



Wisconsin Retirement System

27th Annual Actuarial
Valuation of Retired Lives
December 31, 2009

GRS

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Operation of the System – Core

- ◆ If reserve/assets greater than 0.5% of liabilities, annuity increases (dividends) may be granted
- ◆ If reserve/assets less than -0.5% of liabilities, prior annuity dividends are reduced
- ◆ Increases/decreases rounded to nearest 0.1%
- ◆ Increases or decreases are effective in April following the December 31 Valuation



Operation of the System - Variable

- ◆ If reserve/assets greater than 2% of liabilities, variable annuity is increased
- ◆ If reserve/assets less than -2% of liabilities, variable annuity is decreased
- ◆ Fractions of percents are truncated and carried to following year
- ◆ Increases or decreases are effective in April following the December 31 valuation



Smoothing mechanisms - Core

- ◆ Undesirable for retirees to experience wide swings in monthly benefits from year to year (especially downward swings)
- ◆ Mitigated in Core division by asset smoothing process and portfolio mix
- ◆ Asset smoothing has worked well historically, but a second negative dividend could not be avoided this year



Smoothing Mechanisms - Variable

- ◆ Variable fund is marked to market each year and subject to wide swings
- ◆ Dropping fractions from the percent is a form of smoothing
- ◆ Usually has very little effect due to the magnitude of the gains and losses



Summary of Results – December 31, 2009

\$ Millions

	Core	Variable
Number of Annuitants	150,866	34,836
Annual Annuities	\$ 3,451.6	\$ 240.3
Fund Balance	36,655.8	3,078.4
Actuarial Reserve	37,072.7	2,512.7
Ratio	0.989	1.225



Primary Sources of Core Dividend

	<u>% of APV</u>
1. SWIB published investment return	22.40%
2. MRA adjustment	<u>(18.20)%</u>
3. Published effective earnings rate	4.20%
4. Adjustment to relate earnings to average fixed annuity balance	<u>(0.20)%</u>
5. Earnings rate based on average balance	4.00%
6. Expected dividend before adjustments: 1.04/1.05-1	(0.95)%
7. Adjustment to relate average asset to ending liability	(0.02)%
8. Carryover from last year due to timing of dividend accounting adjustments and rounding	(0.12)%
9. Adjustments to contingency reserve and data reserve	1.15%
10. Experience Study	(0.96)%
11. Experience and other effects	(0.22)%
12. Statutory adjustment to round to nearest one-tenth percent	<u>0.02%</u>
13. Trial Computed dividend rate: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(1.1)%
14. Adjustment for members not subject to negative dividend	(0.20)%
15. Final Computed dividend rate: (13)+(14)	(1.3)%



