



TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
A FIDUCIARY FUND OF THE CITY OF NEW YORK

Annual Comprehensive Financial Report

Fiscal Years Ended June 30, 2021 and June 30, 2020

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**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
A FIDUCIARY FUND OF THE CITY OF NEW YORK**

**ANNUAL COMPREHENSIVE FINANCIAL REPORT
FOR FISCAL YEARS ENDED JUNE 30, 2021 AND JUNE 30, 2020**

Prepared by Accounting Units for the

**QUALIFIED PENSION PLAN
and
TAX-DEFERRED ANNUITY PROGRAM**

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TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

55 Water Street, New York, NY 10041

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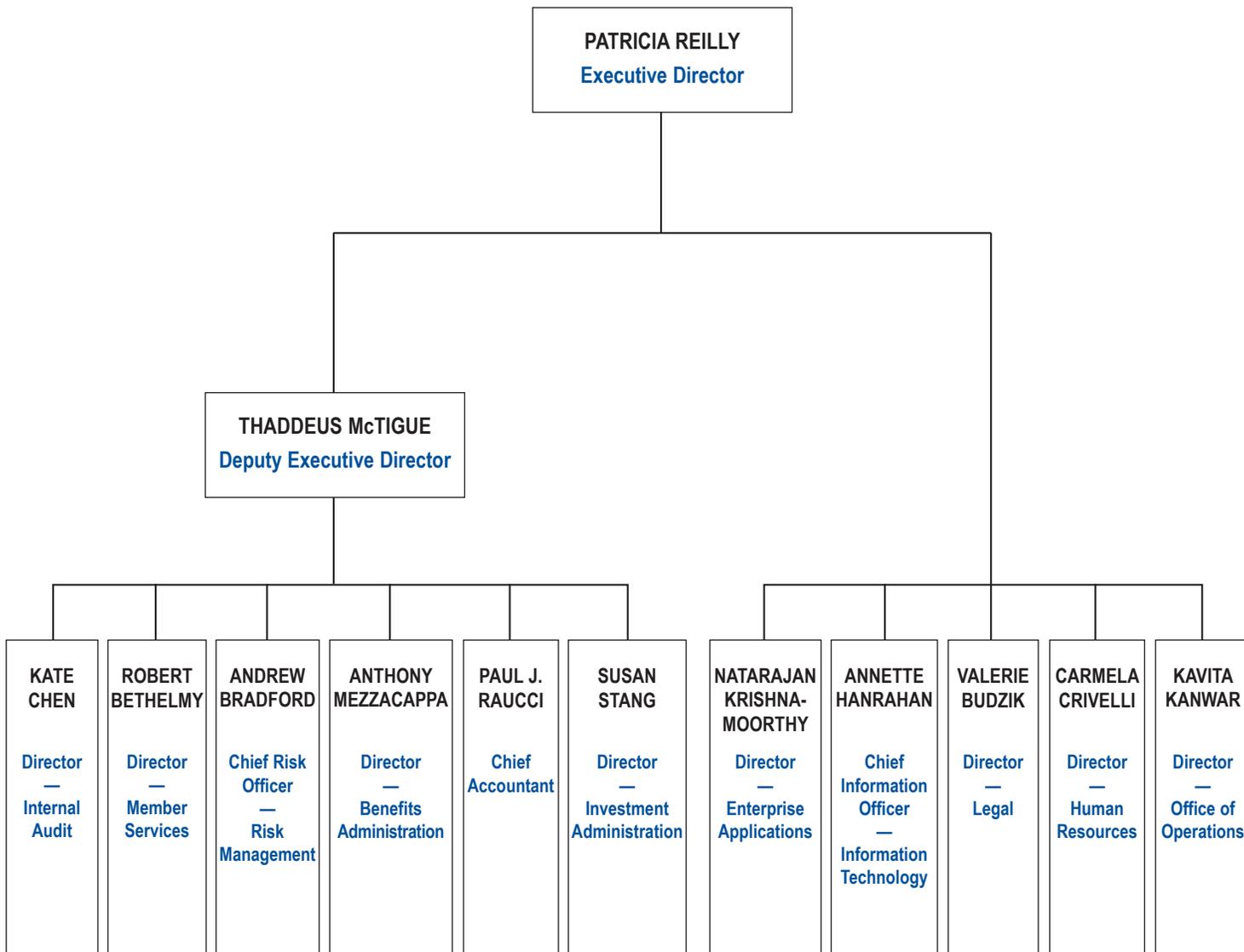


Introductory Section

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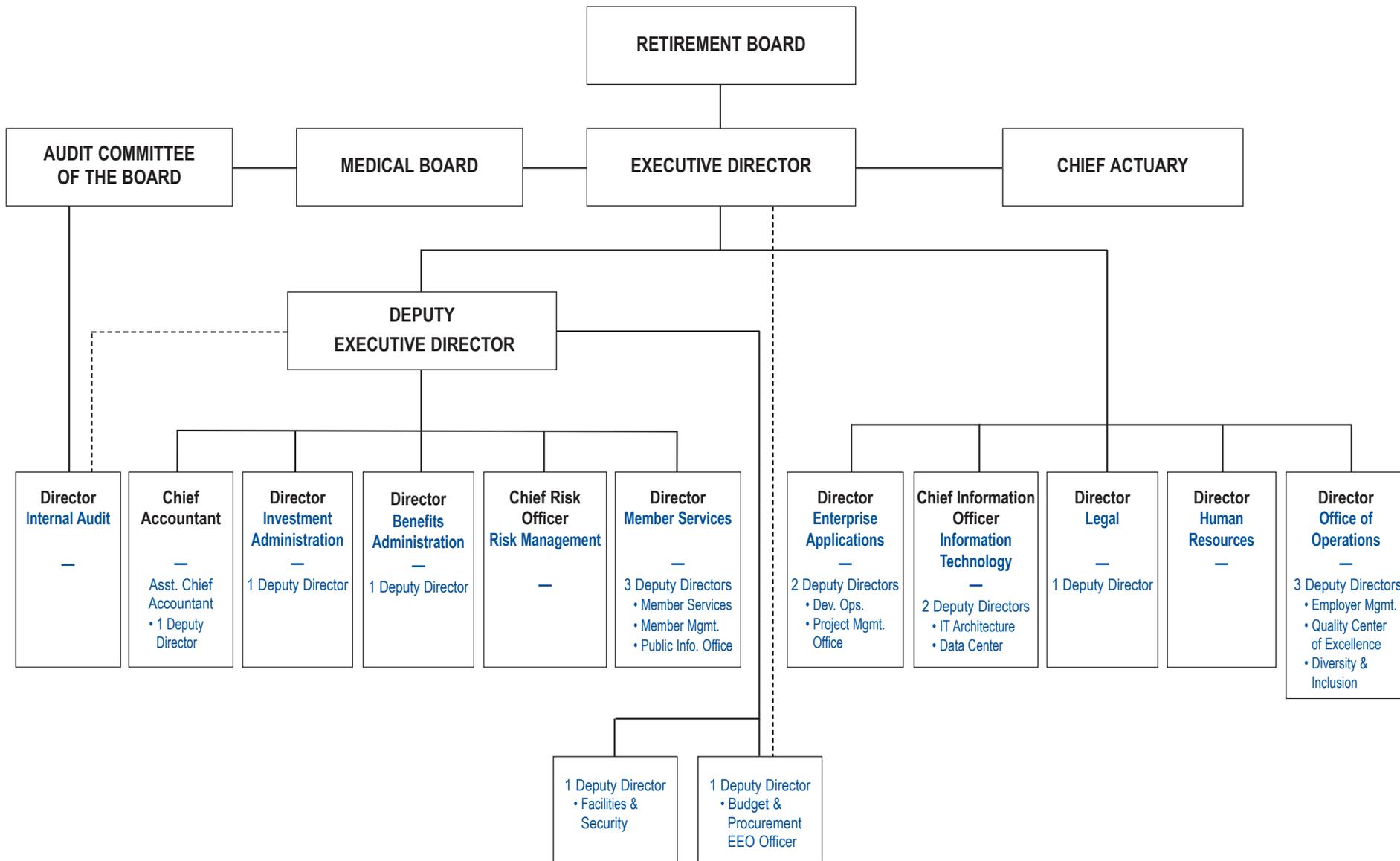
PRINCIPAL OFFICIALS

as of June 30, 2021



ORGANIZATION CHART

as of June 30, 2021





Government Finance Officers Association

Certificate of
Achievement
for Excellence
in Financial
Reporting

Presented to

**Teachers' Retirement System of the City of New York
New York**

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

June 30, 2020

Christopher P. Morill

Executive Director/CEO



December 22, 2021

Dear Members of the Board of Trustees:

We are pleased to present the *Annual Comprehensive Financial Report* of the Teachers' Retirement System of the City of New York (TRS) for the fiscal year ended June 30, 2021.

TRS was established as of August 1, 1917 under Chapter 303 of the Laws of 1917 and is governed by the Administrative Code of the City of New York and the New York State Retirement and Social Security Law.

TRS' pension plan became a tax-qualified retirement plan under Section 401(a) of the Internal Revenue Code (IRC) and is now known as our Qualified Pension Plan (QPP). The QPP is a cost-sharing, multiple employer defined-benefit pension plan. The QPP provides pension benefits to all the teachers and administrative personnel employed by the Department of Education and certain employees of New York City Charter Schools and the City University of New York.

TRS' Tax-Deferred Annuity (TDA) Program was established and is administered pursuant to IRC Section 403(b) and NYC Administrative Code section 13-582, and became effective February 1, 1970. The TDA Program is a voluntary defined-contribution savings option available to TRS members.

Member Profile

Our programs impact approximately 217,000 in-service members, retirees, and beneficiaries. Our membership includes individuals of varying ages, membership tiers, and employment status. And although many TRS members are currently in active service, more than 40% of them have retired. As of June 30, 2021, there were approximately 125,000 in-service members and approximately 92,000 retired members and beneficiaries receiving monthly benefits.

Participating Employers

The participating employers that share the cost of the defined-benefit QPP plan are the New York City Department of Education (DOE), City University of New York (CUNY), and certain New York City Charter Schools that offer TRS benefits to their employees. Employees who become TRS members may participate in the TDA Program in addition to the QPP plan.

Initiatives

TRS conducted operations remotely for most of this fiscal year. We reopened our Member Services Center to visitors (by appointment only) in May. The resumption of in-person appointments supplemented the virtual contact methods we introduced earlier in the pandemic: email, video conferences, and online educational programs. Our membership adapted well to the virtual environment, as evidenced by the spike in attendance with our online classes and high demand for appointments.

In addition, members continued to file for retirement online instead of in person this year. The process was aided by our enhanced retirement "e-form" and streamlined follow-up between our representatives and prospective retirees. Given the success and convenience of online retirement filing, TRS will continue to offer it as an option going forward.

Also during Fiscal Year 2021, we completed implementation of two major pieces of legislation related to the pandemic that were enacted in 2020—the federal CARES Act and the New York State COVID-19 Accidental Death Benefit Law. For our ongoing modernization initiative, we prioritized production stabilization through weekly maintenance releases, implemented certain new pension payroll modules, and continued development for future phases.

Financial Statements

The financial statements and notes along with Management’s Discussion and Analysis in this report present and analyze the changes in TRS fiduciary net position for the fiscal year ended June 30, 2021. Since markets are dynamic and fluid, any judgment of the financial statements should also consider current market conditions.

Funding

The Qualified Pension Plan’s funding objective is to meet long-term benefit promises through employer and member contributions, together with investment earnings. Annual funding by employer contributions is determined through an actuarial valuation of all liabilities to the QPP with adjustments to allow for an incremental phase-in of newly assumed actuarial liabilities. As such, employer contributions have been increasing steadily in line with current membership liabilities.

The QPP’s funding ratios are also developed as part of the QPP’s actuarial valuation. The funding ratios are determined at specific points in time, are usually expressed in various relationships of assets to obligations, and, over time, can provide insight into the long-term financial trend of the QPP.

One measure of the QPP’s funded status, the ratio of Actuarial Asset Value to the Entry Age Normal Actuarial Accrued Liability, determined as of June 30, 2019, is 78.4%. Please refer to the report’s Actuarial Section for a detailed discussion of the Plan’s measures of funded status.

Under Governmental Accounting Standards Board (GASB) Statement No. 67, *Financial Reporting for Pension Plans*, a defined-benefit pension plan is also required to report fiduciary net position as a percentage of the plan’s total pension liability. This method reports assets at current fair value and, as such, is more sensitive to market volatility. As of June 30, 2021, the Qualified Pension Plan’s fiduciary net position represents 99.9% of the QPP’s total pension liability.

Funds needed to finance the QPP’s long-term benefit are accumulated through the collection of employer and member contributions and through income from investments. Primary expenses include benefit and survivor payments as well as investment and administrative expenses, and refunds of contributions to terminated employees. An overview of revenue and expenses, as well as asset and liability information, is provided in the Management’s Discussion and Analysis portion of the Financial Section.

Management Responsibility for Financial Reporting and Internal Controls

The financial statements were prepared in accordance with accounting principles generally accepted in the United States of America and GASB pronouncements. Management is responsible for the integrity and fairness of the information presented in the financial statements, including data that, out of necessity, is based on estimates and judgments. Management is also responsible for establishing and maintaining an effective internal control structure. A system of internal controls provides reasonable, but not absolute, assurance that assets are properly safeguarded and that financial statements are reliable. The concept of reasonable assurance recognizes that first, the cost of a control should not exceed the benefits likely to be derived, and second, the valuation of the cost and benefits requires estimates and judgments by management. We believe that the internal controls currently in place support this purpose, and that the financial statements, accompanying schedules, and statistical tables are fairly presented in all material respects.

Investments

Assets of the QPP and the TDA Program are invested together in the following investment funds: the Pension Fund, the Diversified Equity Fund, the Balanced Fund, the International Equity Fund, the Sustainable Equity Fund, the U.S. Equity Index Fund, and the International Equity Index Fund. The performance summary for Fiscal Year 2021 follows:

Rate of Return by Fund—Fiscal Year 2021		
Fund	ROR	Gross vs. Net Returns
Pension	24.80%	Net of Fees
Variable Fund	ROR	Gross vs. Net Returns
Diversified Equity Fund	43.01%	Net of Fees
Balanced Fund	12.09%	Net of Fees
International Equity Fund	37.54%	Net of Fees
Sustainable Equity Fund	39.55%	Net of Fees
U.S. Equity Index Fund	47.11%	Net of Fees
International Equity Index Fund	36.53%	Net of Fees

For Funds other than the Pension Fund, members' accounts are valued on a monthly basis based on unit values. The unit values are based on each Fund's closing market value as of the end of the preceding month and are comparable to shares in mutual funds. TRS members who invest in these variable-return funds purchase units with their contributions.

The following table showing July unit values for 2021 and 2020 was based on the performance of the variable-return funds as of June 30. In addition to the changes in unit values, members' accounts are credited with a 4% increment factor increasing the number of units they hold, and their accounts are similarly discounted to offset this increase.

Unit Values for Fiscal Years 2021 and 2020		
Variable Fund	Unit Value July 2021	Unit Value July 2020
Diversified Equity Fund	\$133.347	\$96.973
Balanced Fund	\$17.572	\$16.302
International Equity Fund	\$13.280	\$10.042
Sustainable Equity Fund	\$28.029	\$20.889
U.S. Equity Index Fund	\$15.306	\$10.820
International Equity Index Fund	\$13.335	\$10.157

The Administrative Code of the City of New York and Retirement and Social Security Law authorize the investments of plan assets subject to the terms, conditions, limitations, and restrictions imposed by law. The New York State Retirement and Social Security Law, Banking Law, and the Administrative Code establish the criteria for permissible equity investments. Plan assets are diversified over a range of investments, and multiple investment strategies are used to limit risk. Details concerning the criteria for TRS' investments may be found in the Notes to the Financial Statements. A detailed discussion of TRS' investment strategies, asset classes, and yield information is provided in the report's Investment Section.

Actuarial Reports

The Actuarial Section contains the Actuary's certification letter, the actuary's statements, a summary of actuarial assumptions, and the actuarial tables. The actuarial valuation provides a picture of the overall funding health of the QPP.

Statistical Reports

Past and current data are contained in this section. The section includes tables that reflect the net position and demographic characteristics of the QPP and the TDA Program. Also captured in the tables, when applicable, is information comparing ten years of data. This look back shows overall trends in our programs and membership demographics that help to accurately forecast our future ability to meet our members' retirement needs.

Independent Audit & Professional Services

State statutes require an annual audit by independent certified public accountants. TRS' auditor, Grant Thornton LLP, provides a Report of Independent Certified Public Accountants on the financial statements and schedules in the Financial Section of this Report.

Investment professionals are appointed under the direction of the Teachers' Retirement Board. Investment administration services for the TRSNYC Pension Fund are provided by the New York City Office of the Comptroller. Investment administration services for TRS's Variable-Return Funds are performed by TRS. The Office of the Comptroller and TRS hire consultants and other investment professionals to perform additional investment services. The Summary of Investment Managers and Fees and the Schedule of Payments of Commissions to Brokers can be found starting on pages 105 and 112, respectively.

Legal services to TRS are provided by the City's Corporation Counsel and Groom Law Group.

Actuarial services are provided by the Office of the Actuary of the City of New York, which is employed by the City's five major pension systems.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to TRS for its *Comprehensive Annual Financial Report* for the Fiscal Year ended June 30, 2020. This was the 33rd consecutive year that TRS was accorded this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized Annual Comprehensive Financial Report. This report must satisfy both the generally accepted accounting principles and the applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current annual comprehensive financial report continues to meet the Certificate of Achievement Program's requirements, and we are submitting it to the GFOA for its consideration.

Acknowledgements

The compilation of the Report reflects the efforts of the TRS staff under the leadership of the Board of Trustees. It is intended to provide complete and reliable information as a basis for making management decisions, as a means of determining compliance with legal provisions, and as a means for determining responsible stewardship for the assets contributed by the members and their employers.

Finally, we would like to take this opportunity to express our gratitude to the staff, the advisors, and the many people who have worked diligently to ensure the successful operation of TRS.

Sincerely,



Patricia M. Reilly
Executive Director



Paul J. Raucci
Chief Accountant

SUMMARY OF PLAN PROVISIONS

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SUMMARY OF PLAN PROVISIONS

TRS' principal benefit provisions correspond to the tier structure established by applicable New York State Law¹.

Tiers III, IV, VI

Members with a date of membership of July 27, 1976 or later are covered by the following provisions:

SERVICE RETIREMENT

Normal Service Retirement

Eligibility:

A member is eligible to retire at age 62 (age 63 for Tier VI) with immediate payability after 5 or more years of service (10 or more years of service for Tier VI and for members represented by the UFT, joining after December 10, 2009 under the 55/27 plan).

Current members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay, subject to contribution obligations.

After February 27, 2008, new members (excluding CUNY employees) are eligible to retire at age 55 and later with immediate payability and without reduction after 27 years of service and are required to pay an additional 1.85% of future pay, subject to contribution obligations.

After December 10, 2009, new members in a position represented by the UFT under the 55/27 retirement program are required to make contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

After March 31, 2012, new Tier VI members are required to make contributions in amounts ranging from 3% to 6% per annum, based on annual wages earned during a "plan year," originally defined as April 1 to March 31, but amended to January 1 to December 31 as of January 1, 2016.²

Benefits:

- (1) For a member with fewer than 20 years of service, the benefit is 1.67% times FAS³ multiplied by years of service.
- (2) For a member with at least 20 (Tier VI) but fewer than 30 years of service (Tier III/IV), the benefit is 2% times FAS multiplied by years of service (Tier III/IV) or 35% plus 2% times FAS multiplied by each additional year exceeding 20 years of service (Tier VI).
- (3) For a member with 30 or more years of service, the benefit is 2% times FAS for each of the first 30 years of service plus 1.5% times FAS for each additional year (Tier III/IV).

Early Service Retirement

Eligibility:

A member is eligible to retire at age 55 or later with immediate payability, after 5 or more years of service (10 or more years for Tier VI and for members represented by the UFT joining on or after December 10, 2009 under the 55/27 plan).

¹ Chapter 274 of the Laws of 1970 (Tiers I/II), as restricted by RSSL Article 11; RSSL Articles 14 and 15 (Tiers III/IV); Chapter 18 of the Laws of 2012 (Tier VI).

² For the first three plan years of membership, TRS uses projected annual earnings provided by the employer(s) to determine the contribution rates. For the fourth plan year of membership and each plan year thereafter, TRS uses the actual wages earned two plan years prior to the current plan year.

³ Final Average Salary (FAS) is the average earned during any three consecutive years (any five consecutive years for Tier VI) providing the highest average salary. However, if salary earned during any year included in the three-year period (five-year period for Tier VI) exceeds the average of the previous two years by more than 10%, the amount in excess of 10% will be excluded.

Benefits:

The pension is calculated similarly to the pension of a Normal Service Retirement, but it is reduced as follows:

- (1) For a Tier III/IV member who retires prior to age 62 with less than 30 years of service and is not a member of an Age 55 Plan, his/her pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.
- (2) A Tier III/IV member with 30 or more years of service receives no reduction in benefits because of early retirement.
- (3) For a Tier VI member who retires prior to age 63, the retirement allowance is reduced by 6.5% per year.

Deferred Vested Benefit

Eligibility:

A member who has 5 or more years of credited service upon termination of employment (10 or more years under Tier VI, and for members represented by the UFT under the 55/27 plan who joined on or after December 10, 2009) is entitled to a deferred vested benefit payable at age 55 or later. A member who elects payability before age 62 (age 63 for Tier VI) will receive a reduced benefit unless they have 30 years of service under Tier III/IV or meet the eligibility requirements of their retirement plan.

Benefits:

The benefit formulas are the same as those set forth under a Normal Service Retirement and an Early Service Retirement.

DISABILITY RETIREMENTS

Ordinary Disability Retirement

Eligibility:

A member is eligible for Ordinary Disability Retirement benefits if (s)he has completed 10 or more years of service and is incapacitated for performance of gainful employment. If the disability is judged to be the result of an accident in the performance of duty, the 10-year requirement is waived.

Benefits:

The benefit is the greater of: (a) 33.33% of FAS (66.67% of FAS for a member if the disability is judged to be the result of an accident in the performance of duty); or (b) 1.67% times FAS multiplied by the credited service.

A lump-sum disability benefit equals the in-service death benefit amount for members with: a terminal illness with a life expectancy of one year or less; or (b) a medical condition of a long, continued, and indefinite duration requiring extraordinary care and treatment, regardless of life expectancy.

Accident Disability Retirement

Eligibility:

A member is entitled to an accident disability retirement allowance upon the occurrence of a disability caused by an accident in the actual performance of duty.

Benefits:

The retirement allowance will consist of a pension equal to 66.67% (60% under Tier III) of FAS.

DEATH BENEFITS

Ordinary Death Benefits

Benefits:

For members joining TRS after January 1, 2001, Death Benefit #2 below would be payable if a member dies before retirement. For members joining prior to that date, the greater of the two death benefits described below would be payable.

Death Benefit 1:

This benefit provides one month's salary for each year of service up to a maximum of three years' salary. If the member would have been eligible to receive an unreduced retirement allowance at the time of his/her death, the benefit is a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before his/her death, if greater.

Death Benefit 2:

This benefit provides one year's salary for each year of service up to a maximum of three years' salary after three years of service. The benefits reduce after age 60 at the rate of 5% per year, to a maximum reduction of 50% of the benefit in effect at age 60.

A benefit is also payable upon death after retirement and is expressed as follows:

- If death occurs in the first year after retirement, 50% of the benefit in force immediately before retirement.
- If death occurs in the second year following retirement, 25% of the benefit in force immediately before retirement.
- If death occurs subsequently, 10% of the benefit in force at age 60 or immediately before retirement if retirement was earlier than age 60.

If retirement occurs after age 60, the minimum death benefit payable after retirement is 10% of the death benefit in force at age 60.

The death benefit for a vested member with at least 10 years of credited service, who died while inactive before retirement, is equal to 50% of the death benefit that would have been payable had the member died on their last day of active service, in addition to a refund of the member contributions.

The Rules and Regulations adopted by the Teachers' Retirement Board in accordance with Chapter 581 of the Laws of 1970 provide that the first \$50,000 of each benefit on account of death in active service is payable from the Group Term Life Insurance Plan. Only the amount in excess of \$50,000, if any, is payable by TRS.

Beneficiaries:

The latest named beneficiary, duly designated with TRS, will receive the death benefits. If there is no eligible beneficiary on file, the benefits will be paid to the member's estate.

Accidental Death Benefits

Eligibility:

A beneficiary is entitled to the benefit if the member died before the effective date of retirement as a natural and proximate result of an accident sustained in the performance of duty, and if the accident was not caused by the member's willful negligence.

Benefits:

Benefits are payable to “eligible beneficiaries,” as defined by law. The beneficiary receives a benefit equal to 50% of the wages the member earned during the last year of actual service. If there is no eligible beneficiary on file, the benefits will be paid to the member’s estate.

Special Provisions:

An Accidental Death Benefit (resulting from a qualifying World Trade Center-related condition or COVID-19, as defined in law) is payable to the eligible beneficiary(ies).

Tiers I, II

Members with a date of membership before July 27, 1976 are covered by the following provisions:

SERVICE RETIREMENT

Twenty-Year Pension Plan

Eligibility:

- (1) A Tier I member who elects the Twenty-Year Pension Plan is eligible to retire after having completed 20 years of service, with benefits to begin on the latter of: a) the day they cease active employment, b) age 55, or c) the date they could have completed 25 years of service had they remained active. Regardless of the number of years of service, such a member who has elected the Twenty-Year Pension Plan and who is at least 55 years of age may retire with benefits payable immediately by canceling his/her election of the Twenty-Year Pension Plan, thereby becoming eligible for the benefits under the Age-55-Increased-Benefits Pension Plan.
- (2) A member who joined TRS under Tier II must also have rendered five years of continuous service immediately prior to retiring and must have attained age 55.

Benefits:

The service retirement allowance for a Tier I member is the sum of the following:

- (1) 50% of the average salary⁴, reduced by an annuity which is the actuarial equivalent of the minimum accumulation⁵;
- (2) an annuity which is the actuarial equivalent of the accumulated contributions; and
- (3) for service in excess of 20 years, (a) a pension for Increased-Take-Home-Pay⁶ which is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay credited in such years, and 1.2% of the average salary for each such year prior to July 1, 1970 and 1.7% of the average salary for each such year beginning on that date.

If a Tier II member retires prior to age 62 with less than 30 years of service, his/her pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.

⁴ For a Tier I member, salary earnable in the last year of the most recent three-year period during which (s)he held no more than one position, or the average annual salary earnable in any five consecutive years designated by the member. For a Tier II member, the average salary earned during any three consecutive years which provides the highest salary. However, if salary earned during any year included in the three-year period exceeds the average of the previous two years by more than 20%, the amount in excess of 20% will be excluded.

⁵ The difference between (1) the amount of required contributions during the member’s first 20 years of city service, accumulated with interest to the member’s payability date, and (2) the amount of the reserve for Increased-Take-Home-Pay on the date such period of 20 years is completed.

⁶ Increased-Take-Home-Pay consists of special contributions made by the employer at 2.5%, 5%, or 8% of salary, with applicable interest.

Current Tier II members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay.

Age-55-Increased-Benefits Pension Plan

Eligibility:

- (1) A Tier I member who either elects the Age-55-Increased-Benefits Pension Plan or cancels his/her election of the Twenty-Year Pension Plan may retire after having attained age 55 with benefits payable immediately upon retirement.
- (2) A Tier II member must have rendered five years of continuous service immediately prior to retiring and must have attained age 55.

Benefits:

The service retirement allowance consists of a pension for service, a pension for Increased-Take- Home-Pay, and an annuity.

The pension for service is equal to 1.2% of the average salary multiplied by years of service prior to July 1, 1970, plus 1.53% of the average salary multiplied by years of service after June 30, 1970. The pension for Increased-Take-Home-Pay is the actuarial equivalent of the Reserve for Increased- Take-Home-Pay, and the annuity is the actuarial equivalent of the member's accumulated deductions.

If a Tier II member retires prior to age 62 with less than 30 years of service, his/her pension for service is reduced by 0.5% for each of the first 24 months that the payability date precedes age 62, and by 0.25% for each additional month.

Current Tier II members as of February 27, 2008 (excluding CUNY employees) were provided a 180-day period during which they were allowed to join a plan that permitted them to retire at age 55 and later with immediate payability and without reduction after 25 years of service, provided they pay an additional 1.85% of future pay.

VESTED DEFERRED RETIREMENT ALLOWANCE

Eligibility:

A member who either resigns or is dismissed from service would receive a benefit equal to his/her accumulated deductions. However, a member who is eligible for benefits under the Age-55-Increased-Benefits Pension Plan and who has at least 5 years of service immediately preceding resignation may instead elect to receive a deferred vested allowance.

Benefits:

This allowance is computed in the same manner as the retirement allowance for service retirement under the Age-55-Increased-Benefits Pension Plan, except that the allowance is deferred to age 55. Should a member who elected to receive a vested deferred retirement allowance and who had 10 years of service die before the attainment of age 55, the death benefit is 50% of the Ordinary Death Benefit in force on the last day of service.

DISABILITY RETIREMENTS

Ordinary Disability Retirement

Eligibility:

Regardless of the Plan elected, a member who has completed 10 or more years of City service preceding the occurrence of disability, for causes other than an accident in the actual performance of duty, is entitled to an ordinary disability retirement allowance.

Benefits:

If, at the time of becoming disabled, the member could have retired for service with benefits payable immediately, the ordinary disability allowance will be the same as the service retirement allowance without reduction on account of age. For all other members, the ordinary disability allowance is computed in the same manner as though the member had been eligible for service retirement under the Age-55-Increased-Benefits Pension Plan with benefits payable immediately, but never less than the allowance that would have been payable under the provisions in effect prior to July 1, 1970.

Accident Disability Retirement

Eligibility:

A member is entitled to an accident disability retirement allowance upon the occurrence of a disability caused by an accident in the actual performance of duty.

Benefits:

The retirement allowance will consist of a pension equal to 75% of the average salary in the last 5 years, plus a pension which is the actuarial equivalent of the Reserve for Increased-Take-Home-Pay, and an annuity purchased with the member's accumulated deductions.

DEATH BENEFITS

Ordinary Death Benefits

Benefits:

Upon the death of a member in active service, a benefit is paid to his/her estate or to such person(s) as (s)he shall have nominated.

Tier I Members

- If a member completed less than 10 years of City Service, the benefit is equal to the compensation earnable by the member in the 6 months immediately preceding death.
- If the total number of years of City Service is greater than 10, but less than 20, the benefit is equal to the compensation earnable by the member during the 12 months immediately preceding death.
- If the total number of years of City Service exceeds 20, the benefit is equal to twice the compensation earnable by the member during the 12 months immediately preceding death.
- In addition, the member's accumulated deductions and the Reserve for Increased-Take-Home-Pay are paid to the member's estate or to the designated beneficiary.

The benefits payable on account of such a member who, at the time of his/her death, would have been eligible for service retirement is either the benefit described above or a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before his/her death, whichever is larger.

Tier II Members must choose between the two following death benefits so that, upon the member's death, benefits are paid pursuant to the member's election:

Death Benefit 1: This benefit provides one month's salary for each year of service, up to a maximum of three years' salary. In addition, the member's accumulated deductions are payable. If the member would have been eligible to receive an unreduced retirement allowance at the time of his/her death, the benefit is a lump sum that is actuarially equivalent to the retirement allowance which would have been payable had the member retired on the day before his/her death, if greater.

Death Benefit 2: In addition to a refund of the member's accumulated deductions, this benefit provides one year's salary for each year of service up to a maximum of three years' salary after three years of service. The benefit reduces after age 60 at the rate of 5% per year, to a maximum reduction of 50% of the benefits in effect at age 60.

A benefit is also payable upon death after retirement and is expressed as follows:

- If death occurs in the first year after retirement, 50% of the benefit in force immediately before retirement.
- If death occurs in the second year following retirement, 25% of the benefit in force immediately before retirement.
- If death occurs subsequently, 10% of the benefit in force at age 60 or immediately before retirement if retirement was earlier than age 60.

If retirement occurs after age 60, the minimum death benefit payable after retirement is 10% of the death benefit in force at age 60.

The death benefit for a vested member with at least 10 years of credited service, who died while inactive before becoming eligible for unreduced retirement benefits, is equal to 50% of the death benefit that would have been payable had the member died on their last day of active service, in addition to a refund of the member contributions.

The Rules and Regulations adopted by the Teachers' Retirement Board in accordance with Chapter 581 of the Laws of 1970 provide that the first \$50,000 of each benefit on account of death in active service is payable from the Group Term Life Insurance Plan. Only the amount in excess of \$50,000, if any, is payable by TRS.

Beneficiaries:

The latest named beneficiary, duly designated with TRS, will receive the death benefits. If there is no eligible beneficiary on file, the benefits will be paid to the member's estate.

Accidental Death Benefits

Eligibility:

A member is entitled to accidental death benefits upon the occurrence of death caused by an accident in the actual performance of duty and not the result of willful negligence.

Benefits:

The accidental death benefits are (a) a lump-sum equal to the Reserve for Increased-Take-Home-Pay and (b) a pension equal to 50% of the average salary in the last five years payable annually to the widow until remarriage or death, or if there is no widow, to a child or children until the attainment of age 18 of the

youngest child, or if there is no widow, or child, to the dependent parents, and (c) a lump-sum equal to the member's accumulated deductions and Reserve for Increased-Take-Home-Pay payable to the member's estate or to the designated beneficiary. Alternatively, the beneficiary of a Tier I member may elect to receive a lump sum that is actuarially equivalent to the retirement allowance which would have been payable if the member had retired on the day before the member's death, provided that the death occurred after the member became eligible to retire for service.

Cost-of-Living Adjustments

Eligibility:

Automatic annual Cost-of-Living Adjustments (COLA) are applicable to retired members in all tiers. COLA are payable to members who are either (1) at least age 62 and have been retired for at least 5 years or (2) at least age 55 and have been retired for at least 10 years. Additionally, COLA are payable to members who retired for disability after being retired for 5 or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least 5 years.

Benefits:

Starting with benefits for September 2001, the annual increase for COLA is equal to 50% of the increase in the Consumer Price Index for all Urban Consumers (CPI-U) based on the year ending March 31, rounded to the next higher 0.1%, not less than 1% nor greater than 3% of the first \$18,000 of the sum of maximum retirement allowance and prior COLA.

COLA are payable during the life of the retired member. Fifty percent of the amount is also payable after the member's death and during the life of the spouse beneficiary if such retired member had elected one of the options under the Administrative Code which provides that benefits are to be continued for the life of such spouse after the death of the retired member, and where the death of such retired member occurred or occurs more than 30 days after the effective date of the retirement of such member.

Options on Retirement

A member, upon retirement, may receive his/her basic retirement allowance in monthly installments throughout life with all payments ending at death, or may elect to receive the actuarial equivalent in the following optional forms.

- (1) A joint-and-survivor allowance under which reduced payment will be made during life, with a provision that upon the member's death, the same payments or 50% of such payments shall be continued throughout the life of other such person(s) as the member shall have designated.
(Applicable to members under Tiers I and II.)
- (2) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that upon the member's death, 100% or less (*i.e.*, in 10% increments) of such payments shall be continued throughout the life of such other person(s) as the member shall have designated.
(Applicable to members under Tier III.)
- (3) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that upon a member's death, 100% or less (*i.e.*, in 25% increments) of such payments shall be continued throughout the life of such other person(s) as the member shall have designated.
(Applicable to members under Tiers IV and VI.)

- (4) A joint-and-survivor allowance under which reduced payments will be made during life, with a provision that in the event of a member's death prior to the death of the designated beneficiary, the person designated would receive a percentage of the payments under the applicable plan, which had been received by the member under that plan. Should the designated beneficiary predecease the member, the member's retirement allowance "pops up" to the amount which would have been payable, had no optional modification of the retirement allowance been in effect. (All Tiers)
- (5) A ten-year or five-year certain and life allowance under which reduced payments will be made during life, with a provision that in case of death within ten or five years of retirement, the balance that would have been payable had the member survived for ten or five years, shall continue to be paid to the designated beneficiary or estate. (All Tiers)
- (6) A cash refund allowance under which reduced payment will be made during life, with a provision that, in case of death before such payments have equaled the present value of the retirement allowance at the time of retirement, the balance shall be paid to the designated beneficiary or estate in a lump-sum. (Applicable to members under Tier I.)
- (7) A cash refund allowance under which reduced payments will be made during life, with a provision that, in case of death before such payments have equaled the present value of the retirement allowance at the time of retirement, the balance from the annuity portion of the retirement allowance shall be paid to the designated beneficiary or estate in a lump-sum. (Applicable to members under Tier II.)
- (8) A cash refund allowance under which reduced payment will be made during life, with a provision that, upon the member's death, a sum specified by the retiree at the time of retirement, would be paid to the designated beneficiary or estate. (Applicable to members under Tiers I and II, by resolution of the Teachers' Retirement Board.)
- (9) Such other actuarial equivalent optional forms as may be certified by the Actuary and approved by the Teachers' Retirement Board. (All Tiers)

Annuitization Options for Beneficiaries of a Death Benefit

Upon a member's death, the beneficiary may elect to receive the actuarial equivalent of a lump-sum death benefit, otherwise payable, in one of the following forms: 1) An annual amount payable for life in monthly installments, all payments ending at death; (This is only available to the beneficiary of a member who joined under Tiers I and II.) or 2) A cash refund allowance under which reduced payments will be made during life, with a provision that, in case of death before such payments have equaled the lump-sum payable upon the member's death, the balance shall be paid to the designated beneficiary or estate. (This is only available to the beneficiary of a member joined under Tier I.)

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Financial Section

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REPORT OF INDEPENDENT CERTIFIED PUBLIC ACCOUNTANTS

To the Teachers' Retirement Board of
Teachers' Retirement System of the City of New York

We have audited the accompanying combining financial statements of Teachers' Retirement System of the City of New York Qualified Pension Plan and the Teachers' Retirement System of the City of New York Tax-Deferred Annuity Program, (collectively, the "System"), which comprise the combining statements of fiduciary net position as of June 30, 2021 and 2020 and the related combining statements of changes in fiduciary net position for the years then ended, and the related notes to combining financial statements.

Management's responsibility for the combining financial statements

Management is responsible for the preparation and fair presentation of these combining financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of combining financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these combining financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the combining financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the combining financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the combining financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System's preparation and fair presentation of the combining financial statements 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, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the combining financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the combining financial statements referred to above present fairly, in all material respects, the combining fiduciary net position of the System as of June 30, 2021 and 2020, and the changes in the combining fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

**Other matters***Required supplementary information*

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis, Schedule 1 - Schedule of Changes in the Employer's Net Pension Liability and Related Ratios, Schedule 2 - Schedules of Employer Contributions, and Schedule 3 - Schedule of Investment Returns, as listed in the table of contents, be presented to supplement the basic combining financial statements. Such information, although not a required part of the basic combining financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the financial reporting for placing the basic combining financial statements in an appropriate operational, economic, or historical context. This required supplementary information is the responsibility of management. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America. These limited procedures 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 combining financial statements, and other knowledge we obtained during our audit of the basic combining 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.

Other information

Our audit was conducted for the purpose of forming an opinion on the basic combining financial statements. The Introductory Section, Additional Supplementary Information, Investment Section, Actuarial Section, and Statistical Section, as listed in the foregoing table of contents, are presented for the purpose of additional analysis and are not a required part of the basic combining financial statements.

The Additional Supplementary Information (Schedule 4 - Schedule of Administrative Expenses and Schedule 5 - Schedule of Investment Expenses and Services (QPP and TDA)) for the year ended June 30, 2021, is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic combining financial statements. Such information has been subjected to the auditing procedures, applied in the audit of the basic combining financial statements and certain additional procedures, applied in the audit of the basic combining financial statements or to the basic combining financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the Additional Supplementary Information is fairly stated, in all material respects, in relation to the basic combining financial statements taken as a whole.

The Introductory Section, Investment Section, Actuarial Section and Statistical Section have not been subjected to the auditing procedures applied in the audit of the basic combining financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

A handwritten signature in black ink that reads "Grant Thornton LLP".

New York, New York

October 28, 2021

(except for the Additional Supplementary Information,
as to which the date is December 21, 2021)

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED)

June 30, 2021 and 2020

This narrative discussion and analysis of the Teachers' Retirement System of the City of New York's ("TRS" or the "System") financial performance provides an overview of the System's combining financial activities for the Fiscal Years ended June 30, 2021 and 2020. It is meant to assist the reader in understanding TRS' combining financial statements by providing an overall review of the combining financial activities during the years and the effects of significant changes, as well as a comparison with prior years' activity and results. This discussion and analysis is intended to be read in conjunction with the System's combining financial statements. TRS administers the TRS Qualified Pension Plan ("QPP") and the TRS Tax-Deferred Annuity ("TDA") Program. The QPP is a cost-sharing, multiple-employer, defined-benefit pension plan. The QPP provides pension benefits to New York City ("The City" or "City") public school teachers and certain other personnel, participating Charter Schools, and participating City University of New York ("CUNY") teachers and other personnel. The TDA Program is a tax-deferred annuity program described in Internal Revenue Code section 403(b) and is available as a supplemental savings option to QPP members.

OVERVIEW OF COMBINING FINANCIAL STATEMENTS

The following discussion and analysis is intended to serve as an introduction to the System's combining financial statements. The combining financial statements, which are prepared in conformity with Generally Accepted Accounting Principles ("GAAP") as prescribed by Government Accounting Standards Board ("GASB"), include the financial statements of the QPP and the TDA Programs and are as follows:

- **The Combining Statements of Fiduciary Net Position** – presents the financial position of the System at fiscal year-end. It provides information about the nature and amounts of resources with present service capacity that the System presently controls (assets), consumption of net assets by the System that is applicable to a future reporting period (deferred outflow of resources), present obligations to sacrifice resources that the System has little or no discretion to avoid (liabilities), and acquisition of net assets by the System that is applicable to a future reporting period (deferred inflow of resources) with the difference between assets/deferred outflow of resources and liabilities/deferred inflow of resources being reported as net position. Investments are shown at fair value. All other assets and liabilities are determined on an accrual basis of accounting.
- **The Combining Statements of Changes in Fiduciary Net Position** – presents the results of activities during the fiscal year. All changes affecting the assets/deferred outflow and liabilities/deferred inflow of the System are reflected on an accrual basis when the activity occurred, regardless of the timing of the related cash flows. In that regard, changes in the fair values of investments are included in the year's activity as net appreciation (depreciation) in fair value of investments.
- **The Notes to Combining Financial Statements** – provide additional information that is essential to a full understanding of the data provided in the combining financial statements. The notes present information about the System's accounting policies, significant account balances and activities, material risks, obligations, contingencies, and subsequent events, if any.
- **Required Supplementary Information ("RSI") (Unaudited)** – as required by GASB, the RSI includes the management discussion and analysis (this section) and information presented following the notes to combining financial statements.

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

HIGHLIGHTS AND RECENT DEVELOPMENTS

Employer Information

Employers that participate in TRS include the New York City Department of Education (“DOE”), CUNY both Junior and Senior Colleges, and New York City Charter Schools that elect to participate. All employers may participate in the QPP and the TDA Program.

The following schedule provides the 2021 QPP summary information of the employer groups.

Contributions Employers and Contributions Members

	<u>Members Active</u>	<u>Contribution Employer</u>	<u>Contribution Member</u>	<u>Members Retired</u>	<u>Pension Payments</u>
DOE	116,000	\$ 3.0 billion	\$ 232.5 million	89,000	\$ 4.5 billion
CUNY	8,000	\$ 133 million	\$ 13.5 million	2,700	\$ 141 million
Charter Schools	600	\$ 6.5 million	\$ 1.7 million	Less than 50	\$ 1.9 million

United Federation of Teachers (“UFT”) Contract

The current collective bargaining agreement between the DOE and the UFT, the primary union for the DOE's employees, was ratified in October 2018. The contract runs from February 14, 2019 to September 13, 2022. In addition to workplace improvements, the agreement includes wage increases and upward adjustments to starting and top salary amounts. The wage increases impact employer contributions, member contributions, and payments to retirees.

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

FINANCIAL HIGHLIGHTS

QPP Fiduciary Net Position

The QPP's net position restricted for benefits is held in trust for the payment of future benefits to members and pensioners. The QPP's net position restricted for benefits was \$78.3 billion, \$59.3 billion, and \$58.0 billion as of June 30, 2021, 2020, and 2019, respectively. The System's employer contributions amounted to \$3.2 billion, \$3.7 billion, and \$3.8 billion for Fiscal Years 2021, 2020, and 2019, respectively. The QPP's benefit payments totaled \$4.7 billion, \$4.6 billion, and \$4.5 billion for Fiscal Years 2021, 2020, and 2019, respectively. Below is a summary of the QPP's net position and changes in net position.

QPP Fiduciary Net Position

June 30, 2021, 2020, and 2019

(In thousands)

	2021	2020	2019
Cash	\$ 74,742	\$ 48,488	\$ 76,796
Receivables for investments sold	3,560,628	1,889,299	2,305,855
Receivables for accrued interest and dividends	304,145	289,845	290,228
Member loan receivables	310,380	323,805	320,976
Investments, at fair value	110,210,315	87,842,740	83,854,645
Collateral from securities lending	1,242,351	1,391,240	1,222,314
Other assets	46,194	63,899	42,615
Total assets	<u>115,748,755</u>	<u>91,849,316</u>	<u>88,113,429</u>
Accounts payable	349,820	299,648	646,918
Payable for investments purchased	5,723,528	3,096,888	2,574,584
Accrued benefits payable	49,585	88,957	77,154
Investments due to TDA Program	30,036,173	27,653,633	25,602,248
Payable for securities lending	1,242,351	1,391,240	1,222,314
Total liabilities	<u>37,401,457</u>	<u>32,530,366</u>	<u>30,123,218</u>
Net position restricted for benefits	<u>\$ 78,347,298</u>	<u>\$ 59,318,950</u>	<u>\$ 57,990,211</u>

Cash balances amounted to \$74.7 million at June 30, 2021, an increase of \$26.3 million (54.2%) from June 30, 2020. Cash balances amounted to \$48.5 million at June 30, 2020, a decrease of \$28.3 million (-36.9%) from June 30, 2019. Cash balances consist of advances to investment managers' accounts, accounts used to process reimbursement transfers between the System's investment programs, and bank accounts associated with the collections of loan insurance premiums and loan service charges. As of June 30, 2021, the largest cash balances consisted of the International and Private Equity investment manager, with \$39.3 million and \$20.2 million, respectively. Large cash balances held by an investment manager are due to a recent sale or the general investment cycle. For example, Private Equity's investment cycle generally begins with cash from assets sold during the month and ends with subsequent purchases following month-end.

Receivables for investment securities sold amounted to \$3.6 billion at June 30, 2021, an increase of \$1.7 billion (88.5%) from June 30, 2020. Receivables for investment securities sold amounted to \$1.9 billion at June 30, 2020, a decrease of \$416.6 million (-18.1%) from June 30, 2019. These balances are principally composed of receivables for securities that have been sold but have not yet settled (*i.e.*, the cash has not been collected). The changes resulted primarily from timing differences between trade and settlement dates occurring around fiscal year-end. Trades typically do not settle until a few days after the trade date.

Teachers' Retirement System of the City of New York**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED****June 30, 2021 and 2020**

Receivables for accrued interest and dividends amounted to \$304.1 million as of June 30, 2021, an increase of \$14.3 million (4.9%) from June 30, 2020. Receivables for accrued interest and dividends amounted to \$289.8 million as of June 30, 2020, a decrease of \$383.0 thousand (-0.1%) from June 30, 2019. Changes in accrued earnings are impacted primarily by the cumulative value of the interest or dividend bearing securities, as well as by changes in discount rates and interest-payable dates.

At June 30, 2021, member loan receivables amounted to \$310.4 million, a decrease of \$13.4 million (-4.2 %) from the previous year. The decrease is attributable to a decrease in new loans. New Tier III, IV, and VI loan issues totaled to 13,910 loans in Fiscal Year 2021 compared to 15,977 loan issuances in Fiscal Year 2020, a decrease of 2,067 (-12.9%) from Fiscal Year 2020. At June 30, 2020, member loan receivables amounted to \$323.8 million, an increase of \$2.8 million (0.9%) from the previous year.

Investments at June 30, 2021 were \$110.2 billion, an increase of \$22.4 billion (25.5%) from June 30, 2020. Investments at June 30, 2020 were \$87.8 billion, an increase of \$4.0 billion (4.8%) from June 30, 2019. As of June 30, 2021, the QPP's total investment portfolio, including both the TRSNYC Pension and Variable-Return Funds, consisted of 52% equity investments, 35% fixed income securities and 13% alternative investments. The alternative investments consisted of private equity (6%), private real estate investments (3%), opportunistic-fixed income (3%), and infrastructure securities (1%). The \$22.4 billion annual increase in investments is the result of \$22.4 billion in net investment income. More generally, investments as of June 30, 2021, in comparison with investment values as of June 30, 2020, reflect the equity and fixed income markets' annual returns. For the year ended June 30, 2021, the Russell 3000 Index, a broad measure of U.S. equity markets, returned 44.2%. The Morgan Stanley Capital International ("MSCI") World Index excluding the United States returned (37.2%). The NYC Core + 5, a composite index maintained by New York City's Office of the Comptroller and a broad measure of the U.S. fixed income markets, returned (-0.2%). The Dow Jones U.S. Select Real Estate Securities Index returned (40.0%). For the year ended June 30, 2020, the Russell 3000 Index, a broad measure of U.S. equity markets, returned 6.5%. The Morgan Stanley Capital International ("MSCI") World Index excluding the United States returned (-4.7%). The NYC Core + 5, a composite index maintained by New York City's Office of the Comptroller ("Comptroller") and a broad measure of the U.S. fixed income markets, returned 10.1%. The Dow Jones U.S. Select Real Estate Securities Index returned (-17.7%).

Other assets at June 30, 2021 totaled \$46.2 million, a \$17.7 million (-27.7%) decrease from June 30, 2020. The year-over-year decrease in other assets, as of June 30, 2021, was primarily due to a \$23.2 million decrease in amounts due from the TDA Program, less a \$9.1 million increase in amounts due from Corpus Expenses. Other assets at June 30, 2020 totaled \$63.9 million, a \$21.3 million (49.9%) increase from June 30, 2019. The year-over-year increase in other assets, as of June 30, 2020, was primarily due to a \$25.8 million increase in amounts due from the TDA Program, less a \$6.1 million decrease in amounts due from Corpus Expenses.

Accounts payable at June 30, 2021 amounted to \$349.8 million, a \$50.2 million (16.7%) increase from June 30, 2020. Accounts payable as of June 30, 2021 consisted of balances due to depositories (44.6%), reserve for expenses (18.4%), accrued investment expenses (16.1%), unclaimed funds (7.3%), and other payables (13.6%). Accounts payable at June 30, 2020 amounted to \$299.6 million, a \$347.3 million (-53.7%) decrease from June 30, 2019. Accounts payable as of June 30, 2020 consisted of balances due to depositories (45.2%), reserve for expenses (24.6%), accrued investment expenses (12.3%), unclaimed funds (8.6%), and other payables (9.3%).

