# 32ND

annual report

# TEACHERS' RETIREMENT SYSTEM

## STATE OF KENTUCKY
## 1971 - 1972

DECEMBER 1972

COMMONWEALTH OF KENTUCKY
TEACHERS' RETIREMENT SYSTEM
TED L. CROSTHWAIT
EXECUTIVE SECRETARY
309 LEWIS STREET
FRANKFORT

December 18, 1972

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

Dear Governor Ford:

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

The Teachers' Retirement System ended the fiscal year with the usual gains in terms of return on investments, average benefits to members, and capital worth of the System's assets. On June 30, 1972, the average monthly benefit to all retirement payees was $262 as compared to an average of $230 per month a year earlier, and an average of $212 per month two years ago. The rate of investment income on June 30, 1972, had increased to 6.34% on an annual basis, up from an annual rate of 6.08% at the end of the previous fiscal year. The assets of the System increased during the year from a total of $310 million to $346 million, a gain of $36 million in total assets.

On the debit side of the ledger is the fact that accrued obligations for present and future benefits are also increasing quite rapidly as teachers' salaries are increased. There is also a large deficit in the funding of benefits based on service prior to July 1, 1941. Appropriation to the "Prior Service Fund" of $1.5 million for the 1972-74 biennium was a start in the right direction. We cannot, however, emphasize too strongly the necessity of providing a systematic amortization of this obligation over a reasonable period of time.

Kentucky teachers have an excellent program of retirement benefits, and appreciate the interest you have shown in keeping the System on a sound actuarial basis and in improving benefits for persons already retired. The special five percent cost-of-living bonus and the increased minimum annuity, which were included in the 1972 Legislative Program, have done much to offset increased living costs of our retirees.

The Board of Trustees is committed to providing the maximum benefits possible within the limits of financial ability as indicated by periodic actuarial valuations. Attention should be given to the latest actuarial valuation, portions of which are included in this Report.

TEACHERS' RETIREMENT SYSTEM

The assistance and cooperation of the Executive and Legislative branches of State Government are essential to the success of the retirement program. Your continued interest and support will be deeply appreciated.

Respectfully yours,

Harold Miller

Harold Miller, Chairman
Board of Trustees

Ted L. Crosthwait

Ted L. Crosthwait
Executive Secretary

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# TEACHERS' RETIREMENT SYSTEM
# STATE OF KENTUCKY

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## FINANCIAL

During the year ending June 30, 1972, assets of the Teachers' Retirement System increased $35,498,248.13 to a total of $345,521,928.18. This increase represents a growth rate of approximately 11 1/2%. It should be noted that of the $345.5 million in assets, $153 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 $39 million. During the month of July, 1972, benefit payments exceeded $2.3 million which indicates a reserve sufficient to cover only seventeen 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 $13.5 million in 1970 to $21.5 million in 1972. This represents an increase of approximately 60% 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 $27.5 million during 1973.

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 | |
|---|---|---|
| | 1971 | 1972 |
| Number of Active Members | 45,381 | 46,521 |
| Average Balance per Active Member | $2,804 | $3,238 |
| Number of Service Retirants Receiving Benefits | 6,748 | 7,742 |
| Average Monthly Benefit per Service Retirant | $ 247 | $ 270 |
| Number of Members Receiving Disability Benefits | 496 | 521 |
| Average Monthly Benefit per Disability Retirant | $ 189 | $ 205 |
| Number of Survivors Receiving Monthly Benefits | 296 | 327 |
| Average Monthly Benefit per Survivor | $ 163 | $ 161 |

