



Wisconsin Retirement System

32nd Annual Actuarial Valuation as of
December 31, 2012 and Gain/Loss
Analysis

June 2013

GRS

Gabriel Roeder Smith & Company
Consultants & Actuaries
www.gabrielroeder.com

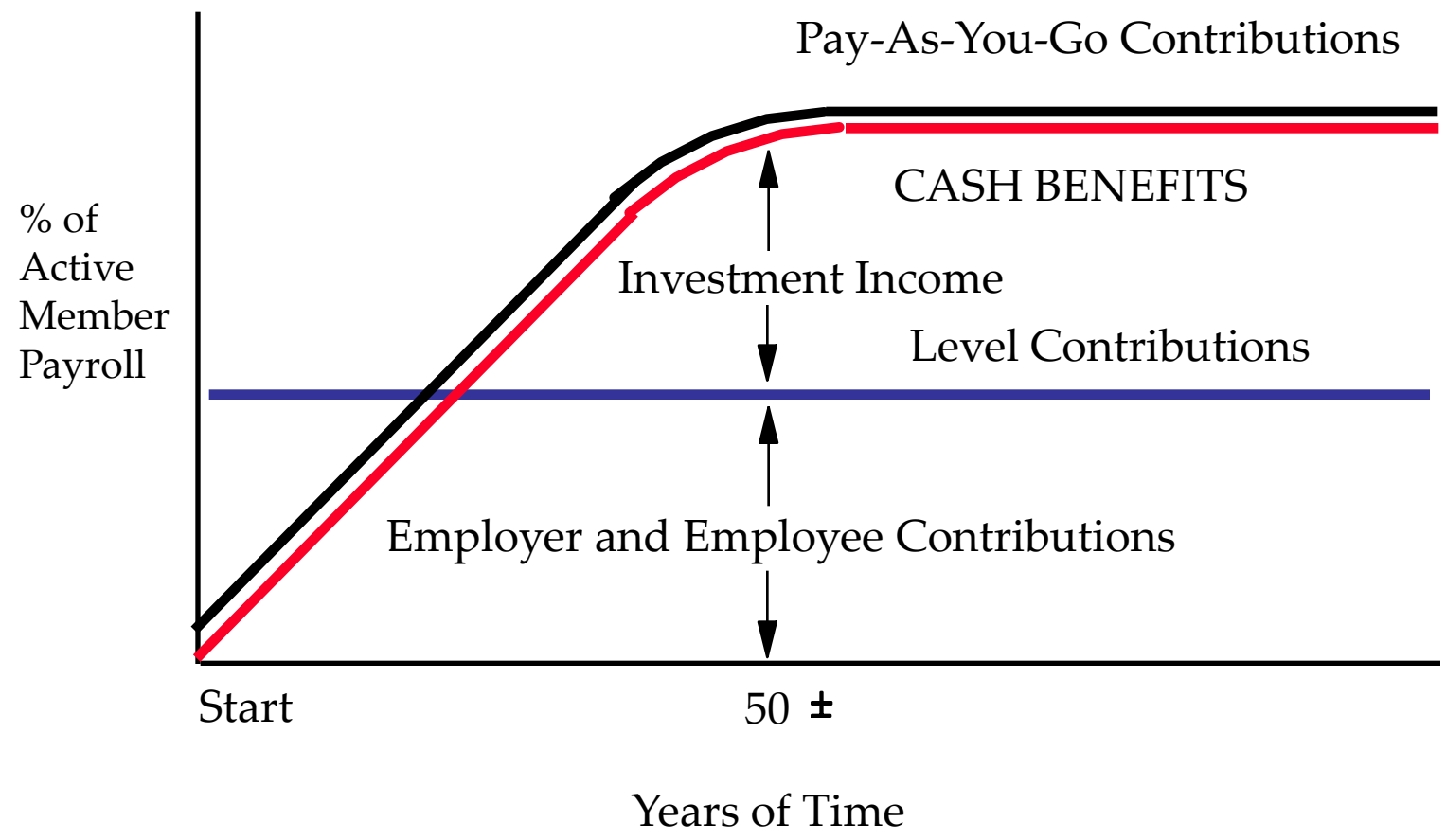


Funding Objectives

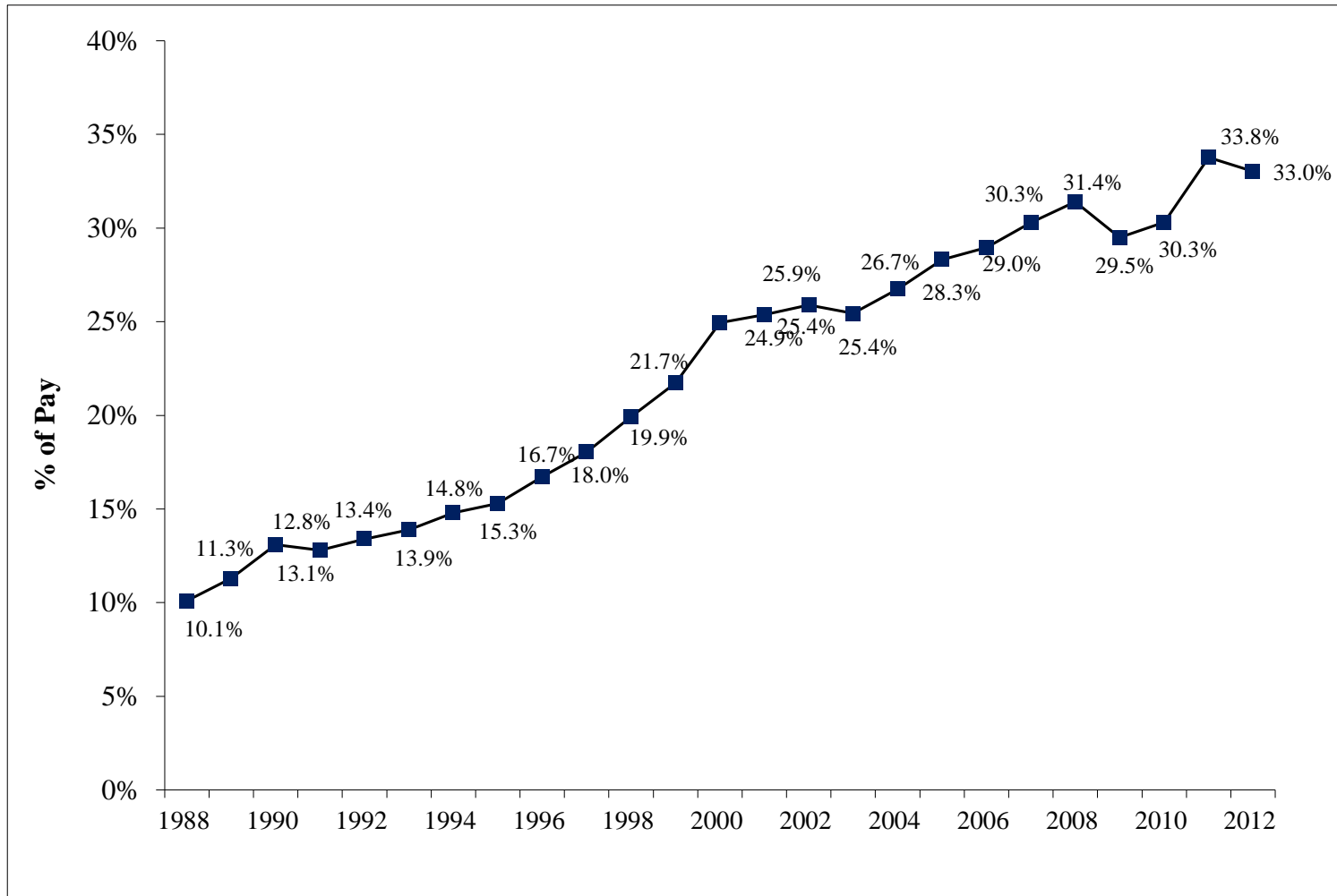
- ◆ Intergenerational equity with respect to plan costs
- ◆ Stable or increasing ratio of assets to liabilities
- ◆ Stable pattern of contribution rates



Financing Diagram



Annuities as a % of Payroll



Annuities are expected to continue to increase as a percent of payroll for several more decades.

