STATE OF NEW YORK INSURANCE DEPARTMENT

REPORT ON EXAMINATION

OF THE

TEACHERS' RETIREMENT SYSTEM

OF THE

CITY OF NEW YORK

AS OF

JUNE 30, 1999

DATE OF REPORT:	MARCH 9, 2001
EXAMINER:	JO'CATENA HARGROVE

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STATE OF NEW YORK
INSURANCE DEPARTMENT
25 BEAVER STREET
NEW YORK, NEW YORK 10004

March 9, 2000

Honorable Gregory V. Serio
Superintendent of Insurance
Albany, New York 12257

Sir:

Pursuant to instructions contained in Appointment No. 21620, dated October 4, 2000 and annexed hereto, an examination has been made into the condition and affairs of the Teachers' Retirement System of the City of New York, hereinafter referred to as "the System" or "Teachers' Retirement System," located at 40 Worth Street, New York, New York 10013.

Where "Department" appears in this report, it refers to the State of New York Insurance Department.

The attached report is respectfully submitted.

1. EXECUTIVE SUMMARY

The Teachers' Retirement System was established August 1, 1917 to provide retirement benefits to New York City teachers and other members. (See item 3 of this report)

The examiner's review of a sample of transactions did not reveal any differences which materially affected the System's financial condition as presented in its financial statements contained in the June 30, 1999 filed annual statement. (See item 5 of this report)

The System failed to reduce the asset reported for "Loans receivable from members" by the loan balances due from members who retired, resigned or otherwise terminated from active service. (See item 7 of this report)

The actuarial asset valuation method was changed in the June 30, 1995 valuation and again with the June 30, 1999 valuation. (See item VI of the report of the examining actuary)

The examiner recommends that the System facilitate the Department in obtaining proper confirmations from its custodians.

2. SCOPE OF EXAMINATION

The prior examination was conducted as of June 30, 1994. This examination covers the period from July 1, 1994 through June 30, 1999. As necessary, the examiner reviewed transactions occurring subsequent to June 30, 1999 but prior to the date of this report (i.e., the completion date of the examination).

The examination comprised a verification of assets and liabilities as of June 30, 1999 to determine whether the System's 1999 filed annual statement fairly presents its financial condition. The examiner reviewed the System's income and disbursements deemed necessary to accomplish such verification and utilized such examination procedures, as deemed appropriate, in such review and in the review or audit of the following matters:

History of the System
Management
Board of trustees records
Accounts and records
Financial statements
Treatment of members

The examiner reviewed the corrective actions taken by the System with respect to the recommendations contained in the prior report on examination. The results of the examiner's review are contained in item 9 of this report.

This report on examination is confined to financial statements and comments on those matters which involve departure from laws, regulations or rules, or which require explanation or description.

3. DESCRIPTION OF SYSTEM

A. History

The Teachers' Retirement System was established August 1, 1917 to provide retirement benefits to New York City teachers and other members. The Teachers' Retirement Law is Chapter 4 of Title 13 of the Administrative Code of the City of New York. Members of the Teachers Retirement System include New York City teachers, their superiors (such as school principals) and school para-professionals, all of whom are employed by the New York City Board of Education. Certain employees of the Board of Higher Education, such as City University adjunct professors, have the option to be members of the System as well.

Members belong to one of four tiers, depending on the date they joined the System. Tier I members joined before July 1, 1973. Tier II members joined after June 30, 1973 and before July 27, 1976. Tier III members joined after July 26, 1976 and before September 1, 1983. Tier IV members joined after August 31, 1983. Benefits are determined by the tier to which the member belongs.

In 1973 and 1976, amendments were made to the Retirement and Social Security Law to modify certain benefits for employees joining the System on or after the effective date of such changes. The 1973 amendments imposed certain limitations on the benefits available to members who joined the System between July 1, 1973 and June 30, 1976. The 1976 amendments, which affect certain employees who joined the System on or after July 1, 1976, require employee contributions of 3% of salary, reduce pension benefits by one-half of the primary social security benefit, and provide for an annual cost of living escalator in pension benefits of not more than 3%.

Legislation enacted on July 1, 1983 and effective September 1, 1983, modified certain elements of Tier III, which became Tier IV. This legislation eliminated: (1) the coordination of pension benefits with Social Security, (2) the automatic cost of living escalation feature, (3) the refunding of employee's contributions until age 62 and (4) the right to retire between ages 55 and 62 at reduced benefits.

Legislation enacted in 1998 reduced the number of years of membership from 10 to 5 to become vested for a service retirement allowance.

Legislation, effective October 1, 2000: (1) allows for members in Tier III/IV to stop paying 3% member contributions when they have 10 years of credited service, (2) reduces from 5 to 2 the number of years of membership service required before certain members can receive credit for prior service, (3) lowers the reduction factors for Tier IV members who retire before age 62 with less than 30 years of service to match those of Tier II, and provides that beneficiaries of Tiers II, III, and IV members who elected Death Benefit 1 coverage receive the greater of Death Benefit 1 or Death Benefit 2 upon the member's death, and (4) allows members to apply for military service credit effective October 19, 2000.

Beginning January 1, 1968, members were given the option to participate in a variable annuity program. Teachers who elect this option have all or a portion of their contributions, as well as the City of New York's contribution for ITHP, invested in common stocks. The monthly variable annuity payment is a fixed number of units, the value of which varies each month to reflect the financial experience of the investments.

Beginning February 1, 1970, members were given the option to participate in a Tax Deferred Annuity program that provides a means of deferring income tax payments on their contributions until retirement. Each year, members may elect to contribute a limited portion of their salaries to the program. The City of New York makes no contributions, but guarantees the benefit payments to retired members. A member has the option to have contributions accumulated at fixed interest or to have contributions invested in variable funds as in the variable annuity programs.

There are two variable funds that members can invest in as part of the variable annuity programs. The Variable A Fund primarily invests in common stock; the Variable B Fund is primarily invested in programs aimed at positive returns with minimal market fluctuations.

The System files two annual statements with the Department: one includes the fixed and variable operations of the Qualified Pension Plan ("QPP") and the other includes the fixed and variable operations of the Tax Deferred Annuity ("TDA") program.

B. Management

The Administrative Code of the City of New York provides that the management of the System shall be vested in the Teachers' Retirement System board consisting of seven members.

The following is a list of the Teachers' Retirement System board members as of June 30, 1999:

Name and Residence	Principal Affiliation	Year First Elected
Melvyn Aaronson Long Island, NY	Teacher member	1980
Adam L. Barsky New York, NY	Representative of the Mayor	1997
Alan G. Hevesi New York, NY	Comptroller City of New York	1994
Dr. Irene Impellizzeri Brooklyn, NY	Representative of the President of the Board of Education	1989
Sandra March Queens, NY	Teacher member	1984
Mona Romain New York, NY	Teacher member	1998
Ninfa Segarra New York, NY	Member of the Board of Education	1995

The following is a listing of the principal officers of the System as of June 30, 1999:

Name	Title
Adam L. Barsky	Chairperson
Donald S. Miller	Executive Director
Alan G. Hevesi	Comptroller/Treasurer
Robert C. North, Jr.	Chief Actuary
Paul J. Raucci	Chief Accountant

4. SIGNIFICANT OPERATING RESULTS

Indicated below is significant information concerning the operations of the System during the period under examination as extracted from its filed annual statements.

The following tables indicate the System's financial growth during the period under review for each program:

Qualified Pension Plan-Fixed

	June 30, 1994	June 30, 1999	Increase (Decrease)
Admitted assets	$14,591,323,625	$27,101,069,921	$12,509,746,296
Liabilities	14,582,236,064	21,731,165,725	7,148,929,661
Excess of assets over liabilities *	$ 9,087,561	$ 5,369,904,196	$ 5,360,816,635

Qualified Pension Plan-Variable A Fund

	June 30,1994	June 30,1999	Increase (Decrease)
Admitted assets	$4,324,118,477	$ 9,603,078,740	$5,278,960,263
Liabilities	4,355,059,680	10,365,630,646	6,010,570,966
Excess of assets over liabilities *	$ (30,941,203)	$ (762,551,906)	$ (731,610,703)

Qualified Pension Plan-Variable B Fund

	June 30, 1994	June 30, 1999	Increase (Decrease)
Admitted assets	$806,390,881	$491,037,216	$(315,353,665)
Liabilities	815,510,518	527,710,810	(287,799,708)
Excess of assets over liabilities *	$ (9,119,637)	$ (36,673,594)	$ (27,553,957)

*Because of the way pension plans are funded, these values, "Excess of admitted assets over liabilities," would generally be zero. They are not zero here primarily because of differences between admitted assets, as shown in the annual statement, and the actuarial valuation of assets, used for developing employer contribution. These differences are further discussed in Section IV of the Report of the Examining Actuary.

Tax Deferred Annuity Program-Fixed and Variable

	June 30,1994	June 30,1999	Increase
Admitted assets	$3,814,271,969	$10,014,762,492	$6,200,490,523
Liabilities	3,814,271,969	10,014,762,492	6,200,490,523
Excess of assets over liabilities	$ 0	$ 0	$ 0

The following table indicates the number of members and pensioners in the System as reported in the filed annual statements, as of June 30th for each of the years under review:

	1995	1996	1997	1998	1999
Active members	78,180	76,672	78,335	83,940	86,682
Service pensioners	38,802	42,187	45,171	45,000	45,215
All other pensioners	4,854	4,982	5,137	5,268	5,310
Total	121,836	123,841	128,643	134,208	137,207

The active members are only those members receiving salaries, and the pensioners are only those receiving benefits as of June 30, 1999.

5. FINANCIAL STATEMENTS

The following statements show the income and disbursements for the years under review and the assets and liabilities as of June 30, 1999, as contained in the June 30, 1999 filed annual statement. The examiner's review of a sample of transactions did not reveal any differences which materially affected the System's financial condition as presented in its financial statements contained in the June 30, 1999 filed annual statement.

A. INCOME AND DISBURSEMENTS OF THE QUALIFIED PENSION PLAN

QUALIFIED PENSION PLAN - FIXED {INCLUDES GROUP TERM LIFE INSURANCE (GTLI)}

	1995	1996	1997	1998	1999
Income					
Regular contributions from members (1)	$ 69,072,855	$ 71,996,076	$ 74,450,161	$ 80,293,295	$ 92,339,326
Purchase of outside service	60,501	128,568	445,779	273,952	243,045
Budget appropriations	357,895,821	397,486,286	388,612,256	417,472,339	460,515,983
Supplementary employer contributions	11,797,164	13,273,459	13,134,165	13,723,876	14,253,395
Transfer to/from Contingent Reserve Fund (CRF)	(1,103,765)	0	0	0	0
Transfer to/from Variable A	(30,941,203)	0	0	0	0
Transfer to/from Variable B	(9,119,637)	0	0	300	(300)
Transfer to/from TDA Variable A	(4,770,560)	0	0	0	0
Transfer to/from TDA Variable B	(707,572)	0	0	0	0
Transfer to/from New York State Teachers Retirement System	(9,281,638)	(7,588,050)	(3,594,468)	(19,487,339)	(207,638)
Transfer to/from New York State & Local Employees' Retirement System	(74,340)	1,116,513	723,235	640,122	2,008,825

(1) All teachers' contributions to the System are entered through the Annuity Savings Fund account. The amounts reported in this table for each year are not only the regular contributions from members to the QPP Fixed Fund but also contributions to the QPP Variable Funds (A and B) and the TDA Fixed and Variable Funds (A and B). The contributions for other programs are transferred through QPP Fixed disbursements.

