MOSERS

Missouri State Employees' Retirement System

Annual Actuarial Valuation

June 30, 2003

GRS

Gabriel, Roeder, Smith & Company

Missouri State Employees' Retirement System

Annual Actuarial Valuation as of June 30, 2003

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September 19, 2003

Board of Trustees
Missouri State Employees'
Retirement System
907 Wildwood Drive
Jefferson City, Missouri 65102

Re: **Actuarial Valuation as of June 30, 2003**

Presented in this report are the results of the **annual actuarial valuation** of the Missouri State Employees' Retirement System. The purpose of the valuation was to measure the System's funding progress and to determine the level cost employer contribution rate for the fiscal year beginning July 1, 2004.

The date of the valuation was **June 30, 2003.**

The valuation was based upon data, furnished by the MOSERS' staff, concerning active, inactive and retired members along with pertinent financial information. The complete cooperation of the MOSERS' staff in furnishing materials requested is hereby acknowledged with appreciation.

Your attention is directed particularly to the presentation of contribution rates on page 7 and the comments on page 11.

To the best of our knowledge, this report is complete and accurate. The valuation was performed by, and under the supervision of, independent actuaries who are members of the American Academy of Actuaries and who have significant experience in performing valuations for public retirement systems.

The valuation was prepared in accordance with the standards of practice prescribed by the Actuarial Standards Board. The actuarial calculations were made by qualified actuaries in accordance with generally accepted actuarial procedures and methods. The calculations are based on the provisions of the System scheduled to be in effect as of July 1, 2003, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

Norman L. Jones, F.S.A., M.A.A.A.
Senior Consultant & Actuary

Brad Lee Armstrong, A.S.A., M.A.A.A.
Senior Consultant & Actuary

RJD:dks:kmg

Financial Principles

Financial Principles and Operational Techniques

Promises Made, and Eventually Paid. As each year is completed, MOSERS in effect hands an "IOU" to each member then acquiring a year of service credit --- the "IOU" says: "The Missouri State Employees' Retirement System owes you certain retirement benefits -- payments in cash commencing when you qualify for retirement."

The related key financial question is, which generation of taxpayers contributes the money to cover the IOU?

> ***The present taxpayers***, who receive the benefit of the member's present year of service?
>
> ***Or the future taxpayers***, who happen to be in Missouri at the time the IOU becomes a cash demand?

The law governing MOSERS financing intends that this year's taxpayers contribute the money to cover the IOUs being handed out this year. By following this principle, ***funds will be accumulated during members' working years, which, combined with income on invested assets, will be sufficient to pay benefits throughout retirement.***

An inevitable by-product of this financing design is the accumulation of reserve assets, for decades, and the income produced when the assets are invested. Over time, ***investment income*** **becomes the largest contributor** toward benefits, and directly influences the contribution amount required from the employer.

In actuarial terminology, the minimum level percent of payroll contribution rate consists of:

> Normal Cost (the cost of members' service being rendered this year)
> ... plus ...
> Interest on Unfunded Actuarial Accrued Liabilities (unfunded actuarial accrued liabilities are the difference between: actuarial liabilities for members' service already rendered; and the actuarial value of MOSERS' accrued assets).

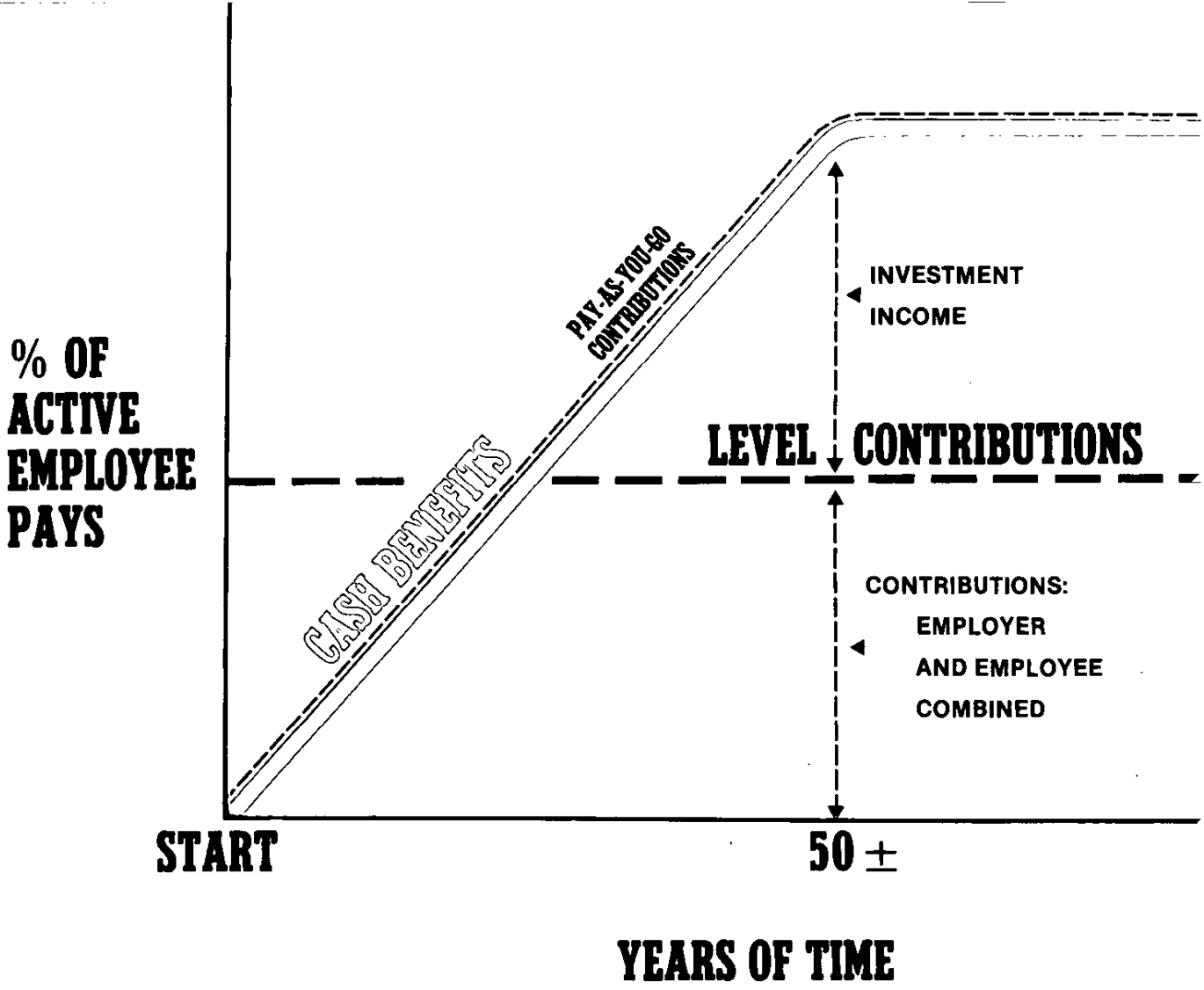
Computing Contributions To Support Funded Benefits. From a given schedule of benefits and from the member data and asset data provided, the actuary determines the contribution rates to support the benefits, by means of ***an actuarial valuation and a funding method.***

An actuarial valuation has a number of ingredients such as: the rate of investment income which plan assets will earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates of salary increases; and the assumed age or ages at actual retirement.

In an actuarial valuation, assumptions are made as to what the above rates will be, for the next year and for decades in the future. Only the subsequent actual experience of the plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the wisdom of those who developed the assumptions, or the skill of the actuary and the many calculations made. The future cannot be predicted with precision.

MOSERS copes with these continually changing differences by having annual actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is ***continuing adjustments in financial position, and contribution rates.***



CASH BENEFITS LINE. **This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).**

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- **Rates of investment return**
- **Rates of pay increase**
- **Changes in active member group size**

Non-Economic Risk Areas

- **Ages at actual retirement**
- **Rates of mortality**
- **Rates of withdrawal of active members (turnover)**
- **Rates of disability**

The Actuarial Valuation Process

An ***actuarial valuation*** is the mathematical process by which actuarial present values and contribution rates are determined. The flow of activity constituting the valuation may be summarized as follows:

A. ***Census Data***, furnished by the system administrative staff, including:

Retired lives now receiving benefits

Former members with vested benefits not yet payable

Active members

\+ B. ***Benefit Provisions*** governing future payments from the retirement system.

\+ C. ***Asset data*** (cash & investments), furnished by the system administrative staff.

\+ D. ***Assumptions concerning future experiences*** in various risk areas, which assumptions are established by the Board of Trustees after consulting with the actuary.

\+ E. ***The funding method*** for employer contributions (the long-term planned pattern for employer contributions).

\+ F. ***Mathematically combining the assumptions, the funding method, and the data.***

= G. Determination of:

Plan financial position and

The employer contribution rate.

Meaning of "Unfunded Actuarial Accrued Liabilities"

"***Actuarial accrued liabilities***" are ***the portion of the present value of plan promises to pay benefits in the future which are not covered by future normal cost contributions*** --- a liability has been established ("accrued") because the service has been rendered but the resulting monthly cash benefit may not be payable until years in the future. Actuarial accrued liabilities are the result of complex mathematical calculations, which are made annually by the plan's actuary.

If "actuarial accrued liabilities" at any time exceed the actuarial value of the plan's accrued assets, the difference is "***unfunded actuarial accrued liabilities***." This is the common condition. If the plan's assets equaled the plan's "actuarial accrued liabilities," the plan would be termed "fully funded."

Each time a plan adds a new benefit which applies to service already rendered, an "actuarial accrued liability" is created, which is also an "unfunded actuarial accrued liability" because the plan can't print instant cash to cover the value of the new benefit promises. Payment for such unfunded actuarial accrued liabilities is spread over a period of years, commonly in the 20-30 year range.

Unfunded actuarial accrued liabilities can occur in another way: if actual financial experience is less favorable than assumed financial experience, the difference is added to unfunded actuarial accrued liabilities. In plans where benefits are directly related to an employee's pay near time of retirement, unfunded actuarial accrued liabilities increase when unexpected rates of pay increase create additional actuarial accrued liabilities which are not offset by favorable experience in other areas.

The existence of unfunded actuarial accrued liabilities is not bad, but the changes from year to year in amount of unfunded actuarial accrued liabilities are important and should be monitored.

Unfunded actuarial accrued liabilities are not a bill payable immediately but it is important that policy-makers prevent the amount from becoming unreasonably high and ***it is vital for plans to have a sound method for making payments toward them*** so that they will be controlled.

Valuation Results

Computed Employer Contribution Rate

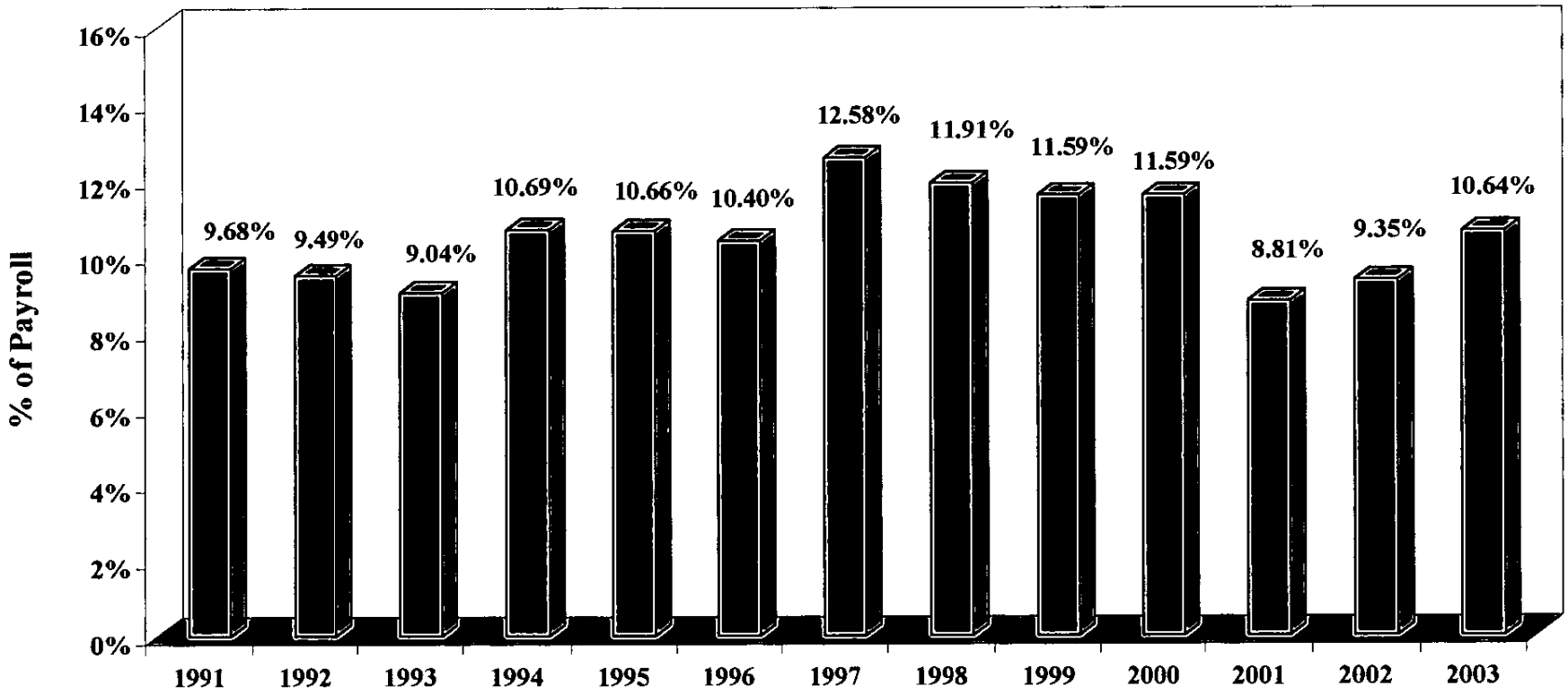
Expressed as Percents of Active Member Payroll

June 30, 2003

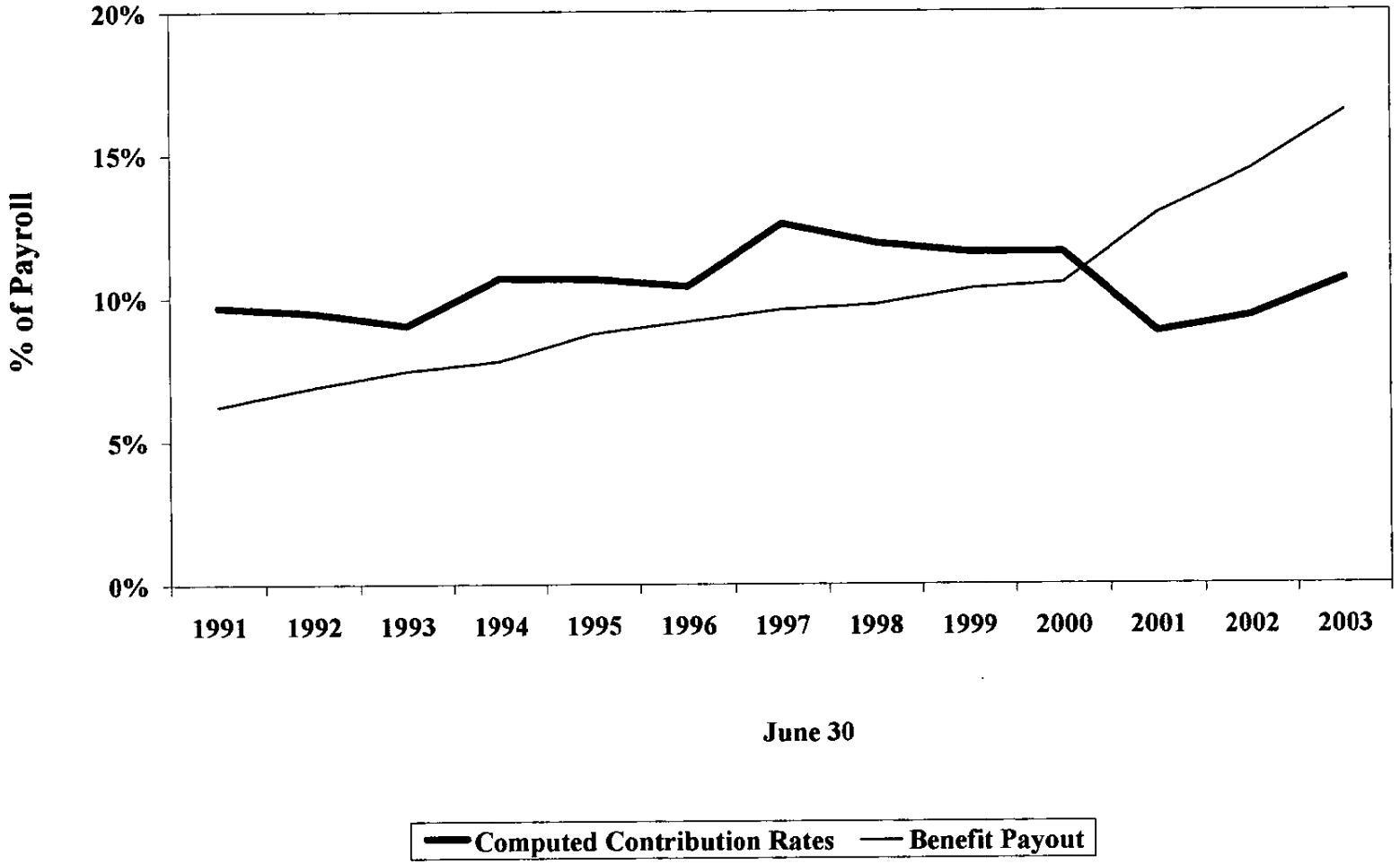
Contributions for	Contribution Expressed as Percents of Payroll
Normal Cost	
Service retirement benefits	7.58 %
Disability benefits	0.32
Survivor benefits	0.33
Administrative expenses	0.34
Total	8.57
Unfunded Actuarial Accrued Liabilities(UAAL) (32 year level percent-of-payroll amortization*)	2.07
TOTAL COMPUTED EMPLOYER CONTRIBUTION RATE	**10.64 %**

