

THE \$8 BILLION QUESTION:

*An Analysis of NYC Pension Costs
Over the Past Decade*



NEW YORK CITY COMPTROLLER
JOHN C. LIU

APRIL 2011

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PAGE	CONTENTS
1	OVERVIEW
6	LOWER INVESTMENT RETURNS
8	BENEFIT ENHANCEMENTS
9	ACTUARIAL DIFFERENCES
10	INVESTMENT AND ADMINISTRATIVE FEES
12	CONCLUSION
13	METHODOLOGY
21	HAY GROUP VALIDATION

About the New York City Comptroller's Office

The New York City Comptroller, an independently elected official, is the Chief Financial Officer of the City of New York. The mission of the office is to ensure the financial health of New York City by advising the Mayor, the City Council, and the public of the City's financial condition. The Comptroller also makes recommendations on City programs and operations, fiscal policies, and financial transactions. In addition, the Comptroller manages the assets of the five New York City Pension Funds, performs budgetary analysis, audits city agencies, registers proposed contracts, etc. His office employs a workforce of over 700 professional staff members. These employees include accountants, attorneys, computer analysts, economists, engineers, budget, financial and investment analysts, claim specialists, and researchers in addition to clerical and administrative support staff.

About Retirement Security NYC

Retirement Security NYC is a major initiative launched by Comptroller John C. Liu to protect the retirement security of public employees while ensuring the City's financial health.

Overview

Governmental contributions to public employee pensions have become a nationwide issue in the wake of the recent recession. New York City, facing large budget gaps over the next few fiscal years, is no exception to this trend.

As part of its ongoing research into the efficacy of public and private pensions, Retirement Security NYC studied the impact on the municipal budget of the City's five retirement systems.¹ Over the past decade, the annual employer contributions to the pension funds have risen more than 500 percent, from \$1.2 billion in Fiscal Year 2001 to \$7.7 billion in Fiscal Year 2010. Pension costs currently represent 11 percent of the City's expenses, up from a low of 3 percent in FY '01.

Why This Report

While the multi-billion dollar growth in employer contributions in New York City has been widely attributed to lower investment returns and benefit enhancements, the specific impact of those drivers, along with several other minor ones, has not been well quantified.

To this end, the New York City Comptroller's Office sought to quantify the impact of each growth driver by analyzing the data from the City's Comprehensive Annual Financial Reports (CAFRs), the actuarial valuations performed by the Office of the Actuary for each of the retirement systems, and fiscal notes issued in relation to benefit enhancement legislation. The analysis conducted by the Comptroller's Office was then independently reviewed and validated by actuaries from the Hay Group.

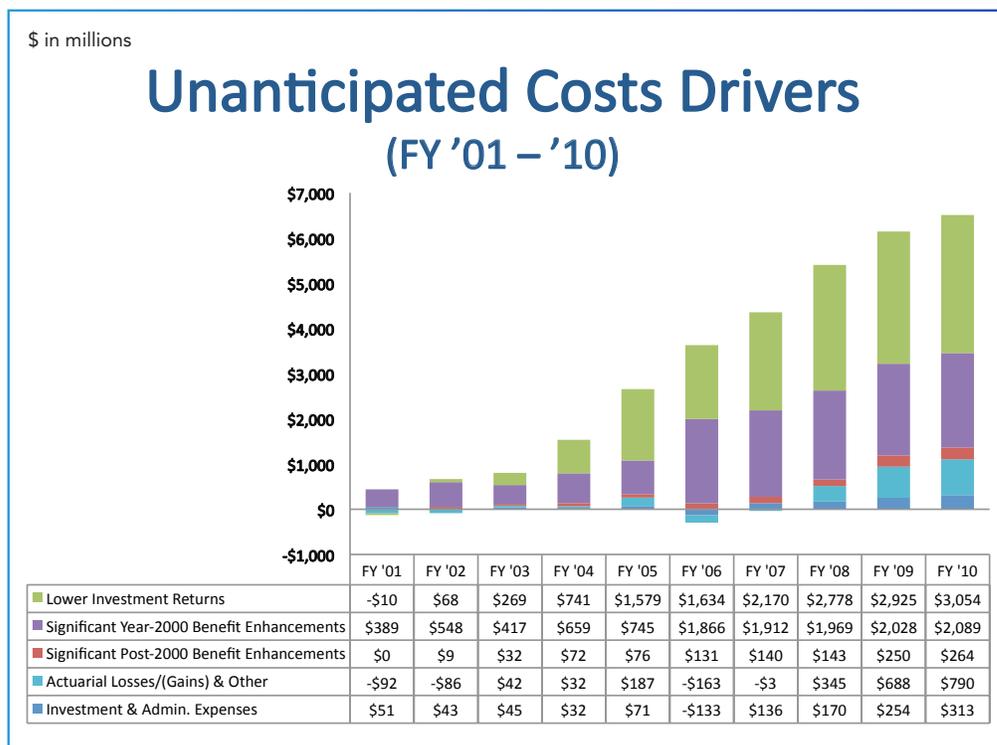
¹ The City's five pension funds are: The New York City Employees' Retirement System (NYCERS), the New York City Teachers' Retirement System-Qualified Pension Plan (TRS), the New York City Board of Education Retirement System-Qualified Pension Plan (BERS), the New York City Police Pension Fund (POLICE), and the New York City Fire Department Pension Fund (FIRE). NYCERS, TRS, and BERS are cost-sharing, public employee retirement systems, i.e., employers other than the City of New York also contribute to these retirement systems.



Key Findings

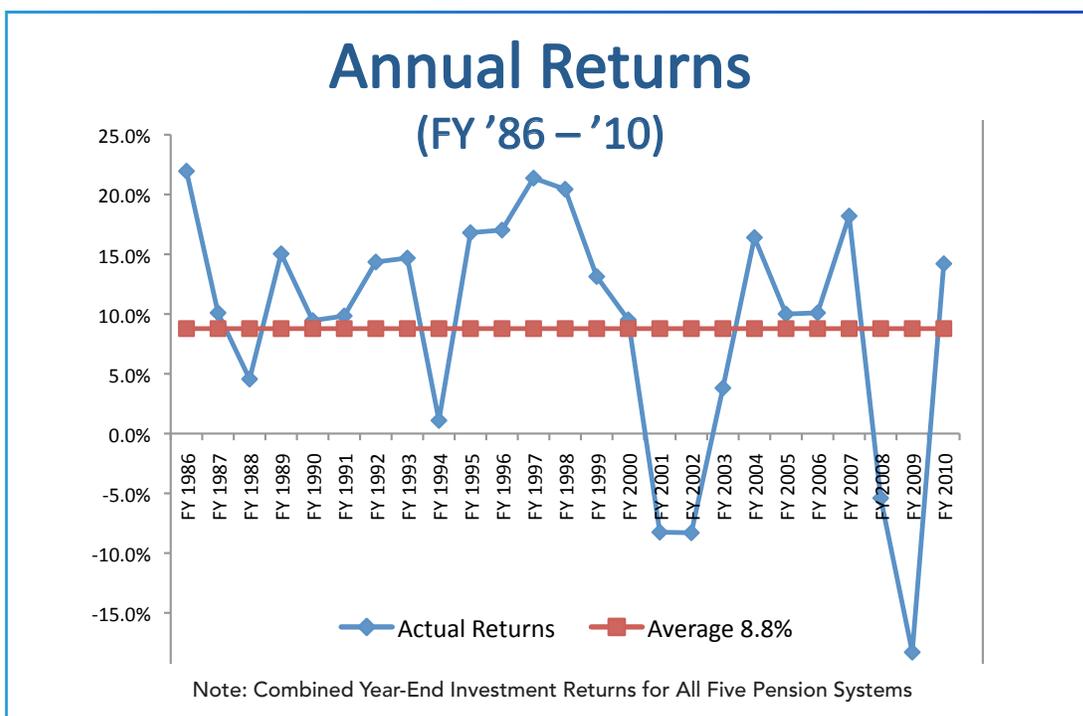
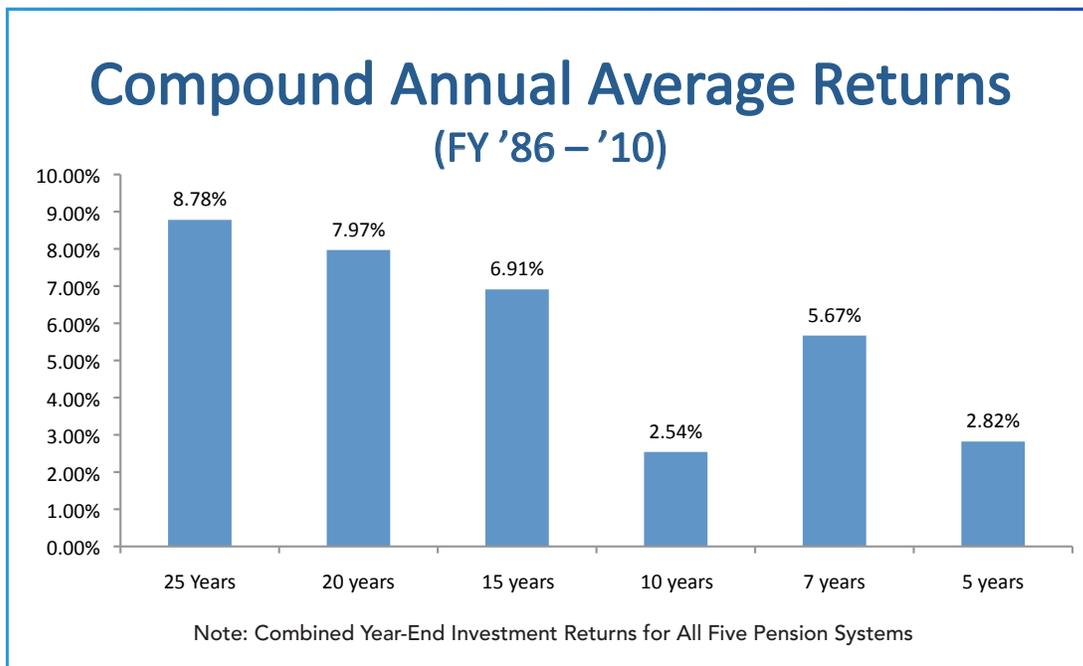
The study of NYC pension costs over the past decade provides insight into the substantial increases in employer contributions that occurred during the 2001 to 2010 time period. Specifically, this analysis identifies and explains the five primary factors driving the unanticipated pension cost increases over this time period as follows:

