KPMG

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Basic Financial Statements, Required Supplementary Information, and Other Supplementary Information

March 31, 2022

(With Independent Auditors' Report Thereon)

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

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KPMG LLP
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Independent Auditors' Report

The Trustee
New York State and Local Retirement System:

Report on the Audit of the Financial Statements

Opinion

We have audited the financial statements of the New York State and Local Retirement System (the System) as of and for the year ended March 31, 2022, and the related notes to the financial statements, which collectively comprise the System's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the fiduciary net position of the System as of March 31, 2022, and the changes in its fiduciary net position for the year then ended in accordance with U.S. generally accepted accounting principles.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the System and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with U.S. generally accepted accounting principles, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the System's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis, schedule of changes in employers' net pension liability (asset) and related ratios, schedule of employer contributions, schedule of investment returns, and notes to required supplementary information be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The schedule of administrative expenses, schedule of investment expenses and schedule of consulting fees are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedule of administrative expenses, schedule of investment expenses and schedule of consulting fees are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated July 22, 2022 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

KPMG LLP

July 22, 2022

The following overview of the financial activity of the New York State and Local Retirement System (the System) for the fiscal year ended March 31, 2022 is intended to provide the reader with an analysis of the System's overall financial position. The System is comprised of the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS). The net position of the System is held in the New York State Common Retirement Fund (the Fund), which was established to hold all assets and record changes in fiduciary net position allocated to the System. This management's discussion and analysis should be read in conjunction with the basic financial statements of the System, which follow.

Financial Highlights

The fiduciary net position of the System held in trust to pay pension benefits was $273.7 billion as of March 31, 2022 and $260.08 billion as of March 31, 2021. This amount reflects an increase of $13.6 billion from the prior fiscal year. This change is primarily the result of the net appreciation of the fair value of the investment portfolio. The Fund continues to diversify and monitor downside risks. Net appreciation in fair value of investments for the fiscal years ended March 31, 2022 and 2021 was $18.5 billion and $67.6 billion, respectively.

- The System's investments reported a positive money-weighted rate of return, net of investment expense, of 9.44 percent for the fiscal year ended March 31, 2022 and a positive money-weighted rate of return, net of investment expense, of 33.43 percent for the fiscal year ended March 31, 2021.
- Retirement and death benefits paid during the fiscal year ended March 31, 2022 to 507,923 annuitants totaled $14.7 billion, as compared to $14.02 billion paid to 496,628 annuitants for the fiscal year ended March 31, 2021. The increase is primarily due to the number of new retirees.
- Contributions from employers increased to $5.6 billion for the fiscal year ended March 31, 2022, from $5.03 billion for the fiscal year ended March 31, 2021. The increase in employer contributions was related to an increase in covered employee payroll from the previous year.
- The Net Pension Asset (NPA) for ERS was $8,174.6 million for the measurement period ended March 31, 2022 as compared to a Net Pension Liability (NPL) of $99.6 million for the measurement period ended March 31, 2021. The fiduciary net position, restricted for pension benefits as of March 31, 2022, was $232.05 billion, which represents 103.65 percent of the calculated total pension liability for ERS. This NPA is allocated to participating employers and reported in their financial statements pursuant to Governmental Accounting Standards Board (GASB) Statement 68.
- The NPL for PFRS was $568 million for the measurement period ended March 31, 2022 as compared to $1.73 billion for the measurement period ended March 31, 2021. The fiduciary net position, restricted for pension benefits as of March 31, 2022, was $41.67 billion, which represents 98.66 percent of the calculated total pension liability for PFRS. This NPL is allocated to participating employers and reported in their financial statements pursuant to GASB Statement 68.

Overview of the Financial Statements

The financial statements consist of the combining basic statement of fiduciary net position, the combining basic statement of changes in fiduciary net position, and the notes to the basic financial statements. The required supplementary information that appears after the notes to the basic financial statements is not a required part of the basic financial statements, but is supplementary information required by the GASB. The other supplementary information following the required supplementary information is not required, but management has chosen to include such information to increase transparency.

The combining basic statement of fiduciary net position reflects the resources available to pay members, retirees and beneficiaries at the close of the System's fiscal year. This statement also provides information about the fair value and composition of the System's fiduciary net position.

The combining basic statement of changes in fiduciary net position presents the changes to the System's fiduciary net position for the fiscal year, including net investment income (loss), which includes net appreciation (depreciation) in fair value of the investment portfolio, and contributions from members and employers. Benefits and administrative expenses paid by the System are included under the deductions section of the statement.

The notes to the basic financial statements are an integral part of the basic financial statements and provide additional information about the plans, policies, and performance of the System.

The required supplementary information includes: Management's Discussion and Analysis, Schedule of Changes in the Employers' Net Pension Liability and Related Ratios, Schedule of Employer Contributions and Schedule of Investment Returns and related notes to the required supplementary information.

The additional supplementary information includes: Schedule of Administrative Expenses, Schedule of Investment Expenses, and Schedule of Consulting Fees.

Analysis of the Overall Financial Position of the System

The purpose of the System's investments is to provide for long-term growth, while also ensuring a reliable cash flow that meets the funding requirements of the near-term pension obligations. To achieve these goals, the investments are allocated to a variety of asset types and strategies in order to meet the System's current funding needs as well as future growth requirements. Equity-related investments are included for their long-term return and growth characteristics. While a majority of fixed income and debt-related investments are generally included in the allocation for their ability to control investment risk and provide for a reliable cash flow that meets the funding requirements, a portion is strategically invested in more actively traded markets. It is important to note that the change from year to year is due not only to changes in fair values but also to purchases, sales, and redemptions. Tables 1, 2, and 3 summarize and compare financial data for the current and prior years.

(Continued)

Table 1

Summary schedule of fiduciary net position as of March 31, 2022, as compared to March 31, 2021:

	2022	2021	Dollar change	Percentage change
		(Dollars in thousands)		
Assets:				
Investments	$ 272,121,262	$ 258,135,801	$ 13,985,461	5.4%
Securities lending collateral – invested	22,478,217	16,923,148	5,555,069	32.8
Receivables and other assets	2,973,061	3,317,830	(344,769)	(10.4)
Total assets	297,572,540	278,376,779	19,195,761	6.9
Liabilities:				
Securities lending obligations	22,506,168	16,930,860	5,575,308	32.9
Payables and other liabilities	1,347,649	1,364,836	(17,187)	(1.3)
Total liabilities	23,853,817	18,295,696	5,558,121	30.4
Net position, restricted for pension benefits	$ 273,718,723	$ 260,081,083	$ 13,637,640	5.2%

The fiduciary net position of the System totaled $273.7 billion as of March 31, 2022, an increase of $13.6 billion from the prior fiscal year, primarily attributable to the net appreciation of invested assets.

Table 2

Schedule of invested assets as of March 31, 2022, as compared to March 31, 2021:

	2022	2021	Dollar change	Percentage change
		(Dollars in thousands)		
Domestic equity	$ 94,271,236	$ 90,263,828	$ 4,007,408	4.4%
Global fixed income	52,497,456	47,722,955	4,774,501	10.0
International equity	39,188,932	43,480,400	(4,291,468)	(9.9)
Private equity	37,026,072	29,470,165	7,555,907	25.6
Real estate	22,873,140	17,647,993	5,225,147	29.6
Short-term investments	3,852,320	11,082,651	(7,230,331)	(65.2)
Real assets	6,051,188	3,929,594	2,121,594	54.0
Opportunistic/ARS investments	5,729,981	5,016,078	713,903	14.2
Mortgage loans	1,421,139	1,043,621	377,518	36.2
Credit	9,209,798	8,478,516	731,282	8.6
Total investments	$ 272,121,262	$ 258,135,801	$ 13,985,461	5.4%

The largest percentage increase to the invested assets were in real assets and mortgage loans, which represent 2.2 percent and .52 percent of the total portfolio, respectively. In the real assets portfolio, the growth reflects asset appreciation and new allocations to bring this portfolio closer to the targeted allocation. For mortgage loans, the increase was due to increased activity in the portfolio.

The largest percentage decrease to the invested assets was in short term investments, which represents 1.4 percent of the total portfolio. The decrease in short-term investments reflects funding of three strategic partnerships and rebalancing activities.

Table 3

Summary schedule of changes in fiduciary net position for the year ended March 31, 2022, as compared to the year ended March 31, 2021:

	2022	2021	Dollar change	Percentage change
		(Dollars in thousands)		
Additions:				
Net investment income	$ 22,374,115	$ 70,649,606	$ (48,275,491)	68.3%
Total contributions	6,332,048	5,638,783	693,265	12.3
Total additions	28,706,163	76,288,389	(47,582,226)	62.4
Deductions:				
Total benefits paid	14,905,023	14,121,971	783,052	5.5
Administrative expenses	163,500	165,097	(1,597)	(1.0)
Total deductions	15,068,523	14,287,068	781,455	5.5
Net increase	13,637,640	62,001,321	(48,363,681)	78.0
Net position, restricted for pension benefits – beginning of year	260,081,083	198,079,762	62,001,321	31.3
Net position, restricted for pension benefits – end of year	$ 273,718,723	$ 260,081,083	$ 13,637,640	5.2%

The change in net investment income is primarily attributable to the net appreciation in fair value of investments from 2021 to 2022. The increase in total benefits paid is attributable to the number of new retirees.

Economic Factors and Rates of Return

The Fund announced a positive investment performance for the fiscal year ended March 31, 2022, with a time-weighted rate of return of positive 9.51 percent. All asset classes were positive except for fixed income where rising rates weighed on returns. The year started especially strong for all other asset classes, but the markets gave back a lot of the returns in the last quarter due to continued supply/demand imbalances, high inflation, growth concerns and the energy/food disruptions over the war in Ukraine. We continue to monitor geopolitical tensions, the possibility of stagflation here in the US and elsewhere in the world, and the policies of Central Bank as they try to balance reigning in inflation and encouraging growth.

