



Demographic Experience Study Preview

Disability Rates, Termination Rates, and Other Assumptions

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"Securing tomorrow's pensions today."

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What Is A Demographic Experience Study?

- Review of assumptions
 - Look at historical data
 - Compare actual to what previous assumptions predicted
- Opportunity to change assumptions
 - Incorporate future expectations
 - Methods
 - Formats

Why Do We Perform Demographic Experience Studies?

- Ensure assumptions are reasonable
 - Assumptions impact estimates of how and when the actual costs of the plan will occur
 - Reasonable assumptions contribute to reasonable funding
- Things change
 - Behaviors
 - Benefits
 - Plan provisions



Today's Presentation

- Preview two assumptions and look briefly at the miscellaneous assumptions
- For each preview we will discuss:
 - How the rates are used
 - General effect of changing rates
 - What the historical data shows
 - Future expectations
 - Assumption format
- Next steps
 - No recommendations at today's meeting

Assumption Changes Impact Costs

- Cost impacts will always be short-term
 - All assumptions will be re-examined in six years
- Assumption changes impact the timing of plan costs
- The actual long-term cost of the plan will be determined by actual experience



How Are Disability Rates Used?

- They determine when a member becomes disabled and eligible to draw a disability benefit



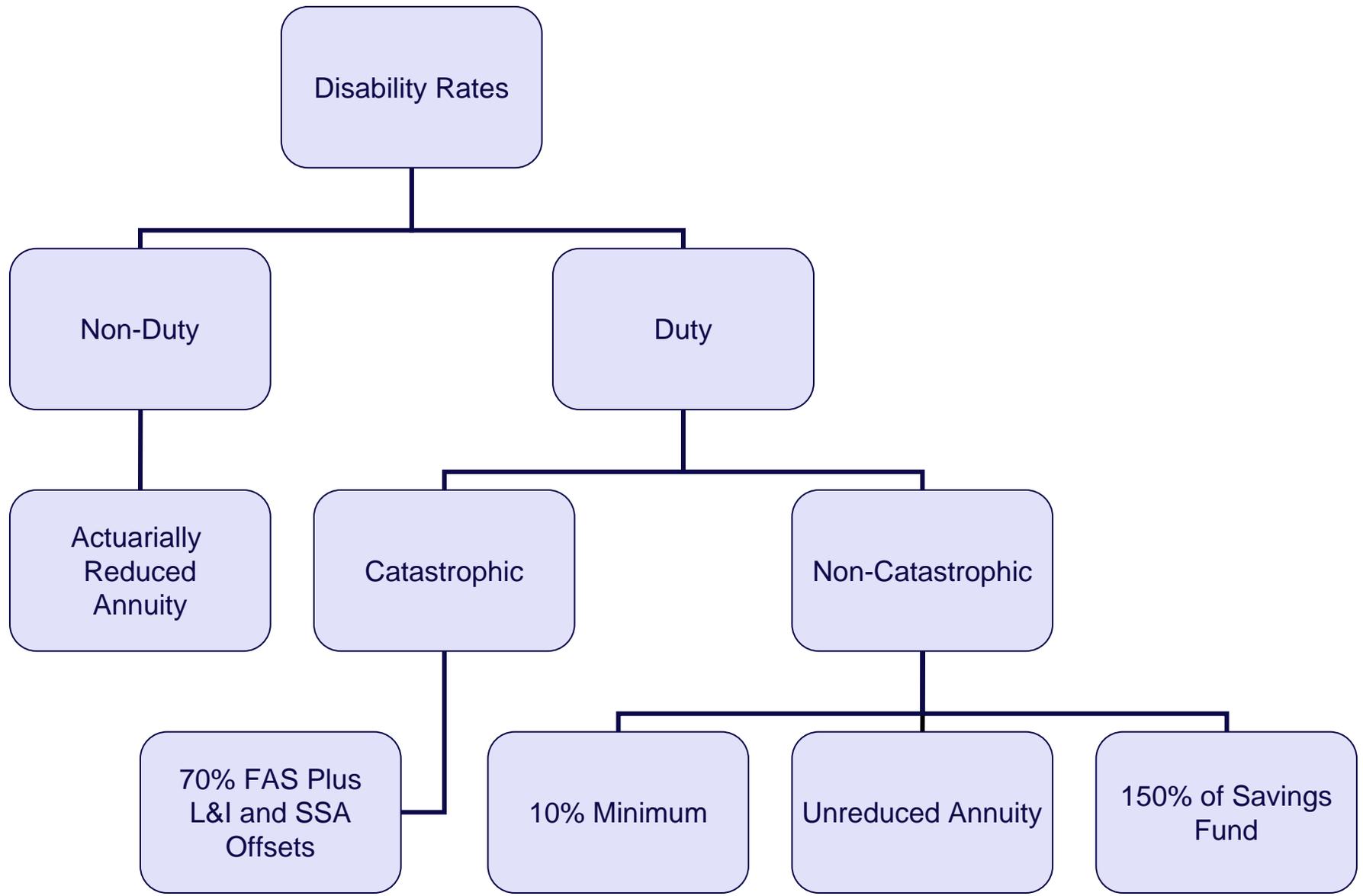
Disability Rates Dependent On Future Expectations

