

WISCONSIN RETIREMENT SYSTEM
29TH ANNUAL ACTUARIAL VALUATION OF RETIRED LIVES
DECEMBER 31, 2011

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March 1, 2012

Employee Trust Funds Board
Madison, Wisconsin

Ladies and Gentlemen:

The results of the **29th annual actuarial valuation of core and variable annuities** being paid from the Wisconsin Retirement System are presented in this report. The valuation was based upon data, furnished by the WRS staff, concerning Fund assets and individual annuitants and beneficiaries. Data was checked for internal consistency, but was not otherwise audited.

The date of this valuation was **December 31, 2011**. Actuarial assumptions used in the valuation are summarized in the Appendix.

The results of the valuation may be briefly summarized as follows (\$ millions).

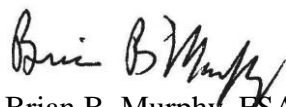
	Core	Variable
Number of Annuitants	167,649	38,949
Annual Amount	\$ 3,844.9	\$ 330.3
Fund Balance	40,411.5	3,197.9
Actuarial Reserve	42,078.3	3,462.9
Ratio	0.96	0.923

Based upon these results, the maximum decrease in the core annuities is 7.0%. The reason the decrease is larger than the average of 4.0% is that many annuitants no longer have a dividend to reduce and therefore must be spread across the group of annuitants that still have remaining dividends. This is discussed in additional detail on Page 8 of this report. Variable annuities will be decreased by 7%.

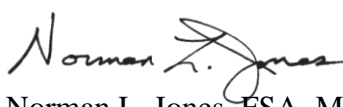
To the best of our knowledge this report is complete and accurate. All calculations have been made in conformity with generally accepted actuarial principles and practices and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. Please see the following page for additional disclosures requested by the Actuarial Standards of Practice. The undersigned are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The cooperation of the Secretary and his staff in gathering materials for this valuation is acknowledged with appreciation.

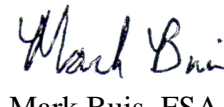
Respectfully submitted,



Brian B. Murphy, FSA, MAAA



Norman L. Jones, FSA, MAAA



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BBM/NLJ/MB:lr

Additional Disclosures Required by Actuarial Standards of Practice

This report was prepared at the request of the Wisconsin Retirement System and those designated or approved by the Wisconsin Retirement System. This report may be provided to parties other than the Wisconsin Retirement System only in its entirety and only with the permission of the Wisconsin Retirement System.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.

This report should not be relied on for any purpose other than the purpose described in the primary communication.

The signing actuaries are independent of the plan sponsor.

The valuation was based upon information furnished by the WRS Staff, concerning pension benefits, financial transactions, plan provisions and retirees and beneficiaries. We are not responsible for the accuracy or completeness of the information provided by the Wisconsin Retirement System.

SECTION A
OPERATION OF THE SYSTEM

OPERATION OF THE RETIREMENT SYSTEM

Each year, as of December 31, an actuarial valuation of the liability for retired persons receiving benefits from the Wisconsin Retirement System is conducted. The purpose of the valuation is to determine the actuarial present value of future benefit payments on behalf of current retired lives. This present value is the “actuarial reserve”. Theoretically, if an amount of money equal to the actuarial present value were invested at a yield equal to the valuation interest rate, the initial amount plus the continuing investment income would provide exactly the right amount of money to pay the annuities of all current retired persons and their beneficiaries for the rest of their lives. The fund would decrease each year, and would become zero many decades in the future when the last annuitant dies.

The above is a “closed group” description of the operation of the annuity reserve fund. But the fund is really an “open group”. The size of the fund does not actually decrease because each year more benefits are added to the rolls than are removed, and fresh money is transferred into the annuity reserve fund to finance the benefits of the new annuitants. (The actuary calculates the reserve transfers for new annuitants each year as a by-product of the actuarial valuation.)

According to theory, the fund will eventually reach a state when the number of people entering (retiring) each year is approximately equal to the number of people exiting (dying) each year. When this mature state is reached, the amount of money in the fund will remain approximately level in constant dollars from year to year. Each year, the reserve transfers for the new annuitants plus investment earnings on the whole fund (total money in) will be approximately equal to the benefit payments (total money out). The only source of growth in assets would be the result of the effects of inflation. The dollars in the fund would increase, but the “real” value of the fund would not change.

There are at least two factors that cause the actual operation to be different from the theoretical operation described above. The first is that annuitants may have longer or shorter lifetimes than expected. In recognition of this, the actuary monitors mortality experience of the retirement system and recommends a new mortality table when appropriate. The second factor is that actual investment earnings are rarely equal to the assumed rate. When investment earnings differ from the assumed rate, the difference, positive or negative, is recorded in a supplemental reserve.

OPERATION OF THE RETIREMENT SYSTEM

The Wisconsin Retirement System maintains separate reserves for core and variable annuities. Each year, the actuary determines the actuarial reserve for core and variable annuities separately. WRS' practice with respect to the use of supplemental reserves is described below.

Core Annuity Division: If the supplemental reserve is positive and is at least 0.5% of core annuity liabilities, core annuity increases (dividends) may be granted. If the supplemental reserve is negative and is equal to or greater than 0.5% of core annuity liabilities in absolute value, prior core annuity dividends are reduced by an aggregate amount equal to the shortfall. Increases or decreases become effective in April following the December 31 valuation.

Variable Annuity Division: If the supplemental reserve is at least 2% of variable annuity liabilities, substantially all of the reserve (dropping fractions of a percent) is used to increase or decrease variable annuities for the ensuing year. Increases or decreases become effective in April following the December 31 valuation.

SECTION B
CORE ANNUITIES

CORE ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2010	\$37,798.4	\$38,148.5	0.991
Closing Adjustments	(0.2)	0.0	
Variable Terminations	71.3	71.3	
2011 Core Annuity Reserve Adjustment: -0.9% *	0.0	(321.9)	
Beginning Balance January 1, 2011	37,869.5	37,897.9	0.999
Increases			
Reserve Transfers	5,735.7	5,735.7	
Regular Interest	1,944.3	1,944.3	
Additional Earnings	(1,388.6)	0.0	
Addition to Contingency/Data Reserve	0.0	196.6	
Experience Study	0.0	0.0	
Other	0.0	53.2	
Total Increases	6,291.4	7,929.8	
Decreases			
Annuities & Lump Sums	3,742.7	3,742.7	
Credit Re-establishments	6.7	6.7	
Releases from Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	0.0	
Total Decreases	3,749.4	3,749.4	
Ending Balance December 31, 2011	\$40,411.5	\$42,078.3	0.960

The ending liability balance includes data and mortality reserves of \$499.8 million and a dividend liability of \$6,417.9 million

* Core Annuity Reserve adjustment ranged from 0% to a maximum of -1.2% dividend.

RESERVE TRANSFER RECOMMENDATION
DECEMBER 31, 2011

Amounts to be transferred from the Employer Reserve and the Employee Reserve to the Annuity Reserve to cover liabilities for new annuities are computed as the first step in the annual actuarial valuation. The actuarial present value at time of retirement of core annuities reported as new since the last actuarial valuation is \$5,707,990,303. Adjustments to prior transfers, related to estimated annuities for which final computations have now been made, totaled \$27,729,257. Reserve transfers are distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$5,143,743,785	\$25,143,734	\$5,168,887,519
Protective with Social Security	426,292,902	1,891,581	428,184,483
Protective without Social Security	85,899,044	57,388	85,956,432
Executive & Elected	52,054,572	636,554	52,691,126
Totals	\$5,707,990,303	\$27,729,257	\$5,735,719,560

Accordingly, we recommend that \$5,735,719,560 be transferred to the Core Annuity Reserve. The results in this report assume that this transfer has been made.

DISCUSSION OF DIVIDEND DECEMBER 31, 2011

The Core Annuity Fund Balance, \$40,411.5 million, was less than the actuarial present value of core annuities and reserves, \$42,078.3 million, by \$1,666.8 million which resulted in an average annuity adjustment of (4.0%) with a range of 0.0% to a maximum of (7.0)%. The primary sources of the (7.0)% are:

	% of APV
1. SWIB published investment return	1.40%
2. MRA adjustment	0.10%
3. Published effective earnings rate	1.50%
4. Adjustment to relate earnings to average core annuity balance	(0.07)%
5. Earnings rate based on average balance	1.43%
6. Expected dividend before adjustments: 1.0143/1.05-1	(3.40)%
7. Adjustment to relate average asset to ending liability	0.10%
8. Carryover from last year due to timing of dividend accounting adjustments and rounding	(0.07)%
9. Adjustments to contingency reserve and data reserve	(0.47)%
10. Experience Study	0.00%
11. Experience and other effects	(0.12)%
12. Statutory adjustment to round to nearest one-tenth percent	(0.04)%
13. Trial Computed dividend rate: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(4.0)%
14. Adjustment for members at or near the statutory floor	(3.0)%
15. Final Computed dividend rate: (13)+(14)	(7.0)%

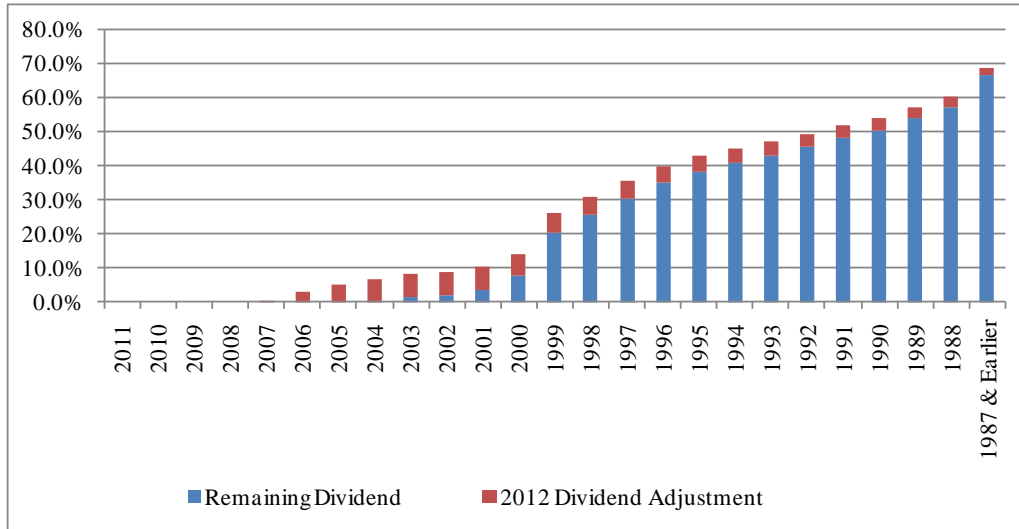
See pages 30 and 31 for a description of items on this page.

In accordance with the Administrative Code, ETF 20.25 and Section 40.27(2) Wisconsin Statutes (see page 29), the dividend adjustment ranging from 0.0% to (7.0)% was effective April 1, 2012.

DISCUSSION OF DIVIDEND DECEMBER 31, 2011

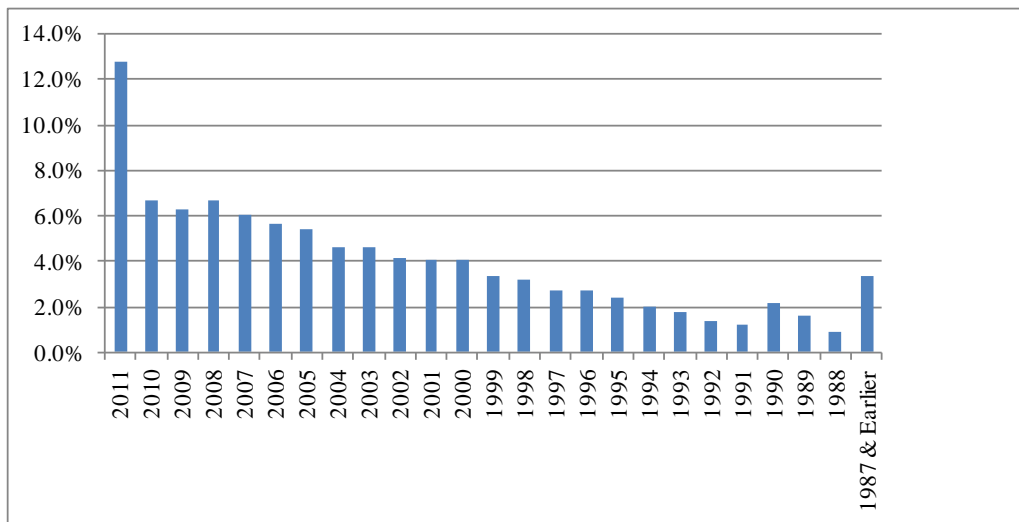
As shown on the prior page, the adjustment for members at or near the statutory floor (Item 14) is (3.0)%. This adjustment has increased significantly this year because the percentage of members with no remaining dividend has grown. The chart below shows that only members who retired prior to 2006 had a dividend remaining prior to the 2012 dividend adjustment.

