33RD

annual report

TEACHERS' RETIREMENT SYSTEM

STATE OF KENTUCKY

1972-73

DECEMBER 1973

COMMONWEALTH OF KENTUCKY
TEACHERS' RETIREMENT SYSTEM
216 WEST MAIN STREET
FRANKFORT, KENTUCKY
40601

December 28, 1973

Honorable Wendell H. Ford, Governor
Commonwealth of Kentucky
Capitol Building
Frankfort, Kentucky 40601

Dear Governor Ford:

Submitted herewith is the Thirty-third Annual Report of the Teachers' Retirement System of the State of Kentucky as provided for in KRS 161.320.

The System continued to make significant gains in terms of return on investments, average benefits to members, and capital worth of the System's assets. On July 1, 1973, the average monthly benefit to all retirement payees was $277 as compared to an average of $262 per month a year earlier, and $230 per month two years ago. The rate of investment income on fixed dollar assets on June 30, 1973, had increased to 6.55% on an annual basis, up from an annual rate of 6.34% at the end of the previous year. The total assets of the System increased during the year from a total of $346 million to $384 million, a gain of $38 million in total assets.

Attention is invited to excerpts from the latest report of our Actuaries. This report continues to point out the importance of funding the Prior Service Obligation over a reasonable period of time, and the necessity of providing full funding of any increases in benefit payments. In regard to benefits based on current service, the report shows that present funding is adequate to cover these costs, with a funding period of about 29 years assuming 6% annual salary increases and about 39 years assuming 4% annual salary increases. Neither of these funding periods is unduly long.

Kentucky teachers, both active and retired, recognize the keen interest you have shown in the Teachers' Retirement System. Your concern for the actuarial soundness of the System and for the welfare of retired teachers is especially appreciated by all concerned.

The Board of Trustees is committed to continuing the excellent programs provided by the System, and wish to express sincere thanks to you and the General Assembly for your interest and support.

Respectfully yours,

Harold Miller

Harold Miller, Chairman
Board of Trustees

Ted L. Crosthwait

Ted L. Crosthwait
Executive Secretary

CONTENTS

TEACHERS' RETIREMENT SYSTEM
STATE OF KENTUCKY

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FINANCIAL

During the year ending June 30, 1973, assets of the Teachers' Retirement System increased $38,113,757.98 to a total of $383,635,686.16. This increase represents a growth rate of approximately 11.3%. It should be noted that of the $383.6 million in assets, $167.6 million is credited to member accounts (Teachers' Savings Fund) and a like amount is reserved in the State Accumulation Fund as state matching for member contributions. This leaves a free reserve for benefit payments of $48.4 million. During the month of July, 1973, benefit payments exceeded $2.6 million which indicates a reserve sufficient to cover only eighteen months of benefits. This should not be a matter of great concern if future funding is at a desirable level. Your attention is invited to the "Actuary Report" section of this document for a more comprehensive discussion of future funding requirements.

Pages 5 and 6 represent a comparative review of the financial status of the System for the last three years. Relative to the application of funds, it is particularly significant that benefits paid for service and disability retirements have increased from $18.6 million in 1971 to $28.2 million in 1973. This represents an increase of approximately 52% within a two year period, and is subject to even greater increases when the 30-year retirement provision becomes a reality. This figure is projected to reach $32.4 million during 1974.

The following statistics, not necessarily financial in nature, are provided to assist in formulating a total picture of the Teachers' Retirement System and its responsibilities.

	At July 1	
	1972	1973
Number of Active Members	46,521	46,954
Average Balance per Active Member	$3,238	$3,341
Number of Service Retirants Receiving Benefits	7,742	8,705
Average Monthly Benefit per Service Retirant	$ 270	$ 286
Number of Members Receiving Disability Benefits	521	568
Average Monthly Benefit per Disability Retirant	$ 205	$ 223
Number of Survivors Receiving Monthly Benefits	327	360
Average Monthly Benefit per Survivor	$ 161	$ 161

BALANCE SHEET
Teachers' Retirement System
June 30, 1973

ASSETS			
Cash, All Funds		$ 5,703,758.33	
Special Reserve Account, Aetna Life Insurance Company		554,479.58	
			$ 6,258,237.91
Overpayments by Employers			(41,793.84)
Investments	$378,403,868.28		
Unamortized premium on Investments	1,480,237.04		
Accrued Interest Purchased	2,984.41		
Sub-total: Investments plus deferred charges		$379,887,089.73	
Deduct Unamortized Discount on Investments		2,467,847.64	
			$377,419,242.09
TOTAL ASSETS			$383,635,686.16
FUND BALANCES			
Teachers' Savings Fund		$167,602,603.16	
State Accumulation Fund		167,602,603.16	
Guarantee Fund		12,300,756.95	
Hospital and Medical Insurance Fund		6,352,470.32	
Voluntary Contributions, Active Members		1,788,675.37	
Administrative Expense Fund		18,378.67	
Allowance Reserve Fund			
Teachers' Contributions	$ 4,744,759.85		
State Contributions (Permanent)	16,892,744.76		
		21,637,504.61	
Survivor and Death Benefit Fund			
Reserve from Contributions from Active Members	5,344,501.78		
Reserve from State Matching Contributions	713,389.59		
Teachers' Balances, Accounts in Benefit Status	68,379.24		
State Reserve for Accounts in Benefit Status	206,423.31		
		6,332,693.92	
TOTAL FUND BALANCES			$383,635,686.16

STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS
Teachers' Retirement System
for the period July 1, 1972 - June 30, 1973