- By far the largest contributor was lower investment returns, which accounted for 48 percent of the additional costs over the period. It added \$3.1 billion to costs in FY '10, and accounted for \$15.2 billion over the decade.
- The second-largest contributor to the growth in NYC pension fund costs was benefit enhancements put into place in 2000. This added \$2.1 billion to FY '10 costs, and accounted for an estimated \$12.6 billion, or 40 percent, of the additional costs over the course of the decade.
- The third-biggest contributor was actuarial losses and revisions in actuarial assumptions and methods, due to a variety of factors including increased longevity, salaries, overtime, disability, early retirement, and buy-backs of service. It added \$790 million to costs in FY '10, and totaled nearly \$1.7 billion, or 5 percent, over the ten year period.
- The fourth-largest contributor to the growth in NYC pension fund costs was benefit enhancements put into place after 2000. This added \$264 million to FY '10 costs, and accounted for an estimated \$1.1 billion, or 4 percent, of the additional costs over the course of the decade.
- The fifth major contributor was higher-than-expected investment and administrative fees, which added \$313 million to expenses in FY '10, and totaled \$982 million, or 3 percent, during the decade.



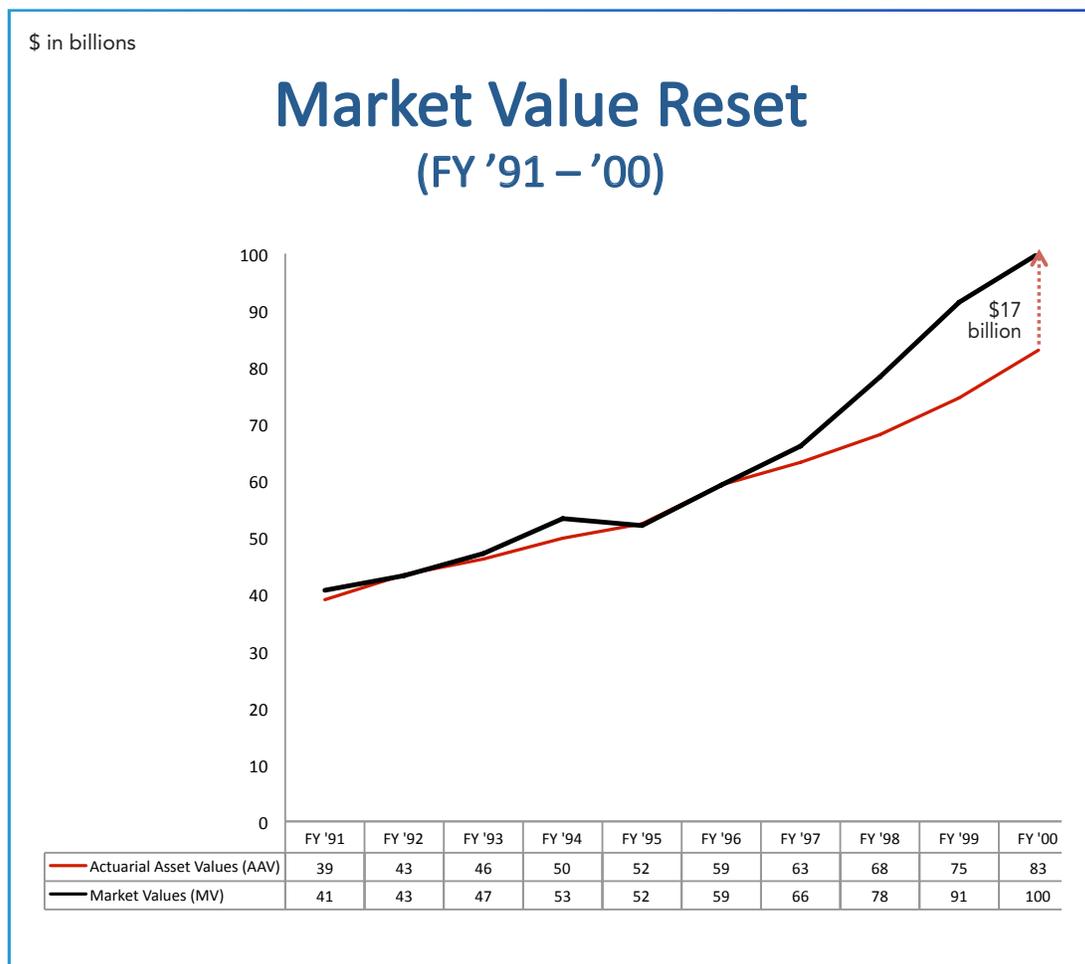
Historical Returns

The New York City Pension Funds have yielded investment returns in excess of 8 percent over the past 25 years. While returns have varied widely over the past few decades, from a high of 22 percent to a low of -18 percent, average returns were 8.78 percent between July 1, 1985 and June 30, 2010.



