TEACHERS' PENSION AND ANNUITY FUND
OF NEW JERSEY

June 30, 2009 Actuarial Valuation Report

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Board of Trustees
Teachers' Pension and Annuity Fund of New Jersey
State of New Jersey
Department of the Treasury
Division of Pensions and Benefits, CN 295
Trenton, NJ 08625-0295

Ladies and Gentlemen:

This report presents the results of the actuarial valuation of Teachers' Pension and Annuity Fund of New Jersey as of June 30, 2009. Section I contains highlights of the valuation including a general discussion and comments on the various schedules included in the report. The subsequent Sections contain schedules summarizing the underlying calculations, asset information, participant data, plan benefits and actuarial assumptions.

Purpose

The main purposes of this report are:

- to provide the annual state contribution in accordance with N.J. Statutes to be made in the Fiscal Year ending June 30, 2011 which represents the contribution for the valuation year beginning July 1, 2009;

- to determine the Annual Required Contribution in accordance with Governmental Accounting Standards Board Statements 25 and 27 for the Fiscal Year ending June 30, 2011 and,

- to review the experience under the plan for the valuation year ending June 30, 2009.

Actuarial computations presented in this report are for purposes of determining the statutory contribution amounts for TPAF. Actuarial computations under GASB Statements No. 25 and 27 are for purposes of fulfilling financial accounting requirements. The calculations in the enclosed report have been made on a basis consistent with our understanding of the N.J. statutes and GASB Statements No. 25 and 27. Determinations for purposes other than these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the State of New Jersey Division of Pension and Benefits. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception:

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No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

Data Reliance

In performing this analysis, we relied, without audit, on census data, plan provisions, asset statements and other information (both written and oral) provided by the State of New Jersey Division of Pensions and Benefits. We have not audited or verified the census data, asset statements or other information. To the extent any of these are inaccurate or incomplete, the results of our analysis may likewise be inaccurate or incomplete.

We performed a limited review of the data used directly in our analysis for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or for relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.

Future Measurements

Future actuarial measurements may differ significantly from the current measurements presented in this analysis due to actual plan experience deviating from the actuarial assumptions, and changes in plan provisions, actuarial assumptions, and applicable law. An assessment of the potential range and cost effect of such differences is beyond the scope of this analysis.

Certification

We hereby certify that, to the best of our knowledge, this report, including all costs and liabilities based on actuarial assumptions and methods adopted by the Board or mandated by statute, is complete and accurate and determined in conformance with generally recognized and accepted actuarial principles and practices, which are consistent with the Actuarial Standards of Practice promulgated by the Actuarial Standards Board and the applicable Guides to Professional Conduct, amplifying Opinions and supporting Recommendations of the American Academy of Actuaries.

We are members of the American Academy of Actuaries and meet its Qualification Standard to render this actuarial opinion.

Respectfully submitted,

MILLIMAN, INC.

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

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TEACHERS' PENSION AND ANNUITY FUND OF NEW JERSEY

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A. Summary of Principal Results

PARTICIPANT DATA

	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Active Contributing Members					
Number	144,579	142,887	141,943	1.2 %	0.7 %
Number of Veteran Members	922	1,019	1,171	(9.5)	(13.0)
Average Pay	$ 67,423	$ 65,927	$ 63,959	2.3	3.1
Total Payroll	9,747,926,624	9,420,070,731	9,078,568,687	3.5	3.8
Total Appropriation Payroll	9,747,020,060	9,419,083,203	9,077,628,813	3.5	3.8
Avg. Member Accumulated Contributions	56,172	53,174	50,707	5.6	4.9
Total Member Accumulated Contributions	8,121,238,550	7,597,916,467	7,197,468,540	6.9	5.6
Active Non-Contributing Members					
Number	12,530	13,200	13,153	(5.1) %	0.4 %
Number of Veteran Members	66	75	91	(12.0)	(17.6)
Average Pay	$ 48,311	$ 47,016	$ 45,441	2.8	3.5
Total Payroll	605,335,737	620,614,734	597,691,622	(2.5)	3.8
Avg. Member Accumulated Contributions	26,240	23,976	22,237	9.4	7.8
Total Member Accumulated Contributions	328,788,416	316,487,024	292,489,528	3.9	8.2