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all interested parties. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the New York State and Local Retirement System, 110 State Street, Albany, New York 12244-001. The report can also be accessed on the Comptroller's website at: www.osc.state.ny.us/retire/about_us/financial_statements_index.php

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Combining Basic Statement of Fiduciary Net Position

March 31, 2022

(Dollars in thousands)

	Employees' Retirement System	Police and Fire Retirement System	Total
Assets:			
Investments (notes 2(b), 4, 5, 8, and 11):			
Domestic equity	$ 79,917,498	$ 14,353,738	$ 94,271,236
Global fixed income	44,504,193	7,993,263	52,497,456
International equity	33,222,025	5,966,907	39,188,932
Private equity	31,388,482	5,637,590	37,026,072
Real estate	19,390,476	3,482,664	22,873,140
Credit	7,807,514	1,402,284	9,209,798
Real assets	5,129,834	921,354	6,051,188
Opportunistic/ARS	4,857,534	872,447	5,729,981
Short-term	3,265,766	586,554	3,852,320
Mortgage loans	1,204,756	216,383	1,421,139
Total investments	230,688,078	41,433,184	272,121,262
Securities lending collateral – invested (notes 7 and 8)	19,055,684	3,422,533	22,478,217
Forward foreign exchange contracts (notes 6 and 8)	19,935	3,580	23,515
Receivables:			
Employers' contributions	295,901	173,296	469,197
Members' contributions	6,326	958	7,284
Member loans	886,370	7,879	894,249
Investment income	330,309	59,326	389,635
Investment sales	462,054	82,988	545,042
Other	55,223	11,684	66,907
Total receivables	2,036,183	336,131	2,372,314
Capital assets, at cost, net of accumulated depreciation	489,343	87,889	577,232
Total assets	252,289,223	45,283,317	297,572,540
Liabilities:			
Securities lending obligations (notes 7 and 8)	19,079,379	3,426,789	22,506,168
Forward foreign exchange contracts (notes 6 and 8)	19,889	3,572	23,461
Accounts payable – investments	587,891	105,589	693,480
Benefits payable	141,310	13,715	155,025
Other liabilities (note 2(f))	411,281	64,402	475,683
Total liabilities	20,239,750	3,614,067	23,853,817
Net position, restricted for pension benefits	$ 232,049,473	$ 41,669,250	$ 273,718,723

See accompanying notes to basic financial statements.

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Combining Basic Statement of Changes in Fiduciary Net Position

Year ended March 31, 2022

(Dollars in thousands)

	Employees' Retirement System	Police and Fire Retirement System	Total
Additions:			
Income from investing activities:			
Interest income	$ 1,047,813	$ 187,090	$ 1,234,903
Dividend income	1,403,267	250,557	1,653,824
Other income	1,597,578	285,251	1,882,829
Less: investment expenses	(803,511)	(143,469)	(946,980)
Net appreciation in fair value of investments	15,713,358	2,805,665	18,519,023
Total income from investing activities	18,958,505	3,385,094	22,343,599
Income from securities lending activities:			
Securities lending income	38,287	6,836	45,123
Less: securities lending rebates	(10,128)	(1,808)	(11,936)
Less: securities lending management fees	(2,266)	(405)	(2,671)
Total income from securities lending activities	25,893	4,623	30,516
Total net investment income	18,984,398	3,389,717	22,374,115
Contributions:			
Employers	4,528,207	1,099,539	5,627,746
Members	494,802	82,792	577,594
Interest on accounts receivable	49,697	8,468	58,165
Other, net	60,177	8,366	68,543
Total contributions	5,132,883	1,199,165	6,332,048
Total additions	24,117,281	4,588,882	28,706,163
Deductions:			
Benefits paid:			
Retirement benefits	12,187,451	2,294,394	14,481,845
Death benefits	227,566	10,225	237,791
Other, net	89,246	96,141	185,387
Total benefits paid	12,504,263	2,400,760	14,905,023
Administrative expenses	144,128	19,372	163,500
Total deductions	12,648,391	2,420,132	15,068,523
Net increase	11,468,890	2,168,750	13,637,640
Net position, restricted for pension benefits – beginning of year	220,580,583	39,500,500	260,081,083
Net position, restricted for pension benefits – end of year	$ 232,049,473	$ 41,669,250	$ 273,718,723

See accompanying notes to basic financial statements.

(1) Description of Plans

The Office of the New York State Comptroller administers the following plans: the New York State and Local Employees' Retirement System (ERS) and the New York State and Local Police and Fire Retirement System (PFRS), which are collectively referred to as the New York State and Local Retirement System (the System). The net position of the System is held in the New York State Common Retirement Fund (the Fund), which was established to hold all assets and record changes in fiduciary net position allocated to the System.

The Comptroller of the State of New York serves as the trustee of the Fund and is the administrative head of the System. The Comptroller is an elected official determined in a direct statewide election and serves a four-year term. Thomas P. DiNapoli has served as Comptroller since February 7, 2007. In November 2018, he was elected for a new term commencing January 1, 2019.

The external advisory committees appointed by the Comptroller meet periodically throughout the year and provide independent, expert assistance in guiding the Fund. These committees include: the Advisory Council for the Retirement System; the Investment Advisory Committee; the Real Estate Advisory Committee; the Actuarial Advisory Committee; and the Audit Advisory Committee.

System benefits are established under the provisions of the New York State Retirement and Social Security Law (RSSL). Once a public employer elects to participate in the System, the election is irrevocable. The New York State Constitution provides that pension membership is a contractual relationship and plan benefits cannot be diminished or impaired. Benefits can be changed for future members only by enactment of a State statute. Generally, members of the System are employees, other than teachers, of the State and its municipalities, other than New York City.

ERS and PFRS are cost-sharing, multiple-employer, defined benefit pension plans. The System is included in the State of New York's financial report as a pension trust fund. The Public Employees' Group Life Insurance Plan (GLIP) provides death benefits in the form of life insurance. In these statements, GLIP amounts are apportioned to and included in ERS and PFRS.

As of March 31, 2022, the number of participating employers for ERS and PFRS consisted of the following:

	ERS	PFRS
State	1	1
Counties	57	4
Cities	61	61
Towns	916	169
Villages	479	297
Other	765	38
School districts	690	—
Total	2,969	570

As of March 31, 2022, the System membership for ERS and PFRS consisted of the following:

	ERS	PFRS
Retirees and beneficiaries currently receiving benefits	468,664	39,259
Active members	473,915	32,169
Inactive members*	176,336	3,030
Total members and benefit recipients	1,118,915	74,458

* Includes vested members not currently receiving benefits and nonvested members.

(a) Membership Tiers

Pension legislation enacted in 1973, 1976, 1983, 2009 and 2012 established distinct classes of membership. For convenience, the System uses a tier concept to distinguish these groups, generally:

ERS

Tier 1 Those persons who last became members before July 1, 1973.

Tier 2 Those persons who last became members on or after July 1, 1973, but before July 27, 1976.

Tier 3 Generally, those persons who are State correction officers who last became members on or after July 27, 1976, but before January 1, 2010, and all others who last became members on or after July 27, 1976, but before September 1, 1983.

Tier 4 Generally, except for correction officers, those persons who last became members on or after September 1, 1983, but before January 1, 2010.

Tier 5 Those persons who last became members on or after January 1, 2010, but before April 1, 2012.

Tier 6 Those persons who first became members on or after April 1, 2012.

PFRS

Tier 1 Those persons who last became members before July 31, 1973.

Tier 2 Those persons who last became members on or after July 31, 1973, but before July 1, 2009.

Tier 3 Those persons who last became members on or after July 1, 2009, but before January 9, 2010.

Tier 4 Not Applicable.

Tier 5 Those persons who last became members on or after January 9, 2010, but before April 1, 2012, or who were previously PFRS Tier 3 members who elected to become Tier 5.

Tier 6 Those persons who first became members on or after April 1, 2012.

(b) Vesting

Members who joined the System prior to January 1, 2010 need five years of service to be 100 percent vested. Members who joined on or after January 1, 2010 (ERS) or January 9, 2010 (PFRS) require ten years of service credit to be 100 percent vested.

Subsequent to March 31, 2022, legislation was passed that reduced the number of years of service credit from ten years to five years. Therefore, all Members are vested when they reach five years of service credit.

(c) Employer Contributions

Participating employers are required under the RSSL to contribute to the System at an actuarially determined rate adopted annually by the Comptroller. The average contribution rate for ERS for the fiscal year ended March 31, 2022 was approximately 16.2 percent of covered employee payroll. The average contribution rate for PFRS for the fiscal year ended March 31, 2022 was approximately 28.3 percent of covered employee payroll. Delinquent annual bills for employer contributions accrue interest at the actuarial interest rate applicable during the year. For the fiscal year ended March 31, 2022, the applicable interest rate was 5.9 percent.

(d) Member Contributions

Generally, Tier 3, 4, and 5 members must contribute 3 percent of their salary to the System. As a result of Article 19 of the RSSL, eligible Tier 3 and 4 employees, with a membership date on or after July 27, 1976, who have ten or more years of membership or credited service with the System, are not required to contribute. Members cannot be required to begin making contributions or to make increased contributions beyond what was required when membership began. For Tier 6 members, the contribution rate varies from 3 percent to 6 percent depending on salary. Generally, Tier 5 and 6 members are required to contribute for all years of service.

(e) Benefits

Tiers 1 and 2

Eligibility: Tier 1 members, with the exception of those retiring under special retirement plans, must be at least age 55 to be eligible to collect a retirement benefit. There is no minimum service requirement for Tier 1 members. Tier 2 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. The age at which full benefits may be collected for Tier 1 is 55, and the full benefit age for Tier 2 is 62.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If the member retires with 20 or more years of service, the benefit is 2 percent of final average salary for each year of service. Tier 2 members with five or more years of service can retire as early as age 55 with reduced benefits. Tier 2 members age 55 or older with 30 or more years of service can retire with no reduction in benefits. As a result of Article 19 of the RSSL, Tier 1 and Tier 2 members who worked continuously from April 1, 1999 through October 1, 2000 received an additional month of service credit for each year of credited service they have at retirement, up to a maximum of 24 additional months.

Final average salary is the average of the wages earned in the three highest consecutive years of employment. For Tier 1 members who joined on or after June 17, 1971, each year's compensation used in the final average salary calculation is limited to no more than 20 percent greater than the previous year. For Tier 2 members, each year of final average salary is limited to no more than 20 percent greater than the average of the previous two years.

Tiers 3, 4, and 5

Eligibility: Tier 3 and 4 members, with the exception of those retiring under special retirement plans, must have five years of service and be at least age 55 to be eligible to collect a retirement benefit. Tier 5 members, with the exception of those retiring under special retirement plans, must have ten years of service and be at least age 55 to be eligible to collect a retirement benefit. The full benefit age for Tiers 3, 4 and 5 is 62.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If a member retires with between 20 and 30 years of service, the benefit is 2 percent of final average salary for each year of service. If a member retires with more than 30 years of service, an additional benefit of 1.5 percent of final average salary is applied for each year of service over 30 years. Tier 3 and 4 members with five or more years of service and Tier 5 members with ten or more years of service can retire as early as age 55 with reduced benefits. Tier 3 and 4 members age 55 or older with 30 or more years of service can retire with no reduction in benefits.

