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# Annual Report

of the  
Pennsylvania Public School  
Employes' Retirement System /  
301 Chestnut Street  
Harrisburg, PA 17101

June 30, 1981

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***Cover:***

*Top Photo: (left to right)*

**James A. Perry**

**Assistant Executive Director**

**M. Andrew Sheffler**

**Executive Director**

*at Capitol Rotunda*

*Wraparound Photo:*

**Employees of**

**Public School Employees'**

**Retirement System**

*at headquarters*

*City Towers, Harrisburg*

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# Pennsylvania Public School Employes' Retirement System

## Board of Trustees

Nancy M. Noonan, *Chairperson*  
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Linda L. Weidner, *Director, Contributor Services*  
Thomas E. Yagel, *Director, Administrative Services*  
John C. Sandrock, *Special Projects Coordinator*  
Nell F. Knight, *Director, Public Information*

## Legal Counsel

Thomas Mangan, *Chief Counsel*

## Advisors

*Investment Counsel*  
Mellon Bank, NA  
Mellon Square  
Pittsburgh, PA 15230

*Mortgage Counsel*  
The Fidelity Bank  
P.O. Box 1300  
Philadelphia PA 19105

## Actuary

George B. Buck Consulting Actuaries, Inc.  
2 Pennsylvania Plaza  
New York, NY 10001



COMMONWEALTH OF PENNSYLVANIA  
PUBLIC SCHOOL EMPLOYEES' RETIREMENT SYSTEM  
BOX 125  
HARRISBURG, PENNSYLVANIA 17108

December 31, 1981

CHAIRMAN OF THE BOARD

Honorable Dick Thornburgh  
Governor of Pennsylvania

and

Members of the Legislature

Dear Governor Thornburgh and Members of the Legislature:

The Board of Trustees of the Pennsylvania Public School Employees' Retirement System is pleased to submit this report for the fiscal year 1980-81.

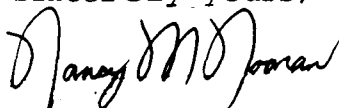
PSERS maintains its position as the 15th largest fund--public or private--in the nation with assets at June 30, 1981, of \$5.3 billion, an increase of \$485 million over 1979-80. This rate of increase is adequate to meet the System's obligations to provide benefits to all members.

Investment income has increased for the year by 18.8 percent from \$316.3 million to \$375.8 million.

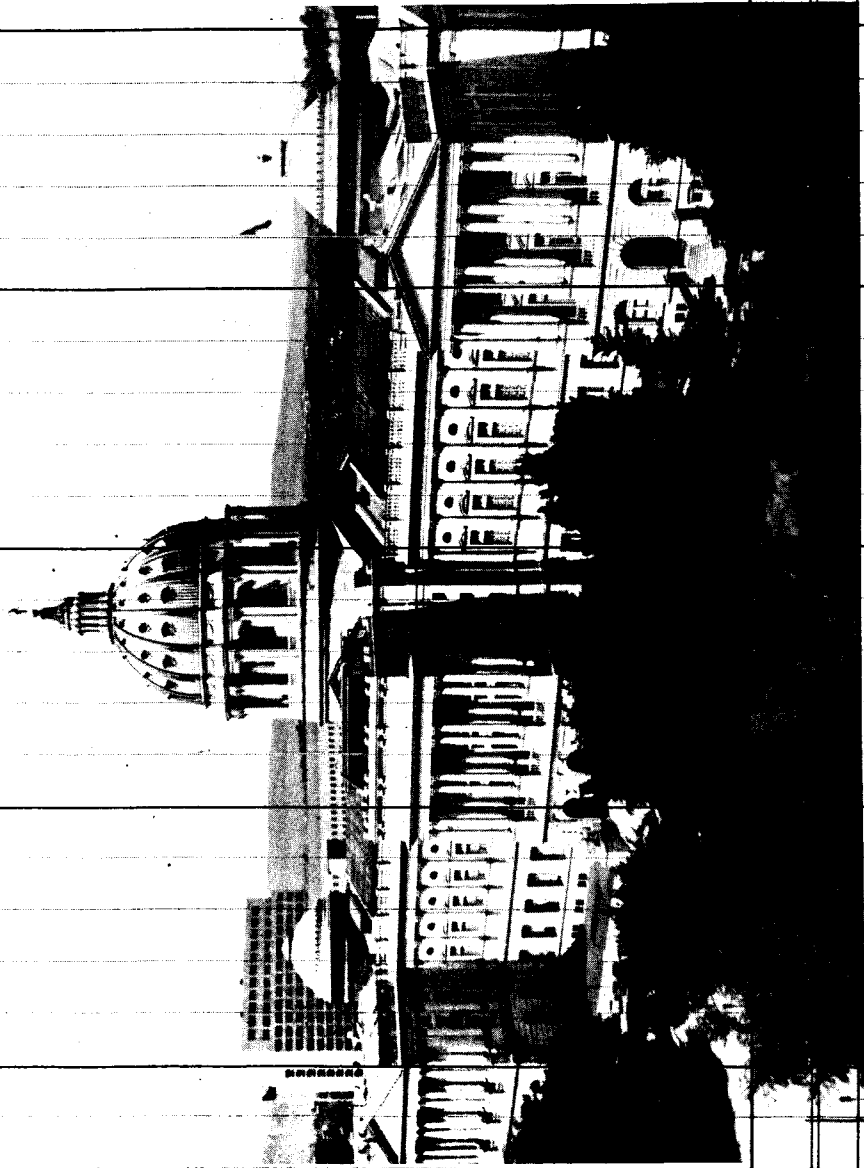
Two opinion letters appear in this report. The first, from Peat, Marwick, Mitchell & Co., Certified Public Accountants, accompanies a balance sheet that fairly states the financial position of PSERS. The second is from George B. Buck Consulting Actuaries, Inc., and attests to the actuarial soundness of the System to fund its liabilities.

We appreciate your interest in the Public School Employees' Retirement System and ask your continued cooperation in strengthening the Fund for the benefit of all its members and annuitants.

Sincerely yours,

  
Nancy M. Noonan







# Year-End Report

June 30, 1981



## INVESTMENTS

The Fund's total assets increased by \$485 million from \$4.9 billion to \$5.3 billion. Net investment income increased by 14.2 percent from \$307.4 million to \$351.2 million. Contributions from reporting units, the Commonwealth and active members of the System totaled \$654.2 million. This was \$96.1 million greater than the contributions of the previous fiscal year. A total of \$522.7 million was paid out in retirements, disabilities, death benefits, refunds, transfers to the State Retirement System, and administrative expenses.

Allocations of assets at year-end found the book value of fixed income investments, corporate and government bonds claimed \$2.5 billion

or 50.4 percent; common and preferred stocks, \$842.3 million or 16.7 percent; FHA and VA government insured mortgages, \$884.3 million or 17.5 percent; and short-term investments, \$773.5 million or 15.4 percent. More important in terms of market value, for the first time, the equity commitment amounted to more than \$1 billion on June 30, 1981.

Results reported by the corporations in which the Retirement Fund is invested in common and preferred stocks have continued on the whole to be excellent. Of the stocks owned by the Fund at both the beginning and end of the year, 65 declared higher dividends during the year.

New federally insured project mortgages in the amount of \$103.8 million were initiated dur-

ing this period. Since July 1, 1980 the Fund has invested \$26.7 million in attractive equity real estate projects, a new vehicle of investments, offering protection to the Fund against inflation.

## ACTUARIAL

The actuarial valuation method used to measure the financial requirements to support present and future demands upon the Fund is the projected benefit method with level percentage entry age, normal costs, and an open-ended accrued liability. Actuarial gains and losses were reflected in the period remaining to liquidate the unfunded accrued liability.

A reconciliation between the actuary's valuation balance sheet and the financial balance sheet appears on page 55. This reconciliation places the Public School Employees' Retirement System's assets in proper perspective with the required obligations projected by George B. Buck Consulting Actuaries, Inc.

A planned funding of the unfunded accrued liability is being effectively pursued. A 25-year projection of this Fund's financial position indicates the accrued liability, as it presently exists, will be funded fully within this period; however, to maintain the planned funding the employers' contribution rates will have to be increased beginning July 1, 1982, to support the results of the five-year, actuarial investigation.

Two notable accomplishments for the year included a five-year investigation of actual experience against the actuarial assumptions and the third outside independent financial audit was made, both of which have confirmed a commitment to a secure Retirement System.

## ACCOUNTING

The asset valuation is measured by an accrual accounting system reflecting the amortized cost of bonds and mortgages and the initial cost of stocks.

All income and expenses are recorded in the period earned or contracted regardless of when the cash is received or paid. This is in conformance with accepted accounting principles.

A footnote to the financial balance sheet contains the market value of the investments as a memo figure only. Since the Fund derives 68

percent of its income from fixed investments, which will presumably be held to maturity, the market value will not affect the value of the assets held by this Fund. The market value is listed in compliance with the System's policy for full disclosure.

A penalty on delinquent amounts due from the reporting units plus deductions of past-due contributions from the educational subsidies of the reporting units assisted in raising the level of employer contributions.

## SERVICES

Completion of the automated investment procedure was achieved in the 1980-81 fiscal year and processing of the purchases, sales and maturity transactions are being handled in a more efficient manner. This enables the Retirement System to relay the position of the investment categories to the money managers thereby giving them more time for their future investment planning and assist in improving the yield on investments.

About 90 percent of the reporting units' employe and 50 percent of the employer contributions are forwarded to a lock box or wire transferred to a bank. This is an improvement in the volume of cash flowing in a more direct manner to short-term investments than last year, putting the cash to work sooner, earning investment income.

The System is now developing an on-line retirement processing system to render a streamlined, secure method of preparing voucher transmittals for retirement with the built-in audit controls recommended by Peat, Marwick, Mitchell & Co.

Refunds during this period averaged a three-week turn-around, with 12,243 refund checks issued in 1980-81. Enrollment processing and beneficiary processing are on a one-day turn-around.

Acquisition of a new computerized data entry system has resulted in the reduction of time to process quarterly reports as well as providing additional validation of information, and expansion of pre-sorted first class mailing to all major computer-produced mailers has brought a savings of more than \$8,000 during the year.

The System added 3,289 annuitants to the payroll during 1980-81 for a total of 69,740. Outgoing mail from the System averaged 203,016 pieces, not including 800,552 annuity checks. Incoming mail averaged 13,610 pieces per month, or more than 600 pieces a day.

## LEGISLATION

Pending legislation (SB994) has been introduced which, if passed, will allow the Fund to invest in many more types of investments, an important advancement in the continued growth of income.

# Financial Highlights

# Contribution Statement

June 30

	1981	1980
Contributions from School Districts	\$238,628,734	\$195,164,681
Less: Refunded to School Districts	3,898	(36,000)
Sub-Total	\$238,632,632	\$195,128,681
Contributions from Employes	\$173,147,492	\$157,835,753
Less: Refund Checks Returned to Cash	(187,641)	(133,820)
Sub-Total	\$172,959,851	\$157,701,933
Installment Purchases	\$ 2,346,219	\$ 3,627,573
Contributions from Commonwealth	\$240,230,000	\$201,673,857
Total	\$654,168,702	\$558,132,044

# Income Statement

June 30

	1981	1980
Investment Income	\$375,772,938	\$316,255,970
Plus: Discounts, Gains & Misc. Revenue (Note 1)	41,652,970	27,586,289
Less: Deductions (Note 2)	(56,205,785)	(36,625,779)
Deductions (Note 3)	(10,000,000)	0
Other Revenue	0	222,475
Total	\$351,220,123	\$307,438,955

Distribution of Net Income:		
State Accumulation Account	\$156,675,130	\$124,557,320
Members' Savings	64,639,674	59,057,035
Annuity Reserve	129,905,319	123,824,600
Total Distribution	\$351,220,123	\$307,438,955

Note 1:		
Accretion of Discount	\$ 21,527,360	\$ 16,440,867
Accretion of Capitalized Gains	680,540	742,516
Gain on Sale	17,902,049	10,302,040
Miscellaneous Revenue	1,543,021	100,866
Total	\$ 41,652,970	\$ 27,586,289

Note 2:		
Amortization of Premium	\$ 595,528	\$ 71,575
Amortization of Capitalized Losses	29,371,567	20,623,332
Loss on Sale	24,083,017	13,746,853
Service Fees	1,641,475	1,522,009
Investment Expense	503,353	632,079
Miscellaneous Expense	10,845	29,931
Total	\$ 56,205,785	\$ 36,625,779

