STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL VALUATION COMPLETED AS OF JUNE 30, 1988

Chicago, Illinois
October, 1988

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OF ILLINOIS

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INTRODUCTION

The law governing the State Universities Retirement System requires the Actuary, as the technical advisor to the Board of Trustees, to make:

> an annual determination of the liabilities and reserves of this System and an annual determination of the amount and distribution of required employer contributions. (Chapter 108 1/2, Par. 15-173).

The Wyatt Company, as Actuary, has completed a valuation as of June 30, 1988, based upon membership and financial data compiled by the administrative staff of the System, and the results of the valuation are presented in this report.

The fiscal year end was changed from August 31 to June 30 effective with the 1987 valuation. Reported salaries last year and this year were for the period September 1 - June 30, and annual salaries for the period July 1 - June 30 were estimated for purposes of the valuation. The estimation procedure that was used for the 1987 valuation has been modified, resulting in a 2 percent increase in estimated salaries and accrued actuarial liability for the 1988 valuation. Except for this change the valuation was completed using the same actuarial assumptions and methods as used in our prior valuation. The assumptions, which were based on our experience review for the five years ending August 31, 1986, are described in detail beginning on page 18.

Changes Since Last Valuation

Since the last valuation there was one amendment (HB2712) which had an impact on costs and liabilities. All employees who were receiving earnings and making contributions to SURS on January 26, 1988 will qualify for the automatic annual increase on the January 1 immediately following the date their retirement annuity begins instead of on the January 1 nearest the later of their 61st birthday or the first anniversary of their retirement.

At its December 1987 meeting, the Board of Trustees of the Retirement System set the effective rate of interest at 7.5% for fiscal year 1989. For valuation purposes, we assumed that this rate would return to 8% for all future years corresponding to our investment return assumption.

In addition, changes in membership data and fund assets have affected the results of the valuation.

Summarized below are certain important results for both years.

		June 30, 1987	June 30, 1988
1.	Number of Active Members	52,057	52,002
2.	Annualized Reported Earnings (Average)	$1,370,248,626 ($26,322)	$1,427,634,230 ($27,453)
3.	Number of Members Receiving Payments	15,316	16,475
4.	Annual Benefit Payments (Average)	$ 128,079,350 ($8,362)	$ 147,699,754 ($8,975)
5.	Assets: (a) Book Value (b) Market Value	 $2,470,490,495 $2,912,938,471	 $2,698,000,610 $3,030,620,779
6.	State Normal Cost (% Payroll)	$ 105,175,736 (7.676%)	$ 108,619,063 (7.608%)
7.	Accrued Actuarial Liability (Funded Percentage)	$4,561,043,635 (54.2%)	$4,977,823,040 (54.2%)
8.	Unfunded Accrued Actuarial Liability	$2,090,553,140	$2,279,822,430

The increase in the unfunded accrued actuarial liability (UAAL) of $189,269,290 was due to the following:

1.	Contribution being less than the amount necessary to fund normal cost and interest on the unfunded.				
	(a)	UAAL at 6/30/87		$	2,090,553,140
	(b)	Contributions Due			
		(i)	Interest on the UAAL to 6/30/88	$	167,244,251
		(ii)	Total Normal Cost		212,952,066
		(iii)	Early Retirement Option (ERO) payments		2,448,861
		(iv)	Service Credit Purchases		12,603,000
		(v)	Interest on Normal Cost and ERO payments to 6/30/88		8,944,705
		(vi)	Total Contributions Due	$	404,192,883
	(c)	Contributions Paid			
		(i)	Participants (including ERO payments)	$	132,331,310
		(ii)	State Appropriations		70,696,700
		(iii)	Employer ERO Payments		1,895,054
		(iv)	Reciprocity		377,401
		(v)	Federal, Trust Funds and Other		10,467,200
		(vi)	Interest on contributions to 6/30/88		8,464,670
		(vii)	Total Contributions Paid	$	224,232,335
	(d)	Increase in the UAAL (b) minus (c)		$	179,960,548
2.	Actuarial (Gains) Losses				
	(a)	Loss from investment return less than 8%		$	13,848,351
	(b)	(Gain) from salary increases less than 7%		$	(74,548,438)
	(c)	Loss from other sources		$	9,686,880
3.	Non-recurring items				
	(a)	Increase in the UAAL due to plan amendment (HB2712)		$	2,390,958
	(b)	Decrease due to decrease in effective rate of interest for FY'89		$	(13,259,183)
	(c)	Change in Procedure for Annualizing Earnings		$	71,190,174
4.	Total Increase			$	189,269,290