Dividend Remaining (as a Percentage of Total Benefit) by Year of Retirement



After the 2012 dividend adjustment, only members retired prior to 2004 have a dividend remaining. This situation is compounded by the fact that members who retired prior to 2004 represent a shrinking portion of the liabilities. The chart below shows liabilities by year of retirement.

Liabilities (as a Percentage of Total) by Year of Retirement



Looking ahead, it is likely that there will be one more negative dividend next year due to the final year recognition of the asset losses incurred during 2008. Due to the fact that the population with a remaining dividend is shrinking and also represents a shrinking portion of the liabilities, the Item 14 adjustment is expected to increase yet further in 2013.

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE CORE ANNUITIES APPROVED IN 2011
TABULATED BY TYPE OF ANNUITY AND OPTION**

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	2,414	\$ 52,670,868	\$ 715,716,300
SL	Straight Life (accelerated)	0	10,783,037	36,523,304
A60	Life Annuity with 60 payments guaranteed	1,513	34,509,705	467,920,290
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	7,978,167	25,822,261
A180	Life Annuity with 180 payments guaranteed	2,778	60,215,360	858,173,277
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	15,524,931	55,050,074
A180F	Life Annuity with 180 payments guaranteed (forced)	45	385,554	4,708,743
JOINT	Joint and 75% Survivor	1,613	43,207,179	646,962,883
JOINT	Joint and 75% Survivor (accelerated)	0	10,296,955	36,078,216
R25	Reduced 25% on First Death	690	18,841,623	271,609,740
R25	Reduced 25% on First Death (accelerated)	0	3,320,101	12,025,306
C100	100% Continued to Named Survivor	1,586	37,262,260	567,481,436
C100	100% Continued to Named Survivor (accelerated)	0	7,855,182	27,102,975
C180	100% Continued to Named Survivor with 180 payments guaranteed	4,441	113,172,924	1,763,928,854
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	30,929,339	113,740,523
LOL	Life with Optional Length Guaranteed	1	25,729	218,837
AC24	Annuity Certain with 24 Payments	0	126,006	297,245
AC60	Annuity Certain with 60 Payments	5	174,520	821,420
AC120	Annuity Certain with 120 Payments	1	125,399	1,034,160
AC180	Annuity Certain between 24 and 180 Payments	3	108,664	786,633
SLNSD	Straight Life - Named Survivor Deceased	6	237,156	2,858,120
Total Regular		15,096	\$ 447,750,659	\$ 5,608,860,597
Average Age at Retirement		59.6 Years		
DISABILITY RETIREMENT				
SL	Straight Life	33	\$ 989,184	\$ 13,182,616
A60	Life Annuity with 60 payments guaranteed	13	463,373	6,108,793
A180	Life Annuity with 180 payments guaranteed	44	1,373,685	19,222,627
JOINT	Joint and 75% Survivor	15	389,753	5,734,279
R25	Reduced 25% on First Death	8	240,099	3,619,106
C100	100% Continued to Named Survivor	19	569,376	8,842,415
C180	100% Continued to Named Survivor with 180 payments guaranteed	64	1,799,726	28,527,843
Total Disability		196	\$ 5,825,196	\$ 85,237,679
Average Age at Retirement		54.9 Years		
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	4	\$ 49,758	\$ 621,825
A60	Life Annuity with 60 payments guaranteed	10	289,848	4,044,048
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	17,940	96,175
A180	Life Annuity with 180 payments guaranteed	46	545,655	8,268,714
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	183,200	861,328
Total Death-in-Service		60	\$ 1,086,401	\$ 13,892,090
Average Age at Retirement		55.2 Years		
GRAND TOTAL		15,352	\$ 454,662,256	\$ 5,707,990,366

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2011 TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	21,621	\$ 408,994,367	\$ 4,283,849,769
SL	Straight Life (accelerated)	0	26,324,458	65,820,885
A60	Life Annuity with 60 payments guaranteed	19,646	371,784,348	3,680,042,403
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	19,733,053	45,809,343
A120	Life Annuity with 120 payments guaranteed	216	3,385,343	10,918,712
A180	Life Annuity with 180 payments guaranteed	34,140	632,850,946	6,624,134,195
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	47,799,760	119,354,219
A180F	Life Annuity with 180 payments guaranteed (forced)	250	1,678,268	16,293,352
JOINT	Joint and 75% Survivor	19,391	480,365,028	5,663,979,128
JOINT	Joint and 75% Survivor (accelerated)	0	30,239,663	72,219,012
R25	Reduced 25% on First Death	13,197	377,392,388	3,836,716,983
R25	Reduced 25% on First Death (accelerated)	0	11,176,203	26,763,062
C100	100% Continued to Named Survivor	14,148	299,621,434	3,625,968,859
C100	100% Continued to Named Survivor (accelerated)	0	19,810,672	49,502,416
C180	100% Continued to Named Survivor with 180 payments guaranteed	36,204	832,651,093	11,292,112,682
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	91,834,853	235,911,713
LOL	Life with Optional Length Guaranteed	80	1,413,048	7,177,362
LOLF	Life with Optional Length Guaranteed (Forced)	8	164,220	742,126
AC24	Annuity Certain with 24 Payments	0	157,790	259,779
AC60	Annuity Certain with 60 Payments	1	373,691	1,251,909
AC120	Annuity Certain with 120 Payments	0	795,545	5,363,472
AC180	Annuity Certain between 24 and 180 Payments	1	2,999,829	13,796,805
C50	50% Continued to One Beneficiary	79	1,448,149	5,787,451
C50W180	50% Continued to One Beneficiary with 180 Months guaranteed	8	54,914	197,678
C75WSS	75% Continued to One Beneficiary and Social Security Integrated	78	1,904,409	11,173,466
R25W120	Reduced 25% on Death of Annuitant or Named Survivor with 120 Months guaranteed	10	175,287	492,359
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	175	1,160,074	4,388,766
A180WSS	Life with 180 Months Guaranteed and Social Security Integrated	148	3,307,286	14,040,007
PF6213	Police and Firemen s.62.13	159	5,360,432	23,701,529
SLNSD	Straight Life - Named Survivor Deceased	484	13,942,880	136,183,179
Total Regular		160,044	\$3,688,899,431	\$39,873,952,621

(concluded on next page)

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2011 TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT				
SL	Straight Life	828	\$ 19,780,736	\$ 181,198,021
A60	Life Annuity with 60 payments guaranteed	466	11,176,789	107,167,378
A180	Life Annuity with 180 payments guaranteed	1,198	27,674,559	288,324,366
JOINT	Joint and 75% Survivor	503	11,252,384	123,736,416
R25	Reduced 25% on First Death	231	5,186,571	54,931,167
C100	100% Continued to Named Survivor	1,202	23,573,698	272,166,552
C180	100% Continued to Named Survivor with 180 payments guaranteed	1,710	37,080,024	493,486,022
DWSMC	Disability with Spouse or Minor/Dependent Child	27	650,490	5,307,673
DWOSMC	Disability without Spouse or Minor/Dependent Child	3	60,262	554,299
CWD	Conservation Warden - Disability	1	784	2,469
PF6213	Police and Firemen s.62.13	26	549,993	2,476,577
SLNSD	Straight Life - Named Survivor Deceased	6	148,026	1,515,773
Total Disability		6,201	\$ 137,134,316	\$ 1,530,866,713
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	250	\$ 3,020,185	\$ 30,933,083
SL	Straight Life (accelerated)	0	50,733	213,900
A60	Life Annuity with 60 payments guaranteed	130	2,065,790	22,670,917
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	49,062	232,714
A180	Life Annuity with 180 payments guaranteed	759	9,597,100	115,133,038
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	907,282	3,305,424
C180	100% Continued to Named Survivor with 180 payments guaranteed	2	11,617	186,298
LOL	Life with Optional Length Guaranteed	9	63,804	267,210
AC180	Annuity Certain between 24 and 180 Payments	3	35,447	134,314
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	53	57,643	270,636
PF6213	Police and Firemen s.62.13	2	65,284	353,120
Total Death-in-Service		1,208	\$ 15,923,947	\$ 173,700,654
GRAND TOTAL		167,453	\$3,841,957,694	\$41,578,519,988

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

CORE ANNUITIES BEING PAID DECEMBER 31, 2011
TABULATED BY ATTAINED AGES

Attained Ages	Regular		Disability		Death-in-Service		Totals	
	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount
Under 20	0	\$ 0	2	\$ 10,926	3	\$ 19,599	5	\$ 30,525
20-24	0	0	3	20,642	10	45,358	13	66,000
25-29	0	0	7	50,045	14	102,430	21	152,475
30-34	0	0	12	117,777	19	151,066	31	268,843
35-39	3	21,714	23	257,632	19	89,580	45	368,926
40-44	14	106,086	46	742,625	24	133,128	84	981,839
45-49	83	880,871	180	3,845,175	41	453,349	304	5,179,395
50-54	1,177	32,758,877	458	10,927,099	85	962,677	1,720	44,648,653
55-59	15,096	462,576,789	1,010	23,323,911	113	2,137,551	16,219	488,038,251
60-64	34,887	889,002,094	1,246	29,379,800	177	3,214,561	36,310	921,596,455
65-69	34,274	728,815,398	1,034	23,532,358	151	2,473,816	35,459	754,821,572
70-74	25,226	529,192,688	817	18,110,731	140	2,010,176	26,183	549,313,595
75-79	19,357	422,344,078	627	13,367,066	118	1,211,551	20,102	436,922,695
80-84	14,775	327,847,568	442	8,433,069	113	1,359,319	15,330	337,639,956
85-89	8,954	189,089,363	220	3,868,475	82	753,026	9,256	193,710,864
90-94	4,044	73,317,059	63	962,747	46	307,161	4,153	74,586,967
95& Up	1,151	15,314,279	11	184,238	15	117,977	1,177	15,616,494
Certain Only*	1,003	17,632,567	0	0	38	381,622	1,041	18,014,189
Totals	160,044	\$3,688,899,431	6,201	\$137,134,316	1,208	\$15,923,947	167,453	\$3,841,957,694

Averages in Years

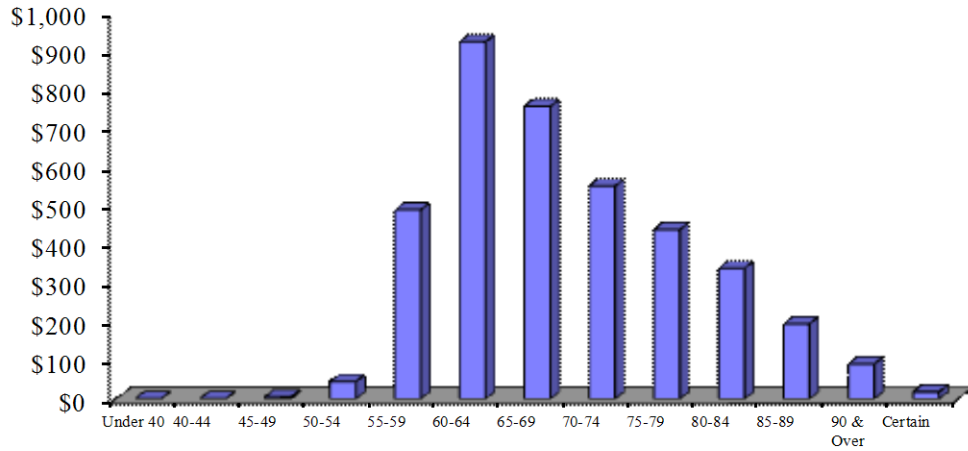
Age at retirement	59.9	52.0	50.5	59.6
Attained age	70.4	66.0	67.2	70.2

* Certain Only category consists of continuations of 5, 10 and 15-year certain and life annuities to beneficiaries of deceased annuitants.