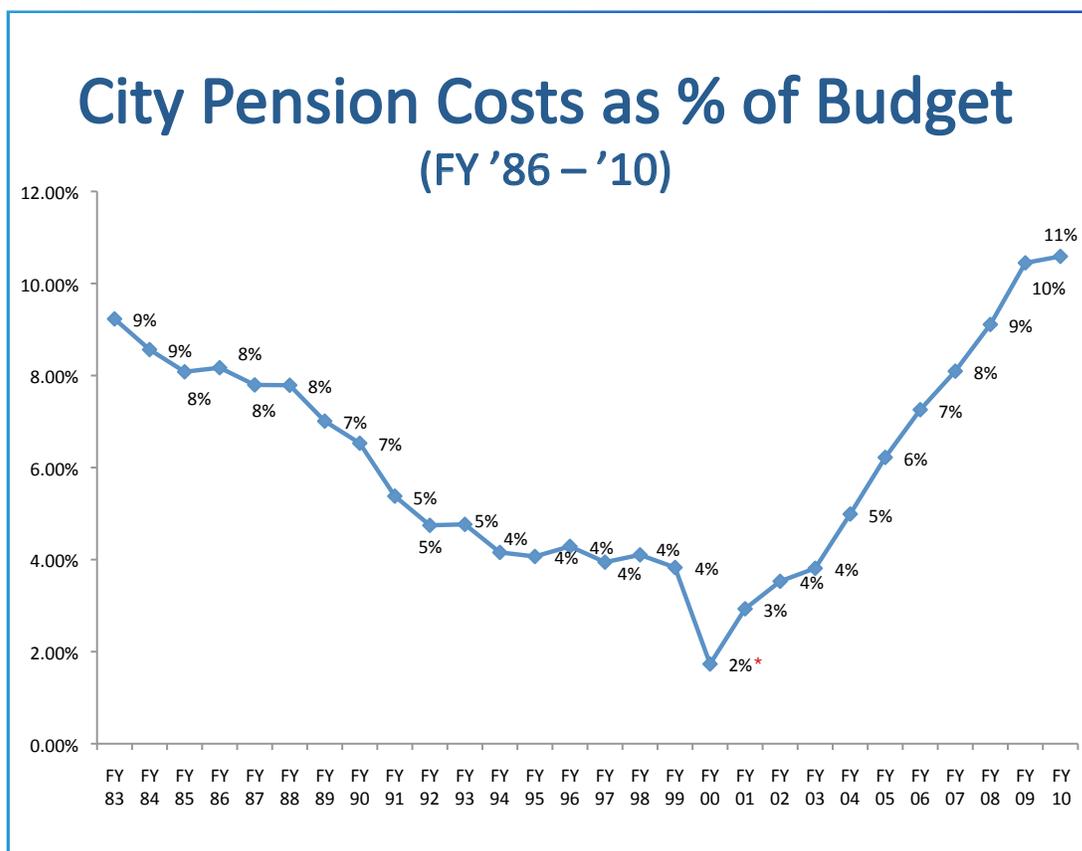
Market Value Reset

In the late 1990s, in the wake of the stock market's "irrational exuberance," the City pension funds implemented a market value reset, of approximately \$17 billion, to bring its asset valuations of \$83 billion in line with the market value at that time of \$100 billion. The higher actuarial asset value in the funds allowed employer contributions to be reduced by \$1.1 billion in FY '00 and decreasing amounts in FYs '01 through '03. It also enabled the passing of benefit enhancements in the years that followed.



Pension Costs as a Percent of the City's Expenses

Municipal employee pension costs as a percentage of the City's Expense Budget have varied significantly over the past 25 years. These costs have averaged 5.8 percent of the City's overall Expense Budget during the period. A longer term look shows that it was not uncommon for pension costs to represent 8 or 9 percent of expenses.

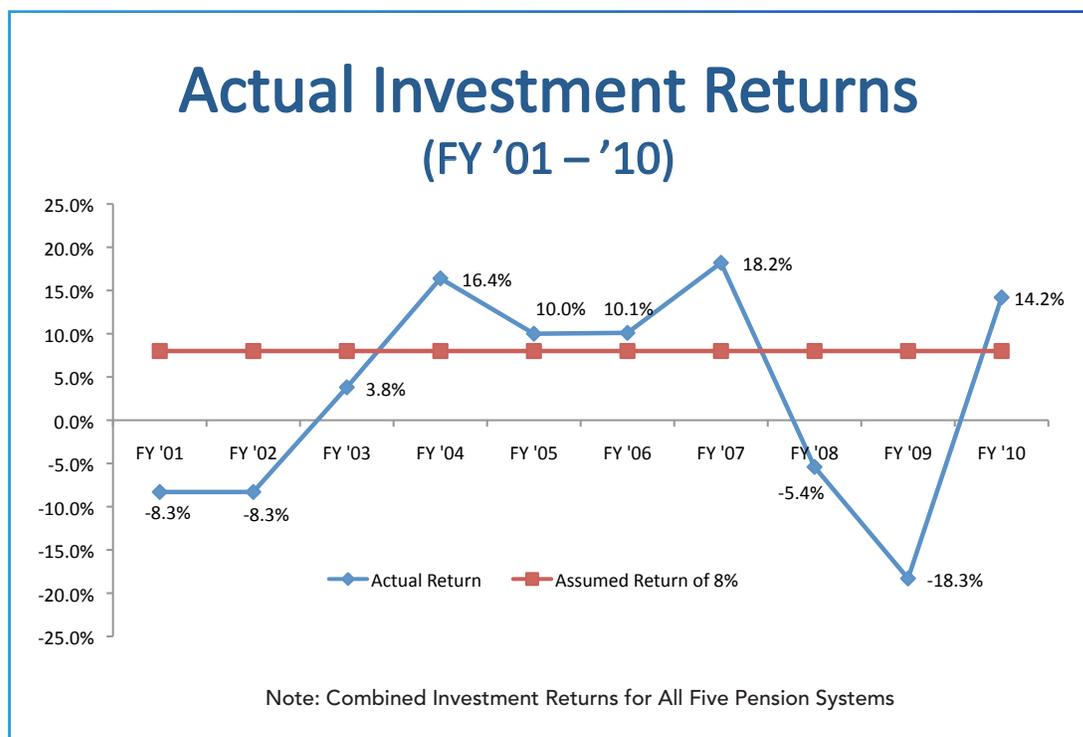


* Market value reset by Chief Actuary



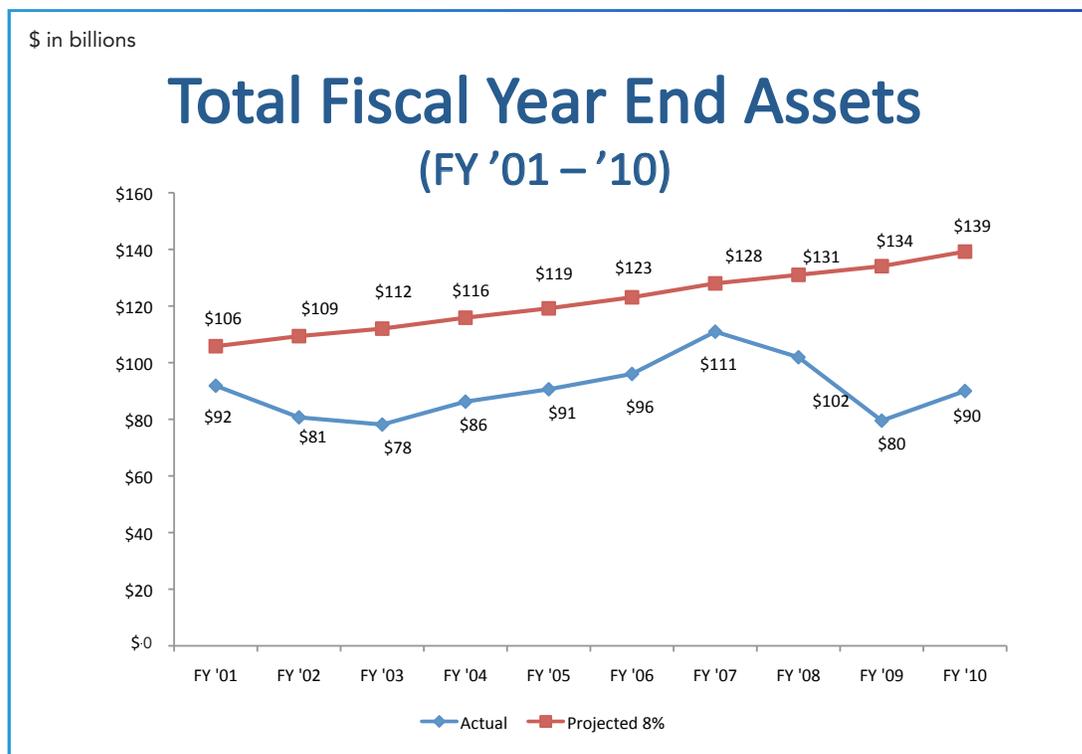
Lower Investment Returns

The biggest driver of increased pension costs during the decade was low investment returns, which added \$15.2 billion, or 48 percent, over the ten-year period. The New York City pension funds, like many public pension systems, have an 8 percent assumed rate of return on their investments. Returns below this assumed rate result in increases in employer contributions. The past decade has been one of the most volatile in U.S. stock market history, beginning with the bursting of the technology stock bubble at the period's onset and ending with the deep recession of 2008-2010. As a result, several years of negative and low investment returns adversely affected the funds in the period under study. The City's pension funds experienced negative returns in four out of the past ten years, in FY '01 (-8.3 percent), FY '02 (-8.3 percent), FY '08 (-5.4 percent), and FY '09 (-18.3 percent).