BALANCE SHEET
Teachers' Retirement System
June 30, 1972

| | | | |
|---|---|---|---|
| **ASSETS** | | | |
| Cash, All Funds | | $ 12,872,694.88 | |
| Special Reserve Account, Aetna Life Insurance Company | | 546,383.58 | |
| | | | $ 13,419,078.46 |
| Due from Employers, Underpayments | | | 2,624.28 |
| Investments | $332,807,631.66 | | |
| Unamortized premium on Investments | 1,478,891.23 | | |
| Accrued Interest Purchased | 163,473.19 | | |
| Sub-total: Investments plus deferred charges | | $334,449,996.08 | |
| Deduct Unamortized Discount on Investments | | 2,349,770.64 | |
| | | | $332,100,225.44 |
| TOTAL ASSETS | | | $345,521,928.18 |
| **FUND BALANCES** | | | |
| Teachers' Savings Fund | | $153,215,427.99 | |
| State Accumulation Fund | | 153,215,427.99 | |
| Guarantee Fund | | 9,725,225.49 | |
| Hospital and Medical Insurance fund | | 5,644,072.32 | |
| Voluntary Contributions, Active Members | | 1,620,896.85 | |
| Administrative Expense Fund | | 37,342.74 | |
| Allowance Reserve Fund | | | |
| Teachers' Contributions | $ 3,489,037.03 | | |
| State Contributions (Permanent) | 13,095,036.92 | | |
| | | 16,584,073.95 | |
| Survivor and Death Benefit Fund | | | |
| Reserve from Contributions from Active Members | $ 4,462,388.53 | | |
| Reserve from State Matching Contributions | 843,507.93 | | |
| Teachers' Balances, Accounts in Benefit Status | 39,661.74 | | |
| State Reserve for Accounts in Benefit Status | 133,902.65 | | |
| | | 5,479,460.85 | |
| TOTAL FUND BALANCES | | | $345,521,928.18 |

## STATEMENT OF SOURCES AND APPLICATIONS OF FUNDS
### Teachers' Retirement System
### for the period July 1, 1971 - June 30, 1972

| | | | |
|---|---|---|---|
| CASH BALANCE, ALL FUNDS, July 1, 1971 | | | $ 14,782,769.31 |
| Sources: | | | |
| Teachers' Savings | $23,062,733.07 | | |
| Reinstatements | 159,087.89 | | |
| Voluntary Unmatched Contributions | 329,992.52 | | |
| Total from Members | | $23,551,813.48 | |
| State Contributions: | | | |
| Permanent, to match teachers' Savings | $21,339,419.50 | | |
| Deficiency appropriation for matching | 850,966.50 | | |
| Administrative expenses | 342,675.00 | | |
| | | 22,533,061.00 | |
| Interest Collected, Bonds Redeemed or Sold, Adjustments | | 79,009,111.47 | |
| Recovery from Aetna Life Insurance Company | | 227,120.45 | |
| Employer Matching of Teacher Contributions (Federal Funds) | | 1,733,656.39 | |
| Total Receipts | | | 127,054,762.79 |
| TOTAL CASH AVAILABLE | | | $141,837,532.10 |
| Applications: | | | |
| Administrative Expenses, Current Year | $ 305,332.26 | | |
| Liquidation of Prior Year Encumbrances | 19,221.86 | | |
| | | 324,554.12 | |
| Refunds for Withdrawal from Membership | | 2,992,943.69 | |
| Premiums for Comprehensive Medical Insurance Plan | | 1,074,783.78 | |
| Benefits for Service and Disability Retirement | 21,552,155.98 | | |
| Survivor Payments | 625,411.75 | | |
| Death Benefits | 547,260.63 | | |
| | | 22,724,828.36 | |
| Purchase of Investments and Miscellaneous Adjustments | | 101,301,343.69 | |
| Total Disbursements | | | 128,418,453.64 |
| CASH BALANCE, ALL FUNDS, June 30, 1972 | | | $ 13,419,078.46 |