Payables for investment securities purchased at June 30, 2021 amounted to \$5.7 billion, a \$2.6 billion (84.8%) increase from June 30, 2020. Payables for investment securities purchased at June 30, 2020 amounted to \$3.1 billion, a \$522.3 million (20.3%) increase from June 30, 2019. Investments purchased are accounted for on a trade-date basis. The increase resulted from timing differences between settlement dates and trade dates, similar to receivables for investment securities sold (discussed earlier).

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Accrued benefits payable at June 30, 2021 amounted to \$49.6 million, a \$39.4 million (-44.3%) decrease from June 30, 2020. The \$39.4 million decrease is primarily attributed to a decrease of pending death benefits due to beneficiaries at year-end. Accrued benefits payable at June 30, 2020 amounted to \$90.0 million, a \$11.8 million (15.3%) increase from June 30, 2019.

Investments due to the TDA Program reflect the TDA Program's share of assets of the TRSNYC Pension Fund/Fixed Fund investments. Assets in the TDA Program's Fixed-Return Fund are pooled with the QPP assets as System assets in the TRSNYC Pension Fund for investment purposes only. The amounts owned by the TDA Program are equal to member contributions, inter-fund transfers from other TDA program's passport funds, and earnings applied in accordance with statutory-interest rates (7% for members of the UFT and 8.25% for certain other members). See Note 2 for a full description of the TDA Fixed-Return Fund investment program.

QPP Changes in Fiduciary Net Position

Years ended June 30, 2021, 2020, and 2019

(In thousands)

	2021	2020	2019
Additions:			
Member contributions	\$ 247,751	\$ 226,920	\$ 217,205
Employer contributions	3,193,270	3,652,570	3,759,199
Net receipts from other retirement systems	(5,550)	(2,798)	1,222
Net securities lending income	6,396	10,510	12,132
Net investment income	22,356,592	3,900,677	5,709,178
Total additions	<u>25,798,459</u>	<u>7,787,879</u>	<u>9,698,936</u>
Deductions:			
Administrative expenses	68,100	64,532	64,291
TDA Rebalance	4,175	(42,651)	(27,449)
Benefits payments and withdrawals	4,699,448	4,591,086	4,487,680
Payment of statutory interest to TDA Program	1,998,388	1,846,173	1,716,679
Total deductions	<u>6,770,111</u>	<u>6,459,140</u>	<u>6,241,201</u>
Net (decrease) increase in net position	19,028,348	1,328,739	3,457,735
Net position restricted for benefits			
Beginning of year	<u>59,318,950</u>	<u>57,990,211</u>	<u>54,532,476</u>
End of year	<u>\$ 78,347,298</u>	<u>\$ 59,318,950</u>	<u>\$ 57,990,211</u>

TRS received \$247.8 million in member contributions in Fiscal Year 2021, a \$20.8 million (9.2%) increase from Fiscal Year 2020. TRS received \$226.9 million in member contributions in Fiscal Year 2020, a \$9.7 million (4.5%) increase from Fiscal Year 2019. The \$20.8 million increase in Fiscal Year 2021 and the \$9.7 million increase in Fiscal Year 2020 were both primarily due to UFT salary increases and a larger active Tier VI membership.

Teachers' Retirement System of the City of New York**MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED****June 30, 2021 and 2020**

Employer contributions during Fiscal Year 2021 were \$3.1 billion, a \$459.2 million (-12.6%) decrease from Fiscal Year 2020. Employer contributions during Fiscal Year 2020 were \$3.7 billion, a \$106.6 million (-2.8%) decrease from Fiscal Year 2019. The Fiscal Year 2021 decrease was primarily due to changes in actuarial assumptions and methods. (See Note 5.) The June 30, 2019 (Lag) actuarial valuation and June 30, 2018 (Lag) actuarial valuation were used to determine Fiscal Year 2021 and 2020 employer contributions, respectively.

The QPP's net investment income for Fiscal Year 2021 was \$22.4 billion, a \$18.5 billion (473.1%) increase from Fiscal Year 2020. The QPP's net investment income of \$22.4 billion consisted of \$2.3 billion in dividend and interest income plus a net gain of \$20.5 billion on the appreciation in fair value of the QPP's investments less \$405.7 million in investment expenses. Net investment income for the QPP portion of the TRSNYC Pension Fund, QPP portion of the Diversified Equity Fund, QPP portion of the Balanced Fund, QPP portion of the International Equity Fund, QPP portion of the Sustainable Equity Fund, QPP portion of the U.S. Equity Index Fund, and QPP portion of the International Equity Index Fund totaled \$20.1 billion, \$2.3 billion, \$7.7 million, \$3.6 million, \$5.0 million, \$1.5 million, and \$79.2 thousand, respectively. The QPP's net investment income for Fiscal Year 2020 was \$3.9 billion, a \$1.8 billion (-31.7%) decrease from Fiscal Year 2019. The QPP's net investment income of \$3.9 billion consisted of \$2.2 billion in dividend and interest income plus a net gain of \$2.0 billion on the appreciation in fair value of the QPP's investments less \$290.9 million in investment expenses. Net investment income for the QPP portion of the TRSNYC Pension Fund, QPP portion of the Diversified Equity Fund, QPP portion of the Balanced Fund, QPP portion of the International Equity Fund, QPP portion of the Inflation Protection Fund, QPP portion of the Sustainable Equity Fund, QPP portion of the U.S. Equity Index Fund, and QPP portion of the International Equity Index Fund totaled \$3.7 billion, \$144.8 million, \$3.5 million, -\$151.0 thousand, -\$297.0 thousand, \$2.7 million, \$323.0 thousand, and \$16.0 thousand, respectively.

For Fiscal Year 2021, the QPP's effective net investment income for the QPP portion of the TRSNYC Pension Fund increased due to investment returns attributable to the TDA Program's TRSNYC Pension Fund assets. The TDA Fixed-Return Fund program resulted in approximately \$4.3 billion more assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns being above the statutory rates. For Fiscal Year 2020, the QPP's effective net investment income for the QPP portion of the TRSNYC Pension Fund decreased due to investment returns attributable to the TDA Program's TRSNYC Pension Fund assets. The TDA Fixed-Return Fund program resulted in approximately \$593.9 million fewer assets accruing to the QPP's Contingent Reserve Fund of Employer's Contributions, as a result of the TDA Program's investment returns being below the statutory rates. The table below displays the TDA Program's impact on the QPP's Contingent Reserve Fund of Employer's Contributions for Fiscal Years 2021, 2020, and 2019.

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Revenue (Expense) to Contingent Reserve Fund

TRSNYC Pension Fund Assets (QPP)*

Years ended June 30, 2021, 2020, and 2019

(In thousands)

	2021	2020	2019
Net investment income	\$ 20,059,992	\$ 3,759,578	\$ 5,299,563
TDA percent of fixed assets as of June 30	29.18%	33.67%	32.95%
TDA percent of fixed assets as of 6/30/18:			32.74%
TDA percent of fixed assets (average)	31.42%	33.31%	32.85%
Investment income on account of TDA investment	\$ 6,303,326	\$ 1,252,282	\$ 1,740,705
Less statutory interest to TDA	(1,998,388)	(1,846,173)	(1,716,679)
Revenue (expense) to QPP contingent reserve	<u>\$ 4,304,938</u>	<u>\$ (593,891)</u>	<u>\$ 24,026</u>

*Includes security-lending income

Administrative expenses during Fiscal Year 2021 were \$68.1 million, an increase of \$3.6 million (5.5%) from Fiscal Year 2020. The System continues its phased implementation to replace its legacy IBM A/S 400 computer system with a system based on Microsoft's .NET programming framework. Sagitec, an outside vendor and a provider of Pension Database Systems, and Cognizant, a software testing company, have been assisting with this multi-year project. In Fiscal Year 2021, the System began the implementation of certain new pension payroll modules and continued development of active account modules. The change in administrative expenses also reflects the annual update in the System's administrative expenses attributed to the QPP. (See Note 8.) The QPP's total administrative expenses for Fiscal Year 2021 accounted for 78.8% of the System's administrative expenditures. The balance of \$18.3 million (21.2%) was expensed to the TDA Program. Administrative expenses during Fiscal Year 2020 were \$64.5 million, an increase of \$241.0 thousand (0.4%) from Fiscal Year 2019. The QPP's total administrative expenses for Fiscal Year 2020 accounted for 72.9% of the System's administrative expenditures. The balance of \$24.0 million (27.1%) was expensed to the TDA Program. The System's administrative expenditures have been \$86.4 million, \$88.5 million, and \$88.3 million for Fiscal Years 2021, 2020, and 2019, respectively.

The TDA rebalance during Fiscal Year 2021 resulted in \$4.2 million in transfers from the QPP TRSNYC Pension Fund to the TDA Program. The Administrative Code of The City of New York under sections 13-582 and 13-577 provides for certain internal transfer of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets and follow liability reviews conducted by the Actuary of The City of New York. Also, \$38.7 million was transferred from the QPP Program's Variable-Return Funds to the QPP TRSNYC Pension Fund. The \$38.7 million transfer increased the investments held by QPP's TRSNYC Pension Fund and decreased the investments held by the QPP Program's Variable-Return Funds but did not impact net investments held by the QPP (see Note 2, Intra-Fund Payable/Receivable). The TDA rebalance during Fiscal Year 2020 resulted in \$42.7 million in transfers to the TRSNYC Pension Fund from the TDA Program due to a surplus in the TDA Program's Variable Annuity and Pension Reserve Funds.

Benefit payments and withdrawals during Fiscal Year 2021 were \$4.7 billion, a \$108.4 million (2.4%) increase from Fiscal Year 2020. The \$108.4 million increase in benefit payments and withdrawals was primarily due to a \$140.0 million (3.1%) increase in payments to retirees, and a \$30.0 million (-28.5%) decrease in death benefit payments. In total, benefit payments and withdrawals distributed during Fiscal Year 2021 were composed of 97.8% in retirement benefits and 2.2% in refund/withdrawals and survivor benefits. Benefit payments and withdrawals during Fiscal Year 2020 were \$4.6 billion, a \$103.4 million (2.3%) increase from Fiscal Year 2019. The \$103.4 million increase in benefit payments and withdrawals

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

was primarily due to a \$81.9 million (1.9%) increase in payments to retirees, and a \$21.4 million (25.4%) increase in death benefit payments. In total, benefit payments and withdrawals distributed during Fiscal Year 2020 were composed of 97.0% in retirement benefits and 3.0% in refund/withdrawals and survivor benefits.

Payments of statutory interest due to the TDA from its investment in the TRSNYC Pension Fund Assets (Fixed-Return Fund) during Fiscal Year 2021 were \$2.0 billion, an increase of \$152.2 million (8.2%) from Fiscal Year 2020. Payments of statutory interest due to the TDA from its investment in the TRSNYC Pension Fund Assets (Fixed-Return Fund) during Fiscal Year 2020 were \$1.8 billion, an increase of \$129.5 million (7.5%) from Fiscal Year 2019.

TDA Program Financial Highlights – The TDA Program's net position restricted for benefits was \$43.0 billion, \$37.0 billion, and \$35.3 billion as of June 30, 2021, 2020, and 2019, respectively. Member contributions amounted to \$1.1 billion, \$1.0 billion, and \$995.0 million for Fiscal Years 2021, 2020, and 2019, respectively. Benefit payments and withdrawals totaled \$1.0 billion, \$1.4 billion, and \$1.4 billion for Fiscal Years 2021, 2020, and 2019, respectively. Below is a summary of the TDA program's net position and changes in net position.

TDA Program's Fiduciary Net Position

June 30, 2021, 2020, and 2019

(In thousands)

	2021	2020	2019
Cash	\$ 7,222	\$ 7,477	\$ 9,533
Receivables for investments sold	5,275	8,378	55,994
Receivables for accrued interest and dividends	21,013	18,164	16,531
Member loan receivables	410,153	401,243	403,787
Investments, at fair value	13,014,474	9,427,396	9,591,018
Investment in TRSNYC Pension Fund	30,036,173	27,653,633	25,602,248
Collateral from securities lending	542,063	54,770	57,798
Other assets	8,781	18,454	20,813
Total assets	<u>44,045,154</u>	<u>37,589,515</u>	<u>35,757,722</u>
Accounts payable	52,205	83,749	68,740
Payable for investment securities purchased	2,605	15,402	59,678
Accrued benefits payable	488,806	412,069	238,111
Payable for securities lending transactions	542,063	54,770	57,798
Total liabilities	<u>1,085,679</u>	<u>565,990</u>	<u>424,327</u>
Net position held in trust for benefits	<u>\$ 42,959,475</u>	<u>\$ 37,023,525</u>	<u>\$ 35,333,395</u>

Cash balances amounted to \$7.2 million at June 30, 2021, a decrease of \$255.0 thousand (-3.4%) from June 30, 2020. Cash balances amounted to \$7.5 million at June 30, 2020, a decrease of \$2.1 million (-21.6%) from June 30, 2019. Cash balances consist of accounts used to reimburse the funds of the Variable-Annuity Program and accounts used for advance funding of the Variable-Return Funds' investment managers.

Receivables for investment securities sold at June 30, 2021 amounted to \$5.3 million, a decrease of \$3.1 million (-37.0%) from June 30, 2020. Receivables for investment securities sold at June 30, 2020 amounted to \$8.4 million, a decrease of \$47.6 million (-85.0%) from June 30, 2019. These balances are principally composed of receivables for securities that have been sold but have not yet settled (*i.e.*, the cash has not

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

been collected). The year-over-year changes resulted from timing differences in trading and settlement dates. Trades typically do not settle until a few days after the trade date.

Receivables for accrued earnings at June 30, 2021 were \$21.0 million, an increase of \$2.8 million (15.7%) from June 30, 2020. Receivables for accrued earnings at June 30, 2020 were \$18.2 million, an increase of \$1.6 million (9.9%) from June 30, 2019. Changes in accrued earnings are impacted by the cumulative value of the interest or dividend-bearing securities, discount rates, and interest payable dates at fiscal year-end.

Member loan receivables at June 30, 2021 amounted to \$410.2 million, an increase of \$8.9 million (2.2%) from June 30, 2020. There were 22,376 new TDA loan issues in Fiscal Year 2021 compared to 17,286 in Fiscal Year 2020, an increase of 5,090 (29.5%) from Fiscal Year 2020. For Fiscal Year 2021, loan disbursements amounted to \$212.1 million, and principal and interest payments amounted to \$224.3 million. Member loan receivables at June 30, 2020 amounted to \$401.2 million, a decrease of \$2.5 million (-0.6%) from June 30, 2019. For Fiscal Year 2020, loan disbursements amounted to \$192.4 million, and principal and interest payments amounted to \$216.3 million.

The Variable-Return Funds' investments at June 30, 2021, including collateral received for securities lending, were \$13.6 billion, an increase of \$4.1 billion (43.0%) from June 30, 2020. The Variable-Return Funds' investments at June 30, 2020, including collateral received for securities lending, were \$9.5 billion, a decrease of \$166.7 million (-1.7%) from June 30, 2019.

Assets of the TDA Program's Fixed-Return Fund invested in the TRSNYC Pension Fund at June 30, 2021 were \$30.0 billion, an increase of \$2.4 billion (8.6%) from June 30, 2020. In addition to the 7% statutory return for UFT members [and 8.25% for non-UFT members] for Fiscal Year 2021, contributions, withdrawals and investment transfers to (from) the Fixed-Return Fund totaled \$742.0 million, \$-828.7 million, and \$437.1 million, respectively. Assets of the TDA Program's Fixed-Return Fund invested in the TRSNYC Pension Fund at June 30, 2020 were \$27.7 billion, an increase of \$2.1 billion (8.0%) from June 30, 2019. In addition to the 7% statutory return for UFT members [and 8.25% for non-UFT members] for Fiscal Year 2020, contributions, withdrawals and investment transfers to (from) the Fixed-Return Fund totaled \$718.2 million, -\$1.2 billion, and \$510.9 million, respectively.

Other assets at June 30, 2021 were \$8.8 million, a decrease of \$9.7 million (-52.4%) over June 30, 2020. Other assets at June 30, 2020 were \$18.5 million, a decrease of \$2.4 million (-11.3%) over June 30, 2019. Other assets primarily represent assets already allocated for future administrative expenses.

Accounts payable at June 30, 2021 amounted to \$52.2 million, a decrease of \$31.5 million (-37.7%) from June 30, 2020. Accounts payable at June 30, 2020 amounted to \$83.7 million, an increase of \$15.0 million (21.8%) from June 30, 2019. The TDA Program's accounts payable balance primarily represents a reserve fund to pay the TDA Program's investment and administrative expenses.

Payables for investment securities purchased at June 30, 2021 amounted to \$2.6 million, a decrease of \$12.8 million (-83.1%) from June 30, 2020. Payables for investment securities purchased at June 30, 2020 amounted to \$15.4 million, a decrease of \$44.3 million (-74.2%) from June 30, 2019. Investments purchased are accounted for on a trade-date basis. The changes resulted from timing differences in settlement and trade dates, similar to receivables for investments sold (discussed earlier).

Accrued benefits payable at June 30, 2021 amounted to \$488.8 million, an increase of \$76.7 million (18.6%) from June 30, 2020. The \$76.7 million increase is primarily attributed to an increase of pending death benefits due to beneficiaries at year-end. Accrued benefits payable at June 30, 2020 amounted to \$412.1 million, an increase of \$174.0 million (73.1%) from June 30, 2019. The \$174.0 million increase is primarily attributed to an increase of pending death benefits due to beneficiaries at year-end.

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Changes in TDA Program's Fiduciary Net Position

Years ended June 30, 2021, 2020, and 2019

(In Thousands)

	2021	2020	2019
Additions:			
Member contributions	\$ 1,060,833	\$ 1,029,758	\$ 995,035
Net investment income	3,909,235	326,442	668,269
Net securities lending income	1,699	1,171	1,271
Total additions	<u>4,971,767</u>	<u>1,357,371</u>	<u>1,664,575</u>
Deductions:			
Administrative expenses	18,290	23,957	23,964
TDA rebalance	(4,175)	42,651	27,449
Benefits payments	1,020,090	1,446,806	1,377,428
Receipt of statutory interest for portion of investment in TRSNYC Pension Fund	(1,998,388)	(1,846,173)	(1,716,679)
Total deductions	<u>(964,183)</u>	<u>(332,759)</u>	<u>(287,838)</u>
Net increase in net position	5,935,950	1,690,130	1,952,413
Net position restricted for benefits			
Beginning of year	<u>37,023,525</u>	<u>35,333,395</u>	<u>33,380,982</u>
End of year	<u>\$ 42,959,475</u>	<u>\$ 37,023,525</u>	<u>\$ 35,333,395</u>

TRS's TDA Program received \$1.1 billion in member contributions during Fiscal Year 2021, an increase of \$31.1 million (3.0%) from Fiscal Year 2020. There were 93,295 members contributing in Fiscal Year 2021 compared to 91,077 members contributing in Fiscal Year 2020. TRS's TDA Program received \$1.0 billion in member contributions during Fiscal Year 2020, an increase of \$34.7 million (3.5%) from Fiscal Year 2019. There were 91,077 members contributing in Fiscal Year 2020 compared to 89,708 members contributing in Fiscal Year 2019.

Net investment income for the TDA Program's Variable-Return Funds for Fiscal Year 2021 increased by \$3.6 billion (1,097.5%) from Fiscal Year 2020. Net investment income for the TDA Program's Variable-Return Funds for Fiscal Year 2020 decreased by \$341.8 million (-51.2%) from Fiscal Year 2019. Net investment gains/losses primarily reflect the appreciation/depreciation in fair value of the TDA Program's Variable-Return Fund investments, including both realized and unrealized gains and losses.

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Administrative expenses for the Fiscal Year ended June 30, 2021 totaled \$18.3 million, a decrease of \$5.7 million (-23.7%) from Fiscal Year 2020. Administrative expenses for the Fiscal Year ended June 30, 2020 totaled \$24.0 million, a decrease of \$7 thousand (-0.03%) from Fiscal Year 2019. The TDA Program accounted for a portion of the System's total administrative expenses; see QPP administrative expenses above and Note 8.

The TDA rebalance during Fiscal Year 2021 resulted in a \$4.2 million transfer to the TDA Program from the TRSNYC Pension Fund. The TDA rebalance during Fiscal Year 2020 resulted in a \$42.7 million transfer to the TRSNYC Pension Fund from the TDA Program. The Administrative Code of the City of New York under sections 13-582 and 13-577 provide for certain internal transfer of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets; see Note 2, Intra-Fund Payable/Receivable.

Benefit payments and withdrawals for the Fiscal Year ended June 30, 2021 totaled \$1.0 billion, a decrease of \$426.7 million (-29.5%) from Fiscal Year 2020. The decrease was due to the CARES Act provision that suspended required minimum withdrawals in 2020. Benefit payments and withdrawals for the Fiscal Year ended June 30, 2020 totaled \$1.4 billion, an increase of \$69.4 million (5.0%) from Fiscal Year 2019. Benefit payments and withdrawals consist primarily of total and partial withdrawals and lump-sum payments to beneficiaries.

Receipts of statutory interest for the TDA Program's Fixed-Return Fund portion in investments in the TRSNYC Pension Fund assets for Fiscal Year 2021 were \$2.0 billion, an increase of \$152.2 million (8.2%) from Fiscal Year 2020. Receipts of statutory interest for the TDA Program's Fixed-Return Fund portion in investments in the TRSNYC Pension Fund assets for Fiscal Year 2020 were \$1.8 billion, an increase of \$129.5 million (7.5%) from Fiscal Year 2019.

Cash Flow

Monthly contributions, loan repayments, and interest and dividends earned on investments less benefit payments, new loans, and investment and administrative expenses account for the System's non-investment cash flow. The table below provides a three-year summary.

Cash Flow Review (In thousands)	June 30, 2021 QPP	June 30, 2021 TDA	June 30, 2020 QPP	June 30, 2020 TDA	June 30, 2019 QPP	June 30, 2019 TDA
Contributions	\$ 3,441,021	\$ 1,060,833	\$ 3,879,490	\$ 1,029,758	\$ 3,976,403	\$ 995,035
Contributions - Loan adj.	-	(87)	-	(207)	-	(393)
Loan repayments (cash)	148,284	224,288	146,168	216,254	147,934	205,573
401(a) receipts (payments)	(5,550)	-	(2,798)	-	1,222	-
Interest income	1,197,604	30,357	1,094,140	32,127	1,148,789	33,155
Interest income - Loan adj.	(14,341)	(28,119)	(14,901)	(28,573)	(13,738)	(27,699)
Dividend income	1,075,166	159,751	1,125,180	166,496	1,112,731	176,359
Investment expenses (net)	(405,713)	(13,732)	(290,871)	(563)	(301,437)	1,824
Benefits/withdrawals	(4,699,448)	(1,020,090)	(4,591,086)	(1,446,806)	(4,487,680)	(1,377,428)
Withdrawals - Loan adj.	10,208	7,828	14,239	7,946	11,787	10,889
New loans	(130,464)	(212,148)	(147,950)	(192,358)	(154,367)	(204,811)
Administrative expenses	(68,100)	(18,290)	(64,532)	(23,957)	(64,291)	(23,964)
	<u>\$ 548,667</u>	<u>\$ 190,591</u>	<u>\$ 1,147,079</u>	<u>\$ (239,883)</u>	<u>\$ 1,377,353</u>	<u>\$ (211,460)</u>

Teachers' Retirement System of the City of New York

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Investments

TRS investment funds include both QPP and TDA Program assets. The table below details the QPP and TDA Program's portions of the funds.

TRS Investment Funds by Plan Percentage	June 30, 2021 QPP	June 30, 2021 TDA	June 30, 2020 QPP	June 30, 2020 TDA	June 30, 2019 QPP	June 30, 2019 TDA
TRSNYC Pension Fund	70.8%	29.2%	66.3%	33.7%	67.0%	33.0%
Variable-Return Funds:						
Diversified Equity Fund*	36.3%	59.5%	37.9%	58.1%	39.0%	57.1%
Balance Fund**	9.6%	90.4%	12.1%	87.9%	15.9%	84.1%
International Equity Fund	4.5%	95.5%	5.7%	94.3%	6.9%	93.1%
Inflation Protection Fund***	-%	-%	-%	-%	5.6%	94.4%
Sustainable Equity Fund****	3.3%	96.7%	4.3%	95.7%	5.4%	94.6%
U.S. Equity Index Fund*****	6.9%	93.1%	12.8%	87.2%	-%	-%
International Equity Index Fund*****	1.0%	99.0%	1.9%	98.1%	-%	-%

* Remaining portion is held by Board of Education Retirement System.

** Bond Fund prior to January 1, 2018.

*** Fund discontinued as of April 1, 2020.

**** Socially Responsive Equity Fund prior to October 1, 2019.

***** New funds established as of January 1, 2020.

To rate investment performance, both the TRSNYC Pension Fund assets and Variable-Return Funds' investments are monitored with various benchmarks.

In addition to other indices, the "policy index" is a custom benchmark for the complete TRS NYC Pension Fund. As of June 30, 2021, the policy index includes the following percentage weights:

TRSNYC Pension Fund Policy Index as of June 30, 2021*

Investment Type	Benchmark	Percent
U.S. Equity	Russell 3000	28.3%
International Developed EAFE Markets	MSCI World ex USA IMI Net	9.8
Int'l Active - Global	MSCI World Net Dividends Index	0.3
Emerging Markets	MSCI Custom TRS Emerging Markets (Net)	9.4
International Emerging Managers FoF	NYC Blended Custom Benchmark for FoF	0.8
Private Equity	Russell 3000 + 300 b.p. per annum	6.1
Private Real Estate - Core	NFI - ODCE Net	2.2
Private Real Estate - Non Core	NFI - ODCE Net + 200 bps	1.5
Infrastructure	CPI + 4%	1.2
U.S. Treasury Short Term	FTSE USBIG Treasury 1-3Y	7.4
U.S. Treasury Intermediate	FTSE Treasury/Agency 1-10Y	1.2
U.S. Treasury Long Duration	FTSE Treasury 10+	7.4
Mortgage	Bloomberg U.S. Mortgage Backed Securities	5.4
ETI	ETI Custom Benchmark	0.7
Investment Grade Corporate	NYC – Custom IGC Benchmark	6.1
High Yield	Bloomberg Barclays U.S. High Yield 2% Issuer Capped	5.6
TIPS	Bloomberg Global Inf-Linked	3.7
Opportunistic Fixed	OFI - JPMGHY/CSFB 50/50 Blend Plus 300 b.p. per annum	2.9
		<u>100.0%</u>

* Source: Teachers' Retirement System of New York City Performance Overview as of June 30, 2021, prepared by State Street Bank and Trust Company ("State Street").

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MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

Variable-Return Funds are benchmarked using the Russell 3000, Dow Jones U.S. Total Stock Market Index, MSCI ACWI ex USA IMI Net Index, FTSE Global All Cap, Bloomberg Barclays 1-5 Year Government/Credit indices, as well as numerous other indices.

TRS earns additional investment income by lending its investment securities. The borrowers provide collateral to TRS that is valued in excess of the securities loaned, and the collateral is invested in short-term interest-bearing funds. For the Fiscal Year ended June 30, 2021, net securities lending income amounted to \$8.1 million, a decrease of \$3.6 million from Fiscal Year 2020. For the Fiscal Year ended June 30, 2020, net securities lending income amounted to \$11.7 million, a decrease of \$1.7 million from Fiscal Year 2019. (See Note 2.)

Investments held by TRS, including collateral from securities-lending transactions, are listed according to their investment classification in the following table:

Investment Summary (by Asset Class) (In thousands)	2021	2020	2019
Short-term investments	\$ 3,219,653	\$ 3,519,502	\$ 1,897,730
Debt securities	35,378,973	28,073,127	26,671,698
Equity securities	70,549,286	54,912,360	54,807,149
Alternative investments	14,076,877	10,765,147	10,069,086
Collateral from securities lending	1,784,414	1,446,010	1,280,112
Total	<u>\$ 125,009,203</u>	<u>\$ 98,716,146</u>	<u>\$ 94,725,775</u>
Investment Summary (by Plan) (In thousands)	2021	2020	2019
TRSNYC Pension Fund:			
QPP	\$ 72,900,195	\$ 54,488,989	\$ 52,091,309
TDA	30,036,173	27,653,633	25,602,248
Total	<u>102,936,368</u>	<u>82,142,622</u>	<u>77,693,557</u>
Variable-Return Funds:			
QPP	7,273,947	5,700,118	6,161,088
TDA	13,014,474	9,427,396	9,591,018
Total	<u>20,288,421</u>	<u>15,127,514</u>	<u>15,752,106</u>
Collateral for Security Lending			
QPP Pension Fund	911,346	1,355,516	1,182,863
QPP Variable-Return Funds	331,005	35,724	39,451
TDA Variable-Return Funds	542,063	54,770	57,798
Total	<u>1,784,414</u>	<u>1,446,010</u>	<u>1,280,112</u>
Total investments	<u>\$ 125,009,203</u>	<u>\$ 98,716,146</u>	<u>\$ 94,725,775</u>

MANAGEMENT'S DISCUSSION AND ANALYSIS (UNAUDITED) – CONTINUED

June 30, 2021 and 2020

CONTACT INFORMATION

This financial report is designed to provide a general overview of the Teachers' Retirement System's finances. Questions concerning any data provided in this report or requests for additional information should be directed to Mr. Paul J. Raucci, Chief Accountant, Teachers' Retirement System of the City of New York, 55 Water Street, New York, New York 10041.

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Teachers' Retirement System of the City of New York
COMBINING STATEMENT OF FIDUCIARY NET POSITION

June 30, 2021
(In thousands)

ASSETS	QPP	TDA	Eliminations	Total
Cash	\$ 74,742	\$ 7,222	\$ -	\$ 81,964
Receivables:				
Investments securities sold	3,560,628	5,275	-	3,565,903
Accrued interest and dividends	304,145	21,013	-	325,158
Member loans (Note 6)	310,380	410,153	-	720,533
Total receivables	<u>4,175,153</u>	<u>436,441</u>	<u>-</u>	<u>4,611,594</u>
Investments - at fair value (Notes 2 and 3):				
TRSNYC Pension Fund Assets (Fixed-Return Fund):				
Short-term investment:				
Commercial paper	867,918	-	-	867,918
Short-term investment fund	1,028,743	-	-	1,028,743
U.S. treasury bills and agencies	1,090,552	-	-	1,090,552
Debt securities:				
U.S. government	14,889,426	-	-	14,889,426
Corporate and other	16,435,107	-	-	16,435,107
Treasury inflation-protected securities	3,594,216	-	-	3,594,216
Equity securities:				
Domestic equity	30,992,669	-	-	30,992,669
International equity	19,960,860	-	-	19,960,860
Alternative investments	14,076,877	-	-	14,076,877
Collateral from securities lending (Fixed-Return Fund)	911,346	-	-	911,346
Variable-Return Funds:				
Diversified Equity Fund:				
Short-term investments	110,049	112,971	-	223,020
Equity securities	6,901,203	11,301,600	-	18,202,803
Debt securities	174,484	285,740	-	460,224
Balanced Fund:				
Short-term investments	231	2,177	-	2,408
Equity securities	55,650	523,351	-	579,001
International Equity Fund:				
Short-term investments	114	2,396	-	2,510
International equity	10,881	229,166	-	240,047
Sustainable Equity Fund:				
Short-term investments	149	4,353	-	4,502
Equity securities	16,272	476,586	-	492,858
U.S. Equity Index Fund:				
Equity securities	4,797	64,485	-	69,282
International Equity Index Fund:				
Equity securities	117	11,649	-	11,766
Collateral from securities lending (Variable-Return Funds)	331,005	542,063	-	873,068
Total investments	<u>111,452,666</u>	<u>13,556,537</u>	<u>-</u>	<u>125,009,203</u>
TDA investment in TRSNYC Pension Fund	-	30,036,173	(30,036,173)	-
Other assets	46,194	8,781	(26,300)	28,675
Total assets	<u>115,748,755</u>	<u>44,045,154</u>	<u>(30,062,473)</u>	<u>129,731,436</u>
LIABILITIES				
Accounts payable	349,820	52,205	(26,300)	375,725
Payable for investment securities purchased	5,723,528	2,605	-	5,726,133
Accrued benefits payable	49,585	488,806	-	538,391
Due to TDA program's Fixed-Return Fund	30,036,173	-	(30,036,173)	-
Securities lending (Note 2)	1,242,351	542,063	-	1,784,414
Total liabilities	<u>37,401,457</u>	<u>1,085,679</u>	<u>(30,062,473)</u>	<u>8,424,663</u>
Net position restricted for benefits:				
Benefits to be provided by QPP	78,347,298	-	-	78,347,298
Benefits to be provided by TDA Program	-	42,959,475	-	42,959,475
Total net position restricted for benefits	<u>\$ 78,347,298</u>	<u>\$ 42,959,475</u>	<u>\$ -</u>	<u>\$ 121,306,773</u>

The accompanying notes are an integral part of this combining financial statement.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
Teachers' Retirement System of the City of New York
COMBINING STATEMENT OF FIDUCIARY NET POSITION
June 30, 2020
(In thousands)

	<u>QPP</u>	<u>TDA</u>	<u>Eliminations</u>	<u>Total</u>
ASSETS				
Cash	\$ 48,488	\$ 7,477	\$ -	\$ 55,965
Receivables:				
Investments securities sold	1,889,299	8,378	-	1,897,677
Accrued interest and dividends	289,845	18,164	-	308,009
Member loans (Note 6)	323,805	401,243	-	725,048
Total receivables	<u>2,502,949</u>	<u>427,785</u>	<u>-</u>	<u>2,930,734</u>
Investments - at fair value (Notes 2 and 3):				
TRSNYC Pension Fund Assets (Fixed-Return Fund):				
Short-term investment:				
Commercial paper	381,195	-	-	381,195
Short-term investment fund	747,639	-	-	747,639
U.S. treasury bills and agencies	2,149,709	-	-	2,149,709
Debt securities:				
U.S. government	9,911,190	-	-	9,911,190
Corporate and other	14,707,801	-	-	14,707,801
Treasury inflation-protected securities	3,126,355	-	-	3,126,355
Equity securities:				
Domestic equity	25,363,162	-	-	25,363,162
International equity	14,990,424	-	-	14,990,424
Alternative investments	10,765,147	-	-	10,765,147
Collateral from securities lending (Fixed-Return Fund)	1,355,516	-	-	1,355,516
Variable-Return Funds:				
Diversified Equity Fund:				
Short-term investments	119,761	103,026	-	222,787
Equity securities	5,366,777	8,227,884	-	13,594,661
Debt securities	129,398	198,383	-	327,781
Balanced Fund:				
Short-term investments	1,086	7,865	-	8,951
Equity securities	57,937	419,544	-	477,481
International Equity Fund:				
Short-term investments	104	1,720	-	1,824
International equity	9,422	155,585	-	165,007
Sustainable Equity Fund:				
Short-term investments	315	7,082	-	7,397
Equity securities	12,691	285,775	-	298,466
U.S. Equity Index Fund:				
Equity securities	2,568	17,470	-	20,038
International Equity Index Fund:				
Equity securities	59	3,062	-	3,121
Collateral from securities lending (Variable-Return Funds)	35,724	54,770	-	90,494
Total investments	<u>89,233,980</u>	<u>9,482,166</u>	<u>-</u>	<u>98,716,146</u>
TDA investment in TRSNYC Pension Fund	-	27,653,633	(27,653,633)	-
Other assets	63,899	18,454	(48,034)	34,319
Total assets	<u>91,849,316</u>	<u>37,589,515</u>	<u>(27,701,667)</u>	<u>101,737,164</u>
LIABILITIES				
Accounts payable	299,648	83,749	(48,034)	335,363
Payable for investment securities purchased	3,096,888	15,402	-	3,112,290
Accrued benefits payable	88,957	412,069	-	501,026
Due to TDA program's Fixed-Return Fund	27,653,633	-	(27,653,633)	-
Securities lending (Note 2)	1,391,240	54,770	-	1,446,010
Total liabilities	<u>32,530,366</u>	<u>565,990</u>	<u>(27,701,667)</u>	<u>5,394,689</u>
Net position restricted for benefits:				
Benefits to be provided by QPP	59,318,950	-	-	59,318,950
Benefits to be provided by TDA Program	-	37,023,525	-	37,023,525
Total net position restricted for benefits	<u>\$ 59,318,950</u>	<u>\$ 37,023,525</u>	<u>\$ -</u>	<u>\$ 96,342,475</u>

The accompanying notes are an integral part of this combining financial statement.

Teachers' Retirement System of the City of New York

COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2021

(In thousands)

	<u>QPP</u>	<u>TDA</u>	<u>Total</u>
Additions			
Contributions:			
Member contributions (Note 4)	\$ 247,751	\$ 1,060,833	\$ 1,308,584
Employer contributions	3,131,607	-	3,131,607
Other employer contributions	61,663	-	61,663
Total contributions	<u>3,441,021</u>	<u>1,060,833</u>	<u>4,501,854</u>
Investment income (Note 2):			
Interest income	1,197,604	30,357	1,227,961
Dividend income	1,075,166	159,751	1,234,917
Net appreciation in fair value of investments	20,489,535	3,732,859	24,222,394
Total investment income	<u>22,762,305</u>	<u>3,922,967</u>	<u>26,685,272</u>
Less:			
Investment expenses	415,229	15,912	431,141
Net decrease in variable expense provision	(9,516)	(2,180)	(11,696)
Net investment income	<u>22,356,592</u>	<u>3,909,235</u>	<u>26,265,827</u>
Securities lending transactions:			
Securities lending income	7,252	1,891	9,143
Less - securities lending fees	(856)	(192)	(1,048)
Net securities lending income	<u>6,396</u>	<u>1,699</u>	<u>8,095</u>
Other:			
Net receipts from other retirement systems	(5,550)	-	(5,550)
Total additions	<u>25,798,459</u>	<u>4,971,767</u>	<u>30,770,226</u>
Deductions			
Benefit payments and withdrawals	4,699,448	1,020,090	5,719,538
Administrative expenses (Note 8)	68,100	18,290	86,390
Other:			
Statutory interest for TDA Program's Fixed-Return Fund	1,998,388	(1,998,388)	-
TDA rebalance	4,175	(4,175)	-
Total deductions	<u>6,770,111</u>	<u>(964,183)</u>	<u>5,805,928</u>
Net increase in net position	19,028,348	5,935,950	24,964,298
Net position restricted for benefits			
Beginning of year	<u>59,318,950</u>	<u>37,023,525</u>	<u>96,342,475</u>
End of year	<u>\$ 78,347,298</u>	<u>\$ 42,959,475</u>	<u>\$ 121,306,773</u>

The accompanying notes are an integral part of this combining financial statement.

Teachers' Retirement System of the City of New York

COMBINING STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Year ended June 30, 2020

(In thousands)

	<u>QPP</u>	<u>TDA</u>	<u>Total</u>
Additions			
Contributions:			
Member contributions (Note 4)	\$ 226,920	\$ 1,029,758	\$ 1,256,678
Employer contributions	3,590,822	-	3,590,822
Other employer contributions	61,748	-	61,748
Total contributions	<u>3,879,490</u>	<u>1,029,758</u>	<u>4,909,248</u>
Investment income (Note 2):			
Interest income	1,094,140	32,127	1,126,267
Dividend income	1,125,180	166,496	1,291,676
Net appreciation in fair value of investments	1,972,228	128,382	2,100,610
Total investment income	<u>4,191,548</u>	<u>327,005</u>	<u>4,518,553</u>
Less:			
Investment expenses	296,818	11,607	308,425
Net decrease in variable expense provision	(5,947)	(11,044)	(16,991)
Net investment income	<u>3,900,677</u>	<u>326,442</u>	<u>4,227,119</u>
Securities lending transactions:			
Securities lending income	11,885	1,299	13,184
Less - securities lending fees	(1,375)	(128)	(1,503)
Net securities lending income	<u>10,510</u>	<u>1,171</u>	<u>11,681</u>
Other:			
Net receipts from other retirement systems	(2,798)	-	(2,798)
Total additions	<u>7,787,879</u>	<u>1,357,371</u>	<u>9,145,250</u>
Deductions			
Benefit payments and withdrawals	4,591,086	1,446,806	6,037,892
Administrative expenses (Note 8)	64,532	23,957	88,489
Other:			
Statutory interest for TDA Program's Fixed-Return Fund	1,846,173	(1,846,173)	-
TDA rebalance	(42,651)	42,651	-
Total deductions	<u>6,459,140</u>	<u>(332,759)</u>	<u>6,126,381</u>
Net increase in net position	1,328,739	1,690,130	3,018,869
Net position restricted for benefits			
Beginning of year	<u>57,990,211</u>	<u>35,333,395</u>	<u>93,323,606</u>
End of year	<u>\$ 59,318,950</u>	<u>\$ 37,023,525</u>	<u>\$ 96,342,475</u>

The accompanying notes are an integral part of this combining financial statement.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS

June 30, 2021 and 2020

NOTE 1 – SYSTEM AND PLAN DESCRIPTIONS

The City of New York ("The City" or "City") maintains a number of pension systems providing benefits for employees of its various agencies (as defined within New York State ("State") and City laws). The City's five major actuarially-funded pension systems are the Teachers' Retirement System of the City of New York ("TRS" or the "System"), The New York City Employees' Retirement System ("NYCERS"), The New York City Board of Education Retirement System ("BERS"), The New York City Police Pension Funds ("POLICE"), and The New York City Fire Pension Funds ("FIRE"). Each pension system is a separate Public Employee Retirement System ("PERS") with a separate oversight body and is financially independent of the others.

TRS administers the TRS Qualified Pension Plan (the "QPP") and the TRS Tax-Deferred Annuity Program (the "TDA Program").

The QPP is a cost-sharing, multiple-employer pension plan. The QPP provides pension benefits for City public school teachers, certain other school employees, and college teachers. The Employers, in addition to The City, are The City University of New York ("CUNY") and several Charter Schools (collectively, the "Employers"). Substantially all teachers in the public schools of The City become members of the QPP, and certain other specified school and college personnel may become members on the first day of permanent employment.

The QPP functions in accordance with State and City laws, which establish benefit terms and Employer and member contribution requirements for the QPP. The QPP is a tax-qualified retirement plan under section 401(a) of the Internal Revenue Code ("IRC") that has received a favorable determination letter from the Internal Revenue Service ("IRS"). The QPP combines features of a defined-benefit pension plan with those of a defined-contribution pension plan, but is a defined-benefit pension plan for financial reporting purposes. Contributions are made by the Employers and the members.

The TDA Program was established and is administered pursuant to IRC Section 403(b) and New York City Administrative Code ("NYCAC") section 13-582 and became effective February 1, 1970. Members of the QPP have the option to participate in the TDA Program, which provides a means of deferring income tax payments on members' voluntary contributions until after retirement or upon withdrawal of contributions. Contributions to the TDA Program are made by the members only and are voluntary. Benefits provided under the TDA Program are derived from members' accumulated contributions and earnings thereon. The TDA Program is a defined-contribution pension plan for financial reporting purposes.

The QPP and TDA Program are fiduciary funds of The City and are included in the Pension and Other Employee Benefit Trust Funds section of The City's Annual Comprehensive Financial Report ("ACFR").

Board of Trustees ("TRS Board")

The Teachers' Retirement Board, a seven-trustee Board, sets policy and oversees TRS' operations. Three TRS Board trustees are elected from and by the TRS membership. These trustees serve three-year terms. The Mayor appoints two Board trustees, one of whom must be a member of the Panel for Educational Policy. The New York City Comptroller ("Comptroller") and the Chair of the Panel for Education Policy are the other two Board trustees, each of which may designate a representative to act on his or her behalf.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Membership Data

The QPP's and TDA Program's membership, at June 30, 2021 and June 30, 2020, consisted of:

	QPP	
	2021*	2020
Retirees and beneficiaries receiving benefits	92,000	89,536
Terminated vested members not yet receiving benefits	16,000	15,502
Terminated non-vested members**	6,000	5,604
Active members receiving salary	125,000	124,276
Total	239,000	234,918

	TDA Program	
	2021*	2020
Retirees receiving a TDA annuity	2,800	2,755
Retirees or Inactive members with TDA deferral	61,000	59,636
Active members with TDA	99,000	95,111
Total	162,800	157,502

* Preliminary

** As of June 30, 2020, members that are on leave with insufficient service for vesting and assumed to not return to active service are classified as terminated non-vested members.

The QPP's and TDA Program's membership, at June 30, 2019 and June 30, 2018, the dates of the membership data used in determining Fiscal Year 2021 and Fiscal Year 2020 employer contributions, consisted of:

	QPP	
	2019	2018
Retirees and beneficiaries receiving benefits	88,507	86,295
Terminated vested members not yet receiving benefits	13,410	16,433
Other inactives***	8,174	9,416
Active members	123,336	121,764
Total	233,427	233,908

	TDA Program	
	2019	2018
Retirees receiving a TDA annuity	2,827	2,811
Retirees or inactive members with TDA deferral	57,730	55,874
Active members with TDA	93,600	90,648
Total	154,157	149,333

*** Prior to June 30, 2020, represents members who are no longer on payroll but not otherwise classified.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Summary of Benefits*QPP Plan*

The State Constitution provides that the pension rights of public employees are contractual and shall not be diminished or impaired. In 1973, 1976, 1983, and 2012, significant amendments made to the New York State Retirement and Social Security Law ("RSSL") modified certain benefits and member contributions for employees joining the QPP on or after the effective date of such amendments. As such, benefits under the QPP fall into various categories (also referred to as "Tiers") based on the year when an employee joined the QPP. A brief overview follows:

- Members who joined prior to July 1, 1973 ("Tier I") are entitled to service retirement benefits of 50% of "final salary" (as defined within State and City laws) after 20 years of service; a portion is provided from member contributions, plus additional benefits equal to specified percentages (as defined within State and City laws) per year of service of "final salary" for years in excess of the 20-year minimum. These benefits are increased, where applicable, by an annuity attributable to accumulated member contributions in excess of the minimum required balance and by any benefits attributable to Increased-Take-Home-Pay ("ITHP") contributions [accumulated after the 20th year of member qualifying service]. ITHP represents amounts contributed by The City to members' QPP accounts in lieu of members' own contributions. These amounts reduce the contributions that members would have to make to the QPP during their service and thereby increase their take-home pay. Members have the choice of waiving their ITHP reduction, which would reduce their take-home pay, but provide them with increased benefits upon retirement.

In addition, these same members could elect a service retirement benefit with no minimum service requirement that provides an annual benefit for each year of service equal to a specified percentage (as described within State statutes and City laws) of "final salary" payable on attainment of age 55. This benefit is increased, where applicable, by an annuity attributable to the member's contributions and by any benefits attributable to the Employers' contributions with respect to such service under the ITHP contributions.

- Members who joined the QPP after June 30, 1973 and before July 27, 1976 ("Tier II") have provisions similar to Tier I, except that the eligibility for retirement and the salary base for benefits are different and there is a limitation on the maximum benefit. This maximum limitation was subsequently eliminated under Chapter 574 of the Laws of 2000 for all Tier II members who retired after December 8, 2000. Members retiring prior to the age of 62 without 30 years of credited service are subject to an age-reduction factor in their retirement allowance. Effective February 27, 2008, active members were eligible to enroll in a 55-retirement-age minimum and 25 credited years of service retirement option ("55/25 retirement option") enabling them to eliminate any age-reduction factor in their retirement allowance (Chapter 19 of Laws of 2008). Those choosing the 55/25 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later.

For Tier I and II members enrolled in the QPP prior to July 27, 1976, ITHP contributions made on their behalf, as well as their own contributions, are invested, at their election, in the Fixed-Return Fund or in Variable-Return Funds. Members can elect to invest in multiples of 5% and change their elections on a quarterly basis. Members receive statutory returns, currently 8.25%, on member contributions or ITHP contributions to the Fixed-Return Fund ("Fixed Annuity Program").

Certain members of Tier I and Tier II have the right to make voluntary member contributions ("Voluntary Contributions") in excess of their required member contributions ("Required Contributions"). Both the investment of the Voluntary Contributions and the Required Contributions

Teachers' Retirement System of the City of New York**NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED****June 30, 2021 and 2020**

are directed by each member. A member may invest in: (1) the QPP's Fixed-Return Fund, in which it is credited with interest at the Statutory-Interest Rate (currently 8.25% for Tier I and Tier II contributions and 7.0% for United Federation of Teachers ("UFT") members and 8.25% for non-UFT members for TDA Contributions); and/or (2) in one or more of the QPP's Variable-Return Funds (see Note 2 – Investment Programs). At the time of retirement or refund of contributions, a member's aggregate balance of actual Required Contributions and Voluntary Contributions, including the actual accumulated earnings thereon, less the outstanding balance of any member loans ("Net Actual Contributions"), may exceed ("Excess of Contributions") or fall short of ("Deficiency of Contributions") the member's Expected Balance. The Expected Balance is the sum of the Required Contributions which a member should have made during his or her credited service, plus the earnings that would have accumulated thereon at the Statutory-Interest rate. The amount of the member's retirement annuity or the refund of contributions that he or she is entitled to is increased by any Excess of Contributions or reduced by any Deficiency of Contributions. The total value of active members' Excess of Contributions, net of all Deficiencies of Contributions, is \$39.9 million and \$46.4 million, for the years ended June 30, 2021 and 2020, respectively. Actuarial estimates of the impact of Excesses and Deficiencies are incorporated into the calculation of the QPP's net pension liability.

The Variable-Return Funds include only member contributions and ITHP contributions made on their behalf, as described above, and are expressed in terms of units that are valued monthly based on investment experience. At retirement, monthly annuities attributable to member Voluntary Excess Contributions and ITHP contributions can be paid in both fixed and variable amounts, based on the member's election, which can be changed quarterly. Other benefits are paid only in fixed amounts. Monthly annuities attributable to investments in the Variable-Return Funds are not fixed in amount, but are based on investment experience through the preceding month.

- Members who joined the QPP on or after July 27, 1976 and prior to September 1, 1983 ("Tier III") were later mandated into Tier IV. However, these members retain their Tier III rights. Tier III requires member contributions of 3.0% of salary for a 10-year period (Chapter 126 of the Laws of 2000) and generally provides for reducing benefits by one-half of the primary Social Security benefit attributable to service with the Employer and for an annual cost-of-living escalator in pension benefits of not more than 3.0%. Members retiring prior to the age of 62 without 30 years of credited service are subject to an age-reduction factor in their retirement allowance.
- Members who joined the QPP on or after September 1, 1983 ("Tier IV") were required to make contributions of 3.0% of salary until termination of service. As of October 1, 2000, these members are not required to make contributions after the 10th anniversary of their membership date or completion of 10 years of credited service, whichever is earlier (Chapter 126 of the Laws of 2000). The annual benefit is approximately 1.67% of "final average salary" per year of service for members with less than 20 years of service and 2.0% of "final average salary" per year of service for members with 20 to 30 years of service, plus a 1.5% addition of "final average salary" per year of service in excess of 30 years of service. Members retiring prior to the age of 62 without 30 years of credited service experience an age-reduction factor in their retirement allowance. Effective February 27, 2008, active members were eligible to enroll in a 55-retirement-age minimum and 25-credited years of service retirement option enabling them to eliminate any age-reduction factor in their retirement allowance. Those choosing the age 55 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later. Members joining after February 27, 2008 are automatically enrolled in a 55-retirement-age minimum and 27-credited years of service retirement program ("55/27 retirement program"). These members are required to make additional plan contributions of 1.85% of salary until they have accumulated 27 years of credited service.