* *This corresponds to an amortization factor of 16.82085 assuming that the first year of payroll growth is 1.67% followed by 31 years at 4% per year. Amortization period a year ago was 33 years.*

Missouri State Employees' Retirement System
Computed Contribution Rates



Missouri State Employees' Retirement System
Contribution Rates vs. Benefit Payout



Actuarial Present Values June 30, 2003

Actuarial Present Value, June 30, for	(1) Actuarial Present Value	(2) Portion Covered By Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1) - (2)
Active Members			
Service retirement benefits based on service rendered before and likely to be rendered after valuation date	$ 3,669,046,665	$ 777,586,082	$ 2,891,460,583
Disability benefits likely to be paid present active members who become totally and permanently disabled	100,052,794	41,718,942	58,333,852
Survivor benefits likely to be paid to widows and children of present active members who die before retiring	142,902,496	43,615,804	99,286,692
Separation benefits likely to be paid present active members			
Refunds of member contributions	0		
Deferred benefits	401,142,235		
Total	401,142,235	200,759,383	200,382,852
Active Member Totals	$ 4,313,144,190	$ 1,063,680,211	$ 3,249,463,979
Members on Leave of Absence & LTD			
Service retirement benefits based on service rendered before the valuation date			104,500,225
Terminated Vested Members			
Service retirement benefits based on service rendered before the valuation date			292,298,152
Retired Lives			3,015,205,273
BackDROP Installment Payments Incurred, but not yet paid			823,777
TOTAL ACTUARIAL ACCRUED LIABILITY			$ 6,662,291,406
ACTUARIAL VALUE OF ASSETS			6,057,329,072
UNFUNDED ACTUARIAL ACCRUED LIABILITY			$ 604,962,334

Actuarial Valuation as of June 30, 2003
Comments

Computed Contribution Rate. The contribution rate for the fiscal year beginning July 1, 2004 was computed to be 10.64% of payroll, based upon an amortization period for the unfunded actuarial accrued liabilities (UAAL) of 32 years. This represents an increase of 1.29% in the rate computed for the fiscal year beginning July 1, 2003. Of this change, (0.35)% was attributable to a reduction in projected across-the-board pay increases to 1.67% for the year ending June 30, 2004 and 1.64% is attributable to plan experience for the year ending June 30, 2003.

Experience. Experience was unfavorable this year – primarily due to difficult market conditions. Measured on an actuarial value basis, recognized investment return was disappointing for MOSERS and for nearly all other retirement funds across the nation. In total, computed accrued liabilities exceed assets by $605 million. Unless the investment markets continue to rebound and unrecognized losses are offset by future gains, MOSERS will continue to see years when investment losses flow into the valuation. With $300 + million of investment loss related to pre-2003 experience expected to be recognized in the 2004 valuation, it is likely that the next valuation will show higher unfunded liabilities and another increase in the computed contribution rate.

A study analyzing the System's recent demographic and financial experience is underway and will be finalized in several months. The study will cover the years 1999 through 2003. To the extent actual experience differed from any current actuarial assumptions, these assumptions may be adjusted for next year's actuarial valuation.

Additional information concerning 2003 experience is presented in the gain/loss section of this report beginning on page 16.

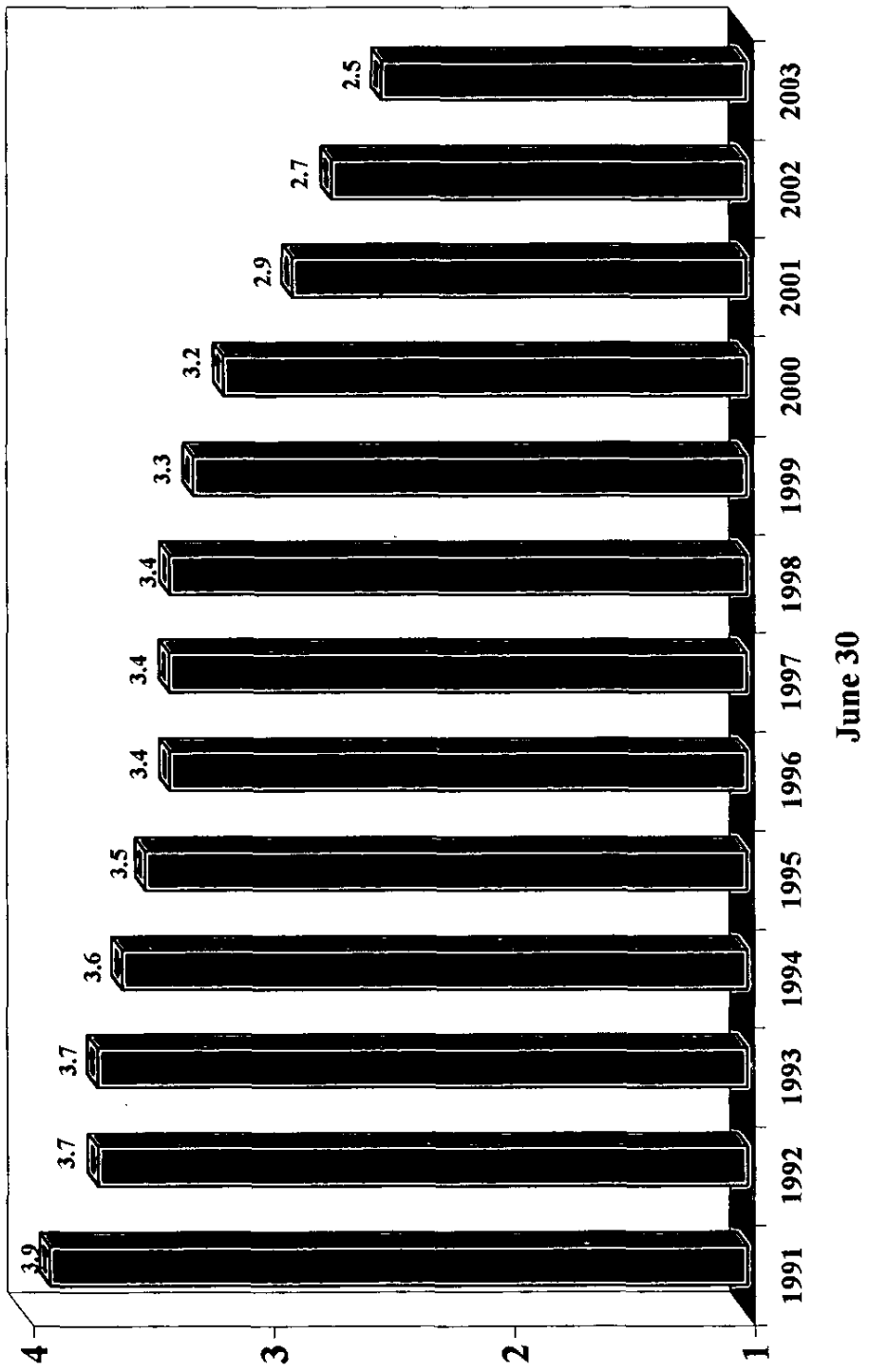
Conclusion. **Based on the results of the June 30, 2003 regular annual actuarial valuation, it is our opinion that the Missouri State Employees' Retirement System continues to be in sound financial condition in accordance with actuarial principles of level percent-of-payroll financing.**

Comparative Schedule

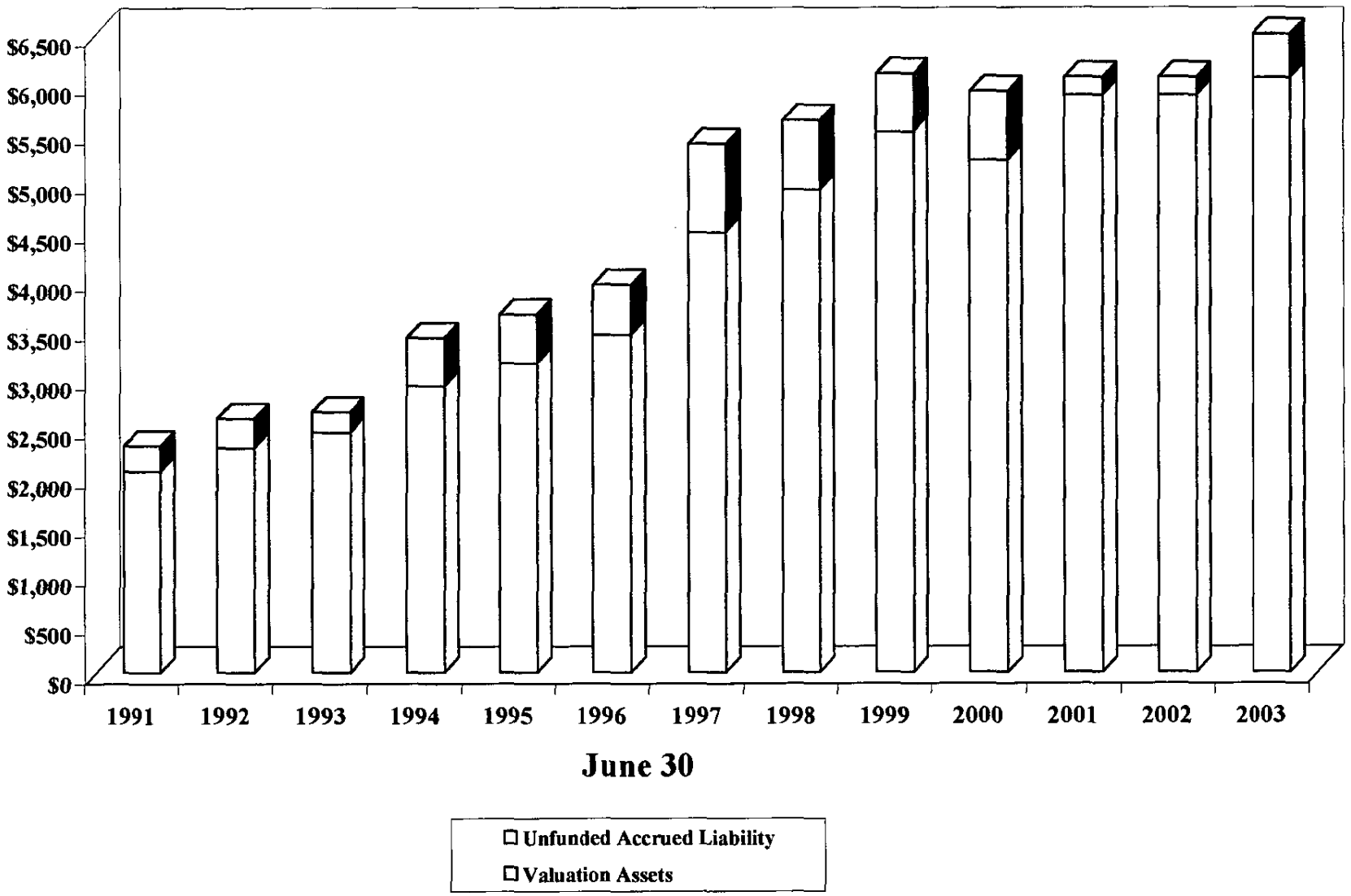
Valuation Date June 30	Active Members				Retired Lives				Accrued Liability	Valuation Assets	UAAL
		Payroll	Average Salary		Number		Annual Benefits				
	Number	$ Millions	$	% Incr.	Retired	Active/ Retired	$ Million	% of Payroll		million	
1989 (2)	43,787	$895	$20,444	4.0 %	11,090	4.0	$ 52.6	5.9 %	$1,782	$1,418	$364
1990 (1)	46,834	994	21,229	3.8	11,495	4.1	57.3	5.8	1,861	1,587	274
1991 (2)	46,725	1,028	21,995	3.6	11,995	3.9	64.0	6.2	2,053	1,793	260
1992 (1)(2)	46,616	1,030	22,101	0.5	12,552	3.7	71.0	6.9	2,291	1,991	300
1993	47,954	1,063	22,172	0.3	13,115	3.7	79.4	7.5	2,447	2,237	210
1994 (2)	49,436	1,125	22,754	2.6	13,651	3.6	96.2	8.6	2,919	2,425	494
1995	50,524	1,199	23,730	4.3	14,384	3.5	104.9	8.8	3,151	2,649	502
1996 (1)	51,425	1,268	24,650	3.9	15,004	3.4	116.2	9.2	3,440	2,928	512
1997 (1)(2)(3)	52,737	1,360	25,782	4.6	15,609	3.4	130.4	9.6	4,484	3,581	903
1998	54,544	1,460	26,762	3.8	16,251	3.4	142.4	9.8	4,919	4,211	708
1999 (2)	56,158	1,565	27,860	4.1	17,117	3.3	161.3	10.3	5,506	4,909	597
2000 (1)	57,774	1,684	29,143	4.6	18,196	3.2	177.0	10.5	5,921	5,217	704
2001 (1)	58,431	1,758	30,090	3.3	20,237	2.9	227.4	12.9	6,065	5,881	184
2002 (4)	58,616	1,773	30,253	0.5	21,502	2.7	256.6	14.5	6,294	6,033	261
2003	57,558	1,740	30,229	(0.1)	22,872	2.5	287.1	16.5	6,739	6,057	682
2003 (2) (4)	57,558	1,740	30,229	(0.1)	22,872	2.5	287.1	16.5	6,662	6,057	605

(1) After changes in assumptions.
(2) After changes in benefit provisions.
(3) After changes in asset valuation method.
(4) After changes in methods other than the asset valuation method.

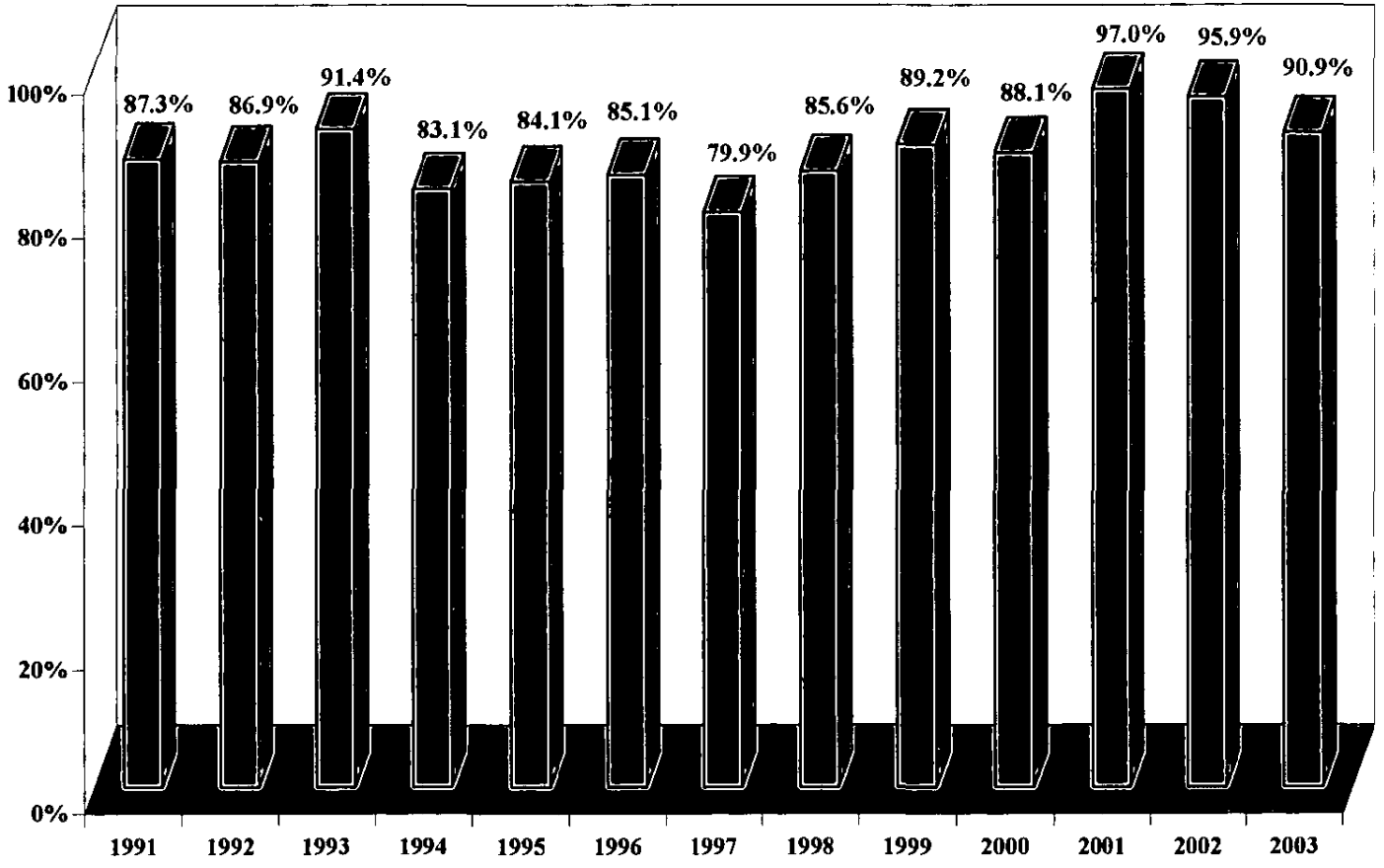
Number of Active Members Per Benefit Recipient



Missouri State Employees' Retirement System
Actuarial Value of Assets and Actuarial Accrued Liabilities
($ in millions)



Actuarial Value of Assets as Percents of Accrued Liabilities (Funded Ratio)



Gain Loss Analysis

Gain/Loss Analysis of Experience
During Last Year

COMMENTS

Purpose of Gain/Loss Analysis. Regular actuarial valuations provide valuable information about the composite change in unfunded actuarial accrued liabilities – whether or not the liabilities are increasing or decreasing, and by how much. However, valuations do not show the portion of the change attributable to each risk area within the retirement system financial mechanism: the rate of investment income on plan assets; the rates of withdrawal of active members who leave covered employment; the rates of mortality; the rates of disability; the rates of salary increases; and the assumed ages at actual retirement. In an actuarial valuation, assumptions are made as to what these rates will be for the next year and for decades in the future.