TEACHERS' RETIREMENT SYSTEM
COMPARATIVE BALANCE SHEET
June 30, 1972

| | YEAR ENDING | | | | | |
|---|---|---|---|---|---|---|
| | June 30, 1970 | | June 30, 1971 | | June 30, 1972 | |
| | AMOUNT | % | AMOUNT | % | AMOUNT | % |
| ASSETS | | | | | | |
| Cash, All Funds | $ 4,727,097.66 | 1.73 | $ 14,338,506.18 | 4.62 | $ 12,872,694.88 | 3.73 |
| Special Reserve Account, Aetna Life Insurance | 368,679.17 | .14 | 444,263.13 | .15 | 546,383.58 | .16 |
| Due from Employers, Underpayments | 766,945.60 | .28 | (19,438.91) | (.01) | 2,624.28 | .01 |
| Investments | 267,514,029.31 | 98.01 | 295,882,441.14 | 95.44 | 332,807,631.66 | 96.30 |
| Unamortized Premium on Investments | 2,248,694.48 | .82 | 1,783,798.37 | .58 | 1,478,891.23 | .43 |
| Accrued Interest Purchased | 83,858.12 | .03 | 304,685.77 | .10 | 163,473.19 | .05 |
| Unamortized Discount on Investments | (2,761,187.46) | (1.01) | (2,730,014.54) | (.88) | (2,349,770.64) | (.68) |
| TOTAL ASSETS | $ 272,948,116.88 | 100.00 | $ 310,004,241.14 | 100.00 | $ 345,521,928.18 | 100.00 |
| FUND BALANCES | | | | | | |
| Teachers' Savings Fund | $ 123,436,152.28 | 45.22 | $ 138,181,127.07 | 44.57 | $ 153,215,427.99 | 44.35 |
| State Accumulation Fund | 123,436,152.28 | 45.22 | 138,181,127.07 | 44.57 | 153,215,427.99 | 44.35 |
| Guarantee Fund | 7,794,644.87 | 2.86 | 10,376,855.57 | 3.35 | 9,725,225.49 | 2.80 |
| Hospital and Medical Insurance Fund | 3,895,179.95 | 1.43 | 4,702,372.48 | 1.52 | 5,644,072.32 | 1.63 |
| Voluntary Contributions Fund | 1,221,859.12 | .45 | 1,483,123.49 | .48 | 1,620,896.85 | .47 |
| Administrative Expense Fund | 21,586.62 | .01 | 40,880.70 | .01 | 37,342.74 | .01 |
| Allowance Reserve Fund | 9,116,843.84 | 3.34 | 12,278,236.41 | 3.96 | 16,584,073.95 | 4.80 |
| Survivor and Death Benefit Fund | 4,025,697.92 | 1.47 | 4,760,518.35 | 1.54 | 5,479,460.85 | 1.59 |
| TOTAL FUND BALANCES | $ 272,948,116.88 | 100.00 | $310,004,241.14 | 100.00 | $ 345,521,928.18 | 100.00 |

TEACHERS' RETIREMENT SYSTEM
COMPARATIVE STATEMENT OF SOURCE AND APPLICATION OF FUNDS
June 30, 1972

| | YEAR ENDING | | | | | |
|---|---|---|---|---|---|---|
| | June 30, 1970 | | June 30, 1971 | | June 30, 1972 | |
| | AMOUNT | % | AMOUNT | % | AMOUNT | % |
| Beginning Cash Balance: | $ 3,378,874.03 | | $ 5,095,776.83 | | $ 14,782,769.31 | |
| Source of Funds | | | | | | |
| Teachers' Savings | $19,774,253.40 | 28.99 | $ 22,005,053.79 | 15.21 | $ 23,062,733.07 | 18.15 |
| Reinstatements | 138,744.37 | .20 | 203,355.97 | .14 | 159,087.89 | .12 |
| Voluntary Unmatched Contributions | 271,835.39 | .40 | 328,259.71 | .23 | 329,992.52 | .26 |
| State Contributions: | | | | | | |
| Permanent, to match teachers' savings | 16,913,000.00 | 24.79 | 20,351,111.52 | 14.07 | 21,339,419.50 | 16.80 |
| Deficiency appropriation for matching | --- | --- | 2,162,416.48 | 1.49 | 850,966.50 | .67 |
| Administrative Expenses | 274,910.00 | .41 | 364,742.00 | .25 | 342,675.00 | .27 |
| Interest Collected, Bonds Redeemed or Sold, Adjustments | 29,639,600.59 | 43.45 | 97,542,869.48 | 67.42 | 79,009,111.47 | 62.19 |
| Recovery from Aetna Life Insurance Company | 104,891.45 | .15 | 75,583.96 | .05 | 227,120.45 | .18 |
| Employer Matching of Teacher Contributions (Federal Funds) | 1,099,535.72 | 1.61 | 1,653,942.27 | 1.14 | 1,733,656.39 | 1.36 |
| Total Source of Funds | $68,216,770.92 | 100.00 | $144,687,335.18 | 100.00 | $127,054,762.79 | 100.00 |
| Total Cash Available | $71,595,644.95 | | $149,783,112.01 | | $141,837,532.10 | |
| Application of Funds | | | | | | |
| Administrative Expenses | $ 256,681.96 | .39 | $ 327,149.10 | .24 | $ 324,554.12 | .25 |
| Refunds for Withdrawal from Membership | 2,892,906.03 | 4.35 | 3,510,477.53 | 2.60 | 2,992,943.69 | 2.33 |
| Premiums for Comprehensive Medical Insurance | 657,644.81 | .99 | 959,334.27 | .71 | 1,074,783.78 | .84 |
| Benefits for Service and Disability Retirement | 13,514,163.06 | 20.32 | 17,470,077.33 | 12.94 | 21,552,155.98 | 16.78 |
| Survivor Benefits | 221,773.28 | .33 | 625,778.69 | .46 | 625,411.75 | .49 |
| Death Benefits | 285,887.53 | .43 | 508,000.00 | .38 | 547,260.63 | .43 |
| Purchase of Investments and Miscellaneous Adjustments | 48,670,811.45 | 73.19 | 111,599,525.78 | 82.67 | 101,301,343.69 | 78.88 |
| Total Application of Funds | $66,499,868.12 | 100.00 | $135,000,342.70 | 100.00 | $128,418,453.64 | 100.00 |
| Ending Cash Balances | $ 5,095,776.83 | | $ 14,782,769.31 | | $ 13,419,078.46 | |