CORE ANNUITIES BEING PAID BY ATTAINED AGE*

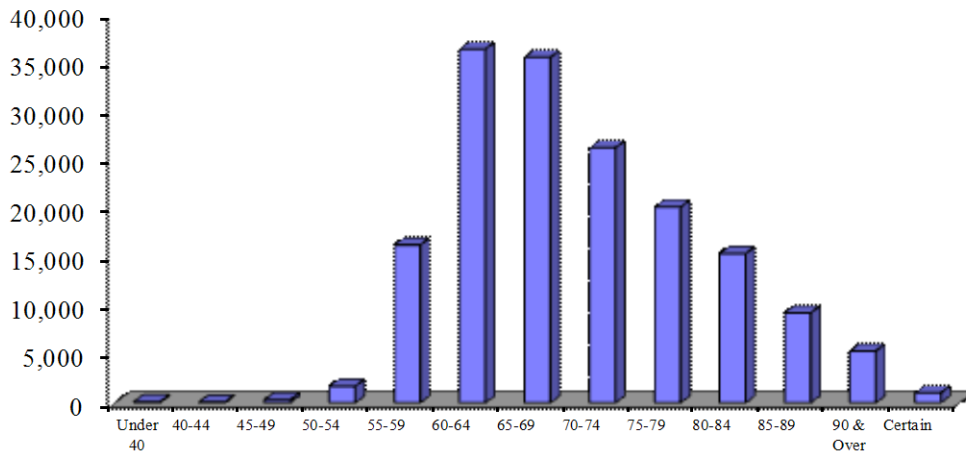
DECEMBER 31, 2011

Annual \$ Millions



Attained Age Groups

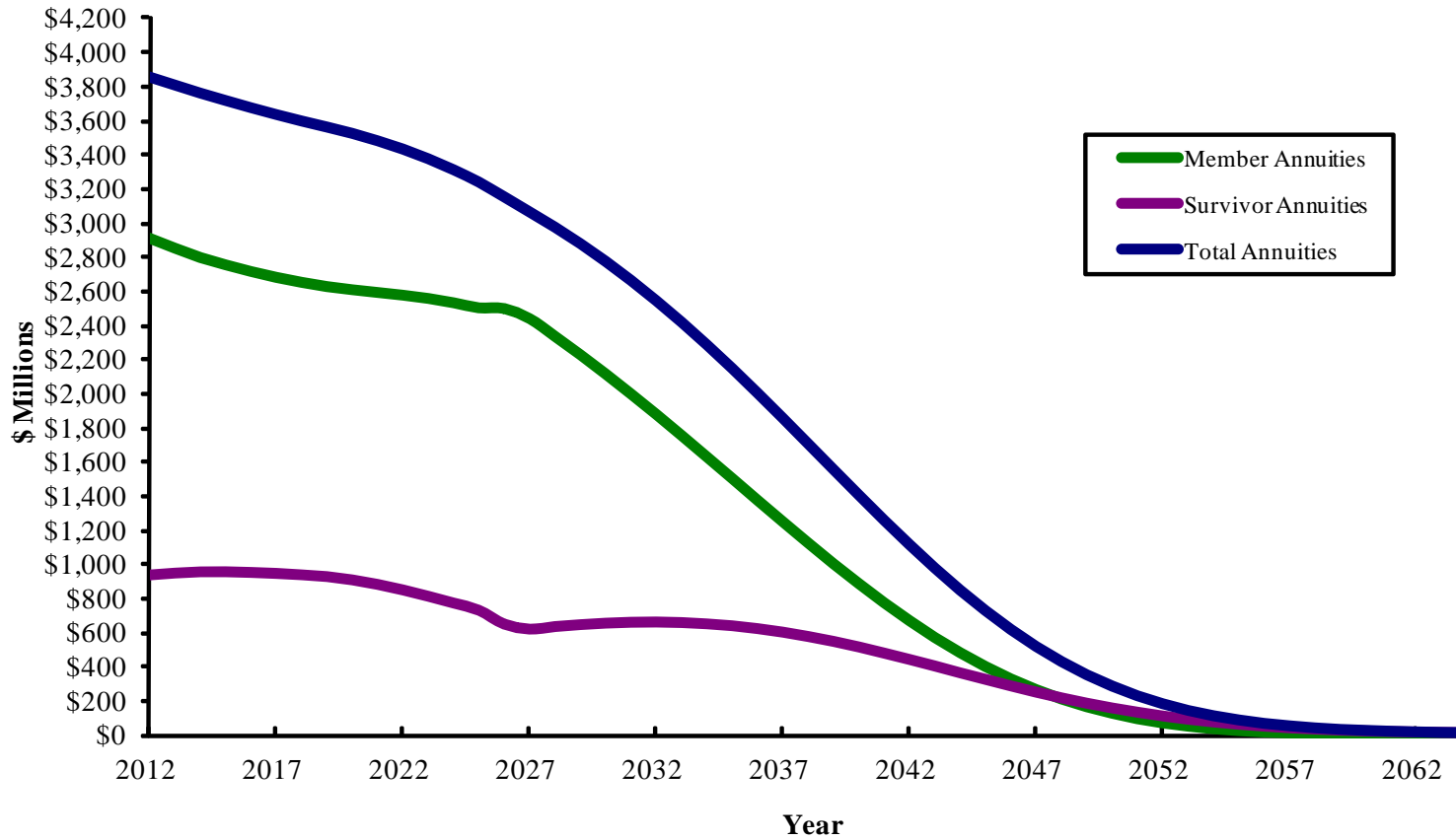
Number of Recipients



Attained Age Groups

* Includes regular and disability retirees and survivor beneficiaries. The "certain" category includes annuities paid for a fixed period which is not dependent upon the age of the recipient.

**PROJECTED FUTURE CORE ANNUITY PAYMENTS
ON BEHALF OF PRESENT RETIRED LIVES
INCLUDING FUTURE DIVIDENDS**



Total Future Payments	\$93.6 billion
From Present Assets	40.4
From Investment Return	53.2

SECTION C
VARIABLE ANNUITIES

VARIABLE ANNUITY DIVISION
DEVELOPMENT OF ASSETS AND LIABILITIES

	\$ Millions		Ratio
	Assets	Liabilities	
Ending Balance December 31, 2010	\$3,340.4	\$3,005.4	1.111
Closing Adjustments	(3.3)	0.0	
Variable Terminations	(71.3)	(71.3)	
2011 Adjustment: 11%	0.0	321.4	
Beginning Balance January 1, 2011	3,265.8	3,255.5	1.003
Increases			
Reserve Transfers	349.9	349.9	
Regular Interest	163.6	163.6	
Additional Earnings	(262.5)	0.0	
Addition to Contingency/Data Reserve	0.0	16.4	
Experience Study	0.0	0.0	
Other	0.0	0.0	
Total Increases	251.0	529.9	
Decreases			
Annuities & Lump Sums	318.3	318.3	
Credit Re-establishments	0.6	0.6	
Release from Contingency/Data Reserve	0.0	0.0	
Experience Study	0.0	0.0	
Other	0.0	3.6	
Total Decreases	318.9	322.5	
Ending Balance December 31, 2011	\$3,197.9	\$3,462.9	0.923

The ending liability balance includes mortality reserves of \$34.3 million.

RESERVE TRANSFER RECOMMENDATION
DECEMBER 31, 2011

Amounts to be transferred from the Employer Reserve and the Employee Reserve to the Annuity Reserve to cover liabilities for new annuities are computed as the first step in the annual actuarial valuation. The actuarial present value at time of retirement of variable annuities reported as new since the last actuarial valuation is \$344,959,087. Adjustments to prior transfers, relating to estimated annuities for which final computations have now been made, totaled \$4,976,700. Reserve transfers were distributed as follows:

Group	Regular Transfer	Adjustment to Prior Transfer	Total Transfer
General	\$326,536,083	\$4,032,103	\$330,568,186
Protective with Social Security	13,558,992	166,176	13,725,168
Protective without Social Security	2,539,580	10,350	2,549,930
Executive & Elected	2,324,432	768,071	3,092,503
Totals	\$344,959,087	\$4,976,700	\$349,935,787

Accordingly, we recommend that \$349,935,787 be transferred to the Variable Annuity Reserve. The results in this report assume that this transfer has been made.

DISCUSSION OF VARIABLE ANNUITY CHANGE DECEMBER 31, 2011

Variable Annuity Reserves, \$3,198.0 million, were less than the actuarial present value of variable annuities, \$3,462.9 million, by \$265.0 million as of December 31, 2011 or (7)% of the actuarial present value (APV) of variable annuity payments. In accordance with Section 40.28(2) of the Wisconsin statutes (see page 29), variable annuities will be decreased by (7)% effective April 1, 2012. The primary sources of the (7)% are as follows:

	% of APV
1. SWIB published investment return	(3.0)%
2. Adjustment to published effective rate	0.0%
3. Published effective earnings rate	(3.0)%
4. Adjustment to relate earnings to average variable annuity fund balance	0.0%
5. Earnings rate based on average balance	(3.0)%
6. Expected change before adjustments: 0.97/1.05-1	(7.6)%
7. Adjustment to relate average asset to ending liability	0.0%
8. Carryover from last year due to timing of distribution, accounting adjustments and truncation	0.3%
9. Adjustments to contingency reserve	(0.5)%
10. Experience Study	0.0%
11. Experience and other effects	0.1%
12. Statutory adjustment: (truncate to whole percent)	0.7%
13. Variable annuity change: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(7.0)%

Please see pages 30 and 31 for a description of the items on this page.

**TRANSFERS TO ANNUITY RESERVE
TO FINANCE VARIABLE ANNUITIES APPROVED IN 2011
TABULATED BY TYPE OF ANNUITY AND OPTION**

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	618	\$ 3,101,686	\$ 41,700,926
SL	Straight Life (accelerated)	0	583,052	1,929,917
A60	Life Annuity with 60 payments guaranteed	400	1,887,390	24,803,153
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	356,840	1,101,206
A180	Life Annuity with 180 payments guaranteed	800	3,752,863	52,794,289
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	823,556	2,586,887
A180F	Life Annuity with 180 payments guaranteed (forced)	3	10,758	128,310
JOINT	Joint and 75% Survivor	517	3,119,597	45,006,499
JOINT	Joint and 75% Survivor (accelerated)	0	586,699	2,013,643
R25	Reduced 25% on First Death	222	1,459,796	20,645,806
R25	Reduced 25% on First Death (accelerated)	0	176,099	589,363
C100	100% Continued to Named Survivor	418	2,212,833	33,537,145
C100	100% Continued to Named Survivor (accelerated)	0	380,853	1,137,875
C180	100% Continued to Named Survivor with 180 payments guaranteed	1,357	7,000,225	107,113,842
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	1,712,893	5,897,179
AC24	Annuity Certain with 24 Payments	0	9,725	17,740
AC60	Annuity Certain with 60 Payments	0	18,949	85,605
AC120	Annuity Certain with 120 Payments	0	7,958	67,198
AC180	Annuity Certain between 24 and 180 Payments	0	72,060	756,905
SLNSD	Straight Life - Named Survivor Deceased	2	23,893	331,940
	Total Regular	4,337	\$ 27,297,725	\$ 342,245,428
	Average Age at Retirement	59.2 Years		
DISABILITY RETIREMENT				
SL	Straight Life	6	\$ 10,744	\$ 142,121
A60	Life Annuity with 60 payments guaranteed	3	17,361	242,582
A180	Life Annuity with 180 payments guaranteed	13	26,710	361,367
JOINT	Joint and 75% Survivor	6	32,362	466,829
C100	100% Continued to Named Survivor	8	19,896	305,174
C180	100% Continued to Named Survivor with 180 payments guaranteed	21	38,764	607,936
	Total Disability	57	\$ 145,837	\$ 2,126,009
	Average Age at Retirement	54.8 Years		
DEATH-IN-SERVICE BENEFITS				
SL	Straight Life	2	\$ 6,587	\$ 96,733
A180	Life Annuity with 180 payments guaranteed	15	28,137	440,348
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	10,492	50,569
	Total Death-in-Service	17	\$ 45,216	\$ 587,650
	Average Age at Retirement	52.8 Years		
GRAND TOTAL		4,411	\$ 27,488,778	\$ 344,959,087

