state's DC system.

[1] In a fully funded plan assets would equal the accrued liability. Thus, in this formulation assets and accrued liabilities are interchangeable.

[2] These calculation use the assumptions presented in the GRS actuarial valuation dated September 2011. The anticipated hybrid payroll was provided in the ORS's 8-23-2011 memo.

Annual Average Investment Return	Normal Cost Increase	Normal Cost Increase
Ratio Assets to Payroll	6.5	3.5
8.00%	-5.82%	-3.14%
7.75%	-4.38%	-2.36%
7.50%	-2.92%	-1.58%
7.25%	-1.47%	-0.79%
7.00%	0.00%	0.00%
6.75%	1.47%	0.79%
6.50%	2.95%	1.59%
6.25%	4.44%	2.39%
6.00%	5.93%	3.19%
5.75%	7.43%	4.00%
5.50%	8.94%	4.81%
5.25%	10.45%	5.63%
5.00%	11.98%	6.45%

Question 2 – Credit Implications of a Transition to Defined Contribution

When evaluating retirement savings policy options, the issue of transition cost is often raised. The contention holds that the Government Accounting Standards Board (GASB) accounting standards necessitates an increase in the amortization schedule of the unfunded liability when closing the old DB system and moving to a new retirement savings plan. This is not true in theory or in practice. The Laura and John Arnold Foundation's Policy Perspective, *"GASB Won't Let Me"- A False Objection to Public Pension Reform* (2012), debunks this claim both in the abstract and with real world examples.

Regardless, GASB is set to do away with the impetus for this claim, the annual required contribution (ARC), in its most recent revision that was approved in June of 2012. GASB Statements 67 and 68, which are set to replace Statements 25 and 27 for fiscal years beginning after June 15th of 2013, move the accounting standards away from funding recommendations and focus more on reporting. GASB put it very clearly in their plain language explanation of the changes (link provided in references section).

> The Statements do not address how governments approach pension plan funding—a government's policy regarding how much money it will contribute to its pension plan each year. While there has been a close relationship between how governments fund pensions and how they account for and report information about them until now, the new

guidance establishes a decided shift from the funding-based approach to an accounting-based approach. The Board crafted its new Statements with the fundamental belief that funding is squarely a policy decision for elected officials to make as part of the government budget approval process.

Policy makers in Michigan have raised the follow-up question of how creating their own funding policy for the unfunded liability would be viewed by the credit ratings agencies. Alaska is a great case in point. In 2005, Alaska closed its DB and placed new employees in a DC. The state accelerated payments on the plan's unfunded liability in the first year after the switch, but in the second year moved back to a level percentage of the payroll amortization schedule. The state's credit rating was not hurt by the change or by ignoring the ARC. In fact, the state's credit rating was upgraded in 2008 and again in 2012. When S&P upgraded Alaska's credit in early 2012, the agency specifically cited the "aggressive steps the state has taken to reform its pension and retirement systems" as one of the main reasons for the upgrade.

What matters to ratings agencies is that states fully fund benefit accruals each year and that they develop a plan to responsibly pay down their unfunded liabilities over a reasonable time horizon. Any move that reduces the risk of future unfunded liabilities has been viewed historically as credit positive.

References

Laura and John Arnold Foundation. (2012). Policy Perspective: "GASB Won't Let Me"- A False Objection to Public Pension Reform." Houston, TX: Costrell, R.

Michigan School Employees Retirement System (2010). *Annual Actuarial Valuation Report, September 30, 2010.* Lansing, MI. Office of Retirement Services.

Michigan Office of Retirement Services (2011). *The Cost of Converting the Michigan Public School Employees Retirement System to a Defined Contribution Plan.* Lansing, MI. Office of Retirement Services.

R.V. Kuhns & Associates, Inc. (2011). *State of Michigan Retirement Systems: Michigan Public School Employees' Retirement System Asset/Liability Study.* Retrieved from http://www.michigan.gov/documents/treasury/AssetLiabilityStudy_School_368380_7.pdf

State of Alaska. (2012). *Alaska's Credit Rating Raise to AAA by S&P*. Retrieved from http://gov.alaska.gov/parnell/press-room/full-press-release.html?pr=6002

Uriona, C., Mahling, M. (2011, August 12). Infographic: A Brief History of S&P's State Credit Ratings. *Stateline.* Retrieved from http://www.pewstates.org/projects/stateline/headlines/infographic-a-brief-history-of-sps-state-credit-ratings-85899375166

Government Accounting Standards Board. (2012). *New GASB Pension Statements to Bring about Major Improvements in Financial Reporting*. Retrieved from http://www.gasb.org/cs/BlobServer?blobcol=urldata&blobtable=MungoBlobs&blobkey=id&blobwhere=1175824124337&blobheader=application%2Fpdf