APPROPRIATION REQUIREMENTS FOR
FISCAL YEAR JULY 1, 1988 - JUNE 30, 1989

The law governing the System requires that the State shall make contributions to the System which, with employee contributions, investment income and other income of the System

> ...will be sufficient to meet the requirements of this Article in accordance with actuarial determinations. In no event shall employer contributions from State appropriations for any fiscal year be less than an amount which, when added to contributions from other sources, is sufficient to meet (1) the total accruing normal costs plus interest at the prescribed rate on the unfunded accrued liabilities or (2) the accruing requirements necessary to retain qualified status under Section 401(a) of the United States Internal Revenue Code[1], or any similar provision as successor thereof.
>
> 1 26 U.S.C.A. §401

The law defines normal cost as:

> ...the liability for pensions and other benefits which accrues to the system because of the credits earned for service rendered by the participants during the fiscal year and expenses of administering the system.

Section 401(a) of the Internal Revenue Code would require essentially the same contribution as required under (1) above, and this amount is shown as the required contribution. The cited Section does require a different minimum contribution for private plans. The "40 year amortization" amount shown for comparison purposes corresponds to the minimum requirements for private plans upon passage of ERISA. It may also be deemed the minimum amount required as expense pursuant to Accounting Principles Board Opinion No. 8, although any "balance sheet accruals" prior to June 30, 1988 are ignored.

Basis	% of Payroll(1)	Required Appropriation(1)
Normal Cost and Interest	19.938%	$284,640,513
Normal Cost and 40 Year Amortization(2)	20.533%	$293,133,903

(1) Based upon an assumed payroll of $1,427,634,230 for fiscal year July 1, 1988 - June 30, 1989.

(2) Assuming a starting date of July 1, 1988.

GASB: Value of Accrued Pension Benefit Obligation

Statement Number 5 of the Governmental Accounting Standards Board sets forth certain standards of financial accounting and reporting for the annual financial statements of a defined benefit pension plan.

This statement requires the disclosure of actuarial present value of credited projected benefits and the effect of any changes in actuarial assumptions or benefit provisions. The actuarial present value of credited projected benefits is a standardized measure of the accrued pension benefit obligation. It is the discounted amount of benefits estimated to be payable in the future as a result of employee service through the balance sheet date, computed by attributing an equal benefit amount (including the effects of projected salary increases and step-rate benefits) to each year of credited and expected future employee service.

This measure of the pension benefit obligation was computed for both this year's and last year's valuation, using the same assumptions as were used to process the respective valuations. Summarized below are key results for both years.

Actuarial Present Value (APV) of Credited Projected Benefits	June 30, 1987	June 30, 1988
Accumulated Contributions of current employees	$1,151,490,747	$1,261,514,093
Accumulated Contributions of inactive members	65,039,352	77,768,756
Payable to Retirees and Beneficiaries	1,289,030,707	1,498,942,681
Payable to Terminated Employees not yet receiving benefits - employer-financed portion	88,084,033	98,982,750
Payable to Vested Current Employees - employer-financed portion	1,566,762,827	1,621,650,368
Payable to Nonvested Current Employees - employer-financed portion	74,514,485	82,051,965
Total APV of Credited Projected Benefits	$4,234,922,151	$4,640,910,613
Net Assets available for benefits (Market value at June 30, 1988 is $3,030,620,779)	$2,470,490,495	$2,698,000,610
Unfunded APV of Credited Projected Benefits	$1,764,431,656	$1,942,910,003

Compared to the assets valued on the same basis as for funding purposes, the credited projected benefits are 58.1% funded compared with 58.3% last year. Changes in benefit provisions since the last valuation resulted in an increase of $2,064,559 in the actuarial present value of credited projected benefits.

15 Year Projection

Based on the results of our valuation and the assumptions used therefor, we have projected what the valuation results will be for the next 15 years under the Entry Age Normal Cost method. Two projections were made using different levels of State contributions. In recent years, State contributions have been a fixed percentage of the estimated annual benefit payments (excluding refunds) and administrative expenses. The State appropriation for fiscal year 1989 is 48% ($80,212,200) and the first projection was based on this rate for all future years. The second projection illustrates what the funded position of the System would be if the future contribution rate were 100% of benefits and expenses.

The results of the projections are shown in Tables 4a and 4b. Certain key results are summarized below. ($ amounts are in millions.)