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2011 TABULATED BY TYPE OF ANNUITY AND OPTION

Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
REGULAR RETIREMENT				
SL	Straight Life	4,489	\$ 34,199,215	\$ 329,238,215
SL	Straight Life (accelerated)	0	1,260,341	3,030,420
A60	Life Annuity with 60 payments guaranteed	3,960	29,240,407	270,097,709
A60	Life Annuity with 60 payments guaranteed (accelerated)	0	979,424	2,047,433
A120	Life Annuity with 120 payments guaranteed	48	260,284	909,774
A120	Life Annuity with 120 payments guaranteed (accelerated)	0	0	0
A180	Life Annuity with 180 payments guaranteed	7,329	52,872,082	527,829,652
A180	Life Annuity with 180 payments guaranteed (accelerated)	0	2,142,833	5,177,975
A180F	Life Annuity with 180 payments guaranteed (forced)	26	179,066	1,572,511
JOINT	Joint and 75% Survivor	4,866	44,575,743	500,038,710
JOINT	Joint and 75% Survivor (accelerated)	0	1,564,852	3,386,993
R25	Reduced 25% on First Death	3,893	46,874,135	447,459,561
R25	Reduced 25% on First Death (accelerated)	0	551,001	1,246,262
C100	100% Continued to Named Survivor	3,360	28,004,680	309,504,512
C100	100% Continued to Named Survivor (accelerated)	0	895,709	2,081,650
C180	100% Continued to Named Survivor with 180 payments guaranteed	9,022	71,636,427	919,317,364
C180	100% Continued to Named Survivor with 180 payments guaranteed (accelerated)	0	4,245,130	9,856,952
LOL	Life with Optional Length Guaranteed	11	159,204	692,473
LOLF	Life with Optional Length Guaranteed (Forced)	0	0	0
AC24	Annuity Certain with 24 Payments	0	12,503	14,364
AC60	Annuity Certain with 60 Payments	0	27,505	100,604
AC120	Annuity Certain with 120 Payments	0	40,164	283,654
AC180	Annuity Certain between 24 and 180 Payments	0	806,445	4,014,645
C50	50% Continued to One Beneficiary	53	375,262	1,455,256
C50W180	50% Continued to One Beneficiary with 180 Months guaranteed	8	47,937	178,895
C75WSS	75% Continued to One Beneficiary and Social Security Integrated	30	165,804	1,003,139
R25W120	Reduced 25% on Death of Annuitant or Named Survivor with 120 Months guaranteed	8	68,037	192,860
A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	60	165,131	624,821
A180WSS	Life with 180 Months Guaranteed and Social Security Integrated	30	155,500	643,379
DWSMC	Disability with Spouse or Minor/Dependent Child	0	0	0
DWOSMC	Disability without Spouse or Minor/Dependent Child	0	0	0
CWJS	Conservation Warden with Joint Survivor	0	0	0
CWD	Conservation Warden - Disability	0	0	0
PF6213	Police and Firemen s.62.13	0	0	0
SLNSD	Straight Life - Named Survivor Deceased	104	1,194,604	10,814,596
Total Regular		37,297	\$322,699,425	\$3,352,814,379

(concluded on next page)

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2011 TABULATED BY TYPE OF ANNUITY AND OPTION

Numeric Code	Alpha Code	Type of Benefit	Number	Annual Amount	Present Value
DISABILITY RETIREMENT					
1	SL	Straight Life	154	\$ 593,638	\$ 4,266,621
3	A60	Life Annuity with 60 payments guaranteed	82	459,794	4,042,149
7	A180	Life Annuity with 180 payments guaranteed	236	1,027,695	9,722,889
10	JOINT	Joint and 75% Survivor	116	665,518	6,992,057
12	R25	Reduced 25% on First Death	61	309,789	2,992,483
14	C100	100% Continued to Named Survivor	257	1,150,879	12,001,013
16	C180	100% Continued to Named Survivor with 180 payments guaranteed	376	1,651,930	19,902,391
30	DWSMC	Disability with Spouse or Minor/Dependent Child	4	14,765	48,145
35	SLNSD	Straight Life - Named Survivor Deceased	1	10,404	67,998
Total Disability			1,287	\$ 5,884,412	\$ 60,035,746
DEATH-IN-SERVICE BENEFITS					
1	SL	Straight Life	62	\$ 374,764	\$ 3,520,505
2	SL	Straight Life (accelerated)	0	550	5,110
3	A60	Life Annuity with 60 payments guaranteed	34	207,856	1,881,884
4	A60	Life Annuity with 60 payments guaranteed (accelerated)	0	6,732	8,891
7	A180	Life Annuity with 180 payments guaranteed	245	1,015,551	10,006,916
8	A180	Life Annuity with 180 payments guaranteed (accelerated)	0	60,440	186,966
18	LOL	Life with Optional Length Guaranteed	4	20,495	46,513
23	AC180	Annuity Certain between 24 and 180 Payments	0	9,738	23,672
28	A60WSS	Life with 60 Months Guaranteed and Social Security Integrated	20	11,557	53,639
Total Death-in-Service			365	\$ 1,707,683	\$ 15,734,096
GRAND TOTAL			38,949	\$ 330,291,520	\$ 3,428,584,221

In cases where an individual is receiving more than one annuity, the person only appears once in the above number counts, but the corresponding annual amounts can show up in several different places, depending on the option elected for the different annuities. This can result in, for example, a number count of zero (or a very low number count) combined with a significant annual dollar amount in the above table.

VARIABLE ANNUITIES BEING PAID DECEMBER 31, 2011
TABULATED BY ATTAINED AGES

Attained Ages	Regular		Disability		Death-in-Service		Totals	
	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount	No.	Annual Amount
20-24	0	\$ 0	1	\$ 232	3	\$ 852	4	\$ 1,084
25-29	0	0	2	583	3	1,381	5	1,964
30-34	0	0	3	1,776	4	2,745	7	4,521
35-39	1	410	5	15,563	6	6,162	12	22,135
40-44	3	12,723	13	39,743	8	9,980	24	62,446
45-49	27	66,094	48	38,463	12	14,135	87	118,692
50-54	377	999,656	90	136,481	23	61,943	490	1,198,080
55-59	4,246	21,142,290	221	539,092	36	144,399	4,503	21,825,781
60-64	8,914	59,985,212	227	1,030,544	58	205,573	9,199	61,221,329
65-69	7,691	67,530,412	206	1,340,871	40	242,305	7,937	69,113,588
70-74	4,850	54,007,641	165	1,146,813	42	280,653	5,057	55,435,107
75-79	3,921	45,510,779	145	817,901	29	188,413	4,095	46,517,093
80-84	3,437	37,463,594	97	496,410	31	133,661	3,565	38,093,665
85-89	2,286	22,761,529	45	201,365	35	174,412	2,366	23,137,306
90-94	1,059	9,161,890	17	74,412	19	137,294	1,095	9,373,596
95& Up	285	2,103,642	2	4,163	5	21,694	292	2,129,499
Certain Only*	200	1,953,553	0	0	11	82,081	211	2,035,634
Totals	37,297	\$322,699,425	1,287	\$5,884,412	365	\$1,707,683	38,949	\$330,291,520

Averages in Years

Age at retirement	59.4	52.6	51.4	59.2
Attained age	69.7	65.8	68.0	69.6

* Certain only category consists of continuations of 5, 10 and 15-year certain and life annuities to beneficiaries of deceased annuitants.

SECTION D
COMPARATIVE STATEMENTS

**CORE ANNUITIES
COMPARATIVE STATEMENT
1983 THROUGH 2011**

Valuation Date	Number	\$ Millions				Change in		
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities		CPI*
						Average	Maximum	
1983	57,770	\$ 177.7	\$ 1,830.3	\$ 1,738.3	1.053	5.0 %		3.8 %
1984	60,302	214.3	2,255.5	2,120.3	1.064	6.0 %		4.0 %
1985	62,953	257.6	2,758.2	2,561.0	1.077	7.2 %		3.8 %
1986	65,425	303.5	3,256.9	3,021.2	1.078	7.6 %		1.1 %
1987	67,688	366.9	3,833.7	3,594.6	1.067	6.7 %		4.4 %
1988	70,017	420.6	4,319.6	4,150.9	1.041	4.1 %		4.4 %
1989	73,232	488.7	5,487.4	4,928.1	1.113	11.3 %		4.6 %
1990	77,666	611.3	6,443.8	6,219.1	1.036	3.6 %		6.2 %
1991	79,465	660.4	7,137.8	6,711.3	1.063	6.3 %		3.0 %
1992	81,508	732.3	7,782.4	7,456.6	1.044	4.4 %		3.0 %
1993	83,836	801.7	8,608.2	8,205.3	1.049	4.9 %		2.7 %
1994	86,214	882.2	9,286.2	9,029.6	1.028	2.8 %		2.7 %
1995	88,998	955.8	10,351.7	9,804.1	1.056	5.6 %		2.6 %
1996	92,198	1,065.8	11,699.8	10,977.1	1.066	6.6 %		3.3 %
1997	95,128	1,188.4	13,185.1	12,240.4	1.077	7.7 %		1.7 %
1998	99,112	1,349.5	14,951.8	13,943.0	1.072	7.2 %		1.6 %
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)%	(2.1)%	0.1 %
2009	150,671	3,449.3	36,655.8	37,072.7	0.989	(1.1)%	(1.3)%	2.7 %
2010	155,775	3,532.4	37,798.4	38,148.5	0.991	(0.9)%	(1.2)%	1.5 %
2011	167,453	3,842.0	40,411.5	42,078.3	0.960	(4.0)%	(7.0)%	3.0 %
29-Year Average						4.4 %		2.9 %
10-Year Average						0.6 %		2.5 %

* CPI percentage increase determined by ratio of current year CPI-U67 December index over prior year December index.