THE \$8 BILLION QUESTION: An Analysis of NYC Pension Costs Over the Past Decade

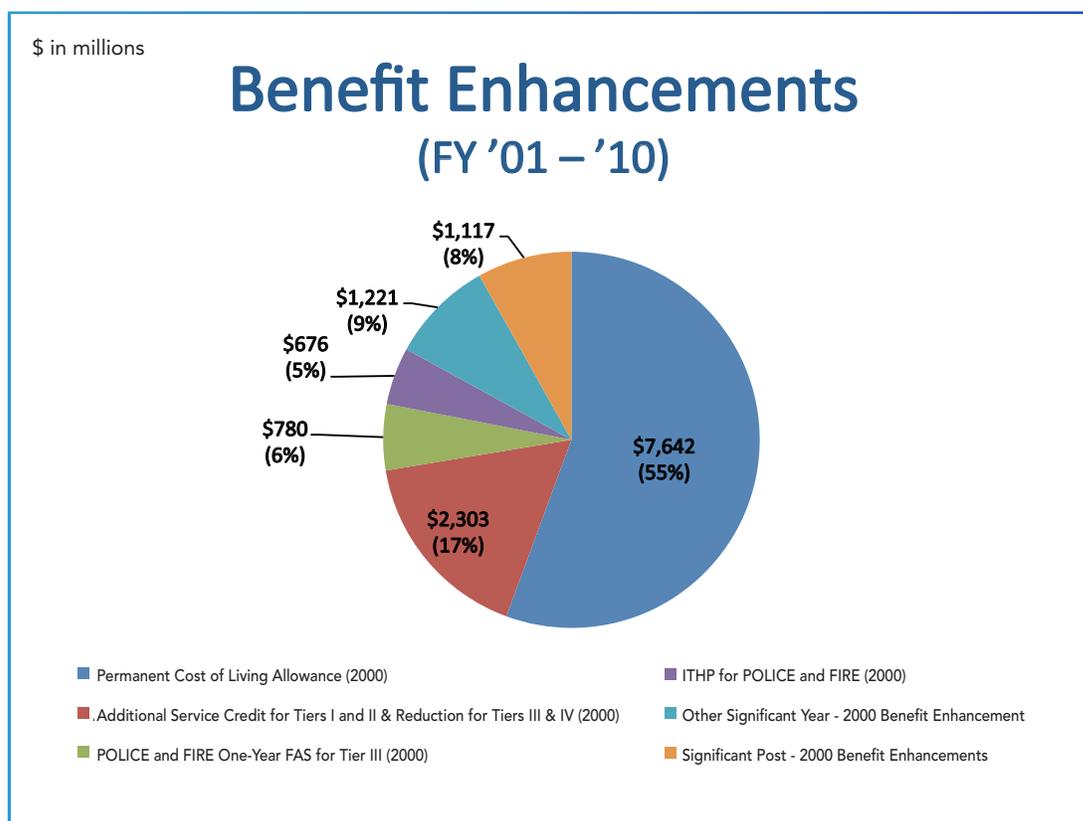
These lower returns created a FY '10 gap of about \$49 billion between what the pension funds were expected to possess in terms of assets and what they actually did.



Benefit Enhancements

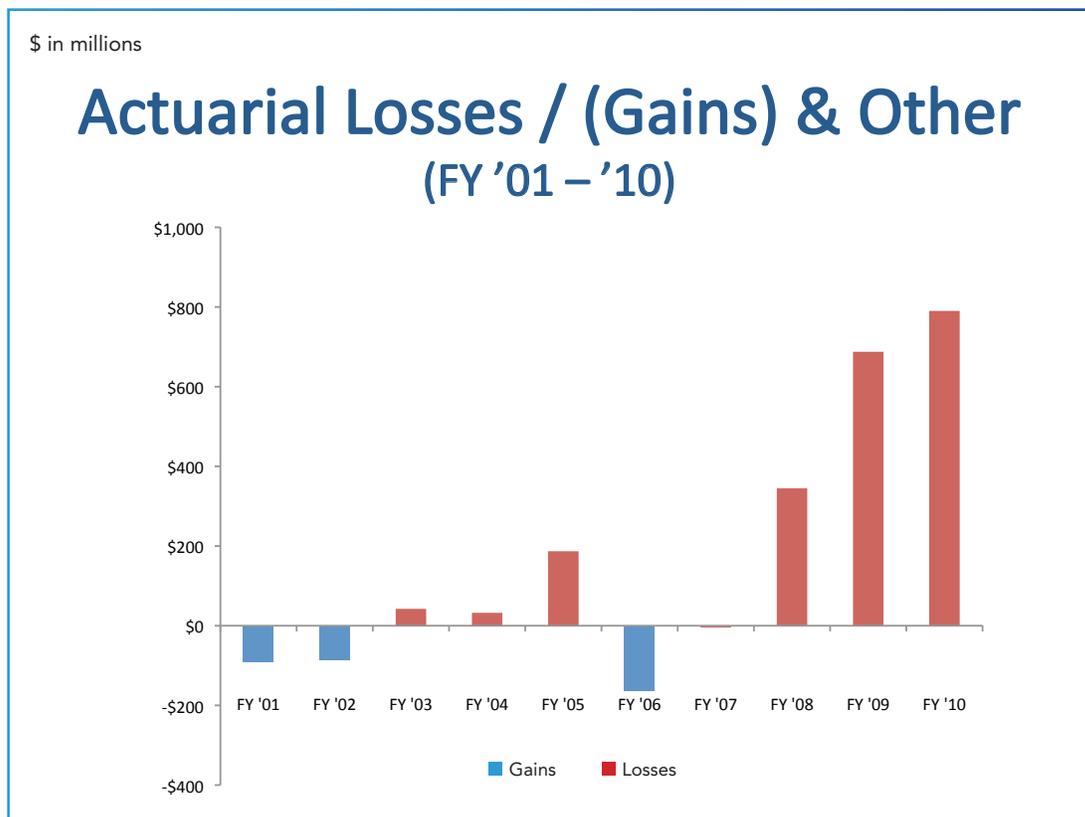
Benefit enhancements put into place in 2000 added \$2.1 billion to FY '10 costs, and accounted for an estimated \$12.6 billion, or 40 percent, of the additional costs over the course of the decade. Benefit enhancements put into place after 2000 added \$264 million to FY '10 costs, and accounted for an estimated \$1.1 billion, or 4 percent, of the additional costs over the course of the decade.

Over 90 percent of the overall benefit enhancements during the past decade were enacted in Calendar Year 2000. \$7.6 billion of these benefits enhancements are associated with cost-of-living (COLA) increases. Other benefit enhancements enacted that year increased costs by an additional \$5.0 billion and included increased service credits for certain employee tiers, a reduction of employee contributions for others, and a more generous final average salary calculation for the police and fire pension funds. Benefit enhancements enacted between FY '02 and FY '10 added less than \$1.2 billion to costs, a portion of which are associated with disability payments in connection with the September 11th terrorist attacks.



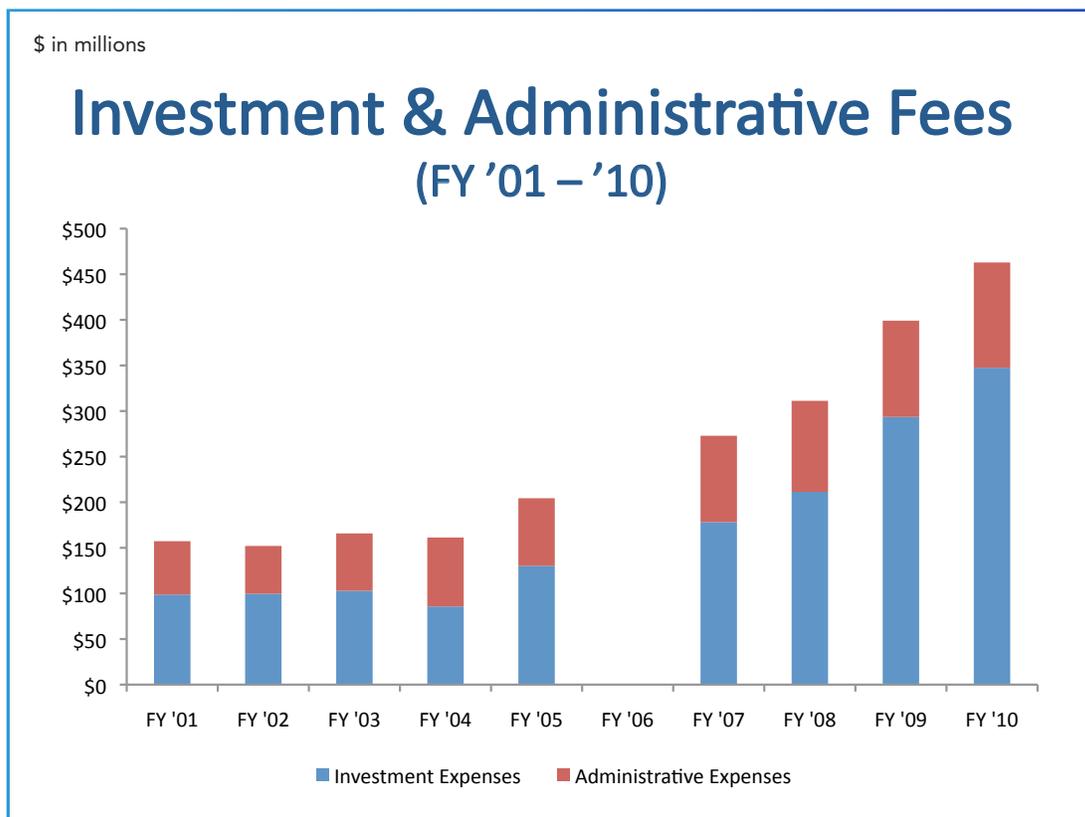
Actuarial Differences

Actuarial losses totaled nearly \$1.7 billion, or 6 percent, over the period. Changes in pension liabilities occurred throughout the decade as experience proved different from initial assumptions. These changes often resulted in losses as actual information about longevity, salaries, overtime, disability, early retirement, and buy-backs of service proved more costly than initially assumed.