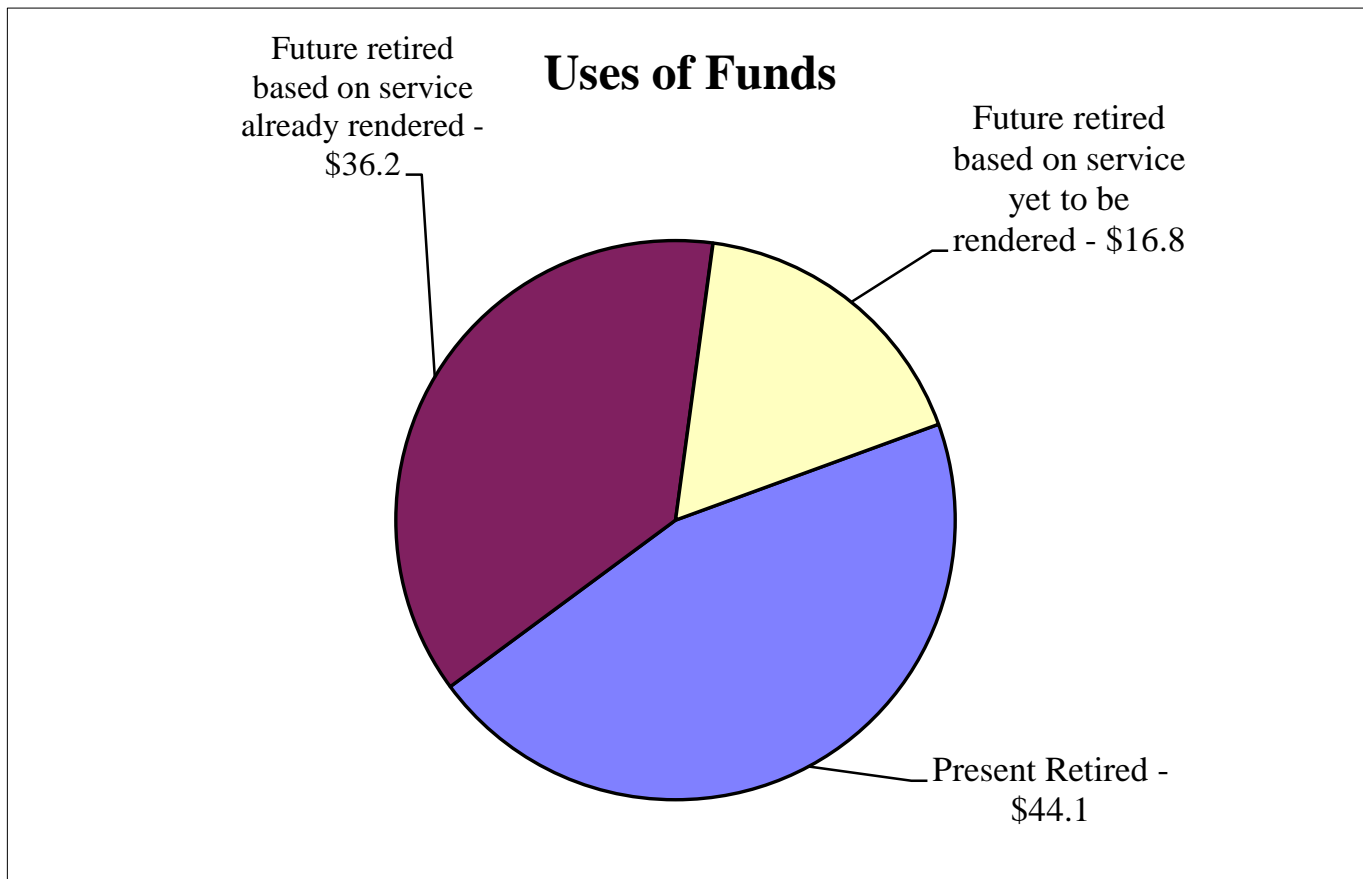


Active Participants

Valuation Group	Number	Annual Earnings (\$M illions)	Group Averages			
			Earnings	Age	Years of Service	Contribs.
General	231,765	\$11,041.0	\$47,639	46.1	11.7	\$46,924
Executive Group & Elected Officials	1,408	104.1	73,968	55.0	13.8	85,764
Protective Occupation with Social Security	19,353	1,105.1	57,104	40.7	12.8	53,556
Protective Occupation without Social Security	2,727	193.5	70,949	41.5	14.5	71,513
Total Active Participants	255,253	\$12,443.7	\$48,751	45.7	11.8	\$47,903
Prior Year	256,232	\$12,354.1	\$48,215	45.7	11.8	\$48,721