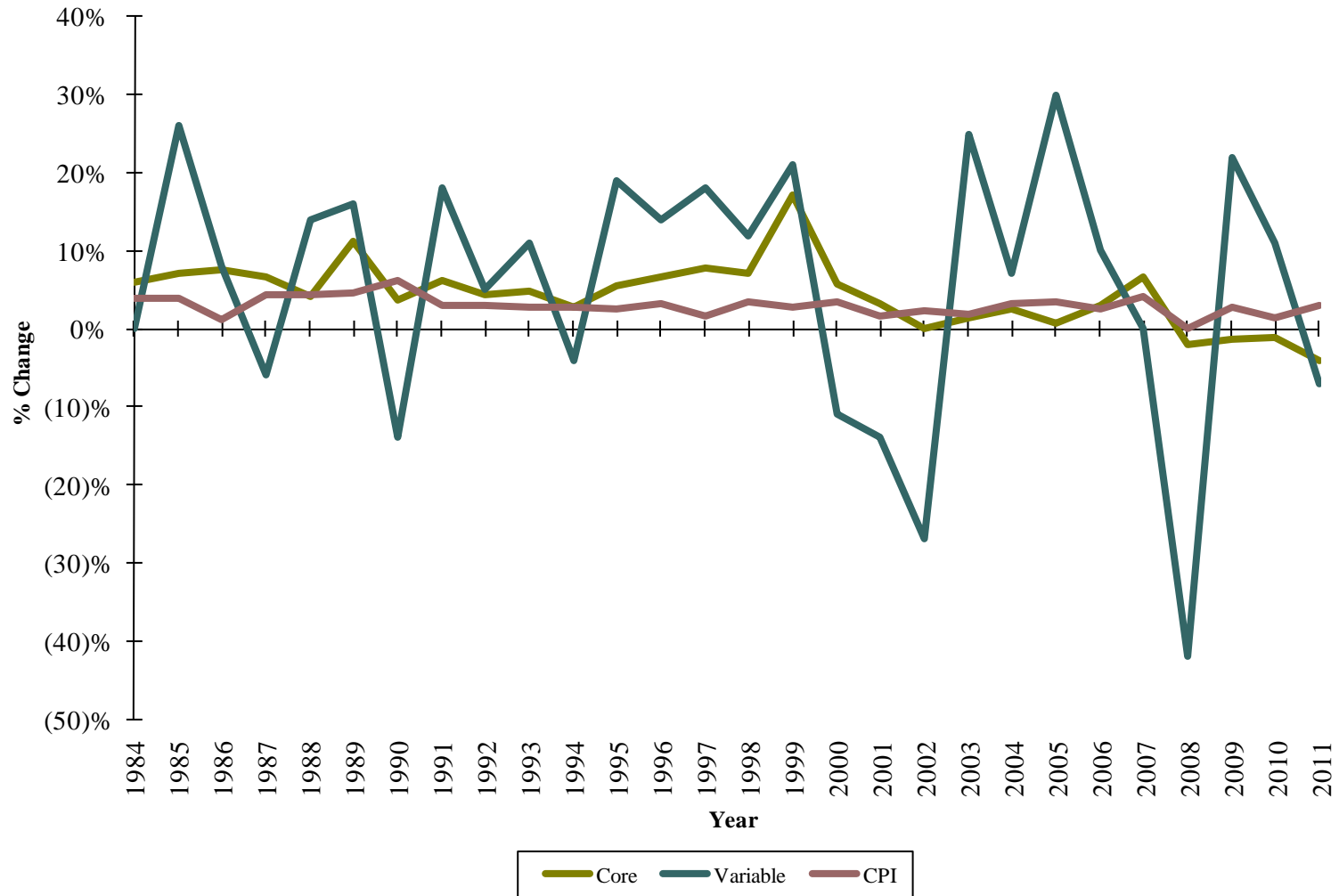
** Including 10.6% Act 11 transfer.

**VARIABLE ANNUITIES
COMPARATIVE STATEMENT
1983 THROUGH 2011**

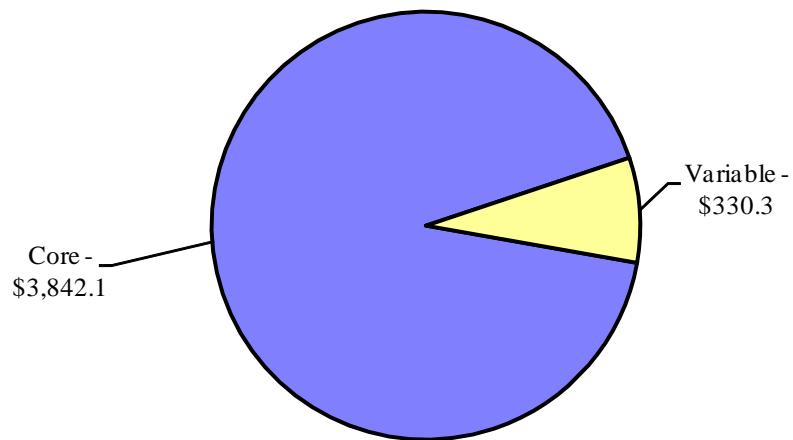
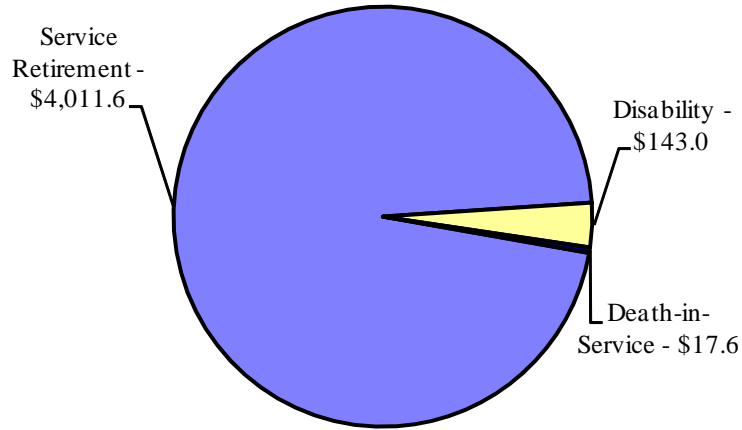
Valuation Date	Number	\$ Millions				Change in	
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI*
1983	13,598	\$ 25.9	\$ 289.4	\$ 245.0	1.181	18.0 %	3.8 %
1984	14,520	34.2	329.2	327.5	1.005	0.0 %	4.0 %
1985	15,529	38.0	463.1	366.6	1.263	26.0 %	3.8 %
1986	16,276	51.8	538.7	498.6	1.080	8.0 %	1.1 %
1987	17,084	60.4	548.8	584.2	0.939	(6.0)%	4.4 %
1988	17,779	61.4	682.6	594.0	1.149	14.0 %	4.4 %
1989	18,502	75.9	878.1	756.5	1.161	16.0 %	4.6 %
1990	19,922	101.0	868.6	1,013.4	0.857	(14.0)%	6.2 %
1991	20,538	91.5	1,101.3	929.7	1.184	18.0 %	3.0 %
1992	20,968	112.6	1,208.6	1,147.4	1.053	5.0 %	3.0 %
1993	21,623	123.7	1,407.9	1,268.6	1.110	11.0 %	2.7 %
1994	22,248	144.6	1,418.0	1,487.0	0.954	(4.0)%	2.7 %
1995	22,978	150.2	1,854.2	1,556.0	1.192	19.0 %	2.6 %
1996	23,725	189.8	2,264.9	1,976.7	1.146	14.0 %	3.3 %
1997	24,462	228.2	2,800.0	2,371.5	1.181	18.0 %	1.7 %
1998	25,424	289.5	3,400.5	3,035.5	1.120	12.0 %	1.6 %
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 %
2010	35,866	288.4	3,340.6	3,005.4	1.111	11.0 %	1.5 %
2011	38,949	330.3	3,197.9	3,462.9	0.924	(7.0)%	3.0 %
29-Year Average						3.9 %	2.9 %
10-Year Average						(2.1)%	2.5 %

* CPI percentage increase determined by ratio of current year CPI-U67 December index over prior year December index.

HISTORY OF % CHANGES IN ANNUITIES AND CPI



ANNUITIES BEING PAID BY TYPE
DECEMBER 31, 2011
\$ MILLIONS



ANNUITIES BEING PAID DECEMBER 31, 2011
TABULATED BY YEAR OF RETIREMENT
(\$1,000S ANNUALLY)

Year Ret'd	Core Annuities				Variable Annuities				Avg. Total Annuity
	No.	Initial	Increases	Total	No.	Initial	Increases	Total	
2011	14,291	\$ 426,265	\$ 0	\$ 426,265	4,194	\$ 25,790	\$ 0	\$ 25,790	\$31,632
2010	8,256	225,462	0	225,462	2,044	9,577	1,053	10,630	28,596
2009	7,796	213,415	0	213,415	1,688	6,314	2,236	8,550	28,472
2008	8,644	228,138	0	228,138	1,995	15,727	(3,369)	12,358	27,822
2007	8,549	208,053	471	208,524	2,100	16,334	(3,505)	12,829	25,892
2006	8,266	183,993	6,283	190,276	1,920	15,282	(2,079)	13,203	24,616
2005	8,269	173,663	9,079	182,742	1,956	15,986	(1,759)	14,227	23,820
2004	7,450	140,819	9,960	150,779	1,791	13,660	(653)	13,007	21,985
2003	7,553	142,745	13,082	155,827	1,666	11,303	2,150	13,453	22,412
2002	7,145	129,003	12,593	141,596	1,482	15,411	(2,015)	13,396	21,692
2001	7,227	129,383	15,080	144,463	1,571	24,042	(6,072)	17,970	22,476
2000	7,311	126,662	21,209	147,871	1,405	27,595	(9,242)	18,353	22,736
1999	6,196	93,154	32,754	125,908	1,178	18,886	(3,690)	15,196	22,773
1998	6,095	86,608	38,352	124,960	1,205	16,992	(1,678)	15,314	23,015
1997	5,156	71,005	39,043	110,048	1,032	12,249	774	13,023	23,869
1996	5,031	68,055	44,714	112,769	1,027	10,661	2,248	12,909	24,981
1995	4,544	59,352	44,486	103,838	920	7,808	3,443	11,251	25,328
1994	4,115	51,071	41,731	92,802	933	7,822	3,014	10,836	25,185
1993	3,784	44,174	39,282	83,456	856	5,910	3,169	9,079	24,454
1992	3,257	36,104	35,181	71,285	735	4,931	3,029	7,960	24,331
1991	2,975	31,247	33,796	65,043	711	3,860	3,463	7,323	24,324
1990	4,775	53,216	62,226	115,442	1,178	7,285	4,650	11,935	26,676
1989	3,623	39,616	52,846	92,462	815	4,377	3,939	8,316	27,816
1988	2,779	23,928	36,131	60,059	696	2,946	3,434	6,380	23,908
1987	2,395	19,275	32,382	51,657	638	2,566	2,661	5,227	23,751
1986	2,162	16,655	31,808	48,463	601	2,294	2,750	5,044	24,749
1985	1,910	15,027	31,984	47,011	520	1,439	2,545	3,984	26,699
1984	1,505	10,788	25,045	35,833	465	1,272	2,252	3,524	26,151
1983	1,285	7,064	17,480	24,544	387	871	1,970	2,841	21,311
1982	973	4,412	12,107	16,519	266	476	1,310	1,786	18,811
1981	853	3,179	9,431	12,610	233	356	973	1,329	16,342
1980	626	2,055	6,384	8,439	168	217	772	989	15,059
1979	437	1,442	4,684	6,126	115	106	428	534	15,242
1978	353	969	3,330	4,299	93	71	310	381	13,261
1977	296	818	2,826	3,644	107	95	393	488	13,960
1976	273	649	2,369	3,018	77	47	205	252	11,977
1975	198	422	1,534	1,956	57	39	197	236	11,068
1974	147	321	1,169	1,490	41	27	123	150	11,155
1973	103	216	737	953	30	18	73	91	10,139
1972	70	114	424	538	12	7	26	33	8,152
Prior	292	297	1,137	1,434	42	22	93	115	3,722
Total	166,965	\$3,068,834	\$773,130	\$3,841,964	38,950	\$310,671	\$19,621	\$330,292	\$24,989

**COMPARISON OF ACTUAL TO EXPECTED DEATHS AMONG RETIRED LIVES
(NORMAL RETIREMENT ONLY)
DURING 2011**

Age	Male Deaths			Female Deaths			Total Deaths		
	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
30-34									
35-39			1			3			4
40-44						20			20
45-49			13			87			100
50-54	3	2	769	2	1	545	5	3	1,314
55-59	37	32	6,198	29	29	8,057	66	61	14,255
60-64	86	104	14,520	85	100	19,104	171	204	33,624
65-69	177	171	14,492	121	138	17,569	298	309	32,061
70-74	205	228	11,113	149	185	13,582	354	413	24,695
75-79	289	339	8,817	225	256	10,548	514	595	19,365
80-84	378	417	6,276	354	378	8,540	732	795	14,816
85-89	441	396	3,545	464	476	5,756	905	872	9,301
90-94	243	228	1,257	467	451	3,122	710	679	4,379
95-99	79	61	243	241	204	901	320	265	1,144
100 & Up	4	6	20	55	54	147	59	60	167
Totals	1,942	1,984	67,264	2,192	2,272	87,981	4,134	4,256	155,245
Average Ages	80.4	79.9	70.0	84.1	83.3	70.9	82.4	81.7	70.5

SECTION E
APPENDIX

ACTUARIAL ASSUMPTIONS USED IN THE RETIRED LIFE ACTUARIAL VALUATION

The interest rate used in the valuation was 5.0% a year, compounded yearly, as provided in Section 40.02 of the Wisconsin Statutes. Please note that we have assumed all current dividends to be payable in the future. To the extent that unfavorable investment performance reduces current dividends, liabilities would be lower than reported in this valuation. The mortality table used in the valuation was the Wisconsin Projected Experience Mortality Table-2005, as adopted by the Board in connection with the 2006-2008 Experience Study (the male table was multiplied by 90%). In addition, retired life liabilities in the valuations contain a reserve for mortality improvement. The reserve level used in this valuation was 1.0%.