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Members under the 55/27 retirement program who joined after December 10, 2009, but before April 1, 2012, were required to make contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

- Members who joined on and after April 1, 2012 (“Tier VI”) are required to make contributions of 3.0% per year through March 31, 2013. Thereafter, contributions range from 3.0% to 6.0% in accordance with a schedule based on salary. Member contributions continue until retirement. Salary is limited to the New York State Governor’s salary. Tier VI members are generally eligible to retire with unreduced benefits beginning at age 63 or with reduced benefits beginning at age 55, if vested.

Members enrolled in the QPP on or after July 27, 1976 (“Tier III, IV, and VI”) who resign or otherwise terminate from service prior to eligibility for a benefit, are refunded all of their member contributions with 5.0% interest (RSSL, Article 15). Tier III, IV, and VI members who work for the Department of Education also receive a monthly supplemental contribution. Monthly supplemental contributions totaling \$550 per year for supervisors and administrators and \$400 per year for other eligible members is credited to the members’ Annuity Savings Accumulation Fund (“ASAF”).

Under all service retirement categories, annuities attributable to member contributions are reduced on an actuarial basis for any loans with unpaid balances outstanding at the date of retirement.

Subject to certain conditions, members become fully vested and eligible for benefits upon the completion of five years of service. After December 10, 2009, new members who belong to the UFT, and all Tier VI members, become fully vested upon the completion of 10 years of service.

The QPP provides death benefits and retirement benefits on the occurrence of accidental or ordinary disability. In terms of payment options of the retirement annuity, the QPP provides a number of options depending on whether retirement payments, following death, will continue to an assigned beneficiary.

During the Spring 2000 session, the State Legislature approved and the State Governor (“Governor”) authorized automatic Cost-of-Living Adjustments (“COLAs”) for certain retirees and beneficiaries (Chapter 125 of the Laws of 2000). COLA is payable to all members who are either: (1) at least age 62 and have been retired for at least five years; or (2) at least age 55 and have been retired for at least 10 years. Additionally, COLA is payable to members who retired for disability after being retired for five or more years and beneficiaries receiving accidental death benefits who have been receiving them for at least five years. COLA is one-half of the increase in the Consumer Price Index for All Urban Consumers (“CPI-U”) based on the year ending March 31, rounding to the next higher 0.1%, not less than 1% nor greater than 3% of the first \$18,000 of the sum of the maximum retirement allowance and prior COLA.

TDA Program

The TDA Program is administered by the TRS Board. Contributions to the TDA Program are made by the members only and are voluntary. To participate in the TDA Program, active members of the QPP are required to submit a salary-reduction agreement and enrollment request. Members may choose to stop contributions at any time. A participant may elect to exclude an amount of compensation (within the maximum allowed by the IRS) from current taxable income by contributing it to the TDA Program. This maximum amount is calculated based on various individual factors. Members can elect to invest in the Fixed-Return Fund or the Variable-Return Funds.

A participant may withdraw all or part of the balance of their account prior to or at the time of retirement. As of January 1, 1989, the tax laws restricted withdrawals of tax-deferred annuity contributions and accumulated earnings thereon for reasons other than retirement or termination. Contributions made after December 31, 1988 and investment earnings credited after December 31, 1988 may only be withdrawn

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NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

upon attainment of age 59½ or for reasons of hardship (as defined by IRS regulations). Hardship withdrawals are limited to (post 88) contribution only. Previously, if a hardship withdrawal occurred, the member was not able to contribute for a six-month period. The Budget Act of 2018 authorized the plan to remove the six-month restriction beginning no later than January 2020.

If a member dies while an in-service employee, the full value of his/her TDA Program account at the date of death is paid to the member's beneficiary or estate.

When a member resigns before attaining vested rights under the QPP, (s)he may withdraw the value of the account or may leave the account in the TDA Program for a period of up to seven school years after the date of resignation, provided the member does not withdraw their account from the QPP. If a member resigns after attaining vested rights under the QPP, (s)he may leave the account in the TDA Program, provided the member does not withdraw their QPP funds. Once a withdrawal is made from the QPP, the member's participation in the TDA Program is automatically terminated, and the value of the account in the TDA Program will be paid out to the member. Upon death, TDA balances are paid to the assigned beneficiaries or may be invested on behalf of the beneficiaries in the TDA Program's Variable-Return Funds. The option for new beneficiaries to invest in the TDA Program's Variable-Return Funds was statutorily rescinded in August 2021.

At retirement, several payment options are available to those who annuitize their TDA Program funds. Generally, payment options similar to the QPP are available under the TDA Program.

See "Investments" below for a discussion of TDA investment programs.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting – The QPP and the TDA Program use the accrual basis of accounting where the measurement focus is on the flow of economic resources. Revenues are recognized in the accounting period in which they are earned, and expenses are recognized in the period incurred. Contributions from members are recognized when the Employers make payroll deductions from members' salary. Employer contributions to the QPP are recognized when due, and the Employer has a legal obligation to provide the contributions. Benefit payments and withdrawals are recognized when due and payable in accordance with the terms of the QPP and the TDA Program.

Use of Estimates – The preparation of combining financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, and disclosure of contingent assets and liabilities, at the date of the combining financial statements, and revenues and expenses, during the reporting period. Actual results could differ from those estimates.

Investment Valuation – Investments are reported at fair value. Fair value is defined as the quoted market price at the end of the last trading day for the specified period, except for Alternative investments, which are considered long-term and illiquid in nature. Alternative investments consist of limited partnership structures invested in privately held investments for which exchange quotations are not readily available, and are valued at estimated fair value as determined in good faith by the General Partner ("GP"). These investments are initially valued at cost with subsequent adjustments that reflect third-party transactions, financial operating results, and other factors deemed relevant by the GP. Fair value is determined by plan management based on information provided by the various GPs after review by an independent consultant and the custodian bank for the funds. They include investments held within Private Equity, Real Estate, Opportunistic-Fixed Income, and Infrastructure.

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Purchases and sales of securities are reflected on the trade date. Dividend income is recorded on the ex-dividend date. Interest income is recorded as earned on an accrual basis.

Fair Value Measurement – Government Accounting Standards Board (“GASB”) Statement No. 72, *Fair Value Measurement and Application* (“GASB 72”), describes fair value as an exit price, requiring investments to be categorized under a fair value hierarchy prescribed by GASB. GASB 72 establishes a hierarchy of inputs used to measure fair value consisting of three levels based on market price observability. Level 1 inputs are quoted prices in active markets for identical assets or liabilities. Level 2 inputs are inputs, other than quoted prices included within Level 1, that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs, and typically reflect management’s estimates of assumptions that market participants would use in pricing the asset or liability. GASB 72 also contains note disclosure requirements regarding the hierarchy of valuation inputs and valuation techniques that were used for the fair value measurements.

Investment Presentation – The TDA Program Fixed-Return Fund’s portion of TRSNYC Pension Fund assets are shown as commingled with the QPP’s portion of TRSNYC Pension Fund assets, and an offsetting liability is used to show the TDA Program’s share of the funds.

Investment Programs – Prior to July 1, 2008, investments were comprised of the assets of the following investment programs: the TRSNYC Pension Fund (which includes the Fixed-Return Fund, which was previously referred to as the Fixed Annuity Program) and two Variable-Return Funds – the Diversified Equity Fund and the Stable-Value Fund. As of July 1, 2008, the investment programs were expanded to include three new Variable-Return Funds – the International Equity Fund, the Inflation Protection Fund, and the Socially Responsive Equity Fund. On January 1, 2012, the Stable-Value Fund became the Bond Fund. On January 1, 2018, the Bond Fund became the Balanced Fund. The Balanced Fund’s objective is to seek current income and some capital appreciation by investing in a portfolio that includes both stocks and bonds. As of October 1, 2019, the Socially Responsive Equity Fund became the Sustainable Equity Fund. On January 1, 2020, the investment programs were expanded to include two new Variable-Return Funds – U.S. Equity Index Fund and International Equity Index Fund. The investment objective of the U.S. Equity Index Fund is to track the total return of the broad U.S. equity market, including large-, mid-, and small-capitalization stocks. The investment objective of the International Equity Index Fund is to track the total return of non-U.S. equity markets, including developed markets and emerging markets. As of April 1, 2020, the Inflation Protection Fund was discontinued. The TRS investment programs are collectively referred to as TRS Passport Funds.

All investment programs excluding the TRSNYC Pension Fund are referred to as the Variable-Return Funds. The TRSNYC Pension Fund includes System investments from QPP employer contributions, QPP Tier I and II members’ and ITHP contributions, QPP Tier III, IV, and VI members’ contributions, and ASAF contributions and TDA Program member contributions invested in the Fixed-Return Fund. Investing in Variable-Return Funds is available for both QPP Tier I and II members’ and ITHP contributions, and TDA program investments.

In the Fixed-Return Fund, deposits from members’ TDA Program accounts are invested along with QPP assets and TDA Program accounts and are credited with a fixed rate of return, determined by the New York State Legislature (“Statutory-Interest Rates”). Payment of the Statutory Interest is an obligation of The City (NYCAC section 13-533). The Statutory-Interest Rates are as follows:

- 7% for TDA investments by members who are serving in (or resigned/retired from) titles represented by the UFT. The crediting rate of 7% has been in effect since December 11, 2009. The prior crediting rate of 8.25% had been in effect from July 1, 1988 to December 11, 2009.
- 8.25% for TDA investments by all other members. This crediting rate has been in effect since July 1, 1988.

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TDA Program assets are pooled with QPP assets for investment purposes only. NYC Administrative Code section 13-582, subdivision [k], provides for the maintenance of TDA accounts in the Annuity Savings Funds ("Fixed-Return Fund") and Variable Annuity Programs ("Variable-Return Funds"), which are distinct from similar funds for the QPP. This is in accordance with requirements that assets of the TDA Program be accounted for separately from assets of the QPP Plan. Statutory Rates received by funds invested in the QPP and the TDA Program's Annuity Savings Fund ("Fixed-Return Fund") are set, respectively, by NYCAC sections 13-638.2 and 13-582 [d].

Assets in the TDA Fixed-Return Fund are invested with assets of the QPP on a pro-rata basis consistent with the QPP's asset allocation policy. Earnings on these investments over (or under) the Statutory Rates are considered by The City's Chief Actuary of the Office of the Actuary (the "Actuary") in determining employer contribution obligations. Earnings over the Statutory Rates accrue to the benefit of the QPP. Earnings under the Statutory Rates are considered by the Actuary in determining employer contributions to the QPP, such that The City is ultimately responsible for any deficiency. For financial reporting purposes, TDA fixed return assets, invested alongside QPP assets, are reflected as a receivable due from the QPP equal in amount to the aggregate original principal amounts contributed by TDA Program members to the fixed return program, plus accrued interest at the Statutory Rate adjusted for withdrawals and transfers to or from variable funds. This receivable is reported by the TDA Program as an Investment in the Fixed-Return Fund, and the corresponding liability is reported by the QPP as Fixed-Return Funds due to TDA.

Assets of the Variable-Return Funds of the QPP and the TDA Program Diversified Equity Fund and International Equity Fund are co-invested along with certain assets of the BERS. These financial statements reflect the QPP's and TDA Program's Variable-Return Funds' proportionate shares of Diversified Equity Fund investments and the related activity.

Other Employer Contributions – Include amounts for Contingent Reserve Funds for half (or employer's portion) of Additional Member Contributions (Chapter 19 1.85%), buyback payments for outside and military service, and The New York City Department of Education ("DOE") supplemental contributions for the ASAF and Annuity Savings Fund ("ASF"). The Employer portion of Additional Member Contributions is not part of the employer's appropriation amount and also not recoverable by the member upon the member's resignation.

Investment Expenses – The Variable-Return Funds maintain a reserve for administrative and investment expenses. As of June 30, 2021, the reserve was \$64.562 million for QPP and \$30.226 million for TDA. The expense reserve and net investment expenses for 2021 were reduced by \$9.516 million for QPP and \$2.180 million for TDA. As of June 30, 2020, the reserve was \$73.749 million for QPP and \$32.396 million for TDA. The expense reserve and net investment expenses for 2020 were reduced by \$5.947 million for QPP and \$11.043 million for TDA.

Income Taxes – Income earned by the QPP and TDA Program is not subject to federal income tax.

Accounts Payable – Accounts payable is principally comprised of amounts owed to the System's banks due to depositories, unclaimed payments, reserves for investment and administrative expenses for the Variable-Return Funds, and investment expenses accrued to the QPP and TDA Program. The System's practice is to fully invest its day-end cash balances in a pooled short-term fund. A typical benefit payment bank account would show no balance, since funding only occurs when benefit payment checks are presented to the bank for payment each day.

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June 30, 2021 and 2020

Intra-fund Payable/Receivable – At fiscal year-end, intra-fund payables/receivables between the TRSNYC Pension Fund and the Variable-Return Funds are excluded from QPP and TDA Program assets. The NYCAC Sections 13-577 and 13-582 provide for certain internal transfers of funds. These transfers are intended to rebalance estimated actuarial liabilities with reported assets. In Fiscal Year 2021, \$38.7 million was transferred from the QPP Variable-Return Funds to the QPP TRSNYC Pension Fund. In addition, in Fiscal Year 2021, \$4.2 million was transferred to the TDA from the QPP Program.

In Fiscal Year 2020, \$9.7 million was transferred from the QPP TRSNYC Pension Fund to the QPP Variable-Return Funds. In addition, in Fiscal Year 2020, \$42.7 million was transferred to the QPP from the TDA Program.

Payment of Statutory-Interest on the TDA Program's Fixed-Return Fund – The fixed interest, credited to TDA Program member account balances invested in the Fixed-Return Fund (7.0% APR for UFT members after December 10, 2009; 8.25% APR for non-UFT members and for UFT members prior to December 10, 2009), and owed and transferred to the TDA Program, is reported as a transfer payment of interest by the QPP and transfer receipt of interest for the TDA Program.

Inter-Plan Eliminations – Included on the Combining Statements of Fiduciary Net Position and the Combining Statements of Changes in Fiduciary Net Position is an elimination column, the purpose of which is to remove from the statement any transactions involving dealings between reported entities. The eliminations include offsetting payables and receivables associated with the TDA Program's investment in the TRSNYC Pension Fund. In addition, payables and receivables between the QPP, the TDA Program, and the System's administrative expense fund are eliminated.

Securities-Lending Transactions – State statutes and Board policies permit the Funds to lend their investments to broker-dealers and other entities for collateral, for the same securities in the future with a simultaneous agreement to return the collateral in the form of cash, Treasury, and U.S. Government securities. The Funds' agent lends the following types of securities: short-term securities, common stocks, long-term corporate bonds, U.S. Government and U.S. Government agency bonds, asset-backed securities, international equities, and bonds held in collective investment funds. In return, the Funds receive collateral in the form of cash, U.S. Treasury, and U.S. Government agency securities at 100% to 105% of the principal plus accrued interest for reinvestment. At June 30, 2021 and 2020, management believes that the Funds had no credit risk exposure to borrowers because the fair value of collateral held by the System equaled or exceeded the fair value of securities lent to the borrowers. Also, the contracts with the Funds' Securities Lending Agent (the "Agent") require the Agent to indemnify the Funds as follows: In the situation when a borrower goes into default, the Agent will liquidate the collateral to purchase replacement securities. Any shortfall before the replacement securities' cost and the collateral value is covered by the Agent. All securities loans can be terminated on demand within a period specified in each agreement by either the Funds or the borrowers. Cash collateral is invested by the securities-lending agent using approved Lender's Investment guidelines. The weighted-average maturity is 8.3 days for collateral investments under State Street's TRSNYC Pension Fund investments and 1.0 days for JPMorgan Chase's Variable-Return Fund investments. The securities-lending program in which the Funds participate only allows pledging or selling securities in the case of borrower default.

During Fiscal Year 2021, net earnings from the securities-lending program were \$8.1 million. Net earnings from QPP were \$6.4 million, including \$5.4 million from TRSNYC Pension Fund and \$1.0 million from Variable-Return Funds. The TDA net earnings from the Variable-Return Funds securities-lending program amounted to \$1.7 million.

During Fiscal Year 2020, net earnings from the securities-lending program were \$11.7 million. Net earnings from QPP were \$10.5 million, including \$9.7 million from TRSNYC Pension Fund and \$763.6 thousand from Variable-Return Funds. The TDA net earnings from the Variable-Return Funds securities-lending program amounted to \$1.2 million.

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GASB Statement No. 28, *Accounting and Financial Reporting for Securities-Lending Transactions*, requires that securities loaned as assets and related liabilities be reported in the Combining Statements of Fiduciary Net Position. Cash received as collateral on securities-lending transactions and investments made with that cash are reported as assets. As of the balance sheet date, the maturities of the investments made with cash collateral on average exceed the maturities of the securities loans by approximately 7.3 days for State Street's TRSNYC Pension Fund investments and 0.0 days for JPMorgan Chase's Variable-Return Fund investments. Securities received as collateral are also reported as assets if the government entity has the ability to pledge or sell them with a borrower default. Accordingly, the System records the investments purchased with the cash collateral from securities lending with a corresponding liability for securities lending. Securities on loan are carried at fair value; as of June 30, 2021 and 2020, the values on loan by the TRSNYC Pension Fund were \$1.0 billion and \$1.4 billion, respectively, and the values on loan by the Variable-Return Funds were \$853.0 million and \$87.3 million, respectively. Collateral received related to securities lending as of June 30, 2021 and 2020 was \$1.1 billion and \$1.4 billion, respectively, for the TRSNYC Pension Fund, and \$873.1 million and \$90.5 million, respectively, for the Variable-Return Funds.

New Accounting Standards Adopted – GASB Statement No. 98, *The Annual Comprehensive Financial Report*, establishes the term Annual Comprehensive Financial Report and its acronym ACFR. The new term replaces comprehensive annual financial report and its acronym in generally accepted accounting principles for state and local governments. The System has decided to early implement this pronouncement and has applied the change as of the issuance of this report.

NOTE 3 – INVESTMENTS AND DEPOSITS

The Comptroller acts as an investment advisor to TRS and employs an independent consultant for the TRSNYC Pension Fund. In addition, TRS employs an independent investment consultant as an investment advisor for its Variable-Return Funds. TRS utilizes investment managers to manage the long-term debt and equity portfolios. The managers are regularly reviewed with regard to both their investment performance and their adherence to investment guidelines.

RSSL and NYCAC authorize the investment of assets subject to the terms, conditions, limitations, and restrictions imposed by law for investments by savings bank and domestic life insurance companies. The State Retirement and Social Security Law §§ 176-178(a), Banking Law § 235, and the ACNY establish the criteria for permissible equity investments. Investments up to 25% of total assets of the QPP and the TDA Program may be made in instruments not expressly permitted by the State RSSL.

QPP and TDA Program assets are diversified over a range of investments, and multiple strategies are used in an effort to limit overall risk.

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TRS possesses investment policy statements for its QPP and TDA Program, and investment risk management is an inherent function of the asset allocation process. The System's assets are diversified over a broad range of asset classes and encompass multiple investment strategies aimed at limiting concentration risk. The asset allocation per investment program and targeted for Fiscal Years 2021 and 2020 included securities in the following categories. TRSNYC Pension Fund primarily holds QPP assets and the returns from this fund impact the funding of the QPP, a defined-benefit plan. The Variable-Return Funds primarily relate to the TDA Program, a defined-contribution plan.

TRSNYC Pension Fund Target Asset Allocations Investment Type	Asset Allocation Percentages *	
	2021	2020
Common stock	28.4%	29.2%
International investments - Non-U.S.	10.5%	10.5%
International investments - Emerging markets	9.6%	9.6%
Alternative investments - Real estate	3.7%	3.9%
Alternative investments - Private equity	6.2%	5.3%
Alternative investments - Infrastructure	1.2%	1.2%
Alternative investments - Opportunistic-fixed income	2.9%	2.9%
Fixed income	37.5%	37.4%
Total	100.0%	100.0%

* Represents adjusted target policy percentages.

Variable-Return Funds Target Asset Allocations Investment Type	Asset Allocation Percentages	
	2021	2020
Diversified Equity (Variable A):		
Common stock - Passive	55.0%	55.0%
Common stock - Active	15.0%	15.0%
Common stock - Defensive	10.0%	10.0%
International investments	20.0%	20.0%
Balanced Fund (formerly Bond Fund - Variable B):		
Fixed Income	70.0%	70.0%
Equity	30.0%	30.0%
International Equity (Variable C):		
International Investments	100.0 %	100.0%
Sustainable Equity (former Socially Responsible - Variable E):		
Sustainable Equity BA SEF	100.0%	100.0%
U.S. Equity Index (established January 1, 2020 - Variable F):		
U.S. Equity Index Fund	100.0%	100.0%
International Equity Index (established January 1, 2020 - Variable G):		
International Equity Index Fund	100.0%	100.0%

State Street is currently the custodial bank for the securities of the TRSNYC Pension Fund. JPMorgan Chase is currently the custodial bank for the securities of the Variable-Return programs.

The information reflected in the Credit Ratings and in the Years to Maturity is derived from the Custodians' Risk and Performance Analytics Reporting System.

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

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Concentrations – In accordance with RSSL § 177, the System's investment programs do not have investments in any individual company that may represent more than 2% of the QPP or TDA Program total net assets or 5% of the company's total outstanding shares. The above concentration exclusion does not apply to obligations of the United States, or those for which the faith of the United States is pledged to provide payment of the interest and principal.

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Credit Risk – The possibility of a loss or default resulting from a borrower’s inability to repay a loan or fulfill its contractual debt obligations. Portfolios, other than U.S. Government and related portfolios, have credit rating limitations. Investment Grade portfolios are limited to mostly ratings, of BBB/Baa2 and above, except that they are also permitted a 10% maximum exposure to BB & B/Ba2 & B2 rated securities. While high yield non-investment grade managers primarily invest in BB & B/Ba2 & B2 rated securities, they can also invest up to 10% of their portfolio in securities rated CCC/Caa2.

The quality ratings of the TRSNYC Pension Fund investments, by percentage of the rated portfolio, as described by nationally recognized rating organizations, at June 30, 2021 and 2020, are as follows:

Investment Type Pension Fund June 30, 2021 (In percent)	Moody's Quality Ratings																	Caa1 & Below	No Rated	Total
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3				
U.S. government	37.81%	0.03%	-%	-%	0.02%	-%	-%	0.01%	0.07%	0.01%	-%	-%	-%	-%	-%	-%	-%	1.09%	39.04%	
Corporate bonds	22.73%	0.15%	0.20%	0.15%	0.75%	2.14%	1.76%	2.33%	3.10%	2.61%	1.36%	1.65%	2.10%	2.28%	1.98%	1.90%	2.26%	2.83%	52.28%	
Short term:																				
Commercial paper	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	2.27%	2.27%
Discount notes and T-bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	2.78%	2.78%
Pooled fund	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	3.63%	3.63%
Percent of rated portfolio	<u>60.54%</u>	<u>0.18%</u>	<u>0.20%</u>	<u>0.15%</u>	<u>0.77%</u>	<u>2.14%</u>	<u>1.76%</u>	<u>2.34%</u>	<u>3.17%</u>	<u>2.62%</u>	<u>1.36%</u>	<u>1.65%</u>	<u>2.10%</u>	<u>2.28%</u>	<u>1.98%</u>	<u>1.90%</u>	<u>2.26%</u>	<u>12.60%</u>	<u>100.00%</u>	

Investment Type Pension Fund June 30, 2020 (In percent)	Moody's Quality Ratings																	Caa1 & Below	No Rated	Total
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3				
U.S. government	30.34%	0.04%	0.01%	-%	0.03%	0.01%	0.01%	0.09%	0.15%	0.01%	-%	-%	-%	-%	-%	-%	-%	1.05%	31.74%	
Corporate bonds	23.22%	0.20%	0.21%	0.36%	0.54%	1.81%	2.29%	2.15%	3.14%	2.98%	1.66%	2.06%	3.05%	2.75%	3.07%	2.02%	2.22%	4.04%	57.77%	
Short term:																				
Commercial paper	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	1.22%	1.22%
Discount notes and T-bills	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	6.88%	6.88%
Pooled fund	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	2.39%	2.39%
Percent of rated portfolio	<u>53.56%</u>	<u>0.24%</u>	<u>0.22%</u>	<u>0.36%</u>	<u>0.57%</u>	<u>1.82%</u>	<u>2.30%</u>	<u>2.24%</u>	<u>3.29%</u>	<u>2.99%</u>	<u>1.66%</u>	<u>2.06%</u>	<u>3.05%</u>	<u>2.75%</u>	<u>3.07%</u>	<u>2.02%</u>	<u>2.22%</u>	<u>15.58%</u>	<u>100.00%</u>	

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The quality ratings of the Variable-Return Fund investments, both QPP and TDA, by percentage of the rated portfolio, as described by nationally recognized statistical rating organizations, at June 30, 2021 and 2020, are as follows:

Investment Type Variable-Return Funds June 30, 2021 (In percent)	Moody's Quality Ratings																	Caa1 & Below	No Rated	Total
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3				
Corporate	-%	-%	-%	-%	-%	0.14%	-%	1.25%	1.13%	0.72%	-%	0.84%	-%	0.87%	-%	-%	-%	60.45%	65.40%	
Short term:																				
U.S. Treasury bills	0.12%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.12%
Money market	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	34.48%	34.48%
Percent of rated portfolio	<u>0.12%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>0.14%</u>	<u>-%</u>	<u>1.25%</u>	<u>1.13%</u>	<u>0.72%</u>	<u>-%</u>	<u>0.84%</u>	<u>-%</u>	<u>0.87%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>94.93%</u>	<u>100.00%</u>	

Investment Type Variable-Return Funds June 30, 2020 (In percent)	Moody's Quality Ratings																	Caa1 & Below	No Rated	Total
	Aaa	Aa1	Aa2	Aa3	A1	A2	A3	Baa1	Baa2	Baa3	Ba1	Ba2	Ba3	B1	B2	B3				
Corporate	-%	-%	-%	-%	-%	0.45%	0.73%	1.00%	0.63%	0.59%	-%	0.38%	-%	0.87%	-%	-%	-%	52.91%	57.56%	
Short term:																				
U.S. Treasury bills	0.43%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	0.43%
Money market	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	-%	42.01%	42.01%
Percent of rated portfolio	<u>0.43%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>0.45%</u>	<u>0.73%</u>	<u>1.00%</u>	<u>0.63%</u>	<u>0.59%</u>	<u>-%</u>	<u>0.38%</u>	<u>-%</u>	<u>0.87%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>	<u>94.92%</u>	<u>100.00%</u>	

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Custodial Credit Risk – Deposits are exposed to custodial credit risk if they are uninsured and uncollateralized. Custodial credit risk is the risk that in the event of a failure of the counterparty or depository financial institution, the Fund will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are not registered in the name of the Funds and are held by either the counterparty or the counterparty's trust department or agent but not in the name of the Funds. Consistent with the Funds' investment policy, investments are held by the custodians of the TRSNYC Pension Fund and Variable-Return Funds and registered in the System's or QPP and TDA Program's name.

Generally, the System is the sole account owner of the custodial account. However, the Diversified Equity and International Investment Funds are co-invested along with certain assets of BERS. Also, as of June 30, 2021, 0.6% of the TRSNYC Pension Fund assets were held in NYC commingled trust accounts owned 100% by The City's pension systems and related funds.

All of the System's deposits are insured by the Federal Deposit Insurance Corporation ("FDIC") or are collateralized by securities held by a financial institution separate from the Funds' depository financial institution. However, the Fund's cash balances can exceed FDIC insured limits. Non-invested cash is swept into the custodial bank's short-term investment intraday account, which is not FDIC insured.

Interest Rate Risk – Interest rate risk is the risk that the value of debt securities will be affected by fluctuations in market interest rates. The duration of the portfolio, relative to the duration of the portfolio's benchmark, is monitored by the Comptroller's Bureau of Asset Management.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The lengths of investment maturities (in years) of TRSNYC Pension Fund investments, both QPP and TDA, as shown by the percent of the rated portfolio at June 30, 2021 and 2020, are as follows:

Investment Type TRSNYC Pension Fund June 30, 2021	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	39.02%	-%	24.63%	6.11%	8.28%
Corporate bonds	52.29%	0.19%	15.98%	13.61%	22.51%
Short term:					
Commercial paper	2.28%	2.28%	-%	-%	-%
Pooled funds	2.78%	2.78%	-%	-%	-%
Discount notes and treasury bills	3.63%	3.63%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>8.88%</u>	<u>40.61%</u>	<u>19.72%</u>	<u>30.79%</u>

Investment Type TRSNYC Pension Fund June 30, 2020	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
U.S. government	31.74%	0.02%	11.23%	3.19%	17.30%
Corporate bonds	57.77%	0.47%	21.09%	14.38%	21.83%
Short term:					
Commercial paper	1.22%	1.22%	-%	-%	-%
Pooled funds	2.39%	2.39%	-%	-%	-%
Discount notes and treasury bills	6.88%	6.88%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>10.98%</u>	<u>32.32%</u>	<u>17.57%</u>	<u>39.13%</u>

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The lengths of investment maturities (in years) of the Variable-Return Funds for QPP and TDA, as shown by the percent of the rated portfolio at June 30, 2021 and 2020, are as follows:

Investment Type Variable-Return Funds June 30, 2021	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	65.40%	1.74%	47.68%	14.20%	1.78%
Short term:					
U.S. treasury bills	0.12%	0.12%	-%	-%	-%
Money market funds	34.48%	34.48%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>36.34%</u>	<u>47.68%</u>	<u>14.20%</u>	<u>1.78%</u>
Investment Type Variable-Return Funds June 30, 2020	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Corporate bonds	57.56%	3.18%	35.58%	16.46%	2.34%
Short term:					
U.S. treasury bills	0.43%	0.43%	-%	-%	-%
Money market funds	42.01%	42.01%	-%	-%	-%
Percent of rated portfolio	<u>100.00%</u>	<u>45.62%</u>	<u>35.58%</u>	<u>16.46%</u>	<u>2.34%</u>

Foreign Currency Risk – Foreign currency risk is the risk that changes in the exchange rates will adversely impact the fair value of an investment. Currency risk is present in underlying portfolios that invest in foreign stocks and/or bonds. The currency markets have proven to be effective diversifiers in a total portfolio context; therefore, the TRSNYC Pension Fund has numerous managers that invest globally. In general, currency exposure is viewed as a benefit for its diversification reasons and not as an inherent risk within the portfolio. In addition, the TRSNYC Variable-Return Funds have investments in foreign stocks and/or bonds denominated in foreign currencies.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
Teachers' Retirement System of the City of New York
NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED
June 30, 2021 and 2020

Foreign currency exposures as of June 30, 2021 and 2020, are as follows:

Trade Currency (in thousands)	Pension Fund June 30, 2021	Variable- Return Funds June 30, 2021	Pension Fund June 30, 2020	Variable- Return Funds June 30, 2020
Euro Currency	\$ 5,288,835	\$ 900,568	\$ 3,676,357	\$ 695,985
Hong Kong Dollar	2,871,758	278,805	2,386,667	217,079
Japanese Yen	2,033,567	551,608	1,832,279	497,803
British Pound Sterling	1,630,961	418,876	1,260,854	312,614
South Korean Won	1,514,184	200,064	995,140	65,891
New Taiwan Dollar	1,425,501	133,473	986,116	66,461
Indian Rupee	1,209,648	129,047	764,006	50,560
Swiss Franc	1,060,872	224,007	761,446	210,789
Canadian Dollar	543,778	90,768	320,557	52,534
Australian Dollar	470,171	129,060	282,025	103,740
Brazilian Real	437,951	54,757	317,461	16,562
Danish Krone	429,059	71,691	343,104	52,924
South African Rand	272,607	41,611	263,540	10,677
Swedish Krona	272,588	82,261	178,183	59,481
Chinese Yuan (Offshore)	255,441	-	270,523	-
Chinese Yuan Renminbi	203,122	37,586	64,504	21,298
Singapore Dollar	168,072	30,592	118,444	25,324
Polish Zloty	167,807	12,067	71,998	1,785
Indonesian Rupiah	158,395	14,925	162,937	5,956
Mexican Nuevo Peso	142,919	21,830	124,283	3,624
Norwegian Krone	119,825	22,097	82,110	13,628
Thai Baht	118,343	15,910	131,190	9,071
Malaysian Ringgit	75,121	3,710	84,761	1,504
Russian Ruble	46,415	3,310	-	-
Philippines Peso	40,081	31	59,058	119
Chilean Peso	39,859	955	42,305	996
Hungarian Forint	32,682	224	30,271	1,406
Turkish Lira	29,282	5,795	71,209	10,439
Israeli Shekel	22,815	5,734	21,439	4,101
UAE Dirham	17,383	7,292	26,774	3,137
Qatari Rial	12,175	-	25,951	-
New Zealand Dollar	10,042	9,176	10,560	6,962
Czech Koruna	7,209	51	7,932	43
Kuwaiti Dinar	6,135	-	-	-
Colombian Peso	4,270	-	11,195	-
Egyptian Pound	1,344	6,150	5,572	875
Pakistan Rupee	838	-	212	-
Peruvian Nuevo Sol	-	-	1,197	-
Saudi Arabian Ryal	-	18,160	-	925
Total	\$ 21,141,055	\$ 3,522,191	\$ 15,792,160	\$ 2,524,293

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Securities Lending Transactions

Credit Risk – The quality ratings of investments held as collateral for Securities Lending by the TRSNYC Pension Fund at June 30, 2021 and 2020 are as follows:

Investment Type and Fair Value of
Securities Lending Transactions - TRSNYC Pension Fund

June 30, 2021 (In thousands)	Moody's Quality Ratings						Total
	Aaa & Below	A1	A2	A3	Baa2	Not Rated	
Short term:							
Reverse repurchase agreements	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 121,000	\$ 121,000
Money market	508,615	-	-	-	-	165,144	673,759
U.S. agency	-	-	-	-	-	34,954	34,954
Cash or cash equivalent	-	92,365	-	-	-	-	92,365
Uninvested	-	-	-	-	-	(10,732)	(10,732)
Total	\$ 508,615	\$ 92,365	\$ -	\$ -	\$ -	\$ 310,366	\$ 911,346
Percent of securities lending portfolio	55.81%	10.13%	-%	-%	-%	34.06%	100.00%

Uninvested securities are due to late collateral settlements where the cash positions changed after cash-collateral investments were made. As of June 30, 2021, the System had a greater amount of cash-collateral investments than amount in open loans which resulted in an overinvestment of \$10.7 million.

June 30, 2020 (In thousands)	Moody's Quality Ratings						Total
	Aaa & Below	A1	A2	A3	Baa2	Not Rated	
Short term:							
Reverse repurchase agreements	\$ -	\$ -	\$ 77,299	\$ 117,494	\$ 8,589	\$ 541,141	\$ 744,523
Money market	227,787	-	-	-	-	97,106	324,893
U.S. agency	-	-	-	-	-	148,999	148,999
Cash or cash equivalent	-	135,529	-	-	-	-	135,529
Uninvested	-	-	-	-	-	1,572	1,572
Total	\$ 227,787	\$ 135,529	\$ 77,299	\$ 117,494	\$ 8,589	\$ 788,818	\$ 1,355,516
Percent of securities lending portfolio	16.81%	10.00%	5.70%	8.67%	0.63%	58.19%	100.00%

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The quality ratings of investments held as collateral for Securities Lending under the Variable-Return Funds at June 30, 2021 and 2020 are as follows:

Investment Type and Fair Value of Securities Lending Transactions - Variable-Return Funds June 30, 2021 (In thousands)		Moody's Quality Ratings		
		Aaa	A3	Not Rated
Government	\$ 710,023	\$ -	\$ -	\$ 710,023
Short term:				
Repurchase agreements	-	-	131,050	131,050
U.S. treasury	31,975	-	-	31,975
Uninvested	-	-	20	20
Total	\$ 741,998	\$ -	\$ 131,070	\$ 873,068
Percent of securities lending portfolio	84.99%	-%	15.01%	100.00%
June 30, 2020 (In thousands)		Moody's Quality Ratings		
		Aaa	A3	Not Rated
Government	\$ 17,777	\$ -	\$ -	\$ 17,777
Short term:				
Repurchase agreements	47,743	-	22,524	70,267
U.S. treasury	2,450	-	-	2,450
Total	\$ 67,970	\$ -	\$ 22,524	\$ 90,494
Percent of securities lending portfolio	75.11%	-%	24.89%	100.00%

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Interest Rate Risk – The lengths of investment maturities (in years) of the collateral for Securities Lending held by the TRSNYC Pension Fund at June 30, 2021 and 2020 are as follows:

Years to Maturity

Investment Type TRSNYC Pension Fund

June 30, 2021 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Short term:					
Reverse repurchase agreement	\$ 121,000	\$ 121,000	\$ -	\$ -	\$ -
Money market	673,759	673,759	-	-	-
U.S. agency	34,954	34,954	-	-	-
Cash equivalents	92,365	92,365	-	-	-
Uninvested	(10,732)	(10,732)	-	-	-
Total	<u>\$ 911,346</u>	<u>\$ 911,346</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Percent of securities lending portfolio	<u>100.00%</u>	<u>100.00%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>

Years to Maturity

Investment Type TRSNYC Pension Fund

June 30, 2020 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Short term:					
Reverse repurchase agreement	\$ 744,523	\$ 744,523	\$ -	\$ -	\$ -
Money market	324,893	324,893	-	-	-
U.S. agency	148,999	148,999	-	-	-
Cash equivalents	135,529	135,529	-	-	-
Uninvested	1,572	1,572	-	-	-
Total	<u>\$ 1,355,516</u>	<u>\$ 1,355,516</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Percent of securities lending portfolio	<u>100.00%</u>	<u>100.00%</u>	<u>-%</u>	<u>-%</u>	<u>-%</u>

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The lengths of investment maturities (in years) of the collateral for Securities Lending held under the Variable-Return Funds at June 30, 2021 and 2020 are as follows:

Years to Maturity

Investment Type Variable-Return Funds

June 30, 2021 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ 710,023	\$ 76,148	\$ 357,414	\$ 155,185	\$ 121,276
Short term:					
Repurchase agreements	131,050	131,050	-	-	-
U.S. treasury	31,975	31,975	-	-	-
Uninvested	20	20	-	-	-
Total	\$ 873,068	\$ 239,193	\$ 357,414	\$ 155,185	\$ 121,276
Percent of securities lending portfolio	100.00%	27.40%	40.94%	17.77%	13.89%

Years to Maturity

Investment Type Variable-Return Funds

June 30, 2020 (In thousands)	Investment Maturities				
	Fair Value	Less Than One Year	One to Five Years	Six to Ten Years	More Than Ten Years
Government	\$ 17,777	\$ 2,128	\$ 8,129	\$ 3,452	\$ 4,068
Short term:					
Repurchase agreements	70,267	70,267	-	-	-
U.S. treasury	2,450	2,450	-	-	-
Total	\$ 90,494	\$ 74,845	\$ 8,129	\$ 3,452	\$ 4,068
Percent of securities lending portfolio	100.00%	82.71%	8.98%	3.81%	4.50%

Rate of Return – For the years ended June 30, 2021 and 2020, the annual money-weighted rate of return on the TRSNYC Pension Fund was 24.8% and 4.92%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense adjusted for the changing amounts actually invested.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

In Fiscal Year 2015, the System adopted GASB 72. GASB 72 was issued to address accounting and financial reporting issues related to fair value measurements.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The System has the following recurring fair value measurements as of June 30, 2021 and June 30, 2020:

GASB 72 - Disclosure (TRSNYC Pension Fund) (In thousands)	2021			
	Level 1	Level 2	Level 3	Total
Investments - at fair value (Notes 2 and 3):				
Short-term investments:				
Commercial paper	\$ -	\$ 867,918	\$ -	\$ 867,918
Short-term investment fund	-	1,028,743	-	1,028,743
U.S. Treasury bills and agencies	-	1,090,552	-	1,090,552
Debt securities:				
U.S. government	-	14,885,336	4,090	14,889,426
Corporate and other	-	16,200,968	234,139	16,435,107
Treasury inflation-protected securities	-	3,594,216	-	3,594,216
Equity securities:				
Domestic equity	30,977,695	6,576	8,398	30,992,669
International equity	19,816,594	-	144,266	19,960,860
Alternative investments	22,602	235,533	13,818,742	14,076,877
Total pension fund investments	\$ 50,816,891	\$ 37,909,842	\$ 14,209,635	\$ 102,936,368

GASB 72 - Disclosure (TRSNYC Pension Fund) (In thousands)	2020			
	Level 1	Level 2	Level 3	Total
Investments - at fair value (Notes 2 and 3):				
Short-term investments:				
Commercial paper	\$ -	\$ 381,195	\$ -	\$ 381,195
Short-term investment fund	-	747,639	-	747,639
U.S. Treasury bills and agencies	-	2,149,709	-	2,149,709
Debt securities:				
U.S. government	-	9,911,190	-	9,911,190
Corporate and other	-	14,439,071	268,730	14,707,801
Treasury inflation-protected securities	-	3,126,355	-	3,126,355
Equity securities:				
Domestic equity	25,354,212	-	8,950	25,363,162
International equity	14,979,798	-	10,626	14,990,424
Alternative investments	15,454	193,447	10,556,246	10,765,147
Total pension fund investments	\$ 40,349,464	\$ 30,948,606	\$ 10,844,552	\$ 82,142,622

Equity and Debt Securities and Short-Term Investments

Equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets issued by pricing vendors for these securities. Debt, equity securities, and short-term investments classified in Level 2 of the fair value hierarchy are valued using prices determined by the use of matrix pricing techniques maintained by the various pricing vendors for these securities. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Debt and equity securities classified in Level 3 of the fair value hierarchy are securities whose stated market price is unobservable by the marketplace; many of these securities are priced by the issuers or industry groups for these securities. Fair value is defined as the quoted market value on the last trading day of the period. These prices are obtained from various pricing sources by the System's custodian bank.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Alternative Investments

Alternative investments include Private Equity, Real Estate, Opportunistic-Fixed Income, and Infrastructure Investments.

Alternative investments by Asset Class (in thousands)	2021	2020
Infrastructure	\$ 1,236,015	\$ 993,461
Opportunistic-fixed income	2,891,031	2,373,458
Private equity	6,182,170	4,279,636
Private real estate	3,767,661	3,118,592
	\$ 14,076,877	\$ 10,765,147

These are mainly investments for which exchange quotations are not readily available. They are valued at Net Asset Value (“NAV”) calculated by the GP’s time-lagged valuation policy, and involve estimation. Alternative investments are mainly illiquid and typically not sold or redeemed. These investments are initially valued at cost, with subsequent adjustments that reflect third-party transactions, financial operating results, and other factors deemed relevant by the GP. The assets in the System’s Alternative Investment program are classified mainly as Level 3 assets. A more detailed explanation of the Level 3 valuation methodologies follows:

Investments in non-public equity securities are valued by the GP or by the fund administrator using one or more valuation methodologies outlined in GASB 72, depending upon the availability of data required by each methodology. In some cases, the GP may use multiple approaches to estimate a valuation range. For the immediate time period following a transaction, the determination of fair value for equity securities, in which no liquid trading market exists, can generally be approximated based on the transaction price (absent any significant developments). Thereafter, or in the interim, if significant developments relating to such portfolio company or industry occur which may suggest a material change in value, the GP should value each investment by applying generally accepted valuation methods, including: (1) the market approach (such as market transaction and comparable public company multiples, which are based on a measurement of the company’s historical and projected financial performance with typical metrics, including enterprise value/latest 12 months Earnings Before Interest, Taxes, Depreciation, and Amortization (“EBITDA”) or projected fiscal-year EBITDA); or (2) the income or discounted cash flow approach.

In the market approach, valuation multiples that are relevant to the industry and company in the investments held should be considered and relied upon. Valuation multiples should be assessed and may be adjusted on a go-forward basis based on the business risk associated with the subject company in which the investment is held. In addition, the implied entry multiples should be considered as benchmarks in valuing unlisted equity. In circumstances where no financial performance metrics are available, the GP should rely on other non-financial related metrics applicable to relevant progress from the original investment date to the valuation date. In the income or discounted cash flow approach, forecasted cash flows that may be generated by the subject company are discounted to present value at an appropriate discount rate. These methodologies can be utilized to determine an enterprise value (“Enterprise Valuation Methodologies”) from which net debt is subtracted to estimate equity value.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The determination of fair value using these methodologies should take into consideration a range of factors, including but not limited to the price at which the investment was acquired, the nature of the investment, local market conditions, trading values on public exchanges for comparable securities, current and projected operating performance, and financing transactions subsequent to the acquisition of the investment. Because of the subjective nature of estimated fair value of the private investments, such value may differ significantly from the values that would have been used had a ready market existed for these investments. These financial instruments have been classified as Level 3 in the fair value hierarchy.

Alternative investments are not fully funded upon subscribing to the investment. The GP can draw down or call for capital as the fund goes into more investments or when the need arises, such as expenses associated with the partnership. The residual balance of uncalled capital is also known as “unfunded commitments,” which are restricted to the maximum amount of the limited partners’ total committed amount.

GASB 72 - Disclosure (Variable-Return Funds)
June 30, 2021
(In thousands)

	2021			
	Level 1	Level 2	Level 3	Total
Investments - at fair value				
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 223,020	\$ -	\$ 223,020
Equity securities	17,362,473	519,461	320,869	18,202,803
Debt securities	-	460,224	-	460,224
Balanced Fund:				
Short-term investments	-	2,408	-	2,408
Equity securities	579,001	-	-	579,001
International Equity Fund:				
Short-term investments	-	2,510	-	2,510
International equity	228,965	6,851	4,231	240,047
Sustainable Equity Fund:				
Short-term investments	-	4,502	-	4,502
Equity securities	492,858	-	-	492,858
U.S. Equity Index Fund:				
Equity securities	-	69,282	-	69,282
International equity index fund:				
Equity securities	-	11,766	-	11,766
Total Variable-Return Funds investments	\$ 18,663,297	\$ 1,300,024	\$ 325,100	\$ 20,288,421

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

GASB 72 - Disclosure (Variable-Return Funds) June 30, 2020 (In thousands)	2020			
	Level 1	Level 2	Level 3	Total
Investments - at fair value				
Diversified Equity Fund:				
Short-term investments	\$ -	\$ 222,787	\$ -	\$ 222,787
Equity securities	12,929,011	571,870	93,780	13,594,661
Debt securities	-	327,775	6	327,781
Balanced Fund:				
Short-term investments	-	8,951	-	8,951
Equity securities	477,481	-	-	477,481
International Equity Fund:				
Short-term investments	-	1,824	-	1,824
International equity	156,928	6,941	1,138	165,007
Sustainable Equity Fund:				
Short-term investments	-	7,397	-	7,397
Equity securities	298,466	-	-	298,466
U.S. Equity Index Fund:				
Equity securities	-	20,038	-	20,038
International Equity Index fund:				
Equity securities	-	3,121	-	3,121
Total Variable-Return Funds investments	\$ 13,861,886	\$ 1,170,704	\$ 94,924	\$ 15,127,514

Equity securities classified in Level 1 of the fair value hierarchy (above) are valued using prices quoted in active markets for those securities.

Equity and debt securities classified in Level 2 of the fair value hierarchy (above) are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices.

Securities are classified in Level 3 (above) when inputs to the valuation methodology are unobservable and significant to the fair value measurement. Instruments are often based on internally developed models of the custodian, in which there are few, if any, external observations. Generally, Level 3 includes distressed securities or alternative investments.

NOTE 4 – QPP CONTRIBUTIONS

The financial objective of the QPP is to fund members' retirement benefits during their active service and to establish employer contribution rates that, expressed as a percentage of annualized covered payroll, will remain approximately level from year to year. The Employers contribute amounts that, together with member contributions and investment income, are intended to ultimately be sufficient to accumulate assets to pay benefits when due.

Member Contributions – Members who joined prior to July 27, 1976 contribute by salary deductions on the basis of a normal rate of contribution that is assigned by the QPP at membership. This member normal rate, which is dependent upon age, years of prior service, and actuarial tables in effect at the time of membership, is determined so as to provide approximately one-fourth of the service retirement allowance at the earliest age for service retirement. For age at membership equal to 20 and with no prior service, the member normal rate is equal to 4.6%. For age at membership equal to 40 with no prior service, the member normal rate is equal to 3.6%.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Members who joined on or after July 27, 1976 are mandated to contribute 3% of salary. Effective October 1, 2000, these members are not required to make contributions after the 10th anniversary of their membership date or completion of 10 years of credited service, whichever is earlier.

Effective February 27, 2008, active members were eligible to enroll in a 55 retirement-age minimum and 25 credited years of service retirement option ("55/25 retirement option"), enabling them to eliminate any age-reduction factor in their retirement allowance. Those choosing the age 55/25 retirement option are required to make additional contributions of 1.85% of salary from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of credited service, whichever is later. Members joining after February 27, 2008 are automatically enrolled in a 55-retirement-age minimum and 27 credited years of service retirement program ("55/27 retirement program"). These members are required to make additional pension contributions of 1.85% of salary until they have accumulated 27 years of credited service. Chapter 504 of the Laws of 2009 ("Chapter 504/09") provides that individuals joining after December 10, 2009, who participate in the 55/27 retirement program, are required to make pension contributions of 4.85% of salary until they have 27 years of credited service and contributions of 1.85% of salary thereafter.

Under Chapter 18 of the Laws of 2012, members who join on and after April 1, 2012 are automatically enrolled in Tier VI. These members are required to make contributions ranging from 3.0% (based on a salary of \$45,000 and less) to 6.0% (based on a salary above \$100,000) until separation from service or retirement.

Employer Contributions – Statutorily-required contributions ("Statutory Contributions") to the QPP, determined by the Actuary in accordance with the State statutes and City laws, are generally funded by the Employers within the appropriate fiscal year. These contributions consider any expected deficiencies between the statutory rates of interest on TDA Program deposits in the Fixed-Return Fund and on statutory rates of interest credited to QPP members and actual investment earnings on such funds. The Statutory Contribution for the year ended June 30, 2021, based on an actuarial valuation as of June 30, 2019, was \$3.132 billion, and the Statutory Contribution for the year ended June 30, 2020, based on an actuarial valuation as of June 30, 2018, was \$3.591 billion. The Statutory Contributions for Fiscal Years 2021 and 2020 were equal to the Actuarial Contributions. Refer to the Schedule of Employers' Contributions in the accompanying required supplementary information for more information on the actuarial methods and assumptions applied by the Actuary to determine the Statutory Contributions.

NOTE 5 – QPP NET PENSION LIABILITY

The components of the net pension liability of the Employers at June 30, 2021 and 2020 were as follows:

	2021	2020
	(in millions)	
Total pension liability	\$ 78,418	\$ 75,116
Fiduciary net position *	78,347	59,319
Employers' net pension liability	\$ 71	\$ 15,797
Fiduciary net position as a percentage of the total pension liability	99.9%	79.0%

* Such amounts represent the preliminary System's fiduciary net position and may differ from the final System's fiduciary net position.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Actuarial Methods and Assumptions

The total pension liability as of June 30, 2021 and 2020 was determined by actuarial valuations as of June 30, 2020 (Updated Preliminary) and June 30, 2019 (Preliminary), respectively, that were rolled forward to develop the total pension liability to the respective fiscal year-end. The following actuarial assumptions were applied to all periods included in the measurement:

Projected salary increases	In general, merit and promotion increases plus assumed general wage increases of 3.0% per annum.
Investment rate of return	7.0% per annum, net of investment expenses.
COLAs	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

The above assumptions were developed assuming a long-term Consumer Price Inflation assumption of 2.5% per annum.