	1995	1996	1997	1998	1999
Transfer to/from New York City Employees' Retirement System	$ 535,602	$ 1,881,322	$ 2,703,358	$ 1,522,950	$ 853,815
Transfer to/from New York State Police and Fire Department Pension Funds	769,463	0	255,696	0	0
Transfer to/from Board of Education Retirement System of the City of New York	1,143,057	1,005,831	1,464,526	4,273,140	15,961,992
Conversion to/from Fixed to Variable A	(11,460,597)	95,477,496	51,266,662	(21,799,966)	(22,795,959)
Conversion to/from Fixed to Variable B	22,857,370	28,982,699	36,030,712	26,602,678	15,939,940
Reserve for service charge, Tiers 3 and 4 member loans	72,907	101,780	(166,720)	216,823	220,351
Reserve for insurance, Tiers 3 and 4 member loans	30,175	33,260	(24,267)	37,355	840
Life insurance fund	0	0	0	554	(617)
Interest on mortgage loans	72,496	67,656	62,486	56,928	52,221
Interest on collateral loans	13,264,571	12,601,776	12,427,699	13,641,064	14,783,946
Interest on bonds	478,818,768	512,356,820	493,189,981	513,933,085	535,456,265
Dividends on stocks	179,471,689	186,633,393	194,352,571	195,891,341	190,757,367
Money left or redeposited with the organization	0	0	182,802	0	0
Income on Corpus expense	0	0	105,207	202,322	3,833,930
Uncollected checks	17,948	65,092	371,095	0	244,422
Unclaimed checks	(104,112)	(33,056)	(23,742)	(75,761)	0
Escrow Fund – FHA Mortgage	(52,942)	(25,902)	41,848	47,060	16,341
Due depositories	5,165,654	71,773,131	(82,295,698)	(14,325,252)	(22,542,809)
United Federation of Teacher dues	27	113	240	(707)	11
Health insurance	16	(431)	(369)	(7,099)	5,138
Net change in accrued expenses	0	0	6,086,000	1,031,754	(257,584)
Profit on sale of bonds	242,739,088	218,584,806	195,957,859	299,418,724	186,165,201
Profit on sale of stocks	249,842,938	224,916,991	438,113,141	719,260,428	866,140,678
Unrealized appreciation/depreciation	1,106,265,391	1,572,532,966	2,283,305,540	2,265,651,579	1,876,797,532
Increases in funds and accounts by transfers	456,061,814	1,858,448,015	1,508,814,898	506,068,963	596,547,803
Total income and increases	$3,128,338,949	$5,261,816,609	$5,615,992,654	$5,004,564,508	$4,827,333,461

	1995	1996	1997	1998	1999
Disbursements					
Periodic retirement payments	$ 740,069,371	$ 869,916,322	$ 980,459,216	$ 997,595,893	$ 1,026,218,328
Lump sum payments on death after retirement	37,996,371	32,404,936	45,338,850	51,562,374	72,136,251
Payments on account of death before retirement	32,151,909	37,961,854	41,889,221	35,431,692	35,511,587
Payments on account of resignation and dismissal with cause	1,624,418	1,781,408	1,912,687	2,403,847	2,138,723
Payments on account of excess contributions	2,435,382	7,250,414	6,976,824	2,829,605	2,942,355
Payments on account of contributions made in error	118,939	113,089	326,152	222,349	260,332
Transfer of loans receivable	21,064,543	90,063,079	87,874,433	15,692,702	25,896,476
Due to/from Fixed to Variable A	2,224,500	55,433,381	(45,873,187)	10,644,848	5,769,721
Due to/from Fixed to Variable B	(2,371,907)	8,422,144	(7,657,203)	41,848	185,331
Due to/from TDA Variable A	13,166,272	(9,265,420)	(2,049,704)	(2,260,612)	(14,519,823)
Due to/from TDA Variable B	4,349,144	(9,237,619)	1,109,865	914,717	(553,544)
Due to/from TDA Fixed	0	(1,187,141)	1,187,141	0	0
Administrative expenses	246,270	236,207	9,949,938	19,542,643	18,033,445
Investment expenses	0	0	10,681,691	13,826,553	13,053,173
Accounts payable for securities purchased	(227,897,133)	(8,006,992)	(957,924,509)	554,672,865	100,871,824
Advance for service charge, Tiers 3 and 4 loans	(50,000)	(50,000)	(350,000)	0	0
Accrued member contributions	1,754,707	(1,701,390)	(1,703,621)	0	0
Interest credit to the Funds	55,568,491	72,760,112	83,638,102	93,028,859	107,320,879
Other interest on benefits paid	3,685,026	9,067,895	8,277,735	6,572,053	9,379,843
Loss on sale of bonds	234,775,585	189,923,483	122,302,521	51,878,354	180,276,654
Loss on sale of stocks	83,367,255	38,264,830	46,395,324	49,727,084	142,455,299
Forgeries	(500)	3,290	7,342	2,198	3,233
Withholding tax	82,660	167,735	268,590	113,530	92,893
Decreases in funds and accounts by transfers	456,061,814	1,858,448,015	1,508,814,899	506,068,963	596,547,803
Total disbursements and decreases	$ 1,460,423,117	$ 3,242,769,632	$ 1,941,852,307	$ 2,410,512,365	$ 2,324,020,783
Excess of income and increases over disbursements and decreases	$ 1,667,915,832	$ 2,019,046,977	$ 3,674,140,347	$ 2,594,052,143	$ 2,503,312,678
Ledger assets, prior year	14,469,421,101	16,137,336,933	18,156,383,910	21,830,524,257	24,424,576,400
Ledger assets, current year	$16,137,336,933	$18,156,383,910	$21,830,524,257	$24,424,576,400	$26,927,889,078

Qualified Pension Plan - Variable A Fund

	1995	1996	1997	1998	1999
Income					
Regular contributions from members	$ 9,718,697	$ 8,935,206	$ 8,288,552	$ 8,688,564	$ 8,867,257
Supplementary employer contributions	6,915,399	7,000,887	5,979,638	5,983,444	5,806,615
Transfer to/from Fixed	30,941,203	0	0	0	0
Transfer to/from BERS	121,986	154,486	180,834	229,367	258,210
Transfer to/from Variable A from/to Variable B	36,737,782	21,559,034	47,716,086	44,381,900	33,659,900
Conversion to/from Fixed	11,460,597	(95,477,496)	(51,266,662)	21,799,966	22,795,959
Interest on bonds	2,529,923	3,085,176	3,634,164	2,312,903	3,121,867
Dividends on stocks	66,321,128	70,844,480	72,592,940	52,811,403	60,805,331
Money left or redeposited with the organization	0	0	34,300	465,038	0
Income on the reserve for expenses	839,247	972,983	1,345,733	1,604,629	3,276,681
Income on Corpus expense	0	0	73,185	89,458	1,509,865
Accounts payable for securities purchased	0	0	(5,113,405)	0	33,934,601
Profit on sale of stocks	286,435,486	329,990,166	398,367,585	3,028,857,682	485,075,133
Unrealized appreciation/depreciation	624,170,201	793,030,498	1,138,307,393	(1,379,244,612)	1,056,778,870
Net increase-Board of Education	6,176,786	3,897,825	10,668,990	9,333,074	6,614,467
Increases in funds or accounts by transfers	85,455,336	340,403,270	317,174,474	142,605,918	187,999,336
Total income and increases	$1,167,823,771	$1,484,396,515	$1,947,983,808	$ 1,939,918,735	$1,910,504,093

	1995	1996	1997	1998	1999
Disbursements					
Periodic retirement payments	$ 179,713,519	$ 240,794,225	$ 300,615,669	$ 376,891,630	$ 422,139,676
Lump sum payments on account of death after retirement	5,523,586	6,459,553	7,110,583	6,617,955	7,645,259
Payments on account of death before retirement	305,953	212,188	266,092	431,416	435,032
Payments on account of resignation and dismissal with cause	0	0	8,598	21,045	0
Payments on account of excess contributions	9,685,220	48,771,582	48,787,227	24,676,926	39,336,680
Transfers to/from Variable A	(2,224,500)	0	0	0	0
Due to/from Fixed	0	(55,433,380)	45,873,187	(10,644,849)	(5,769,721)
Administrative expenses	12,023,181	14,341,062	4,425,863	8,602,705	7,973,622
Investment expenses	0	0	9,820,174	7,559,029	7,777,720
Net change in accrued expenses	0	0	0	8,747	(3,625)
Accounts payable for securities purchased	9,069,221	18,453,761	0	5,980,978	0
Loss on sale of stocks	24,077,966	23,631,601	44,482,914	32,067,947	139,619,164
Decreases in funds and accounts by transfers	85,455,336	340,403,270	317,174,474	142,605,918	187,999,336
Total disbursements and decreases	$ 323,629,482	$ 637,633,862	$ 778,564,783	$ 594,819,447	$ 807,153,144
Excess of income over disbursements	$ 844,194,289	$ 846,762,653	$1,169,419,026	$1,345,099,287	$1,103,350,949
Ledger assets, prior year	4,339,097,228	5,183,291,517	6,030,054,170	7,199,473,196	8,544,572,483
Ledger assets, current year	$5,183,291,517	$6,030,054,170	$7,199,473,196	$8,544,572,483	$9,647,923,432

Qualified Pension Plan - Variable B Fund

	1995	1996	1997	1998	1999
Income					
Regular contributions from members	$ 1,811,643	$ 1,550,164	$ 1,225,670	$ 990,102	$ 899,291
Supplementary employer contributions	1,107,221	982,696	678,807	503,833	424,498
Transfer to/from Variable B	9,119,637	(21,559,034)	(47,716,086)	(44,382,201)	(33,659,600)
Transfer to/from Variable A	(36,737,782)	0	0	0	0
Conversion to/from Fixed	(22,857,370)	(28,982,698)	(36,030,712)	(26,602,678)	(15,939,940)
Interest on bonds	51,527,066	29,018,427	69,947,812	26,128,556	23,969,685
Income on the reserve for expenses	383,877	417,451	326,302	573,966	300,577
Income on Corpus expense	0	0	109,413	29,267	558,306
Net change in accrued expenses	0	0	(318,755)	0	0
Profit on sale of bonds	0	0	163,356	0	0
Increases in funds and accounts by transfers	9,909,423	36,129,108	22,003,181	8,194,536	6,822,999
Total income and increases	$ 14,263,716	$ 17,556,114	$ 10,388,988	$ (34,564,619)	$ (16,624,184)
Disbursements					
Periodic retirement payments	$ 39,364,279	$ 40,516,909	$ 40,255,206	$ 37,584,072	$ 35,728,318
Lump sum payments on account of death after retirement	634,805	916,718	1,000,392	778,548	725,348
Payments on account of death before retirement	52,924	59,703	15,338	0	0
Payments on account of excess contributions	1,318,305	4,794,807	2,710,120	1,019,236	627,985
Transfers to/from Variable B	0	0	0	(41,848)	0
Transfers to/from Fixed	2,371,907	(8,422,144)	7,657,203	0	(185,331)
Administrative expenses	1,360,802	1,840,598	1,532,947	2,814,419	2,608,612
Investment expense	0	0	215,705	199,893	190,970
Net change in accrued expenses	108,910	(86,762)	0	2,861	0
Decreases in funds and accounts by transfers	9,909,423	36,129,108	22,003,181	8,194,536	6,822,999
Total disbursements	$ 55,121,356	$ 75,748,937	$ 75,390,093	$ 50,551,717	$ 46,518,900
Excess of income over disbursements	$ (40,857,640)	$ (58,192,823)	$ (65,001,104)	$ (85,116,336)	$ (63,143,085)
Ledger assets, prior year	747,726,230	706,868,590	648,675,767	583,674,663	498,558,327
Ledger assets, current year	$706,868,590	$648,675,767	$583,674,663	$498,558,327	$435,415,243