COMPARISON OF TEACHERS' SAVINGS AND MATCHING FUNDS
Teachers' Retirement System
for the period July 1, 1940 through June 30, 1972

| Date | Teachers' Savings | Federal Matching Contributions | State Matching Contributions | State Prior Service Contributions | 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 |
| TOTALS | $191,263,541.07 | $8,086,878.44 | $182,999,284.74 | $ 11,570,087.38 | $4,139,218.52 |



RECAPITULATION

| | |
|---|---|
| State permanent contributions to match teacher payments | $182,999,284.74 |
| Federal matching through remittances by Employers | 8,086,878.44 |
| Total matching under the statutory requirement for 100% matching of teachers payments | $191,086,163.18 |
| Teacher payments made thru June, 1972 | 191,263,541.07 |
| State deficit in current matching contributions as of June 30, 1972 | ($177,377.89) |

REFUNDS
Teachers' Retirement System
July 1, 1940 to June 30, 1972

| 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 |
| TOTALS | 68,166 | $24,318,379.38 | 1766 | $2,223,970.37 | 961 | $47,962.13 | 70,893 | $26,590,311.88 |

## ANALYSIS OF ACCOUNTS REFUNDED 1971-72
### Teachers' Retirement System of the State of Kentucky

| REASON FOR WITHDRAWAL | MALES | FEMALES | TOTAL | AMOUNT |
|---|---|---|---|---|
| Other Teaching Employment: | | | | |
| State of Ohio | 40 | 79 | 119 | 96,821.59 |
| State of Florida | 25 | 49 | 74 | 80,608.61 |
| State of Indiana | 27 | 73 | 100 | 70,704.60 |
| Other States | 164 | 339 | 503 | 457,229.36 |
| Outside Limits of USA | 7 | 5 | 12 | 13,580.12 |
| Kentucky school not covered by Teachers' Retirement System | 22 | 39 | 61 | 72,518.26 |
| Non-Teaching Employment: | | | | |
| Entered Business or Industry | 249 | 60 | 309 | 393,932.96 |
| Church-Related Profession | 23 | 5 | 28 | 26,482.52 |
| Medical Profession | 4 | 8 | 12 | 7,865.24 |
| Legal Profession | 6 | 1 | 7 | 8,556.14 |
| Military Service | 33 | 1 | 34 | 21,784.95 |
| Further Training & Education | 102 | 133 | 235 | 207,345.91 |
| Local, State, or Federal Goverm't | 53 | 39 | 92 | 84,721.06 |
| Homemaking, Family Duties, Children | | 501 | 501 | 509,237.23 |
| Husband Transferred Within Kentucky | | 2 | 2 | 3,155.77 |
| Husband Transferred Out of Kentucky | | 276 | 276 | 234,127.80 |
| Moved Residence to Another State | 6 | 25 | 31 | 21,171.06 |
| Emergency Teacher, Not Re-employed | 49 | 85 | 134 | 99,714.54 |
| Salary too Low | 44 | 11 | 55 | 49,399.11 |
| Needed the Money | 4 | | 4 | 12,786.29 |
| Disliked Teaching | 16 | 11 | 27 | 18,340.03 |
| Personal Reasons | 81 | 156 | 237 | 231,291.43 |
| Illness of Member | 9 | 29 | 38 | 68,051.40 |
| Death of Member | 11 | 25 | 36 | 131,650.80 |
| Absent from Profession 4 - 6 Years | 3 | 5 | 8 | 3,729.13 |
| Lost Service Credit, Absent 7 or more Yrs | 34 | 78 | 112 | 19,607.81 |
| Sub-total | 1012 | 2035 | 3047 | 2,944,413.72 |
| Adjustments | 17 | 23 | 40 | 5,953.59 |
| Grand Total | 1029 | 2058 | 3087 | 2,950,367.31 |