Final average salary is the average of the wages earned in the three highest consecutive years of employment. For Tier 3, 4 and 5 members, each year’s compensation used in the final average salary calculation is limited to no more than 10 percent greater than the average of the previous two years.

Tier 6

Eligibility: Tier 6 members, with the exception of those retiring under special retirement plans, must have ten years of service and be at least age 55 to be eligible to collect a retirement benefit. The full benefit age for Tier 6 is 63 for ERS members and 62 for PFRS members.

Benefit Calculation: Generally, the benefit is 1.67 percent of final average salary for each year of service if the member retires with less than 20 years. If a member retires with 20 years of service, the benefit is 1.75 percent of final average salary for each year of service. If a member retires with more than 20 years of service, an additional benefit of 2 percent of final average salary is applied for each year of service over 20 years. Tier 6 members with ten or more years of service can retire as early as age 55 with reduced benefits.

Final average salary is the average of the wages earned in the five highest consecutive years of employment. For Tier 6 members, each year’s compensation used in the final average salary calculation is limited to no more than 10 percent greater than the average of the previous four years.

Special Plans

The 25-Year Plans allow a retirement after 25 years of service with a benefit of one-half of final average salary, and the 20-Year Plans allow a retirement after 20 years of service with a benefit of one-half of final average salary. These plans are available to certain PFRS members, sheriffs, and correction officers.

Disability Retirement Benefits

Disability retirement benefits are available to ERS and PFRS members unable to perform their job duties because of permanent physical or mental incapacity. There are three general types of disability benefits: ordinary, performance of duty, and accidental disability benefits. Eligibility, benefit amounts, and other rules such as any offsets of other benefits depend on a member's tier, years of service, and plan.

Ordinary Death Benefits

Death benefits are payable upon the death, before retirement, of a member who meets eligibility requirements as set forth by law. The first $50,000 of an ordinary death benefit is paid in the form of group term life insurance. The benefit is generally three times the member's annual salary. For most members, there is also a reduced post-retirement ordinary death benefit available.

Post-Retirement Benefit Increases

A cost-of-living adjustment is provided annually to: (i) all retirees who have attained age 62 and have been retired for five years; (ii) all retirees who have attained age 55 and have been retired for ten years; (iii) all disability retirees, regardless of age, who have been retired for five years; (iv) ERS recipients of an accidental death benefit, regardless of age, who have been receiving such benefit for five years; and (v) the spouse of a deceased retiree receiving a lifetime benefit under an option elected by the retiree at retirement. An eligible spouse is entitled to one-half the cost-of-living adjustment amount that would have been paid to the retiree when the retiree would have met the eligibility criteria. This cost-of-living adjustment is a percentage of the annual retirement benefit of the eligible retiree as computed on a base benefit amount not to exceed $18,000 of the annual retirement benefit. The cost-of-living percentage shall be 50 percent of the annual Consumer Price Index as published by the U.S. Bureau of Labor, but cannot be less than 1 percent or exceed 3 percent.

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The System maintains records and accounts, and prepares financial statements using the accrual basis of accounting. Employer contributions are recognized when legally due, pursuant to statutory requirements, in accordance with the terms of each plan. Member contributions are based on earned member salaries and are recognized when due. Benefits, expenses, and refunds are recognized when due and payable.

(b) Investments

Investments are recorded on a trade-date basis and reported at fair value. Fair value is defined as the amount that can reasonably be expected to be received for an investment in a current sale between a willing buyer and a willing seller. Due to the nature of investments, it is reasonable that changes in the value of investments will occur in the near future, and such changes could materially affect the amounts reported. The amounts reported as investments on the financial statements are allocated between ERS and PFRS based on each system’s monthly average equity in the Fund. See note 4(c) for detailed information on the System’s policy on investment valuation and note 8 for more detail regarding the methods used to measure the fair value of investments.

(c) Member Loan Programs

Members who joined prior to January 1, 2018 are entitled to participate in a loan program that allows them to borrow up to 75 percent of their member contributions or $50,000, whichever is less. Members who joined on or after January 1, 2018, may borrow up to 50 percent of their contribution balance or $50,000, whichever is less. Repayment of outstanding amounts is generally made through payroll deductions within five years. The interest rate charged for COESC Member Loans is fixed at 1 percent below the actuarial interest rate at the time the loan is granted. The rate for loans issued during the fiscal year ended March 31, 2022 was 5.8 percent.

(d) Capital Assets

Capital assets are capitalized at cost and depreciated on a straight-line basis over the related assets estimated useful lives.

During the fiscal year ended March 31, 2014, the System began capitalizing outlays associated with the redesign of its pension administration system. As of March 31, 2022, capitalized outlays for the project total $535.84 million. This project is currently ongoing and is expected to be completed in fiscal year 2023, at which time depreciation of the capitalized costs will begin.

(e) Contributions Receivable

Employers' contributions receivable are presented net of withdrawals, refunds, advance employer payments, and credits due employers. Receivable amounts from participating employers include $18.8 million for amortization of retirement incentives, new plan adoptions, and retroactive membership. The RSSL includes several provisions related to the amortization of employer contribution amounts. These include:

- Chapter 57 of the Laws of 2010 authorized the State and local employers to amortize a portion of their annual pension costs during periods when actuarial contribution rates exceed thresholds established by the statute. Amortized amounts will be paid in equal annual installments over a ten-year period including a rate of interest set by the Comptroller annually. Employers may prepay these amounts at any time without penalty. The first payment will be due in the fiscal year following the decision to amortize. Chapter 57 further provides that when contribution rates fall below legally specified levels and all outstanding amortizations have been paid, employers that elected to amortize will be required to pay additional moneys into reserve funds, specific to each employer, which will be used to offset their contributions in the future. These reserve funds will be invested separately from pension assets.

The following represents the amortized receivable balance from the State and Local participating employers as of March 31, 2022, including the statutory amortization threshold and interest rate, for each respective fiscal year:

Chapter 57, Laws of 2010

Year	% of Payroll ERS	% of Payroll PFRS	Interest %	Local (Dollars (in millions)
2011	9.5	17.5	5.00	$ —
2012	10.5	18.5	3.75	—
2013	11.5	19.5	3.00	27.9
2014	12.5	2.5	3.67	35.1
2015	13.5	21.5	3.15	40.4
2016	14.5	22.5	3.21	26.0
2017	15.1	23.5	2.33	3.2
2018	14.9	24.3	2.84	2.7
2019	14.4	23.5	3.64	3.1
2020	14.2	23.5	2.55	—
2021	14.1	24.4	1.33	—
2022	15.1	25.4	1.76	1.1
				$ 139.5

- The fiscal year 2014 Enacted Budget included an alternate contribution program (the Alternate Contribution Stabilization Program) that provided certain participating employers with a one-time election to amortize slightly more of their required contributions than would be available for amortization under the 2010 legislation. In addition, the maximum payment period was increased from ten years to twelve years. The election was available to: counties, cities, towns, villages, BOCES, school districts and the four public health care centers operated in the counties of Nassau, Westchester and Erie. The State was not eligible to participate in the Alternate Contribution Stabilization Program.

The following represents the amortized receivable balance from Local participating employers as of March 31, 2022, including the statutory amortization threshold and interest rate, for each respective fiscal year:

Chapter 57, Laws of 2013

Year	% of Payroll ERS	% of Payroll PFRS	Interest %	Local (Dollars (in millions))
2014	12.0	20.0	3.76	$ 31.9
2015	12.0	20.0	3.50	59.5
2016	12.5	20.5	3.31	47.7
2017	13.0	21.0	2.63	38.6
2018	13.5	21.5	3.31	40.0
2019	14.0	22.0	3.99	10.3
2020	14.2	22.5	2.87	7.9
2021	14.1	23.0	1.60	31.1
2022	14.6	23.5	2.24	19.6
				$ 286.6

(f) Postemployment Benefits Other than Pensions

Employees of the System participate in a Postemployment Benefits Other than Pensions (OPEB) Plan administered by the State. The State administers the OPEB plan on a pay-as-you-go basis. Substantially all of the System's employees may become eligible for postemployment benefits if they reach retirement age while working for the System. The costs of providing the postemployment benefits, which primarily consists of health insurance coverage, are shared between the System and the retired employee.

The System's total OPEB liability was measured as of March 31, 2021 and was determined by an actuarial valuation as of April 1, 2020 rolled forward to March 31, 2021. The total OPEB liability and related OPEB amounts were allocated to the System based on the percentage of the System's full-time equivalents to the total full-time equivalents of the State. The OPEB amounts recorded by the System include the total OPEB liability ($260.5 million), deferred outflows of resources ($33.3 million), deferred inflows of resources ($52.8 million) and OPEB expense ($36.1 million). OPEB expense is recorded as part of administrative expenses on the combining statement of changes in fiduciary net position. Due to immateriality of the OPEB amounts to the System as a whole, the total OPEB liability, deferred outflows of resources and deferred inflows of resources are netted and included in other liabilities on the combining statement of fiduciary net position. Additionally, due to immateriality, the System has not presented all disclosures and required supplementary information prescribed by GASB Statement No. 75. For the fiscal year ended March 31, 2022, the System paid $9.0 million in benefit payments.

(Continued)

(g) Use of Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingencies. These estimates are subject to a certain amount of uncertainty in the near term, which could result in changes in the values reported for those assets in the combined statement of fiduciary net position. Estimates also affect the reported amounts of income/additions and expenses/deductions during the reporting period. Actual results could differ from these estimates.

(3) System Reserves

The legally required reserves, as covered by provisions of the RSSL, are maintained by the System, are fully funded as of March 31, 2022, and are described below:

- *Annuity Savings Funds* – Funds in which contributions of Tier 1 and Tier 2 members are accumulated.
- *Annuity Reserve Funds* – Funds from which member contribution annuities are paid.
- *Pension Accumulation Funds* – Funds in which employer contributions and income from the investments of the System are accumulated.
- *Pension Reserve Funds* – Funds from which pensions are paid.
- *Designated Annuitant Funds* – Funds from which beneficiary annuities are paid.
- *Loan Insurance Funds* – Funds that provide loan insurance coverage for members with existing no default loan balances at time of death.
- *Group Life Insurance Plan Reserve* – Reserves that provide group term death benefits not to exceed $50,000, payable upon the death of eligible members.
- *Coescalation (COESC) Contribution Funds* – Funds in which member contributions are accumulated. These funds are transferred to the Pension Accumulation Fund at retirement.