CASH BALANCE, ALL FUNDS, July 1, 1972			$ 13,419,078.46
Sources:			
Teachers' Savings	$24,885,851.66		
Reinstatements	158,214.05		
Voluntary Unmatched Contributions	341,523.28		
Total from Members		$ 25,385,588.99	
State Contributions:			
Permanent, to match Teachers' Savings	$23,042,763.66		
Deficiency appropriation for matching	963,746.91		
Prior Service Deficiency	750,000.00		
Administrative expenses	373,100.00		
1972 Bonus Payment to Retirees	1,004,289.43		
		26,133,900.00	
Interest Collected, Bonds Redeemed or Sold, Adjustments		94,514,005.90	
Recovery from Aetna Life Insurance Company		8,096.00	
Employer Matching of Teacher Contributions (Federal Funds)		1,852,868.65	
Total Receipts			147,894,459.54
TOTAL CASH AVAILABLE			$161,313,538.00
Applications:			
Administrative Expenses, Current Year		$ 354,721.33	
Refunds to Membership		3,789,907.67	
Premiums for Comprehensive Medical Insurance Plan		1,218,228.75	
Benefits for Service and Disability Retirement	$26,900,568.97		
Survivor Payments	688,051.75		
Death Benefits	655,001.44		
1972 Bonus to Retirees	1,004,289.43		
		29,247,911.59	
Purchase of Investments and Miscellaneous Adjustments		120,444,530.75	
Total Disbursements			155,055,300.09
CASH BALANCE, ALL FUNDS, June 30, 1973			$ 6,258,237.91

TEACHERS' RETIREMENT SYSTEM
COMPARATIVE BALANCE SHEET
June 30, 1973

	June 30, 1971		June 30, 1972		June 30, 1973	
	AMOUNT	%	AMOUNT	%	AMOUNT	%
ASSETS						
Cash, All Funds	$ 14,338,506.18	4.62	$ 12,872,694.88	3.73	$ 5,703,758.33	1.49
Special Reserve Account, Aetna Life Insurance	444,263.13	.15	546,383.58	.16	554,479.58	.14
Underpayments - (Overpayments) from Employers	(19,438.91)	(.01)	2,624.28	.01	(41,793.84)	(.01)
Investments	295,882,441.14	95.44	332,807,631.66	96.30	378,403,868.28	98.62
Unamortized Premium on Investments	1,783,798.37	.58	1,478,891.23	.43	1,480,237.04	.39
Accrued Interest Purchased	304,685.77	.10	163,473.19	.05	2,984.41	.01
Unamortized Discount on Investments	(2,730,014.54)	(.88)	(2,349,770.64)	(.68)	(2,467,847.64)	(.64)
TOTAL ASSETS	$310,004,241.14	100.00	$345,521,928.18	100.00	$383,635,686.16	100.00
FUND BALANCES						
Teachers' Savings Fund	$138,181,127.07	44.57	$153,215,427.99	44.35	$167,602,603.16	43.69
State Accumulation Fund	138,181,127.07	44.57	153,215,427.99	44.35	167,602,603.16	43.69
Guarantee Fund	10,376,855.57	3.35	9,725,225.49	2.80	12,300,756.95	3.21
Hospital and Medical Insurance Fund	4,702,372.48	1.52	5,644,072.32	1.63	6,352,470.32	1.65
Voluntary Contributions Fund	1,483,123.49	.48	1,620,896.85	.47	1,788,675.37	.46
Administrative Expense Fund	40,880.70	.01	37,342.74	.01	18,378.67	.01
Allowance Reserve Fund	12,278,236.41	3.96	16,584,073.95	4.80	21,637,504.61	5.64
Survivor and Death Benefit Fund	4,760,518.35	1.54	5,479,460.85	1.59	6,332,693.92	1.65
TOTAL FUND BALANCES	$310,004,241.14	100.00	$345,521,928.18	100.00	$383,635,686.16	100.00

TEACHERS' RETIREMENT SYSTEM
COMPARATIVE STATEMENT OF SOURCE AND APPLICATION OF FUNDS
June 30, 1973

	YEAR ENDING June 30, 1971 AMOUNT	%	June 30, 1972 AMOUNT	%	June 30, 1973 AMOUNT	%
Beginning Cash Balance:	$ 5,095,776.83		$ 14,782,769.31		$ 13,419,078.46	
Source of Funds						
Teachers' Savings	$ 22,005,053.79	15.21	$ 23,062,733.07	18.15	$ 24,885,851.66	16.83
Reinstatements	203,355.97	.14	159,087.89	.12	158,214.05	.11
Voluntary Unmatched Contributions	328,259.71	.23	329,992.52	.26	341,523.28	.23
State Contributions:						
Permanent, to match teachers' savings	20,351,111.52	14.07	21,339,419.50	16.80	23,042,763.66	15.58
Deficiency appropriation for matching	2,162,416.48	1.49	850,966.50	.67	963,746.91	.65
Prior Service Commitment					750,000.00	.51
Administrative Expenses	364,742.00	.25	342,675.00	.27	373,100.00	.25
Bonus Payment to Retirees					1,004,289.43	.68
Interest Collected, Bonds Redeemed or Sold, Adjustments	97,542,869.48	67.42	79,009,111.47	62.19	94,514,005.90	63.90
Recovery from Aetna Life Insurance Company	75,583.96	.05	227,120.45	.18	8,096.00	.01
Employer Matching of Teacher Contributions (Federal Funds)	1,653,942.27	1.14	1,733,656.39	1.36	1,852,868.65	1.25
Total Source of Funds	$144,687,335.18	100.00	$127,054,762.79	100.00	$147,894,459.54	100.00
Total Cash Available	$149,783,112.01		$141,837,532.10		$161,313,538.00	
Application of Funds						
Administrative Expenses	$ 327,149.10	.24	$ 324,554.12	.25	$ 354,721.33	.23
Refunds for Withdrawal from Membership	3,510,477.53	2.60	2,992,943.69	2.33	3,789,907.67	2.44
Premiums for Comprehensive Medical Insurance	959,334.27	.71	1,074,783.78	.84	1,218,228.75	.79
Benefits for Service and Disability Retirement	17,470,077.33	12.94	21,552,155.98	16.78	26,900,568.97	17.35
Survivor Benefits	625,778.69	.46	625,411.75	.49	688,051.75	.44
Death Benefits	508,000.00	.38	547,260.63	.43	655,001.44	.42
Bonus Payments					1,004,289.43	.65
Purchase of Investments and Miscellaneous Adjustments	111,599,525.78	82.67	101,301,343.69	78.88	120,444,530.75	77.68
Total Application of Funds	$135,000,342.70	100.00	$128,418,453.64	100.00	$155,055,300.09	100.00
Ending Cash Balance	$ 14,782,769.31		$ 13,419,078.46		$ 6,258,237.91	