The objective of a gain and loss analysis is to determine the portion of the change in unfunded actuarial accrued liabilities attributable to each risk area.

The fact that actual experience differs from assumed experience is to be expected – the future cannot be predicted with precision. Changes in the valuation assumed experience for a risk area should be made when the differences between assumed and actual experience have been observed to be sizeable and persistent. One year's gain and loss analysis may or may not be indicative of ***long-term trends, which are the basis of financial assumptions.***

2002 and 2003 Data. For the 2002 and 2003 valuations, active and retired member data was reported as of May 31. It was brought forward to June 30 by adding one month of service for all active members, adding the June COLA for certain retirees, and otherwise making no other adjustments. It was assumed for valuation purposes that there was no turnover among members and no new entrants during the month of June. Financial information was reported as of June 30. It is believed that this procedure resulted in a slight overstatement of total liabilities as of June 30, 2002 and June 30, 2003.

The expected and actual numbers of retirements, deaths, and terminations found on pages 24 through 29 reflect experience over the 12 month period from May 31, 2002 through May 31, 2003.

Results from 2003 Plan Year. There was a net experience loss this year, with the largest single identifiable source being investment income less than assumed. The table below summarizes historical MOSERS economic experience:

Period	Inflation As Measured By		Interest Credited to MOSERS Funds	Real Rate of Return	
	CPI	Increase in Average Salary		Relative to CPI	Relative to Salaries
July 1, 2002 - June 30, 2003	2.1 %	0.6 %	6.8 *%	4.7 %	6.1 %
July 1, 2001 - June 30, 2002	1.1 %	(2.1) %	(6.4) *%	(7.5) %	(4.3) %
July 1, 2000 - June 30, 2001	3.2	5.1	(2.0) *	(5.2) %	(7.1)
July 1, 1999 - June 30, 2000	3.7	5.6	7.9 *	4.2	2.3
July 1, 1998 - June 30, 1999	2.0	5.4	10.9 *	8.9	5.5
July 1, 1998 - June 30, 2003	2.4	2.9	3.2 *	0.8	0.3
January 1, 1978 - December 31, 2002 @	4.4	5.1	12.2	7.8	7.1

* *MOSERS approximate rate of return based on market value.*

@ *This information is based on national average earnings and based on market indices roughly approximating MOSERS' current investment mix. TIPS were treated as government/corporate hybrids.*

The dollar amount of unfunded actuarial accrued liabilities (UAAL) is large in absolute dollars. However, the size should be viewed in the light of MOSERS' overall financial program. ***The ratio of unfunded actuarial accrued liabilities divided by active member payroll is significant.*** UAAL represent plan debt, while active member payroll is indicative of the state's capacity to amortize the UAAL – ***the ratio thus provides an index of relative condition.*** The smaller the ratio, the stronger the financial condition.

	UAAL/Active Member Payroll
June 30, 1995	.42
June 30, 1996 after assumption changes	.40
June 30, 1997 after changes in benefits, assumptions, methods	.66
June 30, 1998	.49
June 30, 1999 after MSEP 2000	.38
June 30, 2000 after changes in assumptions	.42
June 30, 2001 after changes in assumptions	.10
June 30, 2002 after changes in methods	.15
June 30, 2003 after changes in benefits, methods	.35

Derivation of Experience Gain (Loss)

Year Ended June 30, 2003

Actual experience will never coincide exactly with assumed experience (except by coincidence). Gains and losses may offset each other over a period of years, but sizeable year-to-year variations from assumed experience are common. Detail on the derivation of the experience gain (loss) is shown below.

	$ Millions
(1) UAAL* at start of year	$261.1
(2) Normal cost from last valuation	150.2
(3) Actual employer contributions	156.6
(4) Interest accrual: (1) x .085 + [(2) - (3)] x (.085 / 2)	21.9
(5) Expected UAAL before changes: (1) + (2) - (3) + (4)	276.6
(6) Change from any changes in benefits, assumptions, or methods	(76.5)
(7) Expected UAAL after changes: (5) + (6)	200.1
(8) Actual UAAL at end of year	605.0
(9) Gain(loss): (7) - (8)	(404.9)
(10) Gain (loss) as percent of actuarial accrued liabilities at start of year ($6,294)	(6.4) %

* *Unfunded actuarial accrued liabilities.*

Valuation Date June 30	Actuarial Gain (Loss) As a % of Beginning Accrued Liabilities
1994	2.9 %
1995	0.6
1996	0.4
1997	5.5
1998	5.5
1999	4.7
2000	2.7
2001	(4.4)
2002	(3.8)
2003	(6.4)

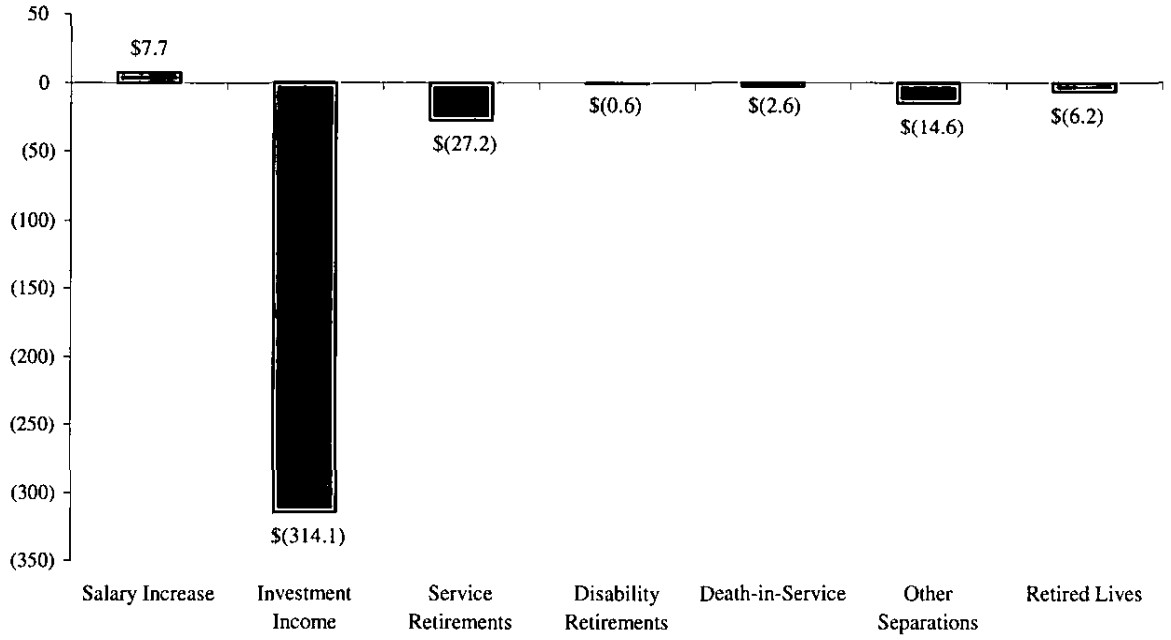
Gains & (Losses) in Actuarial Accrued Liabilities During Plan 2002 - 2003

Type of Activity	-- Gain (Loss) for Year -- $ in Millions	% of Accr. Liabilities*
Decrement Experience:		
Service Retirements. If members retire at older ages than assumed, there is a gain. If at younger ages, a loss.	$ (27.2)	(0.4) %
Disability Retirements. The occurrence of a gain or loss depends upon the age at disability and the incidence of disablility.	(0.6)	(0.0)
Death-in-Service. If there are fewer survivor claims than assumed at younger ages, there is a gain. If there are fewer survivor claims than assumed at older ages, there can be a loss.	(2.6)	(0.0)
Other Separations. If more actuarial liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	(14.6)	(0.2)
Retired Lives. If more deaths than assumed, there is a gain. If fewer deaths, a loss.	(6.2)	(0.1)
Economic Experience:		
Salary Increases. If there are smaller salary increases than assumed, there is a gain. If greater increases, a loss. If long service members have greater salary increases than assumed, there can be a loss even if average salary increases are less than assumed.	7.7	0.1
Investment Income. If there is greater investment income than assumed, there is a gain. If less income, a loss.	(314.1)	(5.0)
COLAs.	15.8	0.2
Other:		
Service credit reinstatements, service transfers, service purchases, net of contributions.	(17.7)	(0.3)
Larger than expected average compensation for new retirees.	(6.2)	(0.1)
Change in group size, data adjustments, retroactive benefit payments, option elections, and miscellaneous unidentified changes in the UAAL.	(39.2)	(0.6)
Experience Gain or (Loss) During Year	$ (404.9)	(6.4) %

* *Beginning of year accrued liabilities totaled $6,294 million.*

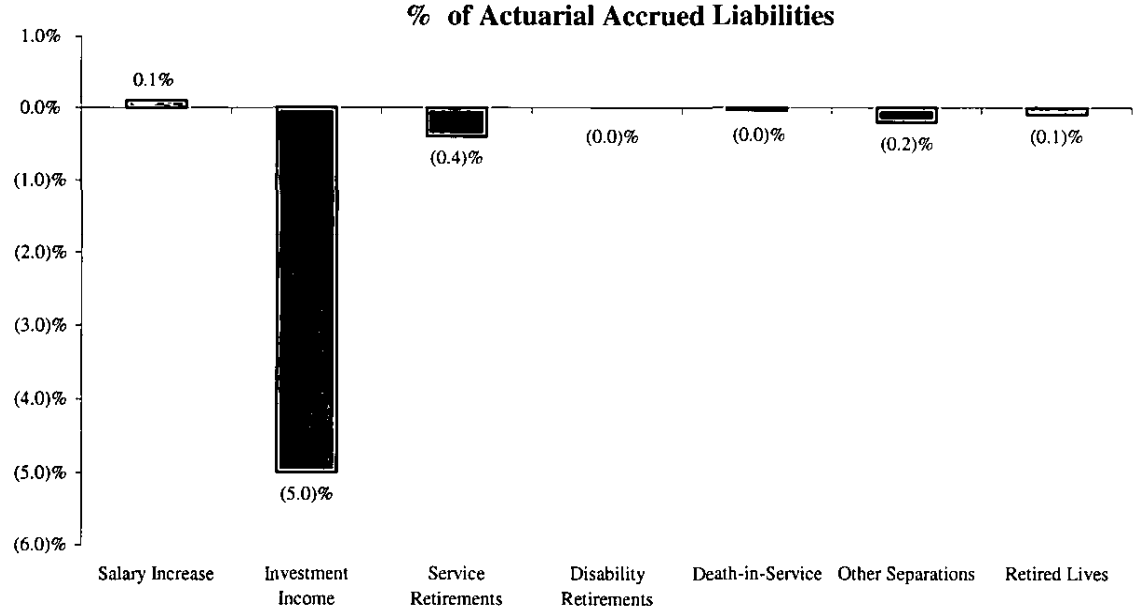
Gain (Loss) Analysis
2002-2003 Experience

Amount in $ Millions



Type of Risk Area

% of Actuarial Accrued Liabilities



Type of Risk Area

Experience Gains & Losses By Risk Area

Comparative Statement

-------$ in Millions-------

Year Ending June 30	Gain (Loss) By Risk Area								Total Exper. Gain (Loss)	Exper. Gain (Loss) as % of AAL	Accrued Liability Beginning of Year
	Salary Increases	Investments	Age & Service Retirement	Disability	Death-In-Service	Withdrawal	COLAs & Retired Lives	Other			
1992 *	$79.8	$19.9	$ (1.8)	$0.6	$1.6	$ (5.5)	#	$ (8.0)	$86.6	4.0 %	$2,165
1993	66.8	54.0	(0.9)	0.8	2.4	(3.9)	#	(27.0)	92.2	4.0	2,292
1994	42.5	(18.1)	(1.0)	0.7	2.3	(7.0)	#	52.0	71.4	2.9	2,447
1995	16.7	12.0	(3.2)	0.5	2.5	(4.0)	#	(7.5)	17.0	0.6	2,919
1996	24.2	63.7	(2.1)	0.6	2.9	(10.2)	$ 7.4	(74.3) ^	12.2	0.4	3,151
1997 *	(26.3)	260.3	(3.1)	0.5	2.6	(7.1)	14.5	(50.6)	190.8	5.5	3,440
1998	(56.9)	325.9	9.6	0.2	(0.3)	(1.7)	16.3	(48.3)	244.8	5.5	4,484
1999	(21.9)	299.8	(1.3)	(0.3)	(0.9)	1.7	10.5	(58.1)	229.5	4.7	4,919
2000 *	(6.4)	162.0	1.7	(0.5)	(0.7)	8.9	18.5	(34.7)	148.8	2.7	5,506
2001 *	(23.2)	(67.9)	(59.8)	(1.0)	(0.2)	(28.2)	(13.1)	(66.1)	(259.5)	(4.4)	5,921
2002	115.0	(284.6)	(14.4)	(0.5)	(1.3)	(21.4)	37.1	(62.6)	(232.8)	(3.8)	6,065
2003	7.7	(314.1)	(27.2)	(0.6)	(2.6)	(14.6)	9.6	(63.1)	(404.9)	(6.4)	6,294

* *Revision in assumptions.*

\# *Not identified as separate risk area. Included in "Other" category.*

^ *Includes (23.0) for legal settlement.*

Development of Gain (Loss)
From Investment Income
During Plan 2002 - 2003

	Market Value	Actuarial Value
	- - - - - - $ in millions - - - - - -	
1. Assets at June 30, 2002	$5,024.9	$ 6,033.1
2. Contributions and Transfers in	160.3	$ 160.3
3. Investment Income	334.2	191.7
4. Benefit Payments	321.8	321.8
5. Administrative Expenses	6.0	6.0
6. Assets at June 30, 2003 = (1) + (2) + (3) – (4) – (5)	5,191.7	6,057.3
7. Actual Investment Increment/Mean Assets*	6.76 %	3.22 %
8. Expected Investment Increment		8.50 %
9. Investment Gain (Loss):		
a. As a % of mean assets: (7) – (8)		(5.28) %
b. $ in millions		$ (314.1)

* *Based on the approximation formula: I/[.5 x (A+B-I)], where*

I = Investment increment
A = Beginning of year asset value
B = End of year asset value

Salary Increases
To Members Active Both at Beginning & End of Year
During Plan 2002 - 2003

Age Group Beginning of Year	Number	Salary Increases	
		Actual *	Expected
25-29	4,114	0.4 %	2.3 %
30-34	5,834	1.1	2.0
35-39	6,199	0.9	1.7
40-44	7,761	0.8	1.3
45-49	8,631	0.7	1.0
50-54	8,478	0.6	0.7
55-59	5,656	0.2	0.7
60-64	2,576	0.2	0.1
65 & over	802	(0.3)	0.0
Total	**50,051**		
Average		**0.6 %**	**1.2 %**

* *Excludes new entrants and terminations.*

Assumed Payroll Growth	Actual Payroll Growth		
	2003	2002	1996-2001
4.0%	(1.9)%	4.4%	n/a
4.5%	n/a	n/a	6.6%

Active Members Who Retired With
SERVICE OR REDUCED SERVICE RETIREMENT BENEFITS
During Plan 2002 - 2003