	Fiscal Year Ending			
	6/30/88	6/30/93	6/30/98	6/30/03
Number of Active Members	52,002	52,002	52,002	52,002
Payroll	$1,428	$1,799	$2,288	$2,909
Normal Cost	$ 109	$ 137	$ 183	$ 244
(% Payroll)	(7.6%)	(7.6%)	(8.0%)	(8.4%)
Actuarial Liability	$4,978	$7,725	$11,142	$15,557
Based on 48% State Contribution				
Assets (Book Value)	$2,698	$4,038	$5,818	$8,107
(Funded %)	(54.2%)	(52.3%)	(52.2%)	(52.1%)
Based on 100% State Contribution				
Assets (Book Value)	$2,698	$4,694	$7,827	$12,692
(Funded %)	(54.2%)	(60.8%)	(70.2%)	(81.6%)

15 Year Projection

(Continued)

	Fiscal Year Ending			
	6/30/88	6/30/93	6/30/98	6/30/03
FASB #35				
Value of Accrued Benefits	$4,542	$6,845	$10,122	$14,424
Based on 48% State Contribution				
(Funded %)	(59.4%)	(59.0%)	(57.5%)	(56.2%)
Based on 100% State Contribution				
(Funded %)	(59.4%)	(68.6%)	(77.3%)	(88.0%)

The remainder of this report is comprised of the following:

Table 1	-	Results of Actuarial Valuation
Table 2	-	Value of Accumulated Plan Benefits
Table 3	-	Value of Credited Projected Benefits (GASB)
Table 4	-	15 Year Projection
Table 5	-	Analysis of Financial Experience

Description of Actuarial Cost Method and Assumptions

Summary of Plan Provisions

To the best of our knowledge, this actuarial statement is complete and accurate and has been prepared in accordance with generally accepted actuarial principles and practice.

Respectfully submitted,

THE WYATT COMPANY

By S. Lynn Hill
S. Lynn Hill
Actuarial Assistant

By
Lloyd L. Nordstrom
Fellow of The Society of Actuaries

By
Robert L. Barnes
Fellow of The Society of Actuaries

Chicago, Illinois
October, 1988

Table 1

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

RESULTS OF ACTUARIAL VALUATION AS OF JUNE 30, 1988

MEMBER DATA

1. Number of Members:	
(a) Members Receiving Annuities	
(i) Retirement	12,495
(ii) Survivor (includes Prospective Widows and Widowers)	3,106
(iii) Disability	874
(b) Other Inactive Members	5,953
(c) Active	52,002
(d) Total	74,430
2. Annual Reported Earnings of Active Members	$1,427,634,230
3. Annual Annuity Payments Currently Being Made:	
(a) Retirement	$127,057,082
(b) Survivor	12,206,919
(c) Disability	8,435,753
(d) Total	$147,699,754

VALUATION RESULTS

4. Actuarial Liability for Members Receiving Annuities:	
(a) Retirement	$1,340,383,031
(b) Survivors	99,143,828
(c) Disability	59,415,822
(d) Total	$1,498,942,681
5. Actuarial Liability for Inactive Members	$176,751,506

	Normal Cost	Actuarial Liability
6. Active Members:		
(a) Pension Benefits	$105,261,851	$2,314,554,265
(b) Cost-of-Living Adjustments	23,316,421	505,358,731
(c) Death Benefits (Excludes Refunds)	13,220,694	209,784,837
(d) Disability		
(i) Accidental	575,644	2,792,647
(ii) Ordinary	7,824,745	72,509,983
(iii) Total	$8,400,389	$75,302,630
(e) Withdrawals and Refunds	59,691,720	197,128,390
(f) Expenses	11,279,626	---
(g) Total Actives	$221,170,701	$3,302,128,853

	Normal Cost	Actuarial Liability
7. TOTAL	$221,170,701	$4,977,823,040
8. Assets		$2,698,000,610
9. Unfunded Actuarial Liability		$2,279,822,430
10. Expected Employee Contributions	$112,551,638	
11. Annual Normal Cost to be Provided by the State (Percent of Pay)	$108,619,063 (7.608%)	

ANNUAL EXPENSE

	Percent Of Payroll	Amount
12. "Interest Only Funding":		
(a) Normal Cost	7.608%	$108,619,063
(b) Interest on Unfunded	12.330%	176,021,450
(c) Total	19.938%	$284,640,513
13. "Forty Year Amortization" (from 7/1/88):		
(a) Normal Cost	7.608%	$108,619,063
(b) Contribution Towards Unfunded	12.925%	184,514,840
(c) Total	20.533%	$293,133,903

All figures have been adjusted by the appropriate interest factor for monthly contributions.