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

PARTICIPANT DATA

	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Service Retirees, Including Domestic Relations Beneficiaries					
Number	71,000	68,479	65,347	3.7 %	4.8 %
Average Annual Pension	$ 37,613	$ 36,056	$ 34,904	4.3	3.3
Total Annual Pensions	$ 2,670,513,732	$ 2,469,099,049	$ 2,280,902,612	8.2	8.3
Average Retirement Age of New Retirees	61.0	60.3	60.1	1.2	0.3
Average Annual Pension of New Retirees	$ 46,486	$ 45,786	$ 44,698	1.5	2.4
Disabled Retirees					
Number	2,674	2,625	2,534	1.9 %	3.6 %
Average Annual Pension	$ 25,846	$ 24,916	$ 24,239	3.7	2.8
Total Annual Pensions	$ 69,112,238	$ 65,403,886	$ 61,422,715	5.7	6.5
Beneficiaries and Dependents					
Number	4,540	4,309	4,116	5.4 %	4.7 %
Average Annual Pension	$ 22,696	$ 21,577	$ 20,726	5.2	4.1
Total Annual Pensions	$ 103,041,702	$ 92,975,389	$ 85,307,467	10.8	9.0
Terminated Vested Participants					
Number	568	655	751	(13.3) %	(12.8) %
Average Annual Pension	$ 12,568	$ 12,270	$ 11,761	2.4	4.3
Total Annual Pensions	$ 7,138,800	$ 8,036,844	$ 8,832,492	(11.2)	(9.0)

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

STATUTORY PENSION CONTRIBUTIONS WITH BUDGET ADJUSTMENTS

	June 30, 2009 Valuation (State's Fiscal Year 2011 Contributions)	June 30, 2008 Valuation (State's Fiscal Year 2010 Contributions)	June 30, 2007 Valuation (State's Fiscal Year 2009 Contributions)	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Normal Contribution (1/60th formula) **	$ 582,957,683	$ 564,701,264	$ 546,875,239	3.2 %	3.3 %
Additional Formula Normal Cost	106,610,084	103,469,076	100,313,396	3.0 %	3.1 %
Benefit Enhancement Fund (BEF) Balance	0	0	0	0.0	0.0
Additional Formula Contribution	106,610,084 *	103,469,076 *	100,313,396 *	3.0	3.1
Accrued Liability Contribution	1,137,154,603 *	857,998,490 *	700,917,218 *	32.5 %	22.4 %
Total Pension Contribution by Statute	**$ 1,826,722,370** *	**$ 1,526,168,830** *	**$ 1,348,105,853** *	**19.7 %**	**13.2 %**
State Appropriation for Pension	(62,398,500)	(62,399,654)	(64,376,207)	0.0 %	(3.1) %
Pension Contribution Not Appropriated	**$ 1,764,323,870** *	**$ 1,463,769,176** *	**$ 1,283,729,646** *	**20.5 %**	**14.0 %**
Percentage of Statutory Pension Contribution Appropriated	**3.4%**	**4.1%**	**4.8%**	**(0.7) %**	**(0.7) %**

* These amounts should be increased for assumed interest at the rate of 8.25% per annum if payment is delayed beyond June 30, 2010, June 30, 2009 and June 30, 2008, respectively.

** Excludes the non-contributory group life insurance term cost.

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

ANNUAL REQUIRED CONTRIBUTION PER GASB 25 AND 27

	June 30, 2009 Valuation (State's Fiscal Year 2011)	June 30, 2008 Valuation (State's Fiscal Year 2010)	June 30, 2007 Valuation (State's Fiscal Year 2009)	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Normal Cost *	$ 761,759,287	$ 742,319,228	$ 722,956,661	2.6 %	2.7 %
Amortization Payment **	1,199,604,178	917,133,905	756,469,213	30.8 %	21.2 %
Subtotal	1,961,363,465	1,659,453,133	1,479,425,874	18.2 %	12.2 %
Interest Adjustment ***	161,812,485	136,904,883	122,052,634	18.2 %	12.2 %
Annual Required Contribution	**$ 2,123,175,950**	**$ 1,796,358,016**	**$ 1,601,478,508**	**18.2 %**	**12.2 %**

* Reflects additional formula normal cost, full cost of pension adjustment benefits, and an actuarial determination of the cost of the non-contributory and contributory group life insurance benefits.

