

Miscellaneous Assumptions

Percent Vested

Overall Summary

What is the Percent Vested Assumption and how is it Used?

The Percent Vested assumption represents the likelihood that members who leave employment (terminate) will be entitled to a future annual benefit. This can happen one of two ways:

- ◆ The member is vested at termination and defers retirement.
- ◆ The member is not vested at termination, but returns to work and becomes vested at some time in the future.

Members who terminate have the option to withdraw their contributions, with interest, or leave their contributions in the plan. In either of the two scenarios above, the member must leave his or her contributions in the plan in order to be eligible for a future benefit. We use the percent vested assumption in combination with our termination assumptions to estimate who will collect a deferred retirement benefit.

Percent Vested rates are generally service-based.

High-Level Takeaways

We generally found that our actual experience exceeded our assumptions and adjusted the assumptions upward based on past experience and future expectations.

We noted that interest rates outside the pension environment have been low and stable for about ten years, while the Department of Retirement Systems (DRS) interest rate credited to accounts is 5.5 percent. Terminating members may see leaving their contributions in their pension accounts as an attractive alternative to withdrawal. This fact alone could indicate that the percentage of people leaving their savings in place when they terminate could be higher than what we've observed in all of our past data. We think this could create a slight increase in actual observations for the future. We kept this in mind as we considered the amount of adjustment made in this study.

Assumptions

We assume that a member who is eligible for a service retirement will not terminate. Specifically, if that member chooses to leave employment then we assume the member will choose to retire immediately, if eligible, rather than withdraw their contributions or defer retirement to a later date.

We also assume a member will not return to active status if they remain terminated for more than two years, and that if a member has not withdrawn his or her contributions within those two years, he or she will not do so prior to retirement.

For purposes of studying this assumption only, we assume 100 percent of Plan 3 members are vested. These members might withdraw their defined contributions upon termination, but they will not lose their service upon withdrawal.

All other assumptions used in the development of Percent Vested match those disclosed in the [2012 Actuarial Valuation Report \(AVR\)](#).

Data

We began with 18 years of experience study records, from 1995-2012. No special data was added for this assumption, but some data was removed as noted below.

We only considered active members, new terminations, and withdrawals through 2010. Any members who terminated through 2010 and did not rehire or withdraw by 2012, were included in our count of actual terminations.

We chose to remove the School Employees' Retirement System (SERS) data from 2000 due to a much shorter-than-normal valuation cycle. SERS opened September 1, 2000, and that valuation period was only four months long. We eliminated that year's data to ensure that it did not overly influence the overall result.

We considered removing 2001 and 2007 data for all systems/plans due to odd-length valuation periods. However, these valuation periods were closer to a full year than the 2000 SERS period, and we do not expect the ratio of people deferring retirement to be affected by the length of valuation period in 2001 and 2007.

We also considered removing 2008-12 data due to the Great Recession, but we do not expect the ratio of people deferring retirement to be affected by it.

Law changes

Since the last study, no law changes have impacted this assumption.

General Methodology

We began by identifying newly terminated member counts. We then divided the count of terminated members who did not

withdraw by the number of terminations. This gives us an observed, or actual, percent vested.

We made this calculation for each system, by years of service and by plan. The exception to this is the Washington State Patrol Retirement System, which has one assumption for both plans combined.

Results

All-Plan Summary

We generally found that our actual experience exceeded our assumptions. We adjusted the assumptions upward based on past experience and future expectations. The table below shows Actual-to-Expected (A/E) counts before and after the assumption changes.

Summary of A/E Ratios*		
	Under Old Rates	Under New Rates
PERS 1	1.12	1.06
PERS 2	1.30	1.07
TRS 1	1.04	1.04
TRS 2	1.12	1.05
SERS 2	1.21	1.06
LEOFF 1	0.96	0.96
LEOFF 2	1.46	1.09
WSPRS	1.67	1.15

*Excludes PSERS due to lack of experience.

By System

PERS

Past Experience

The following table shows the Actual and Expected Public Employees' Retirement System (PERS) Plans 1/2 counts of members who did not withdraw their contributions after termination, along with the A/E Ratio.