- Recent legislation
- Limited historical data
- Emerging experience

Recent Disability Legislation

- Ten percent minimum benefit (2004)
 - Separates duty from non-duty
 - Provided optional 150 percent refund of contributions
- Unreduced annuity (2005)
- Catastrophic benefit (2006)
- Expansion of presumptive occupational disease/illness provisions (2007)

How We Model Disabilities



Historical Data Shows Fewer Disabilities Than Expected

- Possible reasons
 - Expectations been adjusted for recent disability legislation
 - Duty disability experience is just emerging (2005)

Non-Duty Disabilities by Age			
Age	Actual	Expected	Ratio
20-24	0	0.0	0.00
25-29	1	0.4	2.26
30-34	0	1.1	0.00
35-39	1	1.7	0.59
40-44	5	2.8	1.81
45-49	7	4.3	1.64
50-54	19	5.0	3.81
55-59	9	1.9	4.68
60-64	3	0.4	6.86
65+	0	0.0	0.00
Total	45	17.6	2.55

All Disabilities by Age			
Age	Actual	Expected	Ratio
20-24	0	0	0.00
25-29	3	3	0.95
30-34	1	8	0.13
35-39	8	13	0.61
40-44	10	16	0.61
45-49	17	27	0.63
50-54	32	44	0.72
55-59	20	23	0.88
60-64	7	5	1.45
65+	1	0	2.56
Total	99	140	0.71

*Note: Data reflects periods from 1995-2006



Emergence Of Duty-Related Disabilities

- First duty-related disabilities appeared in 2005
- Counts include terminated members who were reclassified as duty disabilities

Year	Non-Duty			Duty		
	Actual	Expected	A/E	Actual	Expected	A/E
1995	0	0.84	0.00	0	0.00	0.00
1996	1	0.96	1.04	0	0.00	0.00
1997	1	1.12	0.89	0	0.00	0.00
1998	1	1.27	0.79	0	0.00	0.00
1999	1	1.45	0.69	0	0.00	0.00
2000	8	1.66	4.81	0	0.00	0.00
2001	2	1.82	1.10	0	0.00	0.00
2002	8	2.06	3.89	0	0.00	0.00
2003	8	2.33	3.44	0	0.00	0.00
2004	10	2.65	3.77	0	0.00	0.00
2005	2	0.70	2.86	18	58.45	0.31
2006	3	0.78	3.83	36	64.14	0.56
TOTAL	45	17.63	2.55	54	122.60	0.44



More Disabilities Are Expected In The Future

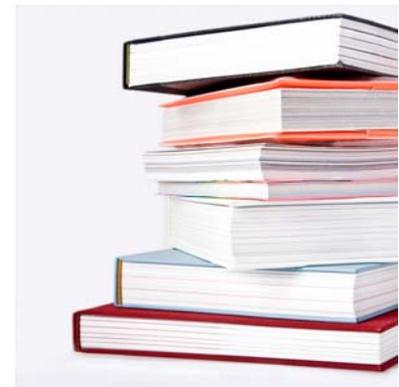
- Plan changes will increase disability claims
 - Expanded definition of duty-related disability
- Benefit improvements increase amount of disability pensions
 - Fewer members will elect return of contributions
- People are working longer
 - Disabilities tend to occur at higher rates at older ages