The Fiscal Year 2021 results reflect changes in the actuarial assumptions and methods from the prior year. These changes reflect refinements and improvements to the actuarial assumptions and methods under the judgment of the Chief Actuary.

Pursuant to Section 96 of the New York City Charter, a study of the actuarial assumptions used to value liabilities of the QPP is conducted every two years. The most recent of these studies was performed by Bolton, Inc. and included experience through June 30, 2017.

On January 17, 2019, the Actuary issued a Report titled "Proposed Changes in Actuarial Assumptions and Methods used in Determining Employer Contributions for Fiscal Years Beginning on and After July 1, 2018 for the New York City Teachers' Retirement System." The actuarial assumptions and methods described in that report are referred to as the "2019 A&M."

The June 30, 2020 total pension liability was calculated from the Preliminary June 30, 2019 actuarial valuation, which was based on the 2019 A&M.

On July 23, 2021, the Actuary issued a memorandum titled "Proposed Changes to Actuarial Assumptions and Methods." The actuarial assumptions and methods described in that memorandum amend certain assumptions and methods from the 2019 A&M. This revised set of actuarial assumptions and methods are referred to as the "Revised 2021 A&M."

The June 30, 2021 total pension liability was calculated from the Updated Preliminary June 30, 2020 actuarial valuation, which was based on the Revised 2021 A&M.

The Entry Age Normal ("EAN") cost method of funding is utilized by the System's Actuary to calculate the contribution required of the Employer.

Under this method, the Present Value ("PV") of Future Benefits ("PVFB") of each individual included in the actuarial valuation is allocated on a level basis over the earnings (or service) of the individual between entry age and assumed exit age(s). The Employer portion of this PVFB allocated to a valuation year is the Normal Cost. The portion of this PVFB not provided for at a valuation date by the PV of Future Normal Costs or future member contributions is the Accrued Liability ("AL").

The excess, if any, of the AL over the Actuarial Value of Asset ("AVA") is the Unfunded Accrued Liability ("UAL").

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Under this method, actuarial gains and losses, as they occur, reduce and increase the UAL and are explicitly identified and amortized.

Increases or decreases in obligations due to benefit changes, actuarial assumption changes, and actuarial method changes are also explicitly identified and amortized.

Expected Rate of Return on Investments

The long-term expected rate of return on QPP investments was determined using a building-block method in which best-estimate ranges of expected real rates of return (*i.e.*, expected returns, net of QPP 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 real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocations and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Asset Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Public markets:		
U.S. public market equities	25.0%	4.9%
Developed public market equities	10.0%	6.6%
Emerging public market equities	9.5%	9.1%
Fixed income	32.5%	1.5%
Private markets (alternative investments):		
Private equity	7.0%	9.5%
Private real estate	7.0%	6.7%
Infrastructure	4.0%	5.0%
Opportunistic-fixed income	5.0%	6.0%
Total	100%	

Discount Rate

The discount rate used to measure the total pension liability was 7.0%. The projections of cash flows used to determine the discount rate assumed that employee contributions will be made at the rates applicable to the current Tier for each member and that Employer contributions will be made at rates as determined by the Actuary. Based on those assumptions, the QPP's fiduciary net position was projected to be available to make all projected future benefit payments of current active and non-active QPP members. Therefore, the long-term expected rate of return on QPP investments was applied to all periods of projected benefit payments to determine the total pension liability.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

The following presents the net pension liability of the Employers, calculated using the discount rate of 7.0%, as well as what the Employers' net pension liability would be if it were calculated using a discount rate that is one-percentage point lower (6.0%) or one-percentage point higher (8.0%) than the current rate:

	1% Decrease (6.0%)	Discount Rate (7.0%)	1% Increase (8.0%)
	(In thousands)		
Employers' net pension liability - June 30, 2021	\$ 8,727,197	\$ 71,173	\$ (7,201,879)

NOTE 6 – MEMBER LOANS

The balance of member loans receivable for the QPP at June 30, 2021 and June 30, 2020 was \$310.4 million and \$323.8 million, respectively. QPP members are permitted to borrow up to 75% of their own contributions, including accumulated interest. Outstanding loan balances are insured in order to protect members' balances in case of death. In return for insurance coverage, Tiers III, IV, and VI members supplement their loan interest payments of 6.0% APR with a 0.1% insurance fee. Tiers I and II members pay loan interest payments of 6.0% APR and are not subject to the insurance fee. Upon termination of employment before retirement, certain QPP members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

The balance of member loans receivable for the TDA Program at June 30, 2021 and June 30, 2020 was \$410.2 million and \$401.2 million, respectively. Members of the TDA Program are permitted to borrow up to 75% of their own contributions, including accumulated interest. TDA Program members supplement their member loans' interest payments (7.0% for UFT, 8.25% for all other members) with a 0.3% ("APR") insurance fee. This fee funds a reserve, which is used to repay members' loan balances outstanding in case of death. Upon termination of employment before retirement, members are entitled to refunds of their own contributions, including accumulated interest, less any loans outstanding.

NOTE 7 – RELATED PARTIES

The Comptroller has been appointed by law as custodian for assets of the QPP and TDA Program with discretionary authority. Securities are held by certain banks under custodial agreements with the Comptroller. The Comptroller, and the NYC Financial Information Services Agency and Office of Payroll Administration ("FISA-OPA"), provide cash receipt and cash disbursement services and financial services; the Office of Actuary ("OA") provides actuarial services; the Office of Management and Budget ("OMB") provides budget review services; and The City's Corporation Counsel provides legal services to TRS. The cost of providing such services amounted to \$12.6 million and \$12.1 million in Fiscal Years 2021 and 2020, respectively. The City also provides other administrative services.

NOTE 8 – ADMINISTRATIVE EXPENSES

Chapter 593 of the Laws of 1996 ("Chapter 593/96"), effective July 1, 1996, authorized the Board of Trustees to draw upon its assets to pay the administrative expenses incurred by TRS. Prior to Fiscal Year 1997, The City and Variable Annuity Programs had paid all administrative expenses. After Chapter 593/96, administrative expenses incurred by the System are attributed to the QPP and the Variable-Return Funds of the TDA Program. The cost sharing is weighted and depends on an assessment of the prior year's administrative activities. Total TRS administrative expenses, attributable to the QPP and TDA Program, amounted to \$86.4 million and \$88.5 million for Fiscal Years 2021 and 2020, respectively. In addition to TRS' administrative expenses, other City agencies attribute the cost for services rendered by them during the fiscal year; see Note 7 above.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

In November 2015, the System amended and extended its lease agreement to rent office space. The agreement will expire on May 31, 2039. The future minimum rental payments required under this operating lease, are as follows:

<u>Years ending June 30,</u>	<u>Amount</u>
2022	\$ 8,760,000
2023	9,480,000
2024	9,559,000
2025	11,156,000
2026	11,156,000
Thereafter	158,443,000

Rent expense under the lease agreement for the years ended June 30, 2021 and June 30, 2020 was approximately \$8.7 million.

NOTE 9 – CONTINGENT LIABILITIES AND OTHER MATTERS

Contingent Liabilities – The QPP and TDA Program have certain contingent liabilities. TRS management, on advice from legal counsel, believes that such proceedings and contingencies will not have a material effect on the fiduciary net position of the QPP or cause changes in its fiduciary net position. Under the State statutes and City laws that govern the functioning of the QPP, increases in the obligation of the QPP to members and beneficiaries ordinarily result in increases in the obligations of the Employers to the QPP.

DOE Class Action – In 1996, a class action was brought against The City Board of Education and the State under Title VII of the Civil Rights Act of 1964 alleging that the use by the Board of Education of two teacher certification examinations mandated by the State had a disparate impact on minority candidates. In 2006, the United States Court of Appeals for the Second Circuit dismissed the claims against the State. In December 2012, the District Court decided a controlling legal question against The City. On February 4, 2013, the Second Circuit affirmed the District Court's decision. The District Court has appointed a Special Master to oversee claimants' individualized hearings both as to damages and eligibility for Board of Education employment. The hearings relate to members of the class that took the Liberal Arts and Science Test ("LAST") from 1996 to 2004. Currently, approximately 4,000 such individuals have submitted claim forms and may be eligible for damages. On June 5, 2015, the Court ruled that a second version of LAST, LAST-2, that was administered from 2004 to 2014, violated Title VII because it did not measure skills necessary to do the job. Currently, up to 700 potential LAST-2 class members have submitted claim forms and may be eligible for damages. In August 2015, the Court found that the State's new teacher certification test, the Academic Literacy Skills Test ("ALST"), administered since Spring 2014, was not discriminatory and evaluated skills necessary to do the job. Hearings to determine each claimant's damages are ongoing. While some final judgments have been entered, it is too early to permit an accurate estimation of the ultimate potential cost to The City.

Actuarial Audit – Pursuant to Section 96 of the New York City Charter, studies of the actuarial assumptions used to value liabilities of the five actuarially-funded New York City Retirement Systems ("NYCRS") are conducted every two years. Refer to Note 5 (QPP Net Pension Liability) for the results of the most recent actuarial audits for the QPP.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

Revised Actuarial Assumptions and Methods – In accordance with the ACNY and with appropriate practice, the Boards of Trustees of the five actuarially-funded NYCERS are to periodically review and adopt actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions.

The most recently completed study was published by Bolton, Inc., dated June 2019. Bolton analyzed experience for the 4- and 10-year periods ended June 30, 2017 and made recommendations with respect to the actuarial assumptions and methods based on their analysis. Based, in part, on these recommendations, the Actuary proposed new assumptions and methods for use in determining Employer Contributions for Fiscal Years beginning on and after July 1, 2018. These assumptions and methods were adopted by the Board of Trustees during Fiscal Year 2019 (See Note 5 for more information).

New York State Legislation (only significant laws since Fiscal Year 2012 included)

Chapter 18 of the Laws of 2012 ("Chapter 18/12") placed certain limitations on the Tier III and Tier IV benefits available to participants hired on and after April 1, 2012 in most New York State PERS, including TRS. These changes are sometimes referred to as Tier VI.

Chapter 3 of the Laws of 2013 implemented changes in the actuarial procedures for determining Employer Contributions beginning Fiscal Year 2012. In particular, Chapter 3/13 continued the One-Year Lag Methodology ("OYLM"), employed the Entry Age Actuarial Cost Method ("EAACM"), established an Actuarial Interest Rate ("AIR") assumption of 7.0% per annum, net of expenses, continued it and other interest rates until June 30, 2016, and defined the amortization of Unfunded Actuarial Accrued Liabilities ("UAAL").

Chapter 489 of the Laws of 2013 ("Chapter 489/13") extended the Notice of Participation filing deadline to September 11, 2014 for vested members to file a sworn statement indicating participation in the World Trade Center Rescue, Recovery, and Clean-up Operations.

Chapter 427 of the Laws of 2014 ("Chapter 427/14") provides non-contributory retirement service credit for members called to active military duty on or after September 11, 2001 and prior to January 1, 2006, who did not receive their full salary from a participating employer and who are otherwise eligible to receive retirement service credit for such service. Such members would not be required to make member contributions to receive such credit.

Chapter 510 of the Laws of 2015 clarifies for Tier VI the definition of multiple employers for the purpose of exclusion of wages, and changes the plan year for contributions from plan year April 1 to March 31 to plan year January 1 to December 31. Chapter 41 of the Laws of 2016 was enacted on May 31, 2016. This amendment removes the specified periods of time, medal requirements, and theaters of operation in which military service would have had to have been rendered for a service purchase pursuant to RSSL § 1000. Accordingly, for a member to be eligible to purchase service credit pursuant to RSSL § 1000 for pre-membership military service, the member need only have been honorably discharged from the military; all other requirements of RSSL § 1000 remain the same. This law is not retroactive and does not permit retired members to purchase service credit.

Chapter 326 of the Laws of 2016, enacted on September 11, 2016, extends the deadline to file a Notice of Participation in the World Trade Center Rescue, Recovery, and Clean-up Operations to September 11, 2018. Proper filing of a Notice of Participation is a requirement for a member to be eligible for a World Trade Center disability or death benefit.

Chapter 266 of the Laws of 2018 extends the time for members or eligible beneficiaries to file a Notice of Participation in World Trade Center Rescue, Recovery, and Cleanup Operations to September 11, 2022.

Teachers' Retirement System of the City of New York

NOTES TO COMBINING FINANCIAL STATEMENTS – CONTINUED

June 30, 2021 and 2020

This law was signed on September 7, 2018, and shall be deemed to have been in full force and effect on and after September 11, 2001.

Chapter 89 of the Laws of 2020 provides death benefits to statutory beneficiaries of members whose death was a result of or was contributed to by Coronavirus Disease ("COVID-19"). This law provides an Accidental Death Benefit to the eligible beneficiaries of a member or a retiree who retired after March 1, 2020, where such member reported for work outside their home and contracted COVID-19 within 45 days after reporting for work, and whose death was caused by COVID-19 or where COVID-19 contributed to such member's death and where such death occurred before January 1, 2021. Amounts payable are reduced by payments of any ordinary death benefits or option benefit paid to another statutory beneficiary. Chapter 78 of 2021 extended the deadline for statutory beneficiaries of members who die prior to January 1, 2023.

Chapter 357 of 2021 eliminated TDA beneficiaries of members who die on or after July 1, 2021.

Chapter 391 of 2021 extended for a 2-year period the 7% Actuarial Interest Rate assumption.

Other Legislation

The SECURE Act of December 2019 increased the age at which Required Minimum Distributions must commence from 70.5 to 72. It also required that certain inherited retirement plan accounts be more rapidly distributed to their owners.

The CARES Act of March 2020 suspended Required Minimum Distributions due in 2020. It also authorized more advantageous loans and distributions to members who certify that COVID-19 adversely affected themselves or their households. These special rules sunset on or before December 31, 2020.

COVID-19

The outbreak of the COVID-19 has been declared a pandemic by the World Health Organization. The Governor declared a state of emergency in the state on March 7, 2020 and the Mayor declared a state of emergency in The City on March 12, 2020. The Governor declared an end to the state of emergency due to the COVID-19 pandemic in the State on June 24, 2021, effective June 25, 2021. The state of emergency in The City remains in effect. The ultimate impact of the COVID-19 pandemic on the plans cannot be determined at this time.

Teachers' Retirement System of the City of New York
REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS

June 30,
(In thousands)

	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total pension liability:								
Service cost	\$ 1,588,162	\$ 1,555,755	\$ 1,691,144	\$ 1,436,617	\$ 1,386,674	\$ 1,274,308	\$ 1,223,158	\$ 1,205,662
Interest	7,145,949	4,838,801	4,914,552	5,071,481	5,147,042	4,131,177	4,027,139	4,407,702
Changes of benefit terms	-	-	-	-	-	-	-	-
Differences between expected and actual experience	(393,805)	(34,324)	(1,188,247)	(2,235,673)	1,008,249	1,229,501	1,507,964	-
Changes of assumptions	(338,383)	-	(826,850)	-	-	2,432,878	-	-
Benefit payments/withdrawals	<u>(4,699,448)</u>	<u>(4,591,086)</u>	<u>(4,487,680)</u>	<u>(4,351,924)</u>	<u>(4,219,312)</u>	<u>(4,107,455)</u>	<u>(4,024,272)</u>	<u>(3,818,248)</u>
Net change in total pension liability	3,302,475	1,769,146	102,919	(79,499)	3,322,653	4,960,409	2,733,989	1,795,116
Total pension liability - beginning	<u>75,115,996</u>	<u>73,346,850</u>	<u>73,243,931</u>	<u>73,323,430</u>	<u>70,000,777</u>	<u>65,040,368</u>	<u>62,306,379</u>	<u>60,511,262</u>
Total pension liability - ending (a)	<u>78,418,471</u>	<u>75,115,996</u>	<u>73,346,850</u>	<u>73,243,931</u>	<u>73,323,430</u>	<u>70,000,777</u>	<u>65,040,368</u>	<u>62,306,378</u>
Plan fiduciary net position:								
Contributions - employer	3,131,607	3,590,822	3,696,686	3,889,710	3,888,399	3,760,714	3,325,528	3,054,424
Contributions - other employer*	61,663	61,748	62,513	59,979	57,369	n/a	n/a	n/a
Contributions - employee	247,751	226,920	217,205	195,241	180,076	173,696	158,590	154,962
Net investment income	22,362,988	3,911,187	5,721,310	6,275,115	8,133,280	960,267	1,611,929	9,435,906
Benefit payments/withdrawals	(4,699,448)	(4,591,086)	(4,487,680)	(4,351,924)	(4,219,312)	(4,107,455)	(4,024,272)	(3,818,248)
Payment of interest on TDA fixed funds	(1,998,388)	(1,846,173)	(1,716,679)	(1,595,462)	(1,466,615)	(1,354,207)	(1,248,988)	(1,147,923)
Administrative expenses	(68,100)	(64,532)	(64,291)	(65,076)	(60,790)	(59,367)	(58,391)	(46,042)
Other changes	<u>(9,725)</u>	<u>39,853</u>	<u>28,671</u>	<u>29,170</u>	<u>(46,229)</u>	<u>1,233</u>	<u>329</u>	<u>404</u>
Net change in plan fiduciary net position	19,028,348	1,328,739	3,457,735	4,436,753	6,466,178	(625,119)	(235,275)	7,633,483
Plan fiduciary net position - beginning	<u>59,318,950</u>	<u>57,990,211</u>	<u>54,532,476</u>	<u>50,095,723</u>	<u>43,629,545</u>	<u>44,254,664</u>	<u>44,489,939</u>	<u>36,856,456</u>
Plan fiduciary net position - ending (b) **	<u>78,347,298</u>	<u>59,318,950</u>	<u>57,990,211</u>	<u>54,532,476</u>	<u>50,095,723</u>	<u>43,629,545</u>	<u>44,254,664</u>	<u>44,489,939</u>
Employer's net pension liability - ending (a)-(b)	<u>\$ 71,173</u>	<u>\$ 15,797,046</u>	<u>\$ 15,356,639</u>	<u>\$ 18,711,455</u>	<u>\$ 23,227,707</u>	<u>\$ 26,371,232</u>	<u>\$ 20,785,704</u>	<u>\$ 17,816,440</u>
Plan fiduciary net position as a percentage of the total pension liability	<u>99.91%</u>	<u>78.97%</u>	<u>79.06%</u>	<u>74.45%</u>	<u>68.32%</u>	<u>62.33%</u>	<u>68.04%</u>	<u>71.41%</u>
Covered payroll	<u>\$ 11,203,878</u>	<u>\$ 10,903,755</u>	<u>\$ 10,404,404</u>	<u>\$ 9,200,180</u>	<u>\$ 8,818,537</u>	<u>\$ 8,256,100</u>	<u>\$ 8,074,522</u>	<u>\$ 7,964,149</u>
TRS net pension liability as a percentage of covered payroll	<u>0.64%</u>	<u>144.88%</u>	<u>147.60%</u>	<u>203.38%</u>	<u>263.40%</u>	<u>319.42%</u>	<u>257.42%</u>	<u>223.71%</u>

Additionally, in accordance with paragraph 50 of GASB No. 67, this schedule should present information for 10 years, if available. The information presented here pertains to periods beginning with the June 30, 2014 fiscal year, the plan's adoption year of GASB No. 67. Additional years will be added until the 10-year requirement is met.

*Includes amounts for Employer's portion of Additional Member Contributions and supplemental contributions for the ASAF and ASF Funds.

**Such amounts represent the preliminary Systems' fiduciary net position and may differ from the Systems' final fiduciary net position.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULES OF EMPLOYER CONTRIBUTIONS

Fiscal years ended June 30,
(In thousands)

	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Actuarially determined contribution	\$ 3,131,607	\$ 3,590,822	\$ 3,696,686	\$ 3,889,710	\$ 3,888,399	\$ 3,702,569	\$ 3,270,007	\$ 2,998,694	\$ 2,855,640	\$ 2,673,078
Contributions in relation to the actuarially determined contribution	<u>3,131,607</u>	<u>3,590,822</u>	<u>3,696,686</u>	<u>3,889,710</u>	<u>3,888,399</u>	<u>3,702,569</u>	<u>3,270,007</u>	<u>2,998,694</u>	<u>2,855,640</u>	<u>2,673,078</u>
Contribution deficiency (excess)	<u>\$ -</u>									
Covered payroll ¹	\$ 11,203,878	\$ 10,903,755	\$ 10,404,404	\$ 9,200,180	\$ 8,818,537	\$ 8,256,100	\$ 8,074,522	\$ 7,964,149	\$ 7,833,329	\$ 7,920,935
Contributions as a percentage of covered payroll	27.951%	32.932%	35.530%	42.279%	44.093%	44.846%	40.498%	37.652%	36.455%	33.747%

¹ Projected employee payroll at time 1.0 under previous roll-forward methodology through 2018. Actual employee payroll at valuation date (time = 0) beginning in 2019.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULES OF EMPLOYER CONTRIBUTIONS

Note to Schedule:

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2021 contributions were determined using an actuarial valuation as of June 30, 2019). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015
Actuarial cost method	Entry age	Entry age	Entry age	Entry age	Entry age
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar	Increasing dollar
Post-2010 unfunded	Level dollar	Level dollar	Level dollar	Level dollar	Level dollar
Remaining amortization period:					
Initial unfunded	13 years (closed)	14 years (closed)	15 years (closed)	16 years (closed)	17 years (closed)
2010 ERI	-	-	-	-	1 years (closed)
2011 Actuarial gain/loss	7 years (closed)	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)
2012 Actuarial gain/loss	8 years (closed)	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)
2013 Actuarial gain/loss	9 years (closed)	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)
2014 Actuarial gain/loss	10 years (closed)	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)
2015 Actuarial gain/loss	11 years (closed)	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)
2016 Actuarial gain/loss	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	NA
2017 Actuarial gain/loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA
2017 ASAF method change	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2017 Method change	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2017 Assumption change	18 years (closed)	19 years (closed)	20 years (closed)	NA	NA
2018 Actuarial gain/loss	14 years (closed)	15 years (closed)	NA	NA	NA
2018 Method change	19 years (closed)	20 years (closed)	NA	NA	NA
2019 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA
2019 Assumption change	20 years (closed)	NA	NA	NA	NA
2019 Method change	20 years (closed)	NA	NA	NA	NA
Actuarial value of assets method ¹	Five-year moving average of market values with a "Market Value Restart" as of June 30, 2019.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.

¹ As of the June 30, 2014 (Lag) valuation, the AVA is constrained to be no more than 20% from Fair Value. As of the June 30, 2018 (Lag) valuation, the AVA is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
 QUALIFIED PENSION PLAN
 SCHEDULES OF EMPLOYER CONTRIBUTIONS

Note to Schedule:

The above actuarially determined contributions were developed using a One-Year Lag Methodology, under which the actuarial valuation determines the Employer contribution for the second following fiscal year (e.g., fiscal year 2021 contributions were determined using an actuarial valuation as of June 30, 2019). The methods and assumptions used to determine the actuarially determined contributions are as follows:

Valuation Dates	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010
Actuarial cost method	Entry age				
Amortization method for unfunded actuarial accrued liabilities:					
Initial unfunded	Increasing dollar				
Post-2010 unfunded	Level dollar				
Remaining amortization period:					
Initial unfunded	18 years (closed)	19 years (closed)	20 years (closed)	21 years (closed)	22 years (closed)
2010 ERI	2 years (closed)	3 years (closed)	4 years (closed)	5 years (closed)	NA
2011 Actuarial gain/loss	12 years (closed)	13 years (closed)	14 years (closed)	15 years (closed)	NA
2012 Actuarial gain/loss	13 years (closed)	14 years (closed)	15 years (closed)	NA	NA
2013 Actuarial gain/loss	14 years (closed)	15 years (closed)	NA	NA	NA
2014 Actuarial gain/loss	15 years (closed)	NA	NA	NA	NA
2015 Actuarial gain/loss	NA	NA	NA	NA	NA
2016 Actuarial gain/loss	NA	NA	NA	NA	NA
2017 Actuarial gain/loss	NA	NA	NA	NA	NA
2017 ASAF method change	NA	NA	NA	NA	NA
2017 Method change	NA	NA	NA	NA	NA
2017 Assumption change	NA	NA	NA	NA	NA
2018 Actuarial gain/loss	NA	NA	NA	NA	NA
2018 Method change	NA	NA	NA	NA	NA
2019 Actuarial gain/loss	NA	NA	NA	NA	NA
2019 Assumption change	NA	NA	NA	NA	NA
2019 Method change	NA	NA	NA	NA	NA
Actuarial value of assets method ¹	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.	Modified six-year moving average of market values with a "Market Value Restart" as of June 30, 2011. The June 30, 2010 AVA is defined to recognize Fiscal Year 2011 investment performance.

¹ As of the June 30, 2014 (Lag) valuation, the AVA is constrained to be no more than 20% from Fair Value. As of the June 30, 2018 (Lag) valuation, the AVA is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULES OF EMPLOYER CONTRIBUTIONS

Valuation Dates	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015
Actuarial assumptions:					
Assumed rate of return ²	7.0% per annum, net of investment expenses.				
Post-retirement mortality ³	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2016
Active service: withdrawal, death, disability, service retirement ³	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2019	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012
Salary increases ²	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.
Cost-of-living adjustments ²	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

² Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

³ As of June 30, 2019, applies mortality improvement scale MP-2020 published by the Society of Actuaries to post-retirement mortality, active ordinary death mortality rates, and pre-commencement mortality rates for terminated vesteds. Prior to June 30, 2019, MP-2018 was applied to post-retirement mortality. Prior to June 30, 2017, MP-2015 was applied to post-retirement mortality. Prior to June 30, 2014, Scale AA was applied to post-retirement mortality.

See Report of Independent Certified Public Accountants.

Teachers' Retirement System of the City of New York

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULES OF EMPLOYER CONTRIBUTIONS

Valuation Dates	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011	June 30, 2010
Actuarial assumptions:					
Assumed rate of return ²	7.0% per annum, net of investment expenses.				
Post-retirement mortality ³	Tables adopted by Retirement Board during Fiscal Year 2016	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012
Active service: withdrawal, death, disability, service retirement ³	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2012	Tables adopted by Retirement Board during Fiscal Year 2006
Salary increases ²	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.	In general, merit and promotion increases plus assumed General Wage Increases of 3.0% per year.
Cost-of-living adjustments ²	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.	1.5% per annum for Auto COLA. 2.5% per annum for Escalation.

² Developed using a long-term Consumer Price Inflation assumption of 2.5% per year.

³ As of June 30, 2019, applies mortality improvement scale MP-2020 published by the Society of Actuaries to post-retirement mortality, active ordinary death mortality rates, and pre-commencement mortality rates for terminated vesteds. Prior to June 30, 2019, MP-2018 was applied to post-retirement mortality. Prior to June 30, 2017, MP-2015 was applied to post-retirement mortality. Prior to June 30, 2014, Scale AA was applied to post-retirement mortality.

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Teachers' Retirement System of the City of New York
REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)
QUALIFIED PENSION PLAN
SCHEDULE OF INVESTMENT RETURNS

June 30, 2021, 2020, 2019, 2018, 2017, 2016, 2015 and 2014

The following table displays the annual money-weighted rate of return, net of investment expense, for TRSNYC Pension Fund investments for each of the past eight fiscal years:

<u>Fiscal Year Ended</u>	<u>Money- Weighted Rate of Return</u>
June 30, 2021	24.80%
June 30, 2020	4.92%
June 30, 2019	7.50%
June 30, 2018	8.14%
June 30, 2017	12.50%
June 30, 2016	1.66%
June 30, 2015	2.81%
June 30, 2014	17.60%

Note: In accordance with paragraph 50 of GASB Statement No. 67, *Financial Reporting for Pension Plans* ("GASB 67"), this schedule should present information for 10 years, if available. The information presented here pertains to periods beginning with the June 30, 2014 fiscal year, the System's adoption year of GASB 67. Additional years will be added until the 10-year requirement is met.

See Report of Independent Certified Public Accountants.

**ADDITIONAL SUPPLEMENTARY INFORMATION
SCHEDULE OF ADMINISTRATIVE EXPENSES
Year Ended June 30, 2021**

SCHEDULE 4

	Total	QPP	TDA
PERSONNEL SERVICES			
Staff Salaries	\$31,358,252	\$24,562,919	\$6,795,333
Social Security	1,878,796	1,471,661	407,135
Insurance (Health)	5,524,786	4,327,565	1,197,221
Welfare Benefit Fund	1,239,187	970,655	268,532
TOTAL PERSONNEL SERVICES	40,001,021	31,332,800	8,668,221
PROFESSIONAL SERVICES			
Data Processing Support and Licenses	7,983,867	6,253,763	1,730,104
Temporary and Consultant Staffing	3,775,846	2,957,620	818,226
Outside Professional Services	910,348	713,076	197,272
TOTAL PROFESSIONAL SERVICES	12,670,061	9,924,459	2,745,602
MODERNIZATION INITIATION			
Consultants and Temporary Costs	8,618,984	6,925,009	1,693,975
IT Vendor Development Costs	1,405,506	1,129,268	276,238
QA Vendor Non-IT Costs	5,634,380	4,526,999	1,107,381
Equipment Costs	130,327	104,713	25,614
Other Expenses	1,397	1,123	274
TOTAL MODERNIZATION INITIATION ***	15,790,594	12,687,112	3,103,482
DOE CLASS ACTION EXPENSE			
Consultants and Temporary Costs	3,582,109	2,878,081	704,028
IT Vendor Development Costs	7,790	6,259	1,531
QA Vendor Non-IT Costs	1,483,444	1,191,888	291,556
Equipment Costs	7,679	6,170	1,509
Mandated Legislative Enhancements	497,369	399,616	97,753
TOTAL DOE CLASS ACTION EXPENSES	5,578,391	4,482,014	1,096,377
RENTALS			
Office Space	8,778,998	6,876,589	1,902,409
Real Estate Taxes & Operating Expenses	383,046	300,040	83,006
Equipment Leasing	97,863	76,656	21,207
TOTAL RENTALS	9,259,907	7,253,285	2,006,622
COMMUNICATION			
Telephone	261,125	204,539	56,586
Postage	839,444	657,537	181,907
Local Travel Expense *	40,450	31,684	8,766
Non-Local Travel Expenses **	(7,335)	(5,745)	(1,590)
TOTAL COMMUNICATION	1,133,684	888,015	245,669
OTHER OPERATING EXPENSES			
Utilities	219,424	171,875	47,549
Supplies and Materials	48,721	38,163	10,558
Maintenance, Repairs, and Services	986,997	773,115	213,882
Office Equipment and Furniture	41,208	32,278	8,930
Storage	30,461	23,860	6,601
Printing	512,103	401,130	110,973
Training Programs	74,771	58,568	16,203
Dues and Subscriptions	42,371	33,189	9,182
TOTAL OTHER OPERATING EXPENSES	1,956,056	1,532,178	423,878
TOTAL ADMINISTRATIVE EXPENSES***	\$86,389,714	\$68,099,863	\$18,289,851

* Total TRS Local Travel Expense includes Local Travel Fare \$752, Courier \$31,447, Meals & Refreshments \$491, and Conferences \$7,760.

** Total TRS Non-Local Travel Expense includes Hotels & Meals \$0, Travel Fare \$0, and Conferences refund of \$7,335.

*** The QPP Fixed Return Fund's administrative expense amounted to \$48,472,226, of which the modernization portion was \$4,419,788 and DOE class action expense was \$1,561,392. The Variable Return Fund's administrative expense amounted to \$36,870,655, of which the modernization portions attributable to the QPP and TDA were \$8,267,324 and \$3,103,482, respectively, and the DOE class action expense portions attributable to the QPP and TDA were \$2,920,622 and \$1,096,377, respectively. Administrative expenses offset by loan service charge revenues amounted to \$1,046,833; portions attributable to the QPP and TDA were \$747,738 and \$299,095, respectively.

The schedule shows total expenses paid by TRS. Other administrative expenses of \$12,603,339 were paid on TRS' behalf by other City agencies under Regulation 85 of the New York State Superintendent of Insurance Regulations.

See Note 8 of the Financial Statements for Administrative Expenses.

See Report of Independent Certified Public Accountants.

ADDITIONAL SUPPLEMENTARY INFORMATION
SCHEDULE OF INVESTMENT EXPENSES AND SERVICES (QPP & TDA)
Year Ended June 30, 2021

INVESTMENT CATEGORY	ASSETS UNDER MANAGEMENT	INVESTMENT EXPENSES AND SERVICES
Pension Fund	\$102,936,369,212	\$394,736,739
Diversified Equity and Int'l Equity Funds	19,128,604,136	24,058,645
Balanced Fund	581,409,192	433
Sustainable Equity Fund	497,359,301	1,312,789
U.S. Equity Index Fund	69,281,450	150
International Equity Index Fund	11,765,982	134
OTHER INVESTMENT SERVICES		
NYC Office of Comptroller (Fixed-Return Fund)		4,958,780
Consultant		3,896,836
Legal		946,838
Other Services		1,229,640
Provision for Expense Reduction		(11,695,369)
	<u>\$123,224,789,273*</u>	<u>419,445,615</u>

* Excludes \$1,784,414 in securities lending

See Report of Independent Certified Public Accountants.



Investment Section

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REPORT ON INVESTMENT ACTIVITY

The below report on investment activity was prepared by Rocaton Investment Advisors. Fund summaries of the System's Investment Options follow it. After the reports are disclosures of sector returns, asset class allocation, investment management and other service fees, and bond and equity holdings. The disclosures supplement the investment information of the Financial Section

**Prepared by Rocaton Investment Advisors, LLC,
Investment Consultant to the Teachers' Retirement System of the City of New York**

As of June 30, 2021, TRS offered seven investment program options to its membership: the Fixed Return Fund, the Diversified Equity Fund, the Balanced Fund, the International Equity Fund, the Sustainable Equity Fund, the U.S. Equity Index Fund, and the International Equity Index Fund. State Street and JP Morgan Chase are the custodians of the assets of these investment programs. The custodian calculates the return information using time-weighted compound return. The structure of each of these programs differs depending upon its investment objective. These seven programs and their objectives are described below.

The pooled New York City Pension Fund includes a) all funds that Tier I/II members invested in the Fixed Return Fund and b) Employer Contribution assets for Tier I/II members c) all Tier III/IV/VI QPP funds d) all TDA funds invested in the Fixed Return Fund. The Fixed Return Fund currently provides Tier I/II participants with an 8.25% return. Tier III/IV/VI members are credited 5% in their QPP accounts. UFT members and non-UFT members with TDA funds invested in the Fixed Return Fund are provided with 7.0% and 8.25% returns, respectively. The combined QPP and TDA Fixed Return Funds assets totaled \$102.9 billion as of June 30, 2021. The overall Pension Fund had a net of fee return of 24.80% for the fiscal year ending June 30, 2021. As of June 30, 2021, the Fund had 30% U.S. equity investments, 19% non-U.S. equity investments, 14% in alternative investments, 37% fixed income investments and short-term investments. The Fund's long-term asset allocation policy is based on the Fund's long-term investment horizon of more than 20 years. The investment structure has a significant emphasis on risk control. For example, as of June 30, 2021, approximately 95% of U.S. equity assets were invested in indexed or risk-controlled strategies. This emphasis on indexed and risk-controlled strategies also enables the program to more effectively control costs. The Fund's fixed income holdings are primarily high quality U.S. securities with smaller allocations to sectors such as enhanced yield.

The Diversified Equity Fund's objective is to provide participants with a diversified equity investment portfolio. As of June 30, 2021, the Diversified Equity Fund, including both QPP and TDA assets had \$18.9 billion in assets and had a net of fee return of 43.01% for the fiscal year ending June 30, 2021. As of June 30, 2021, this portfolio's target structure is a mixture of U.S. equities (70%), non-U.S. equities (20%), and defensive strategies (10%). The defensive sector is made up of convertible bond strategies, conservatively-oriented equity strategies and tactical asset allocation strategies. Tactical asset allocation strategies shift allocations to and within asset classes such as stocks, bonds and cash depending upon the managers' analysis of market conditions. The diversification of this portfolio beyond U.S. equities is intended to broaden diversification and help protect participants against significant market downturns within a single asset class (*i.e.* U.S. stocks). Again, risk control and cost-effectiveness are a very important focus of the investment structure. For example, as of June 30, 2021, approximately 66% of the assets within the Diversified Equity Fund were invested in indexed strategies.

The Balanced Fund's objective is to seek current income and some capital appreciation. The Balanced Fund invests in both stocks and bonds and targets a conservative mix of approximately 70% bonds and 30% stocks. The Fund's bond allocation is passively managed and includes allocations to short-term U.S. Treasuries, Agencies, short-term investment-grade Corporate Bonds, and some foreign securities. The Fund's stock allocation is passively managed and is composed of U.S. and non-U.S. companies located in developed and emerging markets, traded on a variety of stock exchanges and denominated in a variety of currencies around the world. As of June 30, 2021, the combined QPP and TDA Balanced Funds' assets totaled \$581.4 million and the Fund earned a net of fee return of 12.09% for the fiscal year ending June 30, 2021.

The International Equity Fund invests primarily in the stocks of non-U.S. companies located in both developed and emerging markets. The objective of this fund is to provide a return comparable to the return of the non-U.S. developed equity markets over a full market cycle. As of June 30, 2021, the combined QPP and TDA International Equity Funds' assets totaled \$242.6 million. For the fiscal year ending June 30, 2021, the International Equity Fund returned 37.54%, net of fees.

The Sustainable Equity Fund invests primarily in stocks of large and mid-cap U.S. and non-U.S. companies that meet certain financial and social criteria. The objective of this fund is to provide a rate of return comparable to the broad equity

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK

market while reflecting social priorities. As of June 30, 2021, the combined QPP and TDA Sustainable Equity Funds' assets totaled \$497.4 million. For the fiscal year ending June 30, 2021, the Sustainable Equity Fund returned 39.55%, net of fees.

The U.S. Equity Index Fund invests primarily in stocks of large, mid, and small-cap companies in the U.S. The objective of this fund is to closely track the returns and characteristics of the Dow Jones US Total Stock Market Index. As of June 30, 2021, the combined QPP and TDA US Equity Index Funds' assets totaled \$69.3 million. For the fiscal year ending June 30, 2021, the U.S. Equity Index returned 47.11%, net of fees.

The International Equity Index Fund invests primarily in stocks of large, mid, and small-cap companies located in both developed and emerging markets. The objective of this fund is to closely track the returns and characteristics of the MSCI ACWI ex US IMI Net Index. As of June 30, 2021, the combined QPP and TDA International Equity Index Funds' assets totaled \$11.8 million. For the fiscal year ending June 30, 2021, the International Equity Index returned 36.53%, net of fees.

The investment strategies of these investment managers are monitored periodically for consistency with TRS' overall investment objectives.

ECONOMIC REVIEW

Interest rates increased in the U.S. during the one-year period ending June 30, 2021 with the 10-year Treasury note yielding 1.4% at the end of June, an increase of approximately 79 basis points from June 30, 2020. The returns of investment grade fixed income sectors generated mixed results over the trailing one-year period, with corporates returning 3.30% and treasuries returning -3.22%. U.S. equities (proxied by the S&P 500) gained 40.79% during the trailing one-year period, outperforming non-U.S. developed markets (proxied by the MSCI EAFE Index) which returned 32.92%. Additionally, emerging market equities (proxied by the MSCI Emerging Markets Index) posted a return of 41.36% for the one year ending June 30, 2021. The return on the broad fixed income market (proxied by the Bloomberg Barclays U.S. Aggregate Bond Index) during the trailing one-year period was -0.33%. High yield fixed income (below investment grade corporate bonds proxied by the Bloomberg Barclays U.S. High Yield Index) outperformed higher quality domestic fixed income during the one-year period ending June 30, 2021, returning 15.37%, while emerging markets debt (proxied by the J.P. Morgan EMBI Global Diversified Index) returned 7.53%.

U.S. MARKETS REVIEW

Most major domestic equity indices rose during the one-year period ending June 30, 2021 with smaller market capitalization companies, as represented by the Russell 2000 Index, outperforming their larger counterparts, as represented by the Russell 1000 Index. The Russell 2000 Index returned 62.03% during the one-year period ending June 30, 2021 versus the Russell 1000 Index return of 43.07% for the same period. The Russell 3000 Index, a broad measure of the U.S. equity markets, returned 44.16% for the one-year period ending June 30, 2021. For the 12 months ending June 30, 2021, value stocks slightly outperformed growth stocks as the Russell 3000 Value Index outperformed the Russell 3000 Growth Index by 2.41%. For the year ending June 30, 2021, the Bloomberg Barclays U.S. Aggregate Bond Index, a broad index of U.S. investment grade bonds, returned -0.33%.

INTERNATIONAL MARKETS REVIEW

The return for the MSCI EAFE Index, a measure of the developed international equity markets, was 32.92% in U.S. dollar terms for the one-year period ending June 30, 2021. Of the following four regions: Japan, Pacific ex-Japan, U.K., and Europe ex-U.K., Europe ex-U.K. had the strongest performance for the one-year period, with a return of 45.32%. Pacific ex-Japan followed with a return of 34.32% for the one-year period while the MSCI U.K. and MSCI Japan markets returned 31.33%, and 25.25%, respectively. International small cap stocks outperformed foreign large cap companies for the 12-month period ending June 30, 2021 with the MSCI EAFE Small Cap Index's return of 41.49%. The MSCI Emerging Markets Index returned 41.36% for the one-year period ending June 30, 2021. All of the performance information regarding non-U.S. markets is provided from the perspective of U.S.-based investors and as such were translated at fiscal year-end and reviewed as US dollar denominations.

Rocaton Investment Advisors, LLC

20 Glover Avenue
Norwalk, Connecticut 06850

Performance information for MSCI non-U.S. equity indices represents Total Return Net Dividends in U.S. Dollar Terms.

INVESTMENT OPTIONS

Below is a depiction of the investment programs in the QPP and the TDA Program available to members. The programs' portfolios are structured differently to allow members to diversify their investments. Please see pages 91-95 for detailed descriptions of the investment programs.

PENSION FUND	DIVERSIFIED EQUITY FUND	BALANCED FUND	
(Member Contributions, Pension Reserve Funds & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	
Tiers I/II QPP funds in the Fixed Return Fund +	Tiers I/II QPP funds in the Diversified Equity Fund	Tiers I/II QPP funds in the Balanced Fund	
All Tiers III/IV/VI QPP Funds +	+	+	
All Tiers' TDA funds in the Fixed Return Fund	All Tiers' TDA funds in the Diversified Equity Fund	All Tiers' TDA funds in the Balanced Fund	

INTERNATIONAL EQUITY FUND	SUSTAINABLE EQUITY FUND	U.S. EQUITY INDEX FUND	INTERNATIONAL EQUITY INDEX FUND
(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)	(Member Contributions & ITHP Contributions)
Tiers I/II QPP funds in the International Equity Fund +	Tiers I/II QPP funds in the Sustainable Equity Fund +	Tiers I/II QPP funds in the U.S. Equity Index Fund +	Tiers I/II QPP funds in the International Equity Index Fund +
All Tiers' TDA funds in the International Equity Fund	All Tiers' TDA funds in the Sustainable Equity Fund	All Tiers' TDA funds in the U.S. Equity Index Fund	All Tiers' TDA funds in the International Equity Index Fund

Note: Members' QPP accounts receive additional contributions from their employer: "Pension Reserve" funds, which are invested in the Pension Fund, are provided to all members on a statutory basis consistent with generally accepted actuarial principles; actuarial variations are performed annually as of June 30. "Increased-Take-Home Pay" (ITHP) funds, provided by the City of New York to Tier I and Tier II members only, are invested according to member designation in any combination of the seven investment programs.

The table below compares accumulations as of June 30, 2021, based on assumed contributions of \$100.00 per month into each of the Fixed Return, Diversified Equity, Balanced, International Equity, Sustainable Equity, U.S. Equity Index, and International Equity Index Funds.

**10-YEAR COMPARISON OF ACCUMULATIONS
IN TRS' INVESTMENT PROGRAMS**
As of June 30, 2021

MONTHS OF PARTICIPATION	12	24	36	48	60	72	84	96	108	120
Fixed Return Fund (TDA/UFT) ¹	\$1,239	\$2,564	\$3,982	\$5,499	\$7,122	\$8,859	\$10,718	\$12,707	\$14,835	\$17,112
Fixed Return Fund (All others) ¹	\$1,245	\$2,594	\$4,053	\$5,633	\$7,343	\$9,194	\$11,198	\$13,367	\$15,715	\$18,257
Diversified Equity Fund ²	\$1,440	\$3,201	\$5,067	\$7,029	\$9,339	\$11,900	\$4,441	\$7,323	\$20,849	\$24,898
Balanced Fund ³	\$1,270	\$2,655	\$4,116	N/A	N/A	N/A	N/A	N/A	N/A	N/A
International Equity Fund ⁴	\$1,400	\$3,051	\$4,736	\$6,367	\$8,331	\$10,438	\$12,427	\$14,494	\$16,934	\$19,587
Sustainable Equity Fund ⁵	\$1,442	\$3,408	\$5,543	\$7,810	\$10,434	\$13,368	\$16,322	\$19,696	\$23,984	\$28,744
U.S. Equity Index Fund ⁶	\$1,457	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
International Equity Index Fund ⁷	\$1,397	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

¹ Fixed Return Fund

QPP: Tiers I/II members are credited with 8.25% annually on QPP investments in the Fixed Return Fund; this rate has been in effect since July 1, 1988.

TDA: Members who are represented by the United Federation of Teachers (UFT) are credited with 7% annually on TDA investments. This rate has been in effect since December 11, 2009; the previous rate was 8.25%. Members who are not represented by the UFT are credited with 8.25% annually on TDA investments in the Fund; this rate has been in effect since July 1, 1988. The numbers in the chart represent the accumulation for a UFT member.

² Based on July 2021 unit value of \$133.347

³ Based on July 2021 unit value of \$17.572

⁴ Based on July 2021 unit value of \$13.280

⁵ Based on July 2021 unit value of \$28.029

⁶ Based on July 2021 unit value of \$15.306

⁷ Based on July 2021 unit value of \$13.335

**PENSION FUND
Fund Summary
Fiscal Year 2021**

Return: 24.80%

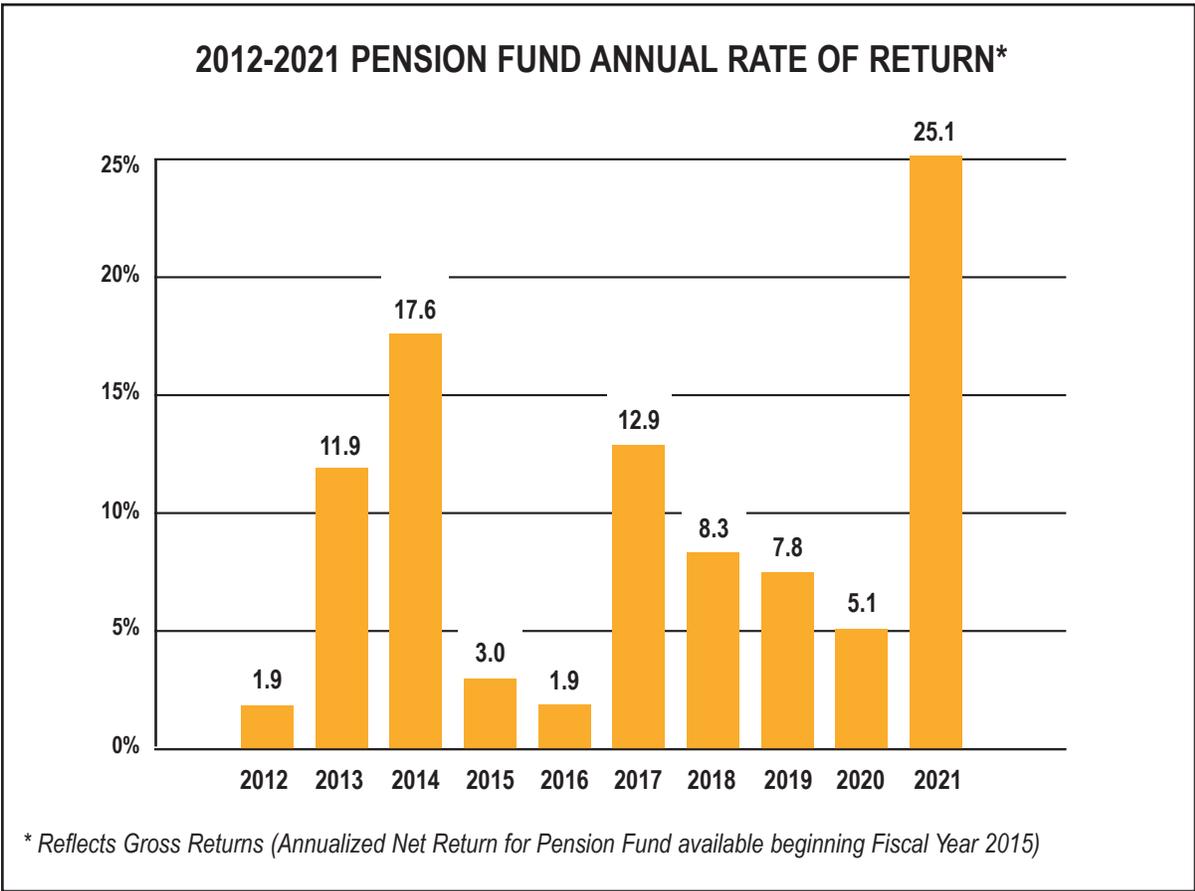
Total Investments: \$102.936 Billion

During Fiscal Year 2021, the Pension Fund’s portfolio, consisting primarily of equities and fixed-income investments, yielded a net return of 24.80% and a gross return of 25.13%. The 25.13% gross return was an increase from the 5.10% return for Fiscal Year 2020.

an annual rate of return that is set by the New York State Legislature in accordance with applicable laws. The combined QPP and TDA Fixed Return Fund assets totaled \$102.936 billion as of June 30, 2021.

The Pension Fund includes a) all funds that Tier I/II members invested in the Fixed Return Fund; b) Employer Contribution assets for Tier I/II members; c) all Tier III/IV/VI Qualified Pension Plan (QPP) funds; and d) all Tax-Deferred Annuity (TDA) Program funds invested in the Fixed Return Fund. The Fixed Return Fund provides

The Comptroller of the City of New York invests the Pension Fund’s holdings in a diversified portfolio, as authorized by the Teachers’ Retirement Board. This portfolio consists of U.S. and international equities and fixed-income instruments, with smaller allocations to private equity and real estate investments.