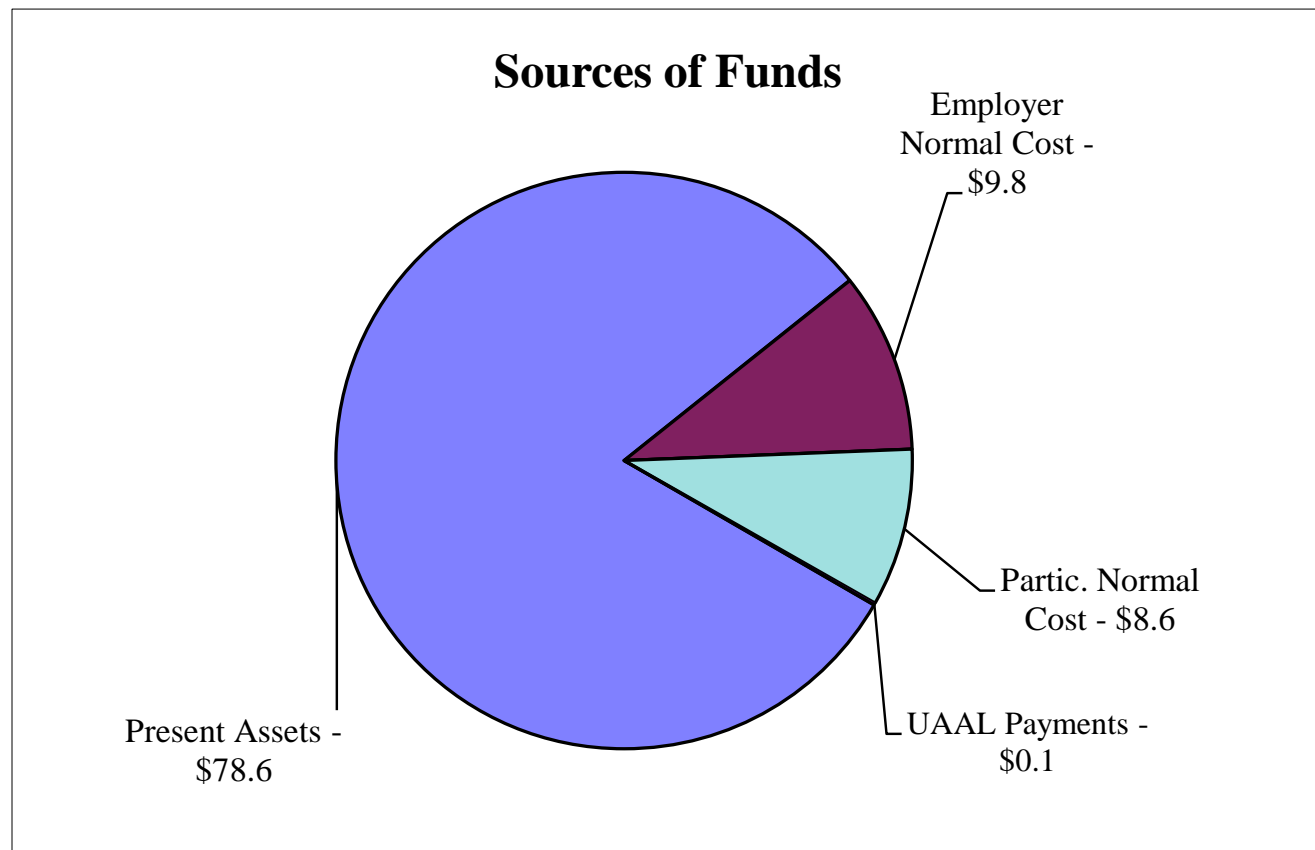
\$97.1 Billion* of Benefit Promises to Present Active and Retired Members