As of March 31, 2022, the System reserves for ERS and PFRS consisted of the following:

		ERS	PFRS
		(Dollars in thousands)	
Annuity savings	$	2,063	70,932
Annuity reserve		49,751	27,778
Pension accumulation		97,491,331	15,256,309
Pension reserve		125,786,490	26,035,267
Designated annuitant		51,984	25,309
Loan insurance		—	118
Group Life Insurance Plan reserve		140,290	2,136
COESC contribution		8,527,564	251,401
Total	$	232,049,473	41,669,250

(4) Investments

(a) Investment Policy

The State Comptroller, currently Comptroller Thomas P. DiNapoli, is Trustee of the Fund. He is directly accountable for the investment of Fund assets and for the oversight and management of the Fund. Comptroller DiNapoli is responsible for implementing an asset allocation with an appropriate balance of risk and return. The Trustee has put in place investment policies and practices designed to ensure that investments are made for the exclusive benefit of the participants and beneficiaries of the System, on whose behalf the assets of the Fund are invested, and that Fund investments are made with the care that a prudent person serving in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with like aims – the “prudence” and “exclusive benefit” fiduciary standards of investment. Additionally, the Trustee has adopted policies and practices to ensure that the Fund is managed with high levels of ethical conduct and transparency.

The Comptroller seeks the input of a wide range of internal and external advisors to determine the allocation of assets and the appropriate investment choices for the Fund. The Comptroller appoints a Chief Investment Officer to oversee the Division of Pension Investment and Cash Management (PICM) operations, manage staff, and supervise investments on a day-to-day basis. The Fund also relies on advice from a network of outside advisors, consultants, and legal counsel, as well as the members of independent external advisory committees appointed by the Comptroller. Outside advisors and internal investment staff are part of the chain of approval that must recommend all investment decisions before they reach the Comptroller for final approval.

The asset allocation is not intended to be an absolute limit on the type of investments that can be made by the Comptroller or considered by staff. The Comptroller is expressly permitted to invest the assets of the Fund pursuant to various provisions of State law, including, among others, Article 4-A of the RSSL, which also contains limitations on the amount and quality of investments the Fund may hold in certain asset categories. Investments purchased pursuant to these provisions are so-called “legal list” investments. In addition to the foregoing, section 177(9) of the RSSL contains a provision that currently provides that up to 25 percent of the Fund’s assets may be placed in investments not specifically authorized by any other provision of law. In making investments under this provision, the Comptroller is subject to the exclusive benefit and prudence standards in the statute. Subject to such standards, investments made under this provision must also, to the extent reasonably possible, benefit the overall economic health of the State. Investments made pursuant to section 177(9) of the RSSL are so-called “basket clause” investments.

(b) Asset Allocation (done)

The following was the adopted asset allocation policy as of March 31, 2022:

Asset class	Target allocation
Domestic equity	32.0%
International equity	15.0
Private equity	10.0
Real estate	9.0
Opportunistic/Absolute Return Strategy	3.0
Credit	4.0
Real assets	3.0
Fixed Income	23.0
Cash	1.0
	100.0%

(c) Methods Used to Value Investments

Equity securities traded on a national or international exchange are reported at current quoted fair values.

Bonds and other fixed income assets are primarily reported at fair values obtained from independent pricing services.

Mortgages are valued on the basis of future principal and interest payments and are discounted at prevailing interest rates for similar instruments.

Direct investments in real estate are valued based on independent appraisals made every three years or according to the contract.

Real estate partnerships, global fixed income funds, commingled international equity funds and various alternative investments (private equity, opportunistic/ARS funds, real assets, and credit) are reported at net asset values as provided by the general partners or investment managers.

Information on securities lending is available in note 7. Information on foreign currency risks and derivative financial instruments can be found in note 5(f) and note 6, respectively.

The Fund trades in foreign exchange contracts in the normal course of its investing activities in order to manage exposure to market risks. Such contracts, which are generally for a period of less than one year, are used to purchase and sell foreign currency at a guaranteed future price. These contracts are recorded at fair value using foreign currency exchange rates.

(d) Rates of Return

In accordance with U.S. generally accepted accounting principles, the money-weighted rate of return on plan investments, net of investment expenses, was 9.44 percent for the year ended March 31, 2022.

For internal purposes, the System evaluates investment performance using the time-weighted rate of return, gross of certain investment fees, which was 9.51 percent for the year ended March 31, 2022.

(5) Deposit and Investment Risk Disclosure

(a) Custodial Credit Risk for Investments

Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Fund, or are held either by the counterparty or the counterparty's trust department or agent, but not in the name of the Fund.

Equity and fixed income investments owned directly by the Fund, which trade in the United States (U.S.) markets, are generally held by the Fund's custodian, in separate accounts, in the name of the Comptroller of the State of New York in Trust for the Fund. These securities are typically held in electronic form through the Federal Book Entry System and by the Depository Trust Company (DTC) and its subsidiaries acting as an agent of the Fund's custodian bank. Securities held directly by the Fund that trade in markets outside the U.S. are held by a subsidiary of the Fund's custodian bank in the local market, a bank performing custodial services in the local market acting as an agent for the Fund's custodian bank, and in some foreign markets, the securities are held in electronic form by a DTC subsidiary or an organization similar to DTC.

Equity investments held indirectly by the Fund via limited partnerships, commingled investment funds, joint ventures, and other similar vehicles are held in custody by an organization contracted by the general partner and/or the investment management firm responsible for the management of each investment organization.

Title to real estate invested in by the Fund is held either by a real estate holding company or a real estate investment fund. Ownership of mortgage assets is documented by the Fund's holding of original mortgage and note documents by the Office of the State Comptroller's PICM.

(b) Custodial Credit Risk for Deposits

Deposits are exposed to custodial credit risk if the deposits are not covered by depository insurance or the deposits are uncollateralized, collateralized with securities held by the pledging financial institution, or collateralized with securities held by the pledging institution's trust department or agent, but not in the name of the Fund.

In accordance with existing policies and procedures, the PICM in the Office of the State Comptroller monitors deposit balances for the purpose of determining collateralization levels. Collateral sufficient to cover all uninsured deposits is held at the State's custodial bank.

(c) Interest Rate Risk

The System is subject to interest rate risk, which is the risk that changes in market interest rates will adversely affect the fair value of the Fund's fixed income securities. Pursuant to the Fund's investment policies and procedures and to address changing economic factors and their impact on various sectors of the economy, PICM staff meets regularly to discuss the investment strategy for the fixed income portfolio. Several factors are taken into account when formulating this strategy, including sector weightings and the current duration of the portfolio.

The price volatility of the Fund's fixed income holdings is measured by duration. Effective duration is a measure of the price sensitivity of a bond to interest rate movements. Effective duration follows the concept that interest rates and bond prices move in opposite directions.

As of March 31, 2022, the duration of the fixed income portfolio is as follows (dollars in thousands):

Category	Fair value	Percentage of portfolio	Effective duration (In years)
Global fixed income:			
Core portfolio:			
Treasury	$ 19,946,139	38.0 %	8.92
Treasury Inflation-Protected Securities (TIPS)	362,827	0.7	8.21
Federal agency	472,077	0.9	4.30
Corporate	16,478,603	31.4	6.12
Asset-backed	2,084,596	4.0	3.09
Commercial mortgage-backed	1,492,384	2.8	2.76
Mortgage-backed	5,521,798	10.4	5.70
Collateralized loan obligations	3,036,836	5.8	0.09
Municipal bonds	582,028	1.1	13.59
Core portfolio	49,977,288	95.1	6.65
Externally managed funds:			
Advent Capital	454,650	0.9	3.6
Calvert Research and Management	247,822	0.5	6.03
DoubleLine Capital	266,680	0.5	15.29
Morgan Stanley Investment Management	246,056	0.5	8.63
New Century Advisors	524,391	1.0	5.49
Schroder Investment Management	250,905	0.5	6.79
Teachers Advisors (Nuveen)	245,270	0.5	6.34
Wellington Management Company	284,394	0.5	6.81
Total global fixed income	$ 52,497,456	100.0 %	
Mortgage loans:			
Berkadia	1,053,469	74.1	
CPC	367,670	25.9	
Total mortgage loans	$ 1,421,139	100.0 %	
Total	$ 53,918,595		

(d) *Credit Risk of Debt Securities*

Fixed income obligations purchased pursuant to section 177(1-a) of the RSSL must be investment grade at the time of their acquisition. A bond is considered investment grade if its credit rating is Baa or higher by Moody's or BBB– or higher by Standard & Poor's. Fixed income obligations purchased pursuant to section 177(9) of the RSSL, the "basket clause," are subject to a standard of prudence. As of March 31, 2022, credit ratings, obtained from several industry rating services, for the fixed income portfolio are as follows (dollars in thousands):

Quality rating		Fair value	Percentage of fair value
Global fixed income:			
AAA		$ 32,022,286	61.00
AA		3,876,470	7.38
A		7,845,645	14.95
BBB		8,218,125	15.65
BB		124,744	0.24
B		35,163	0.07
CCC		17,403	0.03
C		3,541	0.01
Not Rated		354,079	0.67
Total Global fixed income		$ 52,497,456	100.00
Mortgage loans:	Not Rated	1,421,139	100.00
Total		$ 53,918,595	

* These externally managed funds are considered investments under the "basket clause," subject to the standards of prudence. All or a part of the holdings can be non-investment grade. While this fund is not rated, the underlying securities credit ratings range from AAA to CCC & Not Rated.

(e) Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the Fund's investment in a single issuer.

As of March 31, 2022, the System did not hold any investments in any one issuer that totaled 5 percent or more of the pension plan's fiduciary net position. Investments issued or explicitly guaranteed by the U.S. government and pooled investments are excluded.

Issuer limits for investments held by the Fund are established by law and by policy guidelines adopted by the PICM.

Short-term fixed income investments not purchased pursuant to section 177(9) of the RSSL are generally limited to the following investment types maturing in one year or less:

- Obligations for which the full faith and credit of the U.S. government is pledged to provide payment of interest and principal.

- Obligations issued by any Federal Home Loan Bank or obligations fully guaranteed as to principal and interest by the Federal National Mortgage Association or the Federal Home Loan Mortgage Corporation.
- Commercial paper that has received the highest rating from two nationally recognized rating services. A maximum of $1 billion of the short-term portfolio may be invested in any one commercial paper issuer.
- Simultaneous purchase and sale of U.S. Treasury obligations may be executed with Primary Government dealers. A maximum of $200 million may be invested with any one Primary Government dealer.
- Corporate and asset-backed securities (ABS) that are rated investment grade by two nationally recognized rating services. ABS must have a weighted average life of one year or less.