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 50	0	0.0	0	0.0	0	0.0
50	2	1.6	19	8.1	21	9.7
51	16	6.0	31	12.7	47	18.7
52	27	10.2	27	15.5	54	25.7
53	18	9.8	32	13.6	50	23.4
54	32	10.3	35	13.1	67	23.4
55	41	7.4	38	9.8	79	17.2
56	47	15.4	53	10.3	100	25.7
57	31	27.0	48	34.7	79	61.7
58	29	24.0	43	29.6	72	53.6
59	33	23.6	46	35.7	79	59.3
60	37	32.4	53	49.1	90	81.5
61	46	38.8	38	54.8	84	93.6
62	51	44.5	74	53.9	125	98.4
63	47	32.4	61	25.3	108	57.7
64	26	39.2	30	48.2	56	87.4
65	23	45.9	58	73.8	81	119.7
66	28	30.9	22	22.8	50	53.7
67	13	15.2	20	21.3	33	36.5
68	13	15.5	19	15.7	32	31.2
69	8	6.4	8	7.6	16	14.0
70 & over	34	52.3	26	53.2	60	105.5
Totals	**602**	**488.8**	**781**	**608.8**	**1,383**	**1,097.6**

	Men	Women	Total
Average age at retirement	59.2 years	58.8 years	59.0 years
Average service at retirement	23.3 years	22.5 years	22.9 years

Active Members Who Retired With DISABILITY BENEFITS During Plan 2002 - 2003

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 25	0	0.0	0	0.0	0	0.0
25-29	2	0.2	4	0.1	6	0.3
30-34	5	1.4	8	1.3	13	2.7
35-39	5	2.8	18	4.3	23	7.1
40-44	5	5.1	19	8.1	24	13.2
45-49	16	8.8	29	12.7	45	21.5
50-54	19	13.2	34	20.1	53	33.3
55-59	23	15.3	25	20.9	48	36.2
60 & over	6	4.9	8	7.7	14	12.6
Totals	**81**	**51.7**	**145**	**75.2**	**226**	**126.9**

Active Members Who Died
During Plan 2002 - 2003

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 30	2	0.1	1	0.2	3	0.3
30-34	2	0.7	2	0.9	4	1.6
35-39	1	1.4	5	1.7	6	3.1
40-44	6	2.8	5	3.1	11	5.9
45-49	2	6.1	5	5.2	7	11.3
50-54	7	12.6	4	8.6	11	21.2
55-59	7	14.8	6	10.0	13	24.8
60-64	10	10.8	5	7.8	15	18.6
65 & over	10	7.0	1	4.1	11	11.1
Totals	**47**	**56.3**	**34**	**41.6**	**81**	**97.9**

	Men	Women	Total
Average age at death	53.7 years	48.4 years	51.4 years
Average service at death	11.6 years	13.0 years	12.2 years

Of the 81 active members who died in service during 2002 - 2003, 39 members had a benefit payable to a survivor.

Active Members Who Left Active Status with a DEFERRED BENEFIT (Retirement With Monthly Payments Beginning At Later Age) During Plan 2002 - 2003

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 30	35	37.3	89	86.6	124	123.9
30-34	106	103.4	212	187.1	318	290.5
35-39	121	106.9	174	165.7	295	272.6
40-44	103	109.1	171	186.8	274	295.9
45-49	97	106.3	148	184.1	245	290.4
50-54	98	89.1	141	137.7	239	226.8
55-59	58	44.8	68	66.2	126	111.0
60 & over	23	9.7	32	17.0	55	26.7
Totals	**641**	**606.6**	**1,035**	**1,031.2**	**1,676**	**1,637.8**

	Men	Women	Total
Average age at termination	42.0 years	40.6 years	41.1 years
Average service at termination	9.6 years	10.1 years	9.9 years

Active Members Who Left Active Status with NO BENEFIT PAYABLE (Other than Deaths) During Plan 2002 - 2003

Ages	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
under 20	0	0.0	0	1.0	0	1.0
20-24	131	107.0	308	204.1	439	311.1
25-29	299	275.9	519	471.6	818	747.5
30-34	244	264.6	382	395.1	626	659.7
35-39	148	181.0	254	292.6	402	473.6
40-44	157	188.8	205	287.8	362	476.6
45-49	120	156.7	168	270.1	288	426.8
50-54	78	144.9	129	222.8	207	367.7
55-59	54	99.7	61	127.4	115	227.1
60-64	34	53.2	18	55.7	52	108.9
65-69	8	8.6	9	8.8	17	17.4
70 & over	2	3.2	2	2.4	4	5.6
Totals	**1,275**	**1,483.6**	**2,055**	**2,339.4**	**3,330**	**3,823.0**

	Men	Women	Total
Average age at termination	35.1 years	33.4 years	34.1 years
Average service at termination	2.2 years	2.1 years	2.2 years

Service at Termination	Men		Women		Total	
	Actual	Expected	Actual	Expected	Actual	Expected
0	465	529.4	796	759.3	1,261	1,288.7
1	322	373.9	562	624.4	884	998.3
2	222	279.7	344	459.7	566	739.4
3	184	226.7	246	374.1	430	600.8
4	82	73.9	107	121.9	189	195.8
5 & over	0	0.0	0	0.0	0	0.0
Totals	**1,275**	**1,483.6**	**2,055**	**2,339.4**	**3,330**	**3,823.0**

Comparison of Actual to Expected Deaths
Among Retired Lives
(Service Retirement Only)
As of June 30, 2002

	Male Deaths			Female Deaths			Total Deaths		
Age	Actual	Expected	Exposure	Actual	Expected	Exposure	Actual	Expected	Exposure
50-54	4	2	336	2	2	590	6	4	926
55-59	9	7	810	9	7	1,266	18	14	2,076
60-64	21	17	1,277	21	18	2,015	42	35	3,292
65-69	33	36	1,599	32	30	2,344	65	66	3,943
70-74	42	48	1,306	42	44	1,970	84	92	3,276
75-79	45	56	967	64	60	1,585	109	116	2,552
80-84	53	46	504	78	64	1,082	131	110	1,586
85-89	37	29	219	70	50	544	107	79	763
90-94	12	13	72	45	31	218	57	44	290
95-99		4	15	14	7	40	14	11	55
100 & Up						2			2
Totals	**256**	**258**	**7,105**	**377**	**313**	**11,656**	**633**	**571**	**18,761**
Average Ages	**75.8**	**76.0**	**68.5**	**79.6**	**78.5**	**69.4**	**78.1**	**77.4**	**69.1**

Active Members by Years of Service
As of June 30, 2002

Years of Service to Valuation Date	Men	Women	Total
0	2,515	3,492	6,007
1	1,944	3,292	5,236
2	1,743	2,814	4,557
3	1,529	2,548	4,077
4	1,445	2,329	3,774
5 & Over	13,777	21,188	34,965
Totals	**22,953**	**35,663**	**58,616**

Male Active Members as of June 30, 2002
By Attained Age and Years of Service*

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	18							18	$ 333,268
20-24	685	10	7					702	14,939,494
25-29	1,489	182	233					1,904	48,625,065
30-34	1,270	270	931	74	39	7		2,591	75,801,812
35-39	942	185	800	230	360	173		2,690	85,722,413
40-44	985	207	708	203	433	691		3,227	107,801,190
45-49	787	213	674	214	423	1,247	6	3,564	127,190,976
50	176	41	137	41	101	331	5	832	31,071,812
51	163	30	102	37	79	377	12	800	30,065,215
52	135	33	132	45	79	298	15	737	27,347,878
53	128	29	142	42	80	290	29	740	27,522,874
54	129	23	101	39	72	282	28	674	25,093,655
55	122	35	121	47	68	265	35	693	26,230,221
56	115	33	109	39	78	212	43	629	24,681,189
57	89	21	75	19	51	178	33	466	18,172,578
58	93	18	66	28	48	159	36	448	16,998,917
59	91	20	89	19	44	135	41	439	16,814,529
60	86	16	78	18	45	111	46	400	15,642,151
61	52	19	51	23	40	109	50	344	13,482,938
62	40	21	39	11	33	71	21	236	9,248,225
63	31	11	40	14	18	48	38	200	8,123,764
64	25	6	24	6	16	42	30	149	6,659,821
65	22	5	26	9	11	39	19	131	5,246,190
66	9	4	17	3	9	20	9	71	3,199,070
67	11	2	9	6	10	16	10	64	2,675,187
68	12	4	2	2	6	13	11	50	1,903,941
69	5	1	6	2	9	7	3	33	1,484,925
70 & over	21	6	26	5	17	38	8	121	4,424,758
Totals	**7,731**	**1,445**	**4,745**	**1,176**	**2,169**	**5,159**	**528**	**22,953**	**$ 776,504,056**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.3 years

Service: 9.8 years

Annual Pay: $33,830

** We expect to remove this table in subsequent valuation reports.*

Female Active Members as of June 30, 2002
By Attained Age and Years of Service*

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	50							50	$ 839,947
20-24	1,340	43	10					1,393	27,809,686
25-29	2,490	408	511	6				3,415	83,833,886
30-34	1,915	456	1,644	188	138	18		4,359	115,869,099
35-39	1,508	336	1,228	357	524	505		4,458	123,166,166
40-44	1,478	335	1,142	301	538	1,544		5,338	151,610,846
45-49	1,354	297	1,096	294	551	2,125	44	5,761	171,080,464
50	223	64	202	59	107	473	66	1,194	36,128,240
51	239	47	216	59	101	441	62	1,165	35,708,158
52	215	42	187	72	111	408	37	1,072	32,117,307
53	202	53	182	64	114	371	43	1,029	30,891,436
54	227	34	165	46	108	309	56	945	27,844,374
55	169	35	174	64	90	323	70	925	28,009,548
56	139	24	162	57	82	287	60	811	23,321,774
57	117	29	127	37	55	213	35	613	17,700,332
58	95	22	87	36	50	192	38	520	15,119,070
59	87	18	98	30	78	221	27	559	16,725,578
60	70	26	79	40	63	160	24	462	13,452,766
61	51	14	104	24	57	135	27	412	11,534,645
62	50	15	49	20	56	92	20	302	8,372,064
63	35	11	35	8	25	63	18	195	5,531,875
64	24	9	41	18	24	69	17	202	5,968,900
65	14	4	28	13	14	42	14	129	4,025,349
66	12	3	12	7	10	32	10	86	2,443,780
67	11	1	12	10	4	31	6	75	2,264,887
68	11		8	2	7	20	4	52	1,495,573
69	7		2	1	3	11	1	25	754,205
70 & over	13	3	20	6	10	45	19	116	3,159,473
Totals	**12,146**	**2,329**	**7,621**	**1,819**	**2,920**	**8,130**	**698**	**35,663**	**$ 996,779,428**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 42.8 years

Service: 9.7 years

Annual Pay: $27,950

** We expect to remove this table in subsequent valuation reports.*

Total Active Members as of June 30, 2002
By Attained Age and Years of Service*

Attained Age	Years of Service to Valuation Date							Totals	
	0-3	4-4	5-9	10-11	12-14	15-29	30 Plus	No.	Valuation Payroll
Under 20	68							68	$ 1,173,215
20-24	2,025	53	17					2,095	42,749,180
25-29	3,979	590	744	6				5,319	132,458,951
30-34	3,185	726	2,575	262	177	25		6,950	191,670,911
35-39	2,450	521	2,028	587	884	678		7,148	208,888,579
40-44	2,463	542	1,850	504	971	2,235		8,565	259,412,036
45-49	2,141	510	1,770	508	974	3,372	50	9,325	298,271,440
50	399	105	339	100	208	804	71	2,026	67,200,052
51	402	77	318	96	180	818	74	1,965	65,773,373
52	350	75	319	117	190	706	52	1,809	59,465,185
53	330	82	324	106	194	661	72	1,769	58,414,310
54	356	57	266	85	180	591	84	1,619	52,938,029
55	291	70	295	111	158	588	105	1,618	54,239,769
56	254	57	271	96	160	499	103	1,440	48,002,963
57	206	50	202	56	106	391	68	1,079	35,872,910
58	188	40	153	64	98	351	74	968	32,117,987
59	178	38	187	49	122	356	68	998	33,540,107
60	156	42	157	58	108	271	70	862	29,094,917
61	103	33	155	47	97	244	77	756	25,017,583
62	90	36	88	31	89	163	41	538	17,620,289
63	66	22	75	22	43	111	56	395	13,655,639
64	49	15	65	24	40	111	47	351	12,628,721
65	36	9	54	22	25	81	33	260	9,271,539
66	21	7	29	10	19	52	19	157	5,642,850
67	22	3	21	16	14	47	16	139	4,940,074
68	23	4	10	4	13	33	15	102	3,399,514
69	12	1	8	3	12	18	4	58	2,239,130
70 & over	34	9	46	11	27	83	27	237	7,584,231
Totals	**19,877**	**3,774**	**12,366**	**2,995**	**5,089**	**13,289**	**1,226**	**58,616**	**$ 1,773,283,484**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.4 years

Service: 9.8 years

Annual Pay: $30,253

** We expect to remove this table in subsequent valuation reports.*

Data Used In Valuations

Missouri State Employees' Retirement System
Summary of Benefit Provisions Evaluated
June 30, 2003 Actuarial Valuation

MSEP (Missouri State Employees' Plan)	**MSEP 2000** (Missouri State Employees' Plan 2000)
PARTICIPATION	
Participants include:	Participants include:
All MOSERS members, vested former members, retirees and survivors who first became members prior to July 1, 2000 and who do **not** elect to transfer to the MSEP 2000 plan. Election is made at the time benefits commence.	(1) All new employees who first become members on or after July 1, 2000, except full-time teaching and senior administrative personnel of the regional colleges and universities hired on or after July 1, 2002 who will be participants in the Colleges and Universities Retirement Plan. (2) MSEP active members and vested former members who elect to transfer to the MSEP 2000 plan prior to retirement. (3) MSEP retirees who elect to transfer to the MSEP 2000 plan during the election window from July 1, 2000 through July 1, 2001, and their survivors.

MSEP	MSEP 2000
NORMAL RETIREMENT ELIGIBILITY (unreduced benefits)	
Members of the General Assembly: Age 55 with completion of at least 3 full biennial assemblies.	***Members of the General Assembly:*** The earlier of attaining: (1) Age 55 with completion of at least 2 full biennial assemblies. (2) Age 50 with completion of at least 2 full biennial assemblies and with age plus credited service equal to 80 or more.
Statewide Elected Officials: The earliest of attaining: (1) Age 65 with at least 4 years of credited service. (2) Age 60 with at least 15 years of credited service. (3) Age 50 with age plus credited service equal to 80 or more.	***Statewide Elected Officials:*** The earlier of attaining: (1) Age 55 with at least 4 years of credited service as a statewide elected official. (2) Age 50 with age plus credited service equal to 80 or more.
General Employees: The earliest of attaining: (1) Age 65 and active with at least 4 years of credited service. (2) Age 65 with at least five years of credited service. (3) Age 60 with at least 15 years of credited service. (4) Age 48 with age plus credited service equal to 80 or more.	***General Employees:*** The earlier of attaining: (1) Age 62 with at least 5 years of credited service. (2) Age 48 with age plus credited service equal to 80 or more.
Uniform Water Patrol Employees: The earliest of attaining: (1) Age 55 and active with at least 4 years of credited service. (2) Age 55 with at least 5 years of credited service. (3) Age 48 with age plus credited service equal to 80 or more.	
AVERAGE COMPENSATION USED FOR BENEFIT DETERMINATION The average annual compensation of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining Average Compensation). Lump sum payments are excluded, but unused sick leave may be converted to additional credited service (usable only for benefit computation, not eligibility).	The average annual pay of a member for the three consecutive years of service during which pay was highest (overtime pay is included for purposes of determining Average Pay). A lump sum payment is included unless it is for unused vacation or sick leave. However, unused sick leave may be converted to additional credited service (usable only for benefit computation, not eligibility).

MSEP	MSEP 2000
BENEFIT AMOUNT	
Members of the General Assembly: $150 per month per biennial assembly served.	***Members of the General Assembly:*** 1/24 of pay times first 24 years of credited service as a member of the General Assembly.
Statewide Elected Officials: (1) Less than 12 years of credited service: 1.6% of Average Compensation times years of credited service. (2) 12 or more years of credited service: 50% of pay of the highest elected position held prior to retirement.	***Statewide Elected Officials:*** 1/24 of pay (of the highest elected position held prior to retirement) times the first 12 years of credited service as a statewide elected official.
General Employees: 1.6% of Average Compensation times years of credited service. 2.1% of Average Compensation times years of credited service for any period of non-social security covered employment transferred from the Public School Retirement System.	***General Employees:*** Life Benefit: 1.7% of Average Pay times years of credited service. Temporary Benefit: If member retires between ages 50 and 62 with age plus credited service equal to 80 or more, a temporary benefit is payable until the attainment of the minimum age at which reduced social security benefits are payable, in the amount of 0.8% of Average Pay times years of credited service. Non- Social Security Covered Service: 2.5% of Average Pay times years of credited service for any period of non-social security covered employment transferred from the Public School Retirement System.
Uniformed Water Patrol Employees: 2.13% of Average Compensation times years of credited service.	