DIVERSIFIED EQUITY FUND**Fund Summary**

Fiscal Year 2021

Return: 43.01%**Total Investments: \$18.886 Billion**

For the 12-month period ending June 30, 2021, the U.S. equity market, as measured by the Russell 3000 Index, returned 44.16%. The Russell 3000 Index includes no fees and provides a passive representation of the overall U.S. stock market. For the same 12-month period ending June 30, 2021, the Diversified Equity Fund returned 43.01%, after fees. The Fund invests in a diversified blend of investment strategies that historically have made the Diversified Equity Fund less volatile over long time periods than the overall U.S. equity market. The Hybrid Benchmark, which includes no fees, is constructed based upon a passive reflection of the Diversified Equity Fund's target asset allocation among domestic stocks, domestic fixed-income securities, and international equities. As of June 30, 2021, the Hybrid Benchmark was 70% Russell 3000 Index, 20% International Composite Benchmark, and 10% Defensive Strategies benchmark. Over the 12-month period ending June 30, 2021, the Diversified Equity Fund outperformed the Hybrid Benchmark's return of 41.65%.

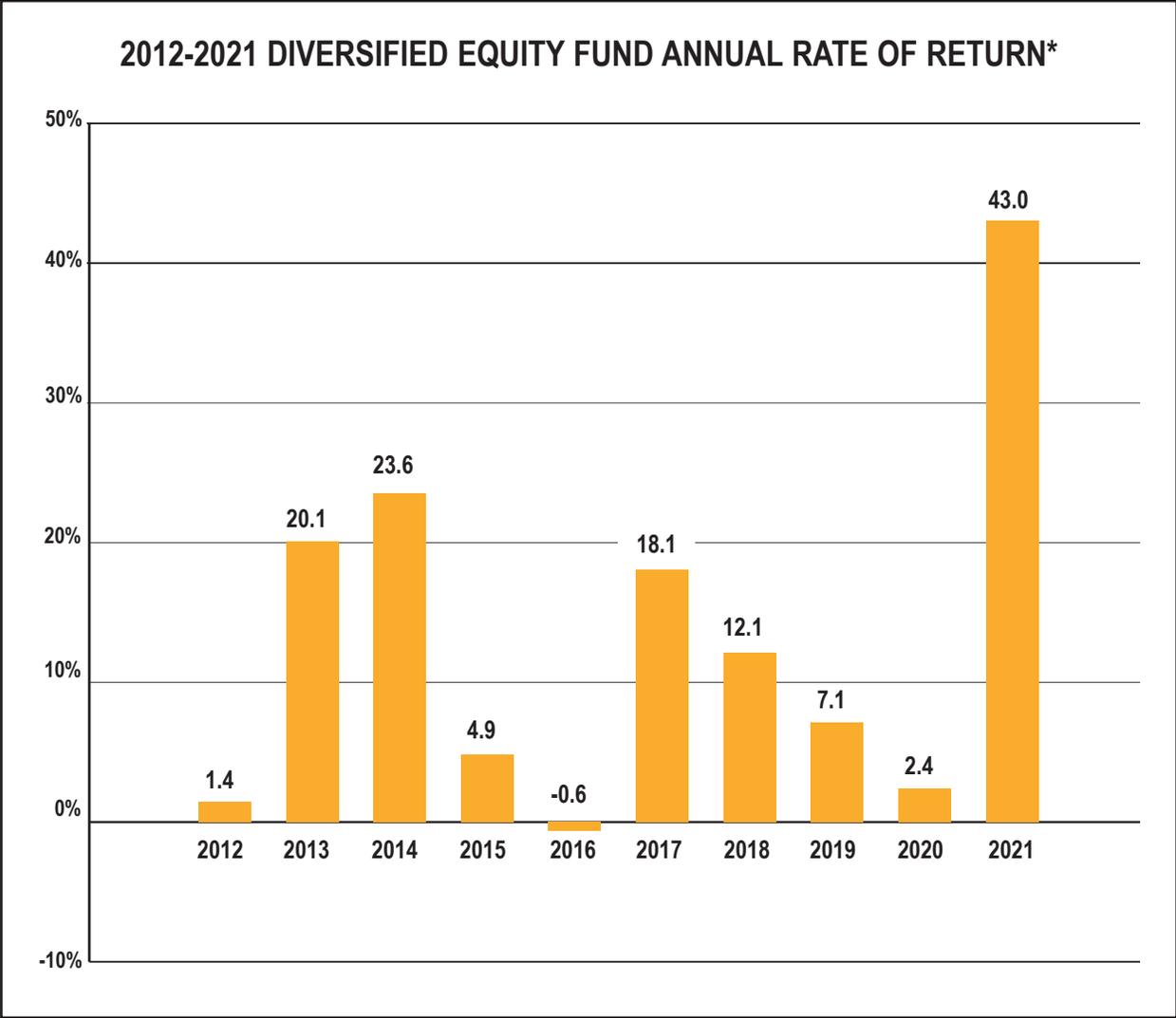
For the three-year period ending June 30, 2021 the Diversified Equity Fund returned 16.20% on an annualized basis after fees, trailing the Russell 3000 Index's annualized return of 18.73% and the Hybrid Benchmark's annualized returns of 16.75% over the same period. For the five-year period ending June 30, 2021, the Diversified Equity Fund returned 15.74%, annualized after fees, behind the Russell 3000 Index's annualized return of 17.89% and the Hybrid Benchmark's annualized returns of 16.32%. Due to its diversified structure, the Diversified Equity Fund has exhibited less performance volatility than the Russell 3000 Index over the same five-year period.

As of June 30, 2021, approximately 75% of the Diversified Equity Fund's portfolio was invested in

the U.S. common stock market. The Diversified Equity Fund's portfolio also contained approximately 20% in international stocks and approximately 5% in fixed income, cash-equivalents, and other securities as of the fiscal year-end. The international stock and the fixed income allocations contribute to portfolio diversification.

The Diversified Equity Fund utilizes several different investment strategies managed by professional money management firms. These strategies are classified into the component sectors described here. Returns after fees for all of the Diversified Equity Fund's component sectors for the one-year period ending June 30, 2021 are as follows:

- The Passive Core (or index) sector is comprised of two index mandates.
- The Active Domestic Equity sector is comprised of strategies focused on particular market capitalization ranges and investment styles.
- The Defensive Strategies sector is designed to provide a diversification benefit to the overall fund and has generally been beneficial to the fund during periods of market decline. The sector is comprised of a variety of strategy types including tactical asset allocation strategies, low expected volatility equity strategies, and convertible bond portfolios which exhibit a hybrid of equity and fixed income characteristics. The fixed income exposure of the overall Diversified Equity Fund comes from the Defensive Strategies sector.
- The International Equity sector is comprised of strategies focused on particular market capitalization ranges and investment styles across developed and emerging markets.



* After expenses

BALANCED FUND

Fund Summary

Fiscal Year 2021

Return: 12.09%

Total Investments: \$581.409 Million

The Balanced Fund has targets of 70% U.S. short-term fixed income and 30% passive world equity. The fund aims to passively track its benchmark, which is 70% Bloomberg Barclays U.S. Govt/Credit 1-5 Year Float Adjusted Index and 30% FTSE Global All Cap Index. For the one-year

period ending June 30, 2021 the Fund returned 12.09%, outperforming the Balanced Fund Composite Benchmark return of 11.50%. For the three-year period ending June 30, 2021, the Balanced Fund returned 7.13% versus its benchmark return of 7.30%.

INTERNATIONAL EQUITY FUND

Fund Summary

Fiscal Year 2021

Return: 37.54%

Total Investments: \$242.557 Million

As of June 30, 2021, the International Equity Fund was primarily comprised of a mix of active and passive management, implemented by 1 passive and 10 active non-U.S. equity managers, which invest primarily in the stocks of non-U.S. companies located in developed and emerging markets. For the one-year period ending June 30, 2021, the International Equity Fund returned 37.54% after fees, outperforming the International Composite Benchmark, which returned 35.78%. For the

three-year period ending June 30, 2021, the International Equity Fund returned 10.97%, outperforming the benchmark return of 9.70%. Over the longer five-year period ending June 30, 2021, the International Equity Fund has returned 12.10%, outperforming the benchmark return of 11.25%. The total return of this option reflects performance of the underlying managers as well as the impact of cash flows into and out of the fund.

SUSTAINABLE EQUITY FUND**Fund Summary**

Fiscal Year 2021

Return: 39.55%**Total Investments: \$497.360 Million**

The Sustainable Equity Fund invests in the common stock of large- and mid-cap U.S. companies that, in the manager's view, effectively implement sustainable business strategies to drive their prospects for future earnings growth. For the one-year period ending June 30, 2021, the Sustainable Equity Fund returned 39.55%, after fees, versus the Sustainable Fund Composite Benchmark's return of 42.50%. The Sustainable Fund Composite Benchmark is comprised of the S&P 500 Index through September 30, 2019, and the Russell 1000 Growth

Index thereafter. For the three-year period ending June 30, 2021 the Sustainable Equity Fund returned 21.20%, underperforming the Sustainable Fund Composite Benchmark return of 24.80% for the same period. Over the longer five-year period ending June 30, 2021, the Sustainable Equity Fund has also trailed the benchmark, returning 18.95% against the benchmark return of 21.25%. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the fund.

U.S. EQUITY INDEX FUND**Fund Summary**

Fiscal Year 2021

Return: 47.11%**Total Investments: \$69.282 Million**

The U.S. Equity Index Fund was added to the Passport Funds in January 2020. The fund tracks the Dow Jones U.S. Total Stock Market Index, which represents the broad U.S. equity market excluding the smallest and least liquid stocks. For the one-year period ending June 30, 2021, the U.S. Equity Index

Fund returned 47.11%, versus the benchmark return of 44.29% for the same time period. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the fund.

INTERNATIONAL EQUITY INDEX FUND**Fund Summary**

Fiscal Year 2021

Return: 36.53%**Total Investments: \$11.766 Million**

The International Equity Index Fund was added to the Passport Funds in January 2020. The objective of the fund is to track the MSCI ACWI ex-US IMI Net Index, which includes both non-U.S. developed and emerging markets. For the one-year period ending June 30, 2021, the International Equity Index Fund

returned 36.53%, versus the index return of 37.18% for the same time period. The total return of this option reflects performance of the underlying manager as well as the impact of cash flows into and out of the fund.

ANNUALIZED INVESTMENT RESULTS¹

As of June 30, 2021

	Current Year 2021	3 Year	Annualized 5 Year	10 Year
TRS Pension Fund ²	25.13%	12.32%	11.62%	9.32%
Benchmark: Policy Index ³	24.03%	12.07%	11.39%	9.39%
TRS Diversified Equity Fund	43.01%	16.20%	15.74%	12.53%
Hybrid Benchmark ⁴	41.65%	16.75%	16.32%	13.22%
Benchmark: Russell 3000	44.16%	18.73%	17.89%	14.70%
TRS Balanced Fund	12.09%	7.13%	N/A	N/A
Benchmark: Custom Benchmark ⁵	11.50%	7.30%	6.15%	4.68%
TRS International Equity Fund	37.54%	10.97%	12.10%	7.05%
Benchmark: International Equity Composite Benchmark ⁶	35.78%	9.70%	11.25%	6.93%
TRS Sustainable Equity Fund	39.55%	21.20%	18.95%	14.13%
Benchmark: Sustainable Fund Composite Benchmark ⁷	42.50%	24.80%	21.25%	16.59%
TRS U.S. Equity Index Fund ⁸	47.11%	N/A	N/A	N/A
Benchmark: Dow Jones U.S. Total Stock Market Index	44.29%	18.69%	17.86%	14.66%
TRS International Equity Index Fund ⁹	36.53%	N/A	N/A	N/A
Benchmark: MSCI ACWI ex-US IMI Net Index	37.18%	9.42%	11.20%	5.65%

1 Performance calculations reflect time-weighted compound returns. Chart reflects TRS Pension Fund's gross returns. Investment results of variable-return funds are net of operational fees (advisory and custody) and administrative expenses.

2 Average crediting rates for the Fixed Annuity Program for the specified period. These rates are set by the New York State Legislature. QPP: Tier I/II members are credited with 8.25% annually on QPP investments. TDA: Members who are represented by the United Federation of Teachers (UFT) are credited with 7% annually on TDA investments. Members who are not represented by the UFT are credited with 8.25% annually on TDA investments in the Fund.

3 The "Policy Index" is a custom benchmark representing the weighted average return of the weighted benchmark indexes for each major investment program within the TRS Pension Fund. For the weights of the benchmark indexes, see the MD&A of the Financial Section.

4 The Hybrid Benchmark is rebalanced monthly to Variable A's target weights of 70% Russell 3000/20% International Equity Composite Benchmark/10% Defensive Strategies' Composite Benchmark. As of 7/1/21, the Global Market Composite Benchmark replaces the Russell 3000.

5 The Custom Benchmark return is composed of 70% Bloomberg Barclays U.S. Government/Credit 1-5 Year Float Adjusted Index and 30% FTSE Global All Cap Index.

6 The International Equity Composite Benchmark reflects the underlying strategy benchmarks at target and is currently comprised of 70% MSCI EAFE/15% MSCI Emerging Markets Index/11% MSCI ACWI ex USA Small Cap Index/4% S&P Developed ex US Small Cap Index. These weights have changed periodically over time with the strategy targets. Prior to January 2016, the benchmark was the MSCI EAFE.

7 The Sustainable Fund Composite Benchmark was the S&P 500 Index through 9/30/2019 and the Russell 1000 Growth Index thereafter.

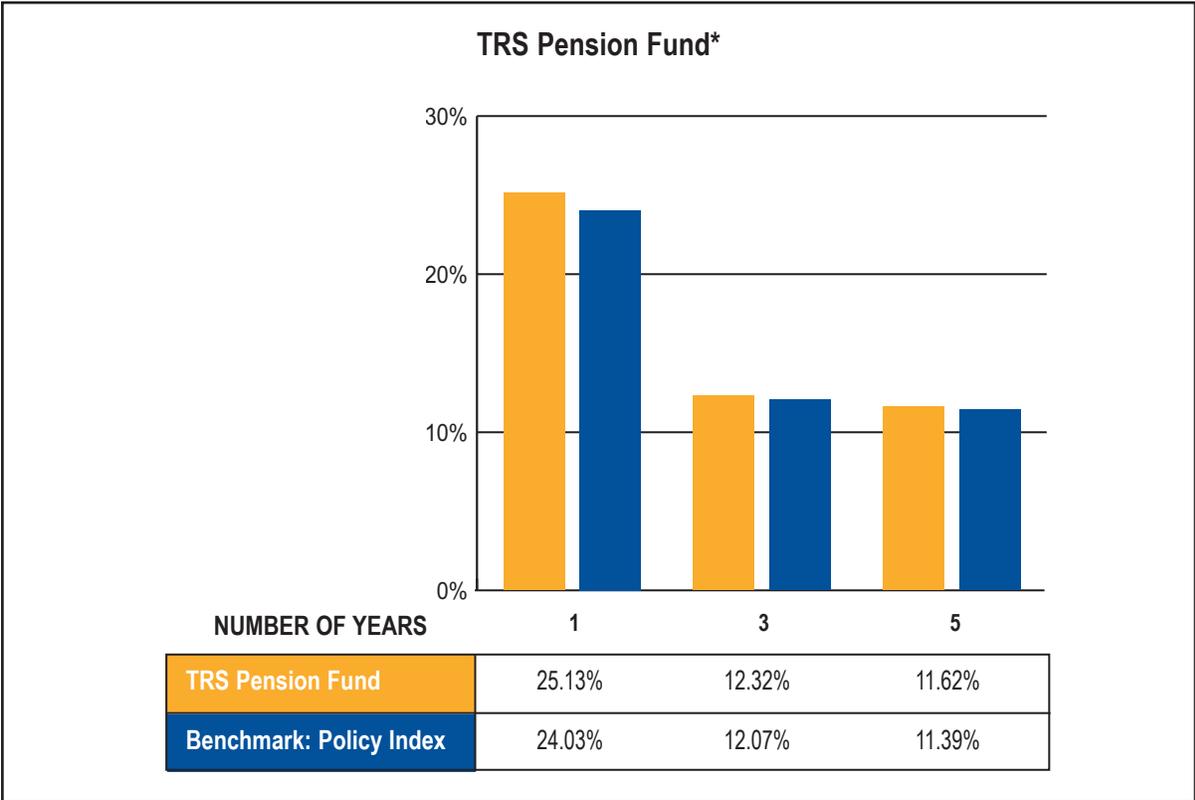
8 3-, 5-, and 10-year investment returns are not available for the U.S. Equity Index Fund, which began on 1/1/2020. The 1-year return shown above represents the actual returns of the U.S. Equity Index Fund and its benchmark, the Dow Jones U.S. Total Stock Market Index. Any difference between the returns of the Fund and that of its underlying mutual fund is due to the timing of cash flows.

9 3-, 5-, and 10-year investment returns are not available for the International Equity Index Fund, which began on 1/1/2020. The 1-year return shown above represents the actual returns of the International Equity Index Fund and its benchmark, the MSCI ACWI ex-US IMI Net Index. Any difference between the returns of the Fund and that of its underlying mutual fund is due to the timing of cash flows.

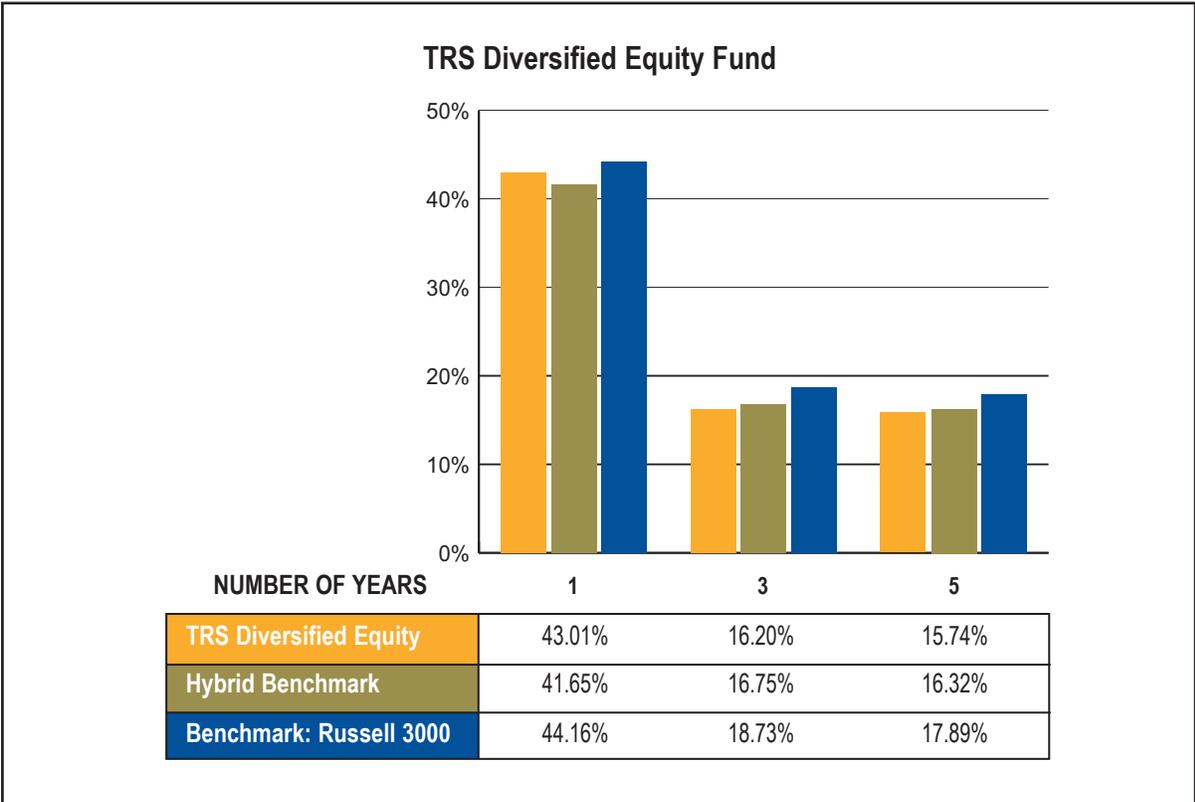
The above information has been gathered from reliable sources, but TRS can only take responsibility for the accuracy of the information concerning its own investment programs.

ANNUALIZED INVESTMENT RESULTS

As of June 30, 2021

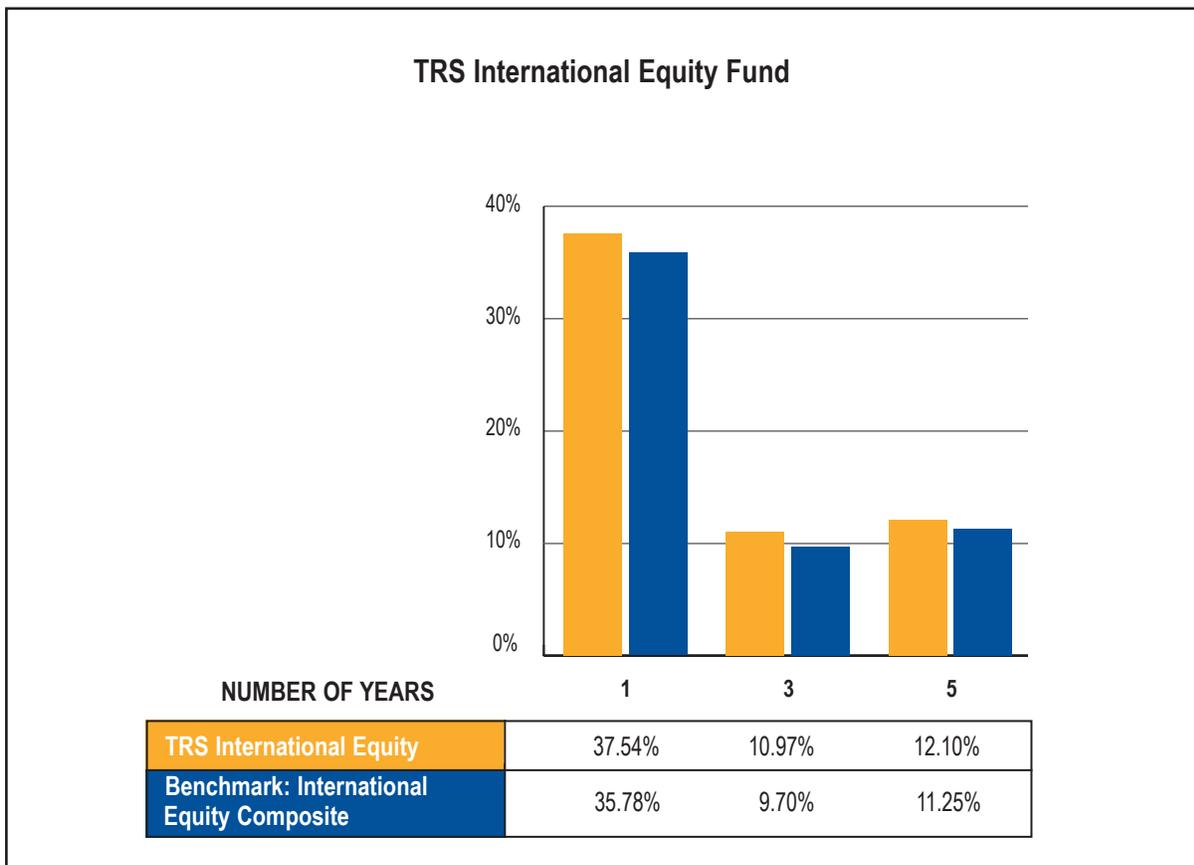
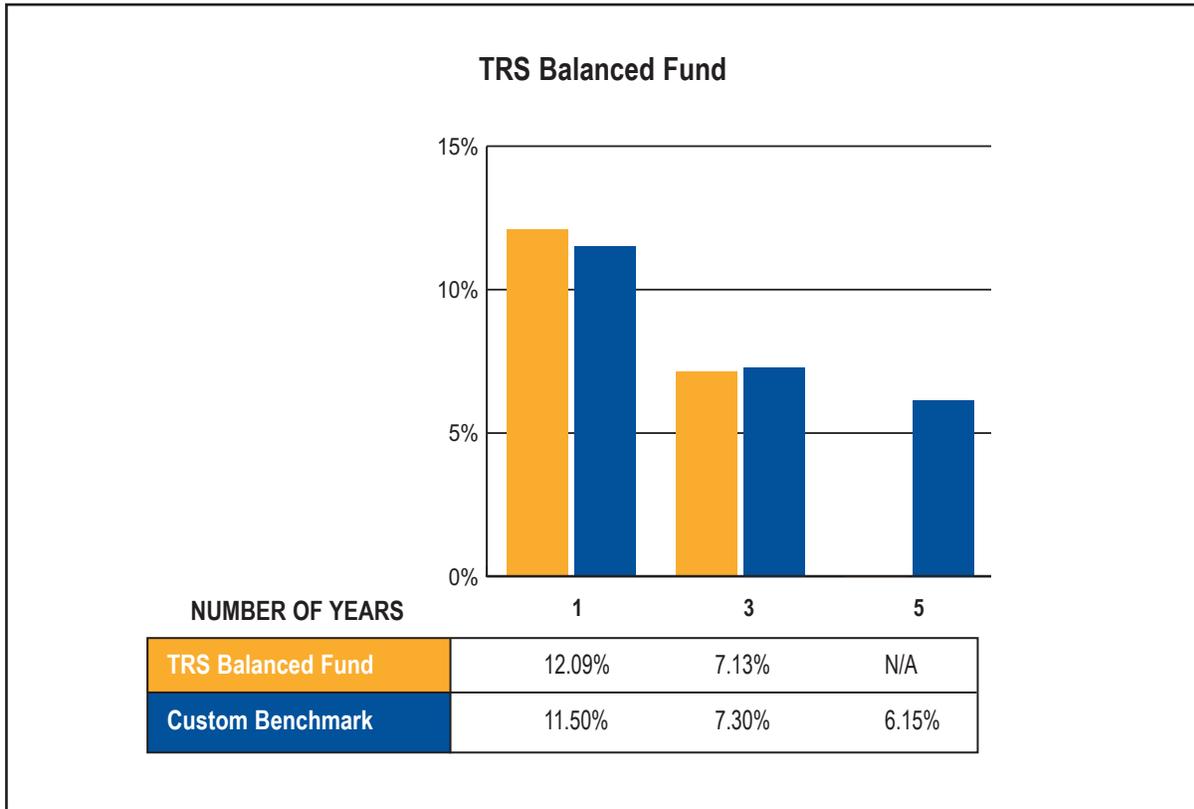


* Reflects TRS Pension Fund's Gross Return.



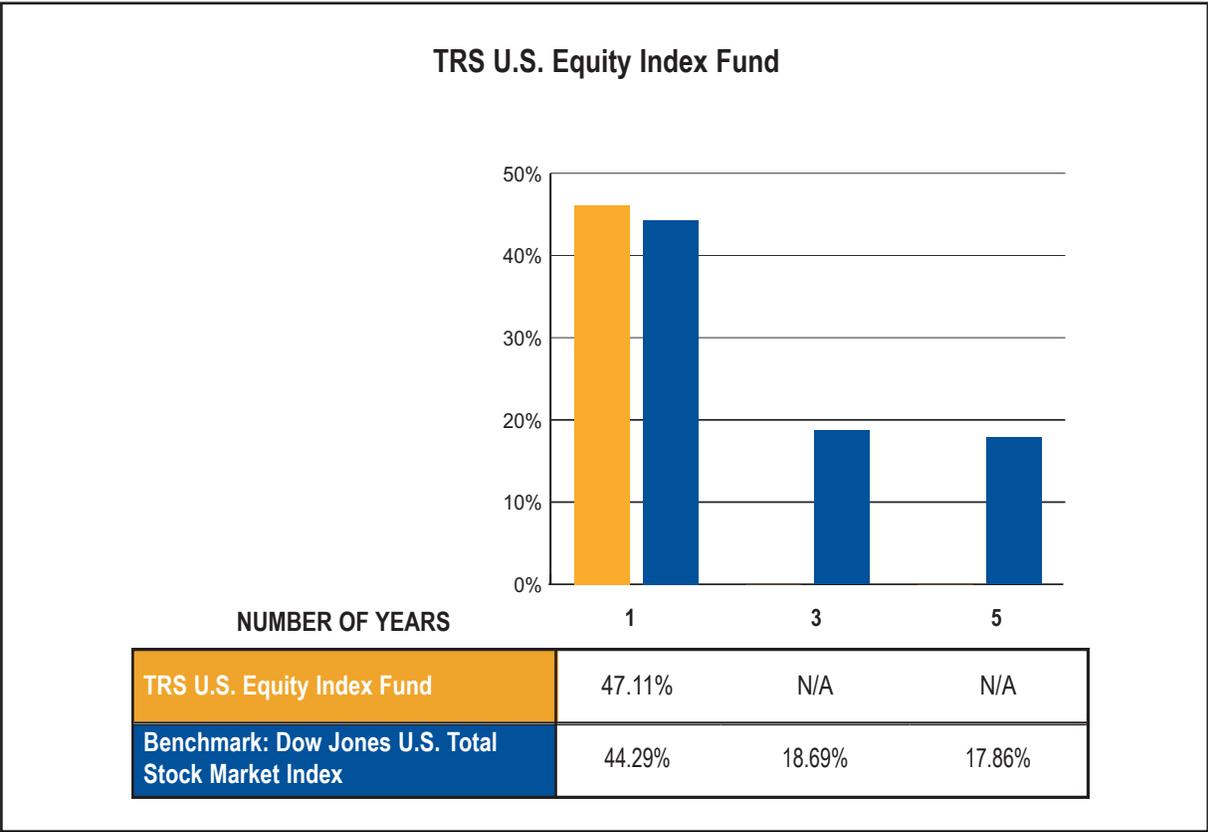
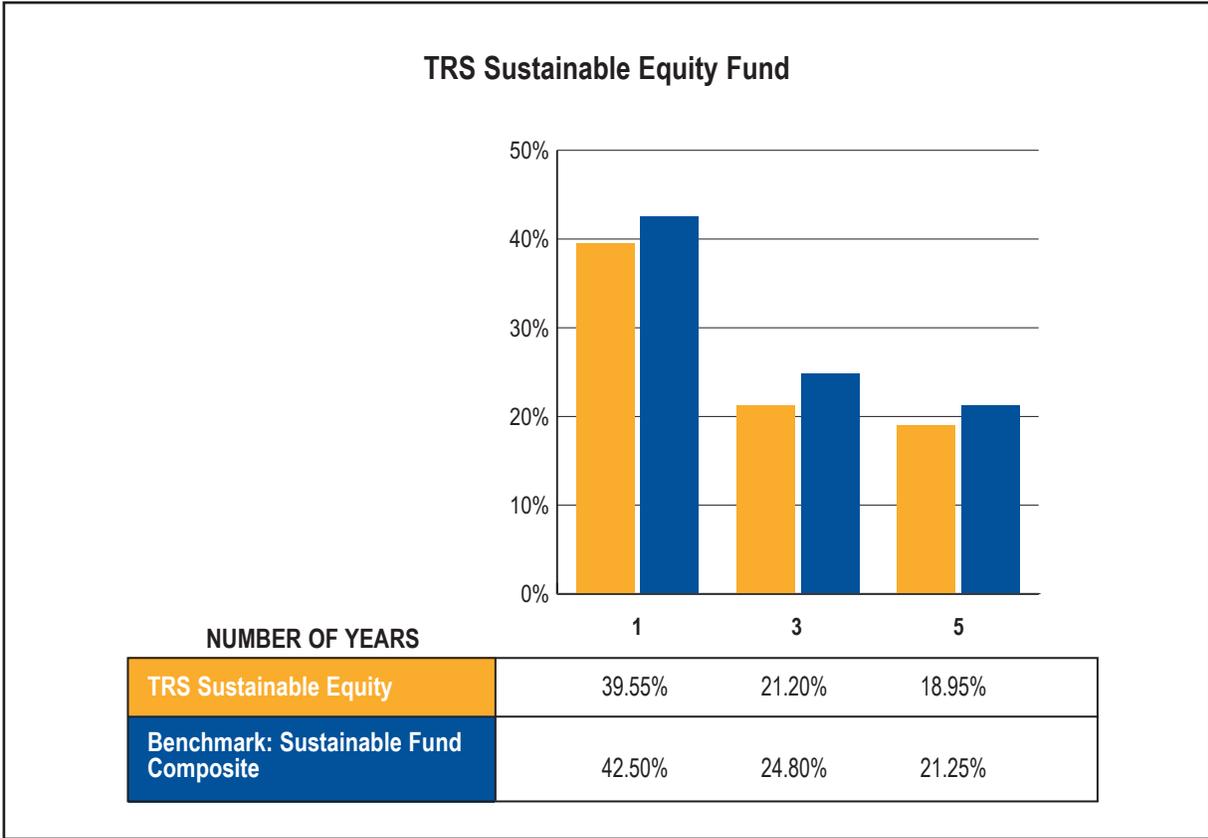
ANNUALIZED INVESTMENT RESULTS (Continued)

As of June 30, 2021



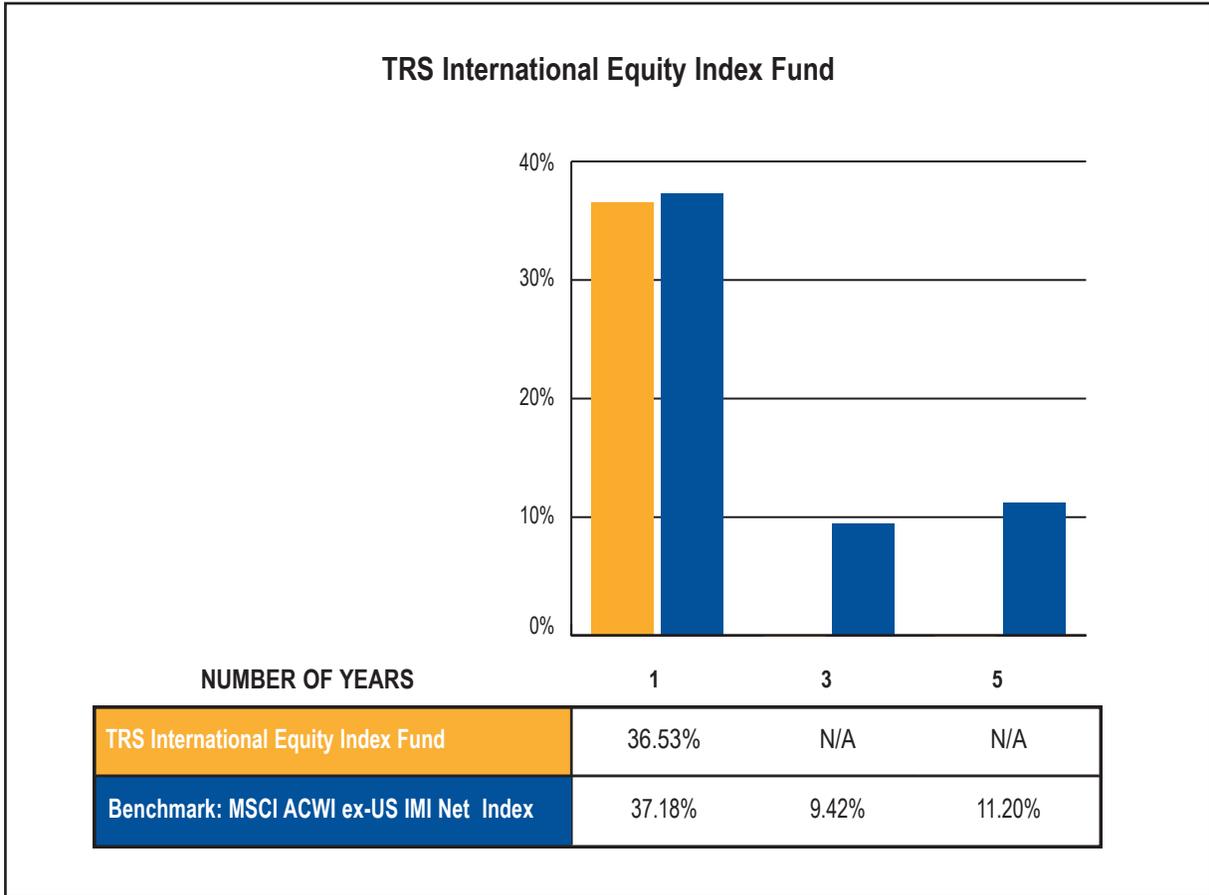
ANNUALIZED INVESTMENT RESULTS

As of June 30, 2021



ANNUALIZED INVESTMENT RESULTS

As of June 30, 2021



INVESTMENT SUMMARY (QPP & TDA)

As of June 30, 2021

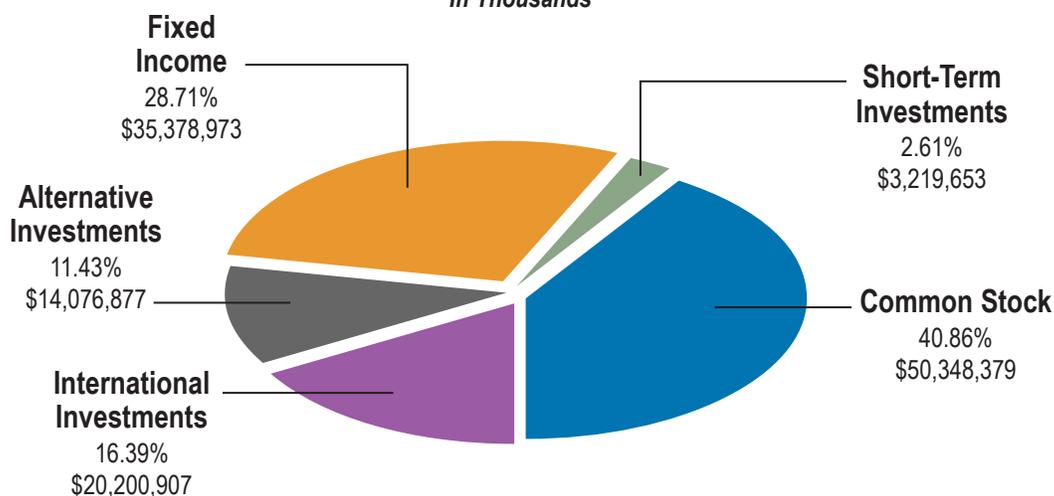
Type of Investment	Fair Value In Thousands	Percent of Total Fair Value
Fixed Income:		
Government Bonds	\$14,889,426	12.08%
Corporate and Other	16,435,107	13.34
TIPS	3,594,216	2.92
Misc. Fixed Income	460,224	0.37
Total Fixed Income	\$ 35,378,973	28.71%
Common Stock:		
Financial & Utility	\$8,199,989	6.66%
Basic Industry	10,190,003	8.27
Consumer & Service	18,176,009	14.75
Technological	8,294,948	6.73
Miscellaneous	5,487,430	4.45
Total Common Stock	\$50,348,379	40.86%
International Investments	\$20,200,907	16.39%
Alternative/Private-Equity Investments	\$14,076,877	11.43%
Short-Term Investments	\$3,219,653	2.61%
Total Investments	\$123,224,789*	100.00%

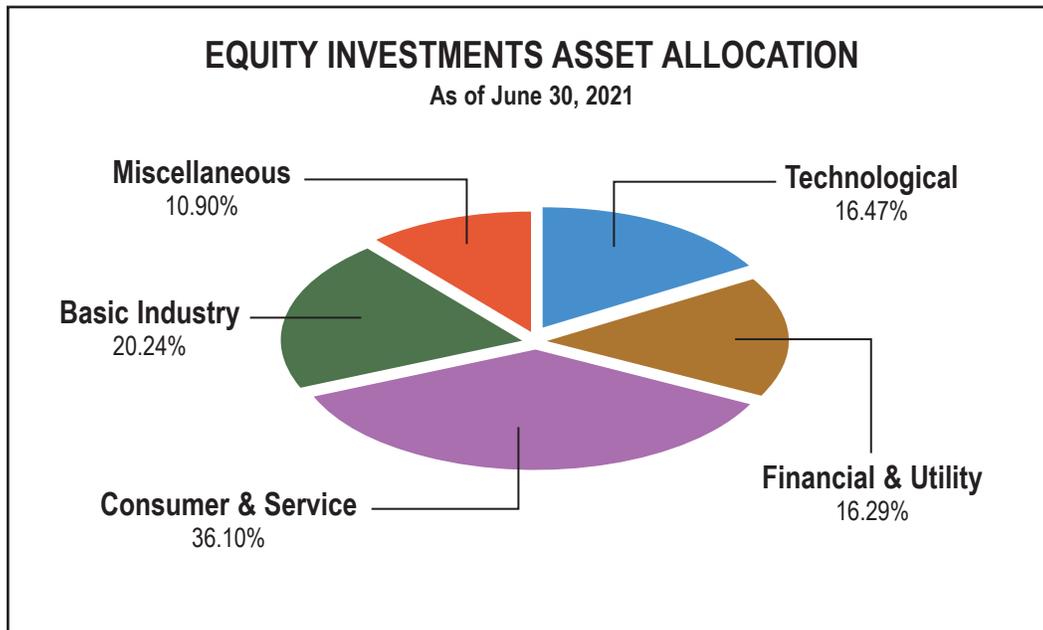
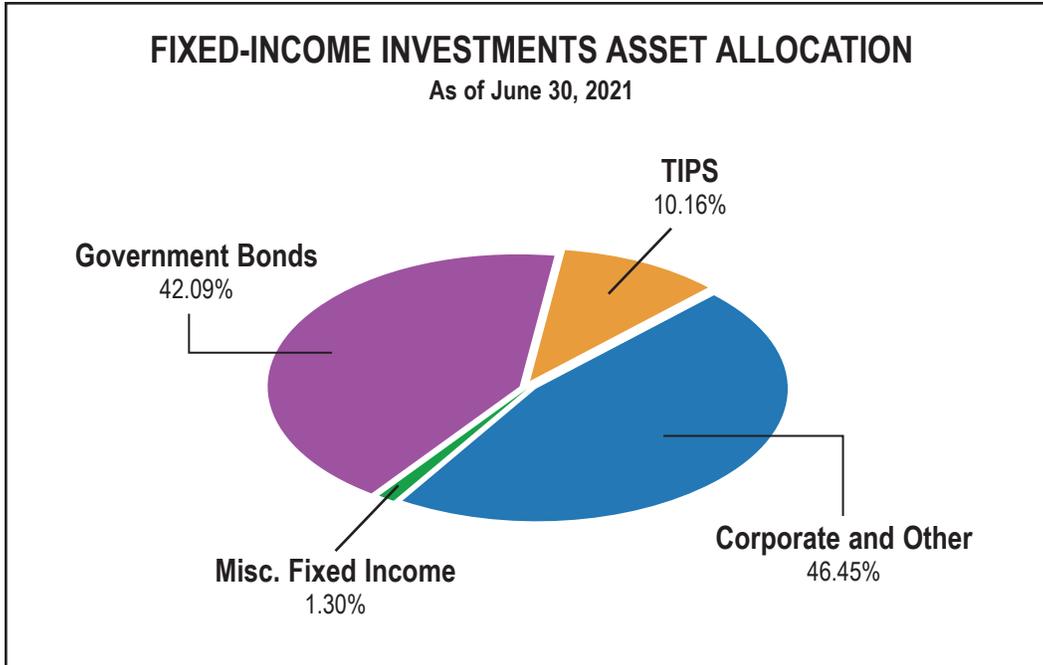
* Excludes \$1,784,414 in securities lending

TOTAL INVESTMENTS ASSET ALLOCATION

As of June 30, 2021

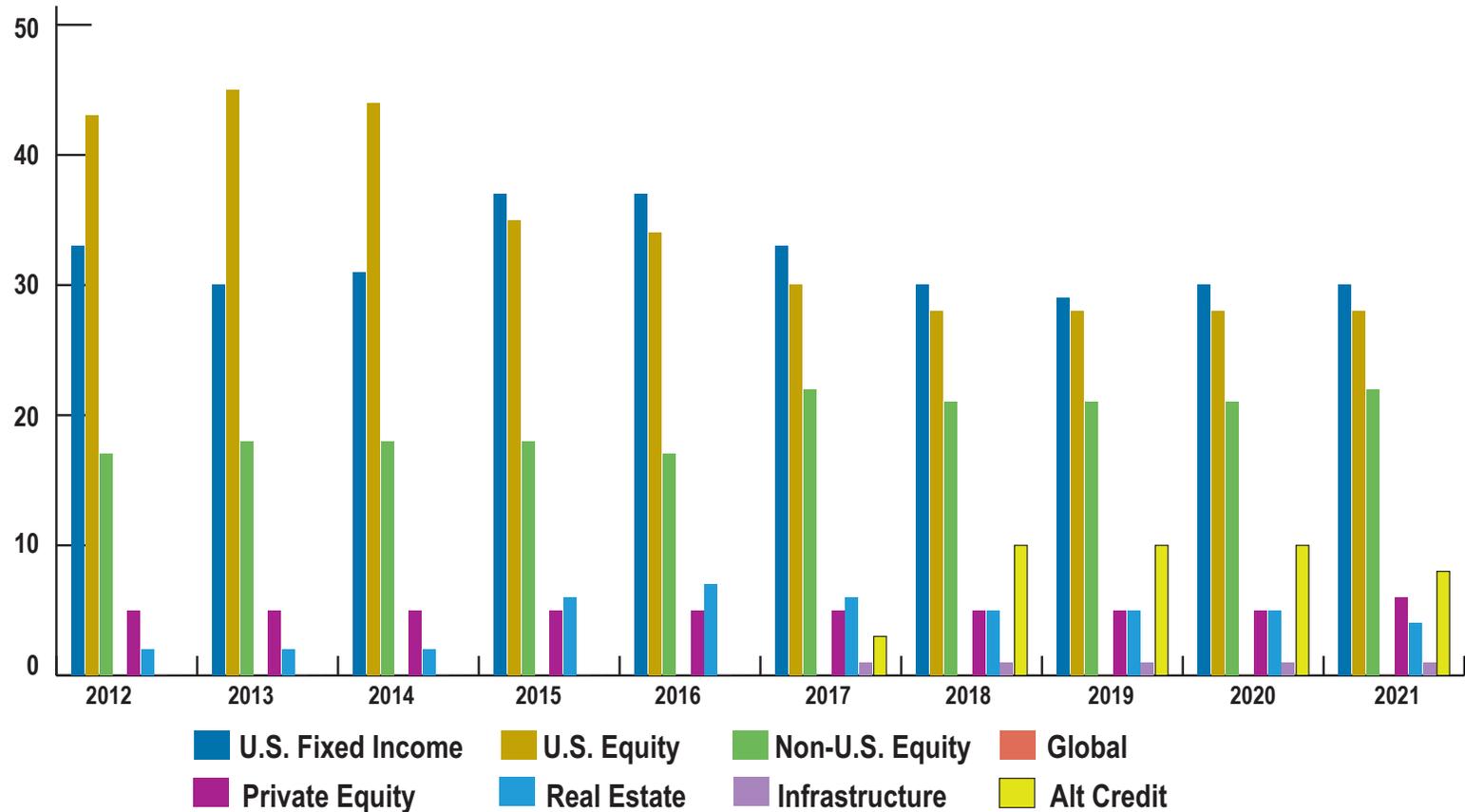
In Thousands





CHANGES IN ASSET ALLOCATION BY PERCENTAGE FOR TRS PENSION FUND OVER 10-YEAR PERIOD

June 30, 2012 – June 30, 2021



LIST OF LARGEST BOND ASSETS HELD (BY FAIR VALUE)

As of June 30, 2021

Par Value		Interest Rate	Due Date	Fair Value
\$487,638,980	Federal Nat Mtg Assn TBA 30YRS	2.500%	08/12/51	\$503,409,225
294,187,546	Federal Nat Mtg Assn TBA 30YRS	2.000	07/14/51	297,038,223
252,466,000	United States Treasury Notes	1.125	02/15/31	245,088,943
241,060,000	United States Treasury Notes	0.250	03/15/24	240,100,581
225,000,000	United States Treasury Notes	0.375	04/15/24	224,736,750
210,393,469	Govt Nat Mtg Assn TBA 30 YRS	3.000	07/21/51	219,520,338
220,000,000	United States Treasury Notes	0.250	05/15/24	218,796,600
216,500,000	Federal Nat Mtg Assn TBA 30YRS	2.000	09/14/51	217,725,390
215,085,000	United States Treasury Notes	0.125	01/15/24	213,781,585
202,986,926	Federal Nat Mtg Assn Pool FM7599	3.500	01/01/51	213,251,975
211,770,000	United States Treasury Notes	0.125	02/15/24	210,406,201
200,000,000	United States Treasury Notes	0.250	06/15/24	198,782,000
195,000,000	United States Treasury Notes	0.125	03/31/23	194,703,600
177,000,000	United States Treasury Notes	2.500	05/15/24	187,489,020

LIST OF LARGEST EQUITY ASSETS HELD (BY FAIR VALUE)

As of June 30, 2021

Company Name	Shares	Fair Value
Apple Inc	14,291,933	\$1,957,423,144
Microsoft Corp	6,949,458	1,882,608,172
Amazon.Com Inc	395,402	1,360,246,144
Alphabet Inc	548,520	1,356,095,988
Facebook Inc	2,207,135	767,442,911
Berkshire Hathaway Inc	1,821,491	506,228,779
Tesla Inc	705,788	479,724,104
Nvidia Corp	544,319	435,509,632
JPMorgan Chase & Co	2,738,239	425,905,694
Johnson & Johnson	2,511,878	413,806,782
Visa Inc	1,561,254	365,052,410
Unitedhealth Group Inc	905,141	362,454,662
The Procter & Gamble Co	2,322,199	313,334,311
Home Depot Inc	978,656	312,083,612
Paypal Holdings Inc	1,069,501	311,738,151
Mastercard Inc	848,181	309,662,401
Bank of America Corp	7,493,187	308,944,100
The Walt Disney Co	1,717,370	301,862,125
Comcast Corp	4,505,777	256,919,405
Adobe Inc	434,661	254,554,868
Exxon Mobil Corp	3,854,324	243,130,758
Verizon Communications Inc	4,075,889	228,372,061
Pfizer Inc	5,771,955	226,029,758
Cisco Systems Inc	3,935,540	208,583,620
Pepsico Inc	1,401,775	207,701,002

Note: The above tables reflect assets of both the Qualified Pension Plan (QPP) and the Tax-Deferred Annuity (TDA) Program. The complete list of assets held by TRS' six investment programs is included in the publication Investment Portfolios.

SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021

INVESTMENT MANAGERS		QPP	TOTAL
FIXED ANNUITY PROGRAM			
Fixed Income			
AFL-CIO Housing Investment	Investment Manager	\$1,026,097	\$1,026,097
Barings	Investment Manager	454,159	454,159
Barrow Hanley Mewhinney Strauss	Investment Manager	545,392	545,392
Blackrock	Investment Manager	2,145,354	2,145,354
Brigade Capital Management	Investment Manager	2,083,493	2,083,493
Credit Suisse Asset Management	Investment Manager	519,630	519,630
Eaton Vance Management	Investment Manager	2,256,513	2,256,513
GIA Partners	Investment Manager	216,320	216,320
LM Capital Group	Investment Manager	186,747	186,747
Mackay Shields	Investment Manager	1,904,606	1,904,606
Neuberger Berman Group	Investment Manager	3,270,355	3,270,355
Nomura Corp. Research and Asset Mgmt.	Investment Manager	1,767,913	1,767,913
Oaktree Capital Management	Investment Manager	1,400,965	1,400,965
Pacific Investment Management Company	Investment Manager	1,091,638	1,091,638
Pinebridge Investments	Investment Manager	609,683	609,683
Prudential Financial	Investment Manager	644,302	644,302
Pugh Capital Management	Investment Manager	127,735	127,735
Ramirez Asset Management	Investment Manager	9,063	9,063
State Street Global Advisors	Investment Manager	1,398,522	1,398,522
T Rowe Price Associates	Investment Manager	4,606,762	4,606,762
Taplin Canida & Habacht	Investment Manager	201,205	201,205
Voya Investment Management	Investment Manager	227,167	227,167
Wellington Management Company	Investment Manager	272,745	272,745
Advent Capital Management	Fee Refund	(3,345)	(3,345)
Integrity Fixed Income Management	Fee Refund	(125)	(125)
New Century Advisors	Fee Refund	(369)	(369)
Optimum Quantvest Corporation	Fee Refund	(121)	(121)
Domestic Equity			
Adelante Capital Management	Investment Manager	335,077	335,077
Altravue Capital	Investment Manager	139,929	139,929
Ballast Equity Management	Investment Manager	14,148	14,148
Blackrock	Investment Manager	541,908	541,908
Bowling Portfolio Management	Investment Manager	19,927	19,927
Bridge City Capital	Investment Manager	120,757	120,757
Brown Asset Management	Investment Manager	7,538,709	7,538,709
Centersquare Investment Management	Investment Manager	188,671	188,671
Cohen & Steers Capital Management	Investment Manager	222,887	222,887
Cooke and Bieler	Investment Manager	1,254,914	1,254,914
Dean Capital Management	Investment Manager	209,161	209,161
Essex Investment Management Company	Investment Manager	142,591	142,591
Legato Capital Management	Investment Manager	11,409	11,409
Lisanti Capital Growth	Investment Manager	161,151	161,151
Morgan Stanley Investment Management	Investment Manager	213,800	213,800
Nicholas Investment Partners	Investment Manager	8,064	8,064
Panagora Asset Management	Investment Manager	960,935	960,935
T Rowe Price Associates	Investment Manager	944,976	944,976

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021 (Continued)

INVESTMENT MANAGERS		QPP	TOTAL
International Fund and Emerging Markets			
Acadian Asset Management	Investment Manager	\$6,266,267	\$6,266,267
Algert Global	Investment Manager	540,919	540,919
Applied Research Investments	Investment Manager	196,870	196,870
AQR Capital Management	Investment Manager	2,097,135	2,097,135
Arga Investment Management	Investment Manager	671,153	671,153
Ativo Capital Management	Investment Manager	249,985	249,985
Aubrey Capital Management	Investment Manager	277,207	277,207
Bailard Institutional	Investment Manager	481,738	481,738
Baillie Gifford	Investment Manager	20,573,132	20,573,132
Blackcrane Capital	Investment Manager	342,785	342,785
Blackrock	Investment Manager	1,833,678	1,833,678
Causeway Capital Management	Investment Manager	5,055,172	5,055,172
Change Global Investments	Investment Manager	60,513	60,513
Denali Advisors	Investment Manager	34,425	34,425
Dimensional Fund Advisors	Investment Manager	5,802,536	5,802,536
Dundas Global Investors	Investment Manager	748,324	748,324
Eaton Vance Management	Investment Manager	329,188	329,188
Fidelity Institutional Asset Management	Investment Manager	1,851,303	1,851,303
Fiera Capital Corporation	Investment Manager	2,071,598	2,071,598
Foresight Global Investors	Investment Manager	150,336	150,336
Global Alpha Capital Management	Investment Manager	121,130	121,130
Haven Global Partners	Investment Manager	252,081	252,081
Henry James International Management	Investment Manager	276,066	276,066
Lazard Asset Management	Investment Manager	20,048	20,048
Leading Edge Investment Advisors	Investment Manager	3,686	3,686
Martin Investment Management	Investment Manager	194,007	194,007
Metis Global Partners	Investment Manager	2,655	2,655
North of South Capital	Investment Manager	32,628	32,628
Osmosis Investment Management	Investment Manager	220,944	220,944
Radin Capital Partners	Investment Manager	113,932	113,932
RBC Global Asset Management	Investment Manager	2,213,772	2,213,772
Redwood Investments	Investment Manager	477,156	477,156
RVX Asset Management	Investment Manager	177,089	177,089
Sands Capital	Investment Manager	3,788,219	3,788,219
Smith Asset Management Group	Investment Manager	466,433	466,433
Sprucegrove Investment Management	Investment Manager	3,245,093	3,245,093
State Street Global Advisors	Investment Manager	405,731	405,731
T Rowe Price Associates	Investment Manager	134	134
UBS	Investment Manager	3,987,560	3,987,560
Walter Scott & Partners	Investment Manager	5,774,757	5,774,757
Xponance	Investment Manager	159,612	159,612
Alternative Investment			
400 Capital Management	Investment Manager	312	312
Acon Investments	Investment Manager	939	939
Actis	Investment Manager	1,235,804	1,235,804
Aermont Capital	Investment Manager	1,609,342	1,609,342
Aisling Capital	Investment Manager	42,330	42,330
Almanac Realty Investors	Investment Manager	1,709,805	1,709,805

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021 (Continued)

INVESTMENT MANAGERS		QPP	TOTAL
Altaris Capital Partners	Investment Manager	\$1,530,456	\$1,530,456
American Security Partners	Investment Manager	3,096,324	3,096,324
American Value Partners	Investment Manager	39,008	39,008
Ampersand Capital	Investment Manager	84,085	84,085
Angelo Gordon	Investment Manager	2,034,101	2,034,101
Apax Partners	Investment Manager	4,817,113	4,817,113
Apollo Global Management	Investment Manager	12,987,483	12,987,483
Ardian	Investment Manager	4,982,350	4,982,350
ARES Management	Investment Manager	14,294,251	14,294,251
Arsenal Capital Partners	Investment Manager	8,326	8,326
Artemis Real Estate Partners	Investment Manager	984,407	984,407
Avanath Capital	Investment Manager	163,777	163,777
Avista Capital Partners	Investment Manager	22,205	22,205
Axiom Infrastructure	Investment Manager	160,720	160,720
Basalt Infrastructure Partners	Investment Manager	1,705,284	1,705,284
Basis Management Group	Investment Manager	271,883	271,883
BC Partners	Investment Manager	3,172,285	3,172,285
Bentall Greenoak	Investment Manager	1,917,152	1,917,152
Blackrock	Investment Manager	2,062,854	2,062,854
Blue Wolf Capital	Investment Manager	64,051	64,051
Bridgepoint Capital	Investment Manager	3,791,640	3,791,640
Brightwood Capital Advisers	Investment Manager	2,805,855	2,805,855
Brookfield Asset Management	Investment Manager	8,514,986	8,514,986
Canyon Johnson	Investment Manager	2,304	2,304
Capri Capital Partners	Investment Manager	1,072,203	1,072,203
Carlyle Group	Investment Manager	8,847,706	8,847,706
Catterton Partners	Investment Manager	118,243	118,243
Centerbridge Partners	Investment Manager	2,612,611	2,612,611
City Investment Fund Associates	Investment Manager	8,624	8,624
Clarion Partners	Investment Manager	1,013,163	1,013,163
Clearlake Capital Group	Investment Manager	640,710	640,710
Constellation Growth Capital	Investment Manager	20,679	20,679
Contrarian Capital Management	Investment Manager	772,911	772,911
Cortland Partners	Investment Manager	639,075	639,075
Crestview Partners	Investment Manager	1,804,583	1,804,583
CVC Capital Partners	Investment Manager	4,337,054	4,337,054
Deutsche Bank	Investment Manager	498,562	498,562
DivcoWest Real Estate Investments	Investment Manager	5,375,078	5,375,078
DRA Advisors	Investment Manager	2,370,061	2,370,061
EIG Credit Management	Investment Manager	255,417	255,417
Elmtree Funds	Investment Manager	312,998	312,998
EQT Partners	Investment Manager	5,849,071	5,849,071
Exeter Property Group	Investment Manager	1,201,782	1,201,782
Fairview Capital Partners	Investment Manager	506,576	506,576
Fortress Investment Group	Investment Manager	4,370,238	4,370,238
Freeman Spogli	Investment Manager	7,454	7,454
FTV Capital	Investment Manager	6,359,614	6,359,614
GCM Grosvenor	Investment Manager	1,704,648	1,704,648
GF Capital Management	Investment Manager	28,283	28,283
Global Infrastructure Management	Investment Manager	3,188,462	3,188,462

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021 (Continued)

INVESTMENT MANAGERS		QPP	TOTAL
Goldentree Asset Management	Investment Manager	\$1,730,559	\$1,730,559
Grain Management	Investment Manager	659,741	659,741
Grey Mountain Partners	Investment Manager	33,837	33,837
GSO Capital Partners	Investment Manager	12,469	12,469
H/2 Capital Partners	Investment Manager	2,062,624	2,062,624
Halyard Capital	Investment Manager	26,874	26,874
Harrison Street Real Estate Capital	Investment Manager	1,018,845	1,018,845
Heartwood Partners	Investment Manager	427,175	427,175
Heitman Capital Management	Investment Manager	382,305	382,305
HG Capital	Investment Manager	437,859	437,859
ICG Strategic Equity	Investment Manager	1,258,833	1,258,833
ICV Partners	Investment Manager	583,226	583,226
Incline Equity Partners	Investment Manager	743,586	743,586
Industry Funds Management	Investment Manager	2,311,591	2,311,591
Intermediate Capital Group	Investment Manager	1,273,218	1,273,218
Jamestown	Investment Manager	879,678	879,678
JP Morgan	Investment Manager	1,523,551	1,523,551
KKR	Investment Manager	13,107,228	13,107,228
Landmark Partners	Investment Manager	2,312,542	2,312,542
Lasalle Investment Management	Investment Manager	968,960	968,960
Leeds Equity Partners	Investment Manager	1,934	1,934
Leonard Green & Partners	Investment Manager	7,774,621	7,774,621
Levine Leichtman Capital Partners	Investment Manager	1,119	1,119
Lexington Partners	Investment Manager	3,299,718	3,299,718
Lincolnshire Management	Investment Manager	191,842	191,842
Lindsay Goldberg	Investment Manager	803,684	803,684
Lone Star	Investment Manager	146,040	146,040
Maranon Capital	Investment Manager	728,452	728,452
Marathon Asset Management Limited	Investment Manager	2,665,793	2,665,793
Mesirow Financial	Investment Manager	10,652	10,652
Metlife	Investment Manager	641,231	641,231
Midocean Partners	Investment Manager	352,112	352,112
Mill City Capital	Investment Manager	138,397	138,397
Montreux Equity Partners	Investment Manager	208,140	208,140
Neuberger Berman Group	Investment Manager	31,312	31,312
New Mainstream Capital	Investment Manager	427,054	427,054
New Mountain Capital	Investment Manager	2,616,902	2,616,902
NGN	Investment Manager	65,510	65,510
Oak Hill Advisors	Investment Manager	3,060,083	3,060,083
Oaktree Capital Management	Investment Manager	1,259,441	1,259,441
Olympus Growth	Investment Manager	316,346	316,346
One Rock Capital Partners	Investment Manager	453,740	453,740
Onex Credit Partners	Investment Manager	87,002	87,002
Palladium Equity Partners	Investment Manager	1,038,604	1,038,604
Patriot Financial Partners	Investment Manager	519,708	519,708
Pegasus Capital Advisors	Investment Manager	531,372	531,372
Phoenix Realty Group	Investment Manager	3,069	3,069
Pine Brook Capital Partners	Investment Manager	5,903	5,903
Platinum Equity	Investment Manager	12,933,979	12,933,979
Prologis	Investment Manager	598,474	598,474

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021 (Continued)

INVESTMENT MANAGERS		QPP	TOTAL
Prudential Financial	Investment Manager	\$2,217,841	\$2,217,841
Psilos Group Partners	Investment Manager	142,227	142,227
Quaker Bioventures	Investment Manager	41,376	41,376
Related Fund Management	Investment Manager	1,514,759	1,514,759
Reverence Capital Partners	Investment Manager	412,837	412,837
Rialto Capital Management	Investment Manager	3,078,125	3,078,125
Riverstone Carlyle Global Energy	Investment Manager	36,073	36,073
RLJ Equity Partners	Investment Manager	55,882	55,882
RRE Ventures	Investment Manager	20,746	20,746
SCP Partners	Investment Manager	124,433	124,433
Silverpeak Legacy Partners	Investment Manager	22,409	22,409
Siris Capital Group	Investment Manager	1,507,773	1,507,773
Snow Phipps	Investment Manager	9,745	9,745
Solera Partners	Investment Manager	75,033	75,033
Starvest Partners	Investment Manager	139,619	139,619
Stellex Capital Management	Investment Manager	298,855	298,855
Stockbridge Capital Group	Investment Manager	47,745	47,745
Stone Point Capital	Investment Manager	187,068	187,068
Stonepeak Partners	Investment Manager	2,329,424	2,329,424
Taconic Investment Partners	Investment Manager	401,303	401,303
Terra Firma Investments	Investment Manager	21,722	21,722
The Blackstone Group	Investment Manager	10,153,808	10,153,808
The Hudson Companies	Investment Manager	784,555	784,555
The Jordan Company	Investment Manager	384,226	384,226
The Raine Group	Investment Manager	3,235,042	3,235,042
The Vistria Group	Investment Manager	312,350	312,350
The Yucaipa Group	Investment Manager	468,116	468,116
Thomas Mcnerney & Partners	Investment Manager	8,530	8,530
Thor Equities Group	Investment Manager	165,017	165,017
Tikehau Investment Management	Investment Manager	989,045	989,045
Torchlight Investors	Investment Manager	2,335,306	2,335,306
Trilantic Capital Partners	Investment Manager	1,393,456	1,393,456
Tristan Capital Partners	Investment Manager	1,271,348	1,271,348
UBS	Investment Manager	568,885	568,885
USAA Real Estate	Investment Manager	767,331	767,331
Valor Equity Partners	Investment Manager	1,594,652	1,594,652
Vanbarton Group	Investment Manager	2,092,178	2,092,178
Vista Equity Partners	Investment Manager	28,998,903	28,998,903
Warburg Pincus	Investment Manager	3,893,772	3,893,772
Webster Capital	Investment Manager	1,355,297	1,355,297
Welsh Carson Anderson & Stowe	Investment Manager	9,837,502	9,837,502
Westbrook Partners	Investment Manager	2,649,069	2,649,069
NYC Office of Comptroller - BAM	Investment Support	4,958,780	4,958,780
ARES Management	Fee Refund	(7,060)	(7,060)
Black Diamond Capital Partners	Fee Refund	(90,014)	(90,014)
Carlyle Group	Fee Refund	(1,229)	(1,229)
EQT Partners	Fee Refund	(310,577)	(310,577)
FDG Capital Partners	Fee Refund	(19,108)	(19,108)
Heitman Capital Management	Fee Refund	(96,414)	(96,414)
Leeds Equity Partners	Fee Refund	(7,169)	(7,169)

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)
YEAR ENDED JUNE 30, 2021 (Continued)

INVESTMENT MANAGERS		QPP	TDA	TOTAL
Lone Star	Fee Refund	(\$1,286,052)		(\$1,286,052)
Nautic Partners	Fee Refund	(3,692)		(3,692)
Paladin	Fee Refund	(891,212)		(891,212)
Trilantic Capital Partners	Fee Refund	(872,339)		(872,339)
Cox Castle Nicholson	Legal Fees	52,620		52,620
Day Pintney	Legal Fees	39,779		39,779
Foley & Lardner	Legal Fees	94,572		94,572
Foster Garvey	Legal Fees	60,265		60,265
Hitchcock	Legal Fees	275		275
Lowenstein Sandler	Legal Fees	485		485
Morgan Lewis Bockius	Legal Fees	285,734		285,734
Pillsbury Winthrop Shaw Pittman	Legal Fees	203,434		203,434
Reinhart Boerner Van Dueren	Legal Fees	125,950		125,950
Seward Kissel	Legal Fees	3,259		3,259
Blackrock	Consultant Fees	348,000		348,000
Hamilton Lane Advisors	Consultant Fees	950,000		950,000
Meketa Investment Group	Consultant Fees	128,333		128,333
MSCI Barra	Consultant Fees	414,118		414,118
MSCI ESG Research	Consultant Fees	37,681		37,681
MSCI Investment Property Databank	Consultant Fees	59,952		59,952
Rocaton Investment	Consultant Fees	505,000		505,000
Shareholder Research Services	Consultant Fees	119,096		119,096
Stepstone Group	Consultant Fees	757,434		757,434
The Burgiss Group	Consultant Fees	61,652		61,652
State Street	Custodian Bank	77,732		77,732
State Street - Miscellaneous	Custodian Bank	47,900		47,900
DIVERSIFIED EQUITY FUND AND INTERNATIONAL EQUITY FUND			TDA	
Acadian Asset Management	Investment Manager	354,689	450,378	805,067
Advent Capital Management	Investment Manager	651,788	827,629	1,479,417
Amalgamated Bank	Investment Manager	24,786	31,473	56,259
Analytic Investors	Investment Manager	232,104	294,721	526,825
Baillie Gifford	Investment Manager	636,768	808,557	1,445,325
Blackrock	Investment Manager	153,362	194,736	348,098
Brown Capital	Investment Manager	819,040	1,040,003	1,859,043
Cardinal	Investment Manager	316,770	402,229	718,999
Diamond Hill Management	Investment Manager	128,216	162,807	291,023
Franklin Templeton	Investment Manager	334,457	424,687	759,144
Invesco	Investment Manager	256,020	325,090	581,110
MCM	Investment Manager	141,973	180,275	322,248
MFS Investment Advisors Intl Equity	Investment Manager	491,118	623,612	1,114,730
New South Capital Management	Investment Manager	678,717	861,823	1,540,540
Pyramis Global	Investment Manager	476,812	605,447	1,082,259
Shapiro Capital Management	Investment Manager	1,203,252	1,527,867	2,731,119
Sound Shore Management	Investment Manager	324,521	412,071	736,592
Sprucegrove Investment Management	Investment Manager	178,395	226,523	404,918
Walter Scott & Partners	Investment Manager	304,620	386,801	691,421
Wasatch Advisors	Investment Manager	1,343,582	1,706,056	3,049,638
Wellington Management Company	Investment Manager	761,842	967,372	1,729,214
Westwood Global Investments	Investment Manager	557,073	707,361	1,264,434

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SUMMARY OF INVESTMENT MANAGERS AND FEES (QPP & TDA)				
YEAR ENDED JUNE 30, 2021				
INVESTMENT MANAGERS		QPP	TDA	TOTAL
NYC TRS	Investment Support	\$303,804	\$657,672	\$961,476
Groom Law Group	Legal Fees	24,377	52,772	77,149
Principals for Responsible Investment	Consultant Fees	3,723	8,061	11,784
Rocaton Investment Advisors	Consultant Fees	159,340	322,274	481,614
Broadridge Financial Solutions	Data Services	61,759	133,688	195,447
eVestment Alliance	Data Services	6,412	13,744	20,156
JP Morgan Chase Bank	Custodian Bank	238,851	282,371	521,222
BALANCED FUND				
Vanguard Mutual Fund	Mutual Fund			
NYC TRS	Investment Support	6,944	31,333	38,277
Groom Law Group	Legal Fees	553	2,396	2,949
Principals for Responsible Investment	Consultant Fees	85	502	587
Rocaton Investment Advisors	Consultant Fees	3,099	14,339	17,438
Broadridge Financial Solutions	Data Services	1,389	6,482	7,871
eVestment Alliance	Data Services	146	666	812
JP Morgan Chase Bank	Custodian Bank	95	338	433
SUSTAINABLE EQUITY FUND				
Brown Advisory	Investment Manager	104,438	1,207,338	1,311,776
NYC TRS	Investment Support	603	3,977	4,580
Groom Law Group	Legal Fees	48	319	367
Principals for Responsible Investment	Consultant Fees	7	49	56
Rocaton Investment Advisors	Consultant Fees	355	3,736	4,091
Broadridge Financial Solutions	Data Services	122	802	924
eVestment Alliance	Data Services	13	84	97
JP Morgan Chase Bank	Custodian Bank	81	932	1,013
U.S. Equity Fund				
Fidelity Mutual Fund	Mutual Fund			
JP Morgan Chase Bank	Custodian Bank	84	66	150
International Equity Index Fund				
Fidelity Mutual Fund	Mutual Fund			
JP Morgan Chase Bank	Custodian Bank	18	116	134
Investment Expenses	Subtotal:	\$415,229,409	\$15,911,575	\$431,140,984
Provision for Administrative Expenses	Administrative Fees	9,364,157	15,811,133	25,175,290
Reserve Transfer to				
Administrative expenses	Fund Transfer	(18,879,900)	(17,990,759)	(36,870,659)
Net (decrease) in variable expense provision	Subtotal:	(\$9,515,743)	(\$2,179,626)	(\$11,695,369)
Total Investment Expenses		\$405,713,666	\$13,731,949	\$419,445,615

**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021**

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Abel Noser	162,157	\$0.05	\$8,106
ABG Securities Limited	126,077	0.01	1,185
ABN Amro Clearing Bank N.V.	235,541	0.02	4,607
Actinver Casa De Bolsa Sa De Cv	77,642	0.00	349
Allen and Company LLC	2,552	0.03	65
Ambit Capital PVT LTD	55,216	0.06	3,570
Apex Clearing Corporation	2,684	0.03	81
Arqaam Capital Limited	3,549	0.00	8
Arqaam Securities Brokerage	139,430	0.00	160
Arqaam Securities LLC	8,321,311	0.00	10,988
Autrepat-Div Re	50,646	0.04	1,807
Baader Bank Ag	2,090	0.08	162
Banc of Santander - Chile	6,588,523	0.00	1,307
Banco Itau SA	1,129,243	0.01	10,643
Banco Modal SA	24,100	0.02	486
Banco Pactual SA	599,457	0.01	3,404
Banco Santander Central Hispano	1,685,467	0.00	3,478
Bank of America Corporation	566,075	0.04	24,381
Bank of Nova Scotia - Scusa	312,805	0.00	1,187
Bank of Santander - Brazil	273,700	0.01	2,074
Bank of Santander - Mexico	366,433	0.01	1,914
Barclays Capital Inc	1,799,115	0.02	36,065
Barclays Capital Inc/Le	6,749,281	0.02	146,328
Barclays Capital Le	792,549	0.02	13,744
Barrington Research Associates	5,709	0.03	199
BCS Prime Brokerage LTD	1,101,076,836	0.00	437
Berenberg Capital Markets LLC	3,169	0.03	95
Bernstein Autonomous LLP	17,476,973	0.01	106,305
BHF-Bank Aktiengesellschaft	4,796	0.03	143
BMO Capital Markets	198,425	0.01	2,363
BMO Nesbitt Burns Inc	6,950	0.03	176
BNDSS Bony DSS	1,041	0.03	27
BNP Paribas	289,974	0.01	2,925
BNP Paribas Prime Brokerage Inc	163,167	0.01	1,306
BNP Paribas Securities (Asia) LTD	5,771,487	0.00	4,051
BNP Paribas Securities Hungary	10,674	0.03	295
BNP Paribas Securities India Private Lim	34	0.12	4
BNP Paribas Securities New York	2,986	0.06	185
BNP Paribas Securities Services	10,108,228	0.00	34,005
BNP Paribas Securities Services SA	151,521,999	0.00	66,843
BNY Mellon/HSBC Bank PLC	2,300	0.03	60
BOFA Securities Inc	71,649,051	0.01	373,708
Bradesco SA Ctvm	17,305,560	0.00	53,701
BRiley & Co, LLC	24,859	0.02	621
Broadcort Capital Corp	2,200	0.03	56
BTG Pactual Casa De Bolsa	115,400	0.00	458
BTG Pactual Chile SA Corredores De Bol	63,096,001	0.00	7,831
BTIG, LLC	275,667	0.02	5,603
Cabrera Capital Markets LLC	45,355	0.04	1,747
Canaccord Genuity (Australia) Limited	6,057	0.00	14

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Canaccord Genuity Inc	147,118	\$0.04	\$5,938
Canadian Imperial Bank of Commerce	393,290	0.02	6,095
Cantor Fitzgerald & Co	107,467	0.02	2,414
Cantor Fitzgerald/Cantor Clearing Serv	19,902	0.03	622
CAP Guardian Broker	567	0.01	4
Carnegie AS	309,494	0.04	10,918
Carnegie Investment Bank Ab	89,461	0.03	2,689
Castleoak Securities	9,708	0.03	243
CF Global Trading LLC	274,203	0.04	10,436
CGS-CIMB Securities (Hong Kong) LTD	1,311,950	0.00	2,429
China International Capital Co	25,573,132	0.00	41,279
China Renaissance Securities HK LTD	423,280	0.00	1,455
CIBC Mellon	109,062	0.02	1,986
CIBC World Mkts Inc	457,982	0.02	7,884
CIMB Securities (Korea) LTD	25,744	0.13	3,460
CIMB Securities (Thailand) Co, LTD	200,400	0.00	310
CIMB-Gk Securities Pte LTD	2,760,300	0.00	6,124
Citadel Securities Institutional LLC	6,155	0.01	58
Citibank International	7,814	0.02	145
Citibank Mexico	442,500	0.00	1,335
Citibank NA	1,400	0.42	593
Citibank NA Istanbul	573,800	0.00	1,648
Citibank of Colombia	1,224,792	0.00	4,263
Citigroup Global Markets Australia Pty	503,281	0.00	856
Citigroup Global Markets Europe	2,462,142	0.02	37,400
Citigroup Global Markets Inc	42,704,151	0.00	52,992
Citigroup Global Markets India	1,306,878	0.00	4,173
Citigroup Global Markets Limited	387,594,634	0.00	189,352
Citigroup Global Markets Taiwan	14,126,634	0.00	10,449
Citigroup Global Marketet Korea Secs LTD	683,145	0.01	6,343
CL Securities Taiwan Company Limited	1,229,810	0.01	7,649
CLSA Americas	514,113	0.02	10,352
CLSA Australia Pty LTD	5,384,449	0.00	3,098
CLSA Securities Korea LTD	5,207,478	0.02	106,539
CLSA Securities Malaysia Sdn Bhd	7,179,700	0.00	2,940
CLSA Singapore Pte LTD	77,200,902	0.00	106,516
CLSA UK	187,680	0.00	888
COL Financial Group, Inc	46,000	0.01	314
Commercial Bank of Qatar, LTD	4,783,401	0.00	6,323
Concordia SA CVMCC	175,200	0.00	742
Cornerstone Macro LLC	39,177	0.04	1,734
Cowen and Company, LLC	1,157,375	0.02	20,708
Cowen Execution Services LLC	25,218,438	0.01	148,221
Craig - Hallum	190,804	0.04	8,045
Credicorp Capital Colombia SA	2,237,697	0.00	6,283
Credit Industriel et Commercial	600	0.05	30
Credit Lyonnais Capital Indonesia	70,100	0.00	59
Credit Lyonnais Securities (Asia)	501,034,565	0.00	251,149
Credit Lyonnais Securities (India)	16,454,802	0.01	111,040
Credit Mutuel-Cic Banques	850	0.11	93

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Credit Suisse First Boston	59,313,779	\$0.00	\$55,246
Credit Suisse First Boston (Europe)	2,324,676	0.01	20,422
Credit Suisse First Boston SA Ctvm	186,023	0.00	369
Credit Suisse International	460,875	0.00	1,704
Credit Suisse Secs India Private LTD	3,313,522	0.01	45,869
Credit Suisse Securities (Europe) LTD	732,151,547	0.00	109,964
Credit Suisse Securities (USA) LLC	266,648,273	0.00	191,390
Credit Suisse Securities Canada Inc	132,618	0.01	1,010
CS First Boston (Hong Kong) Limited	5,221,108	0.00	11,913
CSFB Australia Equities LTD	1,468,988	0.00	1,249
Daiwa Capital Markets America Inc	1,354,404	0.03	43,529
Daiwa Sbcm Europe	632,200	0.03	18,219
Daiwa Securities (HK) LTD	2,011,760	0.01	23,280
Daiwa Securities Company LTD	47,197	0.04	1,908
Daiwa Securities PR (India)	30,437	0.05	1,541
Danareska Securities, Pt	4,890,000	0.00	304
Danske Bank AS	448,320	0.01	3,792
Davidson DA & Company Inc	53,709	0.03	1,514
Davy Stockbrokers	370,440	0.02	8,545
DBS Vickers (Hong Kong) Limited	2,823,400	0.00	3,593
DBS Vickers Securities (Singapore)	38,141,284	0.00	29,194
Den Norske Bank	228,526	0.00	735
Deutsche Bank AG	1,147,840	0.00	5,617
Deutsche Securities Asia LTD	13,500	0.00	1
DNB Markets Custody	5,595	0.02	127
Dougherty & Company LLC	46,295	0.04	1,852
DSP Merrill Lynch LTD	17,041,330	0.01	88,677
Erste Bank Befektetesi Rt	4,587	0.06	292
Erste Group Bank Ag	100	0.06	6
Euroclear Bank	16,754	0.01	203
Evercore Isi	410,849	0.02	7,871
Exane SA	6,710,246	0.01	62,146
Federated Manamged Growth & Income 17 A7	10,000	0.03	251
Fidelity Capital Markets	436,163	0.02	7,230
Fidelity Clearing Canada ULC	3,881	0.02	71
Financial Brokerage Group (FBG)	588,713	0.00	812
Flow Corretora De Mercadorias LTDa	6,221,644	0.00	15,712
Fubon Securities Co LTD	10,410	0.04	382
Gk Goh Ometraco Pt	30,483,100	0.00	7,335
Goldman Sachs & Co LLC	1,237,490,651	0.00	357,274
Goldman Sachs (Asia) LLC	61,288,894	0.00	41,769
Goldman Sachs (India)	21,311,844	0.00	90,949
Goldman Sachs Australia Pty LTD	1,121,203	0.00	4,677
Goldman Sachs Do Brasil Corretora	910,207	0.01	5,090
Goldman Sachs International	1,413,696,403	0.00	127,391
Goodbody Stockbrokers	144,141	0.00	393
Guggenheim Capital Markets LLC	20,764	0.02	519
Guzman And Company	159,699	0.00	278
Haitong Intl Secs Company LTD	9,315,368	0.00	27,651
Hanwha Securities Seoul	9,896	0.04	378

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Hilltop Securities Inc	833,539	\$0.05	\$38,880
Hongkong and Shanghai Banking Corporation	3,327,625	0.02	54,585
HSBC Bank PLC	68,739,008	0.00	179,481
HSBC Bank USA	59,071	0.00	249
HSBC Brokerage (USA) Inc	7,279	0.00	36
HSBC Mexico	6,966,340	0.00	5,760
HSBC Securities	10,827,097	0.00	16,312
HSBC Securities (USA) Inc	121,581,843	0.00	68,916
HSBC Securities India Holdings	11,201,076	0.00	31,226
Ichiyoshi Securities Co LTD	1,600	0.01	23
ICICI Brokerage Services	13,414,489	0.00	46,876
IM Trust SA Corredores De Bolsa	76,004,690	0.00	22,242
India Infoline LTD	107,726	0.03	3,248
Instinet Australia Clearing Srvc Pty LTD	7,491,538	0.00	13,930
Instinet Europe LTD	3,213	0.04	142
Instinet LLC	35,459,653	0.00	68,041
Instinet Pacific Limited	385,162,743	0.00	206,636
Instinet Singapore Services Pt	5,506,090	0.00	25,479
Instinet UK LTD	72,110,810	0.00	339,431
International Strategy And Investment	2,500	0.01	24
Intesa Sanpaolo SPA	1,181	0.03	30
Intl Fcstone Financial Inc	101,294	0.03	2,594
Investec Bank PLC	41,167	0.02	639
Investec Markets(Proprietary)Limited	579,784	0.00	865
Investment Technology Group LTD	916,924	0.03	26,284
Ipopema Securities SA	6,342	0.05	340
Is Yatirim Menkul Degerler As	190,252	0.00	895
ITAU USA Securities Inc	2,800	0.08	223
ITG Australia LTD	45,871,036	0.00	27,024
ITG Canada	171,945	0.01	1,077
ITG Inc	594,721	0.00	2,842
Janney Montgomery, Scott Inc	27,485	0.03	805
Jefferies Hong Kong Limited	2,002,835	0.00	9,623
Jefferies India Private Limited	6,183,545	0.01	78,941
Jefferies International LTD	125,978,440	0.00	81,219
Jefferies LLC	11,591,166	0.01	96,886
Joh Berenberg, Gossler & Co KG	2,210,604	0.04	89,544
Jonestrading Institutional Services LLC	2,832,216	0.03	76,999
JP Morgan Broking HK LTD	7,015,600	0.00	13,542
JP Morgan India Private LTD	2,430,117	0.01	24,472
JP Morgan Securities (Asia Pacific) LTD	114,574,409	0.00	177,341
JP Morgan Securities (Australia) LTD	3,676,263	0.00	3,150
JP Morgan Securities (Far East) LTD Seoul	865,886	0.03	25,630
JP Morgan Securities (Taiwan) LTD	13,103,588	0.00	11,963
JP Morgan Securities Inc	30,252,630	0.00	46,997
JP Morgan Securities Limited	575,219	0.04	21,448
JP Morgan Securities LLC	10,983,494	0.01	102,017
JP Morgan Securities PLC	345,577,143	0.00	180,417
JP Morgan Securities Singapore	3,091,900	0.00	8,329
Jupiter Securities Sdn Bhd	5,750,000	0.00	6,175

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
KB Securities N V	82	\$0.06	\$5
Keefe Bruyette & Woods Inc	116,887	0.03	3,219
Kempen & Co NV	9,355	0.01	111
Kepler Cheuvreux	45,231	0.03	1,505
Keybanc Capital Markets Inc	1,769,681	0.02	30,512
Kim Eng Securities (HK) LTD	33,800,497	0.00	3,692
Korea Investment And Securities Co, LTD	272,218	0.13	36,030
Kotak Securities LTD	721,222	0.03	23,399
Larrain Vial	15,152,588	0.00	4,352
Leerink Partners LLC	20,148	0.03	616
Liberum Capital Inc	965,550	0.01	4,994
Liberum Capital Limited	171,370	0.00	475
Liquidnet Canada Inc	24,443	0.00	91
Liquidnet Europe LTD	1,001,412	0.02	22,040
Liquidnet Inc	2,474,614	0.02	45,575
Loop Capital Markets LLC	8,433,929	0.03	222,812
Luminex Trading and Analytics LLC	243,951	0.01	1,224
Macquarie Bank Limited	19,124,393	0.00	35,653
Macquarie Capital (Europe) LTD	12,201	0.00	5
Macquarie Capital (USA) Inc	5,958	0.04	239
Macquarie Capital Securities	133,362,070	0.00	91,285
Macquarie Sec Nz LTD	318,149	0.01	1,863
Macquarie Securities (India) Pvt LTD	92,961	0.01	749
Macquarie Securities (USA) Inc	300	0.03	8
Macquarie Securities Korea Limited	526,922	0.02	12,947
Macquarie Securities Limited	1,061,200	0.01	6,161
Mandarin Securities Corp	21,610	0.01	201
Maxim Group	32,843	0.03	985
Merrill Lynch Canada Inc	16,721	0.03	578
Merrill Lynch Corredores De Bolsa	91,272	0.05	4,388
Merrill Lynch Equities (Australia)	10,224,350	0.00	12,196
Merrill Lynch International	536,360,966	0.00	372,739
Merrill Lynch Pierce Fenner & Smith	2,813,510	0.00	8,227
Mirabaud Securities LLP	7,859	0.07	534
Mirae Asset Daewoo Co, LTD	838,727	0.05	41,157
Mirae Asset Sec USA	5,770,995	0.02	115,629
Mischler Financial Group, Inc-Equities	205,700	0.02	4,937
Mitsubishi UFJ Securities (USA)	236,448	0.03	8,222
Mizuho International PLC	3,383,020	0.00	13,270
Mizuho Securities Asia Limited	1,888	0.06	112
Mizuho Securities USA Inc	262,360	0.05	12,327
MKM Partners LLC	79,697	0.04	3,015
MI Professional Clearing Corp	300	0.03	8
Morgan Stanley and Co International	675,338,518	0.00	323,363
Morgan Stanley Co Incorporated	195,015,017	0.00	367,706
Morgan Stanley Dean Witter Australia	312,525	0.00	428
Morgan Stanley India Company Pvt LTD	5,259,912	0.01	47,541
Morgan Stanley Securities (HK) LTD	1,597,000	0.00	64
Morgan Stanley Taiwan Limited	53,043,254	0.00	70,400
National Financial Services Corporation	540,841	0.02	13,161

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Needham & Company	5,731	\$0.03	\$145
Needham and Company LLC	239,560	0.04	10,481
Nesbitt Burns	9,123	0.03	274
Newberg Securities	3,400	0.03	86
NH Investment and Securities Co LTD	15,340	0.16	2,385
Nomura Financial Advisory & Sec India	4,387,215	0.00	17,294
Nomura Financial Investment Korea Co LTD	380	0.03	13
Nordea Bank Ab (Publ), Finnish Branch	14,100	0.02	316
North South Capital LLC	8,633	0.03	261
Northland Securities Inc	61,641	0.03	1,967
Numis Securities Inc	35,758	0.01	283
Numis Securities Limited	317,400	0.00	737
O Neil, William And CO Inc / Bcc Clrg	5,653	0.03	170
ODDO Et Cie	56,850	0.01	536
Oppenheimer & Co Inc	65,781	0.04	2,786
Parel	721,773	0.00	3,276
Pavilion Global Markets LTD	528,925	0.02	12,401
Peel Hunt LLP	2,288,662	0.00	3,743
Penserra Securities LLC	3,730,392	0.01	19,351
Pershing LLC	38,609,784	0.01	332,170
Pershing Securities Canada Limited	18,014	0.03	474
Pershing Securities Limited	5,460,558	0.01	43,890
Pictet (Canada) LP	81,822	0.01	820
Pictet and Cie	545,847	0.01	6,885
Piper Jaffray & Co	4,846,175	0.03	146,261
Raymond James and Associates Inc	698,206	0.04	27,736
Raymond James LTD	39,179	0.03	1,174
RBC Capital Markets, LLC	53,635,758	0.00	20,078
RBC Dominion Securities Corporation	1,010,652	0.01	6,315
Redburn (Europe) Limited	7,546,057	0.01	66,730
Robert WBaird Co Incorporated	1,544,726	0.02	32,627
Rosenblatt Securities	44,081	0.01	229
Roth Capital Partners LLC	20,660	0.05	1,033
Royal Bank Of Canada Europe LTD	6,656,973	0.01	53,678
Samsung Securities Co LTD	130,299	0.16	20,740
Sanford C Bernstein (India) Private LIM	613,068	0.03	16,060
Sanford C Bernstein LTD	9,995,298	0.00	42,579
Santander Investment Securities Inc	71,266	0.07	4,651
SB Equities Incorporated	81,950	0.00	369
SBI Securities (Hong Kong) Limited	93,600	0.04	3,506
Sbicap Securities Limited	12,397	0.07	898
Scotia Capital (USA) Inc	586,018	0.00	886
Scotia Capital Inc	20,600	0.01	113
Securities Services Nominees	732,574	0.00	3,117
SG Americas Securities LLC	7,400	0.01	69
SG Asia Securities (Inoia) Pvt LTD	3,894,615	0.00	10,357
SG Securities (London) LTD	5,899,267	0.00	2,818
SG Securities HK	99,702,612	0.00	43,677
Shenyin and Wanguo Securities (HK) LTD	6,503,934	0.00	23,028
Sidco/Virtu Americas	17,348	0.04	693

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (PENSION FUND)
FISCAL YEAR ENDED JUNE 30, 2021

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Sidoti & Company LLC	44,617	\$0.03	\$1,489
Sinopac Securities Corporation	367,000	0.01	4,859
Skandinaviska Enskilda Banken	18,985	0.01	256
Skandinaviska Enskilda Banken London	6,354	0.01	80
Smbc Nikko Capital Markets Limited	834,900	0.10	79,517
Smbc Nikko Securities (Honk Kong) LTD	130,000	0.01	1,323
SMBC Securities Inc	599,604	0.01	5,510
Societe Generale	9,682,166	0.00	26,140
Spark Capital Advisors (India) Priv LTD	61,867	0.01	535
SSB Custodian	850	0.02	17
State Street Global Markets, LLC	51,126	0.03	1,534
Stephens, Inc	125,324	0.04	5,425
Stifel Nicolaus & Co Inc	439,575	0.03	14,725
Stifel Nicolaus Europe Limited	758	0.12	94
Strategas Securities LLC	16,650	0.04	647
Sturdivant and Co, Inc	146,490	0.04	5,810
Suntrust Capital Markets, Inc	71,158	0.04	2,662
Svenska Handelsbanken	30,186	0.01	382
Telsey Advisory Group	298,064	0.05	13,979
Telsey Advisory Group LLC	2,915	0.03	73
The Bank of New York Mellon	386,662	0.00	1,055
The Hongkong and Shanghai Bank	456,766	0.06	29,527
Toronto Dominion Securities Inc	444,001	0.01	2,493
UBS Ag	95,045,145	0.00	283,438
UBS Ag London	1,170,528	0.03	35,872
UBS Securities Asia LTD	226,681,028	0.00	100,519
UBS Securities Canada Inc	1,289,618	0.01	8,414
UBS Securities India Private LTD	1,876,219	0.01	10,469
UBS Securities LLC	2,127,980	0.01	18,165
UBS Securities Pte LTD	6,802,374	0.00	18,151
UBS Securities Pte LTD, Seoul	393,861	0.06	21,750
UBS Switzerland AG	1,702,743	0.01	10,826
UBS Warburg Australia Equities	144,800	0.00	161
UOB Kay Hian Pte Limited	306,000	0.00	333
Virtu Americas LLC	1,716,769	0.02	35,445
Virtu ITG Europe LTD	6,503,997	0.00	18,343
VTB Bank Europe PLC	127,551	0.04	5,354
Wedbush Morgan Securities Inc	4,045	0.02	82
Wedbush Securities Inc	7,900	0.02	197
Wells Fargo Securities LLC	516,256	0.02	9,474
William Blair & Company LLC	483,771	0.05	22,525
Williams Capital Group Lp (The)	323,266	0.03	9,691
Winterflood Securities LTD	9,785,377	0.00	2,503
Wolfe Trahan Securities	8,997	0.02	194
Wood and Company	120,534	0.00	237
Wood Gundy Inc	7,632	0.01	58
XP Investimentos Cctvm SA	395,000	0.01	3,779
Yuanta Securities Co, LTD	981,216	0.00	4,193

SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Abel Noser	8,163,056	\$0.03	\$259,494
ABG Securities AS (Stockholm)	10,062	0.07	732
ABG Securities, Oslo	160,305	0.01	2,077
ABN Amro Clearing Bank N.V.	218,536	0.01	2,258
Altacorp Catal Inc	72,161	0.02	1,136
Arqaam Capital Limited	1,877,904	0.00	2,642
Arqaam Securities LLC	5,987,502	0.00	1,533
Aviate Global LLP	10,348	0.04	463
Banco Itau Sao Paulo	39,000	0.00	27
Banco Pactual SA Rio De Janeiro	157,200	0.00	337
Bank Of America Merrill Lynch Securities	987,570	0.01	5,447
Bank Of Americas Securities Inc	5,120,533	0.01	74,324
Bank of Santander - Brazil	83,400	0.00	79
Banque Nationale Du Canada Montreal	4,063,473	0.00	18,076
Barclays Bank London	1,201,586	0.01	9,854
Barclays Capital Inc	402,484	0.00	1,072
Barclays Capital Inc/Le	317,027	0.02	5,045
Barclays Capital Le	737,386	0.03	22,815
Barclays Capital Securities LTD	7,041	0.01	65
Barrington Research Associates	65,801	0.02	1,317
Baypoint Trading LLC	1,232,429	0.01	17,910
Berenberg Bank Hamburg	313,472	0.03	10,580
BMO Capital Markets	13,964	0.03	419
BNP Paribas Securities (Asia) LTD	60,100	0.01	409
BNP Paribas Securities Services	1,209,522	0.00	2,787
BNP Paribas Securities Services SA	1,444,337	0.01	14,546
BNP Paribas Security Svcs London	129,866	0.00	83
BNY Convergenx Execution Solutions	4,058,488	0.01	26,706
Bofa Securities Inc	11,733	0.01	64
Bradesco SA	2,938,884	0.00	6,822
BRiley & Co, LLC	84,851	0.04	3,315
Broad Court Cap Corp Sub Div Merrill	346,200	0.03	10,387
Brockhouse & Cooper Inc Montreal	62,980	0.02	1,153
Canaccord Capital Corp Vancouver	265,451	0.01	3,002
Cantor Clearing Services	160	0.02	3
Cantor Fitzgerald & Co Inc	1,475,619	0.03	46,385
Cantor Fitzgerald/Mis Brokers	4,147	0.02	83
Capel James Securities	271,365	0.01	2,063
Carnegie AS	126,832	0.01	1,281
Carnegie Secs Helsinki	42,807	0.04	1,898
Celfin Capital Sa Corredores De Bolsa	4,259,706	0.00	958
China Intl Capital Corp HK Secs LTD	2,755,800	0.00	3,721
CIBC London	64,880	0.02	1,043
CIBC World Markets Toronto	45,554	0.01	358
CIMB Securities (HK) LTD	802,800	0.00	84
CIMB-GK Securities Pte LTD	65,244	0.00	41
Citibank Canada	3,600	0.01	30
Citibank Europe PLC	13,699	0.01	137
Citibank Europe PLC UK Branch	783,115	0.02	12,928
Citibank Frankfurt CBF	422,693	0.02	7,621
Citibank NA	37,307,980	0.00	66,224
Citibank NA London	313,923	0.01	3,186
Citigroup Global Markets Europe AG	127,670	0.02	2,571
Citigroup Global Markets Inc	15,125,949	0.00	30,870

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SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Citigroup Global Markets Limited	939,235	\$0.01	\$7,092
Citigroup Global Mkt Ind Pvt LTD	44,784	0.01	512
Citigroup Global Mkt Secs LTD	46,390	0.02	998
Citigroup Global Mkts Australia Pty	194,727	0.00	523
Citigroup Pty Limited	14,694	0.04	596
CJS Securities Inc	1,668	0.04	67
CLKing & Associates Inc	19,410	0.04	777
CLSA Australia Pty LTD	81,336	0.00	102
CLSA India LTD	1,265,322	0.01	13,090
CLSA LTD Hong Kong	16,189,231	0.00	10,955
CLSA Singapore Pte LTD	810,253	0.00	2,641
Collins Stewart LLC	485,365	0.02	9,706
Convergex LLC	1,051	0.01	8
Cornerstone Macro LLC	75,751	0.02	1,515
Cowen And Company LLC	3,344,828	0.03	102,805
Craig - Hallum	1,097,208	0.02	18,122
Craig-Hallum Capital Group LLC	33,196	0.04	1,327
Credit Lyonnais Sec (USA) Inc NY	28,000	0.00	25
Credit Lyonnais Sec Seoul	697,400	0.03	19,727
Credit Lyonnais Secs (Asia) Taipei	4,681,000	0.00	12,198
Credit Lyonnais Secs Singapore	1,426,836	0.01	7,144
Credit Mutuel-Cic Banques	38,536	0.06	2,258
Credit Suisse Equities (Australia)	67,242	0.00	194
Credit Suisse First Boston	1,552,275	0.00	2,691
Credit Suisse First Boston HK	1,922,000	0.00	3,858
Credit Suisse First Boston SA	4,155,792	0.00	2,316
Credit Suisse Securities (CRSUSA)	345,666	0.01	4,563
Credit Suisse Securities (Europe)	2,023,003	0.01	14,035
Credit Suisse Securities (USA) LLC	2,265,156	0.01	13,474
CSFB (Europe) LTD Seoul Secs Branch	4,717	0.05	213
CSFB India (Secs) Pvt LTD Mumbai	58,015	0.02	1,366
CSFB Taipei	447,250	0.02	8,432
D Carnegie AB Stockholm	359,288	0.03	10,722
DADavidson & Co	236,557	0.02	4,847
Daiwa Capital Markets America Inc	542,086	0.05	25,473
Daiwa Capital Markets Hong Kong	36,900	0.01	279
Daiwa Securities Taipei LTD	49,300	0.01	295
Danske Bank A/S Copenhagen	47,100	0.01	262
Davy Stockbrokers	517,959	0.00	1,513
DBS Vickers Secs (Sing) Pte LTD	4,760,738	0.00	2,397
Deutsche Bank London	124,257	0.00	597
Deutsche Bank Securities Inc NY	7,896	0.01	84
Direct Trading Institutional Inc	1,196,561	0.01	14,273
DNB Nor Markets Custody	6,300	0.01	32
Dougherty & Company LLC	21,995	0.04	880
Exane New York	5,921	0.02	136
Exane SA	1,246,984	0.01	10,869
Fidelity Capital Markets	1,593	0.02	32
Financial Brokerage Group	1,876,474	0.00	1,106
First Union Capital Markets	270,557	0.03	8,402
Flow Corretora De Mercadorias LTDa	78,800	0.00	76
French American Banking Corporation	3,629	0.01	36
Friedman Billings & Remsey	7,660	0.02	154
Goldman Sachs	7,486,069	0.01	79,048

Continued on page 121

SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Goldman Sachs (Asia) LLC Seoul	83,905	\$0.01	\$1,148
Goldman Sachs (Asia) Taipei	1,496,280	0.00	1,742
Goldman Sachs (India) Securities	1,057,553	0.01	6,668
Goldman Sachs Australia Pty LTD	122,699	0.02	1,873
Goldman Sachs Bank London	5,420,422	0.00	19,068
Goldman Sachs Do Brasil Corretora	300,100	0.00	569
Goldman Sachs New York	19,738,415	0.00	23,988
Goodbody Stockbrokers Dublin	154,100	0.01	1,337
Guzman & Company	74,521	0.01	530
Haitong Intl Securities Co Limited	60,344	0.00	190
Hilltop Securities Inc	7,354	0.02	147
Hongkong & Shanghai Banking Corp LTD	7,147	0.03	213
HSBC Bank PLC	53,944	0.01	523
HSBC Bank PLC London	4,881,973	0.00	15,199
HSBC Brokerage (USA) Inc	196,815	0.01	1,468
HSBC Secs & Cap Mkts India Privt LTD	1,369,639	0.00	2,283
HSBC Securities Brokers (Asia) LTD	392,300	0.01	2,519
HSBC Securities USA	44,331,100	0.00	22,733
ICICI Brokerage Services Mumbai	1,289,387	0.01	10,497
IM Trust SA Corredores De Bolsa	91,004	0.00	294
Instinet	1,777,103	0.01	20,989
Instinet Australia Clearing Svcs	84,396	0.01	502
Instinet Clearing Services Inc	10,172	0.04	407
Instinet Corp New York	270,500	0.00	1,212
Instinet Europe Limited	1,842,960	0.01	16,681
Instinet Pacific LTD Hong Kong	26,033,926	0.00	16,741
Instinet Singapore Services Pte LTD	79,200	0.00	225
International Advisory Services Group	538,700	0.01	3,432
Investec Henderson Crosthwaite Secs	136,137	0.01	756
Investment Technology Group Dublin	1,600	0.01	13
Investment Technology Group Inc	327,546	0.02	6,049
ISI Group Inc	1,085,905	0.02	25,370
ITG Australia Limited Melbourne	1,129,969	0.00	3,856
ITG Canada Corp Toronto	91,100	0.01	1,045
ITG Inc	23,252	0.00	116
ITG Inc New York	329,461	0.00	950
ITG London	2,765,958	0.00	13,650
Janney Montgomery Scott Inc	87,979	0.04	3,522
Jefferies & Company	3,614,122	0.03	102,265
Jefferies & Company Inc NY	2,460,202	0.00	11,521
Jefferies Hong Kong Limited	48,500	0.00	114
Jefferies International	6,376,339	0.00	7,743
JM Financial Institutional	291,860	0.01	3,502
JM Morgan Stanley Secs Pvt LTD	981,967	0.00	4,839
JMP Securities	173,780	0.02	3,476
Johnson Rice & Company LLC	140,100	0.03	4,203
Jones Trading Institutional Services	655,843	0.03	19,900
JP Morgan Broking HK LTD	805,900	0.00	1,553
JP Morgan Chase Bank	1,674,577	0.03	50,397
JP Morgan Chase Bank, London	741,310	0.00	1,948
JP Morgan Clearing Corp NY	533	0.01	3
JP Morgan India Private LTD	566,624	0.00	2,706
JP Morgan Secs Inc NY	1,846,747	0.00	5,516
JP Morgan Secs London	442,687	0.01	5,690

