

Wisconsin Retirement System

2003 Gain (Loss) Analysis



Gabriel, Roeder, Smith & Company

A Gain (Loss) Analysis measures differences between actual and assumed experience in each Risk Area.

WRS Assumption Risk Areas

Demographic

Normal retirement

Early retirement

Death-in-service

Disability

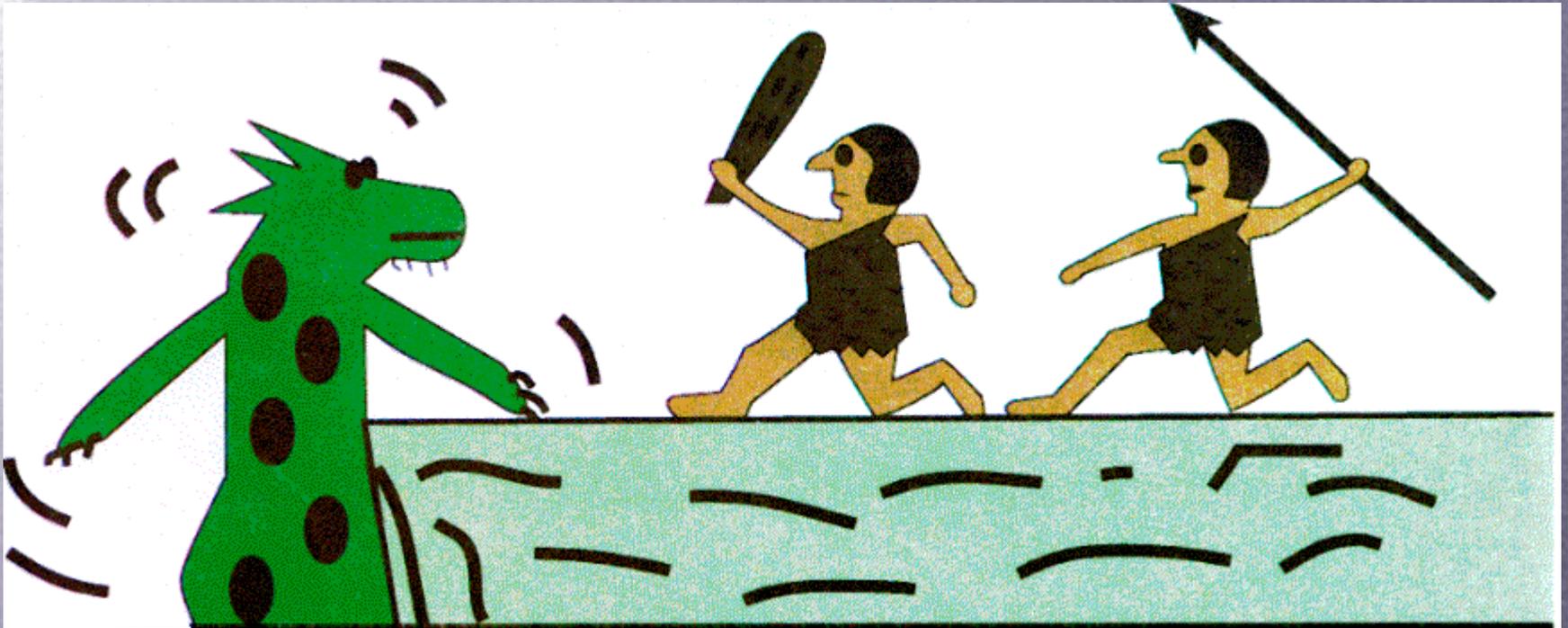
Other separations

Economic

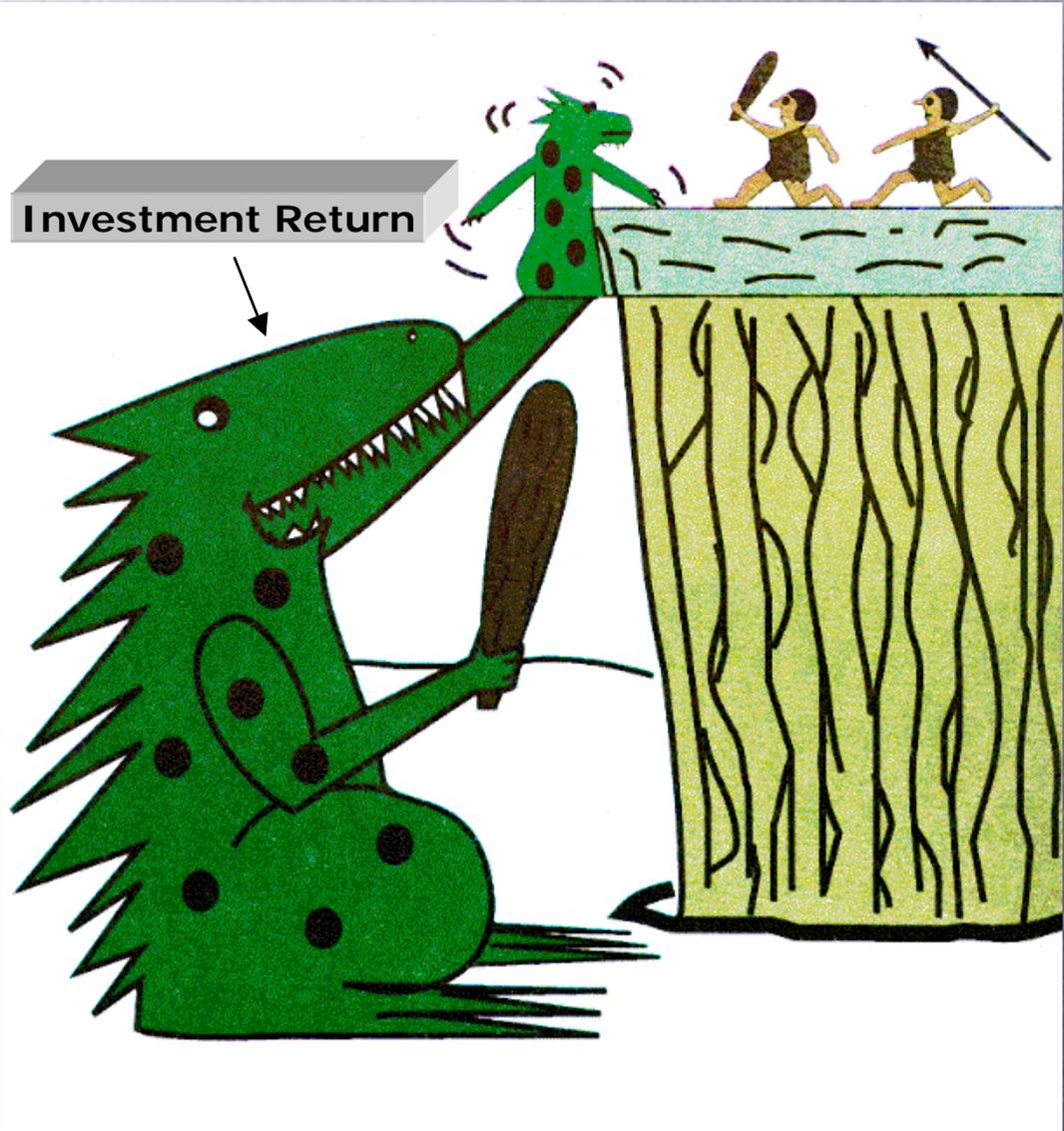
Salary increases

Investment return

There are other risk areas, but they are not germane to the Gain/Loss Analysis.



Fearless Actuaries Battle the Demographic Assumption Monster



Why Have A Gain (Loss) Analysis?

- ◆ It is a year-by-year measure of the operation of assumptions
