6. OSA Findings and Recommendation, 2010 Risk Assessment

The following is the Executive Summary from the 2010 Risk Assessment. The full report can be accessed on the OSA website at http://osa.leg.wa.gov/Actuarial_Services/RiskAssessment/RA.htm.

Executive Summary

As governments look for ways to control and contain pension costs, a renewed interest in risk management is emerging as a way to gain increased efficiencies in the pension enterprise. OSA shares this interest.

To lay a strong foundation for managing financial risks in Washington's state-administered pension plans, we believed it was necessary to expand our analysis. The 2010 Risk Assessment is the first step in this undertaking. The results are documented in this report.

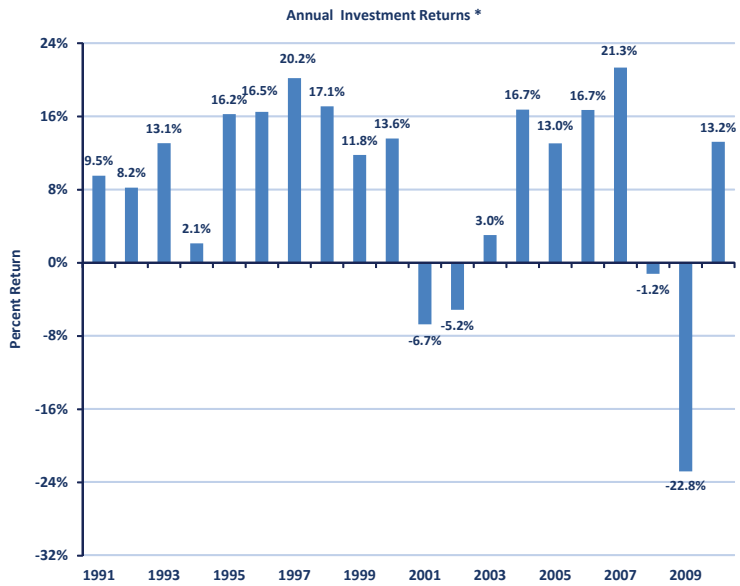
Yes, our report includes analysis, findings, and recommendations. However, a significant outcome from the risk assessment is that we now have tools to quantify the likelihood and magnitude of possible future outcomes for all of Washington's state-administered pension plans.

Does this mean we can predict the future? No. But we can now provide more complete information about financial risks, and we can more objectively evaluate how changes in policies or economic events might effect the future health of the plans.

Twenty-Year Look-Back

As the first step in our assessment, OSA reviewed twenty years of history in the area of investments, funding, and benefits. First, we observed that annual returns during the first decade of the twenty-year period looked very different than annual returns in the second, or most recent decade.

Figure ES.1



*Notes:

Fiscal year, time-weighted returns. Dollar-weighted returns vary by plan.

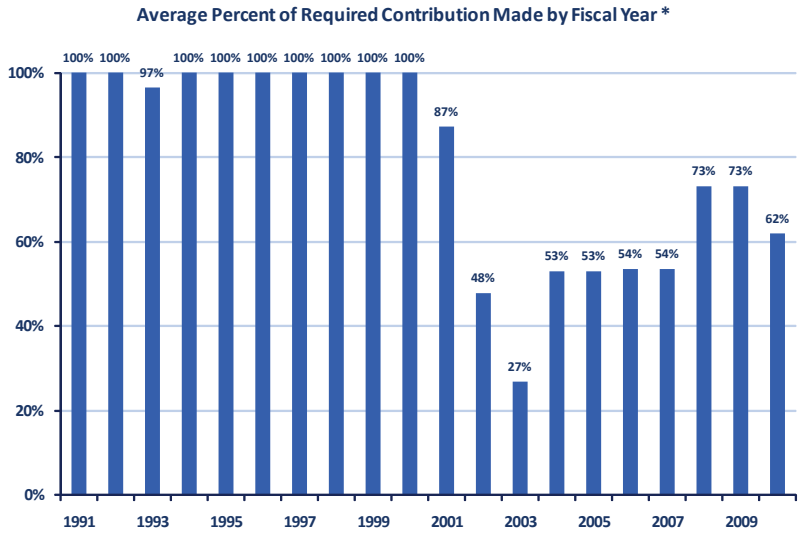
The Commingled Trust Fund (CTF) was created in 1993. Returns for 1993 and later are for the CTF as reported by WSIB. Returns prior to 1993 are total fund returns reported by the Department of Retirement Systems' Comprehensive Annual Financial Report.