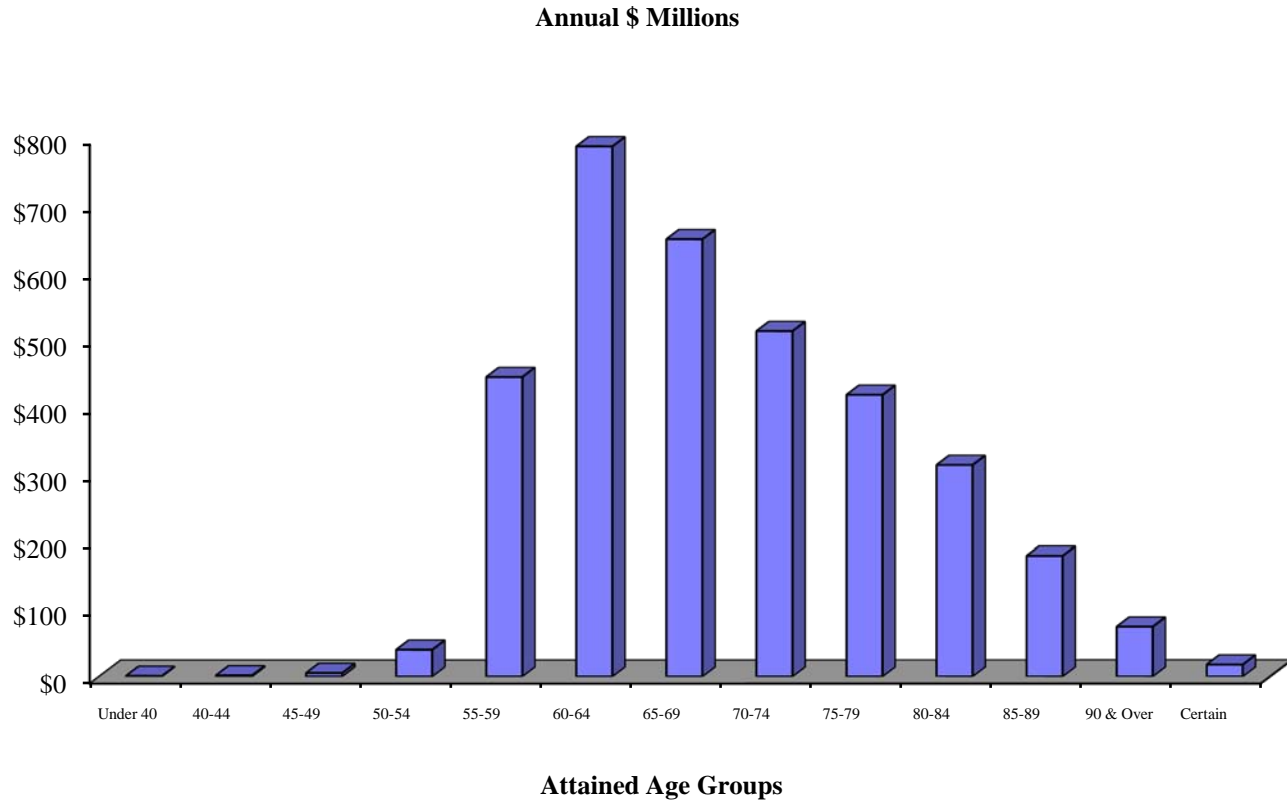
Illustration of Item 14 Adjustment

	<u>Liabilities</u>	<u>2009 Dividend</u>	<u>% of Liabilities</u>
1) All members	\$37,000 M	\$(400) M	(1.1)%
2) Members with no current dividend	\$ 6,000 M	0	0
3) All others	\$31,000 M	\$(400) M	(1.3)%

- ◆ Difference between row 1 and row 3 dividend is (0.2)%
- ◆ To keep actuarial balance, (0.2)% must be reallocated