Note 3:		
Anticipated Bond Loss	\$10,000,000	0

# Statement of Payments

June 30

	1981	1980
<b>Annuities:</b>		
Superannuation	\$379,322,824	\$371,907,837
Disability	13,817,167	13,890,793
Withdrawal	32,619,138	26,300,692
Refund Annuity	506	555
	\$425,759,635	\$412,099,877
<b>Death Benefits</b>	26,414,822	22,426,343
<b>Lump Sum Option 4</b>	43,021,345	27,865,463
Plus: Replacement Checks Issued	18,212	2,737
Less: Outstanding Checks Returned to Cash	(66,385)	0
Annuity Checks Returned to Cash	(2,808,381)	(2,891,706)
Sub-Total	\$492,339,248	\$459,502,714
<b>Refunded Principal &amp; Interest</b>	\$ 18,403,639	\$ 18,636,927
Less: Refund Checks Returned to Cash	(187,642)	(133,820)
Sub-Total	\$ 18,215,997	\$ 18,503,107
<b>Net Transfer to State Employees'</b>		
Retirement System	\$ 6,999,959	\$ 5,884,891
Administrative Expenses	\$ 5,130,308	\$ 3,726,494
Total	\$522,685,512	\$487,617,206

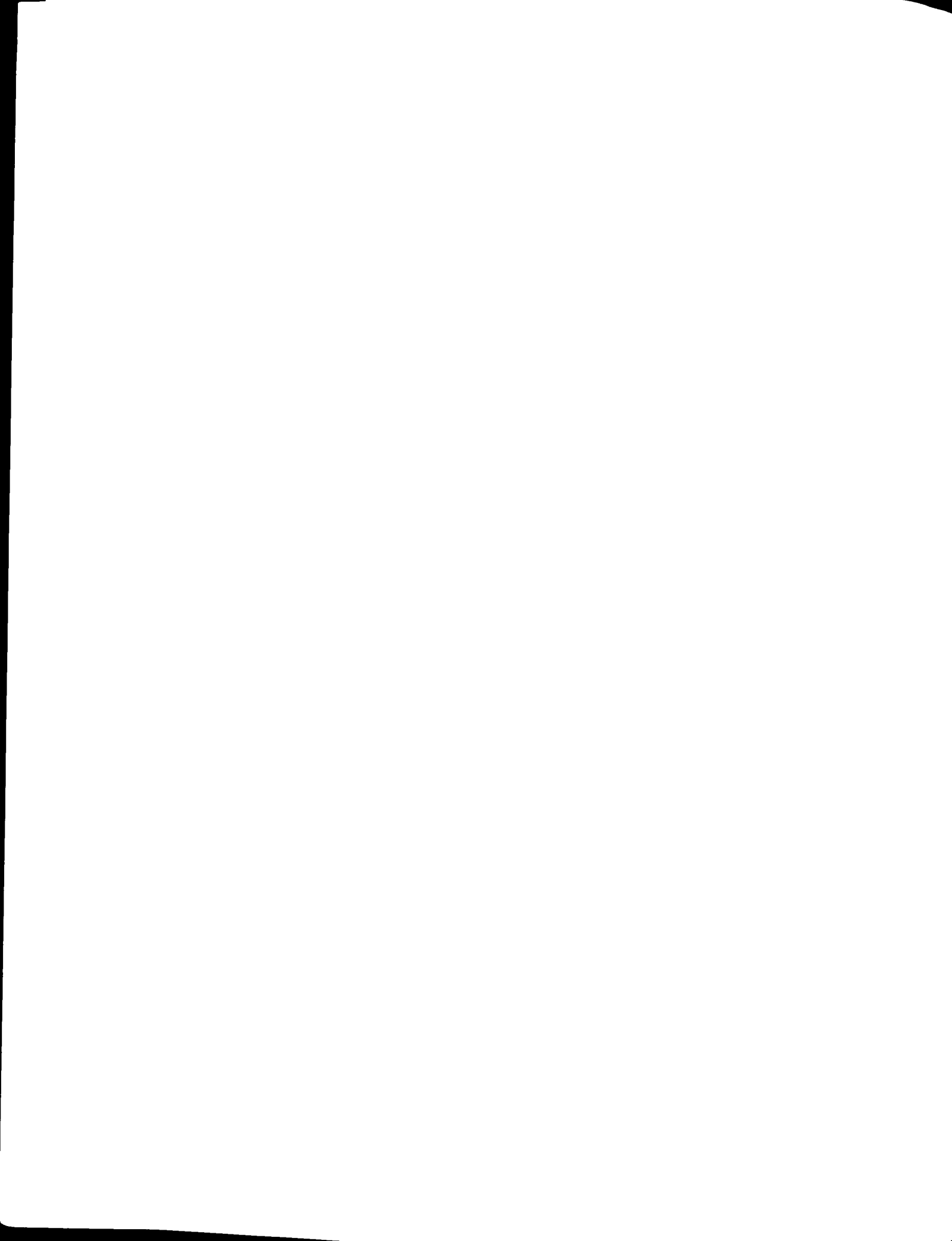
# Summary of Investment Holdings

June 30

## At Par

	<u>1981</u>	<u>1980</u>
Municipals	\$ 85,000	\$ 101,000
Consolidated Foods	1,396,966	1,498,623
Internat'l & Inter-Am. Banks	122,424,000	104,924,000
Pennsylvania State Education Association	463,383	0
University of Pittsburgh	552,000	654,000
Industrial and Commercial	1,450,999,205	1,594,444,252
Public Utilities	521,552,000	700,983,330
Finance Companies	424,975,000	297,674,000
Railroads—Corporate & Equip. Trusts	9,298,573	14,980,228
Short Term Notes	274,644,826	59,291,033
U.S. Treasury Bills	65,449,940	122,587,854
U.S. Treasury Notes	219,660,000	40,000,000
Repurchase Agreements	227,706,750	69,050,000
Phila. National Bank Bldg.	15,402,843	15,597,601
FHA Project Mortgages	322,710,621	218,929,486
Capehart Mortgages	0	16,509,032
Project Mortgage Debentures	3,098,450	3,969,250
FHA and VA Mortgages—Fixed	329,554,030	334,536,005
FHA and VA Mortgages—Graduated	16,344,502	12,332,048
FHA and VA Mortgage Foreclosures	4,269,424	3,637,125
Common Stock (Cost)	835,319,584	803,501,543
Preferred Stock (Cost)	6,996,638	4,637,000
GNMA Fixed Payment Mortgages	78,334,060	79,931,640
GNMA Graduated Payment Mortgages	175,250,611	173,189,651
Equity Real Estate	26,432,405	0
<b>Total Par Value</b>	<u><u>\$5,132,920,811</u></u>	<u><u>\$4,672,958,701</u></u>





# Auditor's Report



Peat, Marwick, Mitchell & Co.

Certified Public Accountants

100 Pine Street  
Harrisburg, Pennsylvania 17101

The Board of Trustees  
Commonwealth of Pennsylvania  
Public School Employees' Retirement System:

We have examined the balance sheets of the Commonwealth of Pennsylvania Public School Employees' Retirement System as of June 30, 1981 and 1980 and the related statements of revenues, expenses and changes in reserves for the years then ended. Our examinations were 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.

In our opinion, the aforementioned financial statements present fairly the financial position of the Commonwealth of Pennsylvania Public School Employees' Retirement System at June 30, 1981 and 1980, and the results of its operations and the changes in its reserves for the years then ended, in conformity with generally accepted accounting principles applied on a consistent basis.

The supplementary data included in Schedule 1 are not necessary for a fair presentation of the financial position and results of operations of the Commonwealth of Pennsylvania Public School Employees' Retirement System. The supplementary data have been subjected to the auditing procedures applied in the examination of the basic financial statements and, in our opinion, are stated fairly in all material respects only when considered in conjunction with the financial statements taken as a whole.

*Peat, Marwick, Mitchell + Co.*

October 7, 1981

# Balance Sheets

*June 30, 1981 and 1980*

<u>Assets</u>	<u>1981</u>	<u>1980</u>
Cash	\$ 14,951	\$ 32,431
Receivables:		
Contributions:		
Members	\$ 26,543,527	\$ 20,134,736
Employers	89,813,712	77,806,081
Commonwealth of Pennsylvania:		
Current receivable	61,176,000	46,328,334
Deficit receivable (Note 4)	45,216,000	71,185,000
Investments:		
Income receivable	74,811,009	67,424,729
Proceeds receivable	4,422,189	425,885
Other	218,319	195,284
Total Receivables	\$ 302,200,756	\$ 283,500,049
Investments (Note 5)		
Corporate and government debentures (including unamortized yield adjust- ments of \$381,953,825 in 1981 and \$167,223,808 in 1980)	\$2,541,908,593	\$2,669,925,144
First mortgage loans	884,345,722	806,798,548
Common and preferred stocks	842,316,222	808,138,543
U.S. Treasury obligations	271,122,259	162,561,891
Other short-term investments	502,351,576	128,341,032
Total Investments	\$5,042,044,372	\$4,575,765,158
Fixed assets	\$ 1,070,068	\$ 916,974
TOTAL ASSETS	\$5,345,330,147	\$4,860,214,612
<b><u>Liabilities and Reserves</u></b>		
Accounts payable and accrued expenses	\$ 4,145,663	\$ 3,989,539
Investment purchases payable	\$ 11,993,443	\$ 9,737,345
Reserves (Note 3):		
Members' savings account	\$1,717,738,874	\$1,578,884,470
State accumulation account	1,147,907,520	948,762,450
Annuity reserve account	2,463,544,647	2,318,840,808
Total Reserves	\$5,329,191,041	\$4,846,487,728
TOTAL LIABILITIES AND RESERVES	\$5,345,330,147	\$4,860,214,612

See accompanying notes to financial statements.

# Statement of Revenues, Expenses and Changes in Reserves

*Years ended June 30, 1981 and 1980*

	Year ended June 30, 1981				Year ended June 30, 1980			
	Total	State Accumulation Account	Members' Savings Account	Annuity Reserve Account	Total	State Accumulation Account	Members' Savings Account	Annuity Reserve Account
<b>Revenue:</b>								
<b>Contributions:</b>								
School districts	\$ 238,632,632	\$ 238,632,632	—	—	\$ 195,128,681	\$195,128,681	—	—
Employes	175,306,070	—	\$ 175,306,070	—	161,329,506	—	\$ 161,329,506	—
Commonwealth of Pennsylvania	240,230,000	240,230,000	—	—	201,673,857	201,673,857	—	—
	654,168,702	478,862,632	175,306,070	—	558,132,044	396,802,538	161,329,506	—
Investment revenue, net of related expenses (Note 5)	351,220,123	156,675,130	64,639,674	\$ 129,905,319	307,216,480	124,334,845	59,057,035	\$ 123,824,600
Other revenue	—	—	—	—	222,475	222,475	—	—
Total revenue	1,005,388,825	635,537,762	239,945,744	129,905,319	865,570,999	521,359,858	220,386,541	123,824,600
<b>Expenses:</b>								
Benefits	492,339,248	16,008,976	46,701,046	429,629,226	459,502,714	13,843,641	30,875,465	414,783,608
Refunds	18,215,997	—	18,215,997	—	18,503,107	—	18,503,107	—
Net transfers to (from) State Employes' Retirement System	6,999,959	6,354,639	645,320	—	5,884,891	6,104,259	647,218	(866,586)
Administrative expenses	5,130,308	5,130,308	—	—	3,726,494	3,726,494	—	—
Total expenses	522,685,512	27,493,923	65,562,363	429,629,226	487,617,206	23,674,394	50,025,790	413,917,022
Excess (deficiency) of revenues over expenses	482,703,313	608,043,839	174,383,381	(299,723,907)	377,953,793	497,685,464	170,360,751	(290,092,422)
<b>Transfers between reserves for: (Note 3)</b>								
Retirements by members	—	(348,845,744)	(25,206,926)	374,052,670	—	(278,827,511)	(24,785,542)	303,613,053
Annuitants who returned to service	—	910,188	64,386	(974,574)	—	2,091,416	284,932	(2,376,348)
Actuarial requirements	—	(71,349,650)	—	71,349,650	—	(49,050,115)	—	49,050,115
Inactive accounts	—	10,386,437	(10,386,437)	—	—	—	—	—
Reserve balance at beginning of year	4,846,487,728	948,762,450	1,578,884,470	2,318,840,808	4,468,533,935	776,863,196	1,433,024,329	2,258,646,410
Reserve balance at end of year	\$5,329,191,041	\$1,147,907,520	\$1,717,738,874	\$2,463,544,647	\$4,846,487,728	\$948,762,450	\$1,578,884,470	\$2,318,840,808

See accompanying notes to financial statements.