PERS Members Maintaining Savings Funds After Termination						
Service	Plan 1			Plan 2		
	Actual	Expected	Ratio	Actual	Expected	Ratio
0-4	0	0	0.00	0	0	0.00
5-9	680	562	1.21	14,338	10,350	1.39
10-14	597	513	1.16	6,912	5,479	1.26
15-19	562	525	1.07	3,647	3,093	1.18
20-24	470	448	1.05	1,399	1,208	1.16
25-29	133	131	1.02	324	298	1.09
30+	0	0	0.00	22	25	0.89
Total	2,442	2,178	1.12	26,642	20,453	1.30

Methods and Format of Assumptions

We considered alternate formats for the assumption and, ultimately, decided not to make any changes. For reference, we considered, but did not adopt:

- ◆ Separate rates by gender.

We studied separate rates by gender, but felt that both genders' experience is reflected well in the data (a natural weighted average based on plan membership).

Best Estimate PERS Percent Vested Assumptions

We increased the PERS Percent Vested rates to bring the A/E ratio closer to 100 percent. The following table shows a summary of Actual, Old, and New percent vested rates by service and plan.

Service Years	PERS Percent Vested					
	Plan 1			Plan 2		
	Actual Rates	Old Rates	New Rates	Actual Rates	Old Rates	New Rates
0	0.641	0.000	0.000	0.769	0.000	0.000
5	0.608	0.450	0.500	0.591	0.400	0.550
10	0.609	0.525	0.600	0.623	0.500	0.575
15	0.677	0.625	0.650	0.678	0.575	0.650
20	0.723	0.650	0.675	0.796	0.675	0.750
25	0.817	0.725	0.700	0.856	0.775	0.800
30+	0.000	0.925	0.950	0.833	0.950	0.950

TRS

Past Experience

The table below shows the Actual and Expected Teachers' Retirement System (TRS) Plans 1/2 counts of members who did not withdraw their contributions after termination, along with the A/E Ratio.

TRS Members Maintaining Savings Funds After Termination						
Service Years	Plan 1			Plan 2		
	Actual	Expected	Ratio	Actual	Expected	Ratio
0-4	0	0	0.00	0	0	0.00
5-9	230	205	1.12	1,915	1,700	1.13
10-14	285	270	1.06	937	830	1.13
15-19	297	285	1.04	411	383	1.07
20-24	286	288	0.99	99	96	1.03
25-29	246	241	1.02	26	26	0.99
30+	0	0	0.00	2	2	1.00
Total	1,344	1,290	1.04	3,390	3,038	1.12

Methods and Format of Assumptions

For the TRS plans, we considered the same alternatives and made the same relative changes as in PERS. Please see the **PERS – Methods and Format Assumptions** section above for more information.

Best Estimate TRS Percent Vested Assumptions

We increased the TRS Percent Vested rates to bring the A/E ratio closer to 100 percent. The following table shows a summary of Actual, Old, and New percent vested rates by service and plan.

Service Years	TRS Percent Vested					
	Plan 1			Plan 2		
	Actual Rates	Old Rates	New Rates	Actual Rates	Old Rates	New Rates
0	0.778	0.000	0.000	0.833	0.000	0.000
5	0.904	0.725	0.725	0.744	0.650	0.700
10	0.885	0.800	0.800	0.831	0.700	0.750
15	0.967	0.875	0.875	0.871	0.775	0.850
20	0.918	0.900	0.900	0.969	0.925	0.950
25	0.979	0.925	0.925	1.000	0.950	0.950
30+	0.000	1.000	1.000	1.000	1.000	1.000

SERS

Past Experience

The table displayed to the right shows the Actual and Expected SERS Plan 2 counts of members who did not withdraw their contributions after termination, along with the A/E Ratio.

SERS Members Maintaining Savings Funds After Termination			
Service	Plan 2		
	Actual	Expected	Ratio
0-4	0	0	0
5-9	5,164	4,126	1.25
10-14	2,280	1,930	1.18
15-19	904	793	1.14
20-24	206	193	1.07
25-29	31	34	0.92
30+	1	1	1.05
Total	8,586	7,078	1.21

Methods and Format of Assumptions

For the SERS plans, we considered the same alternatives and made the same relative changes as in PERS. Please see the **PERS – Methods and Format Assumptions** section above for more information.

Best Estimate SERS Percent Vested Assumptions

SERS Percent Vested			
Plan 2			
Service Years	Actual Rates	Old Rates	New Rates
0	0.853	0.000	0.000
5	0.696	0.550	0.650
10	0.751	0.625	0.700
15	0.777	0.700	0.750
20	0.824	0.775	0.800
25	0.786	0.850	0.850
30+	1.000	0.950	0.950

We increased the SERS Percent Vested rates to bring the A/E Ratio closer to 100 percent. The following table shows a summary of Actual, Old, and New percent vested rates by service and plan.