Table 2

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF ACCUMULATED PLAN BENEFITS AT JUNE 30, 1988

	Vested	Non-Vested	Total
1. Participants Currently Receiving Payments	$1,498,942,681	---	$1,498,942,681
2. Inactive Members	176,751,506	---	176,751,506
3. Active Members:			
(a) Pension Benefits	1,693,744,856	71,552,161	1,765,297,017
(b) Cost-of-Living Adjustments	367,227,171	15,865,665	383,092,836
(c) Death Benefits (Excludes Refunds)	176,964,749	20,742,169	197,706,918
(d) Disability			
(i) Accidental	3,408,359	1,153,953	4,562,312
(ii) Ordinary	66,001,391	17,206,122	83,207,513
(iii) Total	$69,409,750	$18,360,075	$87,769,825
(e) Withdrawals and Refunds	366,706,073	66,163,282	432,869,355
(f) Total	$2,674,052,599	$192,683,352	$2,866,735,951
4. TOTAL	$4,349,746,786	$192,683,352	$4,542,430,138
5. Non-Retired Member Contributions with Interest:			
(a) Active			$1,261,514,093
(a) Inactive			77,768,756
(a) Total			$1,339,282,849

NOTES:

(1) Accumulated benefits were calculated in accordance with plan provisions in effect on June 30, 1988, based on the members' history of pay and service as of such date.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

(4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

Table 3

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS AT JUNE 30, 1988

	Vested	Non-Vested	Total
1. Participants Currently Receiving Payments	$1,498,942,681	---	$1,498,942,681
2. Inactive Members	176,751,506	---	176,751,506
3. Active Members:			
(a) Pension Benefits	1,785,229,979	68,242,904	1,853,472,883
(b) Cost-of-Living Adjustments	387,868,227	15,144,601	403,012,828
(c) Death Benefits (Excludes Refunds)	181,368,125	11,010,334	192,378,459
(d) Disability			
(i) Accidental	3,591,207	606,550	4,197,757
(ii) Ordinary	69,261,825	9,231,986	78,493,811
(iii) Total	$72,853,032	$9,838,536	$82,691,568
(e) Withdrawals and Refunds	368,948,070	64,712,618	433,660,688
(f) Total	$2,796,267,433	$168,948,993	$2,965,216,426
(g) Employee Contributions	1,174,617,065	86,897,028	1,261,514,093
(h) Employer Financed	1,621,650,368	82,051,965	1,703,702,333
4. TOTAL	$4,471,961,620	$168,948,993	$4,640,910,613

NOTES:

(1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1988, based on the members' service as of such date and on the members' historical and projected pay.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

(4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

Table 4a

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS
FIFTEEN YEAR PROJECTION OF COSTS AND LIABILITIES
(Assumes State Contributions Equal to 48% of Benefit Payments)
(All Dollar Amounts in Billions)

	Fiscal Year Ending 6/30							
	1988	1989	1990	1991	1992	1993	1998	2003
1. Number of Active Members	52,002	52,002	52,002	52,002	52,002	52,002	52,002	52,002
2. Annual compensation	$1.428	$1.493	$1.560	$1.634	$1.714	$1.799	$2.288	$2.909
3. Annual Benefit Payments & Administrative Expense	$.174	$.189	$.212	$.233	$.254	$.281	$.432	$.663
4. Actuarial Liability	$4.978	$5.625	$6.100	$6.611	$7.150	$7.725	$11.142	$15.557
(Retired Lives Reserves)	(1.499)	(1.742)	(1.927)	(2.101)	(2.341)	(2.532)	(3.947)	(6.195)
5. Assets (Book)	$2.698	$2.938	$3.190	$3.457	$3.740	$4.038	$5.818	$8.107
6. Unfunded Actuarial Liability	$2.280	$2.687	$2.910	$3.155	$3.410	$3.687	$5.324	$7.450
(Funded Percentage)	54.2%	52.2%	52.3%	52.3%	52.3%	52.3%	52.2%	52.1%
7. Employee Contributions	$.132	$.120	$.125	$.131	$.137	$.144	$.183	$.233
8. State Normal Cost	$.109	$.114	$.114	$.122	$.129	$.137	$.183	$.244
(% Payroll)	7.6%	7.6%	7.3%	7.4%	7.5%	7.6%	8.0%	8.4%
9. State Contribution	$.071	$.080	$.090	$.100	$.109	$.121	$.190	$.297
(% Payroll)	5.0%	5.4%	5.8%	6.1%	6.4%	6.7%	8.3%	10.2%
10. Other Contributions (Federal, Reciprocity, Etc.)	$.013	$.012	$.012	$.013	$.014	$.014	$.018	$.023
FASB #35								
11. Value of Accrued Benefits	$4.542	$4.874	$5.319	$5.794	$6.305	$6.845	$10.122	$14.424
(Funded Percentage)	59.4%	60.3%	60.0%	59.7%	59.3%	59.0%	57.5%	56.2%