** Benefit Enhancement Fund is excluded from the actuarial accrued liabilities.

*** Additional one year of interest is included to reflect payment of contributions at end of fiscal year.

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

TOTAL STATUTORY CONTRIBUTIONS (INCLUDING NCGI AND ERI)

	June 30, 2009 Valuation (State's Fiscal Year 2011 Contributions)	June 30, 2008 Valuation (State's Fiscal Year 2010 Contributions)	June 30, 2007 Valuation (State's Fiscal Year 2009 Contributions)	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Total Pension Contribution by Statute	$ 1,826,722,370 *	$ 1,526,168,830 *	$ 1,348,105,853 *	19.7 %	13.2 %
Est. Non-contributory Group Life Insurance (NCGI)	35,220,000	34,180,000 ***	31,487,765 **	3.0 %	8.6 %
Early Retirement Incentive (ERI-3 and ERI-5) ^	1,624,780 *	1,329,187 *	1,231,186 *	22.2 %	8.0 %
Total State Contribution for Pension, NCGI and ERI	**$ 1,863,567,150**	**$ 1,561,678,017**	**$ 1,380,824,804**	**19.3 %**	**13.1 %**
Total Certain State College Contribution (Included Above)	**730,056**	**706,747**	**756,407** **	**3.3 %**	**(6.6) %**

* These amounts should be increased for assumed interest at the rate of 8.25% per annum if payment is delayed beyond June 30, 2010, 2009 and 2008, respectively.

** Actual NCGI claims paid and actual allocation of costs for certain State colleges for fiscal year 2009.

*** Amount shown reflects Milliman's estimate of NCGI claims. Actual claim amount will be appropriated.

^ Appropriation for ERI contributions is or is expected to be $55,500, 54,346 and 58,793 for fiscal year ending June 30, 2011, 2010 and 2009, respectively.

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

LOCAL EMPLOYER CONTRIBUTIONS

	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Early Retirement Incentive Contributions payable April 1, 2011, April 1, 2010 and April 1, 2009, respectively					
ERI 1 - Local Employers	$ 1,212,778	$ 1,212,778	$ 1,228,070	0.0 %	(1.2) %
ERI 2 - Local Employers	1,565,030	1,564,018	1,568,124	0.1 %	(0.3) %
ERI 4 - Local Employers	2,874,148	2,874,148	3,822,965	0.0 %	(24.8) %
Total	$ 5,651,956	$ 5,650,944	$ 6,619,159	0.0 %	(14.6) %
Terminal Funding Contribution payable April 1, 2011, April 1, 2010 and April 1, 2009, respectively					
No Locations	$ 0	$ 0	$ 0	N/A	N/A

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

ASSETS AND LIABILITIES

	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Market Value of Pension Assets	$ 24,973,886,910	$ 32,358,227,689	$ 35,070,757,170	(22.8) %	(7.7) %
Actuarial Value of Pension Assets	$ 34,708,001,341	$ 36,541,083,946	$ 36,594,817,062	(5.0) %	(0.1) %
Ratio of Actuarial Value to Market Value	139.0 %	112.9 %	104.3 %	26.1 %	8.6 %
Actuarial Accrued Pension Liability	$ 53,418,328,576	$ 50,658,278,274	$ 48,127,453,410	5.4 %	5.3 %
Unfunded Pension Liability					
Based on Market Value	$ 28,444,441,666	$ 18,300,050,585	$ 13,056,696,240	55.4 %	40.2 %
Based on Actuarial Value	$ 18,710,327,235	$ 14,117,194,328	$ 11,532,636,348	32.5 %	22.4 %
Funded Ratio					
Based on Market Value	**46.8** %	**63.9** %	**72.9** %	**(17.1)** %	**(9.0)** %
Based on Actuarial Value	**65.0** %	**72.1** %	**76.0** %	**(7.1)** %	**(3.9)** %
Change in Funded Ratio since July 1, 2000, 1999 and 1998, respectively					
Based on Market Value	**(81.9)** %	**(62.9)** %	**(47.0)** %	**(19.0)** %	**(15.9)** %
Based on Actuarial Value	**(45.1)** %	**(35.2)** %	**(28.2)** %	**(9.9)** %	**(7.0)** %

