THREE: APPENDICES

MISCELLANEOUS ASSUMPTIONS

Age Difference

What is the Age Difference Assumption and How Do We Use it?

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

If an active or terminated vested member dies, their qualifying beneficiary is eligible for either a survivor annuity or a refund of the member's contributions. In the event the beneficiary elects to receive a survivor annuity[1], our valuation model needs the age of the beneficiary in order to calculate the survivor benefits that would be payable throughout his or her lifetime.

However, the age of a member's beneficiary is generally not reported for active or terminated members. Therefore, we use the Age Difference assumption to estimate the beneficiary's age relative to the age of the member.

High Level Takeaways

We studied the Age Difference assumption by gender over the retirement systems as a whole. The data we analyzed does not suggest that any particular plan will have experience that is significantly different from the general plan population.

Our current assumption (+3 age difference for male members and -1 age difference for female members) continues to model the plan demographic data well and is reasonable, so we made no change to our current assumption.

Data and Assumptions

We used eight years of valuation data, from 2011 to 2018, to develop this assumption. We restricted the data to members who retired within ten years prior to the given valuation date, and who have a maximum member to beneficiary age difference of 25 years. This was done to remove outliers and ensure our analysis best reflects more current population data.

We assume that all eligible beneficiaries are of the opposite sex as the member. We acknowledge that this assumption does not apply to beneficiaries who are same-sex spouses and domestic partners. However, at this point, all plans combined have less than 1.5 percent same-sex beneficiaries. Given this limited number of occurrences that we have observed so far, we chose not to make an adjustment in this area. We will review this assumption again in our next study.

General Methodology

For each retirement plan, we analyzed the weighted average age difference by gender. We then consolidated these plan-specific averages into a system-wide age difference assumption – one for males and one for females – and rounded the results to the nearest whole number.

Law Changes

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

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[1]See the **Survivors Selecting Annuities Assumption** section for more information about this assumption.

MISCELLANEOUS ASSUMPTIONS   *continued*

Analysis and Results

The following tables summarize the age difference data and assumptions by system and gender. This data suggests that all the retirement systems will have age differences that are relatively consistent. For this reason, we did not set system-specific assumptions.

In general, for both males and females, we are seeing a shift toward smaller age differences between members and their beneficiaries. However, this shift is not yet large enough to merit a change in our current assumption of a +3 age difference for male members and a -1 age difference for female members.

		Old		New	
Age Difference DataSummary					
		Count	**Age Difference**	**Count**	**Age Difference**
PERS	Male	10,827	3.2	12,949	3.0
	Female	4,490	(0.9)	6,214	(0.3)
TRS	Male	3,873	2.8	3,128	2.9
	Female	4,143	(1.1)	4,697	(0.7)
SERS	Male	912	3.4	1,667	3.2
	Female	957	(1.4)	2,276	(1.2)
PSERS	Male	4	4.8	59	2.1
	Female	1	(1.0)	12	(2.0)
LEOFF	Male	2,491	3.0	2,840	2.4
	Female	45	(0.9)	98	(0.1)
WSPRS	Male	289	2.8	328	2.3
	Female	12	(1.4)	15	(0.5)
Total	**Male**	**18,396**	**3.1**	**20,971**	**2.9**
	Female	**9,648**	**(1.0)**	**13,312**	**(0.6)**

Age Difference Assumption		
	Old Assumption	**New Assumption**
Male	3	3
Female	(1)	(1)

Below are some additional considerations we had while studying this assumption.

❖ The average age differences for the Plans 1 have decreased significantly from our prior study. In addition, the active headcounts have declined. When setting averages based on a population, variations in plan experience will be much more impactful for a small population than for a large population. Since the Plans 1 are closed plans with declining populations, the Plan 1 averages will be more volatile from one experience study to the next than they are for the Plans 2/3. With this in mind, we found our current age difference assumptions to be applicable and reasonable for the Plans 1.

❖ We considered using alternate formats for our data. For example, we considered using a longer history and making changes to the restrictions we applied to the data. However, we concluded that the impacts from making these changes either did not significantly change our results or did not best reflect our expectations for the population of the retirement systems moving forward.