Fixed income investments not purchased pursuant to section 177(9) of the RSSL are generally limited to the following investment types with maturities longer than one year:

- Obligations for which the full faith and credit of the U.S. government is pledged to provide payment of principal and interest.
- Obligations payable in U.S. dollars issued by any department, agency, or political subdivision of the U.S. government or issued by any corporation, company, or other issuer of any kind or description created or existing under the laws of the U.S., any state of the U.S., the District of Columbia, or the Commonwealth of Puerto Rico, and obligations payable in U.S. funds of Canada or any province or city of Canada, provided each obligation at the time of investment shall be rated investment grade by two nationally recognized rating services (or by one nationally recognized rating service in the event only one such service rates such obligation). The aggregate investment by the Fund in the obligations of any one issuer shall not exceed 2 percent of the assets of the Fund or 5 percent of the direct liabilities of the issuer.
- Interest-bearing obligations payable in U.S. funds, which at the time of investment are rated in one of the three highest rating grades by each rating service approved by the New York State Department of Financial Services that has rated such obligations. The aggregate amount invested in the obligations of any single issuer may not exceed 1 percent of the assets of the Fund.
- Bonds issued or guaranteed by the State of Israel and approved by the United States Comptroller of the Currency, payable in U.S. dollars, not to exceed 5 percent of the assets of the Fund.
- Obligations issued or guaranteed by the International Bank for Reconstruction and Development (not to exceed 5 percent of the assets of the Fund), the Inter-American Development Bank, the Asian Development Bank, or the African Development Bank.

Fixed income investments purchased pursuant to section 177(9) of the RSSL are subject to standards of prudence and the exclusion benefit rules. Subject to such standards, investments made under section 177(9) must, to the extent reasonably possible, benefit the overall economic health of the State.

(f) Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The Fund has exposure through direct investments in international equities, international equity commingled funds, international real estate investments, international private equity investments, international opportunistic/ARS funds, international real asset funds and international credit funds. The Fund's asset allocation and investment policies allow for active and passive investments in international securities. The Fund permits the managers of direct investments in international equities to use forward currency contracts to manage their exposure to foreign currencies relative to the U.S. dollar. Where the Fund participates in commingled funds, limited partnerships, or other investment arrangements, the decision whether or not to use forward currency contracts to manage their foreign currency exposure is left up to the individual investment managers. To address the impact of changes in exchange rates, only forward foreign exchange contracts of one year or less are allowed when used to lessen portfolio volatility or hedge the portfolio's currency exposure.

Foreign investments included in the combining basic statement of fiduciary net position as of March 31, 2022 are as follows (dollars in thousands):

	Equity	Cash	Real estate	Private Equity, OARS, Real assets, and Credit	Total
Angolan Kwanza	$ —	$ —	$ —	$ 5,933	$ 5,933
Argentine Peso	—	1	28	16,673	16,702
Australian Dollar	442,025	3,940	85,135	391,927	923,027
Bahamian Dollar	—	—	—	5,159	5,159
Bahraini Dinar	—	—	—	13,893	13,893
Barbadian Dollar	—	—	—	257	257
Belarusian ruble	—	—	—	698	698
Bermudian Dollar	—	—	—	259,265	259,265
Botswana Pula	—	—	—	4,790	4,790
Brazilian Real	403,805	914	38,178	617,606	1,060,503
British Pound Sterling	3,096,113	6,375	685,656	3,370,066	7,158,210
Bulgarian Lev	—	—	93	8,326	8,419
Burmese Kyat	—	—	—	10,563	10,563
Cambodian Riel	—	—	—	178	178
Canadian Dollar	717,866	8,868	222,563	936,616	1,885,913
Cayman Islands Dollar	—	—	—	1,324,643	1,324,643
Central African CFA Franc	—	—	—	2,139	2,139
Chilean Peso	18,585	59	—	112,322	130,966
Chinese Renminbi (Yuan)	280,940	—	239,694	1,215,657	1,736,291
Colombian Peso	5,128	29	2	95,128	100,287
Costa Rican Colon	—	—	—	3,867	3,867
Czech Koruna	2,378	5	59,972	5,338	67,693
Danish Krone	539,553	583	36,719	193,186	770,041
Dominican Peso	—	—	—	16,629	16,629
Egyptian Pound	1,367	20	—	86,169	87,556
Euro	5,396,385	207	2,666,119	7,260,863	15,323,574
Ghanaian Cedi	—	—	—	26,424	26,424
Guatemalan Quetzal	—	—	—	10,046	10,046
Hong Kong Dollar	1,585,126	941	72,954	183,225	1,842,246
Hungarian Forint	22,240	210	—	5,923	28,373
Indian Rupee	697,626	688	268,588	1,205,472	2,172,374
Indonesian Rupiah	105,567	3	—	120,727	226,297
Iraqi Dinar	—	—	—	371	371
Israeli New Shekel	84,791	952	—	804,621	890,364
Jamaican Dollar	—	—	1,918	—	1,918
Japanese Yen	2,969,764	9,468	156,366	437,209	3,572,807
Kazakhstani Tenge	—	—	—	(816)	(816)
Kenyan Shilling	—	—	—	31,781	31,781
Kuwaiti Dinar	—	—	—	755	755
Lebanese Pound	—	—	—	974	974
Malaysian Ringgit	59,287	263	—	32,892	92,442
Maldivian Rufiyaa	—	—	9,097	6,482	15,579

	Equity	Cash	Real estate	Private Equity, OARS, Real assets, and Credit	Total
Mauritian Rupee	$ —	$ —	$ 39	$ 29,837	$ 29,876
Mexican Peso	72,463	253	7,125	132,872	212,713
Mongolian Togrog	—	—	—	1,447	1,447
Moroccan Dirham	—	—	—	19,206	19,206
Mozambican Metical	—	—	—	834	834
New Taiwan Dollar	694,861	2,028	3	42,766	739,658
New Zealand Dollar	1,100	18	7,996	59,498	68,612
Nigerian Naira	—	—	—	98,606	98,606
Norwegian Krone	117,865	333	15,698	155,737	289,633
Omani Rial	—	—	—	8,993	8,993
Pakistan Rupee	—	—	—	1,276	1,276
Panamanian Balboa	—	—	—	10,981	10,981
Paraguayan Guaraní	—	—	—	9,769	9,769
Peruvian Sol	—	1	—	65,503	65,504
Philippine Peso	10,251	10	—	77,844	88,105
Polish Zloty	48,510	308	88,574	114,237	251,629
Qatari Riyal	6,711	4	—	5,111	11,826
Romanian Leu	—	—	1,055	750	1,805
Russian Ruble	—	—	2,214	58,151	60,365
Rwanda Franc	—	—	—	283	283
Saudi Riyal	40,727	445	—	3,381	44,553
Serbian Dinar	—	—	1	5,263	5,264
Singapore Dollar	273,483	3,305	55,147	239,123	571,058
South African Rand	87,121	2,083	69	529,032	618,305
South Korean Won	858,073	50	37,754	204,022	1,099,899
Sri Lankan Rupee	—	—	69	14,287	14,356
Swedish Krona	618,009	847	126,976	769,588	1,515,420
Swiss Franc	1,334,493	1,103	3,126	448,799	1,787,521
Tanzanian Shilling	—	—	—	3,102	3,102
Thai Baht	102,993	—	—	36,124	139,117
Tunisian Dinar	—	—	—	586	586
Turkish Lira	21,931	338	—	69,730	91,999
Ugandan Shilling	—	—	—	2,931	2,931
Ukrainian Hryvnia	—	—	3,269	38,568	41,837
United Arab Emirates Dirham	13,249	—	9,051	91,292	113,592
Uruguayan Peso	—	—	—	1,635	1,635
Venezuelan Bolívar Soberano	—	—	—	4,263	4,263
Vietnamese Dong	—	—	125	90,011	90,136
West African CFA Franc	—	—	—	10,345	10,345
Zambian Kwacha	—	—	—	4,204	4,204
Other	—	—	18,873	16	18,889
Total subject to foreign currency risk	20,730,386	44,652	4,920,246	22,283,980	47,979,264
Commingled international equity in U.S. Dollars	12,986,208	—	—	—	12,986,208
Foreign investments in U.S. Dollars	5,472,338	—	8,130	12,017,936	17,498,404
Total foreign investments	$ 39,188,932	$ 44,652	$ 4,928,376	$ 34,301,916	$ 78,463,876

(6) Derivatives

A derivative is generally defined as an investment contract or security with a value that depends on, or is derived from, the value of an underlying asset, reference rate, or financial index.

Forward Currency Contracts

The System may enter into forward currency contracts to manage exposure to fluctuations in foreign currency exchange rates on portfolio holdings. The System also enters into forward exchange contracts to settle future obligations. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. A contract is classified as a forward contract when the settlement date is more than two days after the trade date. Risk associated with such contracts includes movement in the value of a foreign currency relative to the U.S. dollar. The contracts are valued at forward exchange rates and include net appreciation/depreciation in the combining statement of fiduciary net position. Realized gain or loss on forward currency contracts is the difference between the original contract and the closing value of such contract and is included in the combining basic statement of changes in fiduciary net position.