B. INCOME AND DISBURSEMENTS OF THE TAX DEFERRED ANNUITY PROGRAM

Tax Deferred Annuity Program - Fixed

	1995	1996	1997	1998	1999
Income					
Regular contributions from members	$ 56,266,834	$ 57,830,349	$ 51,041,448	$ 55,155,723	$ 66,046,344
Transfer to/from CRF	1,103,765	0	0	0	0
Transfer from BERS	1,318,315	0	1,688,838	3,071,922	4,086,573
Conversion to/from Variable A	0	0	(36,768,899)	(12,546,072)	56,707,361
Conversion to/from Variable B	0	0	39,098,039	33,889,309	24,014,737
Repayment of TDA loans	332,698	2,106,659	3,823,136	5,038,727	6,128,897
Interest on bonds	55,568,491	72,760,112	83,638,103	92,846,057	107,320,880
Increases in funds and accounts by transfers	4,112,015	5,641,121	6,374,807	7,590,084	10,504,998
Total income and increases	$118,702,118	$138,338,241	$ 148,895,471	$ 185,045,750	$ 274,809,789
Disbursements					
Periodic retirement payments	$ 2,990,935	$ 3,246,738	$ 3,397,173	$ 3,340,663	$ 3,354,282
Lump sum payments on account of death before retirement	2,703,235	2,283,223	3,227,690	4,182,036	3,811,731
Payments on account of resignation and dismissal with cause	2,390,576	5,076,421	4,311,009	3,691,816	2,025,586
Payments on account of dismissal without cause	13,463,757	0	13,166,450	19,520,852	23,072,613
Payments on account of excess contributions	0	10,859,815	0	0	0
Transfer to/from Fixed to Variable A	(37,857,615)	(31,432,743)	0	0	0
Transfer to /from Fixed to Variable B	(59,085,159)	(52,590,895)	0	0	0
Transfer to/from TDA programs	0	(1,290,810)	(1,187,141)	0	0
TDA new loans to members	4,787,665	6,887,963	8,210,768	8,401,636	8,850,381
TDA service charge on loans	15,313	28,278		0	40,473
Decreases in funds and accounts by transfers	4,480,658	5,408,323	6,374,807	7,590,084	10,504,998
Total disbursements and decreases	$ (66,110,635)	$ (51,523,687)	$ 37,500,757	$ 46,727,087	$ 51,660,065
Excess of income over disbursements	$184,812,753	$189,861,928	$ 111,394,716	$ 138,318,663	$ 223,149,726
Ledger assets, prior year	623,422,050	808,234,803	998,096,731	1,109,491,477	1,247,810,110
Ledger assets, current year	$808,234,803	$998,096,731	$1,109,491,447	$1,247,810,110	$1,470,959,836

Tax Deferred Annuity Program - Variable A Fund

	1995	1996	1997	1998	1999
Income					
Regular contributions from members	$ 176,644,621	$ 190,467,740	$ 214,371,728	$ 258,866,199	$ 289,011,984
Conversion Fixed to Variable A	0	0	36,768,899	12,546,072	(56,707,360)
Transfer to/from CRF	4,770,560	0	0	0	0
Transfer Variable A to/from Variable B	48,382,336	27,454,350	36,566,466	31,321,508	15,657,433
Repayment of TDA Loans	845,368	6,337,963	12,224,438	19,139,822	24,138,718
Money left or redeposited	0	0	0	261,837	117,809
Income on the reserve for expense	575,657	177,811	21,809	854,881	1,243,809
Income on Corpus expense	0	0	605,614	50,282	704,989
Interest on bonds	10,581,947	(5,045,956)	902,602	1,635,133	1,818,129
Interest on short term	0	625,194	0	0	0
Dividends on stocks	31,731,812	26,368,406	19,242,478	37,765,861	35,754,326
Profit on sale of stocks	137,415,927	122,774,353	106,058,209	2,170,625,461	285,680,894
Unrealized appreciation/depreciation	423,787,773	597,013,308	1,004,359,264	(904,223,794)	980,926,507
Net increase BERS	21,027,100	20,736,051	42,240,297	40,455,272	39,223,416
Increases in funds or accounts by transfers during the year	21,434,094	27,572,738	26,327,739	37,391,636	46,329,862
Total income and increases	$ 877,197,195	$1,014,481,958	$1,499,689,542	$1,706,690,171	$1,663,900,517
Disbursements					
Periodic retirement payments	$ 24,123,736	$ 28,817,071	$ 32,437,372	$ 39,037,021	$ 41,567,828
Lump sum payments on account of death after retirement	2,930,492	2,842,209	4,670,865	3,629,091	4,871,512
Payments on account of death before retirement	2,203,104	3,130,933	7,378,872	9,817,298	13,354,171
Payments on account of resignation and dismissal with cause	4,954,503	20,492,203	16,947,978	12,320,672	21,931,444
Payments on account of excess contributions	30,696,280	34,668,629	42,754,446	53,022,490	76,217,345
Transfers to/from Fixed	20,342,200	51,122,924	2,049,704	2,260,612	14,519,823
TDA new loans to members	13,453,292	17,930,329	22,999,829	29,978,289	31,971,460
TDA service charge on loans	36,143	0	0	0	105,590
Administrative expenses	2,576,918	2,591,394	2,406,851	4,835,313	4,481,726
Investment expenses	5,624,195	5,968,639	2,645,493	5,400,534	4,648,278

	1995	1996	1997	1998	1999
Income on Corpus expense	$ 0	$ 0	$ 39,020	$ 4,916	$ 0
Net change in accrued expenses	311,786	38,532	819,565	0	0
Accounts payable for securities purchased	3,580,815	11,104,041	1,908,750	4,343,605	(29,138,578)
Loss on sale of stocks	11,551,278	8,792,245	11,842,776	22,981,437	82,227,525
Decreases in funds or accounts by transfers during the year	19,397,494	27,634,508	26,327,739	37,391,637	46,329,862
Total disbursements and decreases	$ 141,782,236	$ 215,133,657	$ 175,229,260	$ 225,022,915	$ 313,087,986
Excess of income over disbursements	$ 735,414,959	$ 799,348,301	$1,324,460,283	$1,481,667,255	$1,350,812,530
Ledger assets, prior year	2,509,017,971	3,244,432,930	4,079,495,788	5,403,956,067	6,885,623,326
Ledger assets, current year	$3,244,432,930	$4,043,781,231	$5,403,956,067	$6,885,623,326	$8,236,435,872

Tax Deferred Annuity Program - Variable B Fund

	1995	1996	1997	1998	1999
Income					
Regular contributions from members	$ 21,255,223	$ 17,717,997	$ 14,160,745	$ 12,528,970	$ 12,340,520
Transfer to/from CRF	707,572	0	0	0	0
Conversion to/from Variable B	0	0	(39,098,039)	(33,889,309)	(24,014,737)
Transfer from Variable A to Variable B	(48,382,336)	(27,454,350)	(36,566,466)	(31,321,508)	(15,657,433)
Reserve for insurance	0	0	130,624	79,703	183,723
Reserve for service charge	0	0	105,390	138,270	170,700
Income on the reserve for expense	0	0	239,228	343,914	233,128
Interest on Corpus expenses	0	0	0	14,267	218,294
Repayment of TDA loans	146,918	832,033	1,261,090	1,819,141	2,025,836
Interest on bonds	29,754,779	24,551,266	40,554,091	18,772,667	18,330,168
Profit on sale of stocks	0	0	108,904	0	0
Increases in funds or accounts by transfers during the year	2,444,223	3,269,342	3,257,172	3,329,024	3,816,858
Total income and increases	$ 5,926,379	$ 18,916,288	$ (15,847,260)	$ (28,184,860)	$ (2,352,943)
Disbursements					
Periodic retirement payments	$ 3,207,112	$ 3,331,820	$ 3,146,619	$ 2,999,119	$ 2,837,052
Lump sum payments on death after retirement	803,128	626,176	607,754	194,176	161,089
Payments on account of death before retirement	758,741	1,863,050	1,402,537	740,184	914,401
Payments on account of resignation and dismissal with cause	1,045,568	2,625,400	1,766,211	2,002,769	1,417,862
Payments on account of excess contributions	10,809,867	6,550,951	5,744,973	5,081,930	4,343,041
Transfer to/from TDA Fixed	59,085,159	52,590,895	(1,109,865)	(914,717)	553,544
Administrative expenses	67,952	76,119	706,637	1,371,983	1,271,655
Investment expenses	0	0	103,996	103,686	99,311
Income on Corpus expense	0	0	(12,453)	1,392	0
Net change in accrued expenses	0	0	190,249	0	0
TDA new loans to members	2,279,227	2,621,398	3,380,444	2,578,038	2,622,229
TDA service charge on loans	5,874	8,502	11,388	10,987	11,197

	1995	1996	1997	1998	1999
Decreases in funds or accounts by transfers during the year	$ 4,112,181	$ 3,440,369	$ 3,257,172	$ 3,329,024	$ 3,816,858
Total disbursements and decreases	$ 82,174,809	$ 73,734,680	$ 19,195,662	$ 17,498,571	$ 18,048,239
Excess of income over disbursements	$ 76,248,430	$ (54,818,392)	$ (35,042,922)	$ (45,683,431)	$ (20,401,182)
Ledger assets, prior year	526,108,868	449,860,438	359,327,488	324,284,566	278,601,135
Ledger assets, current year	$449,860,438	$395,042,046	$324,284,566	$278,601,135	$258,199,953

Note: "Ledger assets, current year" for 1996 does not match the "Ledger assets, prior year" for 1997 due to a change in allocation methods; this change affects both Variable Fund A and Variable Fund B.