# Notes to Financial Statements

June 30, 1981

## (1) Organization and Description of the System

### (a) Organization

The Commonwealth of Pennsylvania Public School Employes' Retirement System (the "System") was established as of July 18, 1917, under the provision of P.L. 1043, No. 343. The System's designated purpose is to provide retirement allowances and other benefits to members. Membership in the System is mandatory for substantially all full-time public school employes in the Commonwealth. Responsibility for the organization and administration of the System is vested in the Board of Trustees.

### (b) Benefits

Significant amendments to the System were made in 1975 as a result of legislative approval of Act 96. Under the provisions of Act 96, members are eligible for monthly retirement benefits upon reaching (a) age 62; (b) age 60 and 30 or more years of service or; (c) 35 or more years of service. Such benefits are generally equal to 2% of the member's final average salary (as defined) multiplied by the number of years of credited service. Early retirement resulting in reduced benefits may be elected after completion of 10 years of service. Under certain features of the System, participants may purchase credit for previous types of educational or military service on a lump-sum or installment purchase basis.

In addition to regular retirement benefits, the System also provides for disability retirement benefits and death benefits. Participants are eligible for disability retirement benefits after completion of 5 years of eligible service. Death benefits are payable upon the death of an active member who has

reached age 62 or who has at least 10 years of eligible service.

Members with credited service in the State Employes' Retirement System may elect to transfer such service to the Public School Employes Retirement System upon commencement of employment in the public school system. Similarly, a member with credited service in the System may transfer such service to the State Employes' Retirement System upon becoming a member of that system.

Upon termination of a member's employment in the public school sector, the member's accumulated contributions plus interest are refundable from the Member's Savings Account.

### (c) Contributions

The contribution policy is set by Act 96 and requires contributions by active members, employers and the Commonwealth. The rate of contribution for most active members is set by law at 5¼% of the member's compensation. The contributions required of employers and the Commonwealth are based upon an actuarial valuation computed as a percentage of the total compensation of all active members during the period for which the amount is determined. For the years ended June 30, 1981 and 1980 the combined amounts required from the employers and Commonwealth were 15% and 13.31%, respectively, of active member payroll. The employer and the Commonwealth share such cost equally.

### (d) Actuarial Valuation

The contribution policy requires employers and the Commonwealth to make a normal contribution and a past service contribution as determined by a quali-

fied actuary. The System's actuary uses the "entry age normal" method to determine normal costs. As of June 30, 1980, the date of the most recent actuarial report, the actuary computed that, utilizing the present method of funding, the actuarial liability of the employers and Commonwealth for prior service of \$3,817,521,000 should be funded in approximately 24 years. Such liability includes \$54,988,000 related to unaccrued interest receivable on Commonwealth contributions which were not paid on a timely basis (Note 4).

Significant assumptions underlying the actuarial computations include: (a) assumed rate of return on investments of 5½%; (b) assumed rate of salary increases ranging from 6.99% at age 25 to 1.89% at age 69; (c) assets valued at cost or amortized cost; and (d) mortality, vesting, retirement age and withdrawal estimates based on tables furnished by the actuary.

## (2) Summary of Significant Accounting Policies

The financial statements of the System are prepared on the accrual basis of accounting and conform to generally accepted accounting principles. In order to assist the reader in understanding the accompanying financial statements, a summary of the more significant accounting policies is presented below:

### (a) Investments

Corporate and government debentures with fixed maturities are reported at cost as of the trade date of the transaction adjusted for amortization of premiums and accretion of discounts, both computed on a straight-line basis to the maturity date of the investment. Unamortized yield adjustments represent the deferral of net losses incurred when corporate bonds are exchanged for similar bonds in order to achieve a higher yield. Losses incurred in such transactions are amortized over the re-

maining life of the bond purchased or sold, whichever is shorter.

Investments in first mortgage loans are carried at the amount of the unpaid principal balance of the loan, adjusted for accretion of discounts. Such discounts are amortized on a straight-line basis to the maturity date of the loan for large project loans, or over the average twelve-year life of the portfolio for single family mortgages. Income on mortgages is recognized as earned.

Investments in common and preferred stocks are carried at cost. Gains and losses on stock sales are recognized on the basis of the average cost of the stocks sold. Dividend income is recognized as dividends are declared.

Investments in short-term obligations, principally commercial paper, U.S. Treasury obligations and bank repurchase agreements are carried at cost, which approximates market value. Income on these investments is recognized when earned.

### (b) Fixed Assets

Fixed assets, consisting primarily of data processing equipment, are carried at cost. Other fixed assets are expensed when purchased. The System does not depreciate fixed assets.

### (c) Federal Income Tax Status

During the years ended June 30, 1981 and 1980 the System qualified under the provision of the Internal Revenue Code and was exempt from Federal income taxes.

## (3) Description of Reserves

Act 96 defines the following reserve accounts to be maintained by the System:

### (a) Members' Savings Account

The Member's Savings Account is credited with all contributions made by active members of the System. Interest is added to the member's individual account at an annual rate of 4%.

Upon death or retirement of a member

the accumulated contributions plus interest are transferred to the Annuity Reserve Account for subsequent payment of benefits.

(b) State Accumulation Account

The State Accumulation Account is credited with the contributions of the Commonwealth and the school districts ("employers"). Additionally, interest earnings of the System (after crediting the Members' Savings Account with the aforementioned 4% credit and the annuity reserve account with a 5½% credit) are credited to this account. Each year, the amounts necessary as determined by the actuary for the payment of retirement and death benefits are transferred from the State Accumulation Account to the Annuity Reserve Account. All administrative expenditures necessary for the operation of the System are paid from the State Accumulation Account.

(c) Annuity Reserve Account

The Annuity Reserve Account represents the amounts transferred from the Members' Savings and State Accumulation accounts, plus additional contributions made by the Commonwealth for the payment of supplemental annuities and cost-of-living increases. All death, disability and retirement benefits are paid from this account. Annual interest of 5½% is credited to the Annuity Reserve Account.

(4) Deficit Commonwealth Contributions Receivable

Deficit Commonwealth contributions receivable represent amounts determined by the System's actuary to be necessary to fund current and prospective annuities as defined by Act 96, but which have not been appropriated by the legislature. Such deficits represent underfunding of Commonwealth contributions for fiscal years ended June 30, 1970 to 1973. The Commonwealth has agreed to make annual payments of \$9 million in order to satisfy this

obligation. At June 30, 1981 and 1980, no interest was recorded on this receivable.

(5) Investments

The Board of Trustees has the responsibility to invest and reinvest available funds of the System, in accordance with the guidelines and limitations outlined by Act 96. Under these guidelines, the Board may make investments in common and preferred stocks, first mortgage loans and corporate and government obligations in such a manner as to maximize return while maintaining a sound portfolio with minimum risk. By law, investments in common stock are limited to 25% of the total assets of the System. Additionally, the amount invested in common stock of any one entity may not exceed 2% of the book value of the assets of the System or 5% of the total issued and outstanding common stock of that entity at the date of purchase. A maximum of 5% of the total assets of the System may be invested in common stocks during any one year.

A summary of investment securities as of June 30, 1981 and 1980 and the approximate market values follows:



	1981		1980	
	<u>Book Value</u>	<u>Market Value</u>	<u>Book Value</u>	<u>Market Value</u>
Corporate, government and other debentures:				
Corporate bonds	\$1,442,396,171	865,381,544	1,595,942,875	1,186,704,744
Utility bonds	521,552,000	267,293,857	700,983,330	448,960,750
Finance company bonds	424,975,000	258,243,852	297,674,000	227,503,497
International bank bonds	122,424,000	69,872,665	104,924,000	72,917,482
Railroad equipment trusts & debentures	9,298,573	6,724,415	14,980,228	11,523,071
FHA debentures	3,098,450	3,098,450	3,969,250	3,969,250
Municipal bonds	85,000	63,102	101,000	78,716
University of Pittsburgh debentures	552,000	441,600	654,000	523,200
	<u>\$2,524,381,194</u>	<u>1,471,119,485</u>	<u>2,719,228,683</u>	<u>1,952,180,710</u>
Plus unamortized yield adjustments	381,953,825		167,223,808	
Less unamortized discount (net of premium)	(364,426,426)		(216,527,347)	
	<u>2,541,908,593</u>		<u>2,669,925,144</u>	
First mortgage loans:				
FHA guaranteed project mortgages	322,710,621	178,563,400	218,929,486	145,129,900
FHA/VA guaranteed single-family mortgages	350,167,956	207,775,836	350,505,179	265,804,000
Capehart mortgages	—	—	16,509,032	12,976,402
GNMA-backed graduated payment mortgages	175,250,611	124,550,743	173,189,651	158,972,255
GNMA-backed fixed payment mortgages	78,334,060	62,562,590	79,931,640	75,420,539
Other mortgages	42,298,631	37,953,607	15,597,601	13,647,900
	<u>968,761,879</u>	<u>611,406,176</u>	<u>854,662,589</u>	<u>671,950,996</u>
Less unamortized discount	(84,416,157)		(47,864,041)	
	<u>884,345,722</u>		<u>806,798,548</u>	
Common and preferred stocks:				
Common stocks	835,319,584	1,048,116,155	803,501,543	878,608,507
Preferred stocks	6,996,638	7,661,500	4,637,000	5,076,000
	<u>842,316,222</u>	<u>1,055,777,655</u>	<u>808,138,543</u>	<u>883,684,507</u>
U.S. Treasury obligations	271,122,259	261,841,944	162,561,891	164,150,254

	1981		1980	
	<u>Book Value</u>	<u>Market Value</u>	<u>Book Value</u>	<u>Market Value</u>
Other short-term obligations:				
Commercial paper	274,644,826	274,644,826	59,291,032	59,291,032
Bank repurchase agreements	227,706,750	227,706,750	69,050,000	69,050,000
	<u>502,351,576</u>	<u>502,351,576</u>	<u>128,341,032</u>	<u>128,341,032</u>
Total investments	<u>\$5,042,044,372</u>	<u>3,902,496,836</u>	<u>4,575,765,158</u>	<u>3,800,307,499</u>

The major components of investment revenue for the years ended June 30, 1981 and 1980 are as follows:

	<u>1981</u>	<u>1980</u>
Corporate, government, and other debentures	\$185,630,412	185,969,691
First mortgage loans	76,253,133	56,588,947
Common and preferred stocks	43,350,219	39,996,002
U.S Treasury obligations	29,740,571	13,667,168
Other short-term obligations	40,798,603	20,034,162
	<u>375,772,938</u>	<u>316,255,970</u>
Accretion of discount	22,207,901	17,183,383
Net gain (loss) on investment transactions	(14,637,947)	(3,444,813)
Amortization of yield adjustments	(29,967,095)	(20,694,907)
Total investment revenue before investment expenses	353,375,797	309,299,633
Investment expenses	(2,155,674)	(2,083,153)
Net investment revenue	<u>\$351,220,123</u>	<u>307,216,480</u>

(6) Relationships With Other Commonwealth Agencies

The Treasurer of the Commonwealth of Pennsylvania is designated under Act 96 as the custodian of all cash and investment securities of the System. The Treasurer of the Commonwealth or his designee also serves as a member of the Board of Trustees.

(7) Litigation and Contingencies

The System is subject to various threatened and pending lawsuits which deal with the question of benefit eligibility. Management does not anticipate that the ultimate liability arising from such litigation and threats of litigation will have a material effect on the financial statements of the System.