The table below summarizes the fair value of foreign currency contracts as of March 31, 2022 (dollars in thousands):

Currency	Forward currency contracts	Spot currency contracts	Totals
Australian Dollar	$ —	$ 1,189	$ 1,189
Brazilian Real	—	(3,419)	(3,419)
British Pound Sterling	20,720	(4,957)	15,763
Canadian Dollar	—	5,664	5,664
Chinese Yuan Renminbi	—	474	474
Colombian Peso	—	700	700
Danish Krone	—	(1,006)	(1,006)
Euro	—	(1,797)	(1,797)
Hong Kong Dollar	1,444	(6,376)	(4,932)
Hungarian Forint	—	622	622
Indonesian Rupiah	—	6,195	6,195
Israeli New Shekel	—	5,753	5,753
Japanese Yen	—	5,034	5,034
Malaysian Ringgit	—	(432)	(432)
Mexican Peso	—	(416)	(416)
New Taiwan Dollar	—	(12,492)	(12,492)
New Zealand Dollar	—	(7)	(7)
Norwegian Krone	—	(191)	(191)
Polish Zloty	—	(714)	(714)
Qatari Riyal	(214)	—	(214)

Currency	Forward currency contracts	Spot currency contracts	Totals
Singapore Dollar	$ —	$ (542)	$ (542)
South African Rand	(984)	(545)	(1,529)
South Korean Won	—	(11,687)	(11,687)
Swedish Krona	—	(281)	(281)
Swiss Franc	—	7,180	7,180
Thai Baht	—	366	366
Turkish Lira	—	1,230	1,230
U.S Dollar	(20,912)	10,358	(10,554)
United Arab Emirates Dirham	—	46	46
Total	$ 54	$ (51)	$ 3

(7) Securities Lending Program

Section 177-d of the RSSL authorizes the Fund to enter into security loan agreements with broker/dealers and state or national banks. The Fund has two providers to manage a securities lending program. These programs are subject to written contracts between the Fund and the Contractor who acts as securities lending agent for the Fund. The securities lending agents are authorized to lend securities within the borrower limits and guidelines established by the Fund. Types of collateral received from borrowers for securities loaned are cash, government securities, and obligations of federal agencies. The securities lending providers are authorized to invest the cash collateral in short-term investments that are legal for the Fund. These include domestic corporate and bank notes, U.S. Treasury obligations, obligations of federal agencies, repurchase agreements, and specific asset-backed securities. All rights of ownership to securities pledged as collateral remain with the borrower except in the event of default. As of March 31, 2022, there were no violations of legal or contractual provisions. The Fund has not experienced any losses resulting from the default of a borrower or lending agent during the year ended March 31, 2022.

The Fund lends fixed income, domestic equity, and international equity securities to approved broker/dealers. Collateral for securities loaned equals 102 percent of fair market value for domestic securities and 105 percent for international securities. Credit risk associated with the investment of cash collateral pledged by borrowers is mitigated by the maturity restrictions, percentage limitations, and rating requirements for individual asset classes included in the Fund’s reinvestment guidelines. Each Contractor acknowledges responsibility to reimburse the Fund for losses that might arise from managing the program in a manner inconsistent with the contract. The Fund manages its market risk by recording investments at market value daily and maintaining the value of the collateral held by the Fund in excess of the value of the securities loaned. As of March 31, 2022, the fair value of securities on loan was $23.6 billion. The associated collateral was $24.09 billion, of which $22.51 billion was cash collateral and $1.58 billion was securities. The cash collateral has been reinvested in other instruments, which had a fair value of $22.48 billion as of March 31, 2022. The securities lending obligations were $22.51 billion. The unrealized loss in invested cash collateral on March 31, 2022 was $27.95 million, which is reported in the combining basic statement of changes in fiduciary net position as part of “Net appreciation in fair value of investments.”

All open security loans can be terminated on demand by either the Fund or the borrower. To provide sufficient liquidity, the policy of the Fund is to maintain a minimum of 5 percent collateral in overnight investments, 10 percent must mature within seven days, and 20 percent must mature within 30 days. While the Fund’s Securities Lending Investment Guidelines allow investments up to a maximum of three years for U.S. Treasury and federal agency obligations and one year for all other investments, the average term of open security loans at March 31, 2022 was 23 days. All loans were open loans. There were no direct matching loans.

The collateral pool is valued at fair value obtained from independent pricing services.

(8) Fair Value Measurement

The System’s investments, measured and reported at fair value, including securities lending collateral and obligations and forward foreign exchange contracts, are classified according to the following hierarchy in which the levels are based on the nature of inputs used to measure the fair value of the investment:

Level 1 – Investment fair values based on prices quoted or published in active markets for identical assets.

Level 2 – Investment fair values based on observable inputs for the assets either directly or indirectly, other than those considered Level 1 inputs, which may include quoted or published prices for identical assets in markets that are not considered to be active, and quoted or published prices of similar assets in active or inactive markets.

Level 3 – Investment fair values based on unobservable inputs.

The categorization of investments within the hierarchy above is based solely upon the objectivity of the inputs used in the measurement of the fair value of the investments and does not reflect the level of risk associated with the investments. Investments classified in Level 1 of the fair value hierarchy are valued from predetermined external pricing vendors or primary dealers who source quoted or published prices in active markets which are readily attainable exit values of these securities. Investments classified in Level 2 are subject to alternative pricing sources, including a combination of price sources, descriptive data and pricing models based on attributes such as spread data, sector, quality, duration, and prepayment characteristics. Investments classified as Level 3 are valued using best available sources such as property appraisals, discounted cash flow models and public market comparables of similar assets where applicable. The values are supplied by advisors or general partners who hold those or similar assets in investment vehicles they oversee. These pricing sources may or may not be indicative of realizable exit values attainable for the assets.

(Continued)

The table below summarizes assets and liabilities carried at fair value based on levels from the fair value hierarchy as of March 31, 2022, with certain assets carried at net asset value (NAV) and cost also included to allow reconciliation to the statement of fiduciary net position (dollars in thousands):

	Total	Level 1	Level 2	Level 3
Assets:				
Investments by fair value level:				
Fixed income securities:				
Short-term	$ 2,911,080	$ —	$ 2,911,080	$ —
Global fixed income	52,497,456	174,432	52,323,024	—
Total fixed income securities	55,408,536	174,432	55,234,104	—
Equity securities:				
Domestic equities	88,591,324	88,590,820	9	495
International equities	36,343,658	36,340,671	31	2,956
Total equity securities	124,934,982	124,931,491	40	3,451
Credit	358,223	—	—	358,223
Mortgages	1,421,139	—	—	1,421,139
Private equity	614,463	—	—	614,463
Opportunistic/ARS	196,967	—	—	196,967
Real assets	98,163	—	—	98,163
Real estate	1,684,629	—	—	1,684,629
Securities lending collateral	18,633,511	—	18,633,511	—
Forward foreign exchange contracts	23,515	—	23,515	—
Total investment assets by fair value level	$ 203,374,128	$ 125,105,923	$ 73,891,170	$ 4,377,035
Investments measured at cost:				
Securities lending collateral	$ 3,844,706			
Total investments measured at cost	$ 3,844,706			
Investments measured at Net Asset Value (NAV):				
Domestic equities[1]	$ 5,679,912			
International equities[2]	2,845,274			
Alternative investments:[3]				
Credit	8,851,575			
Private equity	36,411,609			
Opporttunistic/ARS	5,533,014			
Real assets	5,953,025			
Real estate	21,188,511			
Total alternative investments	77,937,734			
Total investments measured at NAV	$ 86,462,920			
Investment related cash and cash equivalents not included in above	941,240			
Total investment assets	$ 294,622,994			
Liabilities:				
Investments by fair value level:				
Forward foreign exchange contracts	(23,461)	—	(23,461)	—
Total investment liabilities by fair value level	$ (23,461)	$ —	$ (23,461)	$ —

The table below summarizes liquidity information for investments valued at NAV (dollars in thousands):

Investments measured at NAV		Amount		Unfunded Commitments	Redemption Frequency	Period
Domestic equities[1]	$	5,679,912		n/a	N/A, Weekly, Monthly, Annually	N/A, 2-90 days
International equities[2]		2,845,274		n/a	Daily, Monthly, Quarterly	15-120 days
Alternative investments:[3]						
Credit		8,851,575		6,366,101	N/A, monthly	N/A, 1-30 days, 18 months
Private equity		36,411,609		15,367,713	N/A	N/A
Opportunistic/ARS		5,533,014		1,371,307	N/A, Monthly, Quarterly	NA, 5-120 days
Real assets		5,953,025		5,461,646	N/A	N/A
Real estate		21,188,511		7,494,012	N/A	N/A
Total investments measured at NAV	$	86,462,920	$	36,060,779		

[1] Domestic equities consist of two commingled investment vehicles and one fund for which the System is the only investor. The funds invest primarily in publicly traded domestic equity securities. The investments are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

[2] International equities consist of six commingled investment vehicles and one fund for which the System is the only investor. The funds invest primarily in publicly traded international equity securities. The investments are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

[3] Alternative investments include private equity, opportunistic/ARS funds, real assets, credit and real estate through various fund structures. Private equity (12.6 percent* at March 31, 2022) consists of buyout, growth equity, co-investments, special situations, distressed/turnaround, venture capital and fund of funds. Opportunistic/ARS (1.9 percent* at March 31, 2022) consists of investments in strategies including hedged equity, credit, global macro, closed-end funds, and investments that don't fit the mandates of the other asset classes. Real assets (2.0 percent* at March 31, 2022) consist of commodities, farmland, capital assets, infrastructure, and renewables. Credit (3.1 percent* at March 31, 2022) consists of non-investment grade public and private credit strategies in direct lending, distressed and special situations, specialty finance, structured credit and real assets credit through closed-end and open-end funds, co-investments, separately managed accounts and fund-of-funds. Real estate (7.8 percent* at March 31, 2022) consists of investments in separate accounts, joint ventures and commingled funds.The fair values of the alternative investments have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partner’s capital. NAV is used as a practical expedient to estimate fair value. Private equity, real assets, and real estate are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over a span of 5-10 years.

* percentages are stated relative to total investments and securities lending collateral invested.

See note 7 for detailed securities lending information and note 6 for detail forward foreign currency information.

(9) Net Pension Liability (Asset) of Participating Employers

The components of the net pension liability (asset) of the employers participating in the System as of March 31, 2022, were as follows:

	Employees' Retirement System	Police and Fire Retirement System	Total
		(Dollars in thousands)	
Employers' total pension liability	$ 223,874,888	$ 42,237,292	$ 266,112,180
Fiduciary net position	232,049,473	41,669,250	273,718,723
Employers' net pension liability (asset)	$ (8,174,585)	$ 568,042	$ (7,606,543)
Ratio of fiduciary net position to the employers' total pension liability	103.65 %	98.66 %	102.86 %

(a) Actuarial Assumptions

The total pension liability at March 31, 2022 was determined by using an actuarial valuation as of April 1, 2021, with update procedures used to roll forward the total pension liability to March 31, 2022. The actuarial valuation used the following actuarial assumptions:

	ERS	PFRS
Inflation	2.7%	2.7%
Salary increases	4.4%	6.2%
Investment rate of return (net of investment expense, including inflation)	5.9%	5.9%
Cost-of-living adjustments	1.4%	1.4%

Annuitant mortality rates are based on April 1, 2015 – March 31, 2020 System experience with adjustments for mortality improvements based on the Society of Actuaries' Scale MP-2020. The previous actuarial valuation as of April 1, 2020 used the same assumptions for the measure of total pension liability.