C. ASSETS AND LIABILITIES OF THE QUALIFIED PENSION PLAN

Assets	
Ledger assets	
Mortgage loans on real estate	$ 834,044
Book value of bonds in the fixed program	8,720,941,657
Equity in the fixed fund at market value	17,228,348,962
Equity in the Variable A fund at market value	9,568,124,606
Equity in the Variable B fund at book value	430,063,910
Cash on deposit not on interest - Variable A	32,732
Cash on deposit not on interest - Variable B	15,904
Loans receivable to Tier I/II members	134,833,570
Loans receivable to Tier III/IIV members	86,245,064
Accounts receivable for securities sold – Fixed	756,685,774
Accounts receivable for securities sold – Variable A	32,999,031
Short term investment of the reserve for expenses - Variable A	46,767,062
Short term investment of the reserve for expenses - Variable B	5,335,428
Total ledger assets	$37,011,227,744
Non-ledger assets	
Interest due and accrued on mortgages	$ 3,897
Interest due and accrued on bonds – fixed	107,269,623
Interest due and accrued on bonds - Variable A	169,312
Interest due and accrued on bonds - Variable B	60,029,447
Dividend receivable – Fixed	13,823,711
Dividend receivable - Variable A	1,437,914
Interest due, short term investment of reserve for expenses - Variable A	182,632
Interest due, short term investment of reserve for expenses - Variable B	21,162
Due from the City of New York - Contingent Reserve Fund (CRF)	827,737,595
Due from the City of New York - Group Term Life Insurance (GTLI)	10,547,000
Forgeries	19,358
Withholding tax	1,000,317
Life Insurance Fund	760
Total non-ledger assets	$ 1,022,242,728
Gross assets	$38,033,470,472
Assets not admitted	
Due from the City of New York - Balance Sheet Liabilities - CRF	$ 827,737,595
Due from the City of New York - Balance Sheet Liabilities - GTLI	10,547,000
Total assets not admitted	$ 838,284,595
Total admitted assets	$37,195,185,877

Liabilities	
Net reserves	$30,299,184,218
Benefits due and unpaid	17,415,137
Reserve and escrow for mortgages	2,212,083
Expenses due and accrued	2,131,684,997
Due to BERS	71,660,202
Due to City of New York	0
Amount in transit	1,474,404,090
Reserve to offset amount in transit	(1,474,404,090)
Money due to TDA program	26,232,127
Due to TDA program	76,118,416
Total net reserves and all other liabilities	$32,624,507,181
Excess of admitted assets over total net reserves and all other liabilities *	$ 4,570,678,696
Total	$37,195,185,876

*Because of the way pension plans are funded, these values, "Excess of admitted assets over total net reserves and all other liabilities," would generally be zero. They are not zero here primarily because of differences between admitted assets, as shown in the annual statement, and the actuarial valuation of assets, used for developing employer contribution. These differences are further discussed in Section IV of the Report of the Examining Actuary.

D. ASSETS AND LIABILITIES OF THE TAX DEFERRED ANNUITY PROGRAM

Assets	
Ledger assets	
Mortgage loans on real estate	$ 47,458
Book value of bonds in the fixed program	490,604,851
Equity in the Fixed fund at market value	980,307,522
Equity in the Variable A fund at market value	8,178,636,640
Equity in the Variable B fund at book value	253,757,043
Cash on deposit not on interest - Variable A	15,917
Cash on deposit not on interest - Variable B	8,156
Accounts receivable for securities sold - Variable A	28,206,895
Short term investment of the reserve for expenses - Variable A	29,576,420
Short term investment of the reserve for expenses - Variable B	3,501,556
Short term investment of the reserve for service charge - Variable B	557,751
Short term investment of the reserve for Insurance - Variable B	375,447
Total ledger assets	$ 9,965,595,657
Non-ledger assets	
Interest due and accrued on bonds - Variable A	$ 144,725
Interest due and accrued on bonds - Variable B	21,442,535
Dividend receivable – Variable A	1,229,099
Interest due, short term investment of reserve for expenses - Variable A	114,674
Interest due, short term investment of reserve for expenses - Variable B	3,675
Net amount due from the Qualified Pension Plan - fixed	26,232,127
Total non-ledger assets	$ 49,166,835
Gross assets	$10,014,762,492
Total admitted assets	$10,014,762,492
Liabilities	
Net reserves	$ 9,776,979,417
Benefits due and unpaid	18,294,331
Expenses due and accrued	1,198,411
Reserve for expenses	34,376,161
Due to BERS TDA variable annuity program	228,675,097
Payable on account of securities purchased	31,357,491
Amount due to QPP	(76,118,416)
Total net reserves and all other liabilities	$10,014,762,492
Excess of admitted assets over total net reserves and all other liabilities*	$ 0
Total	$10,014,762,492

*Because of the way pension plans are funded, these values, "Excess of admitted assets over total net reserves and all other liabilities," would generally be zero. They are not zero here primarily because of differences between admitted assets, as shown in the annual statement, and the actuarial valuation of assets, used for developing employer contribution. These differences are further discussed in Section IV of the Report of the Examining Actuary.

6. CUSTODIAL AFFIDAVIT

Citibank and State Street Bank are the custodians of the System's securities. At the beginning of the examination, a request to confirm the System's securities was sent to each custodian. The examiners did not receive a proper confirmation from Citibank. The Comptroller provided the examiners with an electronic inventory of securities held by Citibank on CD-ROM and Citibank separately confirmed that the CD-ROM received from the Comptroller did in fact contain the inventory of securities held for the System. A proper confirmation requires the custodian to provide an inventory of all securities held, as well as a notarized affidavit. It is also noted that the confirmation from State Street Bank was not received until after the completion of the on-site examination.

The examiner recommends that the System facilitate the Department in obtaining proper confirmations from its custodians.

7. MEMBER LOANS

As of June 30, 1999, the System reported assets for "Loans Receivable From Tier I/II Members" in an amount of $134,833,570 and "Loans Receivable From Tier III/IV Members" in an amount of $86,245,064. The records for these loans, as well as other member information, were kept on a computer system maintained by the Prudential Insurance Company of America ("Prudential") under a service agreement with the System. The System implemented its own Unified Pension System ("UPS") in February of 1999. The contract with Prudential was canceled and the System now processes its own policy loan portfolio.

Subject to certain restrictions and eligibility requirements, members may borrow against their accumulated member contributions and their TDA accounts. Upon retirement, a member's outstanding loan balance is eliminated by reducing the reserve used to calculate his/her retirement allowance.

The System provided the examiners with a member loan inventory maintained by Prudential's computer system. The review indicated that approximately 2,000 loan balances reported on the inventory for Tier I and II members were for members who had retired, resigned or otherwise been terminated from active service (inactive status). These "inactive status" loan balances should have been eliminated from the inventory. Although the loans were repaid by reducing the members' accumulated contributions prior to benefit calculations, the loan balances had improperly remained on the computer system and were reported as assets in the June 30, 1999 filed annual statement of the System. The asset is overstated by $8,159,434.

The examiner recommends that the System eliminate "inactive status" member loan balances in a timely manner from the inventory in order to correctly report the asset "Loans Receivable From Tier I/II members." This is a repeat recommendation from the prior report on examination.

8. TREATMENT OF MEMBERS

The examiner reviewed a sample of various types of retirement benefits, death claims and withdrawals of excess member contributions. The examiner also reviewed the various controls involved, checked the accuracy of the computations and traced the accounting data to the books of account.

Based upon the sample reviewed, no significant findings were noted.

9. PRIOR REPORT SUMMARY AND CONCLUSIONS

Following are the recommendations contained in the prior report on examination and the subsequent actions taken by the System in response to each citation:

Item	Description
A	The examiner recommends that the System eliminate "inactive status" member loans from the loan receivable asset. The implementation of the Unified Pension System (UPS) in February of 1999 was supposed to clean-up the "inactive status" members loans issue, however the System continued to report loans of inactive members as part of the loan receivable asset during the examination period. (See item 7 of this report)
B	The examiner recommends that the System pay advance partial benefits in accordance with its procedures. Advance payments are initiated when retirement allowance calculations are delayed beyond the normal processing time of 2 to 4 months from the effective retirement date. Currently advance payments are initiated 2 pay cycles from the date of retirement.
C	The examiner recommends that the System expedite efforts to alleviate the telephone service problem and devote a reasonable amount of additional resources to servicing the TDA accounts. Currently the System has a Web-site, an automated service line, a walk-in center open from 8:30 am to 5:00 pm with 8 representatives available, a call center with 43 phone lines and 19 representatives, and a correspondence unit to respond to written inquiries.

10. SUMMARY AND CONCLUSIONS

Following are the recommendations contained in this report:

Item	Description	Page No
A	The examiner recommends that the System facilitate the Department in obtaining proper confirmations from its custodians.	23
B	The examiner recommends that the System eliminate “inactive status” member loans from the loan receivable asset. This is a repeat recommendation from the prior report on examination.	23 - 24

Respectfully submitted,

/s/ ______________________
Jo'Catena Hargrove
Senior Insurance Examiner

STATE OF NEW YORK)
)SS:
COUNTY OF NEW YORK)

Jo'Catena Hargrove, being duly sworn, deposes and says that the foregoing report, subscribed by her, is true to the best of her knowledge and belief.

/s/ ______________________
Jo'Catena Hargrove

Subscribed and sworn to before me

this__________ day of ___________________2001.

APPOINTMENT NO. 21620

STATE OF NEW YORK

INSURANCE DEPARTMENT

I, NEIL D. LEVIN, Superintendent of Insurance of the State of New York, pursuant to the provisions of the Insurance Law, do hereby appoint:

JO CATENA HARGROVE

as a proper person to examine into the affairs of the

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

and to make a report to me in writing of the condition of the said

SYSTEM

with such other information as she shall deem requisite.

In Witness Whereof, I have hereunto subscribed by name and affixed the official Seal of the Department at the City of New York

this 4th day of October, 2000

NEIL D. LEVIN
Superintendent of Insurance

by ***GREGORY V. SERIO***
First Deputy Superintendent

TEACHER'S RETIREMENT SYSTEM
OF THE
CITY OF NEW YORK

AND

NEW YORK CITY
TEACHER'S GROUP LIFE INSURANCE PLAN

Report of the Examining Actuary

Michael J. Lambert, ASA, MAAA, EA

Condition as of: June 30, 1999

Table of Contents

I. Tax Deferred Annuity Program

As mentioned elsewhere in this Report on Examination, the System maintains both a Qualified Pension Plan (QPP) and a Tax Deferred Annuity program (TDA) pursuant to Section 403(b) of the United States Internal Revenue Code. The QPP and the TDA file separate annual statements with the New York Insurance Department.

The TDA program is funded entirely from voluntary member contributions together with investment earnings thereon. Upon retirement, a member may withdraw the balance in his TDA account in whole or in part, or may apply it to provide an annuity at the System's purchase rates. Accordingly, there are no liabilities in the TDA annual statement for benefits provided by the employer for members now in active service. The only liability in the TDA annual statement related to active members is the amount reported on Line 1 of Page 5, “Accumulated Contributions of Members.”

Members may choose to invest their contributions in a variable fund (the TDA Variable Annuity Savings Fund) or in a non-variable fund (the TDA Annuity Savings Fund). The TDA Variable Annuity Savings Fund is pooled and invested in common with Variable Fund ‘A’ of the Teachers Retirement System of the City of New York. Variable fund earnings are credited to the members through unit values, similar to a unit investment trust.

Contributions in the non-variable TDA Annuity Savings Fund are invested in common with the Annuity Savings Fund of the QPP. Interest is credited to both at rates declared by the System's Board of Trustees from time to time. The rate declared in each year of the five-year examination period has been 8¼%.

Liabilities for retired lives in the TDA statement represent the present value of annuities purchased by retired members with their accumulated TDA contributions. Fixed-benefit annuities under the TDA program are fully guaranteed by the System. Variable annuities are guaranteed to the extent that there will be no reduction in benefits on account of adverse mortality experience; however, the monthly benefit may increase or decrease in accordance with the performance of the underlying investments. The assumptions used in actuarial valuations of the TDA have been the same as those used for the QPP.