Expenses estimated at $11 million for FY89; increasing by 10% per annum thereafter. Actual State Contributions used for FY88 and FY89. State Contributions equal to 48% of Benefit Payments (excluding refunds) and Administrative Expenses assumed for subsequent years. Employee Contributions include qualifying payments. Compensation, Benefit Payments, Contributions and Normal Cost represent cash flow for the year just ended. All other dollar amounts are values at the end of the fiscal year.

Table 4b

FIFTEEN YEAR PROJECTION OF COSTS AND LIABILITIES
(Assumes State Contributions Equal to 100% of Benefit Payments)
(All Dollar Amounts in Billions)

	Fiscal Year Ending 6/30							
	1988	1989	1990	1991	1992	1993	1998	2003
1. Number of Active Members	52,002	52,002	52,002	52,002	52,002	52,002	52,002	52,002
2. Annual compensation	$1.428	$1.493	$1.560	$1.634	$1.714	$1.799	$2.288	$2.909
3. Annual Benefit Payments & Administrative Expense	$.174	$.189	$.212	$.233	$.254	$.281	$.432	$.663
4. Actuarial Liability	$4.978	$5.625	$6.100	$6.611	$7.150	$7.725	$11.142	$15.557
(Retired Lives Reserves)	(1.499)	(1.742)	(1.927)	(2.101)	(2.341)	(2.532)	(3.947)	(6.195)
5. Assets (Book)	$2.698	$3.029	$3.391	$3.786	$4.220	$4.694	$7.827	$12.692
6. Unfunded Actuarial Liability	$2.280	$2.596	$2.709	$2.825	$2.931	$3.031	$3.316	$2.865
(Funded Percentage)	54.2%	53.9%	55.6%	57.3%	59.0%	60.8%	70.2%	81.6%
7. Employee Contributions	$.132	$.120	$.125	$.131	$.137	$.144	$.183	$.233
8. State Normal Cost	$.109	$.114	$.114	$.122	$.129	$.137	$.183	$.244
(% Payroll)	7.6%	7.6%	7.3%	7.4%	7.5%	7.6%	8.0%	8.4%
9. State Contribution	$.071	$.167	$.188	$.208	$.227	$.253	$.398	$.619
(% Payroll)	5.0%	11.2%	12.1%	12.7%	13.3%	14.1%	17.4%	21.3%
10. Other Contributions (Federal, Reciprocity, Etc.)	$.013	$.012	$.012	$.013	$.014	$.014	$.018	$.023
FASB #35								
11. Value of Accrued Benefits	$4.542	$4.874	$5.319	$5.794	$6.305	$6.845	$10.122	$14.424
(Funded Percentage)	59.4%	62.1%	63.7%	65.3%	66.9%	68.6%	77.3%	88.0%

Expenses estimated at $11 million for FY89; increasing by 10% per annum thereafter. Actual State Contributions used for FY88 and FY89. State Contributions equal to 100% of Benefit Payments (excluding refunds) and Administrative Expenses assumed for subsequent years. Employee Contributions include qualifying payments. Compensation, Benefit Payments, Contributions and Normal Cost represent cash flow for the year just ended. All other dollar amounts are values at the end of the fiscal year.

Table 3

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

ACTUARIAL PRESENT VALUE OF CREDITED PROJECTED BENEFITS AT JUNE 30, 1988

	Vested	Non-Vested	Total
1. Participants Currently Receiving Payments	$1,498,942,681	---	$1,498,942,681
2. Inactive Members	176,751,506	---	176,751,506
3. Active Members:			
(a) Pension Benefits	1,785,229,979	68,242,904	1,853,472,883
(b) Cost-of-Living Adjustments	387,868,227	15,144,601	403,012,828
(c) Death Benefits (Excludes Refunds)	181,368,125	11,010,334	192,378,459
(d) Disability			
(i) Accidental	3,591,207	606,550	4,197,757
(ii) Ordinary	69,261,825	9,231,986	78,493,811
(iii) Total	$72,853,032	$9,838,536	$82,691,568
(e) Withdrawals and Refunds	368,948,070	64,712,618	433,660,688
(f) Total	$2,796,267,433	$168,948,993	$2,965,216,426
(g) Employee Contributions	1,174,617,065	86,897,028	1,261,514,093
(h) Employer Financed	1,621,650,368	82,051,965	1,703,702,333
4. TOTAL	$4,471,961,620	$168,948,993	$4,640,910,613