The actuarial assumptions used in the April 1, 2021 valuation are based on the results of an actuarial experience study for the period April 1, 2015 – March 31, 2020.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected return, net of investment expenses and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the target asset allocation as of March 31, 2022 (see Investment policy – note 4(a)) are summarized below:

Asset class	Long-term expected real rate of return
Domestic equity	3.30%
International equity	5.85%
Private equity	6.50%
Real estate	5.00%
Opportunistic/ARS portfolio	4.10%
Credit	3.78%
Real assets	5.58%
Fixed Income	0.00%
Cash	-1.00%

The real rate of return is net of the long-term inflation assumption of 2.50 percent.

(b) Discount Rate

The discount rate used to calculate the total pension liability was 5.9 percent. The projection of cash flows used to determine the discount rate assumes that contributions from plan members will be made at the current contribution rates and that contributions from employers will be made at statutorily required rates, actuarially. Based upon the assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

(c) Sensitivity of the Net Pension Liability (Asset) to the Discount Rate Assumption

The following presents the current period net pension liability (asset) of the employers calculated using the current-period discount rate assumption of 5.9 percent, as well as what the net pension liability (asset) would be if it were calculated using a discount rate that is one percentage-point lower (4.9 percent) or one percentage-point higher (6.9 percent) than the current assumption (dollars in thousands):

	One percent decrease (4.9%)	Current assumption (5.9%)	One percent increase (6.9%)
ERS net pension liability (asset)	$ 21,041,295	$ (8,174,585)	$ (32,612,260)
PFRS net pension liability (asset)	$ 6,318,619	$ 568,042	$ (4,191,904)

(Continued)

(10) Federal Income Tax Status

ERS and PFRS are qualified defined benefit retirement plans under section 401(a) of the Internal Revenue Code (IRC) and are exempt from federal income taxes under section 501(a) of the IRC. ERS and PFRS last received favorable determination letters from the Internal Revenue Service dated August 28, 2014 stating that ERS and PFRS are in compliance with the applicable requirements of the Internal Revenue Code. Therefore, no provision for income taxes has been included in the System's financial statements.

(11) Commitments

As of March 31, 2022, the System had contractual commitments totaling $15.9 billion to fund future private equity investments, $7.53 billion to fund future real estate investments, $1.88 billion to fund future investments in opportunistic/ARS funds, $5.68 billion to fund future real asset investments and $7.94 million to fund future credit investments. When compared to note 8 the variances that exist are due to the above representing total commitments of the investment type inclusive of investments measured at fair value and net asset value. Future commitments will be funded over the commitment period through transaction income including distributions, redemptions, and maturities.

(12) Contingencies

The System is a defendant in litigation proceedings involving individual benefit payments, participant eligibility, and other issues arising from its normal activities. Management of the System believes there will be no material adverse effect on the basic financial statements as a result of the outcome of these matters.

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)

Schedule 1(a)

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios

(Unaudited)

(Dollars in thousands)

	2022 Employees' Retirement System	2021 Employees' Retirement System	2020 Employees' Retirement System	2019 Employees' Retirement System	2018 Employees' Retirement System	2017 Employees' Retirement System	2016 Employees' Retirement System	2015 Employees' Retirement System
Total pension liability:								
Service cost	$ 4,046,170	4,157,172	$ 3,365,522	$ 3,218,553	$ 3,004,697	$ 2,951,979	$ 2,916,374	$ 2,989,807
Interest	12,656,540	11,133,759	12,529,672	12,463,933	12,063,525	11,723,859	11,198,823	11,581,437
Difference between expected and actual experience	(1,003,716)	299,922	745,602	704,393	1,235,058	226,737	(2,378,116)	135,177
Changes in assumptions	—	22,441,226	(575,504)	888,656	—	—	5,350,157	—
Benefit payments	(12,415,017)	(11,850,537)	(11,207,761)	(10,781,781)	(10,200,205)	(9,740,272)	(9,224,904)	(8,829,751)
Refunds of contributions	(89,246)	(97,646)	(64,699)	(90,915)	(103,071)	(65,261)	(150,294)	(77,388)
Net change in total pension liability	3,194,731	26,083,896	4,792,832	6,402,839	6,000,004	5,097,042	7,712,040	5,799,282
Total pension liability–beginning	220,680,157	194,596,261	189,803,429	183,400,590	177,400,586	172,303,544	164,591,504	158,792,222
Total pension liability–ending (a)	223,874,888	220,680,157	194,596,261	189,803,429	183,400,590	177,400,586	172,303,544	164,591,504
Fiduciary net position:								
Contributions–employer	4,528,207	4,062,302	3,920,360	3,890,215	3,949,873	3,949,710	4,347,619	4,893,110
Contributions–member	494,802	427,032	395,338	345,846	318,439	306,218	289,332	272,004
Net investment income (loss)	18,984,398	59,964,043	(7,470,542)	9,140,487	18,128,993	17,194,267	(327,068)	10,582,102
Benefit payments	(12,415,017)	(11,850,537)	(11,207,761)	(10,781,781)	(10,200,205)	(9,740,272)	(9,224,904)	(8,829,751)
Refunds of contributions	(89,246)	(97,646)	(64,699)	(90,915)	(103,071)	(65,261)	(150,294)	(77,388)
Administrative expense	(144,128)	(144,234)	(121,694)	(119,304)	(106,972)	(93,943)	(93,012)	(93,357)
Other additions	109,874	103,941	(53,444)	160,431	181,725	200,379	198,333	193,176
Net change in fiduciary net position	11,468,890	52,464,901	(14,602,442)	2,544,979	12,168,782	11,751,098	(4,959,994)	6,939,896
Fiduciary net position–beginning	220,580,583	168,115,682	182,718,124	180,173,145	168,004,363	156,253,265	161,213,259	154,273,363
Fiduciary net position–ending (b)	232,049,473	220,580,583	168,115,682	182,718,124	180,173,145	168,004,363	156,253,265	161,213,259
Net pension liability (asset)–ending (a) – (b)	$ (8,174,585)	99,574	$ 26,480,579	$ 7,085,305	$ 3,227,445	$ 9,396,223	$ 16,050,279	3,378,245
Ratio of fiduciary net position to total pension liability	103.65%	99.95%	86.39%	96.27%	98.24%	94.70%	90.68%	97.95%
Covered-employee payroll	$ 28,772,307	27,976,135	$ 28,169,321	$ 27,374,387	$ 26,686,412	$ 26,200,001	$ 25,644,078	24,480,045
Net pension liability (asset) as a percentage of covered-employee payroll	-28.41%	0.36%	94.01%	25.88%	12.09%	35.86%	62.59%	13.80%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to required supplementary information.

Schedule 1(b)

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Changes in the Employers' Net Pension Liability (Asset) and Related Ratios

(Unaudited)

(Dollars in thousands)

	2022 Police and Fire Retirement System	2021 Police and Fire Retirement System	2020 Police and Fire Retirement System	2019 Police and Fire Retirement System	2018 Police and Fire Retirement System	2017 Police and Fire Retirement System	2016 Police and Fire Retirement System	2015 Police and Fire Retirement System
Total pension liability:								
Service cost	$ 951,585	970,797	$ 743,762	$ 713,480	$ 674,079	$ 657,407	$ 628,863	$ 625,648
Interest	2,363,162	2,020,024	2,252,536	2,236,527	2,154,117	2,065,752	1,935,222	1,997,215
Difference between expected and actual experience	86,530	180,496	76,209	106,384	241,387	302,375	(537,163)	39,833
Changes in assumptions	—	4,930,229	147,086	118,521	—	—	1,531,662	—
Benefit payments	(2,304,619)	(2,172,230)	(2,038,392)	(1,959,831)	(1,827,136)	(1,708,410)	(1,683,580)	(1,606,417)
Refunds of contributions	(96,141)	(1,558)	(284)	(1,404)	1,493	5,632	(1,694)	(158)
Net change in total pension liability	1,000,517	5,927,758	1,180,917	1,213,677	1,243,940	1,322,756	1,873,310	1,056,121
Total pension liability–beginning	41,236,775	35,309,017	34,128,100	32,914,423	31,670,483	30,347,727	28,474,417	27,418,296
Total pension liability–ending (a)	42,237,292	41,236,775	35,309,017	34,128,100	32,914,423	31,670,483	30,347,727	28,474,417
Fiduciary net position:								
Contributions–employer	1,099,539	967,488	862,346	854,094	873,434	837,253	792,585	904,339
Contributions–member	82,792	65,309	58,360	40,673	30,950	22,609	17,297	12,789
Net investment income (loss)	3,389,717	10,685,563	(1,328,229)	1,621,289	3,209,040	3,030,977	(57,765)	1,862,789
Benefit payments	(2,304,619)	(2,172,230)	(2,038,392)	(1,959,831)	(1,827,136)	(1,708,410)	(1,683,580)	(1,606,417)
Refunds of contributions	(96,141)	(1,558)	(284)	(1,404)	1,493	5,631	(1,694)	(158)
Administrative expense	(19,372)	(20,863)	(17,356)	(17,173)	(15,834)	(13,191)	(13,608)	(13,794)
Other additions/deductions	16,834	12,711	(23,402)	9,723	33,889	36,021	134,548	37,623
Net change in fiduciary net position	2,168,750	9,536,420	(2,486,957)	547,371	2,305,836	2,210,890	(812,217)	1,197,171
Fiduciary net position–beginning	39,500,500	29,964,080	32,451,037	31,903,666	29,597,830	27,386,940	28,199,157	27,001,986
Fiduciary net position–ending (b)	41,669,250	39,500,500	29,964,080	32,451,037	31,903,666	29,597,830	27,386,940	28,199,157
Net pension liability–ending (a) – (b)	$ 568,042	1,736,275	$ 5,344,937	$ 1,677,063	$ 1,010,757	$ 2,072,653	$ 2,960,787	$ 275,260
Ratio of fiduciary net position to total pension liability	98.66%	95.79%	84.86%	95.09%	96.93%	93.46%	90.24%	99.03%
Covered-employee payroll	$ 4,043,065	3,862,735	$ 4,024,660	$ 3,730,337	$ 3,683,960	$ 3,633,237	$ 3,526,980	$ 3,257,100
Net pension liability as a percentage of covered-employee payroll	14.05%	44.95%	132.80%	44.96%	27.44%	57.05%	83.95%	8.45%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to required supplementary information.