# INVESTMENTS

Again the Teachers' Retirement System ended the year with record returns on invested reserves. Our yield continues to fall in the upper ten percent of similar systems throughout the nation. These results are secured within a framework of high quality investments.

Action by the 1972 General Assembly increased the permissible investment in common stocks to forty percent of assets. At the close of the 1971-72 fiscal year the share of assets invested in common and preferred stocks was only slightly higher than as at the close of the previous fiscal year, but the total amount invested in common stocks had increased by about $12. 8 million.

During this fiscal year the Trustees have continued an active program of portfolio improvements through exchanges of securities, and purchases of investment grade securities. Increases of yields on investments have resulted both from higher interest rates on current offerings and on improvements of returns due to exchanges of securities. Details of the various transactions are too voluminous to include here, but such information on each transaction is available to auditors and other interested persons.

ANALYSIS OF INVESTMENTS HELD AT JUNE 30, 1972

to show annual yield rate

Teachers' Retirement System of the State of Kentucky

| | Percentage of Total | Par Value | Interest Income/Year | Annual Yield |
|---|---|---|---|---|
| Obligations Secured by U. S. Treasury | 2.15% | $ 7,161,830.38 | $ 441,006.29 | 6.158% |
| Federal Agencies | 4.00% | 13,311,459.07 | 818,312.45 | 6.147% |
| FHA & VA Mortgages | 12.86% | 42,809,074.75 | 2,360,207.46 | 5.513% |
| Other Guaranteed Mortgages | 3.88% | 12,912,214.59 | 845,155.36 | 6.545% |
| Corporate Bonds | 56.29% | 187,324,459.73 | 12,267,973.10 | 6.549% |
| Municipal Bonds | .13% | 424,000.00 | 21,373.12 | 5.041% |
| Kentucky Industrial Development Finance Authority | .42% | 1,411,666.66 | 70,508.33 | 4.995% |
| Sub-Total | 79.73% | $265,354,705.18 | $16,824,536.11 | |

**NET YIELD RATE**: (Fixed Dollar Assets)

$16,824,536.11 ÷ $265,354,705.18 = 6.340%

| Not Included Above: | | Cost |
|---|---|---|
| 1,365,401 Shares Common Stocks | 19.87% | 66,123,211.48 |
| 25,000 Shares Preferred Stocks | .40% | 1,329,715.00 |
| TOTAL INVESTMENTS | 100.00% | $332,807,631.66 |

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 |

# AUDIT

In May, 1972, we received the Audit Report from the Auditor of Public Accounts for the fiscal years ending June 30, 1970, and 1971. Pages 14 thru 18 are excerpts from that Report and include the Auditor's comments as well as copies of pertinent financial statements.

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

A. Comments 1 and 2: The Teachers' Retirement System is now reconciling account and fund balances with the Department of Finance on a monthly basis.

B. Comments 3 and 4: Every effort is being made to expedite the receipt and processing of Employers Annual Reports. A new record was established for the fiscal year ending June 30, 1972, as statements were mailed to the active teachers in October, 1972. The Auditor of Public Accounts was advised of this schedule and was able to request member confirmations in conjunction with the regular statement mailing.