COMPARISON OF TEACHERS' SAVINGS AND MATCHING FUNDS
Teachers' Retirement System
for the period July 1, 1940 through June 30, 1973

Date	Teachers' Savings	Federal Matching Contributions	State Matching Contributions	State Prior Service Contributions	State Cont. Bonus Benefits	State Contribution For Expenses
7/1/40 - 6/30/44	$ 2,063,716.64	$	$ 2,063,636.92	$ 147,146.21		$ 89,216.87
7/1/44 - 6/30/48	3,184,177.52		3,039,017.44	363,594.56		131,388.00
7/1/48 - 6/30/52	4,951,457.55		5,090,847.83	3,374,273.81		198,335.00
7/1/52 - 6/30/56	7,267,163.31		6,494,101.79	936,448.21		262,254.00
1956-57	3,397,252.11		3,396,749.24	611,125.76		89,000.00
1957-58	3,523,727.93		3,523,551.57	612,278.43		125,225.00
1958-59	3,863,489.84		3,858,543.67	479,306.33		129,350.00
1959-60	4,186,490.96		4,184,427.58	281,225.77		178,146.65
1960-61	5,792,722.05		5,790,585.89	1,173,039.11		161,375.00
1961-62	6,311,472.35		6,309,696.04	1,119,118.96		171,185.00
1962-63	6,765,354.48		6,763,615.18	950,175.82		196,846.00
1963-64	7,076,348.40		7,074,866.28	696,608.72		220,657.00
1964-65	7,780,975.02		7,780,017.37	400,782.63		219,200.00
1965-66	11,839,447.87	147,969.24	10,744,110.00			255,890.00
1966-67	14,163,257.71	942,771.10	12,621,567.00			237,063.00
1967-68	16,173,617.90	951,273.29	14,172,000.00			225,000.00
1968-69	18,080,829.17	1,301,561.26	18,475,036.94	424,963.06		266.760.00
1969-70	19,774,253.40	1,355,704.89	16,913,000.00			274.910.00
1970-71	22,005,053.79	1,653,942.27	22,513.528.00			364,742.00
1971-72	23,062,733.07	1,733,656.39	22,190,386.00			342,675.00
1972-73	24,885,851.66	1,852,868.65	24,006,510.57	750,000.00	1,004,289.43	373,100.00
TOTALS	$216,149,392.73	$9,939,747.09	$207,005,795.31	$12,320,087.38	$1,004,289.43	$4,512,318.52

RECAPITULATION

State permanent contributions to match teacher payments	$207,005,795.31
Federal Matching through remittances by employers	9,939,747.09
Total matching under the statutory requirement for 100% matching of teachers payments	$216,945,542.40
Teacher payments made thru June, 1973	216,149,392.73
State surplus to be applied to Prior Service obligation at the end of the 1972-74 biennium	796,149.67

REGULAR REFUNDS
Teachers' Retirement System
July 1, 1940 to June 30, 1973

Date	Withdrawals		Deaths		Adjustments		TOTAL	
	No.	Amount	No.	Amount	No.	Amount	No.	Amount
7/1/40 - 6/30/44	2,654	$ 106,474.07	148	11,447.66	21	231.76	2,823	118,153.49
7/1/44 - 6/30/48	6,455	415,929.56	205	34,386.65	52	1,184.73	6,712	451,500.94
7/1/48 - 6/30/52	9,079	816,505.87	267	89,957.65	71	1,443.47	9,417	907,906.99
7/1/52 - 6/30/56	9,488	1,204,087.67	237	147,531.23	39	727.79	9,764	1,352,346.69
1956-57	1,832	381,015.98	67	63,100.03	10	502.87	1,909	444,618.88
1957-58	2,183	422,166.84	60	63,459.52	11	176.36	2,254	485,802.72
1958-59	2,153	432,917.49	59	66,659.22	198	4,946.17	2,410	504,522.88
1959-60	2,642	599,648.10	69	94,122.66	66	2,053.57	2,777	695,824.33
1960-61	1,672	517,682.44	53	79,564.69	52	2,145.72	1,777	599,392.85
1961-62	2,170	724,240.16	69	113,975.25	42	1,769.95	2,281	839,985.36
1962-63	2,106	826,457.63	66	115,303.28	48	1,718.89	2,220	943,479.80
1963-64	2,310	1,035,242.10	60	144,154.22	26	1,460.21	2,396	1,180,856.53
1964-65	2,380	1,190,715.07	72	156,186.68	39	1,930.17	2,491	1,348,831.92
1965-66	2,417	1,375,728.50	44	90,196.91	23	1,256.68	2,484	1,467,182.09
1966-67	2,512	1,500,846.42	49	143,133.98	29	2,420.61	2,590	1,646,401.01
1967-68	2,766	1,858,115.15	48	138,362.23	16	975.68	2,830	1,997,453.06
1968-69	3,081	2,204,896.23	48	152,415.64	90	2,264.79	3,219	2,359,576.66
1969-70	3,447	2,651,430.47	53	200,204.03	48	8,097.76	3,548	2,859,732.26
1970-71	3,808	3,241,516.61	56	188,158.04	40	6,701.36	3,904	3,436,376.01
1971-72	3,011	2,812,762.92	36	131,650.80	40	5,953.59	3,087	2,950,367.31
1972-73	4,048	3,485,841.89	59	197,514.29	24	1,366.87	4,131	3,684,723.05
TOTALS	72,214	$27,804,221.17	1,825	$2,421,484.66	985	$49,329.00	75,024	$30,275,034.83

ANALYSIS OF ACCOUNTS REFUNDED 1972-73
Teachers' Retirement System of the State of Kentucky