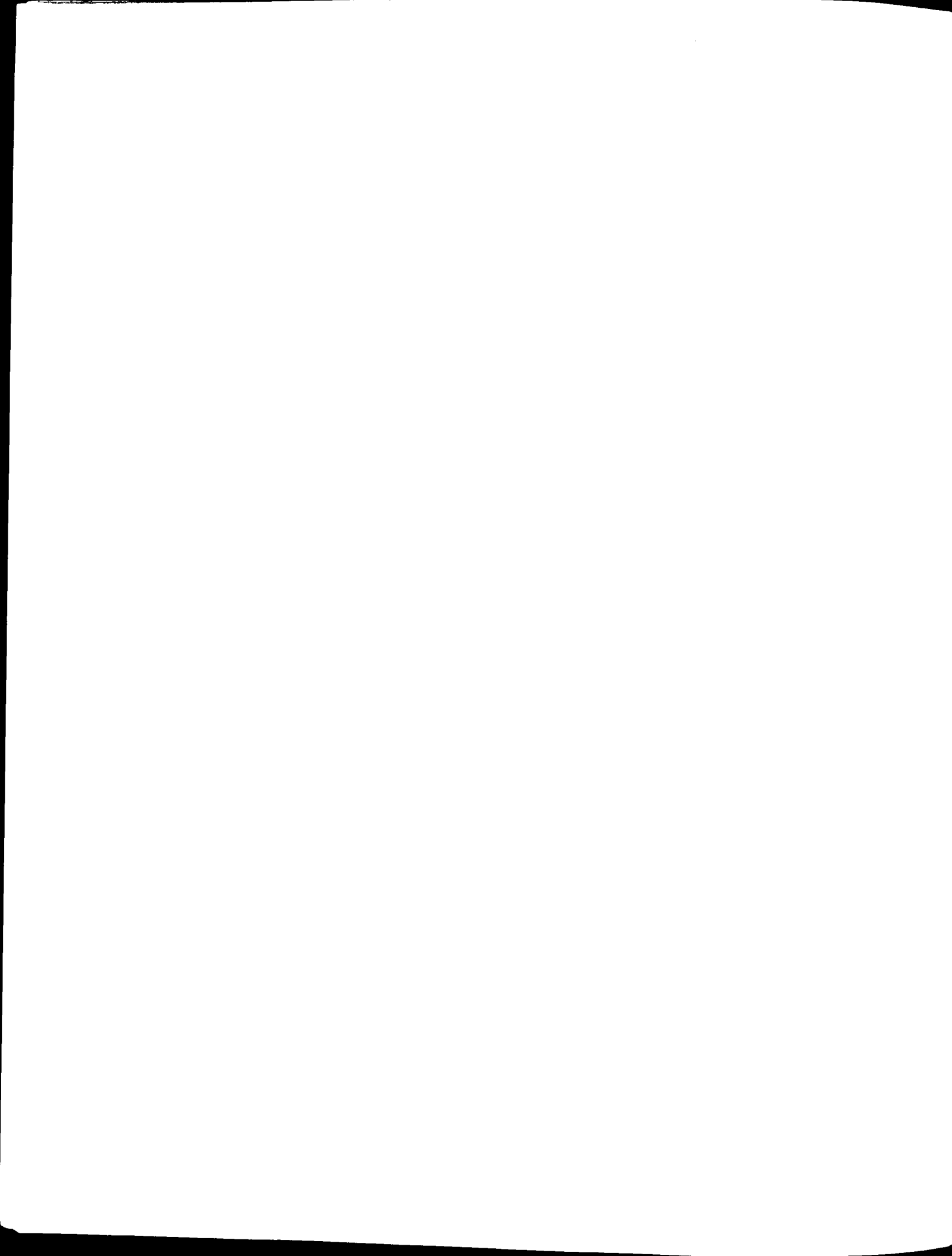
In addition, the System is a defendant in a

class action lawsuit brought by the school districts of the Commonwealth. This litigation deals with the eligibility of members to purchase previous part-time service rendered before July 1, 1975, the date when the legislature authorized, for the first time, membership for these employment categories. Prior to the suit and upon the advice of the Department of Justice, which is defending the action, part-time service credit applications were processed, accepted, and, in certain instances, benefits were paid thereon. Processing of these applications has been halted pending a judicial determination. If the buyback authority is upheld, the assets of the System and its liability for prior service costs would be increased by an indeterminable amount.

# Schedule of Administrative Expenses

*Years ended June 30, 1981 and 1980*

	<u>1981</u>	<u>1980</u>
<b>Personnel costs:</b>		
Salaries and wages	\$2,299,306	\$1,882,729
Social security contributions	147,521	112,436
Retirement contributions	335,293	259,056
Employes' insurance contributions	288,589	228,921
Other employe benefits	51,171	34,672
<b>Total personnel costs</b>	<u>\$3,121,880</u>	<u>\$2,517,814</u>
<b>Operating costs:</b>		
Auditor General services	\$ 79,718	\$ 46,946
Treasury services	169,160	76,818
Civil Service Commission services	9,990	8,860
Classification and pay services	2,494	944
Purchasing services	902	293
Data processing services	12,471	14,410
Consultant fees	43,213	49,010
Legal fees	19,063	10,871
Specialized services	426,792	149,189
Contracted personnel services	24,871	24,790
Printing	47,908	31,317
Postage	314,216	237,700
Telephone and telegraph	106,586	74,681
Dues and subscriptions	4,431	2,504
Insurance	886	886
Electricity	43,895	30,001
Motorized equipment supplies and repairs	2,270	9,764
Travel	59,301	37,941
Contracted maintenance services	176,716	100,053
Rent of real estate	203,419	164,900
Rent of equipment	85,713	36,115
Office supplies	66,701	46,640
Miscellaneous expenses and supplies	1,881	2,800
<b>Total operating expenses</b>	<u>\$1,902,597</u>	<u>\$1,157,433</u>
<b>Fixed charges:</b>		
Equipment and machinery	\$ 80,639	\$ 41,120
Furniture and furnishings	25,192	10,127
<b>Total fixed charges</b>	<u>\$ 105,831</u>	<u>\$ 51,247</u>
<b>Total administrative expenses</b>	<u><u>\$5,130,308</u></u>	<u><u>\$3,726,494</u></u>



# Actuary's Report



George B. Buck Consulting Actuaries, Inc.  
Two Pennsylvania Plaza, New York, New York 10001  
Telephone 212 | 279 4400

November 4, 1981

To the Retirement Board  
Public School Employees'  
Retirement System of Pennsylvania  
P. O. Box 125  
Harrisburg, Pennsylvania 17108

BUCK  
CONSULTANTS

Ladies and Gentlemen:

We have now completed the June 30, 1980 valuation of the Public School Employees' Retirement System of Pennsylvania. The valuation was prepared on the basis of the data supplied by the Retirement System office, and reflects the benefits in effect on the valuation date.

The results of an investigation of the mortality, service and compensation experience for the five year period ended on June 30, 1980 are included in the report and on the basis of the investigation, certain changes in rates of separation from active service and rates of mortality after retirement are recommended for adoption.

Based on the new assumptions the total contribution rate payable by the employers will increase from 15.00 per cent to 18.98 per cent of payroll. This increase will be phased in over a four year period. The total contribution rate payable by employers for the year commencing July 1, 1982 is equal to 16.00 per cent of payroll.

The new actuarial assumptions are, in the aggregate, reasonable. The actuarial cost method utilized is the entry age normal method with open-end accrued liability, as specified in the statutes. The current assets applicable to the System were supplied by the Retirement System office and were taken at book value.

The results of the valuation on the new assumptions indicate that the rates of contribution payable by members and employers together with scheduled increases and the assets currently available are adequate to fund the actuarial liabilities on account of all benefits under the System. The liquidation periods for the four portions of the accrued liability range from 13 to 24 years.

The results of the valuation on the basis of the assumptions in effect as of June 30, 1980 are given in this report.

Respectfully submitted,

GEORGE B. BUCK CONSULTING ACTUARIES, INC.



Hugh Gillespie  
Consulting Actuary

HG:FD



# Report on an Actuarial Valuation of the Assets and Liabilities of The Public School Employes' Retirement System of Pennsylvania As of June 30, 1980

## SECTION I — SUMMARY OF PRINCIPAL RESULTS

1. This report presents the results of an actuarial valuation of the assets and liabilities of the Public School Employes' Retirement System of Pennsylvania, prepared as of June 30, 1980. For convenience of reference, a comparison of membership statistics for the years ended June 30, 1980 and 1979 and a summary of the principal results of the valuation and a comparison with the preceding year's results follow. Since there have been no changes in the benefit provisions of the System, nor in the actuarial assumptions used as a basis for the figures in this report, the results of the valuation for the two years are directly comparable. Therefore, the differences in the expected and actual periods of liquidation of the unfunded accrued liabilities as of June 30, 1980 are the result of the experience during the valuation year.

**TABLE I**  
Comparison of Membership Statistics  
(Dollar Amounts in Thousands)

VALUATION DATE	6/30/80	6/30/79
Active members included in valuation		
Number	216,333	203,416
Annual payroll	\$2,915,377	\$2,565,669
Number of accounts not updated	2,154	14,984
Total adjusted active membership		
Number	218,487	218,400
Annual Payroll	\$2,967,712	\$2,754,638
Number of inactive and vested accounts	20,623	45,956
Retired membership		
Number	64,122	60,999
Annual annuities	\$ 408,056	\$ 321,489 *

\* Excludes increases effective July 1, 1979 which amount to \$75.1 million.

**TABLE II**  
**Summary of Principal Results**  
(Dollar Amounts in Thousands)

Valuation Date	6/30/80	6/30/79
Assets (book value)	\$4,901,476	\$4,514,353
Accounts receivable included in assets		
From State:		
Principal amount	\$ 117,513	\$ 115,995
Interest	54,988	45,819
From School Districts	77,806	76,658
From Members	20,135	19,265
Total	\$ 270,442	\$ 257,737
Total employer contribution rate		
Normal	6.93%	6.93%
Accrued liability	4.83	4.83
Supplemental annuity (excluding 7/1/79 Increase)	1.55	1.55
Supplemental annuity (7/1/79 increase)	1.69	1.69
Total	15.00%	15.00%
Unfunded accrued liability:		
Before consideration of Act No. 96	\$2,186,947	\$1,960,322
Increase on account of Act No. 96	384,526	383,959
Total	\$2,571,473	\$2,344,281
Accrued liability funding period:		
Established prior to Act No. 96	21 years	20 years
Established on account of Act No. 96	24 years	26 years
Unfunded supplemental annuity liability:		
Excluding July 1, 1979 increases	\$ 522,931	\$ 541,417
July 1, 1979 increases	668,129	633,297
Total	\$1,191,060	\$1,174,714
Supplemental annuity liability funding period		
Established prior to July 1, 1979	13 years	14 years
July 1, 1979 increases	20 years	20 years from 7/1/80

2. The valuation balance sheet showing the results of the valuation is given in Section III.
3. Comments on the valuation results are given in Section IV and comments on the experience during the valuation year are given in Section V.
4. Schedule A of this report outlines the full set of actuarial assumptions and methods employed. Schedule B gives a summary of the benefit and contribution provisions of the System.
5. Schedule D of this report gives the results of the investigation of the experience for the five year period ended on the valuation date.

## Section II — Membership Data

Data regarding the membership of the System for use as a basis for the valuation were furnished by the System's office. The following tables summarize the membership of the System as of June 30, 1980 upon which the valuation was based. Detailed tabulations of the data are given in Schedule C.

**TABLE III**  
Active Membership of System  
*As of June 30, 1980*

GROUP	NUMBER	ANNUAL SALARIES
Included in Valuation:		
Men	79,611	\$1,339,319,342
Women	136,722	1,576,060,137
Total	216,333	\$2,915,379,479
Total to Which Adjusted	218,487	\$2,967,712,000

In addition to the above, 20,623 inactive members and vestees were included in the valuation.

**TABLE IV**  
Annuitants and Survivor Annuitants of the System  
*On June 30, 1980*

CLASS	NUMBER	ANNUAL ANNUITIES
Retired on account of superannuation and those in receipt of withdrawal annuities:		
Men	16,413	\$106,799,175
Women	42,500	282,439,761
Total	58,913	\$389,238,936
Retired on account of disability:		
Men	958	\$ 4,557,673
Women	1,730	7,626,708
Total	2,688	\$ 12,184,381
Survivor annuitants in receipts of benefits:		
Men	391	\$ 992,834
Women	2,126	5,639,487
Total	2,517	\$ 6,632,321
Annuities in lieu of return of accumulated deductions:		
Men		
Women	4	\$ 507
Total	4	\$ 507
Grand Total	64,122	\$408,056,145

### Section III — Valuation Balance Sheet

The valuation balance sheet shown on the following pages takes into account the contingent assets and liabilities of the Public School Employees' Retirement System of Pennsylvania as well as the funds in hand and shows the financial condition of the System as of June 30, 1980. The present assets shown on the balance sheet are based on a statement furnished by the System's office.

The following amounts have been included as contributions receivable as of the valuation date:

	<u>Amount Receivable As of Valuation Date</u>
Members	\$ 20,134,736
School Districts	77,806,081
Commonwealth	
Principal amount	117,513,334
Interest	<u>54,988,174*</u>
Grand Total	<u>\$270,442,325</u>

\* Calculated on the basis of interest rates applicable to new money investments during appropriate period.