MSEP	MSEP 2000

EARLY RETIREMENT FOR GENERAL EMPLOYEES:

Eligibility:

Age 55 with at least 10 years of credited service.

Amount:

(1) Less than 15 years of service: Normal retirement amount actuarially reduced for years younger than age 65.

(2) 15 years but less than 20 years of service, and less than the number of years of service necessary for age and service to total 80: Normal retirement amount actuarially reduced for years younger than age 60.

(3) 20 or more years of service, but less than the number of years of service necessary for age and service to total 80: Normal retirement amount reduced for years younger than the 80 and out eligibility date.

Eligibility:

Age 57 with at least 5 years of credited service.

Amount:

Normal retirement amount reduced by ½% for each month that retirement precedes eligibility for normal retirement.

VESTED DEFERRED BENEFITS

Benefits for employees who terminate prior to eligibility for an immediate benefit are considered to be vested in accordance with the following schedule (benefits commence at the age the individual would have been eligible for early or normal retirement, considering years of credited service). Unused sick leave is not converted.

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4		100%	
5			100%
6 (3 assemblies)	100%		

Benefits for employees who terminate prior to eligibility for an immediate benefit are considered to be vested in accordance with the following schedule (benefits commence at age 57). Unused sick leave is converted to additional credited service.

Years of Service	General Assembly	Statewide Elected Officials	General Employees
4 (2 assemblies)	100%	100%	
5			100%
6 (3 Assemblies) HB1455 prospectively	100%		

MSEP	MSEP 2000
DEATH PRIOR TO RETIREMENT	
(1) The surviving spouse benefit is computed as if the member had been normal retirement age on the date of death and elected the joint and 100% survivor optional form of payment, provided the member had at least 5 years of credited service and was married for at least two consecutive years immediately prior to the date of death. If no eligible spouse survives, 80% of the member's life income annuity is paid to eligible children until age 21. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.	The surviving spouse benefit is computed as if the member had been normal retirement age on the date of death and elected the joint and 100% survivor option form of payment, provided the member had at least 5 years of credited service (2 full assemblies for a member of the General Assembly, 4 years of credited service for a statewide elected official). If no eligible spouse survives, 80% of the member's life income annuity is paid to eligible children until age 21. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.
(2) For members of the General Assembly, the surviving spouse receives 50% of the benefit the member would have received if the member had been normal retirement age on the date of death, provided the member had served in at least 3 biennial assemblies, and was married for at least two consecutive years immediately prior to the date of death. If the death is duty related, the service requirement is waived, and the minimum spouse benefit is 50% of current pay.	

MSEP	MSEP 2000
DEATH AFTER RETIREMENT	
50% of the benefit the retired member was receiving on the date of death (the normal form of payment), or the benefit payable under the joint and survivor or period certain form of payment, if the member elected an optional form of payment at time of retirement and provided the member was married for at least two consecutive years prior to the date of retirement. Effective July 1, 2000, a member who is not married at retirement but marries thereafter may designate a spouse as beneficiary upon completion of one year of marriage. Additionally, a member may designate a new spouse as beneficiary upon completion of one year of marriage in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities).	The benefit payable under the joint and survivor or period certain form of payment, if the member elected an optional form of payment at time of retirement. A member who is not married at retirement but marries thereafter may designate a spouse as beneficiary upon completion of one year of marriage. Additionally, a member may designate a new spouse as beneficiary upon completion of one year of marriage in the event of the death of the spouse the member was married to at the date of retirement (this provision does not apply to period certain annuities).
DISABILITY (RECIPIENTS OF LTD BENEFITS)	
Normal retirement benefits become payable at the time the member is eligible for normal retirement, and are computed based on: i) the service that would have accrued to the member if active employment had continued; and ii) the member's rate of pay at the time of disability (If the member retires on or after August 28, 1999, the member's rate of pay is based on the rate of pay at the time of disability indexed to the time of benefit commencement). An exception is Uniformed Water Patrol employees who are eligible for an immediate occupational disability benefit equal to 50% of pay at time of disability.	Normal retirement benefits become payable at the time the member is eligible for normal retirement, and are computed based on: i) the service that would have accrued to the member if active employment had continued; and ii) the member's rate of pay at the time of disability indexed to the time of benefit commencement. The annual percentage increase in the pay used to compute benefits is the lesser of: i) 80% of the CPI increase and ii) 5%.

MSEP

POST-RETIREMENT BENEFIT ADJUSTMENTS

Benefits are increased to retired members (including survivors) annually in accordance with the following formulas:

Increase in CPI	Formula 1 Benefit Increase	Formula 2 Benefit Increase
5.00% or less	4%	80% of CPI increase
5.01% - 6.24%	80% of CPI increase	80% of CPI increase
6.25% or more	5%	5%

Members first hired prior to August 28, 1997 receive COLAs based on Formula 1 until an aggregate increase of 65% is reached. At that point subsequent COLAs based on Formula 2 are granted.

Members first hired on or after August 28, 1997 receive COLAs based solely on Formula 2.

Statewide Elected Officials with 12 or more years of service have their benefit adjusted annually based on the increase in the pay for an active statewide elected official in the member's highest elected position.

Members who are fully vested and work beyond age 65 will have their monthly benefit increased upon retirement. The percentage increase in benefit is equal to all COLAs for the years between age 65 and date of retirement, not to exceed 65% and counts toward the Formula 1 65% maximum.

MSEP 2000

Benefits are increased to retired members (including survivors) annually in accordance with the following:

Members of the General Assembly: Benefit is adjusted annually based on the increase in the pay for an active member of the General Assembly.

Statewide Elected Officials: Benefit is adjusted annually based on the increase in the pay for an active statewide elected official in the retired member's highest elected position.

General Employees: Annual benefit percentage increase equal to the lesser of: i) 80% of the CPI increase, and
ii) 5%.

MSEP	MSEP 2000
POP-UP PROVISION Benefits to members who choose a survivor form of payment and whose spouse precedes the member in death, will "pop-up" or revert to the amount the member would have received had he/she not elected a survivor option.	Same.
PORTABILITY Purchase/Transfer Provisions (in addition to military). Effective August 28, 1999, a member may purchase up to four years of non-federal full-time Missouri public service, provided the member is not vested in another retirement system for that same service.	Purchase/Transfer Provisions (in addition to military). A member may purchase up to four years of non-federal full-time Missouri public service, provided the member is not vested in another retirement system for that same service. Local vested service credit granted after 10 years of state service if the other retirement plan agrees to transfer assets equal to the accrued liability to MOSERS.
MEMBER CONTRIBUTIONS. None.	Same.
BACK DROP. See following page.	Same.

MSEP	MSEP 2000
BACK DROP	
To be eligible to participate in the back DROP, a member must have been eligible to retire under normal age and/or service conditions for at least two years. A retroactive starting date is established for back DROP purposes which is the later of: 1) the member's normal retirement date or 2) five years prior to the annuity starting date under the retirement plan selected by the member.	Same.
A member may elect the back DROP period for the accumulation of the back DROP account in 12 month increments prior to their actual retirement date or back to the earliest possible date. This results in a back DROP period of two to five years depending upon the individual situation.	
A theoretical back DROP account is accumulated that includes 90% of the value of the benefit payments that would have been paid during the back DROP period had the member retired at the retroactive starting date with their respective option election. These payments include applicable post-retirement benefit increases.	
The member is paid the resulting lump sum value of the back DROP account as of the annuity starting date or as three equal annual installments beginning at the annuity starting date.	
The annuity benefit payable from the actual retirement date is computed with years of service and average pay as of the retroactive starting date for the back DROP. Post-retirement benefit increases that occurred during the back DROP period are applied in the calculation of the monthly annuity.	

Retirants & Beneficiaries as of June 30, 2003
Tabulated by Plan Year of Retirement

Plan Year Ended 6/30	No.	Total Annual Benefits	Average Monthly Benefit
2003 *	821	$12,923,906	$1,312
2002	2,237	32,228,232	1,201
2001	1,942	29,108,340	1,249
2000	2,479	39,229,332	1,319
1999	1,427	18,817,080	1,099
1998	1,381	18,498,900	1,116
1997	1,215	15,880,836	1,089
1996	1,093	13,311,744	1,015
1995	1,230	15,715,752	1,065
1994	880	9,634,740	912
1993	972	11,691,396	1,002
1992	790	9,250,308	976
1991	798	10,144,788	1,059
1990	617	7,568,664	1,022
1989	613	6,839,160	930
1988	647	7,325,772	944
1987	512	4,785,876	779
1986	463	3,763,200	677
1985	405	3,262,128	671
1984	320	2,441,664	636
1983	342	2,715,540	662
1982	326	2,563,464	655
1981	261	2,063,076	659
1980	182	1,341,780	614
1979	147	963,024	546
1978	138	964,344	582
1977	147	1,029,252	583
1976	143	869,004	506
1975	87	619,008	593
1974	86	455,808	442
1973	76	463,044	508
1972	33	211,020	533
1971	18	116,904	541
1970	16	99,540	518
1969	9	73,368	679
1968	6	21,108	293
1967	5	35,412	590
1966	3	26,460	735
1965	1	2,844	237
1964 & PRIOR	4	28,320	590
Totals	**22,872**	**$287,084,138**	**$1,046**

** Eleven months ended May 31, 2003.*

Benefits Payable June 30, 2003

Tabulated by Option and Type of Benefit

MSEP Benefits*

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	4,568	$ 41,384,127
50% Joint and Survivor	4,915	62,764,730
75% Joint and Survivor	8	79,050
100% Joint and Survivor	2,155	33,200,577
5 Year Certain and Life	126	1,044,187
10 Year Certain and Life	97	758,227
Survivor Beneficiary	1,527	11,558,060
Total	13,396	150,788,958
Disability Retirement	29	113,843
Death-in-Service	1,150	8,132,614
Total	**14,575**	**$ 159,035,415**

* *Count includes 9 Lincoln University members.*

MSEP 2000 Benefits

Type of Benefit	No.	Annual Funded Benefits
Service Retirement		
Life Annuity	5,878	$ 82,077,352
50% Joint and Survivor	1,060	23,853,129
100% Joint and Survivor	883	16,955,124
5 Year Certain and Life	57	726,077
10 Year Certain and Life	232	2,657,600
15 Year Certain and Life	105	915,680
Survivor Beneficiary	81	862,638
Total	8,296	128,047,600
Disability Retirement	0	0
Death-in-Service	1	1,123
Total	**8,297**	**$ 128,048,723**

Total Benefits Payable June 30, 2003

Tabulated by Attained Ages of Benefit Recipients

Attained Ages	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20					81	$ 216,659	81	$ 216,659
20-24					16	55,323	16	55,323
25-29					7	54,847	7	54,847
30-34					17	77,292	17	77,292
35-39					23	107,364	23	107,364
40-44					52	310,121	52	310,121
45-49			1	$ 1,740	99	715,220	100	716,960
50-54	767	$ 19,869,762	8	39,950	183	1,435,553	958	21,345,265
55-59	2,425	51,655,595	8	26,022	234	2,126,538	2,667	53,808,155
60-64	3,544	49,275,990	12	46,131	280	2,536,790	3,836	51,858,911
65-69	4,070	46,096,228			426	3,759,725	4,496	49,855,953
70-74	3,453	41,842,885			410	2,956,974	3,863	44,799,859
75-79	2,741	30,385,807			438	2,998,176	3,179	33,383,983
80-84	1,724	16,638,344			291	1,912,877	2,015	18,551,221
85-89	918	7,681,163			144	940,174	1,062	8,621,337
90-94	350	2,315,561			46	284,216	396	2,599,777
95	34	241,348			5	25,596	39	266,944
96	19	131,652			5	36,301	24	167,953
97	9	66,471					9	66,471
98	14	85,886			1	3,981	15	89,867
99	7	55,764			1	708	8	56,472
100	3	29,508					3	29,508
101	5	41,052					5	41,052
102	1	2,844					1	2,844
Totals	**20,084**	**$ 266,415,860**	**29**	**$ 113,843**	**2,759**	**$ 20,554,435**	**22,872**	**$ 287,084,138**

Average age at Retirement: 61.1 years.

Average age now: 69.5 years.

Summary of Member Data Included in Valuation

June 30, 2003

Active Members

Valuation Group	Number	Payroll	Group Averages		
			Salary	Age(yrs.)	Service(yrs.)
Regular State Employees	52,893	$ 1,539,362,020	$ 29,103	43.5	9.6
Elected Officials	6	590,976	98,496	46.1	6.1
Legislative Clerks	86	2,329,824	27,091	53.8	14.3
Legislators	196	6,177,456	31,518	48.8	3.9
Uniformed Water Patrol	77	3,015,264	39,159	39.5	13.8
Conservation Department	1,475	53,925,085	36,559	42.2	12.6
Contract Employees	2,825	134,494,739	47,609	49.9	14.8
Total in Funding Program	**57,558**	**$ 1,739,895,364**	**$ 30,229**	**43.8**	**9.9**
Administrative Law Judges	57	$ 4,657,896	$ 81,717	48.0	9.9
Other Judges	392	40,052,952	102,176	53.0	10.7

Retired Lives

Type of Benefit Payment	No.	Annual Benefit	Group Averages	
			Benefit	Age(yrs.)
Retirement	20,084	$ 266,415,860	$ 13,265	69.9
Disability	29	113,843	3,926	57.5
Survivor of Active Member	1,151	8,133,737	7,067	59.0
Survivor of Retired Member	1,608	12,420,698	7,724	72.9
Total in Funding Program	**22,872**	**$ 287,084,138**	**$ 12,552**	**69.5**
Administrative Law Judges	27	$ 993,990	$ 36,814	73.8
Other Judges	393	17,342,866	44,129	75.3

This valuation also includes 12,974 terminated vested members, 512 members on leave and 1,117 members on long-term disability.

Active Members in Funding Program as of June 30, 2003

By Age and Years of Service*

Near Age	Years of Service to Valuation Date							Totals	
	0-3	4	5-9	10-11	12-14	15-29	30 plus	No.	Valuation Payroll
Under 20	53							53	$ 929,444
20-24	1,978	52	21					2,051	42,030,339
25-29	3,668	565	808	7				5,048	125,060,169
30-34	2,846	639	2,575	299	144	19		6,522	179,358,823
35-39	2,190	496	2,077	644	809	610		6,826	198,314,570
40-44	2,221	500	1,953	513	958	2,179		8,324	252,774,287
45-49	1,918	499	1,842	520	917	3,376	59	9,131	290,249,990
50	353	88	379	106	183	713	83	1,905	63,214,225
51	361	78	365	103	178	826	64	1,975	66,161,801
52	352	91	314	98	170	771	94	1,890	63,143,006
53	338	57	309	114	188	675	72	1,753	57,478,798
54	305	69	324	120	191	608	95	1,712	56,449,423
55	318	75	265	87	164	561	82	1,552	50,587,537
56	280	63	292	102	155	540	108	1,540	51,046,402
57	233	59	254	84	159	468	90	1,347	44,324,393
58	175	45	192	67	85	365	55	984	32,930,838
59	161	40	144	62	99	324	65	895	29,227,771
60	144	48	185	61	99	334	57	928	31,030,194
61	138	41	157	56	86	246	53	777	26,102,720
62	83	23	149	36	84	202	55	632	20,676,179
63	67	20	85	24	59	129	25	409	13,365,059
64	48	13	67	18	42	76	44	308	10,818,981
65	40	12	55	24	38	81	37	287	10,271,161
66	16	9	42	8	23	47	24	169	5,956,674
67	14	5	26	10	14	43	13	125	4,484,103
68	13	4	17	9	14	36	15	108	3,914,305
69	14	2	11	3	8	23	8	69	2,346,898
70 & Over	38	12	42	18	23	85	20	238	7,647,274
Totals	**18,365**	**3,605**	**12,950**	**3,193**	**4,890**	**13,337**	**1,218**	**57,558**	**$ 1,739,895,364**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.8 years.

Service: 9.9 years.