Actuarial gains and losses may be experienced by the TDA as a result of differences between actual investment earnings and interest credited to TDA non-variable funds, as well as differences between actual and expected retired life mortality. Each year’s actuarial gains are credited to the TDA Accumulated Earnings Fund, and actuarial losses are charged against that fund. For purposes of computing employer contributions, TDA accumulated earnings are treated as an asset of the QPP (a negative asset in case of a deficit), thereby effectively amortizing each year's TDA gain or loss over the aggregate future working lifetime of the System's members.

This Report on Examination covers the five fiscal years ending June 30, 1995 through June 30, 1999. The following table, and many of the subsequent tables in this Report of the Examining Actuary, includes values as of the end of those five fiscal years, as well as values as of the end of the immediately preceding fiscal year, ending June 30, 1994.

The TDA program reported the following liabilities for both the fixed and the variable fund in its annual statements to the New York Insurance Department (dollar amounts are shown to nearest thousand):

Valuation Date	(1) Accumulated Contributions of Members	(2) Present Value of Benefits Payable to Beneficiaries Now Drawing Allowances	(3) Benefits Due and Unpaid	(4) Net Credit Balance in Expense Reserves
6/30/94	$ 3,372,130	$243,349	$6,289	$10,937
6/30/95	4,147,277	266,723	7,282	11,367
6/30/96	5,074,738	306,732	5,998	13,119
6/30/97	6,383,042	353,874	7,256	20,680
6/30/98	7,887,652	389,165	15,949	25,505
6/30/99	9,367,474	409,505	18,294	35,575

Valuation Date	(5) Accumulated Earnings	(6) Net Reserves and All Other Liabilities (1)+(2)+(3)+(4)+(5
6/30/94	$81,567	3,714,272
6/30/95	108,457	4,541,106
6/30/96	89,806	5,490,393
6/30/97	108,330	6,873,182
6/30/98	130,202	8,448,473
6/30/99	183,914	10,014,762

II. Liabilities of the Qualified Pension Plan

The liabilities of the Qualified Pension Plan as reported in its annual statements to the New York Insurance Department for the period under examination (and the immediately preceding fiscal year) are summarized in the following table (dollar amounts are shown to the nearest thousand):

Valuation Date	(1) Accumulated Contributions of Members	(2) Present Value of Benefits Payable to Beneficiaries Now Drawing Allowances	(3) Present Value of Benefits Provided for Members Now in Active Service	(4) Unfunded Accrued Liability
6/30/94	$1,560,790	$8,433,535	$12,177,544	$1,294,090
6/30/95	1,802,146	8,862,350	13,457,810	1,280,242
6/30/96	1,436,217	11,319,076	14,345,700	1,572,997
6/30/97	1,556,681	13,409,951	14,228,232	1,617,666
6/30/98	1,847,009	14,368,020	15,733,074	1,723,343
6/30/99	2,067,622	15,107,676	17,086,598	1,631,862

Valuation Date	(5) Present Value of Future Tier 3 & 4 Employee Contributions	(6) Present Value of All Other Prospective Contributions	(7) Benefits and Expenses Due and Unpaid	(8) Funds Due Tax Deferred Annuity Program
6/30/94	$591,206	$2,105,778	$1,663,853	$14,467
6/30/95	670,949	2,202,454	1,888,694	(2,862)
6/30/96	740,750	2,419,350	1,966,578	34,295
6/30/97	804,749	2,260,398	2,878,723	57,042
6/30/98	912,521	2,085,856	2,289,185	72,567
6/30/99	1,025,643	1,305,206	2,222,972	102,350

Valuation Date	(9) Net Reserves and All Other Liabilities (1)+(2)+(3)-(4) -(5)-(6)+(7)+(8)	(10) Admitted Assets	(11) Excess of Assets over Reserves and Liabilities (10) – (9)
6/30/94	$ 19,859,115	$19,721,833	$(137,282)
6/30/95	21,854,493	22,206,854	352,361
6/30/96	24,368,769	25,017,177	648,408
6/30/97	27,447,816	29,763,493	2,315,677
6/30/98	29,588,135	33,625,564	4,037,429
6/30/99	32,624,507	37,195,186	4,570,679

Because of the way pension plans are funded, the values in Column (11), "Excess of Assets over Reserves and Liabilities", would, in general, be zero. They are not zero here because of differences between Admitted Assets, as shown in the Annual Statement, and the Actuarial Value of Assets, used for developing the employer contribution. Those differences are discussed further in Section VI of this report.

For the June 30, 1994 and 1995 valuation dates, the liability item “Accumulated Contributions of Members” as reported by the System consisted of the contributions of Tier 1 and 2 members only. Those contributions consist of the Annuity Savings Fund (ASF) and the Variable Annuity Savings Fund (VASF). For June 30, 1996 and subsequent valuations, the liability item “Accumulated Contributions of Members” included only the VASF portion of the Tier 1 and 2 member contributions. The remaining accumulated member contributions (i.e., for Tier 3 and 4 members and, for 1996 and subsequent valuations, the ASF portion of the Tier 1 and 2 member contributions) are reported as a positive liability, captioned “Amount in Transit,” in the Member Contribution Accumulation Fund and ASF, and as an offsetting negative liability within the Contingent Reserve Fund.

As will be discussed in the following section of this report, Tier 3 and 4 member contributions have been handled differently from those of Tier 1 and 2 members in the valuation and funding process.

III. Actuarial Cost Method and Calculation of Employer Contributions

The actuarial cost method by which employer contributions to the System are computed is the Frozen Entry Age Actuarial Cost Method. A significant aspect of that method is that the present value of future normal contributions is a balancing item, calculated by subtracting the sum of the actuarial value of assets, the unfunded actuarial accrued liability and the actuarial present value of future required employee contributions from the actuarial present value of future benefits as of the valuation date. Consequently, actuarial gains and losses are amortized implicitly over members' future working lifetimes as part of the employer's normal contribution.

Contributions are required of employees in all four benefit tiers, reducing the amount the employer otherwise would have to contribute. The typical method for achieving the reduction in employer costs is to include the full formula benefit in the present value of future benefits and then deduct the present value of future employee contributions. The System does so for Tier 3 and Tier 4 employees, and, beginning with the 1996 actuarial valuation, the Tier 1 and Tier 2 employee contributions that are made to the Annuity Savings Fund.

Unlike Tiers 3 and 4, the contributions required of Tier 1 and Tier 2 employees are not set at a uniform percentage of salary, but instead are targeted to provide a certain percentage of the total formula benefit. Any excess contributions at the time of retirement may be applied to increase the retirement allowance, and any deficiency in contributions will result in a reduction in the allowance. Tier 1 and 2 employees also have greater access to their contributions via loans than do Tier 3 and 4 employees, and frequently take maximum loans just prior to retirement.

As a result, the present value of future Tier 1 and Tier 2 employee contributions is more difficult to determine than the present value of future Tier 3 and Tier 4 employee contributions. So, for the June 30, 1994 (and prior) actuarial valuations, the System, based on past experience, derived a "P-factor," representing the employer's average share of total retirement benefit costs for Tier 1 and Tier 2 members. In calculating the present value of future benefits for such employees, the System used the P-factor to adjust the total formula benefit so that only the employer's share is reflected in the present value and hence in the normal contribution rate. Beginning with the June 30, 1995 valuation, a determination of the present value of future Tier 1 and Tier 2 employee contributions was made, and the P-factor methodology was no longer required; for all four tiers, the present value of the full employee retirement benefit is included in the liability calculation, with an offset for the present value of future employee contributions. An exception does exist, however, with respect to the Variable Annuity Savings Fund, which is available to Tier 1 and Tier 2 employees. This is because the VASF is available to the members on a dollar-for-dollar basis.

The normal contribution rate for the System is computed so as to amount to a level percentage of payroll, as follows: the present value of future normal contributions (the aforementioned balancing item) is divided by the present value of projected future salaries of members on the payroll as of the valuation date. The employer normal contribution for the ensuing fiscal year is derived by multiplying the normal contribution rate by aggregate annual salaries. This results in a value that is appropriate for an employer contribution at the beginning of the fiscal year. To recognize the fact that the employer contribution is typically paid monthly throughout the year, the calculation of the present value of prospective normal contributions includes an interest adjustment. For the June 30, 1994 (and prior) valuations, the adjustment to reflect monthly contributions is made after the normal contribution rate is determined. Beginning with the June 30, 1995 valuation, the calculation of the present value of future normal contributions includes an adjustment to account for the fact that the payment is made throughout the year, and an adjustment is no longer made to the normal contribution rate.

In addition to the normal contribution, the total employer contribution includes a contribution to amortize the unfunded actuarial accrued liability (UAL contribution) and, for employee contributions into a variable fund, a contribution for increased take home pay (ITHP contribution). The ITHP contribution represents the assumption by the employer of a portion of the contribution that otherwise would be required of Tier 1 and Tier 2 employees, and is computed as a percentage of the salaries of those employees.

The valuation date for the purpose of determining contributions for each fiscal year is the last day of the preceding fiscal year; e.g., the contributions to be made for the fiscal year ending June 30, 1995 are based on census and asset data as of June 30, 1994.

Employer contributions were computed as follows (dollar figures are shown to the nearest thousand):

	(1)	(2)	(3)	(4)
Fiscal Year Ending 6/30	Actuarial Present Value of Benefits	Actuarial Value of Assets	Unfunded Accrued Liability	Present Value of Future Employee Contributions
1994	$ 20,189,036	$ 16,242,897	$ 1,294,089	$ 591,206
1995	25,164,250	20,412,808	1,338,890	705,413
1996	26,883,785	22,176,110	1,572,997	740,750
1997	28,990,508	24,354,924	1,617,666	804,749
1998	31,730,072	27,069,759	1,723,343	912,521
1999	37,124,662	34,626,062	0	1,058,325

Fiscal Year Ending 6/30	(5) Accumulated Earnings in Tax Deferred Annuity Program	(6) Present Value of Future Normal Contributions (1)-(2)-(3)-(4)-(5)	(7) Present Value of Future Compensation	(8) Normal Contribution Rate (6) ÷ (7)
1994	(6,582)	$2,067,426	$34,827,665	5.936 %
1995	(7,182)	2,714,321	36,616,151	7.413
1996	(25,422)	2,419,350	36,216,613	6.680
1997	(47,229)	2,260,398	37,054,478	6.100
1998	(61,408)	2,085,857	40,152,818	5.195
1999	(163,549)	1,603,824	44,690,897	3.589

Fiscal Year Ending 6/30	(9) Aggregate Annual Salaries	(10) Normal Contribution (8) x (9)	(11) Unfunded Accrued Liability Contribution	(12) ITHP Contribution
1994	$ 3,305,657	$204,864	124,820	$ 40,043
1995	3,592,992	266,348	131,123	-
1996	3,507,775	234,319	177,845	-
1997	3,556,940	216,973	214,099	-
1998	3,873,155	201,210	242,223	-
1999	4,217,560	151,368	0	-