SECTION I - SUMMARY
(continued)

A. Summary of Principal Results (continued)

RISK MEASURES

	June 30, 2009 Valuation	June 30, 2008 Valuation	June 30, 2007 Valuation	Percentage Change 2008 to 2009	Percentage Change 2007 to 2008
Market Value of Pension Assets	$ 24,973,886,910	$ 32,358,227,689	$ 35,070,757,170	(22.8) %	(7.7) %
Annuity Savings Fund **	8,516,171,922	7,986,454,126	7,563,158,194	6.6 %	5.6 %
Net Market Value of Pension Assets	16,457,714,988	24,371,773,563	27,507,598,976	(32.5) %	(11.4) %
Actuarial Accrued Liability (AAL) for Retirees	30,209,589,102	27,997,635,266	25,901,044,198	7.9 %	8.1 %
% of AAL for Retirees Covered by Assets *	82.7%	100.0%	100.0%	(17.3) %	0.0 %
% of AAL for Retirees Covered by Net Assets *	54.5%	87.0%	100.0%	(32.5) %	(13.0) %
Prior Year's Benefit Payments for Retirees	2,805,740,059	2,607,233,754	2,395,332,364	7.6 %	8.8 %
Ratio of Assets to Benefit Payments for Retirees ^	8.9	12.4	14.6	(28.2) %	(15.1) %
Ratio of Net Assets to Benefit Payments for Retirees ^	5.9	9.3	11.5	(36.6) %	(19.1) %
Ratio of AAL to Benefit Payments for Retirees ^	10.8	10.7	10.8	0.9 %	(0.9) %

* Percentage is limited to 100%.
** Accumulated active and inactive member contributions.
^ Does not include impact of future investment income, member and State contributions, and increases in benefit payments.

B. General Comments

This report summarizes the results of the actuarial valuation of the Teacher's Pension and Annuity Fund (TPAF) as of June 30, 2009.

This actuarial valuation is the first valuation that reflects members hired after November 1, 2008 (Class E members) affected by Chapter 89, P.L. 2008. It is the second valuation that reflects members hired on or after July 1, 2007 and before November 2, 2008 (Class D members) affected by Chapter 103, P.L. 2007. Chapter 89, P.L. 2008 increased the age unreduced retirement benefits can commence from age 60 to age 62. Both chapters increased the early retirement reductions for members retiring prior to age 60 for Class D members and age 62 for Class E members, and also imposed a maximum salary equal to the Social Security Wage Base ($106,800 for 2009) upon which contributions and benefits will be based. The reduction in the plan's total normal cost associated with both of these chapters for 15,045 affected members is approximately $2.2 million, which is a 3% reduction.

This actuarial valuation also reflects Chapter 23, P.L. 2008, which offered ERI-5 to State employees. The retirement incentives included are similar to those included in previous ERIs. This ERI was only available to State employees and not local employees. As of June 30, 2009, 17 members retired under the program, which increased the actuarial accrued liability by $2.9 million. A separate amortization schedule will be established for this ERI consistent with previous ERIs. The amortization period will be based on the same period used to amortize the unfunded liability of the System.

<u>GASB Annual Required Contribution</u>
Page 4 contains a Summary Exhibit on the Annual Required Contribution (ARC) per GASB 25 and 27. GASB 25 and 27 do not (1) exclude the Benefit Enhancement Fund from the Actuarial Value of Assets, (2) permit a portion of the normal cost to be paid by the BEF, (3) permit a phase-in of the pension adjustment normal cost or 4) allow the use of a term cost funding method for the non-contributory group life insurance (NCGI). Furthermore, since the contributory group life insurance is provided through TPAF, an actuarial cost for these benefits is included in the ARC. Expected employee contributions of 0.4% of pay offset the normal cost portion of the contributory group life insurance. For the 2007 and later fiscal years, the ARC includes an actuarial determination of the cost of the non-contributory and contributory group life insurance. The ARC in prior years included the term cost for

B. General Comments (continued)

the non-contributory group life insurance. The ARC for the 2011 fiscal year is $2,123.2 million as compared to the sum of the required statutory pension contribution of $1,826.7 million and the estimated non-contributory group life insurance term cost of $35.2 million for a total of $1,861.9 million.