* Present value of future benefits; all divisions combined



Sources of Funds for Financing \$97.1 Billion of Benefit Promises





Summary of December 31, 2012 Valuation Results

	General Participants		Executives & Elected Officials	
	2014	2013	2014	2013
Employer Normal Cost	7.00%	6.65%	7.75%	7.00%
Participant Normal Cost *	7.00%	6.65%	7.75%	7.00%
Total Normal Cost	14.0%	13.3%	15.5%	14.0%
Unfunded Actuarial Accrued Liability (UAAL)	0.0%	0.1%	0.0%	0.0%
WRS Average Total	14.0%	13.4%	15.5%	14.0%

** Participant Normal Cost previously paid by employer*



Summary of December 31, 2012 Valuation Results

	Protective Occupation			
	With Soc. Sec.		Without Soc. Sec.	
	2014	2013	2014	2013
Employer Normal Cost	10.10%	9.75%	13.70%	12.35%
Participant Normal Cost *	7.00%	6.65%	7.00%	6.65%
Total Normal Cost	17.1%	16.4%	20.7%	19.0%
Unfunded Actuarial Accrued Liability (UAAL)	0.0%	0.0%	0.3%	0.3%
WRS Average Total	17.1%	16.4%	21.0%	19.3%

** Participant Normal Cost previously paid by employer and now set equal to General rate for Protective Members.*



Comparative Statement of Total Average Contribution Rates

Valuation 12/31	General	Executive & Elected	Protective with Soc. Sec.	Protective without Soc. Sec.
1988	12.0%	17.4%	18.1%	24.9%
1993	12.3%	17.6%	17.1%	23.2%
1998	11.0%	14.7%	12.1%	17.7%
2003	10.5%	11.2%	13.0%	14.6%
2008	11.2%	11.9%	14.1%	15.5%
2009	11.7%	13.3%	14.7%	17.3%
2010	11.9%	14.1%	14.9%	17.5%
2011	13.4%	14.0%	16.4%	19.3%
2012	14.0%	15.5%	17.1%	21.0%

Although total rates have increased, employer share is less than it was historically.



Reasons for Contribution Increases

	General	Executive & Elected	Protective with Soc. Sec.	Protective without Soc. Sec.
2013 Normal Cost Rate	13.3%	14.0%	16.4%	19.0%
Effect of Asset Performance	0.6%	0.8%	0.9%	1.4%
Effect of Assumption Change	0.2%	0.5%	0.1%	0.2%
Effect of Member Rate Change	0.1%	0.3%	0.0%	0.0%
Demographic and Other Experience	(0.2)%	(0.1)%	(0.3)%	0.1%
2014 Normal Cost Rate	14.0%	15.5%	17.1%	20.7%



Executive and Elected Group

- ◆ Normal Cost Rate increased by 1.5% of pay
- ◆ May have expected a decrease due to the lower benefit multiplier
- ◆ However, lower benefit multiplier for future service was recognized last year for Executive and Elected Group
- ◆ Rates for executive and elected also increased more than general due to shorter remaining working years (approximately 7 years for Executive and Elected versus 10 years for general members)



Impact of Asset Losses

- ◆ Asset gains and losses above or below the assumed rate of return are smoothed in over the current year, and four future years
- ◆ Four years after a valuation date, all asset gains or losses known at that time are fully recognized
- ◆ Smoothing method in WRS is referred to as the Market Recognition Account (MRA)
- ◆ This process generally works well, this valuation is the last including the very large 2008 asset loss



Operation of Market Recognition Account (MRA) - \$millions

	<u>2012</u>	<u>2013</u>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Actual Investment Return	9,416				
Assumed Investment Return	5,450				
Gain/(Loss) to be phased in	3,966				
Phased-in recognition					
• Current year	793	?	?	?	?
• First prior year	(936)	793	?	?	?
• Second prior year	399	(936)	793	?	?
• Third prior year	1,288	399	(936)	793	?
• Fourth prior year	<u>(5,370)</u>	<u>1,288</u>	<u>399</u>	<u>(936)</u>	<u>793</u>
Total recognized gain (loss)	(3,826)	1,544	256	(143)	793