Annual Pay: $30,229

** A breakdown by gender is included on pages 68 and 69.*

Development of Actuarial Value of Assets

Valuation Date:	2002	2003	2004	2005	2006	2007
A. Actuarial Value Beginning of Year	$ 5,881,232,850	$ 6,033,133,598				
B. Market Value End of Year	5,024,940,249	5,191,733,236				
C. Market Value Beginning of Year	5,432,767,672	5,024,940,249				
D. Cash Flow						
D1. Contributions	213,477,292	160,320,089				
D2. Benefit Payments	(268,508,952)	(321,802,953)				
D3. Administrative Expenses	(5,753,805)	(5,954,365)				
D4. Net	(60,785,465)	(167,437,229)				
E. Investment Income						
E1. Market Total: B - C - D4	(347,041,958)	334,230,216				
E2. Assumed Rate	8.5%	8.5%				
E3. Amount for Immediate Recognition: E2*(A+D4*.5)	497,321,410	505,700,274				
E4. Amount for Phased-In Recognition: E1 - E3	(844,363,368)	(171,470,058)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.2 * E4	(168,872,674)	(34,294,012)				
F2. First Prior Year	(110,900,885)	(168,872,674)	$ (34,294,012)			
F3. Second Prior Year	(4,861,638)	(110,900,885)	(168,872,674)	$ (34,294,012)		
F4. Third Prior Year			(110,900,885)	(168,872,674)	$ (34,294,012)	
F5. Fourth Prior Year			0	(110,900,885)	(168,872,672)	$ (34,294,010)
F6. Total Recognized Investment Gain: Sum(F1:F5)	(284,635,197)	(314,067,571)	(314,067,571)	(314,067,571)	(203,166,684)	(34,294,010)
G. Adjustment						
H. Actuarial Value End of Year: A + D4 + E3 + F6 + G						
Minimum 80% of B, Maximum 120% of B	6,033,133,598	6,057,329,072				
I. Difference Between Market & Actuarial Values: H - B	(1,008,193,349)	(865,595,836)				
J. Recognized Rate of Return	3.64%	3.22%				
K. Market Value Rate of Return	(6.42)%	6.76%				
L. Actuarial Value as a % of Market Value: H / B	120%	117%				

The actuarial value of assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, the actuarial value of assets will tend to be less than market value. During periods when investment performance is less than assumed, the actuarial value will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, the actuarial value will become equal to market value.

Asset Summary

June 30, 2003

	Market Value	Actuarial Value
1. Assets at June 30, 2002	$5,024,940,249	$6,033,133,598
2. Contributions and Transfers in	160,320,089	160,320,089
3. Investment Increment*	334,230,216	191,632,703
4. Benefit Payments and Transfers out	321,802,953	321,802,953
5. Administrative and Misc. Expenses	5,954,365	5,954,365
6. Assets at June 30, 2003 (1) + (2) + (3) - (4) - (5)	$5,191,733,236	$6,057,329,072
7. Investment Increment/Mean Assets**	6.76%	3.22%

* *Net of investment expenses.*

** *Based on the approximation formula: I /[.5 x (A+B-I)], where*

I = Investment Increment
A = Beginning of year asset value
B = End of year asset value

Cash Flow Projection

Missouri State Employees' Retirement System

The Nature of Actuarial Projections

Regular actuarial valuations measure the Retirement System's present financial position and contributions adequacy by calculating and financing the liabilities created by the present benefit program. This process involves discounting to present values the future benefit payments on behalf of present active and retired members and their survivors. However, valuations do not produce information regarding future changes in the makeup of the covered group or the amounts of benefits to be paid or investment income to be received--actuarial projections do.

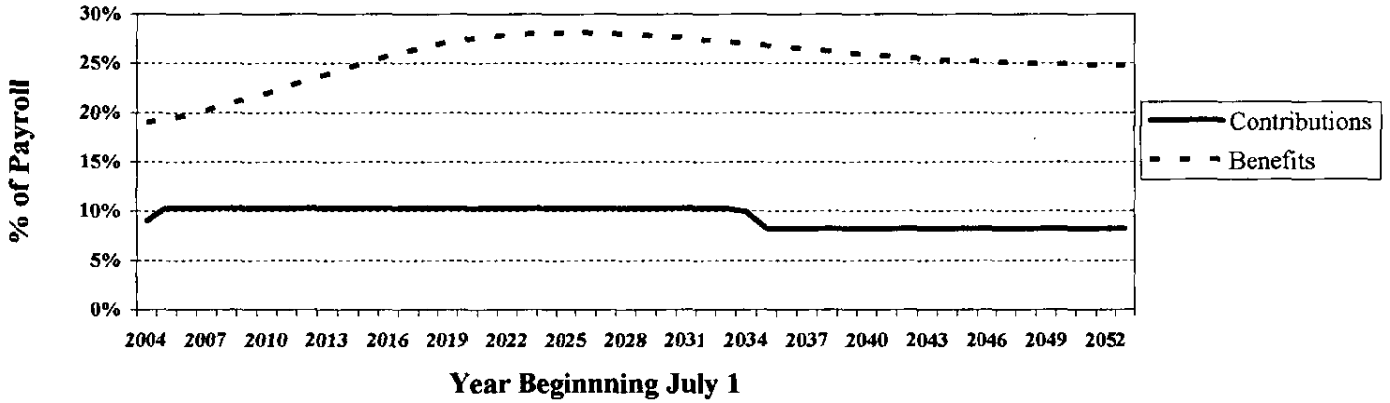
Whereas valuations provide a snapshot of the retirement system as of a given date, projections provide a moving picture. Projected active and retired groups are developed from year to year by the application of assumptions regarding pre-retirement withdrawal from service, retirements, deaths, disabilities, and the addition of new members. Projected information regarding the retired life group leads to assumed future benefit payout. Combining future benefit payments with assumed contributions and expected investment earnings produces the net cash flow of the System each year, and thus end of year asset levels.

Projections are used for many purposes. Among them are (i) developing cash flow patterns for investment policy and asset mix consideration, (ii) exploring the effect of alternative assumptions about future experience, (iii) analyzing the impact on system funding progress of changes in the workforce, and (iv) examining the potential effect of changes in benefits on system financial activity.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example: how benefits payable and system assets will grow in future decades. Projections are not predictions of specific future events and do not provide numeric precision in absolute terms. For instance, cash flow projected to occur 10 years in the future will not be exact (except by coincidence), but understanding the changed relationships between future benefit payout and future investment income can be very useful.

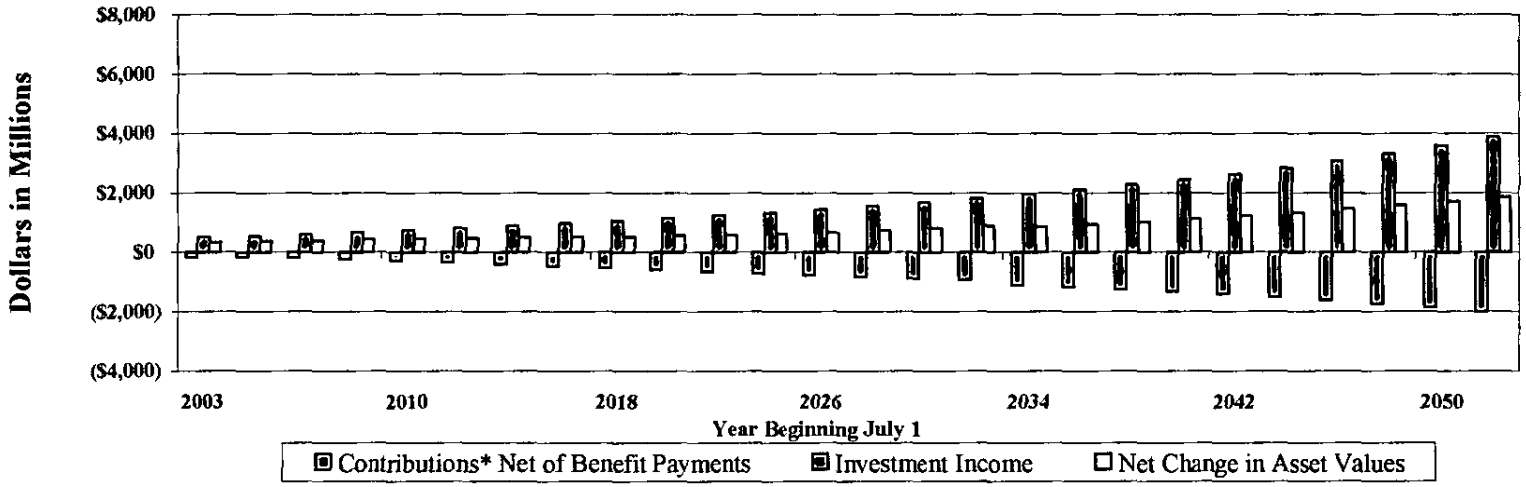
Missouri State Employees' Retirement System
50-Year Cash Flow Projection Based on Valuation Assumptions

Projected Contributions* and Benefits
Expressed as Percents of Active Member Payroll



** Does not include contributions for administrative expenses.*

Net Change in Asset Values



Missouri State Employees' Retirement System

Fifty-Year Cash Flow Projection (in Thousands)

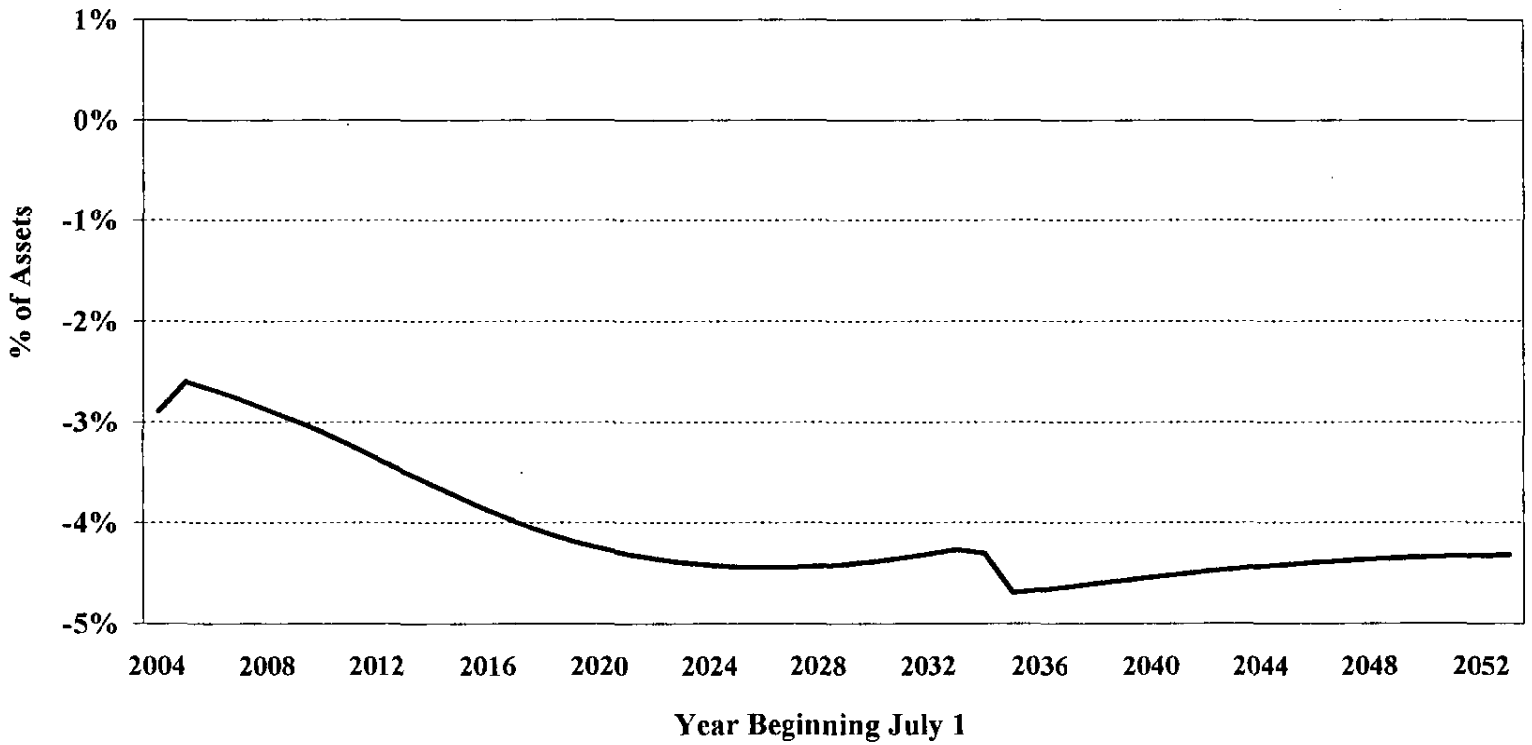
Year Ended June 30	Assets BOY	Contributions*			Benefits	Investment Income	Assets EOY	
		Normal	UAAL	Total			Inflated	2004 $
2004	$6,057,329	$143,203	$15,462	$158,665	$334,151	$507,415	$6,389,258	$6,389,258
2005	6,389,258	151,717	38,391	190,108	356,196	536,028	6,759,198	6,499,229
2006	6,759,198	157,824	39,936	197,760	379,233	566,819	7,144,544	6,605,532
2007	7,144,544	164,098	41,524	205,622	404,272	598,844	7,544,738	6,707,244
2008	7,544,738	170,548	43,156	213,704	431,593	632,042	7,958,891	6,803,294
2009	7,958,891	177,179	44,834	222,013	460,451	666,372	8,386,825	6,893,359
2010	8,386,825	184,028	46,567	230,595	491,436	701,794	8,827,778	6,976,721
2011	8,827,778	191,128	48,363	239,491	525,182	738,219	9,280,306	7,052,270
2012	9,280,306	198,506	50,230	248,736	561,453	775,536	9,743,125	7,119,206
2013	9,743,125	206,195	52,176	258,371	599,394	813,671	10,215,773	7,177,467
2014	10,215,773	214,188	54,198	268,386	639,031	852,589	10,697,717	7,226,994
2015	10,697,717	222,509	56,304	278,813	680,488	892,233	11,188,275	7,267,690
2016	11,188,275	231,192	58,501	289,693	723,471	932,569	11,687,066	7,299,707
2017	11,687,066	240,264	60,797	301,061	767,546	973,575	12,194,156	7,323,494
2018	12,194,156	249,751	63,197	312,948	812,193	1,015,286	12,710,197	7,339,822
2019	12,710,197	259,679	65,710	325,389	856,763	1,057,783	13,236,606	7,349,817
2020	13,236,606	270,063	68,337	338,400	901,477	1,101,181	13,774,710	7,354,430
2021	13,774,710	280,916	71,083	351,999	946,241	1,145,596	14,326,064	7,354,618
2022	14,326,064	292,251	73,952	366,203	990,923	1,191,165	14,892,509	7,351,361
2023	14,892,509	304,075	76,944	381,019	1,035,848	1,238,033	15,475,713	7,345,430
2024	15,475,713	316,403	80,063	396,466	1,080,837	1,286,350	16,077,692	7,337,649
2025	16,077,692	329,254	83,315	412,569	1,126,220	1,336,273	16,700,314	7,328,659
2026	16,700,314	342,644	86,703	429,347	1,171,661	1,387,979	17,345,979	7,319,229
2027	17,345,979	356,598	90,234	446,832	1,217,388	1,441,659	18,017,082	7,310,005
2028	18,017,082	371,139	93,913	465,052	1,263,578	1,497,516	18,716,072	7,301,541
2029	18,716,072	386,282	97,745	484,027	1,309,927	1,555,765	19,445,937	7,294,498
2030	19,445,937	402,045	101,734	503,779	1,356,621	1,616,659	20,209,754	7,289,441
2031	20,209,754	418,440	105,883	524,323	1,403,657	1,680,457	21,010,877	7,286,920
2032	21,010,877	435,479	110,194	545,673	1,451,534	1,747,426	21,852,442	7,287,297
2033	21,852,442	453,183	114,674	567,857	1,500,465	1,817,823	22,737,657	7,290,862
2034	22,737,657	471,579	100,003	571,582	1,550,265	1,891,107	23,650,081	7,291,761
2035	23,650,081	490,692	0	490,692	1,601,319	1,963,055	24,502,509	7,264,020
2036	24,502,509	510,553	0	510,553	1,653,928	2,034,121	25,393,255	7,238,549
2037	25,393,255	531,196	0	531,196	1,708,332	2,108,398	26,324,517	7,215,397
2038	26,324,517	552,646	0	552,646	1,764,616	2,186,075	27,298,622	7,194,609
2039	27,298,622	574,933	0	574,933	1,823,054	2,267,338	28,317,839	7,176,179
2040	28,317,839	598,089	0	598,089	1,884,055	2,352,363	29,384,236	7,160,019
2041	29,384,236	622,143	0	622,143	1,947,890	2,441,316	30,499,805	7,146,008
2042	30,499,805	647,131	0	647,131	2,014,753	2,534,360	31,666,543	7,134,011
2043	31,666,543	673,089	0	673,089	2,084,883	2,631,655	32,886,404	7,123,873
2044	32,886,404	700,058	0	700,058	2,158,576	2,733,357	34,161,243	7,115,413
2045	34,161,243	728,077	0	728,077	2,236,023	2,839,618	35,492,915	7,108,448
2046	35,492,915	757,193	0	757,193	2,317,307	2,950,593	36,883,394	7,102,817
2047	36,883,394	787,453	0	787,453	2,402,596	3,066,446	38,334,697	7,098,367
2048	38,334,697	818,908	0	818,908	2,492,088	3,187,338	39,848,855	7,094,943
2049	39,848,855	851,608	0	851,608	2,585,946	3,313,444	41,427,961	7,092,401
2050	41,427,961	885,610	0	885,610	2,684,294	3,444,933	43,074,210	7,090,612
2051	43,074,210	920,967	0	920,967	2,787,299	3,581,989	44,789,867	7,089,455
2052	44,789,867	957,737	0	957,737	2,895,110	3,724,801	46,577,295	7,088,820
2053	46,577,295	995,981	0	995,981	3,007,879	3,873,563	48,438,960	7,088,612

* *Does not include contributions for administrative expenses.*

Missouri State Employees' Retirement System

50-Year Cash Flow Projection

Projected Net External Cash Flow Expressed as a Percent of Assets



Net External Cash Flow equals: i) Contributions to the plan, less ii) Benefits paid by the plan. A negative Net External Cash Flow means that benefits are being partly funded by investment income --- a natural consequence of advance funding.