Schedule 2

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Employer Contributions

(Unaudited)

(Dollars in millions)

Employees' Retirement System

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially determined contribution (1)	$ 4,528	4,062	$ 3,920	$ 3,890	$ 3,950	$ 3,950	$ 4,348	$ 4,893	$ 5,138	$ 4,524
Contributions in relation to the actuarially determined contribution (2)	4,528	4,062	3,920	3,890	3,950	3,950	4,348	4,893	5,138	4,524
Contribution deficiency (excess)	$ —	—	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Covered-employee payroll	$ 28,772	27,976	$ 28,169	$ 27,374	$ 26,686	$ 26,200	$ 25,644	$ 24,480	$ 24,361	$ 24,405
Contributions as a percentage of covered-employee payroll	15.74%	14.52%	13.92%	14.21%	14.80%	15.08%	16.96%	19.99%	21.09%	18.54%

Police and Fire Retirement System

	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013
Actuarially determined contribution (1)	$ 1,100	968	$ 862	$ 854	$ 873	$ 837	$ 793	$ 904	$ 926	$ 812
Contributions in relation to the actuarially determined contribution (2)	1,100	968	862	854	873	837	793	904	926	812
Contribution deficiency (excess)	$ —	—	$ —	$ —	$ —	$ —	$ —	$ —	$ —	$ —
Covered-employee payroll	$ 4,043	3,863	$ 4,025	$ 3,730	$ 3,684	$ 3,633	$ 3,527	$ 3,257	$ 3,233	$ 3,163
Contributions as a percentage of covered-employee payroll	27.21%	25.06%	21.42%	22.90%	23.70%	23.04%	22.48%	27.76%	28.64%	25.67%

(1) The actuarially determined contribution includes normal costs, the GLIP amounts, adjustments made to record the reconciliation of projected salary to actual salary, and miscellaneous accounting adjustments.

(2) The contributions in relation to the actuarially determined contribution reflects actual payments and installment payment plans.

See accompanying independent auditors' report and notes to required supplementary information.

Schedule 3

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Investment Returns

(Unaudited)

	2022	2021	2020	2019	2018	2017	2016	2015
Annual money-weighted rate of return, net of investment expenses[1]	9.44%	33.43%	(2.64)%	5.14%	11.29%	11.40%	0.03%	6.98%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

[1] Investment expenses include management fees, investment and accounting staff salaries and benefits, and other investment related expenses.

See accompanying independent auditors' report and notes to required supplementary information.

Changes in Benefit Terms

There were no significant legislative changes in benefits for the April 1, 2021 actuarial valuation.

Changes of Assumptions

2021: The demographic assumptions (pensioner mortality and active member decrements) were updated based on the System's experience from April 1, 2015 through March 31, 2020, the mortality improvement assumption was updated to Society of Actuaries' Scale MP-2020, inflation was updated to 2.7%, cost-of-living updated to 1.4%, salary scale updated to 4.4% (ERS) and 6.2% (PFRS), and the interest rate assumption was reduced to 5.9% for the April 1, 2020 actuarial valuation.

2020: The interest rate assumption was reduced to 6.8% and the mortality improvement assumption was updated to Society of Actuaries' Scale MP-2018 for the April 1, 2019 actuarial valuation.

2019: The salary scale for both plans used in the April 1, 2018 actuarial valuation were increased by 10%.

2016: There were changes in the economic (investment rate of return, inflation, COLA, and salary scales) and demographic (pensioner mortality and active member decrements) assumptions used in the April 1, 2015 actuarial valuation.

Methods and Assumptions Used in Calculations of Actuarially Determined Contributions

The April 1, 2020 actuarial valuation determines the employer rates for contributions payable in fiscal year 2022. The following actuarial methods and assumptions were used:

Actuarial cost method	The System is funded using the Aggregate Cost Method. All unfunded actuarial liabilities are evenly amortized (as a percentage of projected pay) over the remaining worker lifetimes of the valuation cohort.
Asset valuation period	5-year level smoothing of the difference between the actual gain and the expected gain using the assumed investment rate of return.
Inflation	2.5%
Salary scale	4.5% in ERS, 5.7% in PFRS, indexed by service
Investment rate of return	6.8% compounded annually, net of investment expenses, including inflation.
Cost-of-living adjustments	1.3% annually
Active member decrements	Based upon FY 2016-2020 experience
Pensioner mortality	Gender/Collar specific tables based upon FY 2016-2020 experience
Mortality improvement	Society of Actuaries' Scale MP-2019

OTHER SUPPLEMENTARY INFORMATION

Schedule 4

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Administrative Expenses

Year ended March 31, 2022

(Dollars in thousands)

Personal services:		
Salaries	$	79,720
Overtime salaries		3,146
Fringe benefits		34,335
Total personal services		117,201
Building occupancy expenses:		
Building, lease and condominium fees		5,122
Utilities and municipal assessments		89
Office supplies and services		347
Telephone		469
Total building occupancy expenses		6,027
Computer expenses:		
IT shared services*		32,526
Total computer expenses		32,526
Personal and operating expenses:		
Training		28
Travel and auto expenses – includes pre-retirement seminars		185
Postage – includes member and retiree communication		2,214
Depreciation expense – Imaging System		1,832
Printing – includes member and retiree communication		22
Subscriptions/memberships		292
Total personal and operating expenses		4,573
Professional expenses:		
Audit services		510
Medical/clinical services		1,885
Miscellaneous consulting services		778
Total professional expenses		3,173
Total	$	163,500

* The System has implemented a shared service, information technology (IT) model within the New York State Office of the State Comptroller, wherein all IT costs, including personal services, will be incorporated into the IT shared services and reflected as nonpersonal service expenditures.

See accompanying independent auditors' report.

Schedule 5

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Investment Expenses

Year ended March 31, 2022

(Dollars in thousands)

Investment expenses:		
Investment management and incentive fees:		
Private equity	$	218,331
International equity		217,071
Absolute return strategy funds(ARS)		145,337
Real estate		86,561
Domestic equity		78,951
Real assets		60,350
Credit assets		58,946
Opportunistic funds		27,465
Multi-Asset Class		9,959
Fixed income		4,889
Total investment management and incentive fees		907,860
Investment-related expenses:		
Miscellaneous expenses		10,446
Data processing expenses/licenses		7,315
Custodial fees		6,157
Mortgage loan servicing fees		3,370
Legal fees		2,374
Private equity consulting and monitoring		2,199
General consulting		1,367
Compliance/Risk monitoring		1,248
Administrative expenses		1,060
Real estate consulting and monitoring		983
Research services		716
Audit and audit-related fees		397
Opportunistic consulting and monitoring		600
Real assets consulting and monitoring		440
Fixed income consulting		271
Domestic equity consulting and monitoring		80
Emerging manager program consulting and monitoring		62
Global equity consulting		35
Total investment-related expenses		39,120
Total investment expenses	$	946,980

See accompanying independent auditors’ report.

Schedule 6

NEW YORK STATE AND LOCAL RETIREMENT SYSTEM

Schedule of Consulting Fees

Year ended March 31, 2022

Fees in excess of $50,000 paid to outside professionals other than investment advisors.

	Amount	Nature
JP Morgan Chase Bank	$ 6,156,677	Custodial Banking Services
FIS Capital Markets US LLC	3,840,379	EDP Expense/Licenses
Bloomberg Finance LP	1,361,155	EDP Expense/Licenses
Morgan Lewis & Bockius LLP	728,657	Legal Services
DLA Piper LLP	643,080	Legal Services
KPMG LLP	627,415	Audit Services
Intex Solutions, Inc.	584,400	Compliance/Risk Monitoring
FactSet Research Systems, Inc.	491,812	EDP Expense/Licenses
eFront Financial Solutions, Inc.	479,100	EDP Expense/Licenses
Foster Garvey PC	460,959	Legal Services
JP Morgan Chase Bank	455,719	Retail Banking Services
Kroll, LLC	425,000	Consulting
National Claim Evaluations, Inc.	406,248	Medical/Clinical Services
Jurisolutions, Inc.	323,006	Medical/Clinical Services
Moody's Analytics, Inc.	321,747	EDP Expense/Licenses
Standard & Poors	318,796	EDP Expense/Licenses
Certified Management Consultants	295,448	Medical/Clinical Services
First Advantage Back Track Reports, LLC	247,870	Compliance/Risk Monitoring
Verizon Business Network Services LLC	223,020	IT Consulting Services
First Choice Evaluations LLC	220,000	Medical/Clinical Services
Arthur J Gallagher Risk Management	206,073	Audit Services
Strategas Securities, LLC	200,000	Research
K&L Gates LLP	184,792	Legal Services
D & D Medical Associates PC	175,050	Medical/Clinical Services
Corporate Resolutions, Inc.	143,500	Compliance/Risk Monitoring
MSCI ESG Research Inc	136,500	Research
Brigar X-Press Solutions, Inc.	133,088	Medical/Clinical Services
Institutional Shareholder Services	125,136	Administrative Expen
Integral Consulting Services, Inc.	113,704	Medical/Clinical Services
Lenox Park Solutions LLC	110,000	Administrative Expen
Cox, Castle & Nicholson LLP	109,995	Legal Services
Lexisnexis Risk Solutions FL, Inc.	103,757	Miscellaneous Consulting Services
EFL Associates	101,675	Staff Recruitment Services
Ernst & Young LLP	100,485	Tax Services
Cornerstone Macro LLC	100,000	Research
Glass Lewis & Co, LLC	99,794	Administrative Expen
CoStar Group Inc.	97,812	Research
London Stock Exchange PLC	93,261	EDP Expense/Licenses
Johnson Controls Security Solutions LLC	91,524	Miscellaneous Consulting Services
Groom Law Group	86,396	Legal Services
Marcum Accountants/Advisors	79,440	Compliance/Risk Monitoring
Bloomberg Index Services Limited	77,500	EDP Expense/Licenses
NPC, Inc.	71,696	Medical/Clinical Services
Seyfarth Shaw LLP	65,000	Legal Services
Castine Consulting LLC	62,260	Compliance/Risk Monitoring
Eurasia Group	60,000	Research
FTSE International LTD	59,491	EDP Expense/Licenses
BCA Research, Inc	56,375	Research
Capital Economics	55,000	Research
CEM Benchmarking	50,000	Miscellaneous Consulting Services
Labaton Sucharow LLP	50,000	Legal Monitoring Services

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Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

The Trustee
New York State and Local Retirement System:

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the New York State and Local Retirement System (the System), which comprise the combining basic statement of fiduciary net position as of March 31, 2022, and the related combining basic statement of changes in fiduciary net position for the year then ended, and the related notes to the basic financial statements, and have issued our report thereon dated July 22, 2022.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. A significant deficiency is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's basic financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

KPMG LLP

July 22, 2022