REASON FOR WITHDRAWAL	MALES	FEMALES	TOTAL	AMOUNT
Other Teaching Employment:				
State of Ohio	39	86	125	117,698.81
State of Florida	22	40	62	69,352.25
State of Indiana	15	40	55	47,698.75
Other States	176	285	461	523.673.32
Outside Limits of USA	7	11	18	17,179.63
Kentucky Schools not covered by Teachers' Retirement System	31	44	75	77,747.39
Non-Teaching Employment:				
Entered Business or Industry	356	152	508	668,282.01
Church-Related Profession	16	8	24	19,104.87
Medical Profession	4	2	6	7,198.68
Legal Profession	3	1	4	6,432.75
Military Service	13	4	17	7,173.62
Further Training & Education	87	107	194	176,351.43
Local, State, or Federal Government	44	51	95	109,265.93
Homemaking, Family Duties, Children	3	549	552	632,667.48
Spouse Transferred Within Kentucky	0	6	6	8,442.98
Spouse Transferred Out of Kentucky	1	311	312	283,836.52
Moved Residence to Another State	25	63	88	93,741.35
Emergency Teacher, Not Re-employed	48	61	109	99,743.08
Salary too Low	28	6	34	28,743.41
Needed the Money	2	3	5	4,868.19
Disliked Teaching	17	21	38	35,599.95
Personal Reasons	75	133	208	233,442.81
Illness of Member	5	19	24	30,169.11
Death of Member	18	41	59	197,514.29
Absent from Profession 4-6 Years	1	8	9	7,682.75
Lost Service Credit, Absent 7 or more Yrs.	281	738	1,019	179,744.82
Adjustments	8	16	24	1,366.87
Sub-total	1,325	2,806	4,131	3,684,723.05
Refunds from Voluntary Savings	46	20	66	88,273.14
Not Eligible for Membership	23	46	69	16,911.48
Grand Total	1,394	2,872	4,266	3,789,907.67

INVESTMENTS

On the following pages is a summary of the investment situation for the System's trust fund at the close of the fiscal year.

Major changes in distribution of securities held by the fund were a reduction of percentages in corporate bonds and insured mortgages, and a substantial increase in the portion devoted to common and preferred stocks.

Average yield on fixed dollar assets increased from 6.34% to 6.55% per annum. A major portion of this increase was due to high short-term interest rates, and a continuation of the program of exchanging securities which was initiated several years ago.

Details of the various transactions are too voluminous to include here, but such information is available to auditors and other interested persons.

Following is some general information concerning the investment program which may be of interest to members of the System:

1. As far as Teachers' Retirement is concerned Kentucky is a "legal list" state. This is the type, quality and in some cases the amounts of investments are stated specifically in the Statutes.

2. The Board of Trustees annually appoints an investment committee consisting of two board members and the executive secretary. This committee makes investments subject to full board approval. Investment counsel is retained by the board on contract. Presently the Boston Company of Louisville serves in this capacity.

3. Within the framework of the Statutes the Board of Trustees has established a detailed policy governing investment procedures. This policy, which is subject to change as conditions warrant, is available to interested persons.

4. The return from invested reserves is one of the very important revenue sources for active and retired teachers. For example, a teacher entering the profession after 1966 will find that her contributions will pay 25% of her retirement benefits, the state's contribution 25% and investment return the remaining 50%.

5. The inroads of inflation is perhaps the greatest fear of retirement years. Improved investment return, both greater interest income and capital gains, offers the greatest protection from this danger.

ANALYSIS OF INVESTMENTS HELD AT JUNE 30, 1973

to show annual yield rate

Teachers' Retirement System of the State of Kentucky

	Percentage of Total	Par Value	Interest Income/Year	Annual Yield
U. S. Treasury Bills	1.46%	$ 5,540,000.00	$ 385,902.00	6.966%
Obligations Secured by U. S. Treasury	1.88%	7,097,830.38	437,182.13	6.159%
Federal Agencies	2.55%	9,645,338.69	666,113.50	6.906%
FHA & VA Mortgages	10.92%	41,317,481.82	2,312,421.08	5.597%
Other Guaranteed Mortgages	3.35%	12,695,309.03	832,217.49	6.555%
Corporate Bonds	51.75%	195,816,923.82	13,214,586.98	6.748%
Kentucky Industrial Development Finance Authority	.35%	1,318,333.35	65,875.01	4.997%
Sub-Total	72.26%	$273,431,217.09	$17,914,298.19	

NET YIELD RATE:

$17,914,298.19 ÷ $273,431,217.09 = 6.552%

Not Included Above:

	Percentage of Total	Par Value
2,148,361 Shares Common Stocks	27.39%	103,642,936.19
25,000 Shares Preferred Stocks	.35%	1,329,715.00
TOTAL INVESTMENTS	100.00%	$378,403,868.28

SUMMARY OF INVESTMENT PROFIT YIELDS
(FIXED DOLLAR ASSETS)

Year	Invested Assets	Net Yield
1959	$ 57,572,000	3.39
1960	64,655,000	3.53
1961	78,017,000	3.81
1962	90,712,000	4.03
1963	102,938,000	4.17
1964	118,466,000	4.27
1965	132,805,000	4.43
1966	152,609,000	4.58
1967	174,612,000	4.69
1968	200,836,000	5.06
1969	235,898,000	5.32
1970	267,514,029	5.59
1971	295,882,441	6.08
1972	332,807,632	6.34
1973	378,403,868	6.55

AUDIT REPORTS

Two Audit Reports have been received from the Auditor of Public Accounts since the last Teachers' Retirement annual report was published in December, 1972. Pages 14 thru 17 are excerpts from the fiscal 1971-72 Audit Report and pages 18 thru 22 include excerpts from the fiscal 1972-73 Audit Report. In each case we have provided copies of the Auditor's comments and the pertinent financial statements.

The following paragraphs are offered in response to selected comments which have been numbered for cross reference purposes.

<u>FISCAL YEAR 1971-72 (Page 15)</u>

A. Comments 3, 4, and 5: Although the accounting methods utilized by this agency during fiscal 1972 are employed in a number of other public retirement systems, our auditors take exception to our accounting procedures that relate to the recognition of gains or losses when exchanging securities for the realization of an increased yield. The American Institute of Certified Public Accountants has been studying this matter for some time without result. Accordingly, on July 1, 1972, the Teachers' Retirement System changed investment accounting procedures to conform with the recommendations of the Auditor of Public Accounts.