We see in **Figure ES.1**, returns in the first decade of the period were quite strong. However in the second decade, annual returns decreased and were much more volatile. Still, the average annual return was 8.23 percent for the twenty-year period. Investment income was right on track, as it exceeded the expected long-term rate of return assumption of 8 percent per year.

There was a similar contrast between the two decades in the area of funding policy. During the first decade of the period, almost all actuarially required contributions were made. However the second or most recent decade was marked by underfunding.

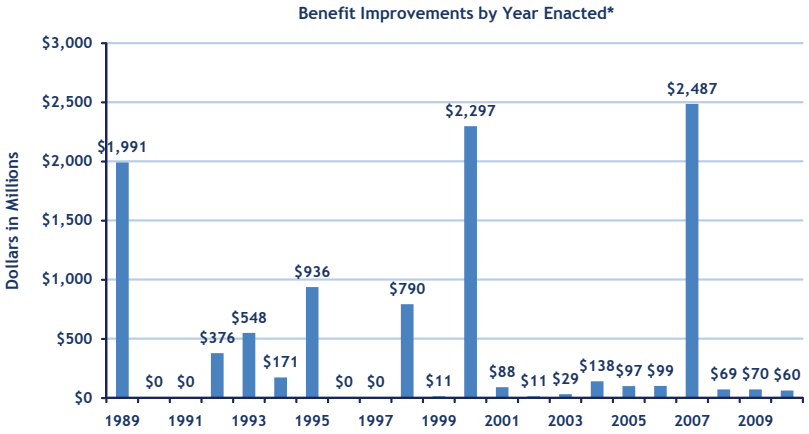
Meanwhile, benefit improvements added significant costs to the plans at the same time that underfunding was decreasing income to the plans. Over the past twenty years, benefits were routinely added, and occasionally, very large benefit improvements were granted.

Figure ES.2



*For PERS, TRS, and SERS combined.

Figure ES.3



Adjusted present value of liability increases in 2010 dollars based on an 8.0% discount rate. Excludes the following:

1) Impacts of Plan 3 gain-sharing prior to 2008 gain-sharing event.

2) Savings from repealing future gain-sharing (cost of future gain-sharing not recognized previously).

3) Benefit improvements where the fiscal note did not report the amount of the liability increase. This includes years showing zero liability increase.

Key to Benefit Spikes

1989 - Plan 1 Age 65 COLA after 40% loss of purchasing power from age 65.

1995 - Plan 1 Uniform COLA.

1998 - Plan 1 Gain-Sharing (excludes cost of future Plan 1 gain-sharing benefits).

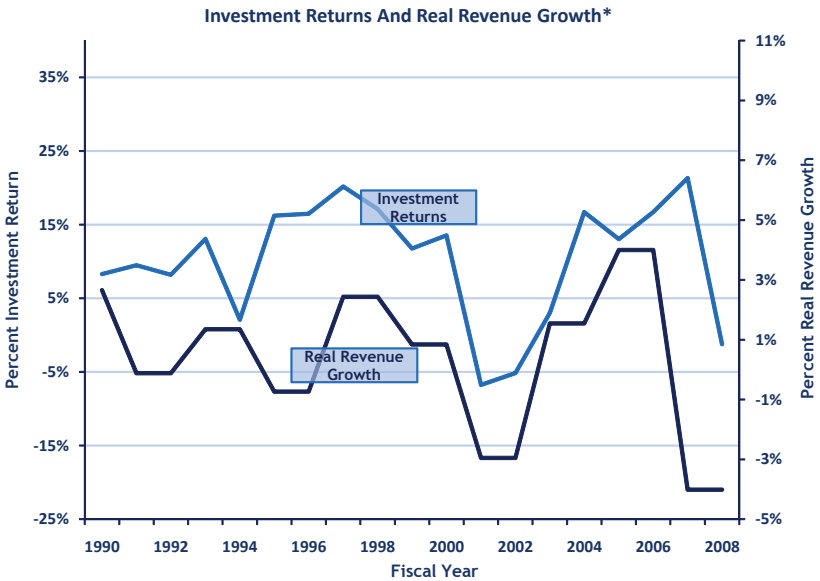
2000 - Plan 2/3 subsidized early retirement reduction factors with 30 years of service.

2007 - Gain-sharing replacement benefits.