Missouri State Employees' Retirement System
Fifty-Year Cash Flow Projection
Analysis of Projected Net Cash Flow

Year Ended June 30	External Cash Flow Inflow*	External Cash Flow Outflow	Net External Cash Flow $	Net External Cash Flow % of Assets	Year Ended June 30	External Cash Flow Inflow*	External Cash Flow Outflow	Net External Cash Flow $	Net External Cash Flow % of Assets
2004	$158,665	$334,151	$ (175,486)	(2.90)%	2029	$484,027	$1,309,927	$ (825,900)	(4.41)%
2005	190,108	356,196	(166,088)	(2.60)%	2030	503,779	1,356,621	(852,842)	(4.39)%
2006	197,760	379,233	(181,473)	(2.68)%	2031	524,323	1,403,657	(879,334)	(4.35)%
2007	205,622	404,272	(198,650)	(2.78)%	2032	545,673	1,451,534	(905,861)	(4.31)%
2008	213,704	431,593	(217,889)	(2.89)%	2033	567,857	1,500,465	(932,608)	(4.27)%
2009	222,013	460,451	(238,438)	(3.00)%	2034	571,582	1,550,265	(978,683)	(4.30)%
2010	230,595	491,436	(260,841)	(3.11)%	2035	490,692	1,601,319	(1,110,627)	(4.70)%
2011	239,491	525,182	(285,691)	(3.24)%	2036	510,553	1,653,928	(1,143,375)	(4.67)%
2012	248,736	561,453	(312,717)	(3.37)%	2037	531,196	1,708,332	(1,177,136)	(4.64)%
2013	258,371	599,394	(341,023)	(3.50)%	2038	552,646	1,764,616	(1,211,970)	(4.60)%
2014	268,386	639,031	(370,645)	(3.63)%	2039	574,933	1,823,054	(1,248,121)	(4.57)%
2015	278,813	680,488	(401,675)	(3.75)%	2040	598,089	1,884,055	(1,285,966)	(4.54)%
2016	289,693	723,471	(433,778)	(3.88)%	2041	622,143	1,947,890	(1,325,747)	(4.51)%
2017	301,061	767,546	(466,485)	(3.99)%	2042	647,131	2,014,753	(1,367,622)	(4.48)%
2018	312,948	812,193	(499,245)	(4.09)%	2043	673,089	2,084,883	(1,411,794)	(4.46)%
2019	325,389	856,763	(531,374)	(4.18)%	2044	700,058	2,158,576	(1,458,518)	(4.44)%
2020	338,400	901,477	(563,077)	(4.25)%	2045	728,077	2,236,023	(1,507,946)	(4.41)%
2021	351,999	946,241	(594,242)	(4.31)%	2046	757,193	2,317,307	(1,560,114)	(4.40)%
2022	366,203	990,923	(624,720)	(4.36)%	2047	787,453	2,402,596	(1,615,143)	(4.38)%
2023	381,019	1,035,848	(654,829)	(4.40)%	2048	818,908	2,492,088	(1,673,180)	(4.36)%
2024	396,466	1,080,837	(684,371)	(4.42)%	2049	851,608	2,585,946	(1,734,338)	(4.35)%
2025	412,569	1,126,220	(713,651)	(4.44)%	2050	885,610	2,684,294	(1,798,684)	(4.34)%
2026	429,347	1,171,661	(742,314)	(4.44)%	2051	920,967	2,787,299	(1,866,332)	(4.33)%
2027	446,832	1,217,388	(770,556)	(4.44)%	2052	957,737	2,895,110	(1,937,373)	(4.33)%
2028	465,052	1,263,578	(798,526)	(4.43)%	2053	995,981	3,007,879	(2,011,898)	(4.32)%

* *Does not include contributions for administrative expenses.*

The portion of investment income needed to pay benefits (the negative external cash flow) increases gradually and begins to level off at the end of the amortization of the unfunded accrued liabilities. After this period, it then approaches the assumed rate of 4.33% (1.085/1.040, minus 1). The remainder of the expected investment income is needed to preserve the purchasing power of the trust fund.

Appendix

Appendix

Summary of Assumptions Used

for the June 30, 2003 Actuarial Valuation

----------*Economic Assumptions*----------

The investment return rate used in the valuations was 8.5% per year, compounded annually (net after investment expenses). This assumption is used to account for the fact that equal amounts of money payable at different points in time in the future do not have the same value presently.

Pay increase assumptions for individual active members are shown for sample ages on page 57. Part of the assumption for each age is for merit and/or seniority increase, and the other 4.0% recognizes wage inflation. This assumption is used to project a member's current salary to the salaries upon which benefits will be based.

The active member payroll is assumed to increase 4.0% annually, which is the portion of the individual pay increase assumptions attributable to wage inflation.

The annual cost-of-living adjustment (COLA) is assumed to be 4.00%, on a compounded basis, when a minimum COLA of 4% is in effect. When no minimum COLA is in effect, price inflation is assumed to be 3.5% and the annual COLA is assumed to be 2.8% (80% of 3.5%), on a compounded basis.

The number of active members is assumed to remain constant although certain new hires on or after July 1, 2002 will participate in the Colleges and Universities Retirement Plan. Active and retired member data is reported as of May 31. It is assumed for valuation purposes that there is no turnover among members and no new entrants during the month of June.

----------*Non-Economic Assumptions*----------

The mortality table, for post-retirement mortality, used in evaluating allowances to be paid was the 1971 Group Annuity Mortality Table, projected to the year 2000, with a 1 year setback for men and a 7 year age setback for women. Related values are shown on page 58. This assumption is used to measure the probabilities of each benefit payment being made after retirement.

Appendix

Summary of Assumptions Used

for the June 30, 2003 Actuarial Valuation (continued)

The probabilities of age and service retirement are shown on page 58. The first two years of eligibility if prior to age 70, were halved due to the expected emerging effect of the back DROP. It was assumed that each member will be granted one half year of service credit for unused leave upon retirement and military service purchases.

The probabilities of withdrawal from service, disability and death-in-service are shown for sample ages on page 57. For disability retirement, impaired longevity was recognized by use of special mortality tables.

The entry age normal actuarial cost method of valuation was used in determining liabilities and normal cost. The normal cost was based on the benefit provisions affecting new employees (MSEP 2000). Differences in the past between assumed experience and actuarial experience ("actuarial gains and losses") become part of actuarial accrued liabilities. Unfunded actuarial accrued liabilities are amortized to produce payments, (principal & interest) which are level percents of payroll contributions.

Employer contribution dollars were assumed to be ***paid in equal installments*** throughout the employer's fiscal year.

Actuarial value of assets. Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 5-year period. Valuation assets are not permitted to deviate from the market value by more than 20%.

The data about persons now covered and about present assets were furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

It is assumed that among active members 80% are married at retirement, 70% of those dying in active service are married, and men are 3 years older than their spouses.

The liabilities for active members hired on or after July 1, 2000 were based on MSEP 2000 benefits. The liabilities for active members hired before July 1, 2000 for male General Employees with an age at hire of 35 years or less, for female General Employees, for Contract Employees, for Elected and for General Assembly were based on MSEP 2000 benefits. All others were based on MSEP benefits. The backDROP was only explicitly valued for those assumed to receive MSEP 2000 benefits.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

Separations From Active Employment Before Service Retirement

& Individual Pay Increase Assumptions

June 30, 2003

Sample Ages	Years of Service	Percent of Active Members - - - - - - Separating within the Next Year - - - - - Withdrawal Men	Withdrawal Women	Death* Men	Death* Women	Disability Men	Disability Women	Pay Increase Assumptions - - For An Individual Employee - - Merit & Seniority**	Base (Economy)	Increase Next Year
	0	25.2 %	24.7 %							
	1	17.1	17.7							
	2	14.4	14.4							
	3	12.8	12.8							
	4	12.0	12.0							
20	5+	12.0	11.0	0.04 %	0.03 %	0.00 %	0.00 %	2.7 %	4.0 %	6.7 %
25		12.0	11.0	0.05	0.04	0.05	0.03	2.6	4.0	6.6
30		8.8	8.9	0.06	0.04	0.12	0.04	2.2	4.0	6.2
35		6.2	6.0	0.08	0.06	0.16	0.13	1.9	4.0	5.9
40		4.6	4.9	0.12	0.08	0.21	0.21	1.4	4.0	5.4
45		3.5	4.3	0.19	0.11	0.29	0.25	1.2	4.0	5.2
50		2.8	3.6	0.35	0.17	0.41	0.41	0.7	4.0	4.7
55		2.4	2.9	0.59	0.31	0.77	0.85	0.7	4.0	4.7
60		2.4	2.9	0.90	0.54	1.40	1.50	0.0	4.0	4.0
65		2.4	2.9	1.44	0.83	0.00	0.00	0.0	4.0	4.0

* *2% of the deaths in active service are assumed to be duty related.*

** *Does not apply to members of the General Assembly.*

Single Life Retirement Values
June 30, 2003

Sample Attained Ages	Present Value of $1/Month the First Year Increasing 2.8% Yearly				Future Life Expectancy (Years)			
	Service		Disability		Service		Disability	
	Men	Women	Men	Women	Men	Women	Men	Women
40	$184.83	$193.48	$125.54	$144.36	38.46	44.22	19.70	26.02
45	175.66	186.44	117.41	138.59	33.73	39.41	17.50	23.70
50	164.77	177.64	108.27	132.00	29.17	34.67	15.35	21.39
55	152.22	167.07	99.23	125.21	24.82	30.06	13.43	19.18
60	137.76	154.87	91.61	117.78	20.70	25.67	11.87	17.01
65	121.34	140.82	85.39	109.23	16.82	21.50	10.56	14.82
70	103.78	124.76	77.74	98.53	13.32	17.57	9.13	12.50
75	86.64	107.31	67.52	84.43	10.36	13.99	7.49	10.00
80	69.90	90.02	54.08	68.59	7.83	10.91	5.66	7.62
85	55.60	73.12	41.07	54.08	5.89	8.29	4.08	5.66

Percent of Eligible Active Members Retiring Next Year

Retirement Ages	Percent		Percent of Rule of 80 at 48	
	Men	Women	Men	Women
48			25.0 %	20.0 %
49			25.0	20.0
50	25.0 %	20.0 %	20.0	18.0
51	25.0	19.5	20.0	18.0
52	21.0	18.5	20.0	18.0
53	17.0	16.0	17.0	16.0
54	12.5	12.5	12.5	12.5
55	6.5	6.7	6.5	6.7
56	6.5	6.7	6.5	6.7
57	6.5	6.7	6.5	6.7
58	6.5	6.7	6.5	6.7
59	6.5	8.3	6.5	8.3
60	9.5	12.0	9.5	12.0
61	13.0	16.5	13.0	16.5
62	29.0	28.0	29.0	28.0
63	24.0	18.0	24.0	18.0
64	30.0	33.0	30.0	33.0
65	40.0	50.0	40.0	50.0
66	32.0	27.0	32.0	27.0
67	26.0	27.0	26.0	27.0
68	23.0	27.0	23.0	27.0
69	23.0	27.0	23.0	27.0
70	23.0	27.0	23.0	27.0
71	23.0	27.0	23.0	27.0
72	23.0	27.0	23.0	27.0
73	23.0	27.0	23.0	27.0
74	23.0	27.0	23.0	27.0
75 & over	100.0	100.0	100.0	100.0

Summary of Assumptions Used
June 30, 2003
Miscellaneous and Technical Assumptions

Pay Increase Timing:	Middle of (Fiscal) year.
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of the benefit payable.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during normal retirement eligibility.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form for MSEP 2000 with 50% continuing to an eligible surviving spouse for MSEP. No adjustment has been made for post-retirement option election changes.
Loads:	No loads were used.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

Active and retired member data was reported as of May 31, 2003. It was brought forward to June 30, 2003 by adding one month of service for all active members and the June COLA for certain retired members. It is expected that this procedure resulted in a slight overstatement of total liabilities as of June 30, 2003. Financial information continues to be reported as of June 30. This procedure was instituted to provide sufficient time for the Board of Trustees to certify the appropriate contribution rate prior to the October 1 statutory deadline.

Supplemental Disclosure Information
June 30, 2003

Actuarial Accrued Liability

The actuarial accrued liability is a measure intended to (i) help users assess the plan's funding status on a going-concern basis, and (ii) assess progress being made in accumulating sufficient assets to pay benefits when due. The actuarial value of assets is based on a method that fully recognizes expected investment return and averages unanticipated market return over a five-year period. Allocation of the actuarial present value of projected benefits between past and future service was based on service using the entry age actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the System's annual required contribution between entry age and assumed exit age. Entry age was established by subtracting credited service from current age on the valuation date.

The entry age actuarial accrued liability was determined as part of an actuarial valuation of the System as of June 30, 2003. Significant actuarial assumptions used in determining the entry age actuarial accrued liability include (a) a rate of return on the investment of present and future assets of 8.5% per year compounded annually, (b) projected salary increases of 4.0% per year compounded annually, attributable to inflation, (c) additional projected salary increases ranging from 0.0% to 2.7% per year, depending on age, attributable to seniority/merit, and (d) the assumption that benefits will increase after retirement (i) at 4.00% per year for approximately the first 12 years, 3.1% for the 13th year and 2.8% per year thereafter, or (ii) at 2.8% per year, depending upon date of hire and benefit election.

At June 30, 2003, the unfunded actuarial accrued liability of the System was determined as follows:

Actuarial Accrued Liability of System:	$ in Thousands
Active members (35,899 vested, 21,659 non-vested)	$ 3,249,464
Retirees and beneficiaries currently receiving benefits (22,872 vested)	3,015,205
Terminated members not yet receiving benefits (12,974 vested)	396,798
Future BackDROP Payments	824
Total Actuarial Accrued Liability	6,662,291
Actuarial Value of Assets	6,057,329
Unfunded Actuarial Accrued Liability	$ 604,962

During the year ended June 30, 2003, the System experienced a net change of $368,019,131 in the actuarial accrued liability of which $76,513,974 was attributable to changes in benefit provisions and actuarial methods.

Supplemental Disclosure Information
June 30, 2003

(continued)

Contributions Required and Contributions Made

The System's funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are designed to accumulate sufficient assets to pay benefits when due. In developing the annual required contribution shown below, the normal cost and actuarial accrued liability are determined using the entry age actuarial cost method. The unfunded actuarial accrued liability is being amortized on a closed basis as a level percent of payroll over a period of 32 years. The corresponding amortization factor is 16.82085.

During the year ended June 30, 2003 contributions totaling $156,576,150 were made by the employer.

Schedule of Employer Contributions

Fiscal Year 7-1/6-30	Valuation Date 6/30	Annual Required Contribution		
		Percent	Dollar Amount	Percentage Contributed
1991-92	1990	9.65 %	$ 100,672,145	100 %
1992-93	1991	9.68	102,988,219	100
1993-94	1992	9.49	106,681,308	100
1994-95	1993	9.04	108,902,372	100
1995-96	1994	10.69	137,007,112	100
1996-97	1995	10.66	146,383,371	100
1997-98	1996	10.40	152,090,687	100
1998-99	1997	12.58	197,909,834	100
1999-00	1998	11.91	202,330,547	100
2000-01	1999	11.59	209,515,026	100
2001-02	2000	11.59	215,450,128	100
2002-03	2001	8.81	156,576,150	100
2003-04	2002	9.35		
2004-05	2003	10.64		

Supplemental Disclosure Information
June 30, 2003

(concluded)

Schedule of Funding Progress

Plan Year Ended	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL) Entry Age	(3) Percent Funded (1) / (2)	(4) Unfunded AAL (2) - (1)	(5) Annual Covered Payroll	(6) Unfunded AAL as a Percentage of Covered Payroll (4) / (5)
6/30/1990 *	$1,587,114,827	$1,861,365,216	85.3 %	$274,250,389	$ 994,228,494	27.6 %
6/30/1991 #	1,793,370,043	2,052,600,760	87.4	259,230,717	1,027,719,059	25.2
6/30/1992 #*	1,991,215,165	2,291,583,890	86.9	300,368,725	1,030,240,894	29.2
6/30/1993	2,236,558,739	2,447,222,060	91.4	210,663,321	1,063,246,615	19.8
6/30/1994 #	2,425,134,504	2,919,456,425	83.1	494,321,921	1,124,862,008	43.9
6/30/1995	2,649,077,134	3,150,796,580	84.1	501,719,446	1,198,938,042	41.8
6/30/1996 *	2,927,896,643	3,440,126,483	85.1	512,229,840	1,267,605,000	40.4
6/30/1997 #*@	3,580,974,502	4,484,047,801	79.9	903,073,299	1,359,656,666	66.4
6/30/1998	4,210,635,094	4,918,887,183	85.6	708,252,089	1,459,712,203	48.5
6/30/1999 #	4,908,820,033	5,505,968,629	89.2	597,148,596	1,564,551,532	38.2
6/30/2000 *	5,216,897,196	5,920,684,192	88.1	703,786,996	1,683,697,080	41.8
6/30/2001 *@	5,881,232,850	6,065,166,716	97.0	183,933,866	1,758,190,269	10.5
6/30/2002 &	6,033,133,598	6,294,272,275	95.9	261,138,677	1,773,283,484	14.7
6/30/2003 # &	6,057,329,072	6,662,291,406	90.9	604,962,334	1,739,895,364	34.8

 # After changes in benefit provisions.

** After a change in assumptions.*

@ After a change in asset method.