B. Comment 7: Excerpts of the Report on the Actuarial Valuation as of July 1, 1972, are presented in this report.

<u>FISCAL YEAR 1972-73 (Pages 19 and 20)</u>

Comment 1: The Teachers' Retirement System is in general agreement with the conclusions reached by the Auditor of Public Accounts concerning the transmittal of teacher contributions. A review of alternative corrective procedures will be implemented in the near future.

COMMONWEALTH OF KENTUCKY

AUDITOR OF PUBLIC ACCOUNTS

FRANKFORT 40601

MARY LOUISE FOUST, C.P.A.
AUDITOR

JOYCE A. MORSE, C.P.A.
ASSISTANT AUDITOR

February 8, 1973

Honorable Wendell H. Ford, Governor
Commonwealth of Kentucky
Frankfort, Kentucky

Dear Governor Ford:

We have examined the records of the Teachers' Retirement System for the fiscal year ended June 30, 1972, and submit herewith our report.

Our examination was made in accordance with generally accepted auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

We take exception to certain policies and procedures followed by the System and refer you to the comments immediately following this letter.

This examination was conducted under the supervision of Ronald C. Mullins, Field Auditor.

Mary Louise Foust

Mary Louise Foust, CPA
Auditor of Public Accounts

COMMENTS

1. We obtained a selected number of confirmations from teachers confirming the balances of the teachers' withholdings to the individual account balances maintained by the Retirement System for the fiscal year ended June 30, 1972.

2. A physical count was made of the Retirement Systems' investments that were held by the Kentucky State Treasury on December 31, 1971, and reconciled to the June 30, 1972 balance.

Investments

3. The System has been selling low-yield investments and reinvesting the proceeds in the higher-yield investments. The System has treated these sales and purchases as reinvestments or "exchanges". Any losses or gains on the securities "exchanged" were added to the cost of the new securities, to bring the new securities to par value, and the remainder of the losses or gains was recognized on the books.

4. During the fiscal year ended June 30, 1972, the System had a loss of $7,613,193.00. Of this loss $3,176,851.35 was recognized and $4,436,342 was treated as additional cost on new securities. This method of handling losses or gains has the effect of overstating the investment cost and the guarantee fund balance, and understating the loss on sale of investments.

5. We commend the practice of selling low-yield securities and purchasing higher-yield securities, but we take issue with the treatment of the gains and losses. The deferred gains and losses should be shown as a separate balance sheet item with a full disclosure of the System's treatment of these items. Starting with July 1, 1972, the System changed their method of accounting for investments. Losses and gains are now recognized at the time the securities are sold.

6. The System is switching from coupon bonds to registered bonds. This will give better control for securities and interest. Also, this will reduce time required to clip coupons.

7. KRS 161.400 requires the System to have an actuarial valuation of the Retirement System at least once in each two year period. The last actuarial valuation was done in 1970. The System is in the process of having one done now.

Exhibit A

TEACHERS' RETIREMENT SYSTEM

BALANCE SHEET

Fiscal Year Ended June 30, 1972

Assets	
Cash	$ 12,872,694.88
Special Reserve Account, Aetna Life Insurance	546,383.58
Investments	332,807,631.66
Unamortized Premiums on Investments	1,478,891.23
Unamortized Discount on Investments	(2,349,770.64)
Accrued Interest Purchased	163,473.19
Total Assets	$345,519,303.90
Fund Balances	
State Accumulation Fund	$153,215,427.99
Teachers' Savings Fund	153,212,803.71
Allowance Reserve Fund	16,584,073.95
Guarantee Fund	9,725,225.49
Voluntary Contribution Fund	1,620,896.85
Hospital and Medical Insurance Fund	5,644,072.32
Survivor and Death Benefit Fund	5,479,460.85
General Expense Fund	37,342.74
Total Fund Balances	$345,519,303.90

Exhibit B

TEACHERS' RETIREMENT SYSTEM

COMBINED STATEMENT OF CHANGES IN FUND BALANCES

Fiscal Year Ended June 30, 1972

Fund Balance - July 1, 1971		$310,004,483.39
Additions		
Teachers' Contributions	$23,062,733.07	
Teachers' Reinstatements	159,087.89	
Voluntary Unmatched Contributions	329,992.55	
Employer's Matching Contributions	1,733,656.39	
State Matching Contributions	22,190,386.00	
General Fund Appropriations	342,675.00	
Interest	17,070,331.74	
Adjustments and Forfeitures	9,966.07	
Experience of Prior Year Premiums	202,686.00	
Recovery of Refund Claims	476.07	
Total Additions		65,101,990.78
Total Funds Available		$375,106,474.17
Deductions		
Refunds	$ 2,995,634.02	
Benefit for Service and Disability Retirement	21,552,200.98	
Premiums Paid to Insurance Company		
Comprehensive Medical Insurance Plan	1,074,733.78	
Survivor and Death Benefit Payments	1,172,672.38	
General Fund Expenses	305,332.26	
Loss on Sale of Investments	2,476,694.49	
Adjustments to Fund Balance	1,341.56	
Loss on Refund Payments	8,560.80	
Total Deductions		29,587.170.27
Fund Balance - June 30, 1972		$345,519,303.90

COMMONWEALTH OF KENTUCKY
AUDITOR OF PUBLIC ACCOUNTS
FRANKFORT 40601

MARY LOUISE FOUST, C.P.A.
AUDITOR

JOYCE A. MORSE, C.P.A.
ASSISTANT AUDITOR

DEC 21 12 AH '73

December 19, 1973

Honorable Wendell H. Ford, Governor
Commonwealth of Kentucky
Frankfort, Kentucky

Dear Governor Ford:

We have examined the records of the Teachers' Retirement System for the fiscal year ended June 30, 1973, and submit herewith our report.

This examination was conducted in accordance with generally accepted governmental auditing standards and accordingly included such tests of the accounting records and such other auditing procedures as we considered necessary in the circumstances.

In our opinion, the accompanying statements present fairly the results of operations for the fiscal year ended June 30, 1973, in conformity with accounting principles recommended by the National Committee on Governmental Accounting.

We call your attention to the comments immediately following this letter.

This examination was conducted under the supervision of Ronald C. Mullins, Field Auditor.