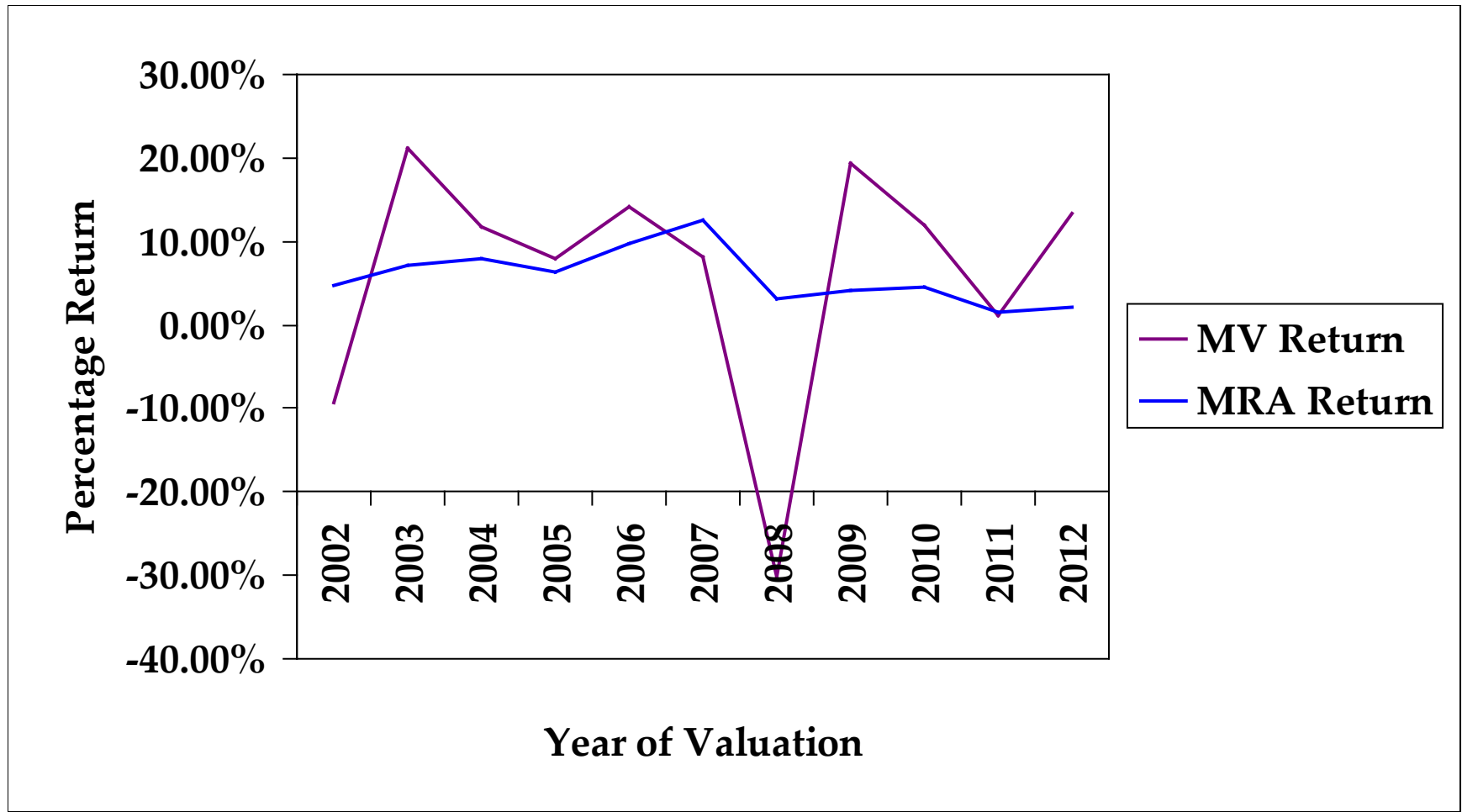


Cost Sharing of Asset Loss

- ◆ Due to the cost sharing nature of WRS, asset losses have been traditionally shared by:
 - ▶ Employees (through reduced money purchase benefit)
 - ▶ Employers (through increases in contributions)
 - ▶ Retirees (through reduced dividends)
- ◆ In most Systems, employers pick up entire cost of asset losses (and reap the rewards of gains)
- ◆ WRS contribution rates have been more stable when compared to other Systems



Market Value Return vs. Market Recognition (Actuarial) Return





Concluding Remarks

- ◆ This year is the last year for recognition of the 2008 asset loss
- ◆ Stable contributions more likely over next few years
- ◆ Experience Amortization Reserve (EAR) period was changed to 25 years to help stabilize rates – will revert to 20 years over next two years



Gain/Loss Analysis

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2012 Gain Loss Analysis

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



WRS Assumption Risk Areas

Primary Risks

Demographic

Normal retirement

Early retirement

Death-in-service

Disability

Other separations

Economic

Salary increases

Investment return



Why Have A Gain/Loss Analysis?