& After changes in methods other than the asset method.

Analysis of the dollar amounts of the actuarial value of assets, actuarial accrued liability, or unfunded actuarial accrued liability in isolation can be misleading. Expressing the actuarial value of assets as a percentage of the actuarial accrued liability provides one indication of the plan's funded status on a going-concern basis. Analysis of this percentage over time indicates whether the plan is becoming financially stronger or weaker. Generally, the greater this percentage, the stronger the plan. The unfunded actuarial accrued liability and annual covered payroll are both affected by inflation. Usually expressing the unfunded actuarial accrued liability as a percentage of annual covered payroll approximately adjusts for the effects of inflation and aids analysis of the progress being made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage, the stronger the plan.

June 30, 2003 Actuarial Valuation

Glossary

Actuarial Accrued Liability. The difference between (i) the actuarial present value of future plan benefits, and (ii) the actuarial present value of future normal cost. Sometimes referred to as "accrued liability" or "past service liability."

Accrued Service. The service credited under the plan which was rendered before the date of the actuarial valuation.

Actuarial Assumptions. Estimates of future plan experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future plan benefits" between the actuarial present value of future normal cost and the actuarial accrued liability. Sometimes referred to as the "actuarial funding method."

Actuarial Equivalent. A series of payments is called an actuarial equivalent of another series of payments if the two series have the same actuarial present value.

Actuarial Present Value. The amount of funds presently required to provide a payment or series of payments in the future. It is determined by discounting the future payments at a predetermined rate of interest, taking into account the probability of payment.

Actuarial value of assets. Also referred to as funding value of assets, smoothed market value of assets, or valuation assets.

Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased in over a closed 5-year period. This treatment helps remove the timing of investment activities from the valuation process. During periods when investment performance exceeds the assumed rate, valuation assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, valuation assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, valuation assets will become equal to market value.

Amortization. Paying off an interest-bearing liability by means of periodic payments of interest and principal, as opposed to paying it off with a lump sum payment.

Experience Gain (Loss). A measure of the difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost. The annual cost assigned, under the actuarial funding method, to current and subsequent plan years. Sometimes referred to as "current service cost." Any payment toward the unfunded actuarial accrued liability is not part of the normal cost.

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Glossary

(concluded)

Plan Termination Liability. The actuarial present value of future plan benefits based on the assumption that there will be no further accruals for future service and salary. The termination liability will generally be less than the liabilities computed on a "going concern" basis and is not normally determined in a routine actuarial valuation.

Reserve Account. An account used to indicate that funds have been set aside for a specific purpose and are not generally available for other uses.

Unfunded Actuarial Accrued Liability. The difference between the actuarial accrued liability and actuarial value of assets. Sometimes referred to as "unfunded accrued liability."

The existence of unfunded actuarial accrued liabilities is not in itself bad, any more than a mortgage on a house is bad. Unfunded actuarial accrued liabilities do not represent a debt that is payable today. What is important is the ability to amortize the unfunded actuarial accrued liabilities and the trend in their amount (after due allowance for devaluation of the dollar).

Valuation Payroll. Active member payroll that is intended to reflect the annual salary considered as covered compensation for Retirement System benefits.

Financing Unfunded Actuarial Accrued Liabilities Which Were Calculated Using an Inflation Assumption of 4.00% and an Investment Return Assumption of 8.50% Compounded Annually

Level % of Payroll Amortization:
Closed Amortization Completed in 32 Years

Year	Active Member Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
	----------$ in millions----------					
1	$1,740	$605	$605	$36	2.07 %	34.77 %
2	1,769	619	595	37	2.07	34.99
3	1,840	633	586	38	2.07	34.43
4	1,913	648	576	40	2.07	33.85
5	1,990	661	565	41	2.07	33.24
6	2,069	675	555	43	2.07	32.61
7	2,152	688	543	44	2.07	31.95
8	2,238	700	532	46	2.07	31.26
9	2,328	711	520	48	2.07	30.54
10	2,421	721	507	50	2.07	29.79
11	2,518	730	493	52	2.07	29.01
12	2,618	738	480	54	2.07	28.20
13	2,723	745	465	56	2.07	27.35
14	2,832	749	450	59	2.07	26.46
15	2,945	752	434	61	2.07	25.53
16	3,063	753	418	63	2.07	24.57
17	3,186	751	401	66	2.07	23.56
18	3,313	746	383	68	2.07	22.51
19	3,446	738	364	71	2.07	21.41
20	3,584	726	345	74	2.07	20.27

Financing Unfunded Actuarial Accrued Liabilities Which Were Calculated Using an Inflation Assumption of 4.00% and an Investment Return Assumption of 8.50% Compounded Annually

Level % of Payroll Amortization:
Closed Amortization Completed in 32 Years
(concluded)

Year	Active Member Payroll	Unfunded Actuarial Accrued Liability	UAAL Adjusted for Inflation	Annual Contributions		UAAL as % of Payroll
				Dollars	% of Payroll	
	----------$ in millions----------					
21	$3,727	$711	$324	$77	2.07 %	19.07 %
22	3,876	691	303	80	2.07	17.83
23	4,031	666	281	83	2.07	16.53
24	4,192	636	258	87	2.07	15.17
25	4,360	600	234	90	2.07	13.76
26	4,534	557	209	94	2.07	12.28
27	4,716	507	183	97	2.07	10.74
28	4,904	448	155	101	2.07	9.14
29	5,101	380	127	105	2.07	7.46
30	5,305	303	97	110	2.07	5.71
31	5,517	214	66	114	2.07	3.89
32	5,737	114	34	119	2.07	1.99
33	5,967	0	0	0	0.00	0.00

Active Members in Funding Program as of June 30, 2003

By Age and Years of Service

Male

Near Age	Years of Service to Valuation Date							Totals	
	0-3	4	5-9	10-11	12-14	15-29	30 plus	No.	Valuation Payroll
Under 20	17							17	$ 234,180
20-24	690	11	3					704	14,803,567
25-29	1,450	200	239	1				1,890	47,692,270
30-34	1,229	221	924	80	26	2		2,482	72,042,985
35-39	884	175	806	248	319	162		2,594	82,098,439
40-44	875	182	736	210	420	729		3,152	105,063,321
45-49	729	190	742	180	388	1,226	4	3,459	122,253,632
50	130	21	148	41	81	301	11	733	26,996,410
51	152	31	144	40	84	351	7	809	30,736,819
52	152	37	105	29	76	361	19	779	29,097,836
53	146	13	129	38	85	277	25	713	26,471,408
54	132	24	132	49	79	266	41	723	26,477,144
55	119	25	107	30	67	264	31	643	23,767,358
56	111	26	124	44	62	233	41	641	24,179,540
57	100	35	106	35	75	198	44	593	22,887,437
58	82	15	78	21	37	166	32	431	16,828,044
59	79	20	60	28	45	152	29	413	15,362,312
60	72	24	90	24	34	130	36	410	15,584,367
61	71	25	72	23	31	108	37	367	14,079,991
62	39	11	55	15	38	82	39	279	10,811,707
63	31	8	41	11	21	54	16	182	7,021,451
64	21	8	38	11	19	31	33	161	6,593,776
65	23	5	20	11	14	34	23	130	5,679,878
66	6	7	20	3	10	27	14	87	3,503,633
67	5	2	17	5	6	16	3	54	2,408,549
68	8	2	6	3	10	12	9	50	2,288,473
69	7	2	5	1	6	11	5	37	1,482,167
70 & Over	23	5	25	10	15	36	7	121	4,506,630
Totals	**7,383**	**1,325**	**4,972**	**1,191**	**2,048**	**5,229**	**506**	**22,654**	**$ 760,953,324**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 44.4 years.

Service: 9.9 years.

Annual Pay: $33,590

Active Members in Funding Program as of June 30, 2003

By Age and Years of Service

Female

Near Age	Years of Service to Valuation Date							Totals	
	0-3	4	5-9	10-11	12-14	15-29	30 plus	No.	Valuation Payroll
Under 20	36							36	$ 695,264
20-24	1,288	41	18					1,347	27,226,772
25-29	2,218	365	569	6				3,158	77,367,899
30-34	1,617	418	1,651	219	118	17		4,040	107,315,838
35-39	1,306	321	1,271	396	490	448		4,232	116,216,131
40-44	1,346	318	1,217	303	538	1,450		5,172	147,710,966
45-49	1,189	309	1,100	340	529	2,150	55	5,672	167,996,358
50	223	67	231	65	102	412	72	1,172	36,217,815
51	209	47	221	63	94	475	57	1,166	35,424,982
52	200	54	209	69	94	410	75	1,111	34,045,170
53	192	44	180	76	103	398	47	1,040	31,007,390
54	173	45	192	71	112	342	54	989	29,972,279
55	199	50	158	57	97	297	51	909	26,820,179
56	169	37	168	58	93	307	67	899	26,866,862
57	133	24	148	49	84	270	46	754	21,436,956
58	93	30	114	46	48	199	23	553	16,102,794
59	82	20	84	34	54	172	36	482	13,865,459
60	72	24	95	37	65	204	21	518	15,445,827
61	67	16	85	33	55	138	16	410	12,022,729
62	44	12	94	21	46	120	16	353	9,864,472
63	36	12	44	13	38	75	9	227	6,343,608
64	27	5	29	7	23	45	11	147	4,225,205
65	17	7	35	13	24	47	14	157	4,591,283
66	10	2	22	5	13	20	10	82	2,453,041
67	9	3	9	5	8	27	10	71	2,075,554
68	5	2	11	6	4	24	6	58	1,625,832
69	7		6	2	2	12	3	32	864,731
70 & Over	15	7	17	8	8	49	13	117	3,140,644
Totals	**10,982**	**2,280**	**7,978**	**2,002**	**2,842**	**8,108**	**712**	**34,904**	**$ 978,942,040**

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.3 years.

Service: 10.0 years.

Annual Pay: $28,047

Basic Series

Year-by-Year Total Returns (1926-2002)

For a type of investment, Red means a REAL Return less than 3% [(Total - Inflation)<3%]

For Inflation, RED means a purchasing power loss

Year	Large Company Stocks	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermediate Term Government Bonds	U.S. Treasury Bills	Inflation
1926	11.62	0.28	7.37	7.77	5.38	3.27	-1.49
1927	37.49	22.10	7.44	8.93	4.52	3.12	-2.08
1928	43.61	39.69	2.84	0.10	0.92	3.56	-0.97
1929	-8.42	-51.36	3.27	1.17	6.01	4.75	0.20
1930	-24.90	-38.15	7.98	4.66	6.72	2.41	-6.03
1931	-43.34	-49.75	-1.85	-5.31	-2.32	1.07	-9.52
1932	-8.19	-5.39	10.32	16.84	8.81	0.96	-10.30
1933	53.99	142.87	10.38	-0.07	1.83	0.30	0.51
1934	-1.44	24.22	13.84	10.03	9.00	0.16	2.03
1935	47.67	40.19	9.61	4.98	7.01	0.17	2.99
1936	33.92	64.80	6.74	7.52	3.06	0.18	1.21
1937	-35.03	-58.01	2.75	0.23	1.56	0.31	3.10
1938	31.12	32.80	6.13	5.53	6.23	-0.02	-2.78
1939	-0.41	0.35	3.97	5.94	4.52	0.02	-0.48
1940	-9.78	-5.16	3.39	6.09	2.96	0.00	0.96
1941	-11.59	-9.00	2.73	0.93	0.50	0.06	9.72
1942	20.34	44.51	2.60	3.22	1.94	0.27	9.29
1943	25.90	88.37	2.83	2.08	2.81	0.35	3.16
1944	19.75	53.72	4.73	2.81	1.80	0.33	2.11
1945	36.44	73.61	4.08	10.73	2.22	0.33	2.25
1946	-8.07	-11.63	1.72	-0.10	1.00	0.35	18.16
1947	5.71	0.92	-2.34	-2.62	0.91	0.50	9.01
1948	5.50	-2.11	4.14	3.40	1.85	0.81	2.71
1949	18.79	19.75	3.31	6.45	2.32	1.10	-1.80
1950	31.71	38.75	2.12	0.06	0.70	1.20	5.79
1951	24.02	7.80	-2.69	-3.93	0.36	1.49	5.87
1952	18.37	3.03	3.52	1.16	1.63	1.66	0.88
1953	-0.99	-6.49	3.41	3.64	3.23	1.82	0.62
1954	52.62	60.58	5.39	7.19	2.68	0.86	-0.50
1955	31.56	20.44	0.48	-1.29	-0.65	1.57	0.37
1956	6.56	4.28	-6.81	-5.59	-0.42	2.46	2.86
1957	-10.78	-14.57	8.71	7.46	7.84	3.14	3.02
1958	43.36	64.89	-2.22	-6.09	-1.29	1.54	1.76
1959	11.96	16.40	-0.97	-2.26	-0.39	2.95	1.50
1960	0.47	-3.29	9.07	13.76	11.76	2.66	1.48
1961	26.89	32.09	4.82	0.97	1.85	2.13	0.67
1962	-8.73	-11.90	7.95	6.89	5.56	2.73	1.22
1963	22.80	23.57	2.19	1.21	1.64	3.12	1.65
1964	16.48	23.52	4.77	3.51	4.04	3.54	1.19
1965	12.45	41.75	-0.46	0.71	1.02	3.93	1.92
1966	-10.06	-7.01	0.20	3.65	4.69	4.76	3.35
1967	23.98	83.57	-4.95	-9.18	1.01	4.21	3.04
1968	11.06	35.97	2.57	-0.26	4.54	5.21	4.72
1969	-8.50	-25.05	-8.09	-5.07	-0.74	6.58	6.11
1970	4.01	-17.43	18.37	12.11	16.86	6.52	5.49
1971	14.31	16.50	11.01	13.23	8.72	4.39	3.36
1972	18.98	4.43	7.26	5.69	5.16	3.84	3.41
1973	-14.66	-30.90	1.14	-1.11	4.61	6.93	8.80
1974	-26.47	-19.95	-3.06	4.35	5.69	8.00	12.20
1975	37.20	52.82	14.64	9.20	7.83	5.80	7.01
1976	23.84	57.38	18.65	16.75	12.87	5.08	4.81
1977	-7.18	25.38	1.71	-0.69	1.41	5.12	6.77
1978	6.56	23.46	-0.07	-1.18	3.49	7.18	9.03
1979	18.44	43.46	-4.18	-1.23	4.09	10.38	13.31
1980	32.42	39.88	-2.62	-3.95	3.91	11.24	12.40
1981	-4.91	13.88	-0.96	1.86	9.45	14.71	8.94
1982	21.41	28.01	43.79	40.36	29.10	10.54	3.87
1983	22.51	39.67	4.70	0.65	7.41	8.80	3.80
1984	6.27	-6.67	16.39	15.48	14.02	9.85	3.95
1985	32.16	24.66	30.09	30.97	20.33	7.72	3.77
1986	18.47	6.85	19.85	24.53	15.14	6.16	1.13
1987	5.23	-9.30	-0.27	-2.71	2.90	5.47	4.41
1988	16.81	22.87	10.70	9.67	6.10	6.35	4.42
1989	31.49	10.18	16.23	18.11	13.29	8.37	4.65
1990	-3.17	-21.56	6.78	6.18	9.73	7.81	6.11
1991	30.55	44.63	19.89	19.30	15.46	5.60	3.06
1992	7.67	23.35	9.39	8.05	7.19	3.51	2.90
1993	9.99	20.98	13.19	18.24	11.24	2.90	2.75
1994	1.31	3.11	-5.76	-7.77	-5.14	3.90	2.67
1995	37.43	34.46	27.20	31.67	16.80	5.60	2.54
1996	23.07	17.62	1.40	-0.93	2.10	5.21	3.32
1997	33.36	22.78	12.95	15.85	8.38	5.26	1.70
1998	28.58	-7.31	10.76	13.06	10.21	4.86	1.61
1999	21.04	29.79	-7.45	-8.96	-1.77	4.68	2.68
2000	-9.11	-3.59	12.87	21.48	12.59	5.89	3.39
2001	-11.88	22.77	10.65	3.70	7.62	3.83	1.55
2002	-22.10	-13.28	16.33	17.84	12.93	1.65	2.38

GABRIEL, ROEDER, SMITH & COMPANY from SBBI 2003 Yearbook