Continued on page 122

SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
JP Morgan Securities (Asia Pacific)	26,218,901	\$0.00	\$20,203
JP Morgan Securities (Far East) LTD	84,290	0.04	3,308
JP Morgan Securities Australia Limited	304,027	0.00	469
JP Morgan Securities Limited	3,877,150	0.01	22,117
JP Morgan Securities Singapore	169,722	0.00	216
JP Morganchase / CustJPMCC	330,427	0.02	5,582
KBC Peel Hunt	680,863	0.00	1,674
KBC Peel Hunt LTD	1,800	0.02	27
Kempen And Co	28,296	0.02	532
Kepler Capital Markets	62,749	0.04	2,494
Keybanc Capital Markets Inc	33,537	0.04	1,341
Kim Eng Securities (HK) LTD	15,500	0.01	152
Knight Equity Markets LP	683,741	0.01	6,464
Knight Execution & Clearing Services	726,933	0.02	12,780
Korea Investment And Securities Co	12,950	0.11	1,450
Kotak Securities Mumbai	46,928	0.03	1,328
Liberum Capital Inc	176,075	0.01	1,063
Liberum Capital Limited	104,000	0.00	285
Liquidnet Asia Limited Hong Kong	36,600	0.01	251
Liquidnet Canada Inc	2,400	0.02	58
Liquidnet Europe LTD London	169,781	0.01	2,205
Liquidnet Inc	979,797	0.03	25,977
Loop Capital Markets	13,524	0.04	541
Luminex Trading And Analytics LLC	35,644	0.01	194
Macquarie Bank Limited	1,166,283	0.01	9,046
Macquarie Capital (Aust) LTD	33,636,095	0.00	24,696
Macquarie Securities (USA) Inc	227,085	0.01	2,098
Macquarie Securities Indian Pvt LTD	460,736	0.02	6,993
Macquarie Securities LTD Seoul	3,456	0.10	339
Macquarie Securities New Zealand	146,024	0.01	1,219
Madison National Bank	182,350	0.01	1,823
Mainfirst Bank AG	13,100	0.01	86
Maxim Group	43,684	0.02	874
Merrill Lynch & Co Inc (Atlas Gbl) NY	114,200	0.02	1,977
Merrill Lynch And Co Inc	54,087	0.01	482
Merrill Lynch International London	13,120,733	0.00	43,815
Merrill Lynch Pierce Fenner & Smith	53,335	0.03	1,653
Mirae Asset Securities	21,215	0.18	3,785
Mirae Asset Securities (USA) Inc	4,345	0.04	174
Mitsubishi UFJ Securities (USA)	232,021	0.00	900
Mizuho Securities Asia LTD	2,257	0.04	96
Mizuho Securities Inc	10,100	0.06	622
Morgan Stanley & Co	35,787,592	0.00	100,694
Morgan Stanley And Co Intl Taipei	2,006,063	0.00	4,819
Morgan Stanley Dean Witter Sydney	32,039	0.00	32
Morgan Stanley Intl Seoul	61,848	0.06	3,533
National Finl Svcs Corp	28,618,542	0.00	138,957
NBC Clearing Services Inc	132,367	0.02	2,112
Needham And Company LLC	88,655	0.03	2,218
Nesbitt Burns Toronto	556,713	0.01	6,650
Nomura Financial Advisory And Securities	2,119,395	0.00	8,071
Nordea Bank Finland PLC	49,200	0.01	423
Northland Securities Inc	5,818	0.03	165
Numis Securities London	52,900	0.01	452

Continued on page 123

SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021 (Continued)

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
Numis Securities, New York	529,960	\$0.01	\$4,544
Oddo Et Cie Paris	102,489	0.13	13,107
Oppenheimer & Co Inc	264,446	0.02	5,257
Parel Paris	10,800	0.01	123
Penserra Securities	188,438	0.03	4,790
Pershing LLC	3,401,523	0.01	45,156
Pershing Securities	2,560,693	0.01	15,130
Piper Jaffray & Co	4,327,754	0.01	36,826
Raymond James & Associates Inc	199,300	0.03	6,288
Raymond James LTD Toronto	131,382	0.01	1,136
RBC Capital Markets Corporation	693,010	0.01	9,009
RBC Dain Rauscher Inc	183	0.01	1
RBC Dominion Secs Toronto	621,312	0.01	9,232
Redburn Partners LLP London	346,604	0.01	5,147
Robert W Baird & Co	154,428	0.03	5,069
Rosenblatt Securities Inc	408,490	0.01	2,204
Roth Capital Partners, LLC	270,895	0.02	5,263
Royal Bank Of Canada	30,232	0.02	483
Royal Bank Of Canada Europe Limited	1,164,437	0.00	4,583
Salomon Smith Barney Taipei Brch	716,812	0.01	7,474
Samsung Securities	40,176	0.09	3,432
Sanford C Bernstein & Co Inc	754,330	0.02	15,223
Sanford C Bernstein (India)	23,555	0.03	648
Sanford C Bernstein And Co, LLC	1,030,740	0.00	3,937
Sanford C Bernstein LTD London	804,663	0.01	6,689
Santander Investment Securities Inc	8,262	0.07	539
Scotia Capital (USA) Inc	14,587	0.01	73
Scotia Capital Mkts Toronto	133,450	0.02	2,381
Scotia Capital USA Inc	1,112,900	0.00	3,010
Seb (Enskilda Securities) London	71,445	0.01	860
SG Securities (HK) LTD Hong Kong	588,322	0.00	940
Shenyin Wanguo Securities (HK) LTD	532,500	0.00	1,856
Shore Capital Stockbrokers	5,200	0.00	15
Sidoti & Company LLC	124,986	0.02	2,502
Sinopac Securities Corporation	25,000	0.02	510
Skandinaviska Enskilda Banken	19,360	0.02	383
SMBC Nikko Securities (Hong Kong)	245,498	0.01	1,573
SMBC Securities Inc	30,100	0.03	884
Societe Generale	5,197,060	0.00	17,315
Societe Generale Secs Corp New York	1,035,324	0.00	2,339
Southwest Securities Inc	1,203,080	0.04	42,593
Sprott Securities	11,800	0.02	232
Stephens Inc	97,961	0.04	3,601
Stifel Nicolaus & Co Inc	602,942	0.02	13,467
Stifel Nicolaus Europe Limited	1,100	0.03	29
Suntrust Capital Markets Inc	686,038	0.03	21,253
Svenska Handelsbanken	15,300	0.01	122
Themis Trading LLC	95,838	0.01	1,403
Toronto Dominion Bank	57,500	0.01	843
Toronto Dominion Secs Toronto	171,524	0.01	1,760
UBS AG	19,065	0.00	20
UBS AG London	11,582,658	0.00	34,702
UBS AG London Branch	107,358	0.02	2,566
UBS AG Stamford CT	2,112,236	0.00	4,646

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**SCHEDULE OF PAYMENTS OF COMMISSIONS TO BROKERS (VARIABLE-RETURN FUNDS)
FISCAL YEAR ENDED JUNE 30, 2021**

BROKERAGE FIRM	NO. OF SHARES TRADED	COMMISSION PER SHARE	COMMISSION PAID
UBS Securities Asia LTD	17,829,861	\$0.00	\$7,798
UBS Securities Australia LTD	7,694	0.01	41
UBS Securities LLC (Warburg)	1,469,222	0.01	10,259
UBS Warburg LLC	11,120	0.06	718
UBS Warburg Secs India Pvt Mumbai	766,285	0.00	824
UBS Warburg Securities LTD Seoul	7,245	0.03	218
UBS Warburg Securities Taiwan	847,068	0.01	10,460
UBS-AG Zurich	78,785	0.01	1,027
Unpublished	3,626,440	0.00	8,961
Virtu Americas LLC	200	0.01	1
Wells Fargo Securities LLC	56,538	0.01	529
William Blair & Company	641,083	0.02	12,684
Williams Capital Group LP (The)	47,213	0.02	944
Winterflood Securities Limited	3,083,366	0.00	9,225
Wolfe Trahan Securities	149,215	0.03	4,477
Woori Investment And Securities	1,000	0.02	16
XP Investments Cctvm SA	123,900	0.00	191



Actuarial Section

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OFFICE OF THE ACTUARY

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SHERRY S. CHAN
 CHIEF ACTUARY

December 1, 2021

Board of Trustees
 Teachers' Retirement System of the City of New York
 55 Water Street, 16th Floor
 New York, NY 10041

Re: Actuarial Information for the Annual Comprehensive Financial Report (ACFR) for the
 Fiscal Year Ended June 30, 2021

Dear Members of the Board of Trustees:

The financial objective of the Teachers' Retirement System of the City of New York - Qualified Pension Plan (TRS-QPP or the Plan) is to fund members' retirement benefits during their active service by establishing employer normal contribution rates that, expressed as a percentage of active member annualized covered payroll, would remain approximately level over the future working lifetimes of those active members and, together with member contributions and investment income, are intended to ultimately be sufficient to accumulate assets to pay benefits when due.

An actuarial valuation of the Plan is performed annually as of the second June 30 preceding each fiscal year to determine the Employer Contributions to be paid for that fiscal year (i.e. the June 30, 2019 (Lag) actuarial valuation is used to determine Fiscal Year 2021 Employer Contributions (Actuarial Contributions)).

The funding policy of the City of New York (the City) is to contribute statutorily-required contributions (Statutory Contributions) and these contributions are generally funded by the City within the appropriate fiscal year.

For Fiscal Year 2021, the Actuarial Contributions to TRS, are equal to those recommended by the Actuary of the New York City Retirement Systems and Pension Funds (the Actuary) and represent the Statutory Contributions.

Pursuant to the Governmental Accounting Standards Board (GASB) Statement No. 67 (GASB67) and Statement No. 68 (GASB68), on September 24, 2021, the Office of the Actuary published the "Fiscal Year 2021 GASB 67/68 Report for the City of New York and the New York City Retirement Systems" (the Fiscal Year 2021 GASB67/68 Report). Appendix B of the Fiscal Year 2021 GASB67/68 Report contains information developed in accordance with GASB67 for TRS.

Board of Trustees
Teachers' Retirement System of the City of New York
December 1, 2021
Page 2

Actuarial Assumptions and Methods

The assumptions and methods used for the June 30, 2019 valuation were presented in the memorandum titled "Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)" dated July 23, 2021 and were adopted by the Retirement Board at the September 20, 2021 Board meeting. These actuarial assumptions and methods meet the parameters set forth by the Actuarial Standards of Practice (ASOPs).

Benefits, Financial Information, and Census Data

The June 30, 2019 (Lag) and June 30, 2018 (Lag) actuarial valuations are based upon the census data as of those dates submitted by the Plan's administrative staff and the employer's payroll facilities. A summary of the census data used in the June 30, 2019 (Lag) actuarial valuation is included in this ACFR. A summary of the census data used in the June 30, 2018 (Lag) actuarial valuation of the Plan is available in the Fiscal Year 2020 Comprehensive Annual Financial Report.

Consistent with the Actuarial Standards of Practice, the Office of the Actuary has reviewed the census data and financial information for consistency and reasonability but has not audited it. The accuracy of the results and calculations presented are dependent on the accuracy of this census data and financial information. To the extent any such data or information provided is materially inaccurate or incomplete, the results contained herein will require revision.

A summary of the benefits available under the terms of the Plan is shown in the Introductory Section of this ACFR. The benefits under the Plan are unchanged from the prior valuation.

Funded Status

The funded status of the Plan is usually expressed by the relationship of assets to liabilities.

With respect to the funded status of the Plan, included in the Actuarial Section of the ACFR is a schedule of funded status based on the Entry Age Normal cost method (Table 11).

Also included in the Actuarial Section of the ACFR is a Solvency Test (i.e. Comparative Summary of Accrued Liabilities Funded by Actuarial Value of Assets) (Table 12), as prescribed by the Government Finance Officers Association (GFOA). This Solvency Test represents an alternative approach to describing progress toward funding objectives.

Board of Trustees
Teachers' Retirement System of the City of New York
December 1, 2021
Page 3

Presentation Style and Sources of Information

The actuarial information herein is believed to be presented in a manner consistent with the requirements of the GFOA and, where applicable, with GASB67.

The following items in the Actuarial Section of the ACFR were prepared by the OA:

- Summary of Actuarial Assumptions and Methods in Effect for the June 30, 2019 (Lag) Actuarial Valuation.
- Summary of Active Member Valuation Data.
- Summary of Plan Membership Data.
- Schedule of Retirees and Beneficiaries Added to and Removed from Rolls.
- Actuarial and Statutory Contribution History.
- Funded Status Based on Entry Age Normal Cost Method.
- Comparative Summary of Accrued Liabilities Funded by Actuarial Value of Assets - Solvency Test.
- Contributions.

The following items in the Financial Section of the ACFR were also prepared by the OA:

- Membership Data.
- Net Pension Liability.
- Actuarial Assumptions and Methods.
- Schedule of Changes in Employers' Net Pension Liability and Related Ratios.
- Schedule of Employer Contributions.

GASB Statement No. 98 establishes the term Annual Comprehensive Financial Report and its acronym ACFR. The new term replaces Comprehensive Annual Financial Report and its acronym in generally accepted accounting principles for state and local governments.

Board of Trustees
Teachers' Retirement System of the City of New York
December 1, 2021
Page 4

If you have any questions about the information in this Actuarial Section or the actuarial information presented elsewhere in this ACFR, please do not hesitate to contact Mr. Michael J. Samet, Mr. Edward Hue, or me.

Acknowledgement of Qualification

I, Sherry S. Chan, am the Chief Actuary for, and independent of, the New York City Retirement Systems and Pension Funds. I am a Fellow of the Society of Actuaries, an Enrolled Actuary under the Employee Retirement Income and Security Act of 1974, a Member of the American Academy of Actuaries, and a Fellow of the Conference of Consulting Actuaries. I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. To the best of my knowledge, the results contained herein have been prepared in accordance with generally accepted actuarial principles and procedures and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Respectfully submitted,



Sherry S. Chan, FSA, EA, MAAA, FCA
Chief Actuary

SSC/eh

Att.

cc: Ms. Dolores Capone - New York City Office of the Actuary
Ms. Melissa Chacko - New York City Office of the Actuary
Mr. Craig Chu - New York City Office of the Actuary
Mr. Edward Hue - New York City Office of the Actuary
Mr. Thad McTigue - New York City Teachers' Retirement System
Mr. Paul Raucci - New York City Teachers' Retirement System
Ms. Patricia Reilly - New York City Teachers' Retirement System
Mr. Michael Samet - New York City Office of the Actuary
Keith Snow, Esq. - New York City Office of the Actuary
Mr. Gregory Zelikovsky - New York City Office of the Actuary

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION

1. Pursuant to Section 96 of the New York City Charter, studies of the actuarial assumptions used to value liabilities of the five actuarially-funded New York City Retirement Systems (NYCRS) are conducted every two years.

Also, in accordance with the Administrative Code of the City of New York (ACCNYS), the Boards of Trustees of the five actuarially-funded NYCRS are to periodically review and adopt actuarial assumptions as proposed by the Actuary for use in the determination of Employer Contributions.

The Actuary issued a memorandum titled, "Proposed Changes to Actuarial Assumptions and Methods (Revised 2021 A&M)" dated July 23, 2021. The actuarial assumptions and methods described in that memorandum were adopted by the Board of Trustees at the September 20, 2021 Board meeting and are referred to as the "Revised 2021 A&M." These actuarial assumptions and methods are effective beginning with Fiscal Year 2021.

2. The Actuarial Interest Rate (AIR) assumption is 7.0% per annum, net of investment expenses (4.0% per annum for benefits payable under the Variable Annuity Program).
3. Active service tables are used to estimate various withdrawals from active service. Probabilities are shown in Table 1 for members withdrawing from active service for service retirement, Table 2 for members terminating from active service, and Tables 3 and 4 for members withdrawing from active service due to disability or death, respectively. Mortality improvement scale MP-2020, published by the Society of Actuaries, is applied to probabilities of ordinary death for actives and pre-commencement mortality for terminated vesteds.
4. The service retiree mortality, disabled retiree mortality, and beneficiary mortality base tables are projected from 2012 using mortality improvement scale MP-2020. The base tables are also multiplied by adjustment factors to convert from lives-weighted to amounts-weighted tables to reflect socioeconomic effects on mortality. Base table probabilities for service and disability pensioners are shown in Tables 5a and 5b respectively, and for beneficiaries in Table 5c.
5. A salary scale is used to estimate salaries at termination, retirement, or death. Percentage increases are shown in Table 6. The salary scale includes a General Wage Increase (GWI) assumption of 3.0% per annum.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

6. The economic assumptions (i.e. the assumed investment return rate, GWI rate, and Cost-of-Living Adjustments (COLA)) were developed assuming a long-term Consumer Price Inflation (CPI) assumption of 2.5% per annum. The assumption is 1.5% per annum for Auto COLA and 2.5% per annum for escalation.
7. The valuation assumes a closed group of members.
8. The Actuary reset the Actuarial Value of Assets (AVA) to market value as of June 30, 2019.

Beginning with the June 30, 2020 (Lag) actuarial valuation, the Actuarial Asset Valuation Method (AAVM) recognizes investment returns greater or less than expected over a period of five years. In accordance with this AAVM, the Unexpected Investment Returns are phased into the AVA over a five-year period at 20% per year.

The AVA is further constrained to be within a corridor of 80% to 120% of the Market Value of Assets.

Beginning with the June 30, 2018 (Lag) actuarial valuation, the Actuarial Value of Assets is determined by re-characterizing the interest credited on TDA Fixed Fund account balances as investment income instead of as a cash disbursement.

9. The Entry Age Normal (EAN) cost method of funding is used by the Actuary to calculate Employer Contributions.

Under this method, the Present Value (PV) of Future Benefits (PVFB) of each individual included in the actuarial valuation is allocated on a level basis over the earnings (or service) of the individual between entry age and the assumed exit age(s). The employer portion of this PVFB allocated to a valuation year is the Normal Cost. The portion of this PVFB not provided for at a valuation date by the PV of Future Normal Costs or future member contributions is the Accrued Liability (AL).

The excess, if any, of the AL over the AVA is the Unfunded Accrued Liability (UAL).

Under this method, actuarial gains and losses, as they occur, reduce and increase the UAL, respectively, and are explicitly identified and amortized. Increases or decreases in obligations due to benefit changes, actuarial assumption changes, and actuarial method changes are also explicitly identified and amortized.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

The explicit UALs that are developed under EAN each year are financed over fixed periods.

Under EAN, the Normal Cost as a percentage of pay remains constant by individual and changes gradually over time for the entire plan as the characteristics of the group changes (e.g. more Tier 6 active members decrease the average Normal Cost as a percentage of pay). A cost is added to each year's Normal Cost for providing a guaranteed 8.25% return on the TDA Fixed Fund for non-UFT members.

10. The Employer Contribution for a fiscal year is increased by the interest-adjusted amount of administrative expenses paid from TRS during the second prior fiscal year.
11. Obligations attributable to the World Trade Center (WTC) Disability Benefits Law and to the WTC Death Benefits Law are determined through the use of explicit assumptions in the Revised 2021 A&M and through estimation techniques for post-retirement reclassifications.
12. One-Year Lag Methodology (OYLM) uses a June 30, XX-2 valuation date to determine Fiscal Year XX employer contributions.

This methodology requires adjustments to certain components used to determine the Fiscal Year XX employer contributions as follows:

a. Normal Cost

The normal cost as of June 30, XX-2 is rolled forward with the assumed AIR of 7.0% to derive the normal cost as of December 31, XX-1.

b. UAL Payments

For determining the UAL payments for Fiscal Year XX, and to be consistent with the OYLM, the UAL as of June 30, XX-2 is adjusted by the discounted value of the employer normal cost and UAL payments paid during Fiscal Year XX-1 and the discounted value of Administrative Expenses reimbursed during Fiscal Years XX-1 and XX.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS
IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)**

Table 1					
PROBABILITIES OF SERVICE RETIREMENT					
Age	Reduced Service Retirement	Unreduced Service Retirement Probabilities For Members Who Did Not Elect an Improved Retirement Program		Unreduced Service Retirement Probabilities For Members Who Elected an Improved Retirement Program	
		Year 1	Ultimate	Year 1	Ultimate
55	2.50%	18.00%	0.00%	37.50%	0.00%
56	2.50%	18.00%	20.00%	37.50%	22.00%
57	2.50%	18.00%	20.00%	37.50%	22.00%
58	2.50%	18.00%	20.00%	37.50%	22.00%
59	3.75%	18.00%	20.00%	37.50%	22.00%
60	5.00%	18.00%	20.00%	37.50%	22.00%
61	6.25%	18.00%	20.00%	37.50%	22.00%
62	7.50% ¹	27.00%/18.00% ²	20.00%	50.00%	33.00%
63	0.00%	18.00%/27.00% ³	20.00%	37.50%	22.00%
64	0.00%	18.00%	20.00%	37.50%	22.00%
65	0.00%	27.00%	20.00%	50.00%	33.00%
66	0.00%	18.00%	20.00%	37.50%	22.00%
67	0.00%	18.00%	20.00%	37.50%	22.00%
68	0.00%	18.00%	20.00%	37.50%	22.00%
69	0.00%	18.00%	20.00%	37.50%	22.00%
70	0.00%	20.00%	20.00%	37.50%	22.00%
71	0.00%	20.00%	20.00%	37.50%	22.00%
72	0.00%	20.00%	20.00%	37.50%	22.00%
73	0.00%	20.00%	20.00%	37.50%	22.00%
74	0.00%	20.00%	20.00%	37.50%	22.00%
75	0.00%	20.00%	20.00%	37.50%	22.00%
76	0.00%	20.00%	20.00%	37.50%	22.00%
77	0.00%	20.00%	20.00%	37.50%	22.00%
78	0.00%	20.00%	20.00%	37.50%	22.00%
79	0.00%	20.00%	20.00%	37.50%	22.00%
80+	N/A	100.00%	100.00%	100.00%	100.00%

¹ 7.50% only applies to Tier 6 members; 0.00% otherwise.

² 27.00% for Tier 1, 2, & 4 members and 18.00% for Tier 6 members.

³ 18.00% for Tier 1, 2, & 4 members and 27.00% for Tier 6 members.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS
IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)**

Table 2	
PROBABILITIES OF TERMINATION	
Years of Service	Probability of Termination
0	9.00%
1	8.00%
2	7.00%
3	6.00%
4	5.00%
5	4.00%
6	3.50%
7	3.05%
8	2.65%
9	2.30%
10	2.00%
11	1.75%
12	1.55%
13	1.40%
14	1.30%
15	1.25%
16	1.20%
17	1.15%
18	1.10%
19	1.05%
20	1.00%
21	0.90%
22	0.80%
23	0.70%
24	0.60%
25+	0.50%

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
 QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS
 IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

Table 3				
PROBABILITIES OF DISABILITY RETIREMENT				
Age	Ordinary Disability		Accidental Disability	
	Males	Females	Males	Females
15	0.01%	0.01%	0.00%	0.00%
16	0.01%	0.01%	0.00%	0.00%
17	0.01%	0.01%	0.00%	0.00%
18	0.01%	0.01%	0.00%	0.00%
19	0.01%	0.01%	0.00%	0.00%
20	0.01%	0.01%	0.00%	0.00%
21	0.01%	0.01%	0.00%	0.00%
22	0.01%	0.01%	0.00%	0.00%
23	0.01%	0.01%	0.00%	0.00%
24	0.01%	0.01%	0.00%	0.00%
25	0.01%	0.01%	0.00%	0.00%
26	0.01%	0.01%	0.00%	0.00%
27	0.01%	0.01%	0.00%	0.00%
28	0.01%	0.01%	0.00%	0.00%
29	0.01%	0.01%	0.00%	0.00%
30	0.01%	0.01%	0.00%	0.00%
31	0.02%	0.01%	0.00%	0.00%
32	0.03%	0.02%	0.00%	0.00%
33	0.04%	0.03%	0.01%	0.00%
34	0.05%	0.04%	0.01%	0.00%
35	0.06%	0.05%	0.01%	0.01%
36	0.07%	0.06%	0.01%	0.01%
37	0.08%	0.07%	0.01%	0.01%
38	0.08%	0.08%	0.02%	0.01%
39	0.09%	0.09%	0.02%	0.01%
40	0.10%	0.10%	0.02%	0.01%
41	0.11%	0.11%	0.02%	0.01%
42	0.12%	0.12%	0.02%	0.01%
43	0.13%	0.13%	0.02%	0.02%
44	0.14%	0.14%	0.02%	0.02%
45	0.15%	0.15%	0.03%	0.02%
46	0.15%	0.16%	0.03%	0.02%
47	0.15%	0.17%	0.03%	0.02%
48	0.15%	0.18%	0.03%	0.03%
49	0.15%	0.19%	0.03%	0.03%
50	0.15%	0.20%	0.03%	0.03%
51	0.15%	0.20%	0.03%	0.03%
52	0.15%	0.20%	0.03%	0.03%
53	0.15%	0.20%	0.03%	0.03%
54	0.15%	0.20%	0.03%	0.03%
55	0.15%	0.20%	0.04%	0.04%
56	0.15%	0.20%	0.04%	0.04%
57	0.15%	0.20%	0.04%	0.04%
58	0.15%	0.20%	0.04%	0.04%
59	0.15%	0.20%	0.04%	0.04%
60	0.15%	0.20%	0.04%	0.04%
61	0.15%	0.20%	0.04%	0.04%
62	0.15%	0.20%	0.04%	0.04%
63	0.15%	0.20%	0.04%	0.04%
64	0.15%	0.20%	0.04%	0.04%
65	0.15%	0.20%	0.04%	0.04%
66	0.15%	0.20%	0.04%	0.04%
67	0.15%	0.20%	0.04%	0.04%
68	0.15%	0.20%	0.04%	0.04%
69	0.15%	0.20%	0.04%	0.04%
70	0.15%	0.20%	0.04%	0.04%
71	0.15%	0.20%	0.04%	0.04%
72	0.15%	0.20%	0.04%	0.04%
73	0.15%	0.20%	0.04%	0.04%
74	0.15%	0.20%	0.04%	0.04%
75	0.15%	0.20%	0.04%	0.04%
76	0.15%	0.20%	0.04%	0.04%
77	0.15%	0.20%	0.04%	0.04%
78	0.15%	0.20%	0.04%	0.04%
79	0.15%	0.20%	0.04%	0.04%
80+	N/A	N/A	N/A	N/A

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

Table 4			
PROBABILITIES OF MORTALITY FOR ACTIVE MEMBERS			
Base Table			
	Ordinary Death		Accidental Death
Age	Males	Females	
15	0.040%	0.025%	0.000%
16	0.040%	0.025%	0.000%
17	0.040%	0.025%	0.000%
18	0.040%	0.025%	0.000%
19	0.040%	0.025%	0.000%
20	0.040%	0.025%	0.000%
21	0.040%	0.025%	0.000%
22	0.040%	0.025%	0.000%
23	0.040%	0.025%	0.000%
24	0.040%	0.025%	0.000%
25	0.040%	0.025%	0.000%
26	0.040%	0.025%	0.000%
27	0.040%	0.025%	0.000%
28	0.040%	0.025%	0.000%
29	0.040%	0.025%	0.000%
30	0.040%	0.025%	0.000%
31	0.042%	0.026%	0.000%
32	0.044%	0.028%	0.000%
33	0.046%	0.029%	0.000%
34	0.048%	0.030%	0.000%
35	0.050%	0.031%	0.000%
36	0.052%	0.033%	0.000%
37	0.054%	0.034%	0.000%
38	0.056%	0.035%	0.000%
39	0.058%	0.036%	0.000%
40	0.060%	0.038%	0.000%
41	0.070%	0.044%	0.000%
42	0.080%	0.050%	0.000%
43	0.090%	0.056%	0.000%
44	0.100%	0.063%	0.000%
45	0.110%	0.069%	0.000%
46	0.120%	0.075%	0.000%
47	0.130%	0.081%	0.000%
48	0.140%	0.088%	0.000%
49	0.150%	0.094%	0.000%
50	0.160%	0.100%	0.000%
51	0.170%	0.106%	0.000%
52	0.180%	0.113%	0.000%
53	0.190%	0.119%	0.000%
54	0.200%	0.125%	0.000%
55	0.210%	0.131%	0.000%
56	0.220%	0.138%	0.000%
57	0.230%	0.144%	0.000%
58	0.240%	0.150%	0.000%
59	0.250%	0.156%	0.000%
60	0.260%	0.163%	0.000%
61	0.270%	0.169%	0.000%
62	0.280%	0.175%	0.000%
63	0.290%	0.181%	0.000%
64	0.300%	0.188%	0.000%
65	0.320%	0.200%	0.000%
66	0.350%	0.219%	0.000%
67	0.390%	0.244%	0.000%
68	0.440%	0.275%	0.000%
69	0.500%	0.313%	0.000%
70	0.540%	0.350%	0.000%
71	0.600%	0.388%	0.000%
72	0.650%	0.425%	0.000%
73	0.700%	0.463%	0.000%
74	0.750%	0.525%	0.000%
75	0.800%	0.588%	0.000%
76	0.890%	0.650%	0.000%
77	0.980%	0.713%	0.000%
78	1.070%	0.775%	0.000%
79	1.160%	0.925%	0.000%
80+	N/A	N/A	N/A

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

Table 5a					
PROBABILITIES OF MORTALITY FOR SERVICE RETIREES					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.0108%	0.0105%	68	1.3827%	0.8399%
16	0.0146%	0.0128%	69	1.5070%	0.8992%
17	0.0197%	0.0140%	70	1.6306%	0.9855%
18	0.0222%	0.0145%	71	1.7953%	1.1072%
19	0.0235%	0.0151%	72	1.9579%	1.2311%
20	0.0246%	0.0153%	73	2.1191%	1.3549%
21	0.0263%	0.0162%	74	2.2784%	1.4775%
22	0.0278%	0.0171%	75	2.4370%	1.5961%
23	0.0295%	0.0181%	76	2.7233%	1.8356%
24	0.0309%	0.0193%	77	3.0074%	2.0765%
25	0.0320%	0.0206%	78	3.2885%	2.3162%
26	0.0335%	0.0220%	79	3.5677%	2.5533%
27	0.0347%	0.0234%	80	3.8824%	2.7842%
28	0.0364%	0.0249%	81	4.4474%	3.3221%
29	0.0386%	0.0267%	82	5.0193%	3.8708%
30	0.0418%	0.0286%	83	5.5977%	4.4089%
31	0.0476%	0.0348%	84	6.1798%	5.0027%
32	0.0532%	0.0401%	85	6.7676%	5.5878%
33	0.0583%	0.0449%	86	7.7139%	6.2981%
34	0.0629%	0.0489%	87	8.6843%	6.9333%
35	0.0673%	0.0527%	88	9.6857%	7.5758%
36	0.0698%	0.0557%	89	10.7135%	8.5620%
37	0.0720%	0.0591%	90	11.7744%	9.6778%
38	0.0745%	0.0626%	91	13.6049%	10.8390%
39	0.0782%	0.0672%	92	15.5105%	11.9717%
40	0.0837%	0.0726%	93	17.4679%	13.1425%
41	0.0941%	0.0775%	94	19.5105%	15.1670%
42	0.1051%	0.0838%	95	21.6689%	17.3761%
43	0.1167%	0.0918%	96	23.7343%	19.5275%
44	0.1294%	0.1013%	97	25.7571%	21.6213%
45	0.1432%	0.1132%	98	27.8633%	23.3643%
46	0.1582%	0.1271%	99	29.8272%	23.8705%
47	0.1744%	0.1429%	100	31.5152%	23.9898%
48	0.1918%	0.1597%	101	33.0771%	24.9134%
49	0.2102%	0.1774%	102	34.4234%	26.0067%
50	0.2317%	0.1950%	103	35.6398%	27.2992%
51	0.2657%	0.2130%	104	36.6357%	28.7614%
52	0.3011%	0.2304%	105	37.3430%	30.3385%
53	0.3373%	0.2472%	106	37.7004%	31.9944%
54	0.3744%	0.2638%	107	37.8599%	33.6898%
55	0.4112%	0.2806%	108	38.0314%	35.3785%
56	0.4578%	0.3034%	109	38.1998%	37.0129%
57	0.5025%	0.3264%	110	50.0000%	50.0000%
58	0.5448%	0.3498%	111	50.0000%	50.0000%
59	0.5843%	0.3732%	112	50.0000%	50.0000%
60	0.6211%	0.3973%	113	50.0000%	50.0000%
61	0.7018%	0.4321%	114	50.0000%	50.0000%
62	0.7804%	0.4686%	115	50.0000%	50.0000%
63	0.8588%	0.5072%	116	50.0000%	50.0000%
64	0.9371%	0.5479%	117	50.0000%	50.0000%
65	0.9994%	0.5912%	118	50.0000%	50.0000%
66	1.1295%	0.6619%	119	50.0000%	50.0000%
67	1.2569%	0.7367%	120	100.0000%	100.0000%

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

Table 5b					
PROBABILITIES OF MORTALITY FOR DISABLED RETIREES					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.3819%	0.3483%	68	2.8007%	2.0012%
16	0.5167%	0.4712%	69	2.8946%	2.0043%
17	0.6964%	0.5141%	70	3.0268%	2.0073%
18	0.7863%	0.5351%	71	3.1148%	2.0103%
19	0.8312%	0.5569%	72	3.2684%	2.1811%
20	0.8353%	0.5649%	73	3.3926%	2.3760%
21	0.8659%	0.5961%	74	3.5875%	2.5968%
22	0.8978%	0.6295%	75	3.7271%	2.8417%
23	0.9464%	0.6597%	76	3.9657%	3.0808%
24	0.9977%	0.6908%	77	4.2691%	3.3373%
25	1.0424%	0.7150%	78	4.5349%	3.6085%
26	1.0960%	0.7387%	79	4.8252%	3.8944%
27	1.1348%	0.7520%	80	5.1378%	4.1909%
28	1.1774%	0.7625%	81	5.6917%	4.6921%
29	1.2163%	0.7686%	82	6.2841%	5.1536%
30	1.2878%	0.7763%	83	6.8835%	5.5061%
31	1.3554%	0.9885%	84	7.7954%	6.1180%
32	1.3755%	1.1922%	85	8.8286%	6.7342%
33	1.3953%	1.3874%	86	9.9032%	7.3088%
34	1.4153%	1.3942%	87	10.8837%	8.2536%
35	1.4357%	1.4012%	88	11.9567%	9.3264%
36	1.4563%	1.4082%	89	13.8059%	10.3734%
37	1.4772%	1.4152%	90	15.7270%	11.4459%
38	1.4985%	1.4223%	91	17.7012%	12.6271%
39	1.5200%	1.4294%	92	19.6428%	14.1350%
40	1.5418%	1.4366%	93	21.9234%	15.4424%
41	1.5640%	1.4436%	94	24.0761%	16.9560%
42	1.5865%	1.4509%	95	26.0577%	18.4261%
43	1.6093%	1.4581%	96	28.3614%	20.1727%
44	1.6324%	1.4654%	97	30.3483%	21.6213%
45	1.6559%	1.5299%	98	31.8739%	23.3643%
46	1.6797%	1.6016%	99	33.6652%	23.8705%
47	1.7038%	1.6623%	100	35.0392%	23.9898%
48	1.7283%	1.7238%	101	36.0496%	24.9134%
49	1.7531%	1.7485%	102	37.0460%	26.0067%
50	1.7783%	1.7736%	103	37.7767%	27.2992%
51	1.8039%	1.7991%	104	38.1460%	28.7614%
52	1.9408%	1.8530%	105	38.3076%	30.3385%
53	2.0713%	1.8909%	106	38.4698%	31.9944%
54	2.2040%	1.9173%	107	38.6325%	33.6898%
55	2.3207%	1.9622%	108	38.8076%	35.3785%
56	2.4304%	1.9652%	109	38.9794%	37.0129%
57	2.4937%	1.9681%	110	50.0000%	50.0000%
58	2.5070%	1.9711%	111	50.0000%	50.0000%
59	2.5245%	1.9741%	112	50.0000%	50.0000%
60	2.5362%	1.9770%	113	50.0000%	50.0000%
61	2.5394%	1.9801%	114	50.0000%	50.0000%
62	2.5426%	1.9831%	115	50.0000%	50.0000%
63	2.5480%	1.9861%	116	50.0000%	50.0000%
64	2.5797%	1.9891%	117	50.0000%	50.0000%
65	2.6258%	1.9921%	118	50.0000%	50.0000%
66	2.6510%	1.9951%	119	50.0000%	50.0000%
67	2.7083%	1.9982%	120	100.0000%	100.0000%

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)

Table 5c					
PROBABILITIES OF MORTALITY FOR BENEFICIARIES					
BASE TABLE					
Age	Males	Females	Age	Males	Females
15	0.0105%	0.0092%	68	1.8256%	1.3605%
16	0.0142%	0.0112%	69	1.9386%	1.4332%
17	0.0191%	0.0122%	70	2.0542%	1.5007%
18	0.0222%	0.0133%	71	2.2359%	1.6745%
19	0.0240%	0.0143%	72	2.4230%	1.8463%
20	0.0251%	0.0145%	73	2.6165%	2.0157%
21	0.0268%	0.0153%	74	2.8157%	2.1838%
22	0.0284%	0.0161%	75	3.0220%	2.3492%
23	0.0301%	0.0171%	76	3.4928%	2.6652%
24	0.0315%	0.0183%	77	3.9787%	2.9831%
25	0.0327%	0.0195%	78	4.4792%	3.3011%
26	0.0342%	0.0208%	79	4.9963%	3.6207%
27	0.0354%	0.0221%	80	5.5282%	3.9391%
28	0.0371%	0.0236%	81	6.1051%	4.4386%
29	0.0394%	0.0252%	82	6.6894%	4.9473%
30	0.0427%	0.0270%	83	7.2805%	5.4665%
31	0.0495%	0.0330%	84	7.8749%	5.9942%
32	0.0562%	0.0384%	85	8.4753%	6.5354%
33	0.0625%	0.0431%	86	9.6136%	7.4659%
34	0.0682%	0.0471%	87	10.8005%	8.3995%
35	0.0743%	0.0511%	88	12.0443%	9.3428%
36	0.0780%	0.0542%	89	13.3397%	10.2918%
37	0.0818%	0.0579%	90	14.6958%	11.2477%
38	0.0861%	0.0618%	91	16.4185%	12.8868%
39	0.0917%	0.0666%	92	18.1416%	14.4887%
40	0.0997%	0.0719%	93	19.8574%	16.0801%
41	0.1394%	0.0775%	94	21.6187%	17.5854%
42	0.1774%	0.0859%	95	23.5884%	19.0626%
43	0.2143%	0.0968%	96	25.4266%	20.2474%
44	0.2507%	0.1111%	97	27.2119%	21.2937%
45	0.2875%	0.1287%	98	29.0202%	22.0663%
46	0.3207%	0.1501%	99	30.6654%	22.5443%
47	0.3534%	0.1748%	100	32.1584%	22.6473%
48	0.3849%	0.2022%	101	33.7521%	23.5294%
49	0.4150%	0.2319%	102	35.1259%	24.5619%
50	0.4431%	0.2633%	103	36.3671%	25.7825%
51	0.5156%	0.2999%	104	37.3834%	27.1635%
52	0.5928%	0.3376%	105	38.1051%	28.6530%
53	0.6740%	0.3762%	106	38.4698%	30.2169%
54	0.7583%	0.4151%	107	38.6325%	31.8182%
55	0.8440%	0.4540%	108	38.8076%	33.4131%
56	0.9048%	0.5132%	109	38.9794%	34.9566%
57	0.9604%	0.5735%	110	50.0000%	50.0000%
58	1.0101%	0.6353%	111	50.0000%	50.0000%
59	1.0536%	0.6981%	112	50.0000%	50.0000%
60	1.0919%	0.7631%	113	50.0000%	50.0000%
61	1.1835%	0.8329%	114	50.0000%	50.0000%
62	1.2676%	0.8908%	115	50.0000%	50.0000%
63	1.3473%	0.9493%	116	50.0000%	50.0000%
64	1.4238%	1.0146%	117	50.0000%	50.0000%
65	1.4985%	1.0876%	118	50.0000%	50.0000%
66	1.6059%	1.1681%	119	50.0000%	50.0000%
67	1.7146%	1.2609%	120	100.0000%	100.0000%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

**SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS
IN EFFECT FOR THE JUNE 30, 2019 (LAG) ACTUARIAL VALUATION (Cont'd)**

Table 6		
ANNUAL RATES OF MERIT AND SALARY INCREASE		
Years of Service	Merit Increase	Salary Increase ¹
0	10.00%	13.00%
1	8.00%	11.00%
2	6.00%	9.00%
3	5.00%	8.00%
4	6.00%	9.00%
5	5.00%	8.00%
6	5.00%	8.00%
7	4.00%	7.00%
8	2.00%	5.00%
9	5.00%	8.00%
10	1.00%	4.00%
11	1.00%	4.00%
12	3.00%	6.00%
13	1.00%	4.00%
14	5.00%	8.00%
15	1.00%	4.00%
16	1.00%	4.00%
17	2.00%	5.00%
18	1.00%	4.00%
19	9.00%	12.00%
20	1.00%	4.00%
21	5.00%	8.00%
22+	1.00%	4.00%

¹Salary Increase is the General Wage Increase of 3.00% plus the Merit Increase.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

SUMMARY OF ACTIVE MEMBER VALUATION DATA

Table 7				
ACTIVE MEMBER VALUATION DATA				
June 30 (Lag) Actuarial Valuation	Number	Annual Salary	Average Annual Salary	Percentage Increase/ (Decrease) In Avg. Salary
2010	111,647	\$7,979,671,378	71,472	0.9%
2011	109,636	7,888,203,642	71,949	0.7%
2012	112,460	8,013,395,184	71,256	(1.0%)
2013	112,481	8,128,378,071	72,264	1.4%
2014	111,726	8,274,685,657	74,062	2.5%
2015	114,652	8,844,650,633	77,143	4.2%
2016	118,201	9,224,267,647	78,039	1.2%
2017	120,826	9,848,899,232	81,513	4.5%
2018	121,764	10,404,403,684	85,447	4.8%
2019	123,336	10,903,755,059	88,407	3.5%

Salaries reflect the impact of recent labor contract settlements and certain non-union salary increases with retroactive effective dates, if any.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

SUMMARY OF PLAN MEMBERSHIP DATA

As of the June 30, 2019 (Lag) and June 30, 2018 (Lag) actuarial valuations, the Plan's Membership consisted of:

Table 8		
SUMMARY OF PLAN MEMBERSHIP		
Group	June 30, 2019 (Lag)	June 30, 2018 (Lag)
Active members	123,336	121,764
Active Off Payroll ¹	8,174	9,416
Terminated vested members not yet receiving benefits	13,410	16,433
Retirees and beneficiaries currently receiving benefits	<u>88,507</u>	<u>86,295</u>
Total	233,427	233,908

¹ Represents members who are no longer on payroll but not otherwise classified.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS

Table 9								
SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM THE ROLLS								
June 30 (Lag) Actuarial Valuation	Added to Rolls		Removed from Rolls		End of Year Rolls		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances¹	Number	Annual Allowances	Number	Annual Allowances²		
2010	3,534	\$207,981,284	2,003	\$64,538,942	72,356	\$3,017,755,611	5.0%	\$41,707
2011	3,849	278,652,149	2,141	67,488,320	74,064	3,228,919,440	7.0%	43,596
2012	4,684	200,786,572	2,209	62,805,438	76,539	3,366,900,574	4.3%	43,989
2013	4,078	248,087,233	2,440	77,107,240	78,177	3,537,880,567	5.1%	45,255
2014	4,356	275,947,759	2,114	67,585,789	80,419	3,746,242,537	5.9%	46,584
2015	4,728	219,769,491	2,370	81,986,287	82,777	3,884,025,741	3.7%	46,922
2016	3,808	157,518,432	2,492	86,890,450	84,093	3,954,653,723	1.8%	47,027
2017	3,519	254,567,439	2,842	111,573,800	84,770	4,097,647,362	3.6%	48,338
2018	4,107	240,586,776	2,582	103,957,220	86,295	4,234,276,918	3.3%	49,067
2019	4,921	249,898,766	2,709	113,559,733	88,507	4,370,615,951	3.2%	49,382

¹ Amounts shown include changes due to benefit finalization, changes in benefit type (e.g. Service to Accidental Disability), COLA increases, and other changes.

² Allowances shown are those used in the actuarial valuation as of the Year End date and are not adjusted for anticipated changes due to finalization of benefit calculations or contract settlements.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

ACTUARIAL AND STATUTORY CONTRIBUTION HISTORY

Table 10			
ACTUARIAL AND STATUTORY CONTRIBUTION HISTORY			
Fiscal Year Ended June 30	Actuarial Contribution Certified	Statutory Contribution Contributed ¹	Employer Rate of Contribution ^{2,3,4}
2012	2,673,078,096	2,673,078,096	33.7%
2013	2,855,639,947	2,855,639,947	36.5%
2014	2,998,693,727	2,998,693,727	37.7%
2015	3,270,006,920	3,270,006,920	40.5%
2016	3,702,569,102	3,702,569,102	44.8%
2017	3,888,399,470	3,888,399,470	44.1%
2018	3,889,709,927	3,889,709,927	42.3%
2019	3,696,685,559	3,696,685,559	37.7%
2020	3,590,801,261	3,590,801,261	34.6%
2021	3,131,606,535	3,131,606,535	28.8%

¹Represents total employer contributions accrued for fiscal year.

²The Employer Rate of Contribution equals the Statutory Contribution as a percentage of the salaries of members who were on payroll or projected to be on payroll (under One-Year Lag Methodology) as of the preceding June 30 adjusted, where applicable, to be consistent with collective bargaining agreements estimated to be achieved.

³Starting with the Fiscal Year ended June 30, 2019, the Employer Rate of Contribution is calculated before offsetting for Annuity Savings Accumulation Fund (ASAF).

⁴ For Fiscal Year ended June 30, 2020, the Employer Rate of Contribution is calculated before offsetting for the Pre-Payment credit as well as the ASAF credit.

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

FUNDED STATUS BASED ON ENTRY AGE NORMAL COST METHOD

Table 11						
FUNDED STATUS BASED ON ENTRY AGE NORMAL COST METHOD						
(\$ Thousands)						
June 30 (Lag) Valuation Date	(1) Actuarial Value of Assets (AVA)	(2) Accrued Liability (AL)	(3) Unfunded AL (UAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Covered Payroll	(6) UAL as a % of Covered Payroll (3) / (5)
2010	\$32,477,527	\$55,138,366	\$22,660,839	58.9%	\$7,979,671	284.0%
2011	33,601,537	57,702,731	24,101,194	58.2%	7,888,204	305.5%
2012	33,871,180	58,783,399	24,912,219	57.6%	8,013,395	310.9%
2013	35,186,072	61,988,933	26,802,861	56.8%	8,128,378	329.7%
2014	37,521,424	67,309,977	29,788,553	55.7%	8,274,686	360.0%
2015	39,290,072	69,625,608	30,335,536	56.4%	8,844,651	343.0%
2016	41,015,087	69,964,412	28,949,325	58.6%	9,224,268	313.8%
2017	44,381,706	69,552,380	25,170,674	63.8%	9,848,899	255.6%
2018	50,012,149	72,205,318	22,193,169	69.3%	10,404,404	213.3%
2019	57,990,211	73,938,547	15,948,336	78.4%	10,903,755	146.3%

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
 QUALIFIED PENSION PLAN

COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED BY ACTUARIAL VALUE OF ASSETS

Table 12 COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED BY ACTUARIAL VALUE OF ASSETS SOLVENCY TEST (\$ Thousands)							
June 30 (Lag) Valuation Date	Accrued Liabilities for			Actuarial Value of Assets (D)	Percentage of Accrued Liabilities Funded by Actuarial Value of Assets		
	Accumulated Member Contributions (A)	Current Retirees and Beneficiaries (B)	Active Members' Employer-Financed Portion (C)		(A)	(B)	(C)
	2010	\$2,962,696	\$32,264,333		\$17,529,345	\$32,477,527	100%
2011	3,167,737	34,317,270	17,770,140	33,601,537	100	89	0
2012	3,122,720	35,575,735	17,558,791	33,871,180	100	86	0
2013	3,330,541	37,451,527	18,565,932	35,186,072	100	85	0
2014	3,547,779	40,753,340	20,193,955	37,521,424	100	83	0
2015	3,646,765	42,095,109	20,888,473	39,290,072	100	85	0
2016	3,765,740	41,651,524	21,465,314	41,015,087	100	89	0
2017	3,291,234	42,149,684	23,681,032	44,381,706	100	97	0
2018	3,431,852	43,150,865	25,230,752	50,012,149	100	100	14
2019	3,617,468	43,741,267	26,579,812	57,990,211	100	100	40

See following "SOLVENCY TEST - NOTES."

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN

COMPARATIVE SUMMARY OF ACCRUED LIABILITIES FUNDED
BY ACTUARIAL VALUE OF ASSETS (Cont'd)

SOLVENCY TEST - NOTES

The ultimate test of financial soundness in a retirement system is its ability to pay all of its promised benefits when due. The retirement system's progress in accumulating assets to pay all promised benefits can be measured by comparing the Actuarial Value of Assets of the retirement system with the Accrued Liabilities for:

- a. Accumulated Member Contributions;
- b. Current Retirees and Beneficiaries; and
- c. Active Members' Employer-Financed Portion.

Prior to the June 30, 2019 (Lag) valuation, the Accrued Liabilities were calculated under the Projected Unit Credit actuarial cost method. Beginning with the June 30, 2019 (Lag) actuarial valuation, the Accrued Liabilities are calculated based on the Entry Age Normal (EAN) actuarial cost method.

The values in the table are dependent upon census data, benefit levels, and the actuarial assumptions and methods employed at each valuation date.