Statutory Contributions
The statutory contribution requirements are highlighted on Summary Exhibits shown on pages 3 (pension only) and 5 (pension, NCGI and ERI). Included on these exhibits is our understanding of the effect of the fiscal year 2010 State budget resolution on contributions to the system for the 2010 and 2011 fiscal years. These exhibits are discussed in detail in the paragraphs below.

The required statutory pension contribution has increased from $1,526.2 million for the State's 2010 fiscal year to $1,826.7 million for the State's 2011 fiscal year. This contribution consists of the Normal Contribution ($583.0 million), the Additional Formula Contribution ($106.6 million) and the Accrued Liability Contribution ($1,137.1 million). Chapter 92 P.L. 2007 eliminated the use of any Excess Assets to offset the pension normal cost in determining the Normal Contribution. Chapter 133 P.L. 2001 established the Benefit Enhancement Fund (BEF) to reduce the State's Additional Formula Normal Contribution. As of June 30, 2009, there are no assets in the BEF so no offset occurred and there are no Excess Assets as of July 1, 2009, so no assets will be transferred to the BEF as of that date.

In addition to the pension contribution, the estimated non-contributory group life insurance contribution is expected to increase from $34.2 million to $35.2 million and the ERI-3 contribution has increased from $1.33 million to $1.62 million from the State's 2010 fiscal year to the State's 2011 fiscal year.

Chapter 92, P.L. 2007 states that the System shall use consistent and generally accepted actuarial standards as established by GASB for the purpose of determining asset values, obligations and employer contributions. However, the System's contribution requirements, which are defined in NJ State statute, differ from the GASB compliant figures that are shown in this report. Also, current budgetary practices do not assess interest on contributions to reflect payment after the start of the fiscal year to the date paid. As a result, the System's statutory contribution is not the same as the annual required contribution (ARC) determined under GASB. As

B. General Comments (continued)

stated above, the GASB ARC is $261.3 million or 14.0% higher than the statutory pension and estimated NCGI contributions.

The summary exhibit on Page 3 reflects our understanding of the effect of the fiscal year 2010, as well as any change to fiscal year 2009, State budget resolution on these contributions to the system for the 2010 and 2011 fiscal years as outlined below:

- For the 2009 fiscal year, the State actually contributed $64.4 million versus the expected appropriation of $166.2 million included in the June 30, 2008 actuarial valuation report. This reduction in the State appropriation is reflected throughout this report. The actual contribution of $64.4 million covered approximately 4.8% of the pension and ERI contributions.

- For the 2010 fiscal year, the State has appropriated $62.5 million, which covers approximately 4.1% of the pension contribution ($62.4 million out of $1,526.2 million) and the ERI-3 contribution ($0.1 out of $1.3 million). This appropriation is 3% lower than the prior year's. In addition, it is our understanding that the actual amount of the non-contributory group life insurance claims will be appropriated. We have estimated the amount of those claims to be $34.2 million during the 2010 fiscal year based on the actuarial mortality assumption.

- An appropriation to cover the remaining portion of the 2010 fiscal year pension contribution ($1,463.8 million) was not made. This increases the Unfunded Actuarial Accrued Liability as of July 1, 2009 by $1,463.8 million resulting in an increase in the 2011 fiscal year Accrued Liability Contribution of $89.0 million. The accumulated value of statutory pension contributions, excluding ERI-3 contributions, not appropriated by the State in fiscal years 2004 through 2010 equals $5,528.6 million. The Unfunded Actuarial Accrued Liability as of July 1, 2009 is $18,710.3 million.

- For the 2011 fiscal year, it is anticipated that approximately 3.4% of the statutory pension contribution of $1,826.7 million and the combined ERI-3 and ERI-5 contributions of $1.6 million will be appropriated. In addition, it is anticipated that the State will appropriate an amount to cover the non-

B. General Comments (continued)

contributory group life insurance claims (NCGI est. $35.2 million). In displaying the results of this actuarial valuation, we have not reduced the contribution otherwise due under statute to reflect the expectation that funds will not be appropriated.