Investment and Administrative Fees

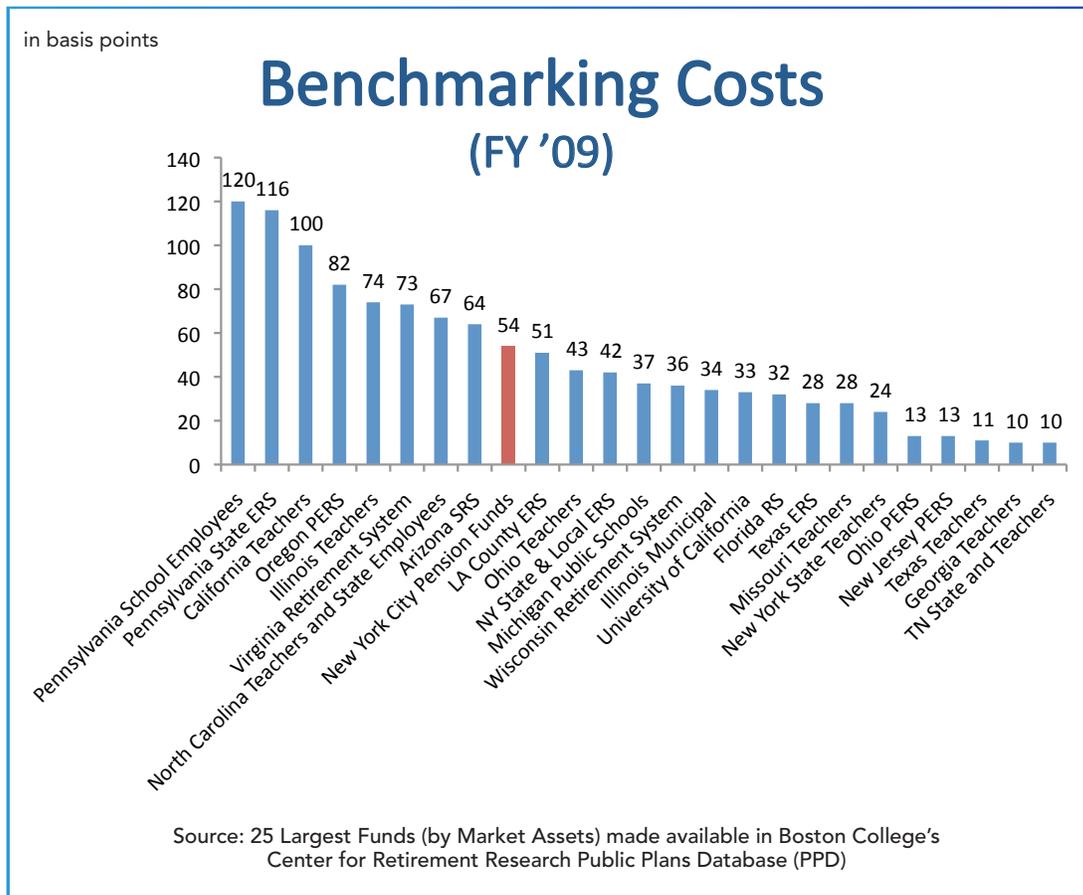
Higher-than-expected investment and administrative fees associated with managing the pension funds and their assets added \$982 million, or 3 percent, during the decade. Substantially all of the increases in investment costs from FY '05 to FY '10 were due to the pension funds shifting asset allocation in favor of private equity and real estate which have higher investment fees. The cost of managing the five pension funds and their assets grew by nearly 200 percent over the period studied.



Note: There were no Investment or Administrative Expenses included in FY '06 due to the introduction of new methodology by the City Actuary.

THE \$8 BILLION QUESTION: An Analysis of NYC Pension Costs Over the Past Decade

Based on an analysis of the costs incurred by other large public pension funds in FY '09, NYC's costs of approximately 54 basis points (\$425 million of expenses on \$79.5 billion of assets) are slightly above the average cost of 48 basis points.



Note: FY '10 data for other systems was not readily available.



Conclusion

Soaring pension costs have put a strain on the City's budget over the past few years. This analysis identifies and explains the five primary factors driving the unanticipated pension cost increases from FY '01 to FY '10. Chief among them was poor market performance, which accounted for 48 percent of the growth in costs, and benefit enhancements passed in 2000, which accounted for 40 percent.

Investment returns realized on City pension funds depend on the strength of the national and global economy and on the inevitable and unpredictable fluctuations in asset markets, particularly the stock market. This past decade was one of the worst for investors in recent economic history. Major indexes such as the S&P 500 and the Russell 3000 were still performing below their 1999 levels at December 31, 2010. While current markets are somewhat nervous, there are indications that global economic growth will increase and an era of improved returns will follow. We are optimistic that investment returns will revert toward their long-term mean, which is neither as high as those of the 1990s nor as dismal as those of the past decade.

As seen in this analysis, pension benefit enhancements enacted in 2000, when asset values were at their peak levels, played a significant role in adding to the City's current pension obligations. It should be noted, however, that since the enactment of these benefits, less expensive pension plans have been introduced for newly-hired City employees. In time, as employees in the new plans replace older workers in the more expensive plans, pension costs should decline.

For more than a century, New York City has found that reasonable pension benefits are an effective tool to attract and retain qualified employees to municipal service. The City's immediate aim should be to increase investment income while reducing volatility, thereby containing pension expenses without pushing costs to future taxpayers. New Yorkers should be proud that in spite of tough economic times the City has appropriately funded its pension liabilities and, with normal investment returns, the pension funds should become stronger in the years to come.

Methodology



Introduction

For the purposes of this study, the Comptroller's Office compared the actual employer contributions made to the pension funds from FY '01 to FY '10 to a baseline projection that has been termed "Anticipated Progression of Employer Contributions." This baseline was constructed on employer contributions calculated for FY '01 by the Office of the Actuary in June 2000, prior to the enactment of the major benefit enhancements in 2000 and beyond, and prior to the investment losses experienced during the decade. The difference has been termed in this analysis as the "Unanticipated Increases in Employer Contributions."

This report explains 94.5 percent of the unanticipated increases between FY '01 and FY '10. The 5.5 percent balance has been allocated to unexplained actuarial losses, including changes in actuarial assumptions and methods.

Scope of Analysis

This analysis has been based on the entirety of the City's five actuarial pension funds, including all participating employers. The City's five pension funds are: The New York City Employees' Retirement System (NYCERS), the New York City Teachers' Retirement System—Qualified Pension Plan (TRS), the New York City Board of Education Retirement System—Qualified Pension Plan (BERS), the New York City Police Pension Fund (POLICE), and the New York City Fire Department Pension Fund (FIRE). NYCERS, TRS, and BERS are cost-sharing, public employee retirement systems, i.e., employers other than the City of New York also contribute to these retirement systems.

As of June 30, 2008, in addition to the City of New York, the following employers also participated in NYCERS: NYC Transit Authority, NYC Housing Authority, NYC Health and Hospitals Corporation, MTA Bridges and Tunnels, NYC Off-Track Betting Corporation, NYC School Construction Authority, NYC Housing Development Corporation, NYC Residential Mortgage Insurance Corporation, City University of New York, New York State, and NYC Municipal Water Authority. For Fiscal Year '10, NYC's statutory employer contribution as a percentage of the total statutory employer contributions by all employers participating in NYCERS was 54.86 percent.

As of June 30, 2008, in addition to the City of New York, the City University of New York and about ten Charter Schools also participated in TRS. For Fiscal Year '10, NYC's statutory employer contribution as a percentage of total statutory employer contributions by all employers participating in TRS was 98.66 percent.