And again, the contrast between the first decade and the second decade of the twenty-year period was evident when we observed the growth in state revenue. We saw that state revenue moved with investments. Real revenue growth,* like annual investment returns, was much more volatile in the second (most recent) decade of the twenty-year period.

** Note: Real revenue growth is revenue growth over and above inflation and population growth, also known as "productivity growth."*

Figure ES.4



**Real revenue growth is revenue growth over and above inflation and population growth. Complete data for the 2009-2011 Biennium was not available at the time of publication.*

Over the past twenty years, funding policy seemed to react to increased volatility. This was especially evident during the second decade of the period. We also observed that weak economic environments were correlated to weak investment returns. And lower investment returns created the need for increased contributions when employers and members could least afford them. We also observed that once contribution rates dropped below what was actuarially required, it was harder to increase them - even when investment returns and revenue growth improved.

Finally, in addition to these challenges, a continuing obligation from the past added even more costs to the pension systems. Legacy costs from PERS 1 and TRS 1 required additional employer contributions, and continue to do so today.

Possible Future Outcomes

We used risk modeling to explore what outcomes we could see in the future if these patterns or "past practices" continue. We built a new dynamic model with a stochastic (or probabilistic) component. While traditional actuarial analysis projects the future of pensions based on what is expected to occur, the new model moves beyond expectations. It projects a full range of possible fifty-year outcomes for pensions.

Output from the model allowed us to quantify the likelihood and magnitude of possible future outcomes. We used a variety of measures to quantify financial risks affecting state budgets, pension contribution rates, and the funded status of the plans. Our report focuses on total plan measures, but we also included plan-by-plan summaries in the Appendix.

Figure ES.5 is one example of how we summarized output from the model. This graph shows how continuing past practices could affect the percentage of General Fund-State dollars allocated to pensions in the future.

Figure ES.5

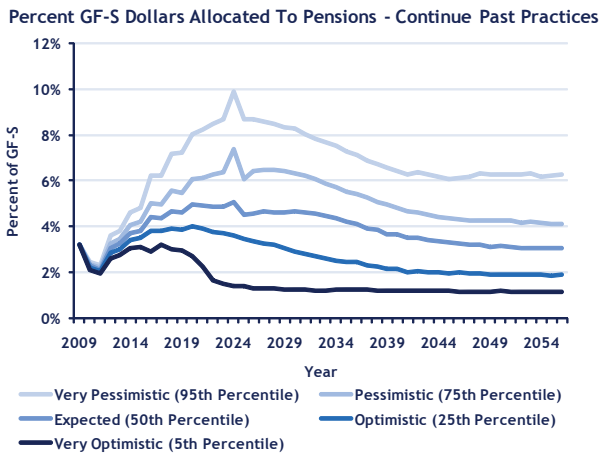
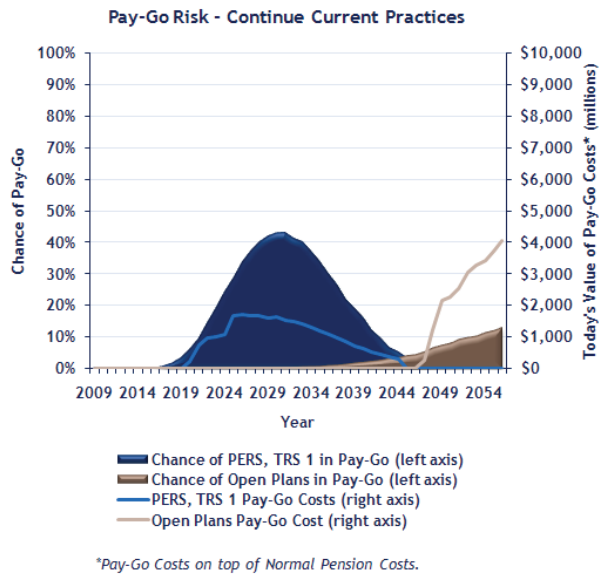


Figure ES.6 is another example of how we summarized output from the model. This graph illustrates the pay-go risk we could see if past practices continue. (Pay-go risk is explained in the full report.) We show this risk for PERS 1 or TRS 1, as well as for any open plan. Pay-go risk shows up in the open plans largely because of the member maximum contribution rates in TRS 2 and WSPRS. Pay-go risk measures for LEOFF 1 are not included in this example, but are included in our full report.