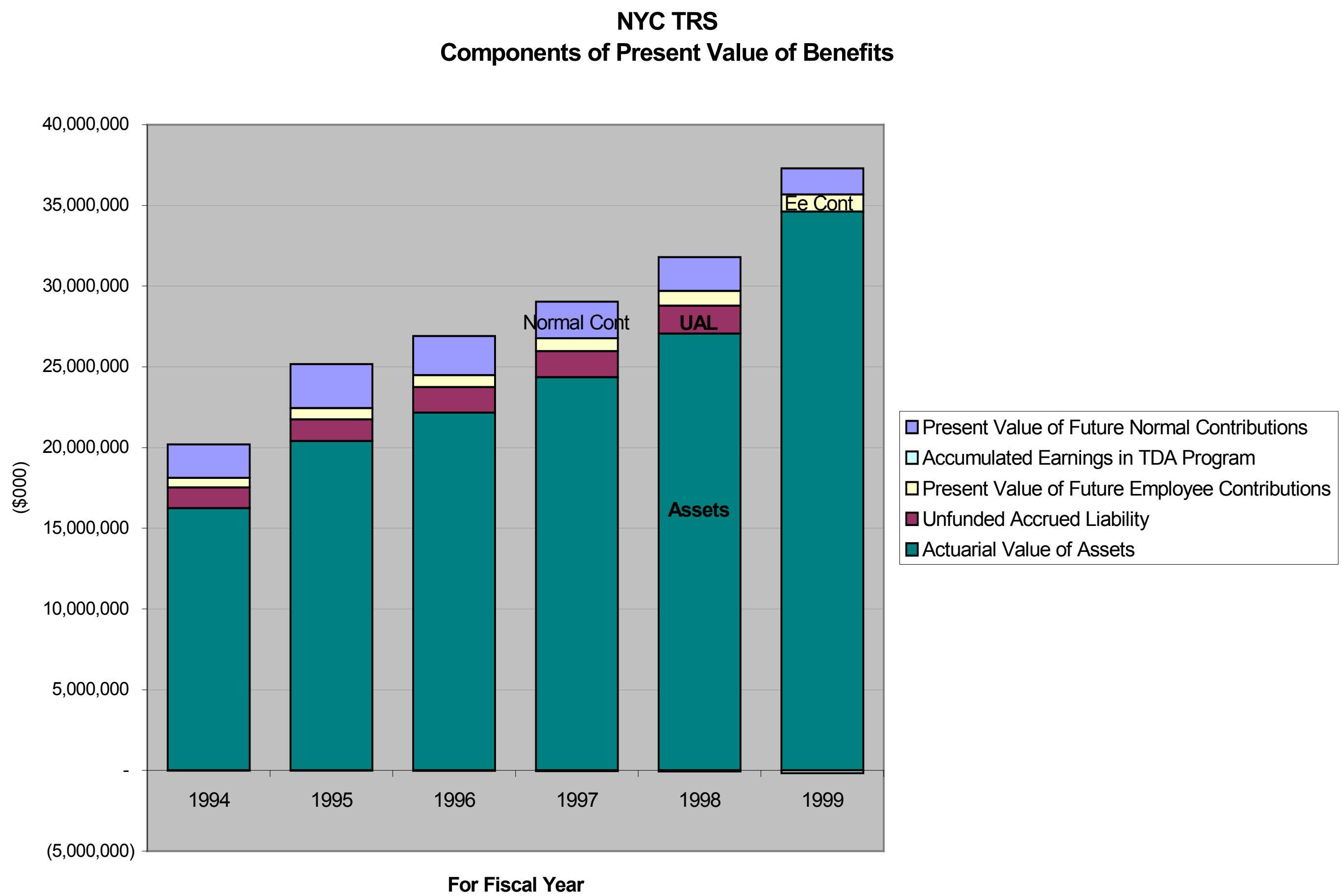
Fiscal Year Ending 6/30	(13) Expenses	(14) Total Employer Contribution (10) + (11) + (12)	(15) Employer Contribution Rate (14) ÷ (9)
1994		$369,727	11.185 %
1995		397,471	11.062
1996		364,172 [a]	10.382
1997	10,821 [b]	441,893	12.423
1998	17,083	460,516	11.890
1999	30,402 [c]	181,770	4.310

[a] This contribution amount has been reduced by $47,992,000 in surplus investment income from the Tax Deferred Annuity due to Chapter 592 of the Laws of 1996.

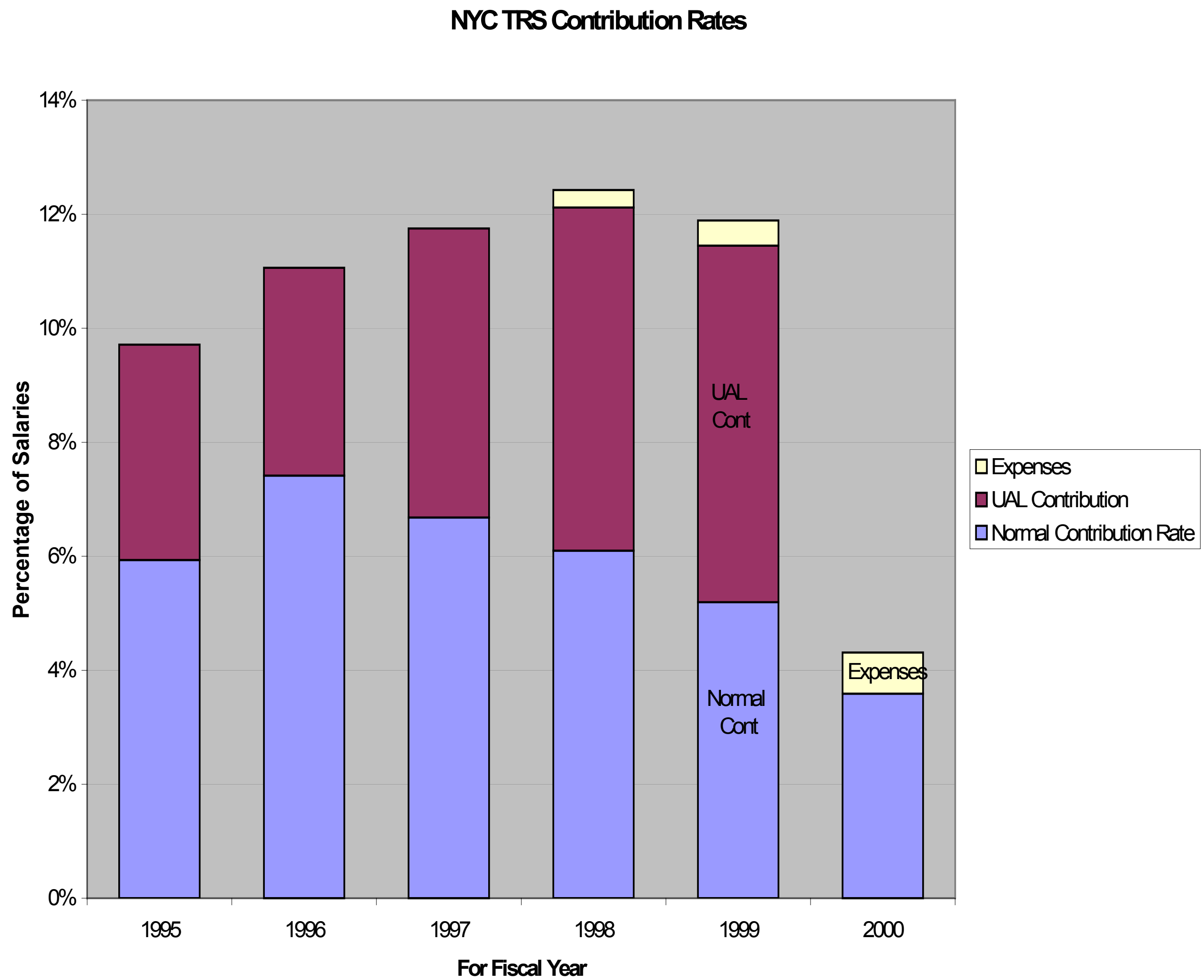
[b] Beginning with the June 30, 1997 valuation, for the 1998 fiscal year, the administrative expenses of the plan that were paid from the fund during the prior fiscal year were reimbursed to the fund.

[c] Beginning with the June 30, 1999 valuation, for the 2000 fiscal year, the investment expenses of the plan that were paid from the fund during the prior fiscal year were reimbursed to the fund. The Expenses value shown here reflects $12,029,000 in administrative expense and $18,373,000 in investment expense.

Below is a graph showing the major components of the total Actuarial Present Value of Benefits for each year.



Shown below is a graph of the employer contribution rate, expressed as a percent of annual salaries. The contribution rate for each year is shown as composed of the two major components: the normal contribution and the UAL contribution (which includes the BSL contribution). In addition, the expenses are shown as a separate component. As mentioned previously in this Report, the contribution to be made for a given fiscal year is based on asset and liability data as of the last day of the preceding fiscal year; e.g., the contribution rate for fiscal year 2000 is based on data and measurements made as of June 30, 1999.



The figures in the tables and the graphs above are based on the actuarial assumptions and methods used, for each year, for the calculation of liabilities. As noted in Section IX, actuarial assumptions and methods were changed effective June 30, 1995 to affect liability and cost calculations for the 1996 (and subsequent) fiscal years. Therefore the relative values shown in the graphs for the 1995 and 1996 fiscal years are not directly comparable. Similarly, actuarial assumptions and methods were changed for the calculation of the 2000 fiscal year contributions.

Two changes in calculation methodology, both effective with the June 30, 1995 valuation, are reflected above.

(1) For the June 30, 1994 (and prior) valuation, the Normal Contribution was calculated as of the first day of the fiscal year, then adjusted with interest to reflect monthly contributions throughout the year. Thus, the Normal Contribution for the 1995 fiscal year (based on a June 30, 1994 valuation date) is calculated first as the product of the Normal Contribution Rate and the Aggregate Annual Salaries; that result is then multiplied by 1.044031 (based on a 9% annual interest rate) to reflect monthly contributions by the employer. For the 1996 and subsequent fiscal years, the liabilities that are used to determine the Normal Contribution Rate already reflect the monthly adjustment, so that a subsequent multiplication by the monthly contribution factor is not necessary.

(2) For the 1995 (and prior) fiscal year, the employer contribution attributable to Increased-Take-Home-Pay benefits was determined as a separate item, and was then added to the sum of the Normal Contribution and the UAL Contribution to yield the total employer contribution. Beginning with the 1996 fiscal year, the liability arising from the ITHP benefit attributable to a fixed account is included in the Actuarial Present Value of Benefits; ITHP benefits attributable to a variable account continue to be handled as a separate item.

The foregoing figures reflect a number of events and trends during the five-year examination period. As can be noted above, the Normal Contribution Rate shows a general decreasing trend. The increasing Aggregate Annual Salaries partially offsets the decreasing Rates, resulting in Normal Contributions which decrease, but more modestly than the Rates. The Unfunded Accrued Liability Contribution increases throughout most of the five-year period, so that the Total Employer Contribution, and Employer Contribution Rate, has changed little through the 1999 fiscal year. However, for fiscal year 2000, changes in actuarial assumptions and methods, as described in Section IX, resulted in a significant reduction in the contribution requirement.

One trend that was a major contributing factor in the reduction in Normal Contribution Rates was the investment results. For each of the five years, the investment yield was significantly greater than the actuarially assumed rate of return.

IV. Employer Contributions and Annual Statement Liabilities

During the current examination period the liabilities reported in the System's annual statements to the New York State Insurance Department generally were based on the same methodology as was used in calculating employer contributions for the following fiscal year.