THE \$8 BILLION QUESTION: *An Analysis of NYC Pension Costs Over the Past Decade*

As of June 30, 2008, in addition to the City of New York, the School Construction Authority and three Charter Schools also participated in BERS. For Fiscal Year '10, NYC's statutory employer contribution as a percentage of total statutory employer contributions by all employers participating in BERS was 94.69 percent.

Employer contributions made only by the City to the five actuarial pension systems during the past decade were as follows:

\$ in millions

	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
Net City Contributions	\$1,179	\$1,442	\$1,690	\$2,360	\$3,284	\$3,919	\$4,757	\$5,645	\$6,286	\$6,651



Detailed Analysis of Employer Contributions to the City's Pension Funds (FY '00 - '10)

\$ in millions

	FY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
(A) Annual Employer Contributions	\$693	\$1,238	\$1,509	\$1,760	\$2,519	\$3,670	\$4,378	\$5,429	\$6,512	\$7,284	\$7,684
(B) Anticipated Progression of Employer Contributions	\$693	\$900	\$927	\$954	\$983	\$1,013	\$1,043	\$1,074	\$1,107	\$1,140	\$1,174
(C) Unanticipated Increases in Employer Contributions	\$0	\$339	\$582	\$806	\$1,536	\$2,658	\$3,335	\$4,355	\$5,405	\$6,144	\$6,510

	FY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
(D) Increases due to Investment Losses	\$0	-\$10	\$68	\$269	\$741	\$1,579	\$1,634	\$2,170	\$2,778	\$2,925	\$3,054
(E) Significant Year-2000 Benefit Enhancements	\$0	\$389	\$548	\$417	\$659	\$745	\$1,866	\$1,912	\$1,969	\$2,028	\$2,089
(F) Significant Post-2000 Benefit Enhancements	\$0	\$0	\$9	\$32	\$72	\$76	\$131	\$140	\$143	\$250	\$264
(G) Increases due to Unanticipated Increase in Investment Expenses	\$0	\$34	\$32	\$34	\$14	\$57	-\$73	\$103	\$134	\$213	\$265
(H) Increases due to Unanticipated Increase in Administrative Expenses	\$0	\$18	\$11	\$11	\$17	\$14	-\$60	\$33	\$36	\$40	\$48
(I) Actuarial Losses/(Gains) & Other	\$0	-\$92	-\$86	\$42	\$32	\$187	-\$163	-\$3	\$345	\$688	\$790
Total	\$0	\$339	\$582	\$806	\$1,536	\$2,658	\$3,335	\$4,355	\$5,405	\$6,144	\$6,510

	FY '00	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
(R) Investment Returns During Fiscal Year	9.5%	-8.3%	-8.3%	3.8%	16.4%	10.0%	10.1%	18.2%	-5.4%	-18.3%	14.2%
(S) Actuarial Value of Assets End of Fiscal Year	\$104,276	\$104,875	\$105,101	\$102,282	\$100,094	\$99,335	\$97,467	\$101,023	\$103,370	\$104,430	\$107,407
(T) Market Value of Assets End of Fiscal Year	\$105,580	\$91,847	\$80,690	\$78,144	\$86,235	\$90,606	\$96,025	\$110,945	\$101,915	\$79,518	\$89,992
(U) Hypothetical Value of Assets if 8% Returns	\$104,002	\$105,808	\$109,371	\$112,013	\$115,872	\$119,177	\$123,081	\$127,989	\$131,010	\$134,071	\$139,220
(V) Actual Investment Expenses included in Employer Contributions	\$63	\$99	\$100	\$103	\$86	\$130	\$0	\$178	\$211	\$294	\$348
(W) Actual Administrative Expenses included in Employer Contributions	\$40	\$59	\$53	\$63	\$76	\$74	\$0	\$95	\$100	\$106	\$115



(A) Actual Employer Pension Contributions

From the City's audited financial statements (Schedule F) for each year.

(B) Anticipated Pension Costs in June 2000

FY '01 employer contributions are as projected in June 2000. At that time it was anticipated that future costs would increase at the general wage increase rate, or 3 percent per year.

(C) Unanticipated Pension Costs

The difference between (A) and (B).

(D) Increases Due to Investment Losses

Estimated change in employer contributions due to investment gains and losses. This was estimated by assuming that pension fund investments earned 8 percent each year and recalculating employer contribution by changing the asset valuation used in computing accordingly. The difference between the recalculated contributions and (A) is the increase due to investment losses.

(E) Increases Due to Benefit Enhancements Enacted in 2000

This row is an estimate of the net impact to employer contributions due to significant benefit enhancements enacted in Calendar Year 2000. It is assumed that the gross increase to employer contributions due to these benefit enhancements was partially offset by NYCERS' "asset cushion" in the initial fiscal years through FY '05.

The NYCERS' "asset cushion" represents the excess of assets over actuarial liabilities as a result of the implementation of new assumptions, methods, and an "actuarial asset value" restart — i.e., resetting the "actuarial market value" to the market value on that date — effective June 30, 1999. (It is assumed here that the NYCERS' "asset cushion" was gradually depleted through FY '05 by investment and other actuarial losses.) FY '06 is the first year when the gross cost-impact of these benefit enhancements is shown in its entirety. It has been assumed that, generally, the first year cost-impact of a benefit enhancement increased roughly at the 3 percent general wage increase rate per year.

THE \$8 BILLION QUESTION: *An Analysis of NYC Pension Costs Over the Past Decade*

This row has also been estimated from fiscal notes produced by the City's Chief Actuary, fiscal notes attached to legislation enacting a benefit enhancement, or, in the absence of a fiscal note, an internal best-judgment assessment. It should also be noted that in FY '06, certain actuarial assumptions and methods were modified, and the cost impact of the COLA — which had only been partially phased into employer cost calculations through FY '05, as per then applicable law — was fully recognized.

\$ in millions

Chapter	Laws	Benefit	FY '01	FY '02	FY '03	FY '04	FY '05	FY '06	FY '07	FY '08	FY '09	FY '10
125	2000	Permanent Cost of Living Allowance	\$98	\$236	\$96	\$329	\$406	\$1,220	\$1,257	\$1,294	\$1,333	\$1,373
110 & 126	2000	Additional Service Credit for Tiers I and II & Reduction of Contributions for Tiers III & IV	\$122	\$125.7	\$129.4	\$133.3	\$137.3	\$311.8	\$321.2	\$330.8	\$340.8	\$351.0
553	2000	Age-55 Reduced	\$3.8	\$3.9	\$4.0	\$4.2	\$4.3	\$15.1	\$15.5	\$16.0	\$16.5	\$17.0
554	2000	Death Benefits	\$1	\$1.0	\$1.1	\$1.1	\$1.1	\$1.2	\$3.5	\$3.6	\$3.7	\$3.8
554	2000	Credit for Prior Service	\$7	\$7.2	\$7.4	\$7.6	\$7.9	\$24.3	\$25.1	\$25.8	\$26.6	\$27.4
372	2000	POLICE and FIRE One-Year FAS for Tier II	\$68	\$70.0	\$72.1	\$74.3	\$76.5	\$78.8	\$81.2	\$83.6	\$86.1	\$88.7
373	2000	ITHP for POLICE and FIRE	\$59	\$60.8	\$62.6	\$64.5	\$66.4	\$68.4	\$70.4	\$72.6	\$74.7	\$77.0
551	2000	Death Benefits for Tier II POLICE & FIRE	\$11	\$11.3	\$11.7	\$12.0	\$12.4	\$12.8	\$13.1	\$13.5	\$13.9	\$14.4
548	2000	Military Service	\$16	\$16.5	\$17.0	\$17.5	\$18.0	\$46.4	\$47.8	\$49.2	\$50.7	\$52.2
255	2000	Correction Officers' VSF	\$0	\$0.0	\$0.0	\$0.0	\$0.0	\$70.7	\$72.8	\$75.0	\$77.3	\$79.6
255	2000	Miscellaneous	\$3	\$3.1	\$3.2	\$3.3	\$3.4	\$4.6	\$4.8	\$4.9	\$5.1	\$5.2
86	2000	Early Retirement Incentive Program		\$12.0	\$12.0	\$12.0	\$12.0	\$12.0				
Total			\$388.7	\$547.6	\$416.6	\$659.2	\$744.8	\$1,866.0	\$1,911.9	\$1,969.3	\$2,028.4	\$2,089.2

(F) Increases Due to Post-2000 Benefit Enhancements

This row is an estimate of the impact of significant benefit increases enacted after Calendar Year 2000, estimated on a similar basis as (E).