Core Annuities Being Paid



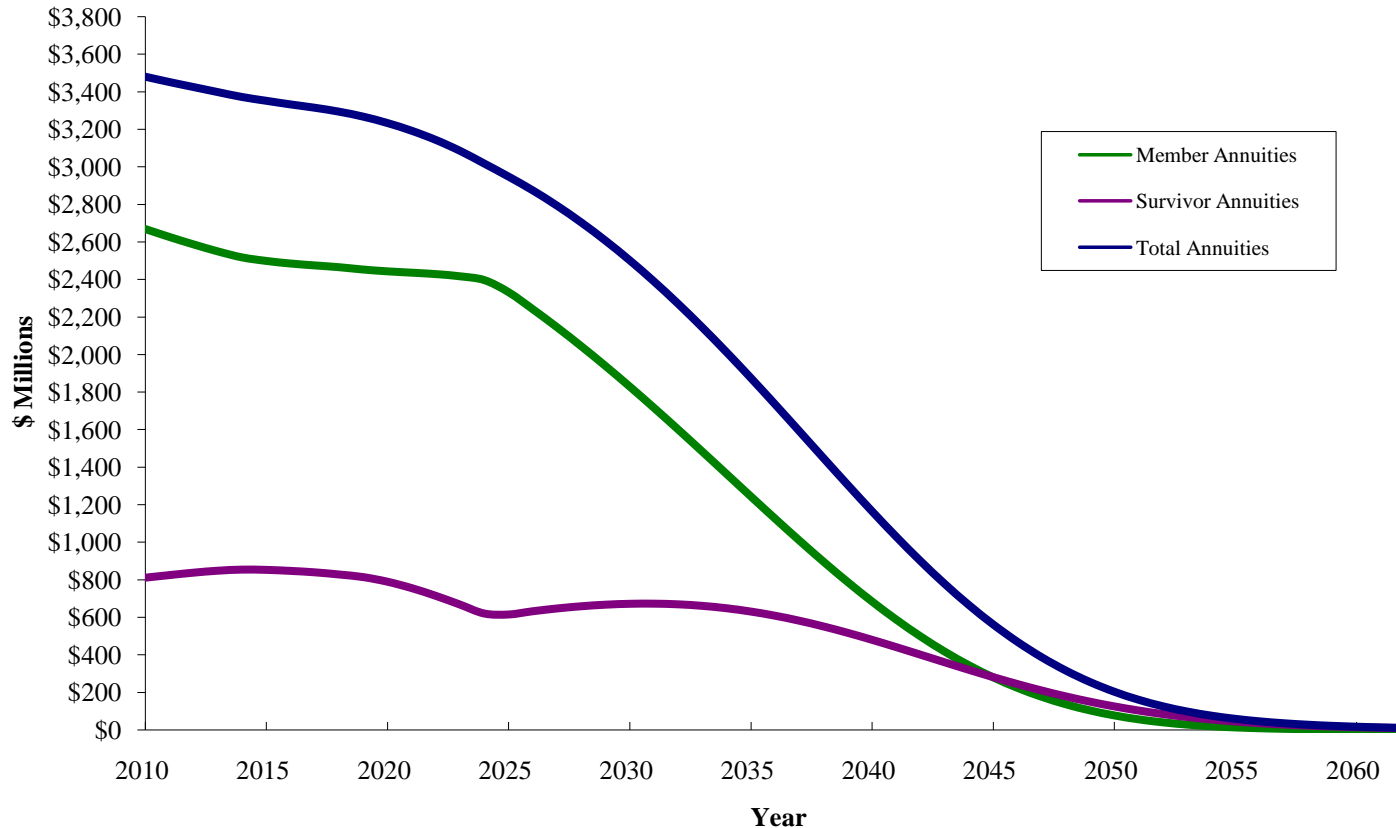
Average age

- at retirement
- now (12/31/2009)

59.5 years
70.4 years



Projected Future Core Annuities



Total Future Payments	\$90.0 billion
From Present Assets	36.7
From Investment Return	53.3



Impact of Declining Variable Base

- ◆ Last year, loss of 0.7% or \$32M was truncated and deferred to this year

	<u>2008</u>	<u>2009</u>
1) Truncated loss	\$32 M	\$32 M
2) Actuarial reserve	\$4,491 M	\$2,512 M
3) Loss as % of Reserve	0.7%	1.3%

- ◆ This year, \$32M loss represents 1.3% of the current Actuarial Reserve
- ◆ Decline in Actuarial Reserve Base will tend to inflate most adjustments shown on the next slide