**TABLE V**  
**Valuation Balance Sheet**  
**Showing Financial Condition of The**  
**Public School Employes' Retirement System Of Pennsylvania**  
*As Of June 30, 1980*  
(amounts in thousands)

Assets		
Present assets:		
Members' Savings Account	\$1,578,884	
Annuity Reserve Account (including Supplemental Retirement Allowance Credit):		
Credited to account	\$2,318,841	
Add amount transferable from State Accumulation Account	59,320	2,378,161
State Accumulation Account:		
Credited to account	\$1,003,751	
Subtract amount transferable to Annuity Reserve Account	59,320	944,431
Total Present Assets		\$ 4,901,476
Present value of future contributions by members		1,608,323
Present value of prospective contri- butions payable to State Accumulation Account:		
Normal contributions	\$2,143,733	
Accrued liability contributions	2,571,473	
Total prospective contributions payable to State Accumulation Account		4,715,206
Present value of prospective accrued liability contributions payable to the Annuity Reserve Account on account of supplemental annuities		1,191,060
Total Assets		\$12,416,065



## Section IV—Comments on Valuation

The valuation balance sheet brings out the following facts regarding the accounts of the System.

### 1. Members' Savings Account

The Members' Savings Account is the account to which are credited all members' contributions with interest and from which are paid all contributions to members leaving service without annuities. The balance sheet shows that assets credited to the account as of June 30, 1980 are equal to \$1,578,884 thousand and that future contributions by members have a present value of \$1,608,323 thousand. The total past and future contributions of members therefore have a present value of \$3,187,207 thousand. The liabilities of this account are shown to be equal to this amount since members will receive benefits on account of their contributions equal in value to their contributions.

### 2. Annuity Reserve Account (including Supplemental Retirement Allowance Account)

The Annuity Reserve Account is the account which holds the reserves for the payment of annuities and death benefits on account of annuities and to which are credited the employer contributions for the payment of supplemental annuities. The liabilities on account of annuitants and survivor annuitants were \$3,569,221 thousand as of June 30, 1980, and the assets, after taking into account the amount transferable from the State Accumulation Account, were equal to \$2,378,161 thousand. The difference between the liabilities and present assets, or \$1,191,060 thousand, is the present value of future accrued liability contributions payable on account of supplemental annuities which have been granted through July 1, 1979, of which \$522,931 thousand is on account of supplemental annuities granted prior to July 1, 1979. It is recommended that contributions to fund supplemental annuities granted prior to July 1, 1979 be continued at 1.55 per cent of total payroll. Contributions at this rate are ex-

pected to liquidate the unfunded liability in 13 years. The liability on account of the increases in annuities effective as of July 1, 1979 is to be funded by annual payments of 1.69 per cent of the payroll over a 20-year period commencing as of July 1, 1980.

### 3. State Accumulation Account

The State Accumulation Account is the account to which are credited all contributions of the State and School Districts other than contributions for supplemental annuities. The liabilities of the account are shown on the balance sheet to be \$5,659,637 thousand and the assets, after taking into account the amounts transferable from the account, are \$944,431 thousand as of June 30, 1980. Therefore, to balance the uncovered liabilities, future contributions are payable by the State and School Districts having a value equal to \$4,715,206 thousand.

The law provides that the employers make a normal contribution and an accrued liability contribution. The normal contribution rate is defined as the percentage of the compensation of the average new active member which, if contributed on the basis of his prospective compensation, would be sufficient to provide any benefit payable to him or on his account in excess of that funded by his prospective member contributions.

On the basis of the valuation it is recommended that the normal contribution rate be continued at 6.93 per cent of compensation. Future normal contributions at a rate of 6.93 per cent have a present value of \$2,143,733 thousand. If this amount is subtracted from \$4,715,206 thousand, the present value of future contributions payable by the employer, there remains \$2,571,473 thousand as the present value of accrued liability contributions. Of this amount, \$384,526 thousand is the unfunded portion of the increase in past service liability on account of the passage of Act No. 96. On the basis of contributions of .66 per cent of payroll, with each payment 4 per cent greater than the previous one, this

unfunded liability will be liquidated within 24 years from the valuation date.

The remainder of the unfunded accrued liability, or \$2,186,947 thousand, is attributable to the System prior to the passage of Act No. 96. It is recommended that accrued liability contributions be continued at the rate of 4.17 per cent of payroll with each payment at least 4 per cent greater than the previous in order to liquidate this amount. Contributions at this rate are expected to liquidate the unfunded accrued liability of \$2,186,947 thousand in about 21 years from June 30, 1980, which compares with an expected period of 19 years as determined in the previous valuation.

The total accrued liability rate is therefore equal to 4.83 per cent of payroll.

## Section V—Comments on Experience

On the basis of the valuation and the current actuarial assumptions a rate of 15.00 per cent is

the total rate payable by School Districts and the State. This is equal to the rate computed on the basis of the June 30, 1979 valuation. The retirement and salary experience under the system continues to be financially unfavorable. This is reflected in the fact that there was an increase in the period over which it is expected that the unfunded accrued liability will be liquidated. A comparison of the valuation results with the projections prepared on the basis of the data submitted for the June 30, 1977 valuation indicates that the unfunded accrued liability as of June 30, 1980 is very close to that determined on the basis of 7 per cent wage inflation and retirement experience following the rates which prevailed during the four year period ended June 30, 1975. The present assets are less than the projection showed primarily because the supplemental annuities granted July 1, 1979 were paid from the System but contributions for these supplements do not commence until July 1, 1980.

A rough reconciliation of the unfunded accrued liability follows:

**TABLE VI**  
Rough Reconciliation of Unfunded Accrued Liability

<u>State Accumulation Account</u>	<u>In Millions of Dollars</u>
(1) Unfunded accrued liability 6/30/79	\$ 2,344.3
(2) Interest at 5½% for 1 year	128.9
(3) Accrued liability contribution with ½ year interest	163.3
(4) Expected unfunded accrued liability 6/30/80 = (1) + (2) - (3)	2,309.9
(5) Actual unfunded accrued liability 6/30/80	2,571.5
(6) Increase above expected	261.6
<hr/>	
(7) Explanation of increase:	
(a) Pensioners' mortality experience	\$ 36.5
(b) Interest surplus	-59.7
(c) Experience among active members	
(i) Salary increases above expected	\$294.4
(ii) New Members	-4.1
(iii) Retirements and other separations	-5.5
	<hr/>
<b>Total</b>	<b>\$ 261.6</b>



## SCHEDULE A

### Outline of Actuarial Assumptions and Methods

**INTEREST RATE:** 5½% per annum, compounded annually, by statute.

**SEPARATIONS FROM SERVICE AND SALARY INCREASE:** Representative values of the assumed annual rates of separation and annual rates of salary increases are as follows:

AGE	ANNUAL RATE OF:					
	Withdrawal and Vesting	Death	Disability	Early Retirement	Super-annuation Retirement	Salary Increase
			<u>Men</u>			
25	8.46%	.07%	.01%			6.99%
30	6.64	.08	.02			6.32
35	5.47	.13	.03			5.23
40	4.74	.18	.06	.80%		4.14
45	4.11	.29	.11	.80		3.27
50	3.50	.45	.20	.84	3.36%	2.60
55	3.30	.67	.34	2.50	3.58	2.13
60	3.28	.93	.59	2.65	5.12	1.91
65		1.37			15.75	1.90
69		1.83			29.93	1.89
			<u>Women</u>			
25	16.79%	.03%	.03%			6.99%
30	11.48	.06	.04			6.32
35	8.15	.08	.04			5.23
40	6.12	.11	.07	.90%		4.14
45	4.91	.15	.12	.90		3.27
50	4.10	.21	.20	1.00	2.31%	2.60
55	3.62	.31	.35	2.50	3.85	2.13
60	3.42	.42	.63	6.95	8.40	1.91
65		.57			22.50	1.90
69		.72			37.00	1.89

**DEATH AFTER RETIREMENT:** 1963 George B. Buck Mortality Tables for service retirements and dependent beneficiaries and a special mortality table for disability retirements.

**VALUATION METHOD:** Projected benefit method with level percentage entry age normal cost and open-end unfunded accrued liability. Gains and losses are reflected in the period remaining to liquidate the unfunded accrued liability.

**ASSET VALUATION METHOD:** Amortized cost on bonds, initial cost on stocks and amortized value of mortgages.

## SCHEDULE B

### Summary of Benefit and Contribution Provisions

A summary of the main benefit and contribution provisions of the System, as interpreted for the valuation, is presented in the following digest. Although there are three classes of membership, Class T-A, Class T-B and Class T-C, for purposes of the valuation, all employees are considered to be members of Class T-C, and the summary contains the benefit and contribution provisions applicable to that class. "Final average salary" is used to mean the highest average annual salary for any three years of service preceding retirement.

A joint coverage member is a school employee who became a member prior to January 1, 1966 but subsequent to May 28, 1957 or who having become a member on or prior to that date elected Social Security coverage. Primary insurance amount of Social Security is the amount computed in accordance with the Federal Social Security Act based on compensation for services covered by the Retirement System. Under Act 525 of 1963 any joint coverage member may become a member of the dual coverage group by filing an election to make contributions and to receive benefits without the reduction on account of Social Security coverage. Such a member must also make up the difference between his accumulated deductions and what they would have been had he not been a joint coverage member. All school employees who become members on and after January 1, 1966 are members of the dual coverage group.

### Benefits

#### Superannuation Annuity Condition for Annuity

Any member who has attained age 62 or has attained age 60 and completed 30 or more years of credited service, or has completed 35 years of credited service, may retire upon his own request on a superannuation annuity.

#### Amount of Annuity

The superannuation annuity is equal to 2% of the member's final average salary multiplied by the number of his years of credited service.

The minimum superannuation annuity is equal to \$100 for each year of credited service.

After the age at which Social Security benefits become payable, the annuity of a joint coverage member is reduced by an amount equal to 40% of the primary insurance amount of his Social Security provided that the reduction in annuity cannot exceed 1% of his final average salary for each year of credited service multiplied by the ratio of the sum of three years of highest taxable wages under the Federal Insurance Contributions Act to an amount equal to three times the final average salary and by the ratio of years of credited service after December 31, 1955 to total years of credited service.

#### Withdrawal Annuity

A member separating from service after completing 10 years of credited service may elect to leave his money in the System and receive an immediate annuity which is actuarially equivalent in value to an annuity beginning at the superannuation retirement age at which the member would have qualified for retirement had he remained in service, based on the final average salary and years of service at date of withdrawal. In the case of a member who separates from service after attaining age 55 and completing 25 years of credited service the annuity is equal to the annuity beginning at the superannuation retirement age at which the

member would have qualified for retirement had he remained in service, based on the final average salary and years of service at date of withdrawal, reduced by  $\frac{1}{4}\%$  for each month by which withdrawal precedes the aforementioned superannuation age.

After the age at which Social Security benefits become payable, the annuity of a joint coverage member is reduced by an amount equal to 40% of the primary insurance amount of his Social Security, subject to the same limitations as are applicable to the superannuation retirement annuity.

#### Disability Annuity

##### Condition for Annuity

Any member who is under superannuation retirement age and is mentally or physically incapacitated for service after 5 years of credited service is eligible for a disability annuity.

##### Amount of Annuity

The disability annuity is equal to 2% of the member's final average salary multiplied by the number of his years of credited service, but not less than  $33\frac{1}{3}\%$  of such final average salary, except that such annuity shall not exceed the rate of annuity to which the member might have been entitled at superannuation retirement age had he remained in service until such age. The minimum disability annuity including any cost-of-living increases is \$100 for each year of credited service.

#### Vesting Annuity

##### Condition for Annuity

Upon separation from service, a member who has completed 10 or more years of credited service may elect to have his accumulated deductions remain in the System to earn interest, and receive an annuity commencing at superannuation retirement age.

##### Amount of Annuity

The annuity is calculated as a superannuation annuity based upon the member's final average salary and years of credited service to the date of separation from service.

#### Optional Benefits

Upon retirement with 10 or more years of credited service a member may elect to convert his annuity to one of the following equivalent benefits:

Option 1. A reduced benefit with the provision that if he dies before he receives in payments the present value of the benefit as it was at the time of his retirement, the balance if less than \$5,000 shall be paid in a lump sum to his designated beneficiary or if the balance is \$5,000 or more the beneficiary may elect to receive the payment of the balance as a lump sum payment, an annuity having a present value equal to the balance payable or a lump sum payment and an annuity.

Option 2. A reduced benefit with the provision that at his death such benefit shall be continued throughout the life of such other person as he shall have designated at the time of his retirement.

Option 3. A reduced benefit with the provision that at his death one-half of such benefit shall be continued throughout the life of such other person as he shall have designated at the time of his retirement.

Option 4. Such other benefit as shall be certified by the actuary to be of equivalent actuarial value to his regular benefit.

## Death Benefit

Any active member or vestee who dies and was eligible for an annuity is considered as having applied for an annuity to become effective the day before his death and in the event he has not elected any option it is assumed that he elected Option 1.

## Return of Contributions

Upon separation from service where no other benefit is payable, the member's accumulated deductions are returned to him.