\$ in millions

Chapter	Laws	Benefit	FY 01	FY 02	FY 03	FY 04	FY 05	FY 06	FY 07	FY 08	FY 09	FY 10
444	2001	PSOVSF Tier B		\$8	\$8	\$8	\$9	\$9	\$9	\$10	\$10	\$10
579	2001	Sanitation 20-yr Program		\$1.3	\$1.3	\$1.4	\$1.4	\$1.5	\$1.5	\$1.6	\$1.6	\$1.6
69	2002	Early Retirement Incentive Program				\$38.4	\$38.4	\$38.4	\$38.4	\$38.4		
216	2002	VSFDRDP			\$15.0	\$15.5	\$15.9	\$16.4	\$16.9	\$17.4	\$17.9	\$18.4
504	2002	Sanitation AD			\$6.0	\$6.2	\$6.4	\$6.6	\$6.8	\$7.0	\$7.2	\$7.4
602	2002	Correction Officers/Captains			\$1.7	\$1.8	\$1.8	\$1.9	\$1.9	\$2.0	\$2.0	\$2.1
623	2004	Sec 415 (m)					\$3.5	\$3.6	\$3.7	\$3.8	\$3.9	\$4.1
93	2005	World Trade Center Presumption for Accidental Disability Retirement						\$53.0	\$54.6	\$56.2	\$57.9	\$59.7
477	2005	Allows Correction Members to Receive Service Credit for Child Care Leave						\$1.0	\$1.0	\$1.1	\$1.1	\$1.1
105	2005	Death Benefit for Members on Military Duty							\$3.0	\$3.1	\$3.2	\$3.3
445	2006	World Trade Center Death Benefits							\$3.0	\$3.1	\$3.2	\$3.3
19	2008	Optional Age 55 Retirement Program for TRS and BERS Members									\$100.6	\$103.6
489	2008	World Trade Center Benefits									\$3.2	\$3.3
NA	NA	Interest on Pension Contributions by Tiers I and II Out of Court Settlement									\$13.0	\$13.4
NA	NA	Coverage Pay									\$3.0	\$3.1
NA	NA	Teachers' Per-Session Earnings Become Pensionable									\$22.0	\$29.0
Total			\$0.0	\$9.3	\$32.3	\$71.6	\$76.1	\$131.3	\$140.1	\$143.1	\$249.7	\$263.5

(G) Unanticipated Increases in Investment Expenses

Baseline investment expenses, which were included in the FY '00 employer cost calculations, were anticipated to stay constant as a percentage of total assets. On average, hypothetical assets increased at about 3 percent per year between FY '00 and FY '10. Hence, a growth rate of 3 percent has been used as a baseline expectation. Costs in excess of this baseline expectation are shown in this row.

(H) Unanticipated Increases in Administrative Expenses

Baseline administrative costs, which were included in the FY '00 employer cost calculations, were anticipated at that time to rise at 3 percent per year. If administrative costs were introduced to a pension system at a later date, that was included in the baseline. Costs in excess of the 3 percent growth are shown in this row.

(I) Actuarial Losses/(Gains) & Other

The balance (unexplained) has been allocated to this category. That is, (I) = (C) – (D) – (E) – (F) – (G) – (H). Examples of Actuarial Losses: salary increases higher than assumed; overtime earnings included in final salary higher than assumed; life-span improvements; disability and accidental disability retirements higher than assumed; administrative and investment expenses; improvements in data; buy-backs of service; early retirement incentives. The “Other” category includes changes to actuarial assumptions and methods.

(V) & (W) Actual Investment and Administrative Costs in Employer Contributions

These are related to lines (G) and (H). There were no investment or administrative expenses included in FY '06 costs due to the introduction of new methodology by the City Actuary.

Benchmarking Investment & Administrative Costs:

\$ in millions

Ranking	Public Pension Fund	Investment Expense	Administrative Expense	Total Expenses	Market Assets	Cost (in basis points)
1	Pennsylvania School Employees	\$478	\$36	\$513	\$42,995	120 bp
2	Pennsylvania State ERS	\$260	\$24	\$284	\$24,662	116 bp
3	California Teachers	\$1,071	\$113	\$1,184	\$118,430	100 bp
4	Oregon PERS	\$318	\$34	\$351	\$42,905	82 bp
5	Illinois Teachers	\$193	\$17	\$210	\$28,498	74 bp
6	Virginia Retirement System	\$258	\$31	\$288	\$39,890	73 bp
7	North Carolina Teachers and State Employees	\$291	\$13	\$304	\$45,422	67 bp
8	Arizona SRS	\$100	\$27	\$127	\$19,880	64 bp
9	New York City Pension Funds*	\$294	\$131	\$425	\$79,518	54 bp
10	LA County ERS	\$105	\$50	\$154	\$30,499	51 bp
11	Ohio Teachers	\$153	\$59	\$211	\$50,096	43 bp
12	NY State & Local ERS	\$308	\$87	\$395	\$94,242	42 bp
13	Michigan Public Schools	\$104	\$23	\$127	\$34,498	37 bp
14	Wisconsin Retirement System	\$230	\$21	\$251	\$69,996	36 bp
15	Illinois Municipal	\$52	\$22	\$74	\$22,303	34 bp
16	University of California	\$73	\$31	\$104	\$32,259	33 bp
17	Florida RS	\$288	\$16	\$303	\$96,503	32 bp
18	Texas ERS	\$34	\$17	\$52	\$19,098	28 bp
19	Missouri Teachers	\$48	\$10	\$58	\$21,589	28 bp
20	New York State Teachers	\$122	\$49	\$171	\$72,472	24 bp
21	Ohio PERS	\$18	\$57	\$75	\$57,630	13 bp
22	New Jersey PERS	\$7	\$20	\$27	\$22,543	13 bp
23	Texas Teachers	\$69	\$28	\$97	\$88,653	11 bp
24	Georgia Teachers	\$19	\$23	\$41	\$42,479	10 bp
25	TN State and Teachers	\$18	\$4	\$21	\$21,949	10 bp

Source: 25 Largest Funds (by market assets) made available in Boston College's Center for Retirement Research Public Plans Database (PPD).

*Amount includes approximately \$25 million of pension fund expenses paid directly by the City.

Hay Group Validation





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March 31, 2011

Mr. Ari Hoffnung
Assistant Comptroller for Budget
Chief Policy Officer
The City of New York
Municipal Building
One Centre Street
New York, NY 10007

Dear Ari:

Hay Group is providing certain retirement program consulting services to the Office of the Comptroller (OC) of the City of New York (CONY). A key deliverable in Phase One of this engagement is to validate the OC's computations of additional contributions to the New York City Retirement Systems (NYCRS) due to investment losses, significant benefit enhancements, and unanticipated investment and administrative expenses.

The OC has provided to Hay Group computations of historical contributions for each of the Systems, including computations of the contributions attributable to investment losses for fiscal years 2001 thru 2010. Hay Group's task was to verify, to the extent possible, the data that was input into these calculations; opine on the methodology used therein; and validate the accuracy of the calculations. This letter documents our findings and conclusions.

Data

The OC provided us with various worksheets and reports, produced by the City's Office of the Actuary (OA), which contained detailed descriptions of the contribution calculations. We supplemented this data by researching the Comptroller's Comprehensive Annual Financial Reports (CAFRs) and with additional data provided to us by the OC. We believe that the data used by the OC as inputs into these calculations are accurate and appropriate.

Methodology

The OC's methodology can be stated, in general, as calculating contribution differences by starting with a "baseline case," varying the factors being studied for their impact on the contributions, and then calculating the resulting differences in contributions. The "baseline case" is a theoretical expected set of contributions for each of the NYCRS starting in fiscal year 2000 and ending in fiscal year 2010. Results in a study such as this will depend in part on the starting date of the study period. Because the OC specified the study period, we accepted it as "given."

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1/7





When reconciling theoretical contributions to actual contributions, the order in which the reconciliation is performed can affect the results. For example, the calculation of the impact of investment gains or losses on the contributions will yield different results if it is done before considering the impact of benefit enhancements on the contributions. The OC has chosen to quantify the impact of investment gains or losses assuming that all other components of the contribution are “actual.” The other factors shown below are generally¹ not dependent on asset performance in their quantification of their contribution impacts, and so their results would not differ based on the order of the reconciliation.