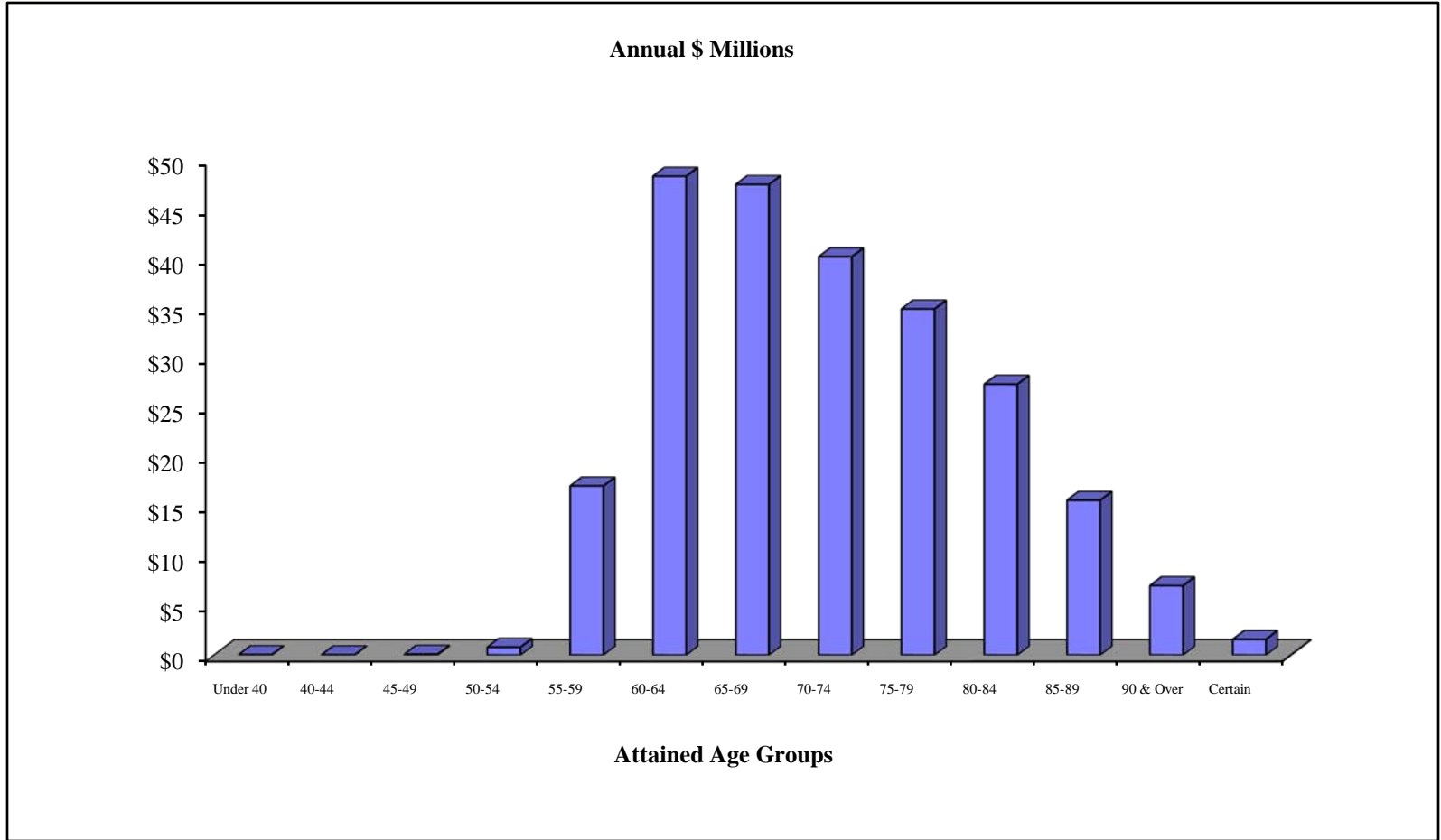


Primary Sources of Variable Adjustment

	<u>% of APV</u>
1. SWIB published investment return	33.7%
2. Adjustment to published effective rate	<u>(0.7)%</u>
3. Published effective earnings rate	33.0%
4. Adjustment to relate earnings to average variable annuity fund balance	<u>(1.2)%</u>
5. Earnings rate based on average balance	31.8%
6. Expected change before adjustments: $1.318/1.05-1$	25.5%
7. Adjustment to relate average asset to ending liability	(0.1)%
8. Carryover from last year due to timing of distribution, accounting adjustments and truncation	(3.9)%
9. Adjustments to contingency reserve	2.3%
10. Experience Study	(1.2)%
11. Experience and other effects	(0.1)%
12. Statutory adjustment: (truncate to whole percent)	<u>(0.5)%</u>
13. Variable annuity change: (6)+(7)+(8)+(9)+(10)+(11)+(12)	22.0%