C. Comments 6, 7, and 8: Although the accounting methods utilized by this Retirement System are employed in a number of other public retirement systems, our auditors continue to take exceptions to our accounting procedures. The whole question of investment accounting practices for tax-exempt pension funds has been under study by the American Institute of Certified Public Accountants, for several years, and we are still awaiting their decision in regard to this accounting principle. Apparently the audit community will not alter its thinking until some pronouncement is published by the AICPA. Given this situation, the Teachers' Retirement System has re-evaluated its position. After several meetings with staff members from the Office of the Auditor of Public Accounts, we have agreed to change our investment accounting procedures effective July 1, 1972. We intend to continually monitor all proceedings concerning this matter and hope that one day soon the public accounting sector will recognize that a tax-exempt state retirement system is deserving consideration not otherwise applicable to a taxable corporate operation.

COMMONWEALTH OF KENTUCKY
AUDITOR OF PUBLIC ACCOUNTS
FRANKFORT 40601

MARY LOUISE FOUST, C.P.A.
AUDITOR

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

May 18, 1972

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

Board of Trustees
Teachers' Retirement System of the
Commonwealth of Kentucky
Frankfort, Kentucky

Gentlemen:

We have examined the financial records of the Teachers' Retirement System of the Commonwealth of Kentucky for the fiscal years ended June 30, 1970 and June 30, 1971, and submit herewith our report.

Our examination included a review of the balance sheet and the related statement of cash receipts and disbursements. 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.

Respectfully submitted,

Mary Louise Foust

Mary Louise Foust, CPA
Auditor of Public Accounts

## COMMENTS

1. The Teachers' Retirement System is not keeping adequate records of the Trust and Agency Funds on deposit with the Kentucky State Treasury. The System does not reconcile the balance of each fund to the records of the Department of Finance. As a result of this, there were pay-in vouchers that were not credited and expenditures were not charged to the proper fund. These errors were not corrected until the time of this examination.

2. The funds maintained by the System should be reconciled at least quarterly with the records of the Department of Finance. Also, transfers between funds made on the System's records should coincide with the transfers on the records of the Department of Finance.

3. The school boards remit the teachers' withholdings monthly to the System. The System submits an annual statement to the teachers showing the breakdown of withholdings for a fiscal year. At the time of this examination, the individual accounts were not complete for the fiscal year ended June 30, 1971. Some school boards were late in remitting the withholdings from teachers' salaries. We recommend the school boards remit the withholdings promptly, and the System submit to the teachers the annual statement as soon as possible after the close of the fiscal year.

4. 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, 1970. As the individual accounts were not complete for the fiscal year ended June 30, 1971, we were unable to obtain confirmations for that year.

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

### Investments

6. The System has been selling low-yield investments and reinvesting the proceeds in 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.

7. During the fiscal years ending June 30, 1970, and June 30, 1971, the System had losses of $1,247,481.00 and $9,040,100.00 respectively. Of these losses, $1,757,844.00 was recognized and $7,759,845.00 was treated as additional cost of the new securities. This method of handling losses or gains has the effect of over-stating the investment cost and the guarantee fund balance, and under-stating the loss on sale of investments.

8. 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.

COMMENTS
(Concluded)

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

10. 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 1968. The System is in the process of having one done now.

TEACHERS' RETIREMENT SYSTEM

Exhibit A

COMPARATIVE BALANCE SHEET

| Assets | June 30, 1970 | June 30, 1971 |
|---|---|---|
| Cash | $ 4,723,809.86 | $ 14,319,309.52 |
| Special Reserve Account - Aetna Life Insurance | 368,697.17 | 444,263.13 |
| Investments | 267,514,029.31 | 295,882,441.14 |
| Unamortized Premiums on Investments | 2,248,694.48 | 1,783,798.37 |
| Unamortized Discounts on Investments | (2,761,187.46) | (2,730,014.54) |
| Accrued Interest Purchased | 83,858.12 | 304,685.77 |
| Total Assets | $272,177,901.48 | $310,004,483.39 |
| **Fund Balances** | | |
| State Accumulation Fund | $121,822,993.00 | $138,153,790.43 |
| Teachers' Savings Fund | 122,699,884.86 | 138,152,593.53 |
| Allowance Reserve Fund | 3,817,026.08 | 3,039,278.60 |
| Guarantee Fund | 14,677,104.82 | 19,614,001.53 |
| Voluntary Contribution Fund | 1,221,859.12 | 1,483,123.49 |
| Hospital and Medical Insurance Fund | 3,895,061.17 | 4,703,816.18 |
| Survivor and Death Benefit Fund | 4,025,673.61 | 4,857,879.63 |
| General Expense Fund | 18,298.82 | -0- |
| Total Fund Balances | $272,177,901.48 | $310,004,483.39 |