- ◆ To understand the nature of risk
- ◆ To determine when assumption changes are needed
- ◆ To gain an understanding of reasons for contribution rate changes

Gain (Loss) Analysis Process

- ◆ Output file from last year's active valuation
- ◆ Output file from this year's active valuation
- ◆ Codes supplied by ETF saying what happened to people
- ◆ Match files to produce side-by-side file

Gain (Loss) Analysis Process

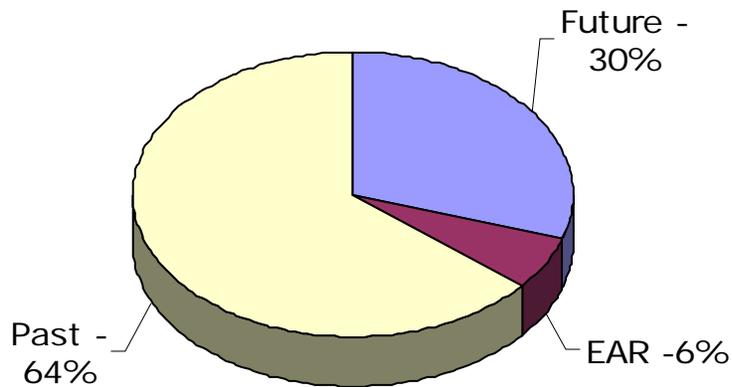
- ◆ Output file from this year's retiree valuation
- ◆ Match to side-by-side file and fix inconsistent coding
- ◆ Output file from this year's inactive valuation
- ◆ Match to side-by-side file and fix inconsistent coding
- ◆ Result is a "perfect" side-by-side file