SINGLE LIFE RETIREMENT VALUES Wisconsin Projected Experience Table - 2005 with 5% Interest

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)		Probability of Death Next Year	
	Males	Females	Males	Females	Males	Females
40	\$207.44	\$213.54	41.9	45.3	0.098%	0.057%
45	198.25	205.53	37.1	40.5	0.145%	0.089%
50	187.11	195.62	32.4	35.7	0.237%	0.123%
55	174.05	183.60	27.9	30.9	0.417%	0.256%
60	158.95	169.88	23.5	26.4	0.608%	0.435%
65	140.97	153.66	19.3	22.0	0.932%	0.665%
70	120.85	134.71	15.3	17.8	1.634%	1.065%
75	99.35	113.77	11.7	13.9	3.006%	1.950%
80	78.71	91.62	8.6	10.4	5.428%	3.387%
85	59.77	69.69	6.2	7.4	9.241%	6.512%

The values shown above are for non-disabled participants. Sample values for disabled participants are as follows:

Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)		Probability of Death Next Year	
	Males	Females	Males	Females	Males	Females
40	\$188.17	\$202.09	33.0	38.9	0.262%	0.119%
45	175.49	191.71	28.5	34.1	0.386%	0.187%
50	160.60	179.05	24.1	29.5	0.631%	0.258%
55	144.08	164.05	20.0	24.9	1.112%	0.538%
60	126.15	147.80	16.2	20.7	1.620%	0.913%
65	105.47	129.25	12.5	16.8	2.485%	1.396%
70	83.80	108.29	9.3	13.0	4.358%	2.237%
75	62.40	86.39	6.5	9.6	8.016%	4.095%
80	44.25	64.71	4.3	6.7	14.473%	7.112%
85	29.47	44.71	2.8	4.4	24.643%	13.675%

POST-RETIREMENT ADJUSTMENTS

CORE ANNUITIES - 40.27(2)

“CORE ANNUITY RESERVE SURPLUS DISTRIBUTIONS. Surpluses in the core annuity reserve established under s. 40.04(6) and (7) shall be distributed by the board if the distribution will result in at least a 0.5% increase in the amount of annuities in force, on recommendation of the actuary, as follows:

(a) The distributions shall be expressed as percentage increases in the amount of the monthly annuity in force, including prior distributions of surpluses but not including any amount paid from funds other than the core annuity reserve fund, preceding the effective date of the distribution. For purposes of this subsection, annuities in force include any disability annuity suspended because the earnings limitation had been exceeded by that annuitant in that year.

(b) Prorated percentages based on the annuity effective date may be applied to annuities with effective dates during the calendar year preceding the effective date of the distribution, as provided by rule, but no other distinction may be made among the various types of annuities payable from the core annuity reserve.

(c) The distributions shall not be offset against any other benefit being received but shall be paid in full, nor shall any other benefit being received be reduced by the distributions. The annuity reserve surplus distributions authorized under this subsection may be revoked by the board in part or in total as to future payments upon recommendation of the actuary if a deficit occurs in the core annuity reserves.”

VARIABLE ANNUITIES - 40.28(2)

“Whenever the balance in the variable annuity reserve, as of December 31 of any year, exceeds or is less than the then present value of all variable annuities in force, determined in accordance with the rate of interest and approved actuarial tables then in effect, by at least 2% of the present value of all variable annuities in force, the amount of each variable annuity payment shall be proportionately increased or decreased, disregarding fractional percentages, and effective on a date determined by rule, so as to reduce the variance between the balance of the variable annuity reserve and the present value of variable annuities to less than one percent.”

NARRATIVE REGARDING THE DEVELOPMENT OF DIVIDEND AND VARIABLE ANNUITY CHANGES SHOWN ON PAGES 6 AND 15

1. SWIB Published Investment Return

The earnings rate published by State of Wisconsin Investment Board on the Core/Variable Fund.

2. Adjustment to Relate Earnings to Averaged Core/Variable Annuity Balance

Item 3 below minus Item 1 above. For core annuities, this is the MRA adjustment which takes into account five-year smoothing of gains and losses. For variable annuities, it converts a figure based on an average balance to a figure based on a beginning year balance.

3. Published Earnings Rate

The earnings rate published by DETF is funds' earnings credits expressed as a percentage of the beginning year balance adjusted for benefit payments and reserve transfers.

4. Adjustment to Relate Earnings to Averaged Core Annuity Balance

Item 5 below minus Item 3 above.

5. Earnings Rate Based on Average Balance

This is similar to the published earnings rate except that the rate is determined as a percentage of the average balance during the year instead of the adjusted beginning of year balance.

6. Expected Dividend (Variable Change) before Adjustments

The relative difference in fund growth based on actual versus the 5% assumed earnings rates.

7. Adjustment to Relate Average Asset to Ending Liability

The final dividend/variable change is calculated based on the end of year assets divided by the end of year liabilities. Since the calculations in Items 5 and 6 are based on average (approximately mid-year) balances, this adjustment is needed so that the final rate will be based on the end of year liabilities.

8. Carryover from Last Year Due to Timing of Distribution and Accounting Adjustments (and Truncation for Variable Annuity)

The dividend or variable rate changes are made effective April 1 of each year. This adjustment takes into account the fact that the prior year dividend/variable increase was in effect for less than a full year as well as any accounting adjustments made to the asset value at the beginning of the year. This adjustment also carries over any truncated or rounded amounts from the prior year.

NARRATIVE REGARDING THE DEVELOPMENT OF DIVIDEND AND VARIABLE ANNUITY CHANGES SHOWN ON PAGES 6 AND 15

9. Adjustments to Contingency Reserve and Data Reserve

Currently there is a reserve for incomplete data for the dividend calculation of 0.2% and a mortality improvement reserve for both the dividend and variable calculations that starts at 0.3% and grades to 1.0% over a 3-year experience period. The adjustment is equal to the amount held in reserve for the current year less the amount held in reserve for the prior year expressed as a percent of the end of year liability. This reserve is accumulated to reflect the fact that over time, mortality rates tend to improve. By increasing reserves gradually each year, instead of all at once every three years, the effect on dividends and variable increases will also be more gradual.

10. Experience Study

A study is conducted for WRS every three years to analyze the assumptions that are made in the valuation versus the experience that actually occurred. If the results of the study show material changes in experience, WRS generally adopts a new set of assumptions. When assumptions are changed, this item displays the effect of the change on the dividend/variable rate calculation.

11. Experience and Other Effects

After making all other known adjustments, this is the remainder of all other experience. Changes here are primarily attributable to mortality experience and, generally to a lesser extent, on any data adjustments.

12. Statutory Adjustment to Round/Truncate

By statute, the dividend rate is calculated to the nearest one-tenth of a percent. For the variable annuity change, the rate is truncated to a whole percent. This is the adjustment made from the calculated dividend/variable annuity rate change without rounding/truncation to the statutory rate.

13. Computed Dividend Rate/Variable Annuity Change.

This is the end of year asset value divided by the end of year liability. It is reconciled to the published earnings rate (Item 3) by making the adjustments in Items 6 through 12.

14. Adjustment for Members Not Eligible for Negative Dividend.

This is an adjustment that is sometimes made for Core Fund recipients to reflect that some members are not eligible for a negative dividend (once the dividend has been depleted).

15. Computed Dividend Rate.

Item 13 + Item 14.



Wisconsin Retirement System

29th Annual Actuarial
Valuation of Retired Lives
December 31, 2011

Board	Item	Date
J1	3C	3.8.12

GRS

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



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 fourth 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, 2011

\$ Millions

	Core	Variable
Number of Annuitants	167,649	38,949
Annual Annuities	\$ 3,844.9	\$ 330.3
Fund Balance	40,411.5	3,197.9
Actuarial Reserve	42,078.3	3,462.9
Ratio	0.96	0.923



Primary Sources of Core Dividend

	<u>% of APV</u>
1. SWIB published investment return	1.40%
2. MRA adjustment	<u>0.10%</u>
3. Published effective earnings rate	1.50%
4. Adjustment to relate earnings to average core annuity balance	<u>(0.07)%</u>
5. Earnings rate based on average balance	1.43%
6. Expected dividend before adjustments: 1.0143/1.05-1	(3.40)%
7. Adjustment to relate average asset to ending liability	0.10%
8. Carryover from last year due to timing of dividend accounting adjustments and rounding	(0.07)%
9. Adjustments to contingency reserve and data reserve	(0.47)%
10. Experience Study	0.00%
11. Experience and other effects	(0.12)%
12. Statutory adjustment to round to nearest one-tenth percent	<u>(0.04)%</u>
13. Trial Computed dividend rate: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(4.0)%
14. Adjustment for members at or near the statutory floor	(3.0)%
15. Final Computed dividend rate: (13)+(14)	(7.0)%



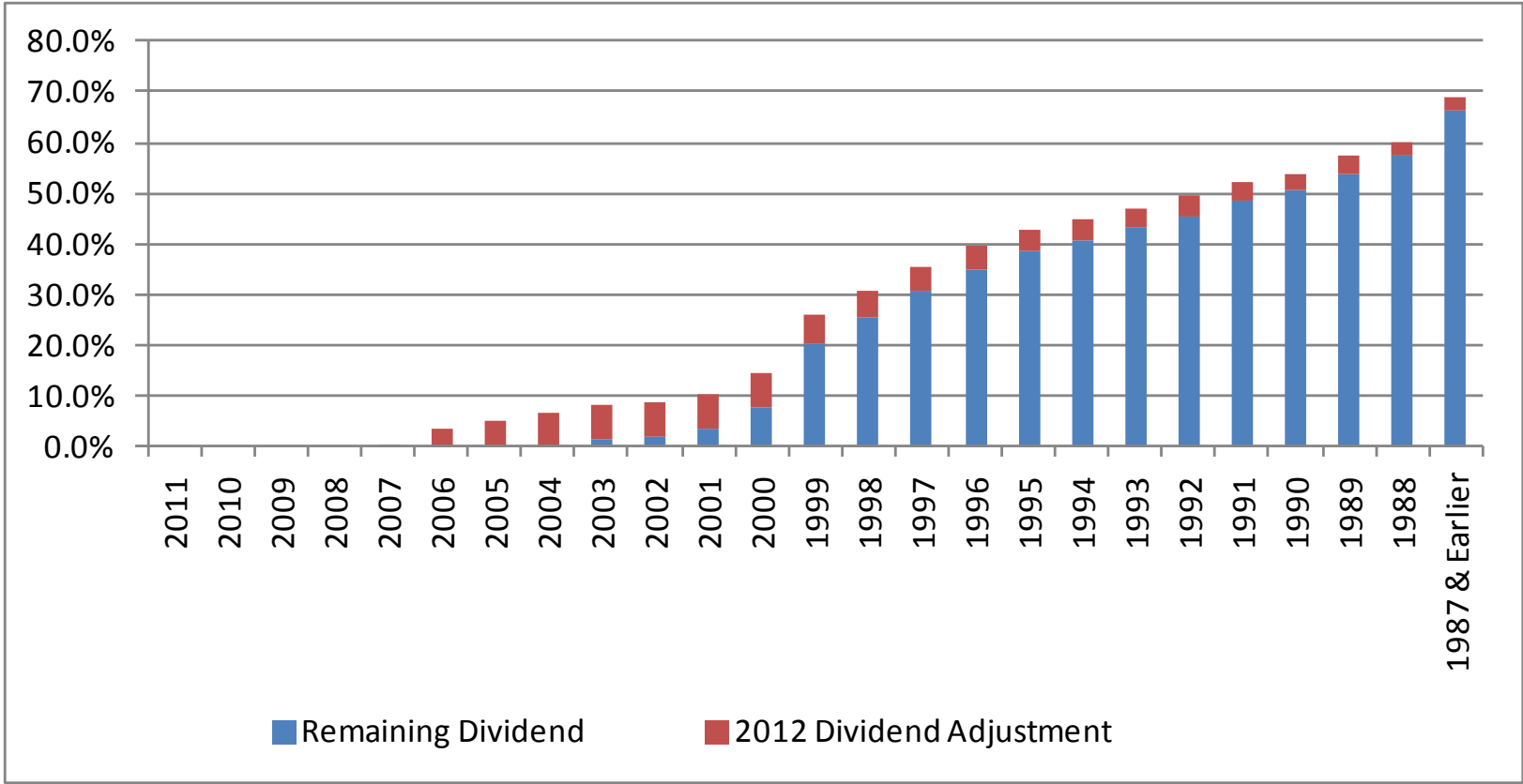
Illustration of Item 14 Adjustment

	<u>Liabilities</u>	<u>2012 Dividend</u>	<u>Dividend as % of Liabilities</u>
1) All members	\$42,000 M	\$(1,680) M	(4.0)%
2) Members at or near statutory floor	\$18,000 M	0	0
3) All others	\$24,000 M	\$(1,680) M	(7.0)%