Upon death in service where no other benefit is payable, the member's accumulated deductions are paid to his designated beneficiary or estate.

Upon the death of an annuitant who has elected the maximum annuity, other than a disability annuitant who has 10 years of credited service, the excess of his accumulated deductions at retirement over the annuity payments made is paid to his designated beneficiary or legal representative. Upon the death of a disability annuitant who has 10 years of credited service and who has elected the maximum annuity the excess of the present value of his annuity on his retirement date over payments received is paid to his designated beneficiary.

## Contributions

### By Members

The rate of contribution for each Class T-C member of the single or dual coverage group is  $5\frac{1}{4}\%$  of his compensation.

In the case of joint coverage members the amount of contribution determined at the basic rate is reduced by 40% of his Social Security tax exclusive of that portion attributable to disability and medical coverage. A joint coverage member who applies for a superannuation or withdrawal annuity may elect to receive such allowance without the reduction on account of Social Security coverage by paying a lump sum equal to the difference between the amount of accumulated deductions to his credit and the amount which would have been to his credit if contributions had been made without the reduction on account of Social Security coverage.

### By State\*

The State contributes a percentage of the total compensation of all members known as the normal contribution, an additional percentage of such compensation known as the accrued liability contribution and a percentage of such compensation known as the supplemental annuity contribution in order to accumulate the required reserves to provide the benefits payable.

\*School districts' contributions match State contributions.

## SCHEDULE C

**Table 1**  
**The Number and Annual Salaries**  
**of Members in Active Service**  
**Distributed by Age as of June 30, 1980**

Age	Men		Women	
	Number	Amount	Number	Amount
18	30	\$92,914	24	\$41,984
19	94	447,132	151	630,729
20	157	874,518	195	886,194
21	210	1,352,082	310	1,624,902
22	325	2,286,086	550	3,210,655
23	674	5,329,962	1,889	13,742,480
24	950	8,524,486	2,449	20,649,252
25	1,099	10,725,308	2,833	26,823,205
26	1,351	14,522,927	3,319	33,763,930
27	1,647	18,829,941	4,007	43,558,564
28	2,029	25,565,116	4,631	53,503,396
29	2,447	32,642,111	4,969	59,880,274
30	2,550	36,257,568	4,794	59,731,963
31	2,829	41,863,807	4,585	58,053,119
32	3,126	47,887,873	4,502	58,390,239
33	3,800	61,687,820	4,901	64,313,851
34	3,186	53,797,762	3,929	50,940,851
35	2,658	46,779,935	3,192	41,314,827
36	2,487	45,133,333	3,172	40,237,531
37	2,656	49,521,268	3,505	42,479,866
38	2,676	50,533,924	3,548	42,584,854
39	2,108	39,876,795	3,298	37,675,075
40	1,909	36,937,313	3,149	36,220,670
41	1,721	32,905,622	3,113	35,112,635
42	1,781	34,649,900	3,181	35,560,227
43	1,787	35,110,842	3,072	33,613,429
44	1,745	34,524,409	3,103	34,329,873
45	1,652	32,489,648	3,051	32,861,445
46	1,646	32,417,735	2,952	33,030,198
47	1,698	33,500,280	2,865	31,826,640
48	1,749	34,848,405	3,117	35,411,312
49	1,766	35,771,265	3,252	37,312,201
50	1,746	34,362,946	3,227	37,724,712
51	1,615	31,481,706	3,112	35,351,579
52	1,682	32,552,769	3,320	38,595,710
53	1,776	33,416,506	3,197	37,803,094
54	1,656	31,471,526	3,038	36,429,667
55	1,727	32,482,932	2,973	34,236,244
56	1,629	29,381,980	2,954	33,914,428
57	1,565	27,773,430	2,679	30,617,128
58	1,453	24,773,060	2,588	29,768,151

**Table 1—Continued**  
**The Number and Annual Salaries**  
**of Members in Active Service**  
**Distributed by Age as of June 30, 1980**

Age	Men		Women	
	Number	Amount	Number	Amount
59	1,347	22,146,357	2,648	30,757,474
60	1,406	22,827,121	2,524	29,370,250
61	1,130	17,910,627	2,012	23,978,600
62	1,153	17,921,173	2,088	24,971,754
63	881	13,224,648	1,454	17,325,969
64	690	10,225,461	1,149	13,148,441
65	642	9,119,921	904	10,706,936
66	355	4,871,245	635	6,806,235
67	193	2,258,171	259	2,806,642
68	121	1,149,840	142	1,196,591
69	96	772,860	73	427,921
70	58	472,448	49	351,742
71	43	356,740	21	118,811
72	34	193,056	20	82,820
73	22	129,727	19	88,727
74	18	126,241	9	50,490
75	14	83,868	9	71,017
76	9	103,285	4	17,173
77	7	41,611	7	25,460
<b>Total</b>	<b>79,611</b>	<b>\$1,339,319,342</b>	<b>136,722</b>	<b>\$1,576,060,137</b>

**Table 2**  
**The Number and Annual Salaries**  
**of Members in Active Service**  
**Distributed by Years of Credited Service**  
**As of June 30, 1980**

Years Of Service	Men		Women	
	Number	Amount	Number	Amount
0	1,343	\$6,422,158	3,451	\$13,790,411
1	4,574	35,246,171	13,654	78,993,978
2	3,635	37,577,478	11,721	81,416,400
3	3,404	37,240,611	10,836	80,673,178
4	3,433	41,822,385	9,397	85,037,249
5	3,276	43,590,536	7,819	80,331,484
6	4,062	57,633,199	8,663	96,267,442
7	4,068	60,912,200	7,943	94,254,831
8	4,083	63,227,623	7,709	95,209,656
9	3,603	57,518,218	6,673	85,772,909
10	3,844	64,809,745	6,488	89,911,432

**Table 2—Continued**  
**The Number and Annual Salaries**  
**of Members in Active Service**  
**Distributed by Years of Credited Service**  
**As of June 30, 1980**

Years Of Service	Men		Women	
	Number	Amount	Number	Amount
11	3,865	68,458,457	5,618	79,863,198
12	3,704	66,692,547	4,854	70,032,590
13	3,406	64,206,722	4,646	67,168,967
14	2,954	56,422,885	4,252	64,598,043
15	2,499	49,011,284	2,932	47,523,098
16	2,197	44,618,598	2,372	38,934,401
17	2,046	41,481,046	2,206	36,735,717
18	1,780	36,612,341	2,008	34,148,285
19	1,717	35,839,746	1,610	28,684,056
20	1,591	33,721,083	1,588	27,549,955
21	1,625	35,277,889	1,362	24,555,796
22	1,492	32,305,930	1,224	21,793,011
23	1,365	30,148,925	1,095	20,321,162
24	1,303	28,829,969	957	18,324,044
25	1,188	26,881,797	833	15,693,535
26	982	23,029,434	663	13,328,928
27	928	21,565,212	610	12,473,480
28	789	18,649,585	498	10,024,095
29	745	17,552,247	458	9,381,830
30	750	18,152,664	402	8,224,810
31	672	16,297,136	374	7,730,202
32	617	15,190,663	295	6,172,379
33	544	13,296,148	251	5,129,499
34	443	11,121,187	249	5,157,699
35	307	7,704,012	201	4,165,893
36	232	5,994,506	176	3,620,989
37	188	4,839,690	153	3,163,798
38	134	3,365,296	144	2,889,117
39	75	1,980,912	104	2,226,725
40	44	1,267,496	75	1,605,782
41	26	726,109	53	1,078,064
42	27	713,878	25	507,871
43	21	541,960	22	422,617
44	15	398,996	27	531,167
45	8	237,025	16	335,996
46	6	171,192	5	108,264
47			7	137,478
48	1	14,451		
49			2	38,480
50			1	20,146
Total	79,611	\$1,339,319,342	136,722	\$1,576,060,137

**Table 3**  
**The Number and Annual Annuities**  
**of Annuitants on the Retired List**  
**as of June 30, 1980 Classified by Age**  
*Retired on Account of Superannuation and*  
*Those in Receipt of Withdrawal Annuities*

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
29	1	\$398	1	\$171
30			6	1,829
31	1	686	9	3,159
32	5	2,490	8	3,812
33	39	14,864	18	7,876
34	40	16,554	52	25,103
35	50	25,013	41	23,333
36	49	25,216	47	25,896
37	45	26,550	43	27,829
38	47	31,422	41	30,876
39	29	20,980	29	24,879
40	27	23,252	23	21,179
41	23	19,615	27	23,233
42	25	28,852	10	5,260
43	22	25,836	19	18,446
44	32	36,214	18	19,581
45	26	41,492	20	26,925
46	29	38,195	18	16,543
47	20	40,913	30	40,413
48	19	30,704	24	43,505
49	25	49,576	39	70,270
50	16	45,709	51	61,604
51	24	63,593	48	70,373
52	21	66,279	51	78,833
53	32	78,711	50	101,079
54	28	119,221	77	182,423
55	32	178,878	71	207,931
56	67	594,506	120	520,113
57	70	542,166	152	731,755
58	97	851,763	200	973,333
59	122	1,209,794	268	1,795,311
60	151	1,531,742	323	2,117,071
61	134	1,315,799	425	2,827,433
62	267	2,550,003	637	4,558,632
63	497	3,791,947	1,158	6,964,365
64	643	4,466,505	1,363	8,193,286
65	691	4,659,900	1,546	9,293,766



**Table 3—Continued**  
**The Number and Annual Annuities**  
**of Annuitants on the Retired List**  
**as of June 30, 1980 Classified by Age**  
*Retired on Account of Superannuation and*  
*Those in Receipt of Withdrawal Annuities*

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
66	953	5,771,850	1,981	12,174,512
67	1,089	6,850,878	2,204	13,719,924
68	1,097	6,462,984	2,421	15,901,611
69	1,043	6,334,752	2,424	16,498,082
70	973	6,506,237	2,572	17,856,853
71	985	6,522,001	2,514	18,097,113
72	958	6,438,583	2,724	20,095,914
73	866	6,108,659	2,526	18,381,514
74	772	5,222,620	2,305	16,662,794
75	684	4,701,169	2,051	14,584,711
76	616	4,259,525	1,742	12,360,202
77	500	3,252,999	1,525	10,592,708
78	425	3,022,831	1,329	9,234,341
79	334	2,079,376	1,048	7,010,561
80	277	1,695,395	974	6,572,032
81	260	1,749,437	760	5,192,626
82	208	1,313,199	721	4,704,894
83	181	1,142,840	655	4,380,448
84	137	929,621	598	3,973,926
85	147	957,783	481	3,141,581
86	106	670,991	416	2,720,638
87	79	535,793	336	2,184,056
88	61	436,003	258	1,682,729
89	56	347,835	212	1,364,095
90	49	304,292	187	1,172,074
91	29	146,057	104	655,247
92	28	161,289	102	668,048
93	13	84,857	63	391,913
94	18	102,448	48	320,103
95	11	57,279	45	293,889
96	7	35,372	31	198,894
97	3	13,828	29	195,400
98			21	130,523
99	1	7,067	9	60,378
100			11	63,687
102	1	7,987	1	7,084
103			3	22,899
104			2	14,748
105			1	7,557

**Table 3—Continued**

The Number and Annual Annuities  
of Annuitants on the Retired List  
as of June 30, 1980 Classified by Age

*Retired on Account of Superannuation and  
Those in Receipt of Withdrawal Annuities*

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
106			1	3,797
107			1	6,551
108			1	1,678
<b>Total</b>	<b>16,413</b>	<b>\$106,799,175</b>	<b>42,500</b>	<b>\$282,439,761</b>

**SUMMARY**

No Option	8,561	\$45,938,776	35,812	\$238,270,033
Option 1	2,178	14,355,816	3,926	24,537,259
Option 2	1,692	8,464,508	983	5,603,206
Option 3	3,707	34,651,656	1,659	12,990,912
Option 4	275	3,388,419	120	1,038,351

**Table 4**

The Number and Annual Annuities  
of Survivor Annuitants as of June 30, 1980  
Classified by Age

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
7			2	\$2,815
8			2	1,629
10			1	1,311
12			1	600
14			1	208
21			1	2,405
32	1	\$4,776	2	4,257
35	1	600	2	3,758
37	1	791	1	1,841
38	2	6,103	1	537
39	1	517		
40	1	1,090	1	1,200
41	1	2,089	2	13,430
42	1	2,145	1	2,304
43			2	7,021
44	2	3,511	2	6,674
45	1	2,423	1	1,034
46	3	4,560	1	5,220
47			1	396

**Table 4—Continued**  
**The Number and Annual Annuities**  
**of Survivor Annuitants as of June 30, 1980**  
**Classified by Age**