Figure ES.6



The new model also allows us to explore hypothetical changes in policies, practices or economic events. For example, **Figures ES.7** and **ES.8** illustrate how the risk measures in the previous graphs (**Figures ES.5** and **ES.6**) would change if past patterns of reacting to investment and revenue volatility were overcome, and if benefit improvements were curtailed. In this hypothetical change, we assume 100 percent of actuarially required contributions are made and benefit improvements are eliminated in the future.

Figure ES.7

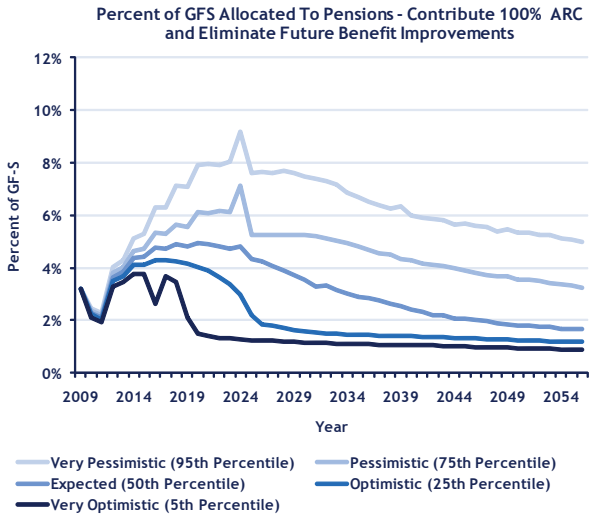
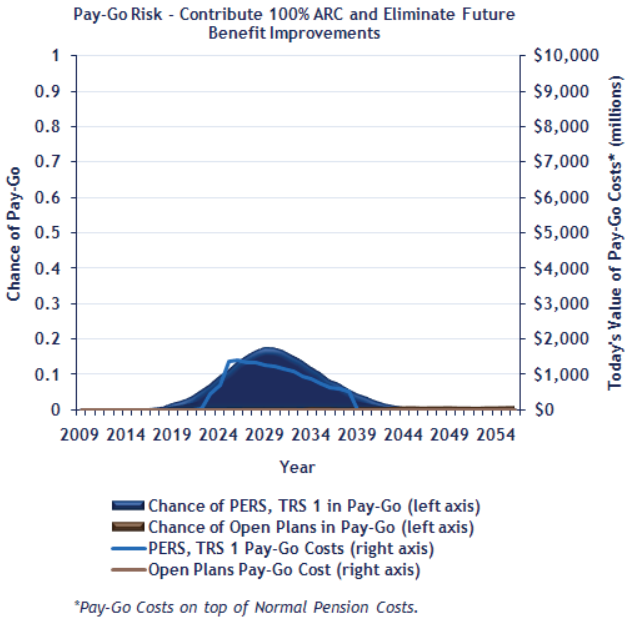


Figure ES.8



The risk measures improve considerably under this hypothetical change. Pensions become more affordable, although short-term challenges still remain. Pay-go risk is reduced in the closed plans, and it is almost completely gone in the open plans.

Recommendations from the State Actuary

Findings from risk modeling led the State Actuary to make the following recommendations:

1. Make 100 percent of actuarially required contributions in the future. This includes adhering to the minimum contribution rates required to amortize unfunded past liabilities in PERS 1 and TRS 1.
2. Avoid large benefit improvements in the future until risk and affordability measures significantly improve. Develop new policies for adopting benefit improvements that balance the need to accommodate reasonable adjustments in benefits with the need for sustainable long-term funding.
3. Use risk modeling to further examine pay-go risk. Develop and implement strategies to mitigate or eliminate this risk, especially in TRS 2/3, WSPRS, and LEOFF 1.
4. Prepare for financial risks outside the control of the retirement systems. Use the model to explore how current policies could be amended to better accommodate investment and revenue volatility, budget challenges, and changing economic conditions.

The Next Step is Risk Management

Policy makers may want to develop their own recommendations for managing the future health of pensions. We urge them to study the report and apply their own values and risk tolerances to identify what outcomes they'd like to facilitate, minimize, or avoid.

With the new model, we now have the ability to show how changes in policy or economic events can affect possible future outcomes for pensions. We can quantify these effects using a variety of measures based on what is important to users. We hope these new tools will contribute to better understanding, increased efficiencies in the pension enterprise, and ultimately, to the on-going success and soundness of the state pension systems.