- ◆ Difference between row 1 and row 3 dividend is (3.0)%
- ◆ The dividend reduction must be larger than (4.0)% for the group that is affected by it
- ◆ To keep actuarial balance, an additional (3.0)% must be reallocated among annuitants not at the statutory floor

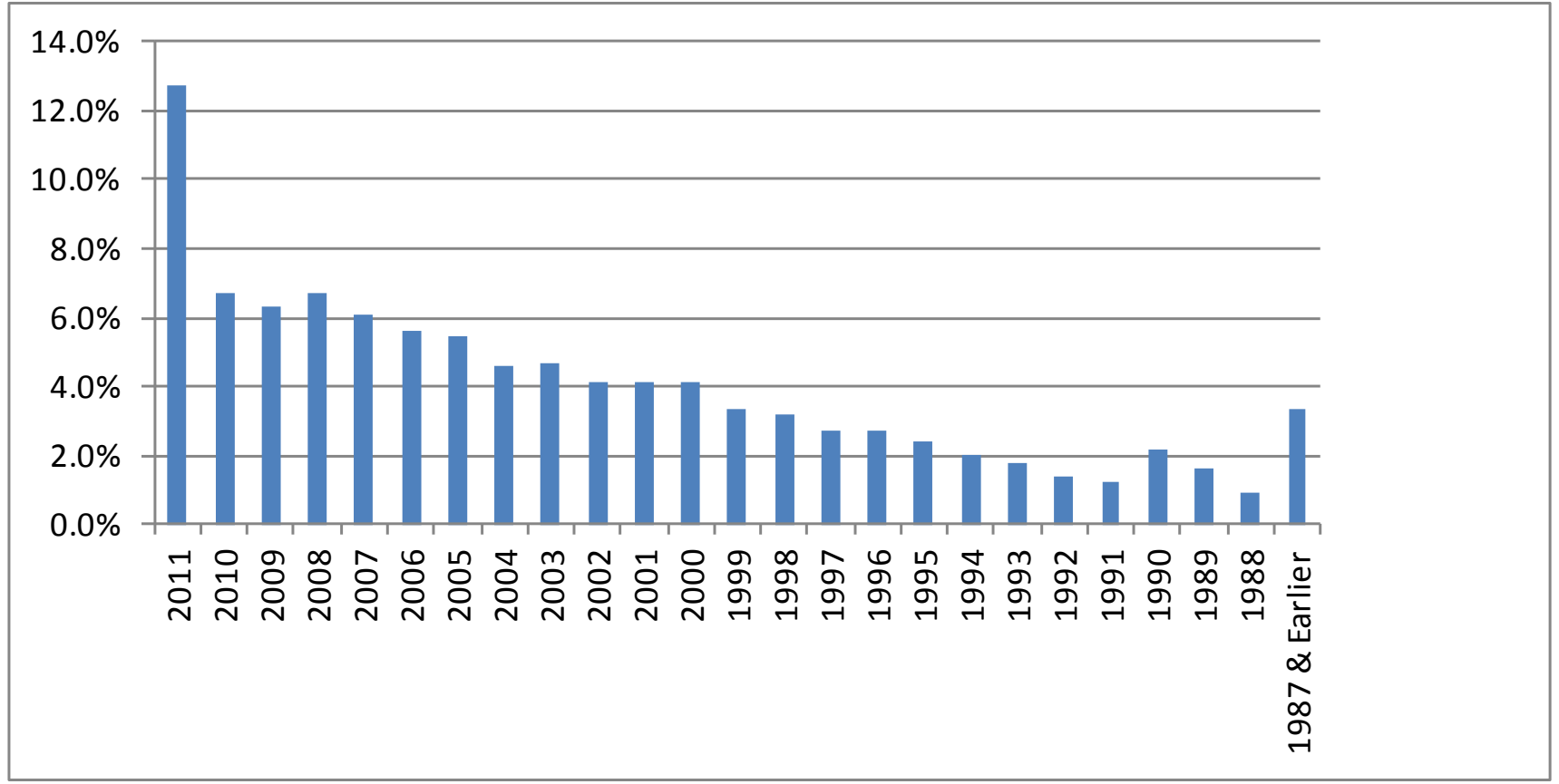


Dividend Remaining (as a percentage of total benefit) by Year of Retirement





Liabilities (as a percentage of total) by Year of Retirement





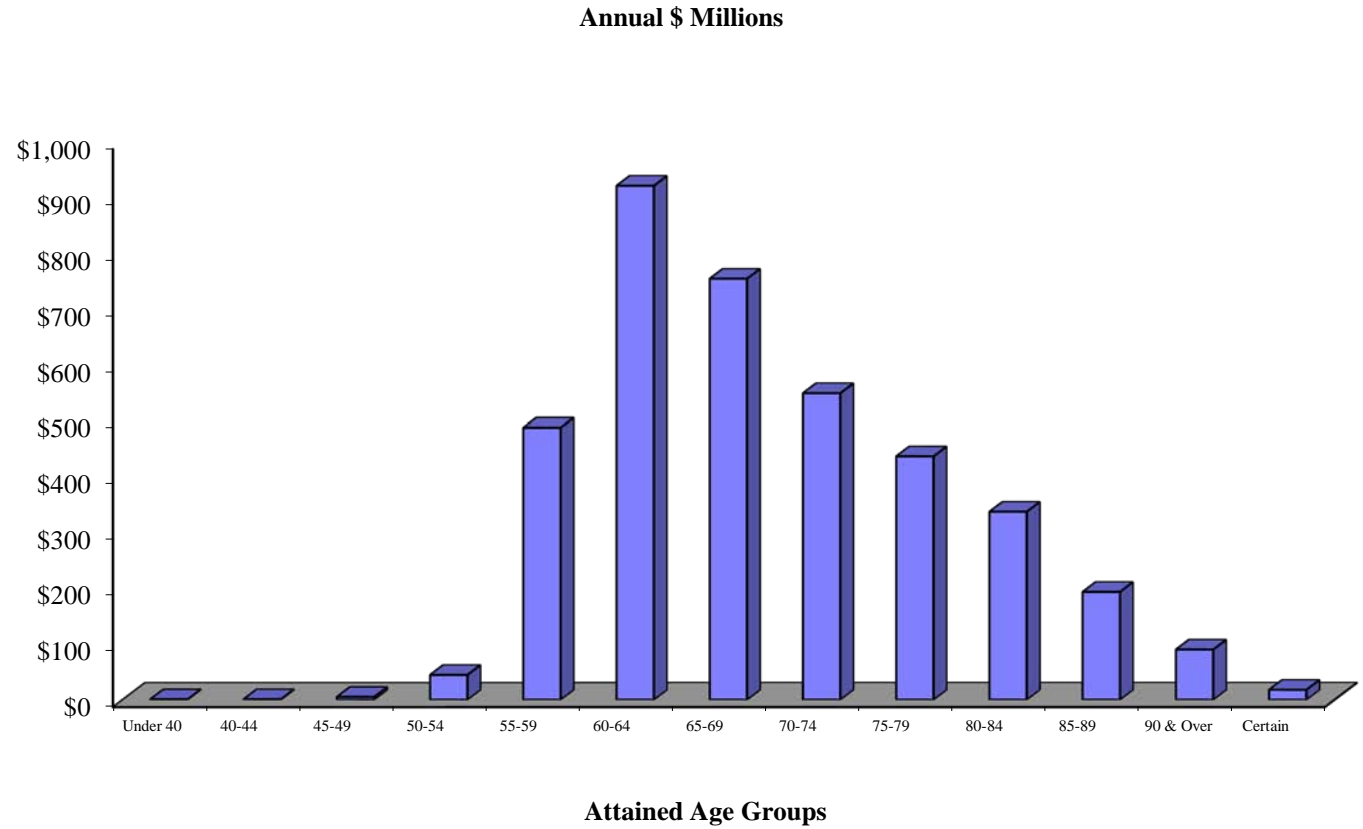
Liability Attributable to Dividends

<u>Valuation</u>	<u>Liability for Dividend Remaining (billions)</u>	<u>Liability for Dividend Adjustment (billions)</u>
12/31/2008	\$9.2	\$(0.8)
12/31/2009	8.1	(0.4)
12/31/2010	7.2	(0.3)
12/31/2011	6.4	(1.7)
12/31/2012 (estimated)	4.2	(2.0)

- ◆ As the liability for the Dividend Remaining decreases, the Dividend Adjustment becomes highly leveraged.