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
48	2	1,332	5	10,382
49	1	585	3	2,988
50			3	11,129
51	2	1,503	3	2,076
52	2	1,995	8	27,425
53	1	361	5	24,637
54	1	2,654	10	38,748
55	3	3,413	7	23,908
56	3	9,972	9	35,500
57	2	8,637	11	33,826
58	2	3,598	16	58,704
59	5	17,622	13	61,932
60	6	14,944	23	84,156
61	1	2,587	22	58,413
62	2	3,159	36	161,141
63	2	8,220	35	106,739
64	4	7,355	39	139,526
65	7	24,456	49	172,253
66	7	31,519	63	193,933
67	13	30,717	56	204,107
68	13	55,131	65	208,125
69	11	36,792	84	279,863
70	12	32,385	77	229,493
71	13	45,146	83	265,403
72	12	43,124	109	318,497
73	17	60,280	88	272,464
74	16	42,849	80	221,552
75	12	26,468	103	260,003
76	11	32,595	85	196,178
77	23	52,171	75	181,882
78	9	16,929	92	227,315
79	13	21,481	82	174,647
80	5	11,152	67	128,145
81	13	23,518	73	135,463
82	12	14,299	50	90,921
83	8	29,399	61	117,113
84	10	15,536	46	75,002
85	13	13,867	41	69,393
86	5	22,975	38	48,338
87	5	9,072	37	48,966
88	6	10,083	25	33,866

**Table 4—Continued**  
**The Number and Annual Annuities**  
**of Survivor Annuitants as of June 30, 1980**  
**Classified by Age**

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
89	6	8,608	25	36,753
90	6	8,013	17	21,870
91	1	3,208	11	10,984
92	3	2,497	25	37,458
93	2	1,493	11	12,774
94	1	881	7	5,616
95	4	3,035	6	11,541
96			2	959
97	3	4,577	6	4,569
98	1	1,687	3	2,257
99	3	1,844	1	2,317
100			1	1,420
101			3	1,929
102	1	625	2	5,264
103			1	1,200
104	1	60		
<b>Total</b>	<b>352</b>	<b>\$855,014</b>	<b>2,023</b>	<b>\$5,247,703</b>

**Table 5**  
**The Number and Annual Annuities**  
**of Survivor Annuitants as of June 30, 1980**  
**Classified by Years of Unexpired Period**

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
0	4	\$9,306	5	\$12,521
1	2	6,136	7	18,339
2	1	575	9	16,869
3	5	22,710	11	27,199
4	5	25,804	10	40,141
5	2	3,527	9	37,723
6	4	14,420	19	79,069
7	6	18,629	12	47,118
8	5	16,633	8	48,807
9	5	20,080	11	62,169
10			2	1,829
<b>Total</b>	<b>39</b>	<b>\$137,820</b>	<b>103</b>	<b>\$391,784</b>

**Table 6**  
**The Number and Annual Annuities**  
**of Annuitants on the Retired List**  
**as of June 30, 1980 Classified by Age**

*Retired on Account of Disability*

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
28	1	\$4,286		
29	1	3,662		
30			1	\$3,993
31			2	7,359
32	1	4,868	3	14,170
33	1	3,646	2	7,822
34	2	5,825	6	26,802
35	1	5,225	9	42,791
36	1	3,445	3	14,927
37	3	15,060	4	20,825
38	1	5,870	4	15,867
39	1	4,191	7	35,989
40	3	13,206	3	13,699
41	5	22,329	4	15,251
42	2	15,536	4	19,270
43	7	37,387	7	38,245
44	8	46,567	6	24,554
45	9	36,320	11	45,721
46	9	45,112	9	38,047
47	9	43,747	7	39,207
48	12	62,481	14	69,453
49	16	100,022	16	74,727
50	12	64,075	17	60,885
51	20	137,855	20	90,974
52	32	194,471	31	119,949
53	23	160,174	18	88,710
54	25	133,700	40	222,600
55	46	248,705	38	201,631
56	41	224,402	46	210,230
57	28	142,139	56	253,110
58	55	304,444	70	309,782
59	42	248,453	70	396,692
60	51	249,958	85	391,766
61	74	358,720	91	370,881
62	64	241,685	91	418,941
63	68	286,428	96	406,942
64	52	193,531	78	327,595
65	40	158,351	93	402,000
66	40	190,048	78	305,108
67	29	109,425	84	405,214

**Table 6—Continued**  
**The Number and Annual Annuities**  
**of Annuitants on the Retired List**  
**as of June 30, 1980 Classified by Age**  
*Retired on Account of Disability*

Age	Men		Women	
	Number	Total Annuities	Number	Total Annuities
68	17	53,862	40	201,478
69	23	80,602	44	203,289
70	20	79,604	52	223,490
71	13	48,940	40	165,458
72	10	33,018	54	209,511
73	8	30,339	48	199,144
74	3	8,826	31	123,392
75	5	14,516	26	107,799
76			17	60,129
77	5	15,758	24	80,964
78	1	2,015	21	80,308
79	3	10,975	13	44,920
80	3	11,345	9	27,519
81	3	10,324	13	42,411
82			9	33,440
83	3	10,870	5	16,759
84			8	34,311
85			8	31,767
86	1	4,683	6	26,345
87	1	3,207	5	20,004
88			6	20,813
89	1	4,598	5	19,536
90	1	2,491	4	18,324
91			4	15,387
92			5	27,989
93	1	3,627	1	4,837
94	1	2,724	2	6,017
95			2	8,953
96			1	5,075
97			1	4,257
98			1	6,244
99			1	5,109
<b>Total</b>	<b>958</b>	<b>\$4,557,673</b>	<b>1,730</b>	<b>\$7,626,708</b>
<b>SUMMARY</b>				
No Option	744	\$3,483,023	1,641	\$7,074,976
Option 1	35	178,793	39	184,099
Option 2	124	587,113	34	189,234
Option 3	55	308,744	16	178,399

**Table 7**  
**The Number and Annual Annuities**  
**of Annuitants on the Retired List**  
**as of June 30, 1980 Classified by Age**

<b>Age</b>	<b>Number</b>	<b>Total Annuities</b>	<b>Women Number</b>	<b>Total Annuities</b>
70			1	\$39
82			1	95
87			1	75
93			1	298
<b>Total</b>			<b>4</b>	<b>\$507</b>

# Statement Of Financial Position As Of June 30, 1980

IN  
BILLIONS

Financial reserves available for:

The first obligation against the assets to be considered is the active contributing members' savings accounts with 4 percent interest added. \$1.579

The next obligation against the assets is the future annuities payable to the present retirees developed by using an actuarial projection based on life expectancies of the retirees, earnings of the Fund, and what would be owed to their beneficiaries. 2.378

Balance of the assets available for current contributing members retiring in the future. .889

A. Total of Money in Reserves \$4.846

Liabilities on account of:

Present value of past contributions. \$1.579

Present value of future contributions by members. 1.608

Present value of annuities payable to present retirees, beneficiaries and their survivors. 3.569

Present value of annuities that will be required from State and school districts to pay annuities to active contributing members when they retire. 5.660

B. Total Liabilities \$12.416

Uncovered Liabilities (A-B): \$7.570

Less: Money planned to be received for service rendered after June 30, 1980

By contributing members. 1.608

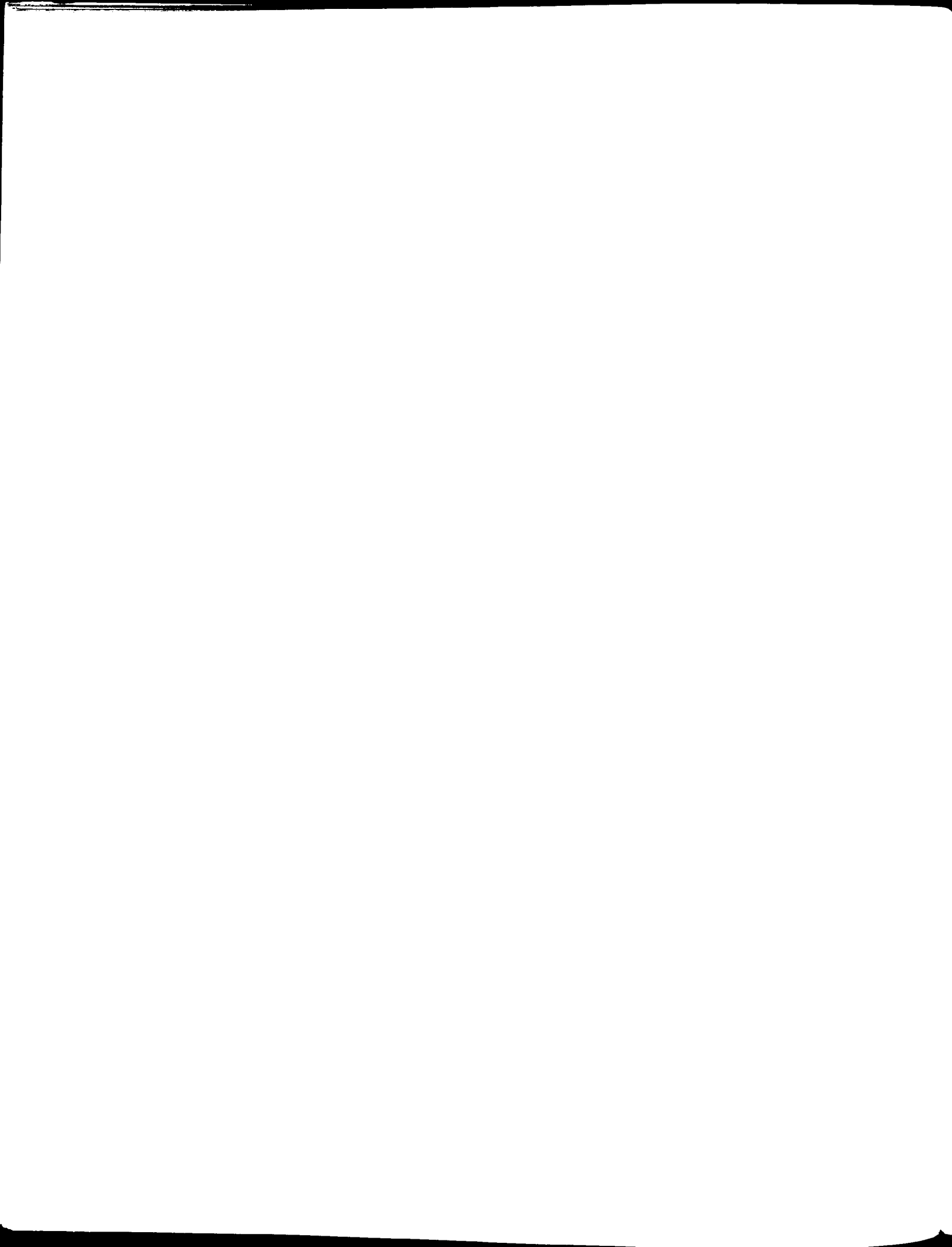
By State and school districts. 2.144

C. Total to be received from members, State, and school districts \$ 3.818

Less: Interest on Commonwealth deficit not counted in the financial reserves. .055