TEACHERS' RETIREMENT SYSTEM — Exhibit B

COMBINED STATEMENT OF CHANGES IN FUND BALANCES

| | Fiscal Year Ended | |
|---|---|---|
| | June 30, 1970 | June 30, 1971 |
| Beginning Fund Balance | $239,273,729.40 | $272,177,901.48 |
| **Additions** | | |
| Teachers' Contributions | $ 19,775,000.15 | $ 22,772,128.15 |
| Teachers' Reinstatements | 138,744.36 | 203,355.81 |
| Voluntary Unmatched Contributions | 271,835.39 | 328,259.71 |
| Employer's Matching Contributions | 1,099,266.83 | 1,910,213.58 |
| State Matching Contributions | 16,913,000.00 | 22,513.528.00 |
| General Fund Appropriations | 274,910,00 | 364,742.00 |
| Interest | 12,453,229.63 | 14,778,197.46 |
| Experience of Prior Year Premiums | 93,021.00 | 57,150.00 |
| Recovery of Refund Claims | 7,033.82 | -0- |
| Total Additions | $ 51,026,041.18 | $ 62,927,574.71 |
| Total Funds Available | $290,299,770.58 | $335,105,476.19 |
| **Deductions** | | |
| Refunds | $ 2,892,906.03 | $ 3,512,128.72 |
| Benefit for Service and Disability Retirement | 13,474,312.32 | 17,470,735.34 |
| Premiums Paid to Insurance Company | | |
| Comprehensive Medical Insurance Plan | 657,626.81 | 959,352.27 |
| Survivor and Death Benefit Payments | 579,964.32 | 1,133,120.70 |
| General Fund Expenses | 256,611.18 | 343,058.16 |
| Loss on Sale of Investments | 260,448.44 | 1,682,597.61 |
| Total Deductions | $ 18,121,869.10 | $ 25,100,992.80 |
| Ending Fund Balance | $272,177,901.48 | $310,004,483.39 |

## ACTUARIAL VALUATION

The Actuarial Valuation as of July 1, 1970, was received in June of 1972, and copies have 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 $33 million greater than it was two years ago.

2. Even though the current contribution rate is found to be sufficient to fund accrued current liabilities, the portion of contributions which may be applied to this purpose is slightly less than was the case two years ago.

3. 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".

4. 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, 1970

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 4 1/2% per annum, compounded annually, which is the rate used for the preceding valuation as of July 1, 1968.

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 $273,204,286 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, 1/4% 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 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 $330,896,445 which will be discussed in Part II of this report.

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 $200,420,141; the liability on account of benefits payable in the future to active and inactive members amounts to $811,448,183; and, finally, there are special reserve items of $5,083,413 representing the balances in the account for Voluntary Contributions and in the Hospital and Medical Insurance Fund

## ACTUARIAL BALANCE SHEET SHOWING PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES AS OF JULY 1, 1970

### A S S E T S

| | | |
|---|---|---|
| **Present assets at book value** | | |
| Teachers' Savings Fund | $119,251,717* | |
| State Accumulation Fund | 119,251,717* | |
| Guarantee Fund ——— | 8,050,814 | |
| Voluntary Contributions Active Members ——— | 1,166,647* | |
| Allowance Reserve Fund | 17,540,927* | |
| Hospital and Medical Insurance Fund ——— | 3,895,180 | |
| Survivor and Death Benefit Fund ——— | 4,025,698* | |
| Expense Fund ——— | 21,586 | $273,204,286** |
| **Prospective assets:** | | |
| Present value of future 6.75% contributions of present members — | $206,425,503 | |
| Present value of future State 6.75% contributions related to present members ——— | 206,425,503 | |
| Deficiency in reserves to be financed in the future related to: | | |
| Prior service ——— | 50,931,597 | |
| Service subsequent to July 1, 1941 ——— | 279,964,848 | 743,747,451 |
| TOTAL ASSETS ——— | | $1,016,951,737 |