Variable Annuities Being Paid



Average age

**- at retirement
- now (12/31/2009)**

**59.2 years
70.2 years**



Comparative Statement - Core

Valuation Date	Number	\$ Millions				Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI
1999	102,817	1,513.8	16,857.8	15,687.2	1.075	17.1 %	2.7 %
2000	107,425	1,867.0	20,517.8	19,405.3	1.057	5.7 %	3.4 %
2001	112,142	2,048.6	21,979.7	21,283.6	1.033	3.3 %	1.6 %
2002	116,289	2,226.6	23,142.4	23,202.9	0.997	0.0 %	2.4 %
2003	121,582	2,364.7	25,071.9	24,724.0	1.014	1.4 %	1.9 %
2004	126,211	2,500.3	26,920.0	26,232.2	1.026	2.6 %	3.3 %
2005	131,674	2,691.4	28,575.3	28,359.7	1.008	0.8 %	3.4 %
2006	137,117	2,843.6	31,180.5	30,273.9	1.030	3.0 %	2.6 %
2007	142,906	3,075.3	35,050.1	32,877.5	1.066	6.6 %	4.1 %
2008	144,033	3,399.3	35,798.1	36,551.5	0.979	(2.1)%	0.1 %
2009	150,671	3,449.3	36,655.8	37,072.7	0.989	(1.3)%	2.7 %
27-Year Average						4.9 %	3.0 %
10-Year Average						2.0 %	2.5 %