Gain (Loss) Analysis Process

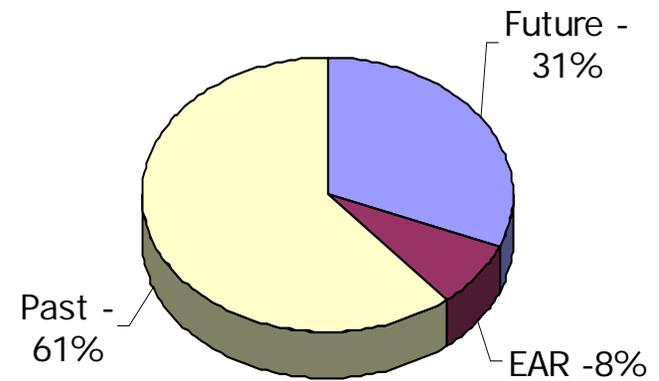
- ◆ Side-by-side file has various information on what was expected to happen during the year to a person.
- ◆ It also has all available information on what did in fact happen to the person.
- ◆ Information is tabulated by a "simple but not easy" program to produce results.

Financing Active & Inactive Participant Benefits at December 31

2003 - \$45.0 Billion



2002 - \$43.1 Billion



(see page 7)

Investment Earnings in 2003 (Active Participants)

	<u>\$ Millions</u>
A. Average balance	\$31,109
B. Expected earnings: 0.078	2,426
C. Earnings credited to PAR & EAR	2,606
D. Gain (loss) from earnings: B - C	\$ 180

(see page 12)

Investment Earnings in 2003 (Active Participants)

- ◆ \$180 million is total asset gain for the year
- ◆ However, part of the total gain or loss is due to Variable Excess accounts
- ◆ Some of the gain flows through to members via the operation of Money Purchase minimum benefits
- ◆ Must net these out to determine remaining fixed fund gain or loss
- ◆ Remaining portion affects contribution rates

Investment Earnings in 2003 (Active Participants)

\$ Millions

Gross Gain for Year	\$ 180
Less Estimated Gain Due to Money Purchase and Variable Excess Effects	<u>329</u>
Net Fixed Fund Asset Loss	\$(149)

(see page 12)

Asset Gain (Loss) in Depth

- ◆ Gain (Loss) in Total: \$180 Million
- ◆ Gain (Loss) on Fixed fund: +7.4% credited (Mean Balance calc)
- ◆ Gain (Loss) on Variable : 34.0% credited (Mean Balance calc)
- ◆ Total average crediting rate: 8.3% in 2003 vs. 2.9% in 2002

Salary Related Gain (Loss)

Pay Increases varied among groups producing a loss in total.

	Avg. % Incr.*	Gain (Loss) \$ Millions
General	4.3 - 5.5%	\$81
Exec. & Elected	2.6%	3
Prot. w/Soc. Sec.	6.1%	7
Prot. w/o Soc. Sec	5.0%	3
		<hr/>
		\$93

* *Excluding new entrants.*

(see page 11, 13, 14)

Population Development During 2003

	<u>Actual</u>	<u>Expected</u>
<u>Beginning Census</u>	263,500	
(-) Normal Retirement	2,602	2,780
(-) Early Retirement	3,380	3,436
(-) Death	285	289
(-) Disability Retirement		
- Total Approved	309	332
- Less Pending	<u>144</u>	
- Net New	165	
(-) Other Separations	12,297	12,159
(-) Transfers Out	1,159	
(+) Transfers In	1,159	
(+) New Entrants	<u>17,767</u>	
<u>Ending Census</u>	262,538	

(see page 4)

Population Development During 2003

Normal Retirements: Less than assumed for General group, varied in others.

Early Retirements: Varied by group and gender, overall slightly fewer than expected.

Death and Disabilities: Very close to assumed.

Other Separations: More than assumed for short service participants, less than assumed for long service participants.

(see page 5)

How do changes in counts translate into gains and losses?

	<u>Normal Retirement</u>		<u>Gain/(Loss)</u>
	<u>Actual</u>	<u>Expected</u>	<u>(\$ millions)</u>
General Group	1,036	1,149	\$ 2.1
Public Teachers	<u>1,022</u>	<u>953</u>	<u>(2.5)</u>
Total	2,058	2,102	\$(0.4)

Moral: In general, total counts will indicate the direction of a gain or loss, but not always.

Comparative Schedule of Experience

	<u>2002</u>	<u>2003</u>
Regular Retirement	\$ (3.2)	\$ (7.7)
Disability Retirement	8.6	12.2
Death	(4.2)	(0.4)
Other Separations	(19.9)	(13.5)
Salary Increases	200.8	93.2
Investment Income	(414.0)	(149.0)
Total	\$(231.9)	\$(65.2)

(see page 9)

Concluding Remarks

- ◆ This Gain (Loss) Analysis is the first in a regular 3-year experience cycle.
- ◆ This study together with the 2004 and 2005 studies will form the basis for the next experience study.
- ◆ The next experience study will be reported in 2006.
- ◆ The results of that study will first be used in the December 31, 2006 valuations.