Mary Louise Foust

Mary Louise Foust, CPA
Auditor of Public Accounts

COMMENTS

1. Delinquent Withholding Payments

KRS 161.560 requires agencies that withhold retirement from employes to forward all amounts so deducted to the Teachers' Retirement System no later than fifteen days following the end of each payroll period. We examined the transmittals from the 164 various agencies as to the dates the transmittals were received by the Teachers' Retirement System. Of the 164 agencies, 120 failed to comply with this requirement at least one time during the year. The following delinquent payments from these agencies are revealing:

1,178 payments were more than fifteen days delinquent
227 payments were more than thirty days delinquent
94 payments were more than sixty days delinquent

The interest computed at 6% on the amounts of the delinquent payments would be approximately $12,696.47. We recommend the agencies be required to comply with the statute with some form of a penalty for delinquent payments.

2. Confirmations

We selected a number of members and sent requests to them for confirmation of their individual balances. About 12% of the members in the sample did not have a current address. Members need to be better informed of the importance of notifying the System of their current addresses.

3. Investments

The System's investments are in the custody of the State Treasurer. A physical count of the investments as of August 31, 1973, was made and reconciled to the June 30, 1973, balances of the System and Department of Finance.

Schedule "L" of this report is a summary of investments with bonds, notes, and mortgages carried at maturity value and stocks carried at cost. A comparison of the market and carrying value of the securities per schedule "L" is as follows:

Stock

Cost	Market value at July 1, 1973	Market value at December 1, 1973
$104,972,651.00	$115,632,242.00	$103,339,192.00

Coporate Bonds

Maturity Value	Market value at July 1, 1973
$195,816,923.00	$181,225,506.00*

*Per the National Bond Summary of July 1, 1973.

Comments (concluded)

4. Actuarial Valuation

KRS 161.400 requires the System to have an actuarial valuation of the Retirement System at least once in each two year period. This valuation was performed by Huggins and Company, Inc. for the year ended June 30, 1972.

5. Office Rent

The System rents office space from the Farmers Bank and Capital Trust Company at a cost as follows:

5,300 sq. ft. on first floor @ $2.50 per sq. ft. per annum
1,650 sq. ft. in basement @ $1.50 per sq. ft. per annum

By comparing this with offices rented by other departments, it is a reasonable cost for office rent.

6. Accounting Records

The System maintains a double entry set of accounting records. There were no adverse findings of the records. The records have greatly improved over previous years.

Schedule A

TEACHERS' RETIREMENT SYSTEM

COMPARATIVE BALANCE SHEET

	June 30, 1972	June 30, 1973
Assets		
Cash	$ 12,872,694.88	$ 5,703,758.33
Special Reserve Account, Aetna Life Ins. Co.	546,383.58	554,479.58
Investments	332,807,631.66	378,403,868.28
Unamortized Premiums on Investments	1,478,891.23	1,480,237.04
Unamortized Discounts on Investments	(2,349,770.64)	(2,467,847.64)
Accrued Interest Purchased	163,473.19	2,984.41
Total Assets	$345,519,303.90	$383,677,480.00
Reserves and Fund Balances		
Reserves		
Irregular Payments - Escrow Account	-0-	$ 41,793.84
Fund Balances		
State Accumulation Fund	$153,215,427.99	$167,602,603.16
Teachers' Savings Fund	153,212,803.71	167,602,603.16
Allowance Reserve Fund	16,584,073.95	21,637,504.61
Guarantee Fund	9,725,225.49	12,300,756.95
Voluntary Contribution Fund	1,620,896.85	1,788,675.37
Hospital and Medical Insurance Fund	5,644,072.32	6,352,470.32
Survivor and Death Benefit Fund	5,479,460.85	6,332,693.92
General Expense Fund	37,342.74	18,378.67
Total Reserves and Fund Balances	$345,519,303.90	$383,677,480.00

TEACHERS' RETIREMENT SYSTEM

COMBINED STATEMENT OF CHANGES IN FUND BALANCES

FISCAL YEAR ENDED JUNE 30, 1973

Fund Balance, July 1, 1972			$345,519,303.90
Additions			
Teachers' Contributions		$24,885,851.66	
Teachers Reinstatements		158,214.05	
Voluntary Contributions		341,523.28	
Employer's Matching Contributions		1,852,868.65	
State Matching Contributions		24,756,510.57	
General Fund Appropriations		373,100.00	
Interest		19,203,256.67	
Treasurers Unredeemed Checks		3,051.87	
Recovery of Refund Claims		361.66	
Gain on Sale of Investements		188,675.88	
Aetna Life Insurance Company			
Interest	$32,342.00		
Experience Deficit	24,246.00	8,096.00	
Total Additions			71,771,510.29
Total Funds Available			$417,290,814.19
Deductions			
Refunds		$ 3,789,907.67	
Benefits for Service and Disability Retirement		26,900,568.97	
Survivor and Death Benefits		1,343,053.19	
General Fund Expenses		354,721.33	
Premiums Paid to Insurance Company - Comprehensive Medical Insurance Plan		1,218,228.75	
Self Insurance Medical Payments		6,824.35	
Irregular Payments - Escrow Account		41,793.84	
Forfeitures & Adjustments		29.93	
Total Deductions			33,655,128.03
Fund Balance, June 30, 1973			$383,635,686.16

ACTUARIAL VALUATION

The Actuarial Valuation as of July 1, 1972, has been previously distributed to concerned persons and groups. However, certain excerpts from the Actuarial Report are included herewith because of their importance in understanding the retirement program, and perhaps more importantly, to focus attention on the limitations of the Retirement System if adequate funding levels are not realized.

Part III of this Report summarizes the information and evaluations contained in other sections of this Valuation. While the Report is generally positive as to adequacy of funding, there are some negative factors which deserve serious consideration. These include the following:

1. The unfunded accrued liability is approximately $75 million greater than it was two years ago.

2. Failure of the State of Kentucky to provide adequate funding of the prior service liability poses a serious problem for the future. The actuary says in part, "If such contributions are not forthcoming, the actuarial soundness of the System could well be jeopardized."

3. The last paragraph of this Valuation sounds a warning which should be carefully weighed when further liberalization of benefits is being considered.