General Effect Of Changing Disability Rates

- When disability rates increase
 - Members receive disability pensions sooner - benefits paid over a longer period of time
 - Future salary stream is smaller, shorter => fewer contributions collected
 - Both generally result in higher contribution rates
- When disability rates decrease
 - Members work longer - benefits paid over a shorter period of time
 - Future salary stream is larger, longer => more contributions collected
 - Both generally result in lower contribution rates

Historical Data Used

- Annual valuation data combined from 1995 through 2006
- Counted active members that became disabled
- Compared actual to expected disabilities
- Things to note
 - Occupational and catastrophic duty disability benefits added
 - Occupational disease definitions expanded
 - Duty disabilities first observed in the 2005 actuarial valuation
 - New disability rates implemented with law changes



Assumption Formats We Considered

- Current format
 - Rates vary by age
 - Same rates for males and females
 - Same rates for all service levels
- Alternate formats
 - Rates vary by gender
 - Rates vary by category (LEO vs. FF)



How Are Termination Rates Used?

- Termination rates determine when members leave employment before retirement



Historical Data Shows More Terminations Than Expected

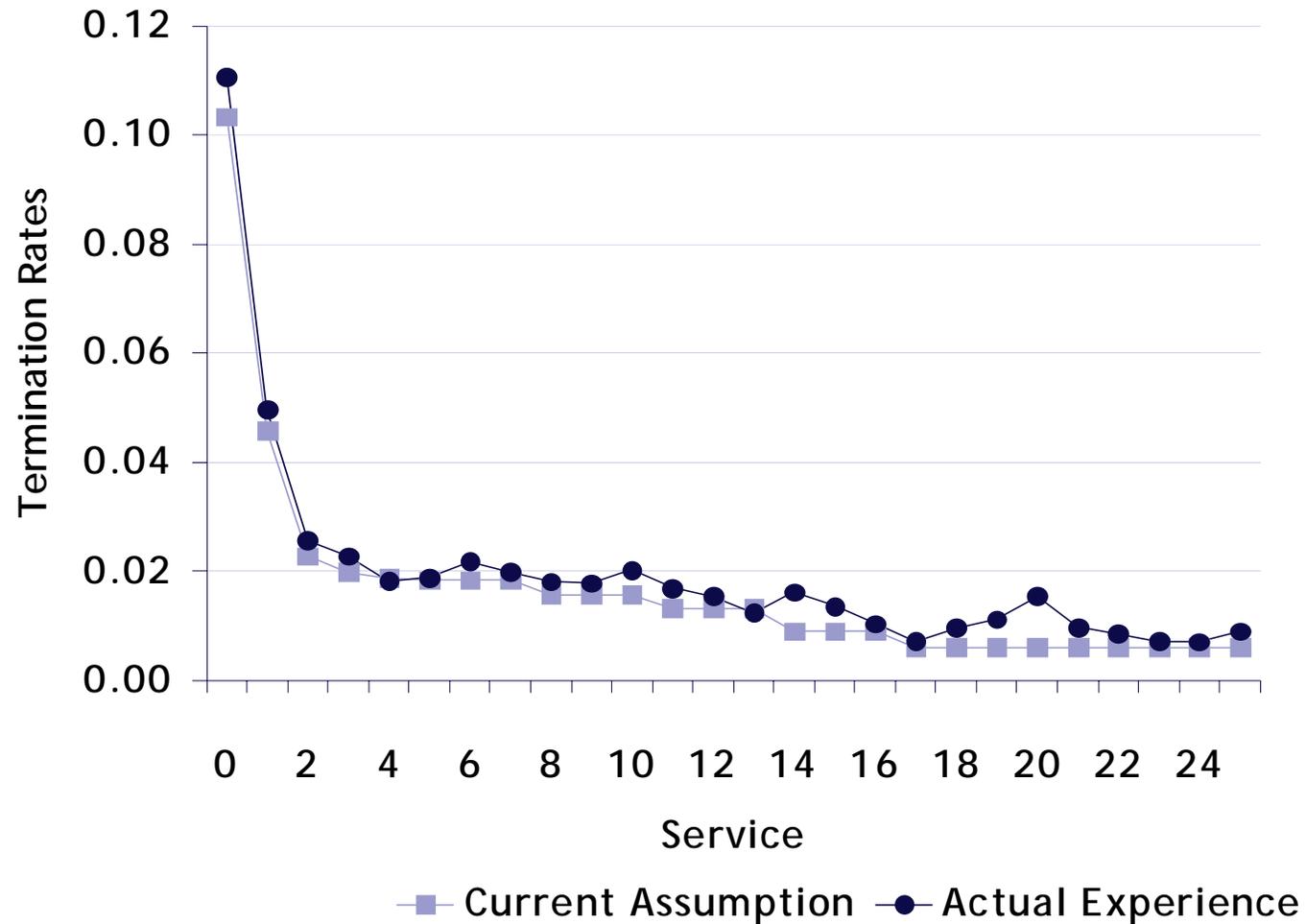
- Possible reasons
 - Changes in business cycles
 - Method change from last experience study