NOTES:

(1) Credited projected benefits were calculated in accordance with plan provisions in effect on June 30, 1988, based on the members' service as of such date and on the members' historical and projected pay.

(2) Projected years of service were considered only in determining members' expected eligibility for particular benefits.

(3) Future automatic cost-of-living increases were recognized.

(4) The actuarial assumptions utilized were the same as those adopted for funding purposes.

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

ANALYSIS OF FINANCIAL EXPERIENCE

Gains and losses in Accrued Actuarial Liability for Fiscal Year ending June 30, 1987.

Activity	Gain (Loss)
1. Actuarial Gains and Losses	
(a) Age & Service Retirements	($ 16,865,670)
(b) Incidence of Disability	5,105,615
(c) In-Service Mortality	(1,975,218)
(d) Retiree Mortality	(6,240,453)
(e) Disabled Mortality	(979,780)
(f) Termination of Employment	3,997,356
(g) Salary Increases	74,548,438
(h) Investment Income	(13,848,351)
(i) Other	7,271,270
(j) Total Actuarial Gain (Loss)	$ 51,013,207
2. Contribution Income	($179,960,548)
3. Non Recurring Items (Plan amendments)	
(a) Benefit Increases (HB2530)	($ 2,390,958)
(b) Decrease in FY89 effective rate of interest	$ 13,259,183
(c) Change in procedure for annualizing earnings	($ 71,190,174)
4. Total Financial Gain (Loss)	($189,269,290)

ACTUARIAL COST METHOD

An entry age normal cost method is used. Under this method, the projected pensions at retirement age are first determined and the values thereof at the individual member's entry age or hire age are determined. The values so determined are divided by the value at entry age of all future compensation payable to the member to determine the normal cost as a level percentage of covered pay. The normal cost for a particular year is that percentage of covered compensation for the year.

The actuarial liability at any point in time is the value of the projected pensions at that time, less the value of future normal costs.

For ancillary benefits for active and inactive members, in particular for disability benefits, death and survivor benefits, termination benefits and the post-retirement increments, the same procedure as outlined above is followed.

Estimated annual administrative expenses are added to the normal cost.

ACTUARIAL ASSUMPTIONS

Mortality: 1986 Projected Experience Table, a table based on experience underlying the 1971 Group Annuity Mortality Table, without margins, with a projection for mortality improvements to 1986, with a three year setback for males and a two year setback for females.

Interest: 8% per annum, compounded annually.

Termination: Illustrative rates of withdrawal from the plan are as follows:

Age	Males	Females
20	0.184	0.224
25	0.152	0.188
30	0.120	0.152
35	0.087	0.116
40	0.059	0.083
45	0.041	0.059
50	0.029	0.045
55	--	--

It is assumed that terminated employees will not be rehired.

Salary Increases: 7% per annum, compounded annually.

Disability Rates: Incidence of disability amongst employees.

Age	Males	Females
20	0.0002	0.0006
25	0.0002	0.0007
30	0.0004	0.0010
35	0.0007	0.0014
40	0.0011	0.0019
45	0.0019	0.0025
50	0.0032	0.0035
55	0.0055	0.0052
60	0.0094	0.0080

5% of disabilities amongst active employees are assumed to be caused by "on-the-job" accidents where a qualifying workers' compensation award is granted. During the first 2 years of service, one quarter of disabilities are assumed to arise as a result of an accident.

Employees receiving a disability allowance are assumed to recover or die in accordance with the following tables:

Age	Rate of Recovery	Rate of Mortality
20	0.591	0.044
25	0.478	0.044
30	0.377	0.044
35	0.288	0.044
40	0.211	0.044
50	0.094	0.045
60	0.024	0.053
70	0.001	0.075
80	--	0.130
90	--	0.240

Retirement Rates: General employees are assumed to retire at age 62. Police and firefighters are assumed to retire upon the attainment of age 55 and completion of 20 years of service, or at age 62 if earlier.