We considered blending the PERS 2 rates with rates from another plan with similar retirement qualifications as PSERS, but the experience of those plans at those service levels didn't reflect our expectations for PSERS.

The table on the right shows a summary of Old and New percent vested rates by service.

PSERS Percent Vested		
Plan 2		
Service Years	Old Rates	New Rates
0	0.000	0.000
5	0.400	0.550
10	0.500	0.575
15	0.575	0.650
20	0.675	0.788
25	0.775	0.840
30+	0.950	0.950

LEOFF

Past Experience

The following table shows the Actual and Expected Law Enforcement Officers' and Fire Fighters' Retirement System (LEOFF) Plans 1/2 counts of members who did not withdraw their contributions after termination, along with the A/E Ratio.

PSERS

Past Experience

The Public Safety Employees' Retirement System (PSERS) Plan 2 opened in 2006 and we do not yet have enough experience data to develop plan-specific assumptions. As a result, we applied modified PERS 2 rates for this study.

Specifically, the PSERS rates use PERS 2 rates that were increased by 5 percent between 20 and 30 years of service and PERS 2 rates for all other service levels. We used increased rates between 20 and 30 years because PSERS members can retire early (at age 53) with subsidized Early Retirement Factors once they reach 20 years of service, while PERS 2/3 members cannot.

LEOFF Members Maintaining Savings Funds After Termination						
Service	Plan 1			Plan 2		
	Actual	Expected	Ratio	Actual	Expected	Ratio
0-4	0	0	0.00	0	0	0.00
5-9	0	0	0.00	354	216	1.64
10-14	0	0	0.00	241	145	1.67
15-19	2	2	1.00	139	95	1.46
20-24	14	15	0.93	98	107	0.92
25-29	6	6	1.00	18	18	0.99
30+	0	0	0.00	0	0	0.00
Total	22	23	0.96	850	581	1.46

Methods and Format of Assumptions

For the LEOFF plans, we considered the same alternatives and made the same relative changes as in PERS. Please see the **PERS – Methods and Format Assumptions** section above for more information.

Best Estimate LEOFF Percent Vested Assumptions

We did not revise the LEOFF 1 Percent Vested assumptions. There are very few active members left in this plan, and all are eligible for retirement. We generally increased the LEOFF 2 Percent Vested rates to bring the ratio of actual to expected closer to 100 percent. The table below shows a summary of Actual, Unchanged (Plan 1), Old, and New percent vested rates by service and plan.

LEOFF Percent Vested					
Service Years	Plan 1		Plan 2		
	Actual Rates	Unchanged Rates	Actual Rates	Old Rates	New Rates
0	1.000	0.000	0.650	0.000	0.000
5	0.000	1.000	0.376	0.240	0.325
10	0.000	1.000	0.377	0.240	0.375
15	0.000	1.000	0.402	0.270	0.400
20	1.000	1.000	0.696	0.690	0.600
25	1.000	1.000	0.778	0.910	0.900
30+	0.000	1.000	0.000	0.910	0.950

WSPRS

Past Experience

The table to the right shows the Actual and Expected Washington State Patrol Retirement System (WSPRS) Plans 1/2 counts of members who did not withdraw their contributions after termination, along with the A/E Ratio.

WSPRS Members Maintaining Savings Funds After Termination			
Service	Plan 1/2		
	Observed	Expected	Ratio
0-4	0	0	0.00
5-9	47	22	2.16
10-14	16	10	1.53
15-19	10	8	1.18
20-24	5	6	0.83
25-29	0	0	0.00
30+	0	0	0.00
Total	78	47	1.67

Methods and Format of Assumptions

For the WSPRS plans, we considered the same alternatives, and made the same relative changes as in PERS. Please see the **PERS – Methods and Format Assumptions** section above for more information.

Best Estimate WSPRS Percent Vested Assumptions

We generally increased the WSPRS Percent Vested rates to bring the A/E ratio closer to 100 percent. The table displayed on the right shows a summary of Actual, Old, and New percent vested rates by service.

WSPRS Percent Vested			
Service Years	Plan 1/2		
	Actual Rates	Old Rates	New Rates
0	0.500	0.000	0.000
5	0.667	0.275	0.475
10	0.429	0.275	0.475
15	0.400	0.400	0.500
20	0.000	0.775	0.750
25	0.000	1.000	1.000
30+	0.000	1.000	1.000