The present value of future benefits is presented somewhat differently in the System's annual statements compared to the employer contribution calculations. In the annual statements, the present value of the ITHP contribution to be paid in the following fiscal year, referred to as "future ITHP," is included in the present value of benefits provided for members now in active service and in the contra-liability, present value of prospective contributions. For employer contribution calculations, as mentioned above, "future ITHP" is excluded both from prospective benefits and from prospective contributions for employee contributions allocated to variable accounts.

The final funding calculations as of a given fiscal year end are generally completed after the Annual Statement for that fiscal year is filed with the Insurance Department. Therefore, for some years, the final funding calculations show different values than what is reported in the Annual Statement because of changes made after the Annual Statement is filed. This is particularly apparent for values determined as of June 30, 1999. The Annual Statement values are based on assumptions and methods that were first effective with the June 30, 1995 valuation. However, after the 1999 Annual Statement was filed with the Insurance Department, changes in assumptions and methods were finalized and the fiscal year 2000 contribution calculation was based on liability and asset values that were significantly different from what was originally reported to the Insurance Department.

For the June 30, 1994 (and prior) valuations, in computing employer contributions it had been the System's practice to deduct the balance in the Member Contribution Accumulation Fund from both liabilities and assets. The two deductions cancel one another; i.e., the effect on the normal contribution rate is the same as if no deduction had been made. Beginning with the June 30, 1995 valuation, the Member Contribution Accumulation Fund was recognized in both the liabilities and assets in determining the normal contribution rate. This change was made in accordance with Chapter 249, Laws of 1996.

V. Unfunded Actuarial Accrued Liability

The unfunded actuarial accrued liability (UAL) of a pension plan refers to the present value of required employer contributions other than normal contributions (and, in the case of the System, other than certain ITHP contributions for fiscal years prior to 1995). The UAL usually relates to service rendered before the valuation date, so-called past service.

UAL should not be viewed as a measure of the overall funding status of a pension plan. One such measure is discussed in Section VIII of this report under the caption, "Funding Ratios."

The specific items to be funded through UAL contributions, and the computation of the initial UAL balance, are determined by the choice of funding method. Under the System's funding method, new unfunded accrued liability balances generally are established in connection with improvements in member benefits attributable to past service and in connection with changes in actuarial assumptions. The amount of such new UAL balances is computed by the actuarial funding method known as Entry Age Normal.

The System's total UAL at any point in time comprises the aggregate present value of the remaining payments in amortization of all previously established UAL balances, together with the "balance sheet liability" (BSL). The BSL is the non-ledger and not-admitted asset.

At the beginning of the examination period the UAL consisted of two components: the "consolidated UAL" of around $361,000,000, and the BSL mentioned above, around $933,000,000.

Changes in actuarial assumptions and methods were made effective June 30, 1995 pursuant to Chapter 249 of the Laws of 1996. Those changes affected the determination of the overall plan liability, the portion of that liability embodied in the UAL, and the amortization of the UAL.

The actuarial assumptions changed included the assumed investment return rate, the salary scale, mortality rates for service and disability pensioners and withdrawal rates. The assumed investment return rate was changed from 9% to 8.75% (it remained at 4% for benefits payable under the Variable Annuity Program). The salary scale reflects assumed increases due to merit, promotion and a general wage increase due to inflation. The general wage increase component of the salary scale was changed from 5.5% to 4%. The changes in mortality rates and withdrawal rates were based on an experience study conducted by the independent actuarial auditor, William M. Mercer, Inc.

The change in actuarial methods pursuant to Chapter 249 involved the consolidation and re-establishment of the UAL as of June 30, 1995. That legislation also provided that the UAL and BSL be amortized over a period of 15 years beginning July 1, 1995, such that the amount of each annual payment after the first is 103% of the preceding annual payment.

As of June 30, 1996, two benefit changes resulted in the establishment of two additional components of UAL. Chapter 12 of the Laws of 1995 provided an early retirement incentive for certain members. The resulting UAL component was to be amortized over five years with level payments. Chapter 119 of the Laws of 1995 provided for supplemental retirement allowances for certain retirees. The resulting UAL component was to be amortized over ten years with level payments. The initial combined value of the two additional UAL components resulting from this legislation was about $269,000,000, with annual payments attributable to those components of $33,000,000.

Chapter 30 of the Laws of 1996 provided an early retirement incentive for certain members. The resulting UAL component was to be amortized over five years with level payments. The initial value of the resulting UAL component as of June 30, 1997 was about $92,000,000, with an annual amortization payments of $23,000,000.

Chapter 390 of the Laws of 1998 provided additional benefits to reflect cost-of-living increases for certain retirees. That legislation increased benefits for members who retired prior to 1993, and resulted in an initial UAL component of about $182,000,000 as of June 30, 1998. The City Council, under the legislation, elected a second increase in benefits for members who retired before 1994; that increase resulted in an initial UAL component of about $8,000,000 as of June 30, 1999.

As discussed further in Section IX, actuarial assumptions and methods were changed effective June 30, 1999. As a result of the changes, the UAL was zero.

The progression of the total UAL (including the BSL) and the corresponding amortization payments is shown below.

Valuation Date June 30	Total UAL	Payment
1994	$1,294,000,000	$125,000,000
1995	1,339,000,000	131,000,000
1996	1,573,000,000	178,000,000

1997	1,618,000,000	214,000,000
1998	1,723,000,000	242,000,000
1999	0	0

VI. Actuarial Asset Valuation Method

As already mentioned, the value of the System's assets directly affects the amount of employer contributions for the following fiscal year (except for variable funds, where the experience is passed through to the members and has little effect on employer contributions). Market values of assets generally are considered too volatile to use directly in computing employer contributions, and, accordingly, the System applies an actuarial asset valuation (AAV) method to produce a smoother progression of asset values from year to year (except for the assets of the variable annuity and variable pension funds, which are valued at market value).

Beginning with the June 30, 1991 valuation the System adopted a new AAV method, under which the current year's market value was adjusted so as to recognize “unexpected return” over a five year period. “Unexpected return” was defined as the excess of actual investment income, including realized and unrealized changes in market value, over expected investment income. Expected investment income, in turn, was defined to be the valuation interest rate multiplied by the mean actuarial value of investable assets.

In conjunction with the actuarial assumption and method changes effective June 30, 1995 mentioned above, a “market value restart” was implemented. Thus, as of June 30, 1995 the actuarial value of investable assets was set equal to market value and the five-year averaging of “unexpected return” was phased in with the valuations of June 30, 1996 through June 30, 1998.

A market value restart was again performed as of June 30, 1999. The actuarial value of assets, which would have been $30.2 billion without the restart, became $34.6 billion due to the restart. The five-year averaging of unexpected return is to be phased in over subsequent valuations.

The value of assets reported on the annual statement is different from the value used for pension funding purposes, for three reasons: (1) the asset value used for funding generally reflects "smoothing" of prior values, as discussed above, and (2) the asset value used for funding is based on the market value of bonds, while the asset value used for the annual statement is based on book value, and (3) the asset value reported on the annual statement includes some items which are not available for future benefits.

Shown below is a reconciliation between the admitted assets reported in the annual statement and the actuarial value of assets.

	Fiscal Year ending June 30 ($000)				
	1995	1996	1997	1998	1999
Annual Statement Admitted Assets	22,206,854	25,017,177	29,763,493	33,625,564	37,195,186
BV - MV Bonds	318,859	127,785	180,770	238,012	(98,840)
Accounts Payable	(77,576)	(162,477)	(118,720)	(85,189)	(92,484)
Payable for Investment Securities	(1,755,830)	(1,745,436)	(2,699,613)	(2,139,006)	(2,071,815)
Accrued Benefits Payable	(13,892)	(22,401)	(14,422)	(11,081)	(12,970)
Due to BERS	(41,395)	(45,138)	(55,780)	(65,067)	(71,936)
Loan Receivables	(224,212)	(217,208)	(204,357)	(218,032)	(221,079)
Smoothing Adjustment	0	(776,193)	(2,496,448)	(4,275,440)	0
Actuarial Value of Assets	20,412,808	22,176,109	24,354,923	27,069,761	34,626,062

VII. Interest Earned and Interest Required

Included in the System's annual statements to the Insurance Department are the total investment income actually earned during the year, including realized and unrealized changes in market values and, for fixed (non-variable) funds, the amount of interest required to maintain those funds. (Investment experience on variable funds passes directly to the members via changes in unit values; consequently, interest required to maintain variable funds would not be a meaningful concept.)

Interest required to maintain funds is computed by multiplying the assumed valuation interest rate by the mean actuarial value of assets. Thus, the amount reported as interest required to maintain funds represents the expected investment income for the fiscal year.

Fixed funds of the Tax Deferred Annuity Program and the Qualified Pension Plan are invested in a common pool, and the resulting investment income is shared between the two. It is therefore useful to compare interest earned with interest required for the TDA and QPP in combination. The amounts of interest earned and interest required during the period under examination for the QPP and the non-variable funds of the TDA in combination were as follows:

Fiscal Year Ending 6/30	(1) Interest Earned	(2) Interest Required	(3) Excess, (1) - (2)	(4) Ratio, (1) / (2)
1995	1,959,208	1,346,325	612,883	146%
1996	2,498,069	1,425,782	1,072,287	175%
1997	3,437,832	1,539,371	1,898,461	223%
1998	3,891,115	1,636,312	2,254,803	238%
1999	3,354,248	1,786,734	1,567,514	188%
Total	15,140,472	7,734,524	7,405,948	196%

The table indicates that actual investment earnings significantly exceeded expected investment income for the five-year examination period as a whole, as indicated above in Section II.

VIII. Funding Ratios

Attachment B of the System's annual statements to the Insurance Department provides, as a measure of funding adequacy, the ratio of assets available for active members to the projected benefit obligation (PBO).

The PBO is the present value of pension benefits resulting from employee service up to the date of the annual statement, based on salaries projected to the date of retirement. (PBO thus is different from the annual statement's "Present Value of Benefits for Members now in Active Service," which involves members' total anticipated service as of the date of retirement.) The PBO includes vested benefits for terminated members.

The System has, for each year of the examination period, developed the PBO based on Statement No. 5 of the Government Accounting Standards Board (GASB 5). This Statement has been largely superseded by GASB 27, which is effective for periods beginning after June 15, 1997. GASB 5 prescribes the use of the Projected Unit Credit actuarial cost method for determining PBO, while GASB 27 states that the actuarial cost method used for funding should also be used for determining PBO. As indicated in Section IX, the System uses the Frozen Entry Age actuarial cost method for funding; therefore, GASB 27 would require that the PBO be based on the Frozen Entry Age actuarial cost method.

Under both GASB 27 (when the Frozen Entry Age actuarial cost method is used) and GASB 5, for purposes of computing the PBO, the member's total projected benefit at retirement is prorated uniformly over total anticipated service, even if the plan's benefit formula provides a non-uniform pattern of benefit accrual. The System's benefits accrue more rapidly in the later years of a member's service (after twenty years) than in the early years. The uniform prorate required by GASB produces a higher PBO, and hence a less favorable funding ratio, in the first twenty years of a given member's service, than would be produced by prorating benefits strictly according to the benefit formula. Conversely, GASB would produce a lower PBO in the later years of given member's service than would be produced by prorating benefits according to the benefit formula. Since, as of any given actuarial valuation date (fiscal year end), some members will have less than twenty years of service and others will have more, the total System PBO will vary from the "true" PBO based on actual benefit accrual by an amount that reflects an average of all members' under- or over-statements of the PBO.