Investment Losses

The OA restarted the Actuarial Asset Valuation Method as of June 30, 1999, by resetting it to the market value of assets as of that date. This was used in the valuation for fiscal year 2000². The OC then assumed that the exact assumed rate of return on assets of 8% was achieved in each fiscal year during the study period. This assumption means that no actuarial gains or losses would occur due to investment performance which would cause decreases or increases to the NYCERS contributions. The contributions calculated in this way were then compared to the actual NYCERS contributions calculated by the OA for each fiscal year. The differences in contributions in each fiscal year would isolate the contributions related to investment gains or losses. We believe this is a very accurate approach to isolate the impact of investment gains and losses on the NYCERS contributions over the study period.

Table 1³ below shows the results of this study.

Fiscal Year	Actual	Theoretical Without Investment (Gains)/Losses	Difference
2000	\$ 693	\$ 693	\$0
2001	1,238	1,248	(10)
2002	1,509	1,441	68
2003	1,760	1,491	269
2004	2,519	1,778	741
2005	\$3,670	\$2,092	\$1,579

¹ The presence of an “asset cushion” has an impact on the quantification of NYCERS benefit enhancements. Thus, if benefit enhancement impacts on contributions were quantified based on theoretical asset performance, results would vary from those shown in this letter.

² In our opinion, this bolsters the argument for starting the study period with fiscal year 2000, because asset values can easily be projected from market value.

³ In this Table, and subsequent Tables in this paper, numbers may not add due to rounding.





Table 1: NYCERS Contributions Due to Investment (Gains)/Losses
(\$ millions)

Fiscal Year	Actual	Theoretical Without Investment (Gains)/Losses	Difference
2006	4,378	2,744	1,634
2007	5,429	3,259	2,170
2008	6,512	3,733	2,778
2009	7,284	4,359	2,925
2010	7,684	4,630	3,054

Unanticipated Benefit Enhancements

The OC tabulated the initial contribution impacts, derived from fiscal notes issued by the OA or attached to the relevant legislation, of the significant benefit enhancements which were adopted for each of the NYCERS during the study period.¹ These contribution impacts were then projected over the remainder of the study period by increasing them by 3% per annum. This is a reasonable projection method². The estimates of the benefit enhancement impacts on contributions were complicated by: (i) phase-ins³ (starting in FY 2001) of the funding for certain enhancements, (ii) a fresh start to the phase-ins beginning in FY 2003, and (iii) an “asset cushion” in NYCERS which mitigated the funding impact for NYCERS through the end of FY 2003. With regard to the aforementioned phase-ins of funding, to the extent that benefit enhancements were not funded in full, the OC estimated the impact on the contributions for FY 2006 and beyond by accumulating the contribution shortfalls and spreading them over 10 years commencing in FY 2006. We believe this is a rough but reasonable estimation technique.

The benefit enhancements being implemented during the study period would not have been anticipated in the funding valuations for fiscal year 2000. Thus, in projecting the drivers of contribution increases since fiscal year 2000, the impact of unanticipated benefit enhancements is an important bridge between what would have been anticipated in fiscal year 2000 and actual contributions during the study period.

¹ Hay Group reviewed the fiscal notes attached to each legislation quantified by the OC for this analysis, but did not attempt to determine whether there were any additional benefit enhancements which would have been deemed significant for purposes of this analysis.

² Under the Frozen Initial Liability actuarial funding method currently in use for funding the NYCERS, the present value of benefits is funded over the working lifetime of the active employee population as a level percent of salary. Because the general wage increase assumption is 3%, the annual funding of a change in present value of benefits arising from a benefit enhancement theoretically would be expected to increase by 3% per year.

³ The term “phase-in” here refers to an intentional deferral of funding, whereby a specified percentage of a “full” (in the absence of a phase-in) annual funding contribution is paid for a specified number of years. The phase-in percentages typically increase gradually to 100%.





It should be noted that during the study period, various plan changes were implemented in the NYCERS which were intended to result in a cost savings. However, the impact of cost saving initiatives was not reflected in the OC calculations. Also, the OC only selected those benefit enhancements which were deemed “significant.” The criterion chosen by the OC for what was deemed to be a significant benefit enhancement was a cost impact of at least \$1 million per year. We agree that cost impacts less than this threshold would be immaterial to this analysis.

In Table 2 below, we list the NYCERS summation of the annual contribution impacts based on unanticipated benefit enhancements during the study period:

Fiscal Year	Annual Contribution Increase
2000	\$ 0
2001	389
2002	557
2003	449
2004	731
2005	821
2006	1,997
2007	2,052
2008	2,112
2009	2,278
2010	2,353

Administrative Expenses

The OC sought to isolate the impact of unexpected increases in administrative expenses on NYCERS contributions during the study period. Using the administrative expenses reimbursed to the trusts as contributions for fiscal year 2000 as a starting point, the OC projected administrative expenses by increasing them by 3% per annum. Assuming that the majority of administrative expenses are related to salaries of NYCERS employees, or would otherwise be expected to rise at the rate of inflation, the 3% increase rate is reasonable.¹

¹ As stated above, the general wage increase assumption in use for the valuations is 3%. The inflation assumption is 2.5%. Since it is unknown to Hay Group what proportion of administrative expenses would rise by the wage increase assumption versus by inflation, we find the increase rate of 3% used by the OC for this study to be reasonable and conservative.





In Table 3 below, we list the annual impact of unexpected increases in administrative expenses on NYCERS contributions:

Table 3: NYCERS Contributions Due to Unexpected Administrative Expense Increases (\$ millions)

Fiscal Year	Actual	Theoretical (Baseline Year Increasing by 3%)	Difference
2000	\$40	\$40	\$ 0
2001	59	41	18
2002	53	42	11
2003	63	51 ¹	11
2004	76	58 ²	17
2005	74	60	14
2006	0 ³	60	(60)
2007	95	62	33
2008	100	63	36
2009	106	65	40
2010	115	67	48

Investment Expenses

In a similar manner to the analysis of unexpected administrative expenses, the OC sought to isolate the impact of unexpected increases in investment expenses on NYCERS contributions during the study period. Using the investment expenses reimbursed to the trusts as contributions for fiscal year 2000 as a starting point, the OC projected investment expenses by increasing them by 3% per annum. Assuming that the majority of investment expenses are related to fees paid to investment managers, who generally base their fees on a percentage of assets under management, we believe that a reasonable way to project investment expenses would be to increase them as a constant percentage of plan assets. Over the study period, NYCERS assets increased by approximately 3% per annum on average in the scenario in which the OC projected the expected rate of return of 8%. Though there may be year-by-year deviations from the 3% asset increase assumption, as well as deviations by System, we believe these differences would be immaterial to this analysis.

¹ Includes impact of POLICE expenses
² Includes impact of BERS expenses
³ Implementation of one-year lag methodology





In Table 4 below, we list the annual impact of unexpected increases in investment expenses on NYCERS contributions:

Table 4: NYCERS Contributions Due to Unexpected Investment Expense Increases
(\$ millions)

Fiscal Year	Actual	Theoretical (Baseline Year Increasing by 3%)	Difference
2000	\$63	\$63	\$0
2001	99	65	34
2002	100	67	32
2003	103	69	34
2004	86	71	14
2005	130	73	57
2006	0*	73	(73)
2007	178	76	103
2008	211	78	134
2009	294	80	213
2010	348	83	265

* Implementation of one-year lag methodology

Summary

The factors that the OC has chosen to study have had a significant impact on NYCERS contributions during the period fiscal years 2001 through 2010. The contribution impacts are summarized in Table 5 below.

Table 5: Summary of Certain Drivers of NYCERS Contribution Increases
(\$ millions)

Fiscal Year	Investment (Gains)/Losses	Unanticipated Benefit Enhancements	Unexpected Increases in Administrative Expenses	Unexpected Increases in Investment Expenses	Total
2000	\$0	\$0	\$0	\$0	\$0
2001	(10)	389	18	34	431
2002	68	557	11	32	668
2003	269	449	11	34	763
2004	741	731	17	14	1,503
2005	1,579	821	14	57	2,471
2006	1,634	1,997	(60)	(73)	3,498
2007	2,170	2,052	33	103	4,358
2008	2,778	2,112	36	134	5,060
2009	2,925	2,278	40	213	5,456
2010	3,054	2,353	48	265	5,720

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March 31, 2011 6/7





In Conclusion

It is Hay Group's opinion that the OC's computations are reasonable estimates of the impact of the investment performance, benefit enhancements, and unanticipated investment and administrative expenses on the NYCRS contributions for fiscal years 2000 thru 2010.

If you have any questions, please contact us. Thanks again for the opportunity to partner with you on this engagement.

Sincerely,

Adam E. Meyers, FSA
Vice President

Les Richmond, ASA
Senior Principal

cc: A. Basu
C. Graby



RETIREMENT SECURITY | NYC



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