Assets: Assets available for benefits are used at book value.

Expenses: As estimated and advised by SURS staff, based on current expenses with an allowance for expected increases.

Marital Status: Employees are assumed to be married in accordance with the following table:

Age	Males	Females
20	25%	40%
30	70%	75%
40	80%	80%
50	85%	80%
60	85%	70%

Spouse's Age: The female spouse is assumed to be 3 years younger than the male spouse.

Remarriage Rates: The surviving spouses of deceased employees are assumed to remarry in accordance with the following table:

Age	Rate of Remarriage	Age	Rate of Remarriage
20	0.145	40	0.029
25	0.095	45	0.019
30	0.060	50	0.012
35	0.041	55	0.007

Children:

It is assumed that married members have 2.0 children one year apart in age.

The age of the youngest child of a deceased employee at his date of death is assumed to be as follows:

Age At Death Of Employee	Age of Youngest Child
20	0
25	1
30	3
35	5
40	7
45	9
50	12
55	15
60	18

Effective Rate of Interest:

The rate of interest credited on member contributions is 7.5% for FY89 and is assumed to be 8% for each fiscal year thereafter.

Earnings Data:

If earnings were not available, the annual salary was assumed to be $25,100.

Procedure for Annualizing Earnings:

A factor of 1.206 is applied to the September 1 - June 30 salaries provided by the System to estimate total salaries for the period September 1 - August 31.

STATE UNIVERSITIES RETIREMENT SYSTEM OF ILLINOIS

The following is a summary of the major provisions of the State Universities Retirement System as in effect on the date of the valuation (6/30/88).

Membership:

The System covers faculty and non-academic permanent employees of State Universities and Colleges, Community Colleges, State Scientific Surveys and other related agencies.

Employees hired after age 68, employed less than 50% full-time or employed on a temporary basis at less than full-time and attending classes with an employer are ineligible to participate.

Member Contributions:

8% of gross earnings. 6-1/2% of the 8% contributions are designated for retirement annuities, 1/2% for automatic annual increases and 1% for survivor benefits. Police officers and firefighters contribute 9-1/2% of earnings. The additional 1-1/2% is a normal retirement contribution.

Interest Credited on member Contributions:

The interest rate credited is fixed by the Board and has been 8% in recent years. For FY89 it is 7.5%. For purposes of lump sum payments to former members, the interest rate is 4-1/2%.

Normal Retirement:

Members are eligible for normal retirement after 35 years of covered service, after 8 years of covered service and age 60, or after 5 years of covered service and age 62. Policemen and firemen are eligible for normal retirement at age 55 with 20 years of service, or at age 50 with 25 years of service.

The annuity payable is based on the largest of three formulas:

(1) The following percentages of "average earnings":

		General	Police & Fireman
(a)	For each of the first 10 years of service	1.67%	2.25%
(b)	For each of the next 10 years of service	1.90%	2.50%
(c)	For each of the next 10 years of service	2.10%	2.75%
(d)	For each year of service over 30	2.30%	2.75%

Average earnings are the average of the highest earnings for any 4 consecutive years. Optionally, for all employees except academic employees paid on other than a 12 month basis, average earnings may be based on the 48 consecutive calendar months ending with the last day of employment. A lump sum payment for up to 56 days of accrued vacation may be included in this computation.

(2) The actuarial equivalent of 2.4 times the accumulated member contributions for retirement annuities (6-1/2% of earnings for ordinary members, 8% of earnings for police officers and firefighters). The actuarial equivalent assumes a constant annuity payable for life.

(3) For each year of service up to a maximum of 30 years, if employed one-half time or more, the following monthly amounts based on average earnings:

"Average Annual Earnings"

Under $3,500	$ 8
$3,500 - $4,500	9
$4,500 - $5,500	10
$5,500 - $6,500	11
$6,500 - $7,500	12
$7,500 - $8,500	13
$8,500 - $9,500	14
$9,500 and above	15

For members first participating hired after September 14, 1977, the maximum annuity under (1) or (2) is 75% of average earnings. The maximum is 80% of average earnings for members who participated on or before September 14, 1977.

Early Retirement:

Members are eligible for early retirement after 8 years of service and age 55 but the annuity calculated under formula (1) or (3) above is reduced by 1/2% for each month such retirement precedes age 60.

Early Retirement Without Discount:

A member may retire between the ages of 55 and 60 with at least 8, but not more than 35 years service credit, without the 1/2 of 1% reduction provided:

(1) The member does so between June 1, 1981 and September 1, 1992.