Core Annuities Being Paid



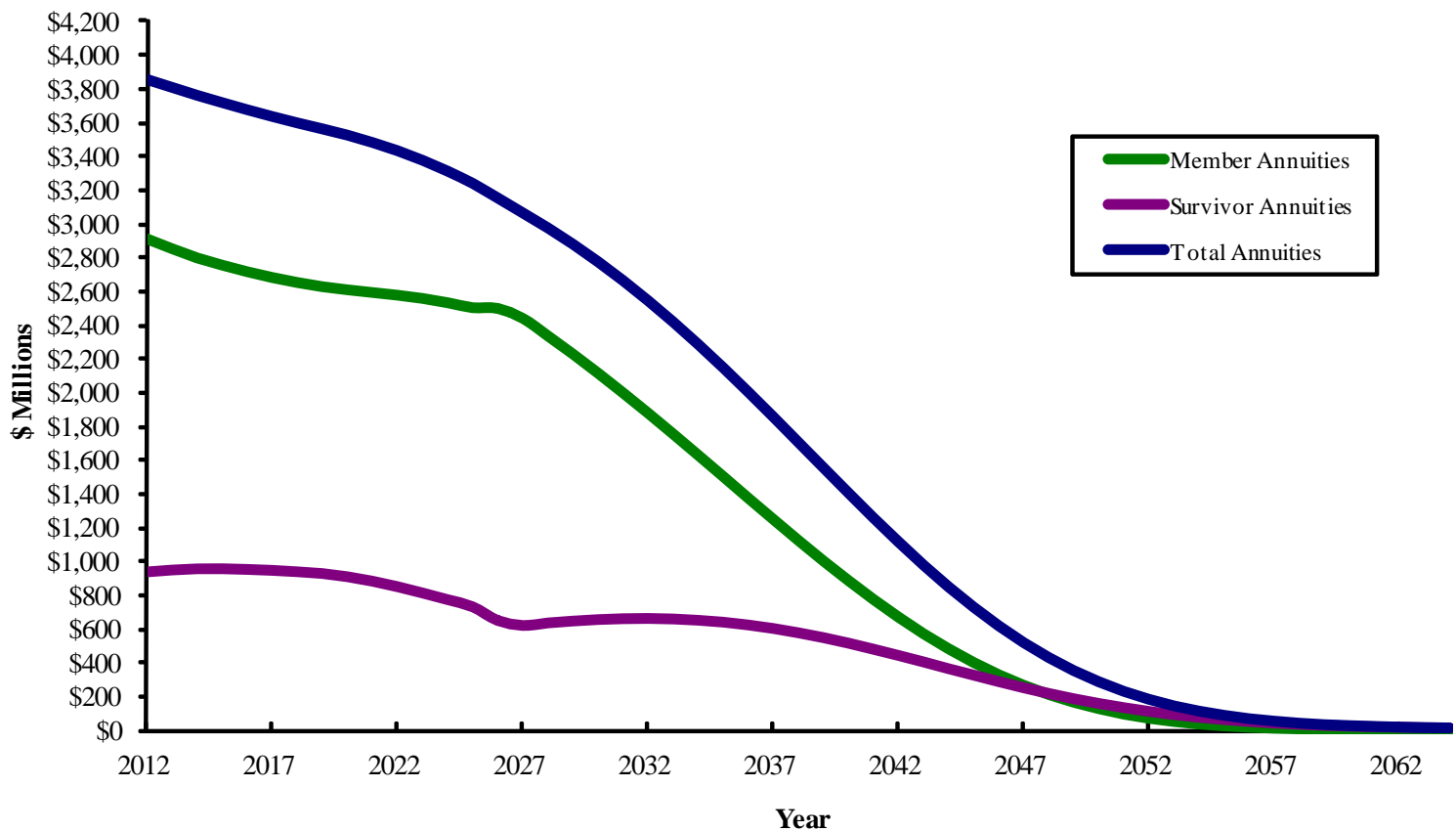
Average age

- at retirement
- now (12/31/2011)

59.6 years
70.2 years



Projected Future Core Annuities



Total Future Payments	\$93.6 billion
From Present Assets	40.4
From Investment Return	53.2

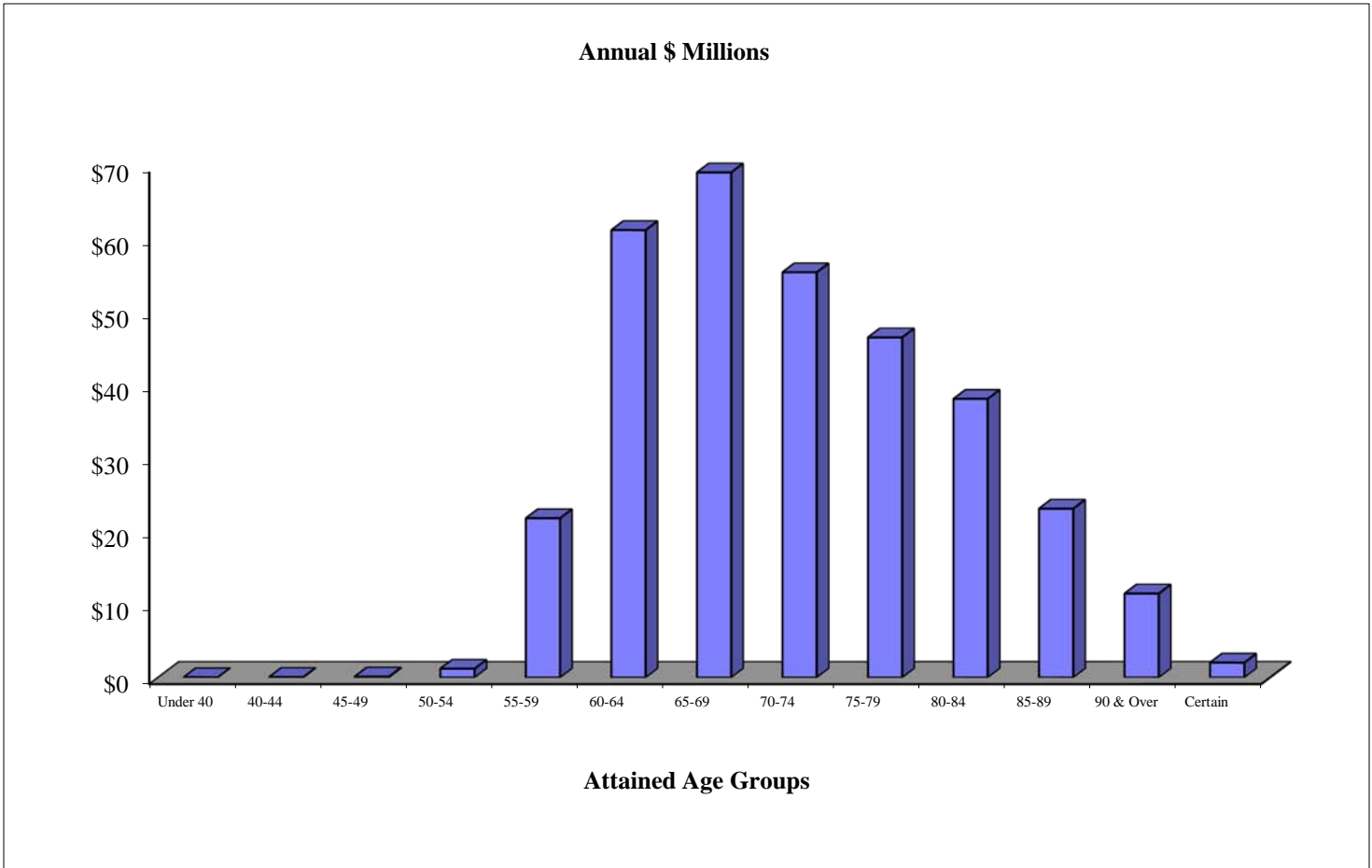


Primary Sources of Variable Adjustment

	<u>% of APV</u>
1. SWIB published investment return	(3.0)%
2. Adjustment to published effective rate	<u>0.0%</u>
3. Published effective earnings rate	(3.0)%
4. Adjustment to relate earnings to average variable annuity fund balance	<u>0.0%</u>
5. Earnings rate based on average balance	(3.0)%
6. Expected change before adjustments: 0.97/1.05-1	(7.6)%
7. Adjustment to relate average asset to ending liability	0.0%
8. Carryover from last year due to timing of distribution, accounting adjustments and truncation	0.3%
9. Adjustments to contingency reserve	(0.5)%
10. Experience Study	0.0%
11. Experience and other effects	0.1%
12. Statutory adjustment: (truncate to whole percent)	<u>0.7%</u>
13. Variable annuity change: (6)+(7)+(8)+(9)+(10)+(11)+(12)	(7.0)%



Variable Annuities Being Paid



Average age

- at retirement
- now (12/31/2011)

59.2 years
69.6 years



Comparative Statement - Core

Valuation Date	Number	\$ Millions				Change In		
		Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities		
						Average	Maximum	CPI
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)%	(2.1)%	0.1 %
2009	150,671	3,449.3	36,655.8	37,072.7	0.989	(1.3)%	(1.3)%	2.7 %
2010	155,775	3,532.4	37,798.4	38,148.5	0.991	(0.9)%	(1.2)%	1.5 %
2011	167,453	3,842.0	40,411.5	42,078.3	0.960	(4.0)%	(7.0)%	3.0 %
29-Year Average						4.4 %		2.9 %
10-Year Average						0.6 %		2.5 %

***The decrease in Core Annuities varied from 0.0% to (7.0)%.

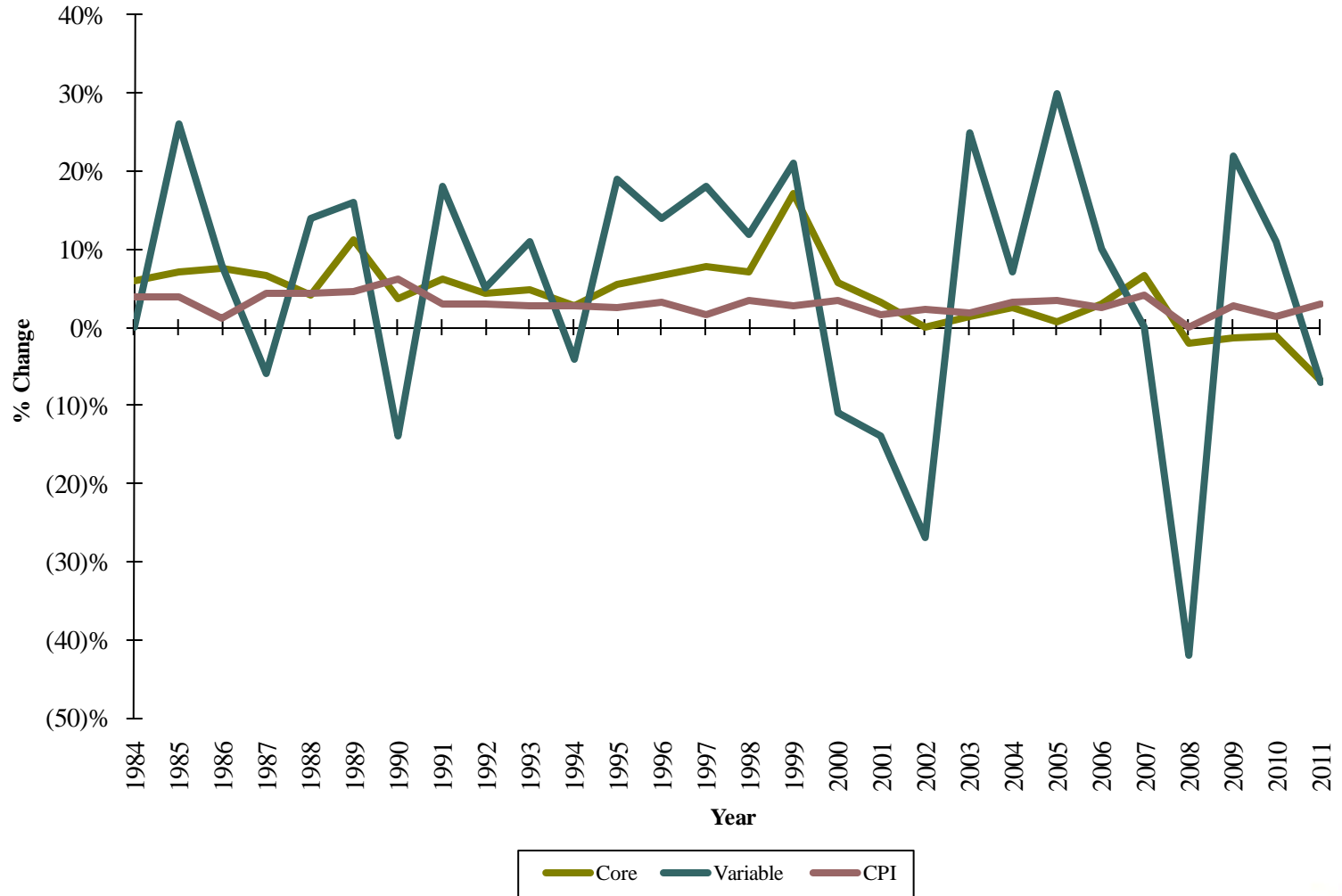


Comparative Statement - Variable

Valuation		\$ Millions				Change in	
Date	Number	Annual Annuities	Fund Balance	Actuarial Reserve	Ratio	Annuities	CPI
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 %
2010	35,866	288.4	3,340.6	3,005.4	1.111	11.0 %	1.5 %
2011	38,949	330.3	3,197.9	3,462.9	0.923	(7.0)%	3.0 %
29-Year Average						3.9 %	2.9 %
10-Year Average						(2.1)%	2.5 %



History of % Changes





Looking Ahead

- ◆ Negative dividends are likely to continue next year due to continued recognition of prior investment losses (Next year will be last year that results are impacted by 2008 market loss).
- ◆ 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 29 years
- ◆ Results should be closely monitored next year



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