PART I

Valuation as of July 1, 1972

The results of the valuation of the System are summarized in the actuarial balance sheet set forth on the following page. These results are based on (a) membership data provided by the System, (b) the various service tables and salary scales developed as a result of the actuarial investigation of the System for the period from July 1, 1959 to June 30, 1966, as reported on December 18, 1967, and (c) an assumed investment yield rate of 4½% per annum, compounded annually, which is the rate used for the preceding valuation as of July 1, 1970.

It will be noted that the assets in the balance sheet are broken down into the two main categories of (1) the present assets, based on the value shown on the books of the System, and (2) prospective assets represented by future member and State contributions by and on behalf of present members. The various fund balances included in the total present assets of $345,521,928 are shown in the balance sheet and the distribution of these present assets is shown in a footnote.

In the prospective asset category, the present values of members' and State's contributions were each computed at a rate of 6.75% of salaries. While the actual rate for each is 7% of salaries, ¼% of this rate is paid to the Hospital and Medical Insurance Fund. Since this Fund is considered to be self-supporting, both the assets and liabilities for benefits from the Fund were eliminated from our valuation, except to the extent of reserves already on hand in the Fund. Therefore, the prospective assets reflect a present value of only a 6.75% rate for each of the members' and State's contributions, while the only liability shown for hospital and medical benefits are for the reserves currently in the Fund. Both of these present values, each amounting to $241,905,820, relate only to contributions by and on behalf of present members. The other item in this prospective asset category refers to a deficiency in reserves on the basis of this valuation totalling $406,496,166 which will be discussed in Part II of this report.

ACTUARIAL BALANCE SHEET SHOWING PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES AS OF JULY 1, 1972

ASSETS

Present assets at book value

Teachers' Savings Fund	$145,837,271*	
State Accumulation Fund	145,837,271*	
Guarantee Fund	9,725,226	
Voluntary Contributions Active Members	1,475,213*	
Allowance Reserve Fund	31,470,310*	
Hospital and Medical Insurance Fund	5,644,072	
Survivor and Death Benefit Fund	5,495,222*	
Expense Fund	37,343	
		$ 345,521,928**

Prospective assets:

Present value of future 6.75% contributions of present members	$241,905,820	
Present value of future State 6.75% contributions related to present members	241,905,820	
Deficiency in reserves to be financed in the future related to:		
Prior service	55,618,577	
Service subsequent to July 1, 1941	350,877,589	
		$ 890,307,806

TOTAL ASSETS ---------- $1,235,829,734

LIABILITIES

Present value of benefits payable to present annuitants:

Service retirement benefits	$273,586,057	
Disability retirement benefits	12,865,478	
Present and future death and survivor benefits	23,705,420	$ 310,156,955

Present value of future benefits payable to active and inactive members:

Service retirement benefits	$690,917,329	
Disability retirement benefits	44,179,652	
Refunds of contributions	124,551,362	
Death and survivor benefits	58,867,808	$ 918,516,151

Special reserves:

Voluntary Contributions- Active Members	$ 1,475,213	
Hospital and Medical Insurance Fund	5,644,072	
Expense Fund	37,343	$ 7,156,628

TOTAL LIABILITIES ---------- $1,235,829,734

*June 30, 1972 balance as adjusted for transfers made July 1, 1972 on account of retirements on July 1, 1972.

**Total present assets distributed as follows:

Cash	$ 13,419,078
Underpayments due from Employers	2,624
Invested assets	332,807,631
Amortization Reserves for Premiums and Discounts on Investments	(-) 870,879
Accrued interest	163,473
TOTAL	$345,521,928

HUGGINS

On the liability side of the balance sheet, there are two main divisions of the liability; the first relates to the present annuitants and the second to the present active and inactive members. It will be noted that the total liability on account of benefits payable in the future to annuitants is $310,156,955; the liability on account of benefits payable in the future to active and inactive members amounts to $918,516,151; and, finally, there are special reserve items of $7,156,628 representing the balances in the account for Voluntary Contributions and in the Hospital and Medical Insurance Fund and the Expense Fund.

PART II

Sufficiency of Contribution Rates Under the Law in Effect as of July 1, 1972

In this part of the report, we would like to discuss the sufficiency of the present contribution rates of 6.75% by the member and 6.75% by the State under the System as in effect as of July 1, 1972. The rates used are the amounts which are available for retirement and death benefits; i.e., the 14% total contribution less the amounts contributed by the members and matched by the State for hospital and medical insurance.

In order to study the adequacy of the contribution rate of the System as in effect on July 1, 1972, we must turn to the balance sheet shown on page 2. While most of the following comments are related to the asset side of the actuarial balance sheet, and in particular to the value of prospective future contributions on account of present members, it should be made clear that our calculation of the liability side of the actuarial balance sheet took into account the number of members who may be expected to withdraw from the Retirement System prior to eligibility for deferred vested benefits, including as liability only the amount of their accumulated contributions at the time of withdrawal. In other words, we have assumed that some of the present members will be paid retirement annuities, some will be paid disability benefits, the beneficiaries of some will be paid death or survivor benefits after the death of the member in service, and some will leave employment in the public schools and receive no more than their accumulated deposits. The liability side of the balance sheet includes our estimated value for each of these types of payments.

It will be noted in the balance sheet that, as compared with the total liability of $1,235,829,734 to provide all present and future benefits as of July 1, 1972, there were assets on hand of $345,521,928. This means that the present value of assets needed in the future to balance the liabilities is in the amount of $890,307,806. Of these future assets, it is seen from the balance sheet that $241,905,820 represents the present value of the members' effective 6.75% contributions in the future and the same figure of $241,905,820, the corresponding value of the State's effective 6.75% contributions in the future. When the total of these amounts is deducted from $890,307,806, we arrive at the over-all deficiency in reserve for the present members to be financed in the future, and this figure is $406,496,166.

Part of this deficiency, in the amount of $55,618,577, represents the unfunded portion of prior service benefits payable under the provisions of the Kentucky Teachers' Retirement Law. The Law (Section 161.550) provides for supplemental appropriations by the State to discharge this prior service obligation, so that the deficiency remaining to be funded from "permanent" State contributions is $406,496,166 minus $55,618,577, or $350,877,589.