(2) The member retires within 6 months of the last day of employment.

(3) The member and the employer make one-time lump sum payments to the Retirement System based upon the member's highest full-time annual salary rate during the 4 year average salary period. The member pays 7% of such salary rate for each year or fraction of a year prior to age 60 or for each year or fraction of a year that his service credit is less than 35 years, whichever is less. The employer payment is 20% of the salary rate for each year or fraction of a year prior to age 60.

The number of members using this provision may be limited, at the option of the employer, to no less than 15% of those eligible during any year. The right to participate is allocated among those applying on the basis of seniority in the service of the employer.

Disability:

Members with 2 years of covered service who are unable to perform their duties because of illness or any amount of covered service if because of an accident, are eligible for disability after 60 days of disability. Pregnancy and childbirth are considered a disability.

The amount of the disability benefit is as follows:

(1) 50% of basic compensation at disability or 50% of average earnings for the 24 months preceding disability, whichever is greater, payable until the total benefits paid equal 50% of the total earnings in covered service, but in no event after September 1 following the employee's 70th birthday. In case of disability caused by an on-the-job accident, where workers' compensation or occupational disease payments are granted, the 50% of total earnings limitation does not apply until the employee attains age 70.

(2) After cessation of the benefit in (1), members who had 8 years of covered service will receive the normal retirement benefit commencing at or after age 55 (with no reduction for early retirement) if the member continues to be disabled.

The disability benefit will cease upon death or recovery.

Disability Retirement Allowance:

If a member's disability benefits are discontinued due to the 50% of total earnings limitation, the member is entitled to a disability retirement allowance of 35% of the basic compensation which was payable at the time the disability began, provided at least 2 licensed and practicing physicians appointed by the Board certify that the member has a medically determined physical or mental impairment which would prevent him/her from engaging in any substantial gainful activity, and which can be expected to result in death, or which has lasted or can be expected to last for a continuous period of not less than 12 months.

The disability retirement allowance is payable for life unless the member is able to accept substantial gainful employment, or elects to receive a retirement annuity.

Death Benefits Before Retirement:

Upon death of a participating employee* with 1-1/2 years of covered service, or of a former member with 10 years of covered service, the following amounts are paid to the member's survivors:

(1) A death benefit equal to the retirement contributions (7% for general employees, 8-1/2% for police and firefighters) and interest, plus

(2) A lump sum payment of $1,000, plus

(3) A monthly survivor's annuity equal to the greater of 50% of the member's accrued normal retirement benefit or the following amounts if greater:

(i) 30% of average earnings to a spouse, child or parent, up to $400 monthly.

(ii) 60% of average earnings to a spouse and 1 child, up to $600 monthly.

(iii) 80% of average earnings to a spouse and 2 or more children, up to $600 monthly.

Survivor's benefits are payable until children attain age 18, to a spouse after age 50 and a dependent parent after age 55. The spouse's benefit is payable at any age while children are under 18 and living with the spouse. If death occurs after termination of employment, the monthly survivors annuity may not exceed 80 percent of the earned retirement annuity.

If there are no dependent survivors, the member did not have the necessary service or if the dependent survivors so elect in lieu of any other benefits, the following amounts will be paid.

(1) A refund of all contributions and interest, and

(2) If death occurred while a participating employee*

(i) to a dependent beneficiary an amount equal to the employee's final annual rate of earnings, but not less than $2,000 nor more than $5,000.

(ii) to a nondependent beneficiary a lump sum payment of $2,500.

* The recipient of a disability benefit is a participating employee. The recipient of a disability retirement allowance is not.

Death Of An Annuitant:

Upon the death of an annuitant receiving a retirement annuity or disability retirement annuity, a lump sum benefit of $1,000 is payable to the member's spouse, children or dependent parent. In addition, a survivor's annuity as outlined above is payable. If no survivor annuity is payable, a minimum death benefit of $1,000 or an amount equal to the excess of the member's contributions and interest at retirement over the benefits paid is payable.

Automatic Increases:

Retirement benefits are increased annually after retirement by 3% of the original retirement annuity. The increase is not compounded and does not apply to survivor's or disability benefits. The first automatic annual increase in retirement annuity is paid on the January 1st following the annuitant's retirement date, and is based on the number of completed months that have elapsed since retirement began.

Termination of Service:

A lump sum refund of all member contributions and interest (at 4-1/2%) will be made. If a member has 5 years of covered service and does not apply for a refund, a normal retirement benefit will be payable at age 62.