Unfunded Accrued Liabilities \$3.763



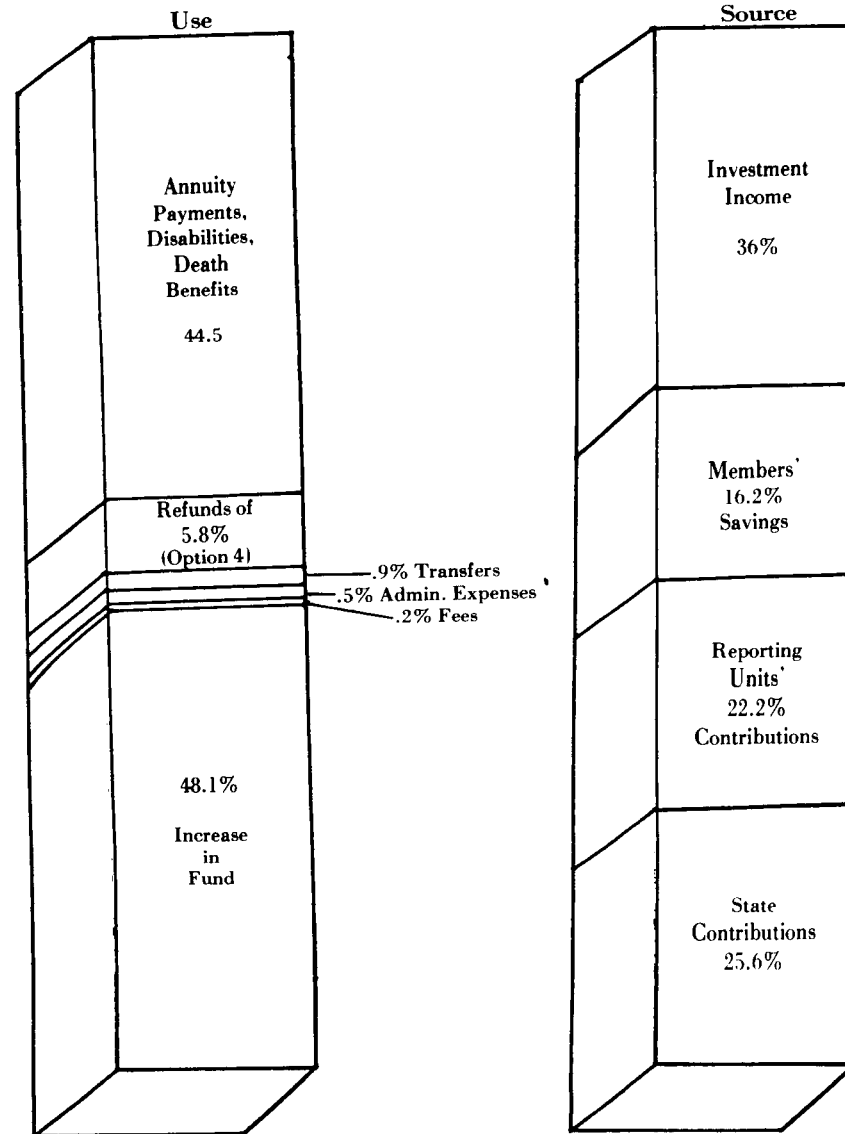


# Cash Flow

## Fiscal Year 1980-81

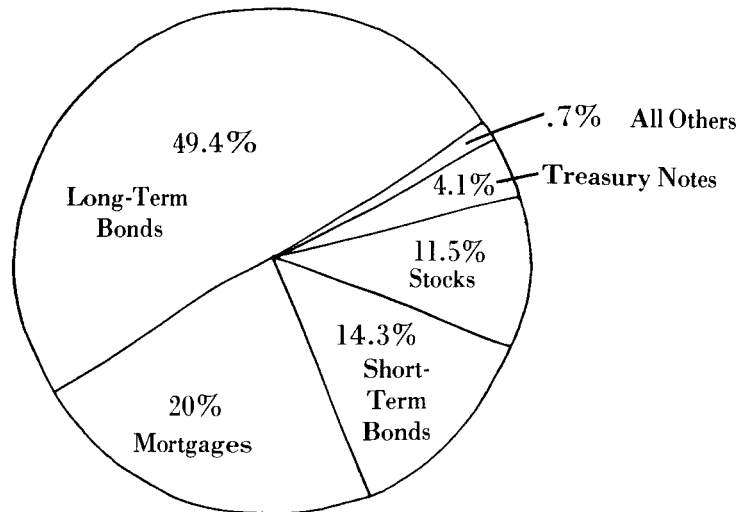
<u>Receipts</u>	Millions
State Contributions	\$ 251,351
Reporting Units	226,796
Employes' Savings	167,029
Installment Purchase of Service, etc.	8,785
Investment Income	<u>368,352</u>
Total	<u>\$1,022,313</u>

<u>Disbursements</u>	Millions
Annuity Payments Disabilities, Death Benefits	452,010
Refunds (Option 4)	59,187
Transfers	8,717
Administrative Expenses	5,378
Service Fees, Invest- ment Expenses	2,230
Total	527,522
Increase in Fund	494,791



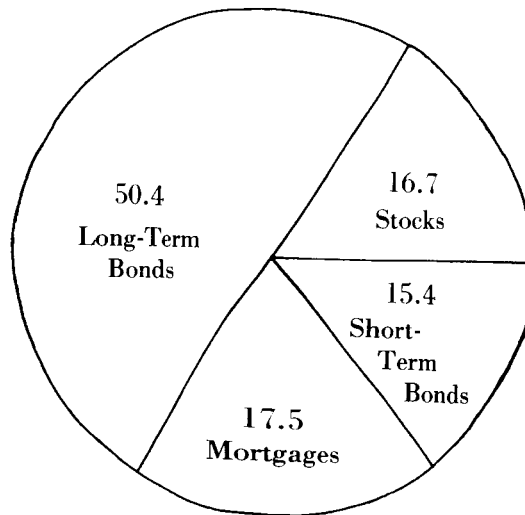
# Investments

## *Income Distribution*



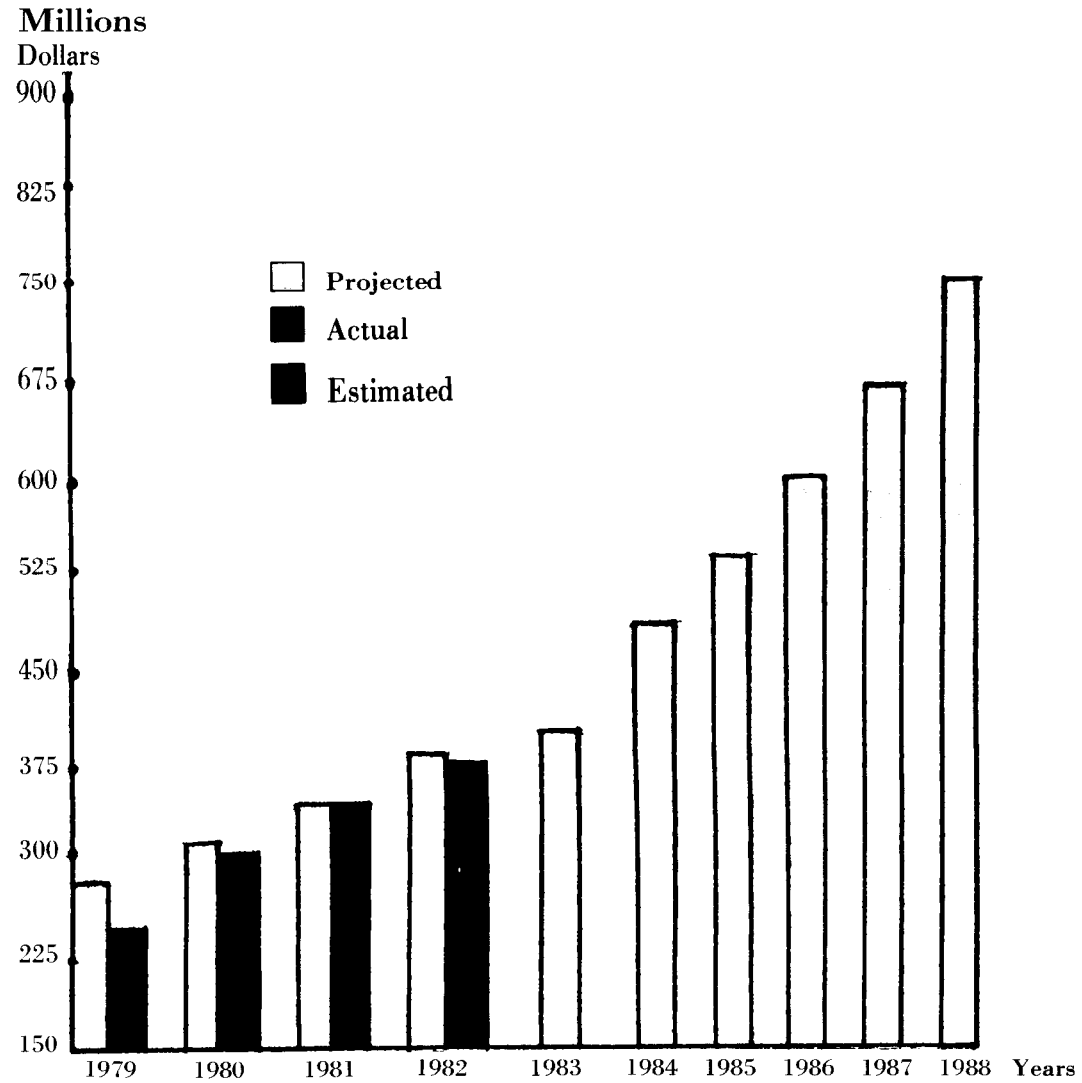
The greatest contributor to the investment income is the long-term bonds category where 50.4 percent of the portfolio is producing 49.4 percent of the income. The next largest income producer is the mortgage section where 17.5 percent is responsible for 20.0 percent of the investment income. Short-term investments are next highest, contributing 14.3 percent of the income for the Fund, and involves 15.4 percent of the assets. Stocks are 16.7 percent of the invested assets and contributed 11.5 percent of the 1980-81 investment income.

## *Asset Allocation*



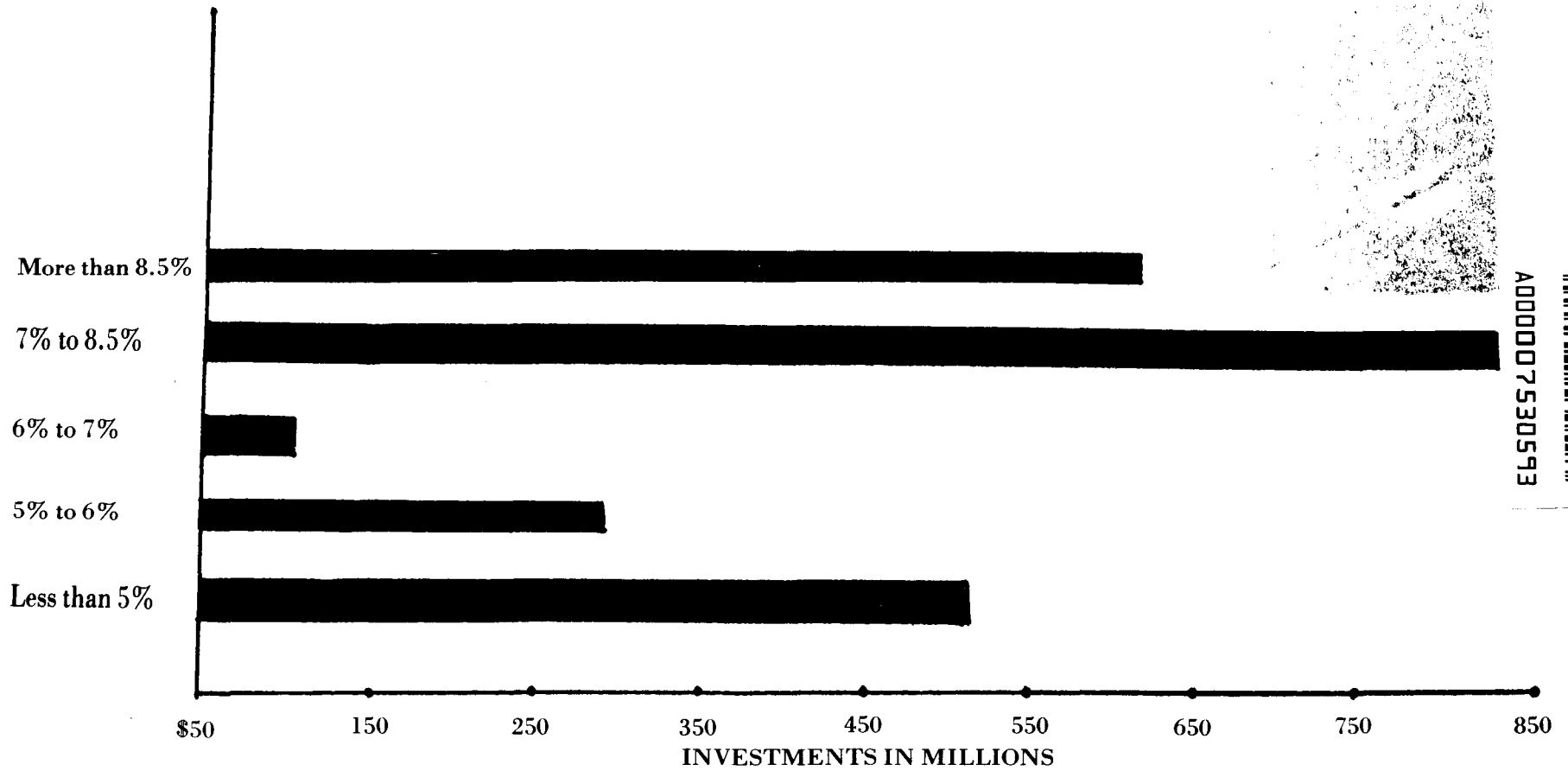
# Investment Income

*Actual and 25-year Projection*



# Bond Portfolio By Coupon Yield

(June 30, 1981)



Average Coupon Yield 7.47%

A000007530593