For the purpose of developing these funding ratios, assets available for active members are the System's admitted assets reduced by the following: present value of benefits to beneficiaries now drawing allowances, accumulated member contributions, benefits due and unpaid and other miscellaneous liabilities. Amounts relating to group life insurance benefits are excluded from assets as well as from the PBO.

An advantage in developing the PBO based on GASB 5 is that the resulting funding ratio (a measure of funding adequacy) is independent of the actuarial cost method used for determining contributions to the pension plan. However, the PBO is also based on the actuarial assumptions used for funding. As a result, for a given plan, the funding ratio is comparable from year to year only if the actuarial assumptions have not changed. If actuarial assumptions are changed to be more optimistic, for example, the funding ratio will be higher and the future funding requirements will be lower.

Funding ratios are shown in the following table (000).

Valuation Date	(1) Assets Available for Active Members	(2) Projected Benefit Obligation	(3) Funding Ratio (1) divided by (2)
6/30/94	$ 7,559,189	$ 8,018,208	94.28 %
6/30/95	9,079,205	8,936,136	101.60
6/30/96	10,128,268	9,928,808	102.01
6/30/97	11,714,071	9,764,149	119.97
6/30/98	14,885,142	10,886,425	136.73
6/30/99	17,512,777	11,887,823	147.32

The increase in Funding Ratio shown above reflects primarily the investment gains referred to earlier in this report.

It should be noted that the increase in Funding Ratio shown above does not reflect the change in funded status of the entire Plan. The Funding Ratio above is based on a comparison between the liabilities for active members and assets "available" for active members. The value of assets "available" for active members is the total plan assets reduced by the liability attributable to non-active members. Thus all plan investment gains or losses flow through to this funding ratio, which excludes non-active members. This "leveraging" effect magnifies the apparent change in funded status of the entire plan.

IX. Actuarial Assumptions and Methods

During the prior examination period the System engaged a pension consulting organization (William M. Mercer, Inc.) to analyze System experience in relation to the actuarial assumptions used to determine employer contributions. The consulting organization issued a final report dated December 29, 1994 in which a number of changes in actuarial assumptions were recommended. Based in part on the consulting organization's recommendations, the System's own actuary (i.e., the City of New York Office of the Actuary) presented recommendations for changes in actuarial assumptions to the System's Board of Trustees. The recommendations included a decrease in the valuation interest rate for non-variable benefits (with no change in the 4% assumption for variable benefit programs), a reduction in the assumed rates of increase in salaries and various adjustments in the rates of decrement to better reflect expected future experience.

A significant increase in employer contributions for fiscal year 1995-96 was expected to be produced by the revised actuarial assumptions (particularly the interest assumption). The expected increase in employer costs became the subject of protracted discussions among the System’s actuary and trustees as well as New York City and New York State government officials. Eventually a valuation interest assumption of $8^{3}/_{4}\%$ was adopted, along with the aforementioned changes in salary scale and decrements. The initial increase in employer contributions was to be softened by a “market value restart” approach for the actuarial value of assets, with actuarial asset values based on a five-year averaging of “unexpected return” to be resumed in valuations subsequent to the June 30, 1995 valuation. Enabling legislation, retroactive to June 30, 1995, was signed into law on June 30, 1996 as Chapter 249 of the Laws of 1996.

The changes in actuarial assumptions due to the aforementioned legislation, effective with the June 30, 1995 valuation, were:

- The assumed rate of investment income (valuation interest rate) for non-variable benefits was 9% as of June 30, 1994, the year prior to the examination period. It was decreased to 8¾ % for the June 30, 1995 and subsequent valuations.
- The salary scale assumption consists of a general wage increase assumption with age-specific and sex-specific merit and promotion assumptions. The general wage increase component was 5½% for the June 30, 1994 valuation, and decreased to 4% for the June 30, 1995 and subsequent valuations.
- The mortality rates for service pensioners are age- and sex-specific, and were changed such that the new rates were lower than the former rates for younger ages (generally 70 or less) and higher for older ages.
- Assumptions for decrements from active service due to mortality, ordinary disability and accidental disability were changed.
- Assumptions for withdrawal from active service both before and after eligibility for service retirement were changed.

Also effective with the June 30, 1995 valuation, the actuarial value of assets was determined by a market value restart, where the actuarial value of assets was set equal to the market value of assets. For years prior to 1995, the actuarial value of assets was determined using a five year average of "unexpected investment returns". For years subsequent to 1995, a similar five-year average approach was used, but the weights applied to the each of the five years were modified slightly from the prior approach.

The assumed investment return ("AIR") underlying the purchase rate structure of the System's variable annuities is 4%. During the examination period the valuation interest rate for variable annuity benefits continued to be 4%, inasmuch as the rate used for determining the actuarial present value of variable benefits should be the same as the AIR.

Effective with the June 30, 1999, for the 2000 fiscal year contributions, assumptions and methods were changed again. The changes were authorized by Chapter 85 of the Laws of 2000. The changes included:

- The assumed interest rate was changed from 8.75% to 8.00%. The assumed interest rate for benefits under the Variable Annuity Programs remained at 4%.
- Both components of the salary scale were changed:
  - the General Wage Increase assumption was changed from 4% to 3%.
  - the merit and promotion increase assumption, which varies by attained age, was changed; at age 20, the assumption was reduced from 8% to 6.50%, and at age 60, the assumption was increased from 1.20% to 1.75%.
- The post-retirement mortality assumption was changed to reflect slightly lower mortality among males, and, for females, lower mortality at some ages and higher mortality at other ages.
- The assumptions of withdrawals from active service (due to other than death, disability or retirement) were changed to reflect significantly lower withdrawal rates at younger ages.

Also, as of June 30, 1999, the actuarial value of assets was reset to market value, as was done in the 1995 valuation.

The actuarial cost method used for this System, throughout the examination period, is the Frozen Entry Age Actuarial Cost Method. This method is described further in Section III.

X. Recommendation

The actuarial asset valuation method, as described in Section VI, adjusts the current year market value to attempt to smooth the volatility normally encountered with equities. As described in Section IX, the actuarial asset valuation method was changed with the June 30, 1995 valuation and again with the June 30, 1999 valuation. In each case, the change made was a "market value restart", where the actuarial asset value was set equal to the market value of assets. Also, in each case the market value of assets was higher than the actuarial value that would have otherwise been calculated, thus resulting in a lower contribution requirement.

Even though, as mentioned above, this plan is not subject to the funding requirements promulgated by the Internal Revenue Service, we can look to the Internal Revenue Code et al. for guidelines. The IRS permits actuarial asset valuation methods that smooth fluctuations, and even permits, with certain restrictions, changing from one method to another (e.g., from a method which smoothes assets fluctuations to a market value of assets; i.e., a market value restart) without prior IRS approval. The general intent of the IRS rules is to require that an actuarial asset valuation method be applied on a consistent basis. If changes in the actuarial asset valuation method are made, they should not produce results that are consistently above or below the fair market value.

The Department has a concern that, in some years, the actuarial asset valuation method has been changed in order to reduce the contribution requirement. The result is that contributions that would otherwise be made in that year are deferred to future years. The ultimate cost of a pension plan is the plan benefits plus expenses less investment income. This deferral of contribution would therefore result primarily in less investment income, which means that the ultimate cost of the pension plan would be greater than it otherwise would be. In addition, changing the actuarial asset valuation method via the fresh-start method can result in contribution requirements that are not directly comparable to previous years, and may produce a misleading indication of the magnitude of future contribution requirements.

The Department recommends that the current actuarial asset valuation method be applied consistently.

XI. Comments

1. This comment considers a longer time frame than the five year period encompassed by this report.

The actuarial interest rate and the salary scale assumption are related, since they share a component: the assumed wage increase. A single measure that incorporates certain aspects of both the actuarial interest rate and the salary scale assumption is the *spread*, or excess of the interest rate over the salary scale assumption. The spread is often viewed as a measure of the degree of conservatism or liberalism inherent in the interest and salary scale assumptions. As the spread increases, the assumptions are considered to be more liberal (i.e., optimistic, or leading to lower employer contributions). Conversely, as the spread decreases, the assumptions are considered more conservative. The salary scale assumption of the New York City Teachers' Retirement System is made up of a wage increase assumption, which is uniform for all ages, and a merit and productivity assumption, which varies by age. The spread, for the purposes of this comment, is considered to be the excess of the interest rate assumption over the wage increase assumption.

For the June 30, 1980 valuation, the interest assumption was 7.5% and the wage increase assumption was 6%, for a spread of 1.5%. In the most recent valuation, as of June 30, 1999, the interest assumption was 8% and the wage increase assumption was 3%, for a spread of 5%.

The table below shows changes in the two assumptions over the last several years:

Effective Date June 30	Interest Assumption	Wage Increase	Spread
1980	7.50%	6.00%	1.50%
1981	8.00	6.50	1.50
1985	8.00	6.00	2.00
1986	8.00	5.50	2.50
1989	8.25	5.50	2.75
1990	9.00	5.50	3.50
1995	8.75	4.00	4.75
1999	8.00	3.00	5.00

Since over one-half of the total plan liability is due to the active population (for which a salary scale assumption is relevant), this increasing spread over the last several years, from 1.5% to 5%, reflects an increasingly liberal funding posture.

Each of the two primary assumptions, the interest rate and the salary scale, appear to be reasonable; therefore the resulting spread between the two would be reasonable. However, the observation of the spread in subsequent year's valuations can provide a useful measure of a general trend in actuarial assumptions used for funding.

2. As noted in Section V, some of the components of the Unfunded Actuarial Liability (including the BSL) are amortized in a manner that does not produce level dollar amortization payments. Rather, the amortization payments after the first are 103% of the preceding payment.

This plan is not subject to the minimum funding standards of Internal Revenue Code section 412; however, we can look to the IRC for guidance on matters of funding. That section states that unfunded liabilities are to be amortized "… in equal annual installments …". Clearly, the method described above to amortize certain components of unfunded liability does not satisfy that standard.

Another source for guidance is the Governmental Accounting Standards Board. GASB 27 provides for two possible methods of amortizing unfunded actuarial liability: either as level dollar amounts or as a level percentage of projected payroll. The salary scale assumption for the June 30, 1999 valuation consisted of the wage increase assumption of 3% plus merit and productivity percentages that vary by age. The current amortization method does not conform to either of the two alternatives presented by GASB 27, but it produces amortization payments that lie between the two series of payments that would be produced by the two alternatives.

The Department has a concern here that by using increasing payments to amortize components of the unfunded liability, the System is deferring some funding that would otherwise be made sooner. Because the current funding level, as shown in Section 8, appears to be relatively healthy, it might seem that some deferral of funding would be acceptable. However, the current funded status of the System is due largely to a period of unusually high investment gains. Such gains are unlikely to be sustained in the future, and the funded status could deteriorate from the current level. The Department will be considering further recommendations or guidelines in this matter.

Respectfully submitted,

/s/
Michael J. Lambert
Principal Actuary

State of New York } *SS*
County of New York

MICHAEL J. LAMBERT, being duly sworn, deposes and says that the foregoing actuarial report, subscribed by him, is true to the best of his knowledge and belief.

/s/
Michael J. Lambert

Subscribed and sworn to before me
this ________ day of ___________, 2001.