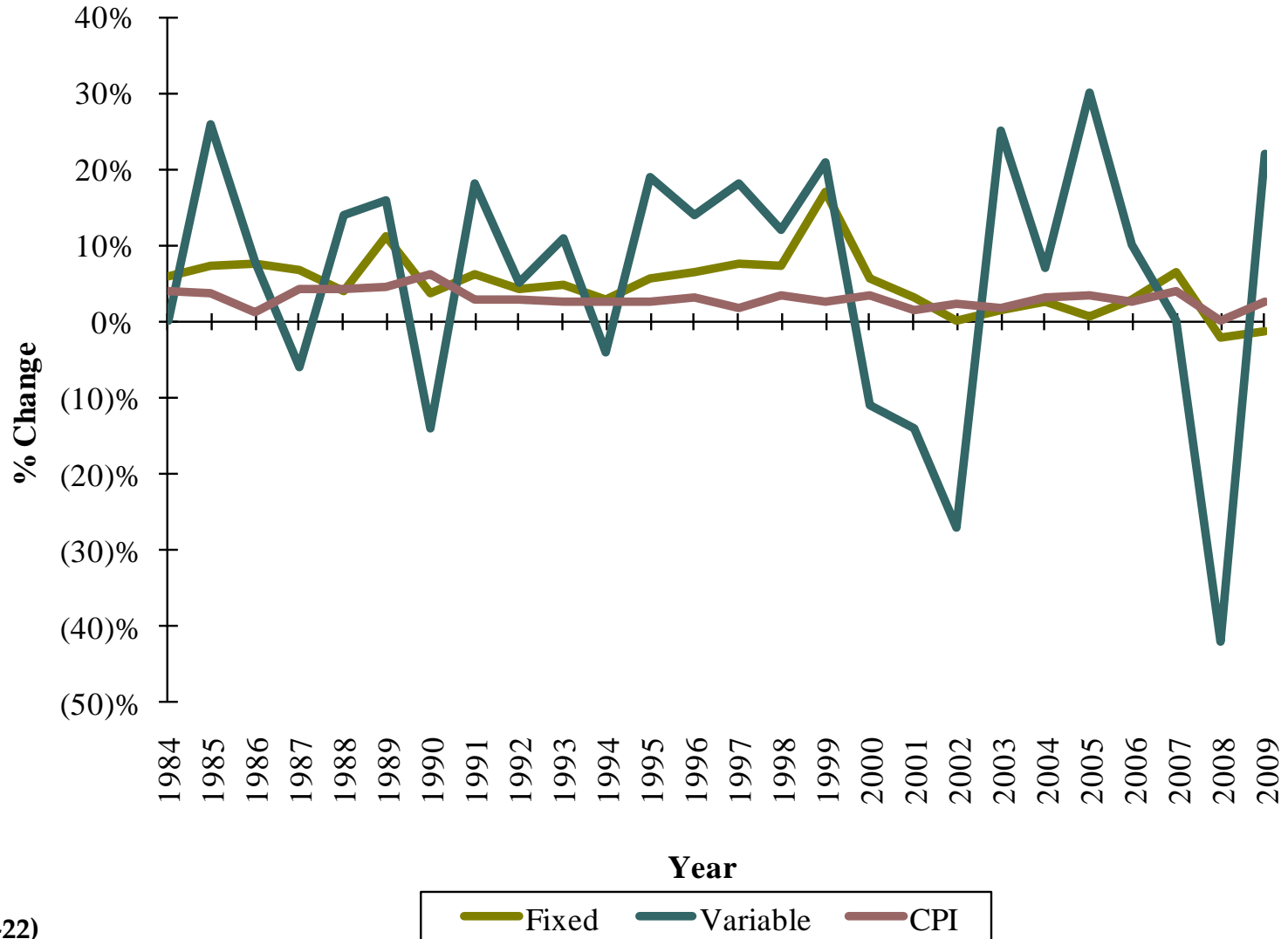


Comparative Statement - Variable

Valuation		\$ Millions				Change in	
		Annual	Fund	Actuarial	Ratio	Annuitants	CPI
Date	Number	Annuitants	Balance	Reserve			
1999	26,257	345.8	4,432.9	3,659.1	1.212	21.0 %	2.7 %
2000	27,321	445.3	4,211.4	4,749.3	0.887	(11.0)%	3.4 %
2001	28,314	424.4	3,901.8	4,547.4	0.858	(14.0)%	1.6 %
2002	28,662	374.0	2,899.3	3,999.1	0.726	(27.0)%	2.4 %
2003	29,496	273.3	3,635.9	2,892.2	1.257	25.0 %	1.9 %
2004	30,270	346.0	3,909.9	3,654.5	1.070	7.0 %	3.3 %
2005	31,499	376.5	4,092.7	3,970.7	1.031	3.0 %	3.4 %
2006	32,683	391.8	4,594.2	4,145.2	1.108	10.0 %	2.6 %
2007	33,880	432.6	4,625.0	4,563.7	1.013	0.0 %	4.1 %
2008	34,927	427.0	2,574.5	4,491.0	0.573	(42.0)%	0.1 %
2009	34,836	240.3	3,078.4	2,512.7	1.225	22.0 %	2.7 %
27-Year Average						4.1 %	3.0 %
10-Year Average						(5.0)%	2.5 %



History of % Changes





Looking Ahead

- ◆ Future dividend projections will be discussed in greater detail in the next topic
- ◆ Negative dividends are likely to continue in the near term due to continued recognition of prior investment losses
- ◆ Variable adjustment will have some upward pressure next year due to timing of adjustment and carryover of truncated amounts



Looking Ahead

- ◆ Important to keep long-term perspective – even with full recognition of 2008 market losses, core fund has achieved long-term investment objective and dividends have averaged over 4.0% the last 27 years.