If there is a deficiency after taking into account the present value of all future member and State contributions for present members, a question arises as to how it is possible to meet the current deficiency of $350,877,589 with the present contribution rate. One possible answer is based on the fact that this rate is more than adequate for <u>future</u> members if the present benefit structure remains in effect, and would provide excess funds in future years for funding the deficit.

We have made tests which indicate that the total contribution rate required, on the average, to fund the benefits of new entrants as a level percentage of salary during membership is 10.40% of payroll. This is the same as the corresponding rate of 10.40% used for our previous valuation as of July 1, 1970. Since the average required rate of contribution is 10.40% and the member contributes 6.75%, the State must contribute the remaining 3.65% of salary to meet the normal costs. This means that, for future entrants, there is a residual State contribution of 3.10% (i.e., 6.75% - 3.65%) which may be applied toward the deficiency for the present members.

Our calculations indicate that, if 3.10% out of the effective contribution of 6.75% by the State for future entrants is applied to fund the total unfunded accrued liability of $350,877,589 as of July 1, 1972 (ignoring the unfunded prior service liability), the funding periods on the three different assumptions as to future increases in payrolls as the result of new entrants are as follows:

	Assumptions as to Future Increases in Payroll as the Result of Future Entrants		
	Level	4% Annual Increase	6% Annual Increase
Period of funding deficiency ------	Never	39.3 years	29.2 years

Based on these results, it is our opinion that a net State contribution rate of 6.75% of payroll along with a net 6.75% contribution rate paid by members is sufficient to fund the normal cost each year and to complete the funding of the deficiency of $350,877,589 over a reasonable period of years. These funding periods have decreased from 50.2 years (with 4% annual increase) and 34.8 years (with 6% annual increases since the 1970 valuation, and these decreases are encouraging. However, the period is sufficiently long that we consider the plan still needs further stability in order to continue to decreasing the funding period.

In addition to recommending no major liberalizations without corresponding contribution increases, we wish to convey our concern about two aspects of operations. First of all, it should be pointed out that the funding period above does not make any provision for taking care of the unfunded prior service liability of the System. While the Law requires that the "state shall contribute an amount sufficient to discharge the prior service obligation with interest assumed by the state, over a period not greater than thirty years", such contributions are not being fully paid. As a result, the amount of such liability has increased from $50,931,597 as of July 1, 1970 to $55,618,577 as of July 1, 1972. In order to fund a liability of this size over the eighteen years remaining as of July 1, 1972 out of the original thirty year period, the state would have to make annual contributions of $4,376,904 on July 1, of each of those eighteen years. If such contributions are not forthcoming, the actuarial soundness of the System could well be jeopardized.

A second concern relates to the continually increasing liabilities being created under the System as the result of benefit liberalizations. The deficiency under the System (other than that related to prior service benefits) has increased during the period since our last valuation as of July 1, 1970 from $279,964,848 to $350,877,589. Furthermore, because of substantial benefit increases to present annuitants, there were less assets on hand in the entire System as of July 1, 1972 (excluding the Teachers' Savings Fund which, of course, represents the accumulations of the presently active and inactive members) then there were liabilities for present annuitants. This situation has deteriorated further since the 1970 valuation. Stated another way, if the System had terminated as of July 1, 1972, the assets would not have been sufficient to both return the personal funds, including interest, paid in by the presently non-retired teachers and procide the remaining lifetime annuities on the basis of our current actuarial assumptions. Thus, if the System had ceased operations on July 1, 1972, not one cent of state funds would have been available for any teacher who had not yet retired. A period of stability should enable the state to rebuild the assets so that active as well as retired members will have some funds on hand to undergird the liabilities for their accrued benefits.

PART III

Summary and Recommendations

This valuation of the Retirement System as of July 1, 1972 has been made using the actuarial tables developed in the actuarial investigation for the period July 1, 1959 to June 30, 1966 as submitted in our report dated December 18, 1967. In conjunction with these actuarial tables, we have used an interest assumption of 4½% per annum. These actuarial assumptions are summarized in Appendix A and we have also included as Appendix B a summary of the benefit provisions of the Retirement System.

This valuation reveals that the Retirement System is actuarially sound assuming that the total payroll continues to expand substantially in the future as the result of increases in the number of members and that the State begins to make adequate annual provision for funding the unfunded prior service liability of the System. While it is true that the deficiency of $350,877,589 in addition to the unfunded prior service liability of $55,618,577 is very high in relation to the present assets and the prospective contributions, the period required to fund the deficiency is not unduly lengthy - ranging from approximately 40 years, assuming that the total payroll increases at a rate of 4% annually in the future, to approximately 30 years, assuming increases at the rate of 6% annually in the future. These periods represent reductions from the corresponding respective periods of 50 years and 35 years which were quoted in our valuation report as of July 1, 1970.

One unfavorable aspect of the combined deficiency of $406,496,166 is that it is higher than the corresponding amount of $330,896,445 as of July 1, 1970. It might have been expected that the deficiency would have been reduced because of the introduction of new members for whom the total 14% rate of contribution by the member and the State is more than sufficient to fund benefits. However, this was more than counter-balanced by the additional liabilities resulting from

(1) substantial number of new annuitants and actives and (2) rates of salary increases substantially in excess of those assumed in calculating liabilities. Since retirement benefits are primarily based on average of the five highest salaries, salary increases for individuals at rates higher than assumed can lead to substantial increases in the deficiency.

Another unfavorable factor is the fact that the State made no payment toward the prior service liability for the fiscal years of the System ending June 30, 1971 and June 30, 1972. This situation results in increases in this liability which will have to be paid over future years.

It is our conclusion that the Retirement System is actuarially sound and that the deficiency can be met in the future. However, we recommend that no further benefit liberalizations be made at this time, without corresponding increases in contribution levels, because of (1) the experience relating to rates of increase in individual salaries, (2) the lack of payment by the State of required amounts toward the prior service liability, (3) the increasing deficiency and (4) the relatively small size of assets (which are insufficient to cover the liabilities for refunds to present members of their own contributions with interest and for future benefit payments to present annuitants, thus leaving no assets available for present members). Furthermore, the State should resume direct appropriations in the full amount required as soon as possible in order to reduce the unfunded liability for prior service.