LEOFF Actual vs. Expected Terminations 1995-2004

Service	Actual	Expected	Ratio
0	402	379	1.06
1-5	1,062	1,023	1.04
6-10	614	559	1.10
11-15	351	296	1.19
16-20	190	137	1.38
21-25	94	79	1.20
26-30	9	10	0.87
31+	0	0	0.00
Total	2,722	2,484	1.10

Termination Experience

LEOFF Termination Rates 1995-2004



General Effect Of Changing Termination Rates

- Increased termination rates
 - Fewer members make it to retirement so total liabilities decrease
 - Future salary stream is shorter => fewer contributions collected
 - Results in a decrease in contribution rates
- Decreased termination rates
 - More members make it to retirement so total liabilities increase
 - Future salary stream is longer => more contributions collected
 - Results in an increase in contribution rates

Historical Data Used

- Annual valuation data combined from 1995 through 2004
- Counted active members who terminated
 - Subtracted members who rehired within two years
- Compared expected to actual terminations
- Short valuation period in 2001 impacts:
 - Termination counts in 2001
 - Rehire counts in 1999 and 2000

Future Expectations

- Economy will continue to influence termination rates
 - Effects are short-term
 - Assumptions are meant to be long-term
- Benefit improvements could reduce termination rates



Assumption Format

- Current format
 - One table for all of LEOFF
 - Varies by service
 - Same table for males and females
- Alternate formats considered
 - Rates that vary by:
 - Plan
 - Age
 - Gender

The Other Assumptions

- There are quite a few
- We will look at a couple types in detail
 - Duty-related death assumptions
 - Occupational disease/illness assumptions



What Should You Know About The Other Assumptions

- Generally used to model a specific plan provision
- Mainly based on historical data
 - May project a trend forward
 - Will include impacts of law changes
- Changes in Other assumptions generally result in small liability and contribution rate impacts



Other Demographic Assumptions

- Percent
 - Deaths that are duty related (general and occupational)
 - Disabilities that are duty related
 - Disabilities that are catastrophic/total
 - Increase in liabilities for portability
 - fire fighters (occupational diseases/illnesses)
 - married
 - vested
 - male/female
- Length of term by decrement (occupational diseases/illnesses)
- Length of certain period for annuities
- Member beneficiary average age difference
- Disabled mortality rates



Duty-Related Death Assumptions

- Duty death benefits have similar complexity as duty disability benefits
 - \$150K lump sum
 - Survivor PEBB premiums
- Constant duty-related death rate for all ages
 - Depends on percent fire fighter
- Experience is still emerging
 - Few deaths during experience study period
 - Law changes expanded duty-related death benefits and eligibility

Modeling Occupational Diseases For Fire Fighters

- Of duty-related deaths, what percent are considered occupational
 - Varies by age
- Coverage for duty-related deaths continues after separation from employment
 - How long does coverage last
- Presumptions only apply to fire fighters
 - What percent of the plan consists of fire fighters



Final Thoughts

- Fewer people became disabled than expected
 - Plan changes have increased our future expectations
- More people terminated service than expected
- The number of other assumptions continues to increase

Next Steps

- Best estimate recommendations for these assumptions will be developed and finalized by June
- At the June meeting OSA will present
 - Preliminary AVR
 - Preliminary Experience Study
- At the July meeting
 - Preliminary audit results will be presented
 - OSA to recommend assumptions and contribution rates
- Final assumption and contribution rate adoption by July 31