### L I A B I L I T I E S

| | | |
|---|---|---|
| **Present value of benefits payable to present annuitants:** | | |
| Service retirement benefits — | $173,064,453 | |
| Disability retirement benefits | 11,706,937 | |
| Present and future death and survivor benefits ——— | 15,648,751 | $ 200,420,141 |
| **Present value of future benefits payable to active and inactive members:** | | |
| Service retirement benefits — | $630,188,793 | |
| Disability retirement benefits | 37,578,138 | |
| Refunds of contributions ——— | 101,083,985 | |
| Death and survivor benefits — | 42,597,267 | 811,448,183 |
| **Special reserves:** | | |
| Voluntary Contributions-Active Members ——— | $ 1,166,647 | |
| Hospital and Medical Insurance Fund ——— | 3,895,180 | |
| Expense Fund ——— | 21,586 | 5,083,413 |
| TOTAL LIABILITIES ——— | | $1,016,951,737 |

*June 30, 1970 balance as adjusted for transfers made July 1, 1970 on account of retirements on July 1, 1970.

**Total present assets distributed as follows:

| | |
|---|---|
| Cash ——— | $ 4,983,267 |
| Underpayments due from Employers ——— | 766,946 |
| Invested assets ——— | 267,514,029 |
| Amortization Reserves for Premiums and Discounts on Investments ——— | (-) 512,493 |
| Miscellaneous ——— | 452,537 |
| TOTAL ——— | $273,204,286 |

and the Expense Fund.

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## PART II

Sufficiency of Contribution Rates Under the Law in Effect as of July 1, 1970

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, 1970. 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, 1970, we must turn to the balance sheet shown on page 21. 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 $1,016,951,737 to provide all present and future benefits as of July 1, 1970, there were assets on hand of $273,204,286. This means that the present value of assets needed in the future to balance the liabilities is in the amount of $743,747,451. Of these future assets, it is seen from the balance sheet that $206,425,503 represents the present value of the members' effective 6.75% contributions in the future and the same figure of $206,425,503, the corresponding value of the State's effective 6.75% contributions in the future. When the total of these amounts is deducted from $743,747,451, we arrive at the over-all deficiency in reserve for the present members to be financed in the future and this figure is $330,896,445.

Part of this deficiency, in the amount of $50,931,597, 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 $330,896,445 minus $50,931,597, or $279,964,848.

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 $279,964,848 with the present contribution rate. One possible answer is based on the fact that this rate is more than adequate for future 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 approximately the same as the corresponding rate of 10.38% used for our previous valuation as of July 1, 1968. 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.

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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 $279,964,848 as of July 1, 1970 (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 | 50.2 years | 34.8 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 $279,964,848 over a reasonable period of years. However, the period is sufficiently long that we consider the plan needs a period of stability in order to decrease the funding period.

In addition to recommending a period of stability, 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 $47,055,402 as of July 1, 1968 to $50,931,597 as of July 1, 1970. In order to fund a liability of this size over the twenty years remaining as of July 1, 1970 out of the original thirty year period, the State would have to make annual contributions of $3,746,800 on July 1 of each of those twenty 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, 1968 from $250,007,532 to $279,964,848. Furthermore, because of substantial benefit increases to present annuitants, there were less assets on hand in the entire System as of July 1, 1970 (excluding the Teachers' Savings Fund which, of course, represents the accumulations of the presently active and inactive members) than there were liabilities for present annuitants. Stated another way, if the System had terminated as of July 1, 1970, the assets would not have been sufficient to both return the personal funds, including interest, paid in by the presently non-retired teachers and provide the remaining lifetime annuities to present annuitants. Thus, if the System had ceased operations on July 1, 1970, 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, 1970 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 4 1/2% 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 $279,964,848 in addition to the unfunded prior service liability of $50,931,597 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 50 years, assuming that the total payroll increases at a rate of 4% annually in the future, to approximately 35 years, assuming increases at the rate of 6% annually in the future. These periods represent reductions from the corresponding respective periods of 54 years and 37 years which were quoted in our valuation report as of July 1, 1968.

One unfavorable aspect of the combined deficiency of $330,896,445 is that it is higher than the corresponding amount of $297,062,934 as of July 1, 1968. 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) benefit liberalizations since July 1, 1968 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 year of the System ending June 30, 1970 and paid only $424,963 for the year ending June 30, 1969. This situation results in increases in this liability which will have to be paid over future years.

It is our conclusion that thy 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 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 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.