Actuarial Value of Assets

As mandated by statute, only 20% of the difference between the expected actuarial value of assets and the market value is recognized in calculating the actuarial value of assets each year. Due to the significant drop in the financial markets since 2007, the actuarial value of assets as of June 30, 2009 is 139% of market value, which is an increase from the prior year's ratio of 113%. Section III(G) shows the impact of using the market value of assets to determine the statutory pension contribution instead of the actuarial value.

Actuarial Accrued Liability

The actuarial accrued liability figures reflect the full additional actuarial liability due to pension adjustment benefits for actives, retirees, terminated vested members and beneficiaries. It excludes the actuarial liability associated with the group life insurance benefits and post retirement medical benefits. The State will appropriate funds to cover the actual amount of the non-contributory group life insurance claims. The post retirement medical benefits are no longer financed through TPAF. The liabilities are based on the assumptions adopted in the 2006 Experience Study.

Normal Cost

For purposes of calculating employer contributions, the portion of the normal cost attributable to the pension adjustment benefits for active members is reflected separately and its cost is being phased-in over a period beginning with the March 31, 1987 valuation. The current valuation reflects a 60.61% phase-in of the pension adjustment normal cost for active members.

The net pension normal cost, based on the 1/60 formula and reflecting the phase-in of the pension adjustment benefits, payable as of July 1, 2009 is $538.5 million. This is $16.8 million more than the comparable normal cost of $521.7 million

B. General Comments (continued)

payable on July 1, 2008. This increase is due to the continued phase-in of the pension adjustments ($3.8 million) and increases in payroll and the number of active participants ($13.0 million).

The additional formula normal cost payable as of July 1, 2009 is $98.5 million. This is $2.9 million more that the additional formula normal cost of $95.6 million payable on July 1, 2008. This increase is due to increases in payroll and the number of active participants.

Unfunded Actuarial Accrued Liability

The unfunded Actuarial Accrued Liability increased by $4,593.1 million from $14,117.2 million as of July 1, 2008 to $18,710.3 million as of July 1, 2009. This increase in the unfunded liability resulted in an increase in the Accrued Liability Contribution of $279.1 million from $858.0 million payable June 30, 2009 to $1,137.1 million payable June 30, 2010. The following table summarizes the reasons for the increase in the unfunded liability.

Unfunded Liability as of June 30, 2008	$14,117.2
Pension Contribution Less than State Appropriation for Prior Year	110.3
State Appropriation Less than Statutorily Required	1,463.8
Phase-in of Pension Adjustment Benefits	71.0
Amortization Payment Less/(More) than Interest Accrual	306.6
Actuarial Loss/(Gain)	2,703.3
Member Contributions Less/(More) than anticipated	(61.9)
Total Change in Unfunded Liability	$4,593.1
Unfunded Liability as of June 30, 2009	$18,710.3

Funded Ratio

As a result of the increase in the unfunded liability, the funded ratio based on the actuarial value of assets decreased by 7.1% from 72.1% as of June 30, 2008 to 65.0% as of June 30, 2009. On a market value basis, the funded ratio decreased by 17.1% from 63.9% to 46.8%. The decrease is greater on a market value basis since

B. General Comments (continued)

the actuarial value smoothes the investment losses over time. Since July 1, 2000, the funded ratio on a market value basis has decreased 81.9%. This decrease is primarily due to investment losses experienced over the period, State contributions less than the GASB Annual Required Contribution, the increase in benefits due to Chapter 133, P.L. 2001 and Chapter 353, P.L. 2001, and the strengthening of actuarial assumptions.

As of June 30, 2009, the market value of assets has fallen below the actuarial liability attributable to retirees due to significant investment losses during the prior year and State contributions significantly less than the statutorily required contribution. Furthermore, if the assets contained in the Annuity Savings Fund (ASF) are excluded, the funded ratio of the remaining market value of assets to the actuarial accrued liability for retirees is 54.5%.

As of June 30, 2009, the ratio of market value of assets to the prior year's benefit payments is 8.9. This is a simplistic measure of the number of years that the assets can cover benefit payments, excluding: investment income, State and member contributions, and future increases in those payments. This ratio has decreased 39% over the past two years. If ASF assets are excluded, since they represent accumulated contributions from active and inactive members, the ratio is 5.9.