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



Population Development During 2012

	<u>Actual</u>	<u>Expected</u>
Beginning Census	256,233	
(-) Normal Retirement	3,542	3,760
(-) Early Retirement	3,904	3,909
(-) Death	290	277
(-) Disability Retirement		
- Total Approved	178	248
- Less Pending	68	
- Net New	110	
(-) Other Separations	12,726	10,800
(-) Transfers Out	1,531	
(+) Transfers In	1,531	
(+) New Entrants	19,592	
Ending Census	255,253	



Population Development During 2012

Normal Retirements: Varied by group and gender. Overall, fewer than expected, but net result on liabilities is a small loss.

Early Retirements: Very close to expected, overall producing a small loss.

Deaths: Among active participants were very close to expected. The net result for the past year was a small gain.

Disabilities: Less than expected, producing a gain.

Other Separations: Varied by group, gender and service. The net result was a small gain.



Components of Total Gain/Loss

	<u>Gain/(Loss) in Millions</u>	
	<u>2011</u>	<u>2012</u>
Economic Risk Areas	\$ (1,178)	\$ (548)
Decrement Risk Areas	(136)	(15)
Other Activity	<u>(159)</u>	<u>(92)</u>
Total Gain (Loss)	\$ (1,473)	\$ (655)
Effect of Assumption Changes	<u>0</u>	<u>(108)</u>
Net Gain/(Loss)	\$ (1,473)	\$ (763)



Investment Earnings in 2012 (Active Participants)

	<u>\$ Millions</u>
A. Average balance on Participant and Employer Accumulation Reserves	\$34,237
B. Expected earnings: 7.2%	2,465
C. Earnings credited to Participant and Employer Accumulation Reserves	1,040
D. Gain (loss) from earnings: C - B	\$ (1,425)



Investment Earnings in 2012 (Active Participants)

- ◆ \$1,425 million is the total recognized asset loss for the year
- ◆ However, part of the total gain/loss is allocated to Variable Excess accounts
- ◆ Some of the loss flows through to members via the operation of Money Purchase minimum benefits
- ◆ Must net these out to determine remaining core fund gain or loss
- ◆ Remaining portion affects contribution rates



Investment Earnings in 2012 (Active Participants)

	<u>\$ Millions</u>
Gross Loss for the Year	\$(1,425)
Less Estimate Gain/(Loss) due to Money Purchase	(436)
Less Estimated Gain/(Loss) due to Variable Excess	<u>277</u>
Net Core Fund Asset Loss	\$ (1,266)

Loss for the year is based on 5-year smoothed return.
Actual market return on Core Fund for 2012 was a gain.



Comparative Schedule of Experience Gains/Losses by Decrement

	<u>2011</u>	<u>2012</u>
Normal Retirement	\$ (72.5)	\$ (17.3)
Early Retirement	(77.0)	(31.5)
Death with Benefit	19.0	17.4
Disability Retirement	0.7	0.4
Other Separations	<u>(6.1)</u>	<u>16.3</u>
Total	\$ (135.9)	\$ (14.7)
As % of Liabilities	<0.4%	<0.05%



Salary Related Gain/Loss

Pay increases were less than expected in all groups, resulting in a gain

	<u>\$ Millions</u>	<u>Liabilities</u>
General	\$610.0	2.0 %
Executive & Elected	1.4	0.7 %
Protective w/Soc. Sec.	100.8	2.9 %
Protective w/o Soc. Sec.	6.2	0.7 %
	<u>\$718.4</u>	<u>2.1 %</u>



Concluding Remarks

- ◆ Recognition of remaining prior asset gains are expected over the next few years
- ◆ This Gain/Loss Analysis is the first in a regular 3-year experience cycle
- ◆ This study together with the 2013 and 2014 results will form the basis for the next experience study



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