

Age Difference

Overall Summary

What is the Age Difference Assumption and how is it Used?

The Age Difference assumption represents the difference in age between a member and his or her qualifying survivor. This helps us estimate the cost of survivor benefits.

If an active or terminated vested member dies, their qualifying survivor is eligible for a survivor annuity. Of these deceased members, we assume a percentage of their qualifying survivors will select an annuity.¹ Our valuation model then uses the age of the member's spouse to calculate the survivor benefits that may be payable throughout the spouse's life.

If the member is not currently married, or if their qualifying survivor data is missing from our valuation data file, then we use the Age Difference assumption to estimate how much older (or younger) the member is than his/her beneficiary.

This assumption is gender-based, but we have assumed this same gender-based age difference for all plans.

High-Level Takeaways

We modified the age difference for females to -1. We held the age difference for males at +3.

We found no evidence that any particular plan will have experience that is significantly different from the general plan population. Therefore, we developed one age difference assumption per gender for all plans.

Assumptions

We have assumed that all eligible survivors are of the opposite gender. Recent law² changes have increased the potential pool of eligible survivors by including same-sex spouses and domestic partners. However, considering the relative newness of these laws and the current inability of our data to distinguish certain survivor types, we chose not to make an adjustment to our method to reflect these changes for this study. We will review this assumption in the next demographic experience study.

General Methodology

For each year and retirement plan, we took the weighted average of all the age differences within that plan.

Except as noted, all assumptions used in the development of this assumption match those disclosed in the [2012 Actuarial Valuation Report](#).

Data

We began with nine years of experience study records, from 2005-2012. The data are limited to members retiring within 12 years prior to each year within the study period and limited to a 25-year maximum age difference between the member and the member's spouse. The data set includes all beneficiaries; not just those who would be eligible had the member died pre-retirement.

¹See the *Miscellaneous Assumptions: Survivors Selecting Annuities* section for more information about this assumption.

²See the *Law Changes* section for more information.

The data are presented from the member's perspective; how much older (or younger) the member is to his/her beneficiary, as opposed to showing how much older (or younger) the member's beneficiary is to the member.

No data was excluded due to the Great Recession or any other event.

Law changes

Since the last experience study, state law now allows domestic partners and same-sex spouses to qualify as survivors.

◆ E2SSB 5688 (2009).

- ▲ Applied to all citizens and members of all retirement plans.
- ▲ This bill provided that registered domestic partners would be treated exactly like married couples under state law.

◆ ESSB 6239 (2012).

- ▲ Applied to all citizens, and members of all retirement plans.
- ▲ This bill established same-sex marriage, created full reciprocity with other states, and automatically converted most (but not all) same-sex domestic partnerships registered in Washington to marriages.

Results

All-Plan Summary

In general, we saw a shift in females to a rounded age difference of -1. The age difference for males moved slightly for each plans but overall remained near +3.

		Age Difference				
		By System				
		Old	New	Count	Weight*	Product**
PERS	Male	3	3.18	10,827	0.589	1.869
	Female	(2)	(0.94)	4,490	0.465	(0.436)
TRS	Male	3	2.81	3,873	0.211	0.591
	Female	(2)	(1.07)	4,143	0.429	(0.461)
SERS	Male	3	3.37	912	0.050	0.167
	Female	(2)	(1.41)	957	0.099	(0.140)
PSERS	Male	3	4.75	4	0.000	0.001
	Female	(2)	(1.00)	1	0.000	0.000
LEOFF	Male	4	2.96	2,491	0.135	0.400
	Female	(1)	(0.87)	45	0.005	(0.004)
WSPRS	Male	4	2.80	289	0.016	0.044
	Female	(6)	(1.42)	12	0.001	(0.002)

*The ratio of the count for each system and gender combination to the total count of each gender.

**The product of the New and Weight columns. The final Age Difference assumption is based on the sum of each gender's products.

General Methodology

We considered alternate formats for the assumptions, but ultimately did not make any formatting changes.

◆ Different age maximum and minimum.

Using a 25-year minimum and maximum age difference resulted in larger-than-expected groupings at the endpoints. In response, we studied two options: Increasing the minimum/maximum to +/-35 years, and +/-60 years. Ultimately, we found that the new ranges did not significantly affect results and chose to retain the +/-25-year range.

◆ Different database.

We considered using a larger database that ranged from 1982-2012. Using the larger database showed only a minor impact on the resulting age differences; in some cases by a few tenths of a year. We felt this impact was not large enough to change the final rounded age difference.

◆ Different “Years Retired” limits.

We limited the data to members remaining retired for no more than 12 years. For this report, we started by studying 100-year limits, but then considered both five and 12-year limits. Ultimately, we felt the 12-year limit best reflected the current population while maintaining sufficient levels of data to set the assumption.

Best Estimate Age Difference Assumptions

The following table shows both the new and old age difference assumption for all systems and plans.

All Systems - Age Difference		
	Old Assumptions	New Assumptions
Male	3	3
Female	(2)	(1)