Actuarial Gain/(Loss) Analysis

TPAF experienced an actuarial loss of $2,703.3 million during the period July 1, 2008 to June 30, 2009 based on the actuarial assumptions adopted in the 2006 Experience Study. This loss is approximately 5.1% of the Actuarial Accrued Liability as of June 30, 2009. The major factors contributing to this loss are summarized below and are compared to the experience for the prior two plan years.

B. General Comments (continued)

	Gain/(Loss) (Amounts in Millions)		
	June 30, 2009	June 30, 2008	June 30, 2007 *
Economic Factors:			
Investment Return	$(2,433.5)	$(1,045.7)	$(381.0)
Salary Increases	230.0	20.1	112.1
Pension Adjustments (COLA)	(286.0)	125.2	(151.4)
Expenses	(13.2)	(14.3)	(12.8)
Demographic Factors:			
Active Members	(34.5)	(82.8)	(123.3)
New Entrants	(61.7)	(58.0)	(55.0)
Non-Contributing Members	(29.4)	(28.4)	(29.5)
Retirees and Beneficiaries	(75.0)	(47.3)	(67.7)
Total	(2,703.3)	(1,131.2)	$(708.6)

* Based on 2003 Experience Study

Total pension assets earned investment returns of approximately -16.29% on a market value basis and 1.36% on an actuarial value basis for the period ending June 30, 2009. The determination of the approximate rate of return on the market value of assets is based on all assets of the fund including receivables and payables in addition to the investment holdings. This will result in a different rate of return reported by the Division of Investments. The resulting loss to the plan of $(2,433.5) million represents the shortfall in the actuarial value of assets relative to the 8.25% assumed investment return.

Salary increases for contributory members who were active on both July 1, 2008 and July 1, 2009 averaged 4.61% versus expected salary increases of 5.95% resulting in an actuarial gain of $230.0 million. Salaries for new entrants averaged $47,975, which is significantly below the average salary of all contributory members of $67,423. This resulted in the average salary of all contributory members increasing by only 2.3% over last year, with total contributory payroll growing by 3.5%.

For annuitants receiving benefits since 2006, the pension adjustments were based on a CPI increase of 4.60%, which is higher than the 3.0% actuarial assumption for CPI increases. This resulted in an actuarial loss of $286.0 million.

C. Discussion of Supporting Exhibits

Assets

Section II summarizes the System assets taken into account in the preparation of the actuarial valuation. Subsection A summarizes the market value of System assets as of June 30, 2009 and includes the present value of expected contributions from State and local employers for ERI and Terminal Funding retirements as of June 30, 2009.

Subsection B reconciles the development of the market value of pension assets starting from the market values as of June 30, 2008, which reflects a reduction in the State contribution for fiscal year 2009 from the prior valuation report. Subsection C summarizes the development of the actuarial value of pension assets as of July 1, 2009. The exhibit reflects the growth in the pension assets based on the expected investment income at an assumed rate of 8.25% adjusted to reflect 20% of the difference between the market value of pension assets as of the valuation date and the expected actuarial value.

Subsection D estimates the annual rate of return for the year ending June 30, 2009 on the actuarial value and the market value of pension assets. Subsection E summarizes the estimated annual rates of return for the five previous plan years. The 5-year compounded annual return on the actuarial value of assets and the market value of assets are 4.72% and 2.63%, respectively.

Actuarial Liabilities and Contributions

Section III summarizes the actuarial liabilities and the development of the required State contribution for the plan year beginning July 1, 2009. The State is statutorily required to make three contributions, a Normal Cost Contribution, an Accrued Liability Contribution and an Additional Formula Normal Cost Contribution, which in general are determined under the Projected Unit Credit funding method. The Normal Cost and Additional Formula Normal Cost under the Projected Unit Credit funding method is defined as the present value of the benefits attributed to the current year. The Normal Cost reflects the phase-in of the cost of pension adjustment benefits. The Unfunded Accrued Liability (Surplus) is determined as the difference between the Actuarial Accrued Liability used to develop contributions and