To fully evaluate trends in financial soundness, changes in assumptions need to be evaluated. The Actuarial Interest Rate assumption has been 7.0% per annum, net of investment expenses, throughout the period shown. However, other actuarial assumptions have been revised. The two most recent changes in actuarial assumptions occurred in the June 30, 2019 (Lag) valuation used to compute the Employer Contribution for Fiscal Year 2021 and in the June 30, 2017 (Lag) valuation used to compute the Employer Contribution for Fiscal Year 2019.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

CONTRIBUTIONS

The benefits of the System are financed by member and employer contributions and from investment earnings of the System.

A. MEMBER CONTRIBUTIONS

1. Coordinated Retirement Plan (Article 15):

A Tier III/IV member of this Plan is mandated to contribute 3% of annual wages during all the years of coverage. If a member resigns or is otherwise terminated from City Service prior to eligibility for a benefit, all of his or her contributions with 5% interest will be refunded upon request.

Beginning October 1, 2000, Tier III and IV members are not required to make basic required contributions after the 10th anniversary of their membership date or completion of 10 years of City Service, whichever is earlier. Effective February 27, 2008, active members were eligible to enroll in a 55/25 plan (age 55 with 25 years of service). Those that chose the 55/25 plan were required to contribute an additional 1.85% of pay from February 28, 2008 until June 29, 2008, or until they have accumulated 25 years of service, whichever is later. New members joining after February 27, 2008 are automatically enrolled in a 55/27 plan (age 55 with 27 years of service). These members are required to pay an additional 1.85% of pay for the first 27 years of service. New members after December 10, 2009 who are represented by the UFT are required to contribute 4.85% of salary for the first 27 years of service and 1.85% of salary thereafter.

A Tier VI member is mandated to contribute between 3.0% and 6.0% of salary until the later of separation from service or retirement.

2. Twenty-Year Pension Plan:

A member of this Plan is required to contribute a percentage of salary which, if paid from the date of entry until the date of completion of 20 years of City Service, would provide at the payability date, an annuity of approximately one-eighth of the member's final salary as of the completion of 20 years of City Service. Tier II members who elected to join the 55/25 plan pay an additional 1.85% of pay.

TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK QUALIFIED PENSION PLAN

CONTRIBUTIONS (Cont'd)

3. Age-55-Increased-Benefits Pension Plan:

A member of this Plan is required to contribute a percentage of salary, which if paid to the age for service retirement under the law in effect prior to July 1, 1970, would provide an annuity equal to approximately 1% of the average annual compensation during the last five years of service multiplied by years of service. Tier II members who elected to join the 55/25 plan pay an additional 1.85% of pay.

Member contributions are accumulated with interest in individually maintained accounts. Except under Article 15, upon retirement, the amount to the member's credit (i.e. Accumulated Deductions) is used to purchase an annuity on the basis of the tables adopted by the Teachers' Retirement Board. Upon death in service, the death benefits, including the Accumulated Deductions, are paid to the beneficiary and, on termination of employment other than by death or retirement, the Accumulated Deductions are returned to the member.

Beginning July 1, 1960, on a year-to-year basis, the required contributions of members were reduced by an Increased-Take-Home-Pay rate initially equal to 2.5% of salary. The following table shows effective periods and Increased-Take-Home-Pay rate.

PERIOD	INCREASED-TAKE-HOME-PAYRATE
Board of Education Employees	
07/01/60 - 06/30/61	2.5%
07/01/61 - 08/31/67	5.0%
09/01/67 - 08/31/68	8.0%
Board of Higher Education Employees	
09/01/67 - 08/31/68	5.0%
Twenty-Year and Age-55-Increased-Benefits Pension Plan Members	
09/01/68 - 06/30/70	8.0%
07/01/70 - 12/31/75	5.0%
01/01/76 and later	2.5%
Article 15 Members	
All	0.0%

**TEACHERS' RETIREMENT SYSTEM OF THE CITY OF NEW YORK
QUALIFIED PENSION PLAN**

CONTRIBUTIONS (Cont'd)

B. EMPLOYER CONTRIBUTIONS

The Entry Age Normal cost method of funding is utilized by the Plan's Actuary to calculate the contributions required of the employers.

Employer contributions are accrued by the Plan and are funded by the employers on a current basis.

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Statistical Section

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STATISTICAL SECTION OVERVIEW

This part of the Annual Comprehensive Financial Report presents detailed information as a context for understanding how the information in the Financial Section relates to the Teachers' Retirement System's overall condition. The following are the categories of the various schedules that are included in this Section:

QPP Financial Trend Information

Schedules 1 through 3 contain trend information to help the reader understand how the QPP's financial performance and condition have changed over time.

QPP Demographic and Economic Information of In-Service Members

Schedules 4 through 7 offer demographic and economic information of in-service members to help the reader understand this segment of the QPP membership population.

QPP Benefit Payment, and Demographic and Economic Information of Retired Members

Schedules 8 through 17 present information to help the reader assess the QPP's current and future benefit payment obligations based on financial and demographic information of retired members.

QPP and TDA Operating Expense Information

Schedule 18 contains trend information as it relates to investment and administrative expenses of the System.

TDA Financial Trend Information

Schedules 19 through 21 contain trend information to help the reader understand how the TDA Program's financial performance and condition have changed over time.

TDA Membership Information of In-Service and Retired Members

Schedules 22 through 26 present membership information to help the reader assess the TDA Program's demographics and financial activity.

SCHEDULE 1: NET POSITION AND CHANGES IN NET POSITION—QPP

In Thousands

Year Ended	Pension Fund	Diversified Equity	Balanced Fund*	International Equity	Inflation Protection**	Sustainable Equity***	U.S. Equity Index****	International Equity Index****	Net Position	Changes in Net Position
2012	\$29,611,995	\$3,053,466	\$80,952	\$16,802	\$5,937	\$5,609	\$ -	\$ -	\$32,774,761	(\$826,776)
2013	33,654,166	3,110,127	63,719	16,320	5,882	6,242	-	-	36,856,456	4,081,695
2014	41,199,953	3,210,248	48,507	17,082	5,662	8,487	-	-	44,489,939	7,633,483
2015	41,452,046	2,740,658	34,034	15,071	4,747	8,108	-	-	44,254,664	(235,275)
2016	41,440,456	2,142,217	22,786	12,262	3,930	7,894	-	-	43,629,545	(625,119)
2017	43,920,339	6,058,218	83,594	16,685	4,760	12,127	-	-	50,095,723	6,466,178
2018	48,172,801	6,256,312	69,477	16,458	4,553	12,875	-	-	54,532,476	4,436,753
2019	51,949,650	5,947,790	61,152	15,470	3,904	12,245	-	-	57,990,211	3,457,735
2020	53,732,776	5,499,519	57,166	13,813	-	12,791	2,795	90	59,318,950	1,328,739
2021	71,185,752	7,070,829	54,015	15,200	-	16,554	4,825	123	78,347,298	19,028,348

* Bond Fund prior to January 1, 2018

** Fund discontinued as of April 1, 2020

*** Socially Responsive Equity Fund prior to October 1, 2019

**** New funds established as of January 1, 2020

SCHEDULE 2: 2021 CHANGES IN NET POSITION—QPP

In Thousands

	Pension Fund	Diversified Equity	Balanced Fund	International Equity	Sustainable Equity	U.S. Equity Index	International Equity Index	Total
2020 Net Position	\$53,732,776	\$5,499,519	\$57,166	\$13,813	\$12,791	\$2,795	\$90	\$59,318,950
Member Contributions	247,535	197	19	-	-	-	-	247,751
Employer Contributions	3,193,258	12	-	-	-	-	-	3,193,270
Interest & Misc Income	1,200,910	3,082	4	4	-	-	-	1,204,000
Dividend Income	954,076	118,630	1,860	157	175	259	9	1,075,166
Realized Profit/Loss	3,978,144	546,329	332	724	1,695	437	9	4,527,670
Unrealized Profit/Loss	14,330,806	1,620,174	4,536	2,508	3,070	759	12	15,961,865
Benefit Payments	(4,027,627)	(642,921)	(7,530)	(1,509)	(1,327)	(491)	(22)	(4,681,427)
Refunds & Withdrawals	(16,828)	(932)	(261)	-	-	-	-	(18,021)
Interest Paid to TDA Funds	(1,998,388)	-	-	-	-	-	-	(1,998,388)
Transfer to other Systems	(5,550)	-	-	-	-	-	-	(5,550)
Interfund Transfer	53,978	(52,853)	(2,031)	(468)	277	1,072	25	-
TDA Rebalance	(4,175)	-	-	-	-	-	-	(4,175)
Provision for Expenses*	(453,163)	(20,408)	(80)	(29)	(127)	(6)	-	(473,813)
2021 Net changes	\$17,452,976	\$1,571,310	(\$3,151)	\$1,387	\$3,763	\$2,030	\$33	\$19,028,348
2021 Net Position	\$71,185,752	\$7,070,829	\$54,015	\$15,200	\$16,554	\$4,825	\$123	\$78,347,298

* Includes Administrative and Investment Expenses

SCHEDULE 3: CHANGES IN NET POSITION—QPP
In Thousands

	1	2	3	4	5	6	7	8	9	10	11
Year Ended June 30*	Net Member Contributions	Employer Contributions	Net Investment Income	Transfer from/to Other Systems	TDA Fixed Interest Payments	Total Retirement Benefits	Loans Closed at Retirement	Withdrawals	Other Benefits**	Administrative Expenses	Change in Net Position
2012	\$164,361	\$2,732,263	\$803,007	\$853	(\$945,967)	(\$3,366,901)	(\$28,031)	(\$17,273)	(\$129,375)	(\$39,713)	(\$826,776)
2013	154,698	2,912,844	5,721,112	(44)	(1,047,979)	(3,537,881)	(24,006)	(12,690)	(44,677)	(39,682)	4,081,695
2014	154,962	3,054,424	9,435,906	404	(1,047,923)	(3,740,243)	(24,866)	(18,813)	(134,326)	(46,042)	7,633,483
2015	158,590	3,325,528	1,611,929	329	(1,248,988)	(3,884,026)	(28,775)	(14,312)	(97,159)	(58,391)	(235,275)
2016	173,696	3,760,714	960,267	1,233	(1,354,207)	(3,954,654)	(20,126)	(13,639)	(119,036)	(59,367)	(625,119)
2017	180,076	3,945,768	8,133,280	(2,291)	(1,466,615)	(4,097,646)	(16,958)	(13,493)	(135,153)***	(60,790)	6,466,178
2018	195,241	3,949,689	6,275,115	(3,534)	(1,595,462)	(4,234,277)	(17,935)	(17,262)	(49,746)***	(65,076)	4,436,753
2019	217,205	3,759,199	5,721,310	1,222	(1,716,679)	(4,370,616)	(12,800)	(16,580)	(60,235)***	(64,291)	3,457,735
2020	226,920	3,652,570	3,911,187	(2,798)	(1,846,173)	(4,437,206)	(14,476)	(15,033)	(81,720)***	(64,532)	1,328,739
2021	247,751	3,193,270	22,362,988	(5,550)	(1,998,388)	(4,587,347)	(10,305)	(18,021)	(87,950)***	(68,100)	19,028,348

Total Retirement Benefits By Type

Year Ended June 30*	6a Service Retirement Allowances	6b Ordinary Disability Retirement Allowances	6c Accident Disability Retirement Allowances	6d Death Benefits To Beneficiaries	Total Retirement Benefits
2012	(\$3,178,074)	(\$46,071)	(\$27,811)	(\$114,945)	(\$3,366,901)
2013	(3,337,405)	(48,492)	(28,487)	(123,497)	(3,537,881)
2014	(3,531,071)	(51,484)	(23,087)	(134,601)	(3,740,243)
2015	(3,660,115)	(54,633)	(30,276)	(139,002)	(3,884,026)
2016	(3,721,783)	(56,624)	(30,912)	(145,335)	(3,954,654)
2017	(3,855,232)	(58,447)	(31,470)	(152,497)	(4,097,646)
2018	(3,979,655)	(61,606)	(32,700)	(160,316)	(4,234,277)
2019	(4,094,412)	(64,061)	(33,510)	(178,633)	(4,370,616)
2020	(4,151,269)	(65,477)	(32,766)	(187,694)****	(4,437,206)
2021	(4,276,249)	(66,136)	(34,828)	(210,134)	(4,587,347)

* *Benefit Payment categories for 2012-2020 take into account retirement valuation reports.*

** *Other Benefits consists of Retiree Advances, delayed interest payments, Active Death Payments, Accidental Death, and, excluding Fiscal Year 2021, adjustment of retirement benefits is based on retirement valuation reports.*

*** *TDA rebalance transfers include a \$43,938 negative adjustment in 2017, a \$32,704 positive adjustment in 2018, a \$27,449 positive adjustment in 2019, a \$42,651 positive adjustment in 2020, and a \$4,175 negative adjustment in 2021.*

**** *Death Benefits for 2020 include \$1,469 of Accidental Death benefits (see Schedule 17).*

Note: *Benefit payments and withdrawals include columns 6, 7, 8, and 9.*

SCHEDULE 4: PARTICIPATING EMPLOYERS—QPP

As of June 30, 2019 (Lag)

Employer			Number of In-Service Members*	Annual Payroll*
NYC Department of Education and City University of New York			116,300	\$10,397,096,844
City University of New York Senior Colleges & Community Colleges			6,483	458,264,970
Charter Schools**	Start Date	Type		
Future Leaders Institute	09/2005	DOE Conversion - UFT	36	2,973,006
Harriet Tubman	09/2005	DOE Conversion - Non Union	56	3,708,139
Imagine Me Leadership	09/2017	Non Conversion - Non Union	18	1,133,689
Kipp Academy	09/2000	DOE Conversion - UFT	80	7,105,456
Kipp NYC	07/2016	Non Conversion - Non Union	37	4,219,849
Opportunity	09/2004	Non Conversion - UFT	70	6,175,092
Renaissance	09/2000	DOE Conversion - UFT	58	5,566,328
South Bronx	09/2015	Non Conversion - UFT	34	2,407,298
UFT***	09/2005	Non Conversion - UFT	26	2,413,190
University Prep	09/2008	Non Conversion - UFT	48	4,717,892
Voice	09/2008	Non Conversion - Non Union	64	5,297,780
Wildcat	09/2000	DOE Conversion - UFT	26	2,675,526
SUBTOTAL			553	\$48,393,245
TOTAL			123,336	\$10,903,755,059

* The number of in-service employees and their corresponding Annual Payroll include only current active members receiving salary as of each June 30th.

** Charter Schools that were converted from the NYC Department of Education Schools became participating employers when they were first converted to Charter Schools. Unless restricted by a collective bargaining agreement, a non-conversion Charter School decision to participate is voluntary and at the discretion of the individual school.

*** UFT Charter School relinquished its charter as of July 1, 2020 and was replaced by a new Board school.

SCHEDULE 5: ACTIVE MEMBERSHIP SUMMARY—QPP

Year	As of July 1	Contributors Registered	Payroll Updates	Contributors Withdrawn	As of June 30th
2011	111,647	4,779	(3,717)	(3,073)	109,636
2012	109,636	9,519	(3,135)	(3,560)	112,460
2013	112,460	7,101	(3,744)	(3,336)	112,481
2014	112,481	7,915	(4,032)	(4,638)	111,726
2015	111,726	8,727	(2,499)	(3,302)	114,652
2016	114,652	10,239	(2,519)	(4,171)	118,201
2017	118,201	9,466	(2,894)	(3,947)	120,826
2018	120,826	8,797	(3,619)	(4,240)	121,764
2019	121,764	7,357	(1,844)	(3,941)	123,336
2020	123,336	7,074	(1,438)	(4,696)	124,276

Active membership summary based on latest valuation reports. Estimated active membership of 125,000 for 2021.

SCHEDULE 6: TABLE OF AVERAGE SALARIES OF IN-SERVICE MEMBERS—QPP

As of June 30, 2020

MEN			WOMEN		
Age	Number of In-Service Members*	Average Salaries*	Age	Number of In-Service Members*	Average Salaries*
24 & under	213	\$51,880	24 & under	826	\$56,635
25-29	2,278	65,441	25-29	8,830	67,781
30-34	3,948	78,169	30-34	14,037	79,421
35-39	4,310	90,781	35-39	14,100	89,759
40-44	4,125	100,988	40-44	14,019	95,167
45-49	3,702	107,390	45-49	12,815	98,188
50-54	3,409	109,942	50-54	11,969	96,714
55-59	2,540	107,077	55-59	9,451	91,993
60-64	1,714	103,244	60-64	6,676	88,772
65-69	852	96,716	65-69	2,954	87,565
70 & over	447	87,687	70 & over	1,061	82,905
TOTAL	27,538	\$95,122	TOTAL	96,738	\$88,739

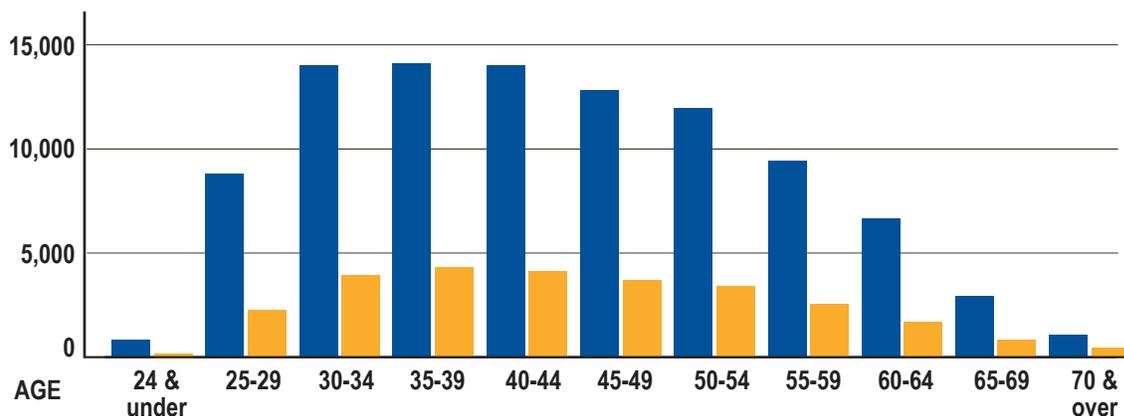
TOTAL ANNUAL SALARIES \$2,619,461,763

TOTAL ANNUAL SALARIES \$8,584,416,263

* The member count and the annual payroll include only those who were on the June 30 payroll.

IN-SERVICE MEMBERS ON PAYROLL—DISTRIBUTION BY AGE

As of June 30, 2020



WOMEN	826	8,830	14,037	14,100	14,019	12,815	11,969	9,451	6,676	2,954	1,061
MEN	213	2,278	3,948	4,310	4,125	3,702	3,409	2,540	1,714	852	447

SCHEDULE 7: IN-SERVICE MEMBERSHIP BY TIER AND BY TITLE—QPP

Year	Average Age	IN-SERVICE MEMBERSHIP BY TIER					IN-SERVICE MEMBERSHIP BY TITLE					
		Tier I	Tier II	Tier III	Tier IV	Tier VI	Teachers	Paraprofessionals	Principals and Administrators	Full-Time CUNY Faculty	Adjunct CUNY Instructors	Others
2012	45.4	0.9%	0.5%	1.8%	96.6%	0.2%	65.1%	16.7%	5.4%	2.4%	2.4%	8.0%
2013	45.3	0.7%	0.4%	1.4%	91.4%	6.1%	64.9%	16.9%	5.5%	2.7%	2.4%	7.6%
2014	44.8	0.5%	0.2%	1.0%	86.3%	12.1%	64.7%	16.6%	5.7%	3.0%	2.4%	7.6%
2015	44.8	0.4%	0.2%	0.7%	81.3%	17.4%	64.5%	16.8%	5.4%	3.3%	2.3%	7.7%
2016	44.7	0.3%	0.2%	0.6%	81.0%	17.9%	63.6%	17.3%	5.6%	3.4%	2.3%	7.8%
2017	44.6	0.2%	0.1%	0.5%	71.6%	27.6%	62.9%	17.7%	5.6%	3.7%	2.3%	7.8%
2018	44.7	0.2%	0.1%	0.4%	67.7%	31.6%	62.9%	17.6%	5.6%	3.9%	2.3%	7.7%
2019	44.8	0.1%	0.1%	0.3%	64.5%	35.0%	62.5%	17.8%	5.6%	4.2%	2.3%	7.6%
2020	44.9	0.1%	0.1%	0.2%	61.3%	38.3%	62.3%	17.8%	5.4%	4.2%	2.4%	7.9%
2021	45.3	0.1%	0.1%	0.2%	59.4%	40.2%	62.4%	17.8%	5.4%	4.2%	2.4%	7.8%

SCHEDULE 8: RETIREE SUMMARY—QPP

Year	As of July 1	Retirees Registered	Payroll Status Changes	Retirees Withdrawn	As of June 30th
2011	72,356	3,285	(39)	(1,537)	74,065
2012	74,064	4,180	(412)	(1,293)	76,539
2013	76,539	3,541	(451)	(1,452)	78,177
2014	78,177	3,791	(186)	(1,363)	80,419
2015	80,419	4,171	(308)	(1,505)	82,777
2016	82,777	3,267	(16)	(1,935)	84,093
2017	84,093	3,030	(153)	(2,200)	84,770
2018	84,770	3,578	(21)	(2,032)	86,295
2019	86,295	4,122	198	(2,108)	88,507
2020	88,507	3,477	19	(2,467)	89,536

Retiree membership summary is based on latest valuation reports. Estimated retiree memberships of 92,000 for 2021.

SCHEDULE 9: AVERAGE YEARS OF SERVICE OF NEW RETIREES—QPP

Average Years of Service

Year Ended June 30	Men	Women	Men and Women	Total Number of Retirees*
2011	26.5	25.3	25.6	3,285
2012	25.8	25.2	25.3	4,180
2013	25.1	24.8	24.9	3,541
2014	24.2	24.7	24.6	3,791
2015	24.9	24.0	24.2	4,171
2016	24.5	24.3	24.4	3,267
2017	25.6	25.0	25.1	3,030
2018	25.6	25.1	25.2	3,578
2019	25.6	25.0	25.1	4,122
2020	26.1	25.4	25.5	3,477

* Total number of new retirees is based on latest valuation reports.

SCHEDULE 10: PAYMENT OPTIONS CHOSEN AT RETIREMENT—QPP

Year	Average Age	OPTIONS CHOSEN BY TIER I/II MEMBERS					OPTIONS CHOSEN BY TIER III/IV/VI MEMBERS			
		Maximum Payout	Pop-Up Payments	Continuing Payments	Lump-Sum Payment	Guaranteed Number of Payments	Maximum Payout	Pop-Up Payments	Continuing Payments	Guaranteed Number of Payments
2012	60.6	61.1%	24.8%	11.3%	1.1%	1.7%	71.4%	17.2%	9.7%	1.7%
2013	60.7	64.1%	21.5%	11.5%	1.3%	1.6%	68.9%	19.1%	10.3%	1.7%
2014	60.8	62.1%	25.2%	10.7%	1.1%	0.9%	69.2%	19.5%	9.6%	1.7%
2015	60.8	50.8%	25.4%	20.0%	1.5%	2.3%	68.5%	18.1%	10.6%	2.8%
2016	60.9	59.4%	20.3%	17.6%	0.7%	2.0%	68.2%	19.6%	10.7%	1.5%
2017	60.9	62.4%	23.7%	11.9%	0.0%	2.0%	67.8%	19.4%	10.9%	1.9%
2018	61.0	56.1%	27.1%	15.0%	0.9%	0.9%	66.6%	20.3%	11.6%	1.5%
2019	61.0	56.4%	15.4%	25.6%	1.3%	1.3%	66.7%	20.5%	11.4%	1.4%
2020	61.0	59.1%	18.2%	16.6%	6.1%	0.0%	66.3%	20.4%	12.0%	1.3%
2021	61.1	58.7%	10.9%	26.1%	2.1%	2.2%	65.6%	18.6%	13.4%	2.4%

SCHEDULE 11: RETIREES' AVERAGE MONTHLY BENEFIT PAYMENTS AND FINAL AVERAGE SALARY ORGANIZED BY YEARS OF CREDITED SERVICE—QPP

	Year*	Survivor	Other	Under 5 Yrs**	5 - 9 Yrs	10 - 14 Yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 35 Yrs	35 & up Yrs	Total
Retirees	2012	4,071	5,882	63	1,165	4,382	5,720	8,786	15,942	18,786	11,742	76,539
Retirees	2013	4,118	5,363	64	1,270	4,704	5,862	9,371	16,634	19,064	11,727	78,177
Retirees	2014	4,257	8,208	65	1,377	5,054	6,011	9,600	16,671	18,140	11,036	80,419
Retirees	2015	4,403	4,620	68	1,481	5,543	6,374	10,588	18,260	19,649	11,791	82,777
Retirees	2016	4,564	4,989	67	1,516	5,794	6,535	10,854	18,568	19,536	11,670	84,093
Retirees	2017	4,635	3,879	69	1,566	5,975	6,713	11,266	19,106	19,912	11,649	84,770
Retirees	2018	4,651	3,264	67	1,679	6,290	6,909	11,720	19,784	20,279	11,652	86,295
Retirees	2019	4,734	7,064	65	1,722	6,245	6,757	11,661	19,027	19,839	11,393	88,507
Retirees	2020	4,798	8,839	64	1,790	6,235	6,615	11,655	18,807	19,576	11,157	89,536
Retirees	2021***	5,067	13,169	66	1,832	6,083	6,340	11,398	18,137	19,068	10,840	92,000

	Year*	Under 5 Yrs**	5 - 9 Yrs	10 - 14 Yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 34 Yrs	35 & up Yrs
Avg Monthly Benefit	2012	\$1,265	\$588	\$987	\$1,504	\$2,331	\$3,682	\$4,798	\$6,286
Avg Monthly Benefit	2013	\$1,292	\$597	\$993	\$1,478	\$2,417	\$3,822	\$4,969	\$6,532
Avg Monthly Benefit	2014	\$1,322	\$614	\$1,005	\$1,531	\$2,451	\$3,897	\$5,100	\$6,764
Avg Monthly Benefit	2015	\$1,324	\$606	\$1,046	\$1,541	\$2,609	\$4,054	\$5,279	\$7,350
Avg Monthly Benefit	2016	\$1,290	\$681	\$1,118	\$1,555	\$2,601	\$4,065	\$5,202	\$6,895
Avg Monthly Benefit	2017	\$1,360	\$648	\$1,112	\$1,626	\$2,693	\$4,198	\$5,368	\$7,061
Avg Monthly Benefit	2018	\$1,442	\$995	\$1,219	\$1,714	\$2,792	\$4,266	\$5,481	\$7,240
Avg Monthly Benefit	2019	\$1,506	\$906	\$1,153	\$1,620	\$2,741	\$4,276	\$5,475	\$7,232
Avg Monthly Benefit	2020	\$1,562	\$688	\$1,189	\$1,649	\$2,790	\$4,319	\$5,541	\$7,285
Avg Monthly Benefit	2021***	\$1,670	\$643	\$1,139	\$1,740	\$2,877	\$4,493	\$5,867	\$7,873

	Year*	Under 5 Yrs**	5 - 9 Yrs	10 - 14 Yrs	15 - 19 Yrs	20 - 24 Yrs	25 - 29 Yrs	30 - 34 Yrs	35 & up Yrs
Final Average Salary	2012	\$30,270	\$42,741	\$44,943	\$46,367	\$57,724	\$66,782	\$73,787	\$82,267
Final Average Salary	2013	\$31,076	\$43,539	\$46,381	\$47,698	\$59,738	\$69,113	\$74,985	\$82,940
Final Average Salary	2014	\$30,646	\$43,911	\$47,700	\$48,561	\$60,661	\$70,338	\$75,376	\$83,206
Final Average Salary	2015	\$30,946	\$44,441	\$49,831	\$50,645	\$63,802	\$73,796	\$77,860	\$84,692
Final Average Salary	2016	\$30,465	\$44,767	\$51,350	\$52,142	\$65,096	\$75,755	\$78,660	\$85,340
Final Average Salary	2017	\$30,945	\$45,569	\$52,882	\$54,286	\$67,606	\$78,798	\$80,914	\$86,726
Final Average Salary	2018	\$32,029	\$45,696	\$53,990	\$55,783	\$69,233	\$80,890	\$82,536	\$87,830
Final Average Salary	2019	\$32,819	\$45,373	\$53,449	\$55,695	\$69,782	\$81,534	\$83,186	\$88,424
Final Average Salary	2020	\$34,330	\$45,396	\$53,968	\$56,659	\$70,950	\$82,503	\$84,193	\$89,319
Final Average Salary	2021***	\$33,943	\$45,370	\$53,757	\$56,937	\$71,560	\$83,173	\$84,663	\$89,814

* Retiree figures for 2012-2020 take into account retirement valuation reports.

** Retirees include Service Retirement, Accidental Disability, and Ordinary Disability. The majority of retirees with under 5 Yrs. of service are Accidental Disability.

*** Retiree figures for 2021 include Service or FAS retirement revision cases previously categorized as "Other".

Note: If elected, total monthly benefits for Tier I and Tier II members depend on current unit value.

SCHEDULE 12: AVERAGE ANNUAL BENEFIT PAYMENT AMOUNTS—QPP

Year Ended June 30	SERVICE RETIREMENT BENEFITS		ORDINARY (NON-DUTY) DISABILITY BENEFITS		ACCIDENTAL (DUTY) DISABILITY BENEFITS		SURVIVORS' BENEFITS*	
	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Allowance	Number	Average Annual Benefit
2011	67,253	\$45,300	2,153	\$20,134	670	\$38,202	3,989	\$28,432
2012	69,515	45,718	2,242	20,549	711	39,116	4,071	28,235
2013	71,017	46,994	2,299	21,093	713	39,954	4,148	29,773
2014	73,069	48,325	2,379	21,641	714	40,738	4,257	31,619
2015	75,251	48,639	2,481	22,020	732	41,360	4,313	32,229
2016	76,346	48,749	2,541	22,284	745	41,492	4,461	32,579
2017	76,973	50,086	2,549	22,929	744	42,299	4,504	33,858
2018	78,364	50,784	2,640	23,336	757	43,197	4,534	35,359
2019	80,048	51,149	2,728	23,483	776	43,183	4,955	36,051
2020	80,915	51,304	2,731	23,975	750	43,689	5,140	36,516

* Survivors' benefits for 2020 include 30 Accidental Deaths with an average annual benefit of \$48,956 (see Schedule 17).

SCHEDULE 13: SERVICE RETIREMENT ALLOWANCES—QPP

As of June 30, 2020

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	-	-	under 30	-	-
30-34	-	-	30-34	-	-
35-39	-	-	35-39	-	-
40-44	-	-	40-44	-	-
45-49	-	-	45-49	-	-
50-54	-	-	50-54	-	-
55-59	656	\$58,178	55-59	2,008	\$55,833
60-64	1,702	53,215	60-64	5,407	49,913
65-69	2,995	50,853	65-69	10,829	46,997
70-74	6,274	63,377	70-74	15,203	53,245
75-79	5,115	63,030	75-79	10,745	49,635
80-84	2,723	58,826	80-84	6,606	43,409
85-89	1,691	58,697	85-89	4,195	40,663
90 & over	1,140	54,306	90 & over	3,626	37,997
TOTAL	22,296	\$59,312	TOTAL	58,619	\$48,258

TOTAL ANNUAL ALLOWANCES PAID \$1,322,414,453

TOTAL ANNUAL ALLOWANCES PAID \$2,828,854,874

SCHEDULE 14: ORDINARY DISABILITY RETIREMENT ALLOWANCES—QPP*As of June 30, 2020*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	-	-	under 30	-	-
30-34	-	-	30-34	-	-
35-39	1	\$25,734	35-39	3	\$21,699
40-44	8	24,262	40-44	30	26,433
45-49	21	29,620	45-49	76	24,965
50-54	36	29,996	50-54	164	27,084
55-59	61	27,641	55-59	291	26,535
60-64	78	25,799	60-64	383	23,465
65-69	99	24,119	65-69	435	22,963
70-74	133	27,799	70-74	367	23,122
75-79	73	26,851	75-79	227	20,625
80-84	28	22,695	80-84	108	17,497
85-89	8	26,498	85-89	59	16,959
90 & over	10	29,605	90 & over	32	22,354
TOTAL	556	\$26,634	TOTAL	2,175	\$23,296

TOTAL ANNUAL ALLOWANCES PAID \$14,808,693

TOTAL ANNUAL ALLOWANCES PAID \$50,668,332

SCHEDULE 15: ACCIDENT DISABILITY RETIREMENT ALLOWANCES—QPP*As of June 30, 2020*

MEN			WOMEN		
Age	Number of Retirees	Average Annual Allowance	Age	Number of Retirees	Average Annual Allowance
under 30	-	-	under 30	-	-
30-34	-	-	30-34	-	-
35-39	1	\$38,044	35-39	3	\$36,510
40-44	4	50,466	40-44	12	41,476
45-49	6	50,058	45-49	11	43,153
50-54	6	56,223	50-54	26	48,625
55-59	8	43,299	55-59	49	43,033
60-64	17	53,937	60-64	82	40,575
65-69	28	50,512	65-69	105	42,553
70-74	56	47,611	70-74	127	41,815
75-79	41	50,357	75-79	76	43,075
80-84	11	46,561	80-84	32	37,360
85-89	9	42,281	85-89	23	33,269
90 & over	6	44,140	90 & over	11	47,983
TOTAL	193	\$48,931	TOTAL	557	\$41,872

TOTAL ANNUAL ALLOWANCES PAID \$9,443,656

TOTAL ANNUAL ALLOWANCES PAID \$23,322,725

SCHEDULE 16: SURVIVORS' BENEFITS—QPP

As of June 30, 2020

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Benefit	Age	Number of Beneficiaries	Average Annual Benefit
under 30	5	\$23,823	under 30	13	\$27,216
30-34	6	23,424	30-34	8	36,140
35-39	10	24,670	35-39	20	22,722
40-44	21	22,469	40-44	23	22,020
45-49	20	33,984	45-49	33	20,855
50-54	34	18,625	50-54	50	19,823
55-59	47	23,361	55-59	86	22,788
60-64	75	23,083	60-64	151	28,800
65-69	112	30,549	65-69	242	38,172
70-74	241	34,839	70-74	493	44,152
75-79	264	37,139	75-79	648	42,834
80-84	219	29,789	80-84	593	43,138
85-89	178	30,289	85-89	567	41,062
90 & over	306	26,722	90 & over	645	34,379
TOTAL	1,538	\$30,452	TOTAL	3,572	\$39,023
TOTAL ANNUAL BENEFITS PAID		\$46,834,641	TOTAL ANNUAL BENEFITS PAID		\$139,390,249

SCHEDULE 17: ACCIDENTAL DEATH BENEFITS—QPP

As of June 30, 2020

MEN			WOMEN		
Age	Number of Beneficiaries	Average Annual Benefit	Age	Number of Beneficiaries	Average Annual Benefit
under 30	-	-	under 30	3	\$44,615
30-34	1	\$21,346	30-34	-	-
35-39	-	-	35-39	-	-
40-44	1	58,442	40-44	1	60,031
45-49	1	51,010	45-49	2	46,854
50-54	2	58,044	50-54	1	58,001
55-59	4	49,739	55-59	7	54,918
60-64	3	38,301	60-64	3	41,172
65-69	1	54,416	65-69	-	-
70-74	-	-	70-74	-	-
75-79	-	-	75-79	-	-
80-84	-	-	80-84	-	-
85-89	-	-	85-89	-	-
90 & over	-	-	90 & over	-	-
TOTAL	13	\$47,320	TOTAL	17	\$50,207
TOTAL ANNUAL BENEFITS PAID		\$615,160	TOTAL ANNUAL BENEFITS PAID		\$853,526

SCHEDULE 18: NUMBER AND COST OF INVESTMENT AND ADMINISTRATIVE SERVICES (QPP & TDA)

Year Ended	Investment Agent Count	Investment Expenses	TRS Employees Count*	Administrative Expenses
2012	221	\$122,647,913	368	\$50,064,502
2013	227	\$151,401,872	373	\$49,877,929
2014	230	\$169,736,553	376	\$63,230,181
2015	228	\$205,719,517	370	\$84,173,556
2016	230	\$209,422,244	365	\$91,998,934
2017	221	\$308,283,033	351	\$93,821,614
2018	227	\$352,816,375	347	\$87,532,002
2019	228	\$299,613,733	350	\$88,255,115
2020	230	\$291,433,988	338	\$88,488,346
2021	238	\$419,445,615**	336	\$86,389,714

* Employee count does not include Consultants, Temporary Employees, and Summer Interns.

** 2021 details are found in the schedule: Summary of Investment Managers and Fees of the Investment Section.

SCHEDULE 19: NET POSITION AND CHANGES IN NET POSITION—TDA PROGRAM

In Thousands

Year Ended	Pension Fund	Diversified Equity	Balanced Fund*	International Equity	Inflation Protection**	Sustainable Equity***	U.S. Equity Index****	International Equity Index****	Net Position	Changes in Net Position
2012	\$14,554,722	\$5,975,066	\$301,727	\$57,905	\$22,590	\$30,087	\$ -	\$ -	\$20,942,097	\$1,108,304
2013	16,021,066	6,762,476	304,675	71,621	28,001	41,837	-	-	23,229,676	2,287,579
2014	17,450,769	7,909,321	304,788	96,028	37,488	75,095	-	-	25,873,489	2,643,813
2015	18,922,602	7,869,896	302,816	97,942	39,437	100,889	-	-	27,333,582	1,460,093
2016	20,511,536	7,365,430	312,613	96,081	41,444	117,236	-	-	28,444,340	1,110,758
2017	22,223,301	8,194,607	310,195	120,211	50,138	153,641	-	-	31,052,093	2,607,753
2018	23,963,722	8,704,088	316,507	143,858	60,281	192,526	-	-	33,380,982	2,328,889
2019	25,745,844	8,804,658	340,687	156,367	67,024	218,815	-	-	35,333,395	1,952,413
2020	27,638,167	8,481,059	432,171	162,175	-	290,399	16,492	3,062	37,023,525	1,690,130
2021	29,976,852	11,670,982	527,697	235,938	-	476,762	60,581	10,663	42,959,475	5,935,950

* Bond Fund prior to January 1, 2018

** Fund discontinued as of April 1, 2020

*** Socially Responsive Equity Fund prior to October 1, 2019

****New fund established as of January 1, 2020

SCHEDULE 20: CHANGES IN NET POSITION—TDA PROGRAM
In Thousands

Year Ended	Net Member Contributions	Fixed Interest from TRSNYC Pension Fund	Net Investment Income	Withdrawals	Other Benefits*	Annuitized Payments	Administrative Expenses	Change in Net Position
2012	\$627,159	\$945,967	\$109,651	(\$431,412)	(\$98,606)	(\$34,103)	(\$10,352)	\$1,108,304
2013	633,900	1,047,979	1,216,793	(460,659)	(104,402)	(35,837)	(10,195)	2,287,579
2014	638,979	1,147,923	1,631,411	(577,102)	(139,759)	(40,451)	(17,188)	2,643,813
2015	662,601	1,248,988	435,632	(658,504)	(157,994)	(44,847)	(25,783)	1,460,093
2016	717,566	1,354,207	(11,194)	(708,466)	(164,389)	(44,334)	(32,632)	1,110,758
2017	743,663	1,466,615	1,398,500	(781,276)	(139,690)**	(47,027)	(33,032)	2,607,753
2018	856,294	1,595,462	1,055,191	(882,994)	(220,931)**	(51,677)	(22,456)	2,328,889
2019	995,035	1,716,679	669,540	(996,830)	(356,090)**	(51,957)	(23,964)	1,952,413
2020	1,029,758	1,846,173	327,613	(972,178)	(464,719)**	(52,560)***	(23,957)	1,690,130
2021	1,060,833	1,998,388	3,910,934	(574,947)	(386,815)**	(54,153)	(18,290)	5,935,950

* Other Benefits consists of active death payments and delayed interest payments.

** Includes \$43,938 positive, \$32,704 negative, \$27,449 negative, \$42,651 negative, and \$4,175 positive adjustments in 2017, 2018, 2019, 2020, and 2021, respectively, of TDA rebalance transfers.

*** Adjusted for \$40,525 of TDAB annuity under Other Benefits (originally classified under Annuitized Payments).

SCHEDULE 21: 2021 CHANGES IN NET POSITION—TDA PROGRAM
In Thousands

	Pension Fund	Diversified Equity	Balanced Fund	International Equity	Sustainable Equity	U.S. Equity Index	International Equity Index	Total
2020 Net Position	\$27,638,167	\$8,481,059	\$432,171	\$162,175	\$290,399	\$16,492	\$3,062	\$37,023,525
Member Contributions	741,970	218,251	37,505	20,175	33,826	7,204	1,902	1,060,833
Payment of interest on TDA fixed return funds	1,998,388	-	-	-	-	-	-	1,998,388
Interest & Misc Income	28,119	3,881	15	39	2	-	-	32,056
Dividend Income	-	149,331	6,633	1,503	2,018	201	65	159,751
Realized Profit/Loss	-	687,717	1,183	6,921	19,589	340	59	715,809
Unrealized Profit/Loss	-	2,796,903	47,216	53,934	105,719	11,851	1,427	3,017,050
Benefit Payments	(424,345)	(27,660)	(560)	(111)	(193)	(91)	(11)	(452,971)
Refunds & Withdrawals	(404,343)	(142,245)	(9,868)	(3,303)	(5,756)	(1,466)	(138)	(567,119)
Interfund Transfer	437,096	(511,937)	14,261	(6,023)	33,277	28,563	4,763	-
TDA Rebalance	(38,200)	44,340	177	1,076	(306)	(2,455)	(457)	4,175
Provision for Expenses*	-	(28,658)	(1,036)	(448)	(1,813)	(58)	(9)	(32,022)
2021 Net changes	2,338,685	\$3,189,923	\$95,526	\$73,763	\$186,363	\$44,089	\$7,601	\$5,935,950
2021 Net Position	\$29,976,852	\$11,670,982	\$527,697	\$235,938	\$476,762	\$60,581	\$10,663	\$42,959,475

* Includes Administrative and Investment Expenses

SCHEDULE 22: TDA PROGRAM SUMMARY (EXCLUDES ANNUITANTS)

Year	As of July 1	Contributors Registered	Payroll Status Changes	Contributors Withdrawn	As of June 30th
2011	75,917	845	2,617	(3,022)	76,357
2012	76,357	1,435	2,965	(3,513)	77,244
2013	77,244	1,834	2,095	(3,400)	77,773
2014	77,773	1,914	1,587	(3,569)	77,705
2015	77,705	2,751	3,168	(2,440)	81,184
2016	81,184	3,367	3,464	(3,108)	84,907
2017	84,907	2,851	3,037	(3,101)	87,694
2018	87,694	2,774	3,436	(3,256)	90,648
2019	90,648	2,179	3,934	(3,161)	93,600
2020	93,600	1,948	3,389	(3,826)	95,111

Active membership summary is based on latest valuation reports.

SCHEDULE 23: TDA PROGRAM ANNUITANTS SUMMARY

Annuitants Year	Payroll As of July 1	Annuitants Registered	Status Changes	Withdrawn	As of June 30th
2011	3,419	86	10	(264)	3,251
2012	3,251	140	(42)	(165)	3,184
2013	3,184	97	(50)	(176)	3,055
2014	3,055	120	(5)	(134)	3,036
2015	3,036	105	(18)	(132)	2,991
2016	2,991	86	16	(163)	2,930
2017	2,930	97	3	(164)	2,866
2018	2,866	91	28	(174)	2,811
2019	2,811	64	74	(122)	2,827
2020	2,827	51	26	(149)	2,755

Annuitant membership summary is based on latest valuation reports.

SCHEDULE 24: MEMBERSHIP BY AGE (ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS AS OF JUNE 30, 2021)—TDA PROGRAM

Age	Contributing		Non-Contributing		Deferred*		Beneficiary		Loans**	
	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Fund Balance	Count	Loan Balance
=<25	6,977	\$130,161,131	401	\$3,812,104	-	\$ -	21	\$4,693,067	767	\$2,883,870
30	12,729	460,863,313	1,118	31,804,583	7	544,020	26	4,114,654	3,266	17,901,221
35	14,090	996,300,860	1,517	82,523,466	174	10,902,027	32	9,248,024	6,354	40,998,731
40	14,557	1,697,264,207	1,185	78,457,014	372	31,704,826	36	12,063,724	9,325	63,439,070
45	13,464	2,191,870,497	773	65,556,575	475	52,962,082	60	23,245,715	10,238	70,526,759
50	12,710	2,739,526,634	728	74,010,624	616	93,510,646	98	32,091,338	9,661	67,126,626
55	9,204	2,092,132,809	593	75,418,257	3,075	1,043,698,505	146	41,255,172	7,535	57,900,388
60	6,181	1,457,511,441	389	56,448,080	6,532	2,349,869,693	172	49,618,270	5,415	39,561,439
65	2,509	657,709,068	215	22,209,997	10,916	4,478,354,908	161	54,095,574	3,469	28,687,238
70	708	259,602,545	81	6,807,402	16,315	8,704,844,094	193	90,177,927	2,717	24,646,466
75	128	69,842,383	35	4,724,240	11,483	6,247,154,621	219	116,844,237	1,217	10,647,887
80	32	27,540,152	7	2,862,288	6,049	3,081,477,655	157	70,815,317	489	4,302,765
85	6	7,474,629	6	1,558,080	3,113	1,345,045,143	103	40,406,097	133	1,452,158
90	-	-	1	92,626	1,467	437,593,740	57	16,672,685	28	354,401

Source: TRS query reports

* Includes inactive memberships.

** Loan balances include interest and insurance receivable amounts.

SCHEDULE 25: WITHDRAWALS BY AGE (FROM ACTIVE, DEFERRAL & BENEFICIARY ACCOUNTS, FISCAL YEAR 2021)—TDA PROGRAM

Age	Partial Withdrawals*		401(a) Service Purchase		RMD Withdrawals**		Total Withdrawals***		Survivors' Payments****	
	Count	Distribution	Count	Distribution	Count	Distribution	Count	Distribution	Count	Distribution
=<25	88	\$861,396	4	\$9,806	1	\$6,019	123	\$1,281,099	-	\$ -
30	246	4,086,892	8	29,803	2	10,550	243	5,421,447	8	86,430
35	392	8,472,582	19	67,191	2	5,839	212	7,119,074	20	216,258
40	631	16,221,777	26	108,185	4	50,796	154	8,221,601	25	973,901
45	599	17,225,559	36	117,999	3	15,720	79	3,998,107	43	2,529,475
50	629	18,980,204	55	316,624	6	54,996	68	4,483,118	71	5,014,991
55	1,693	42,007,991	87	568,657	16	189,199	104	9,335,784	91	11,176,336
60	3,680	70,289,170	64	411,036	12	215,878	182	12,545,094	117	13,646,911
65	3,204	54,969,832	26	141,352	20	470,386	110	8,404,310	205	32,859,648
70	3,337	62,477,898	8	43,652	1,104	19,529,908	81	12,594,640	328	95,347,759
75	1,789	36,239,433	2	25,089	1,172	23,548,435	35	9,321,591	332	103,885,305
80	692	16,498,163	2	27,463	611	14,931,001	25	4,341,233	301	91,432,392
85	320	10,082,218	-	-	299	8,759,503	16	2,916,750	349	87,364,216
90	176	4,908,923	-	-	108	4,215,532	15	2,264,316	213	43,589,250

Source: TRS query reports

* Category includes 152 Partial Withdrawals to Beneficiaries.

** Category includes 127 RMD Withdrawals to Beneficiaries.

*** Category includes 31 Total Withdrawals to Beneficiaries.

**** Category includes the establishment of 290 new Beneficiary accounts.

**SCHEDULE 26: FUND CONVERSION OF INVESTMENT BALANCES BY AGE
(FISCAL YEAR 2021)—TDA PROGRAM**

From	To	=<25	30	35	40	45	50	55	60	65	70	75	80	85	90+
FX	VA	21.1%	15.3%	12.3%	11.7%	5.6%	3.0%	3.0%	3.6%	3.9%	5.8%	3.2%	2.0%	8.1%	0.0%
FX	VB	1.0%	0.6%	0.6%	0.4%	0.3%	0.5%	0.0%	0.1%	0.0%	0.4%	0.1%	0.0%	0.0%	0.0%
FX	VC	0.4%	0.7%	0.7%	0.5%	0.4%	0.1%	0.2%	0.2%	0.1%	0.3%	0.0%	1.1%	0.0%	0.0%
FX	VE	9.4%	12.4%	12.4%	10.6%	5.3%	2.2%	2.5%	3.4%	3.3%	3.4%	1.8%	1.6%	0.0%	4.0%
FX	VF	5.3%	6.1%	5.5%	4.0%	5.7%	0.6%	0.8%	1.0%	0.9%	1.4%	0.4%	1.5%	0.0%	0.0%
FX	VG	0.4%	1.0%	0.8%	0.8%	0.4%	0.1%	0.5%	0.4%	0.1%	0.6%	0.0%	0.0%	0.0%	0.0%
VA	FX	28.6%	37.2%	40.2%	49.0%	68.8%	80.8%	81.8%	78.8%	76.8%	70.5%	88.1%	85.4%	84.7%	62.9%
VA	VB	0.1%	0.1%	0.1%	0.3%	0.2%	1.1%	0.5%	0.5%	0.3%	1.4%	0.0%	0.0%	0.7%	0.5%
VA	VC	0.6%	0.3%	0.0%	0.3%	0.2%	0.2%	0.1%	0.0%	0.1%	0.1%	0.0%	0.2%	0.0%	0.0%
VA	VE	1.8%	2.1%	4.8%	4.4%	2.2%	1.8%	2.2%	2.8%	3.6%	6.8%	1.7%	0.7%	0.8%	0.1%
VA	VF	4.6%	2.2%	3.9%	3.0%	1.3%	1.2%	0.9%	0.7%	2.1%	1.5%	2.1%	2.9%	1.6%	31.7%
VA	VG	0.4%	0.7%	0.4%	0.5%	0.4%	0.1%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%
VB	FX	3.3%	3.1%	2.8%	1.6%	1.6%	1.3%	2.0%	3.0%	2.2%	0.6%	0.5%	0.0%	3.4%	0.8%
VB	VA	0.8%	0.5%	0.3%	0.2%	0.2%	0.2%	0.2%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
VB	VC	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VB	VE	0.1%	0.5%	0.5%	0.1%	0.4%	0.2%	0.1%	0.1%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%
VB	VF	0.4%	0.6%	0.3%	0.3%	0.0%	0.2%	0.0%	0.0%	0.0%	0.2%	0.1%	0.9%	0.0%	0.0%
VB	VG	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VC	FX	5.3%	3.7%	3.2%	2.4%	2.5%	1.2%	1.0%	1.0%	1.3%	0.6%	0.4%	0.5%	0.1%	0.0%
VC	VA	1.0%	1.1%	0.3%	0.3%	0.2%	0.2%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.3%	0.0%
VC	VB	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VC	VE	1.1%	0.6%	1.6%	0.5%	0.3%	0.3%	0.1%	0.1%	0.3%	0.0%	0.2%	0.5%	0.0%	0.0%
VC	VF	0.4%	0.4%	0.3%	0.4%	0.2%	0.4%	0.0%	0.1%	0.0%	0.2%	0.0%	0.2%	0.0%	0.0%
VC	VG	0.0%	0.1%	1.6%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	FX	9.4%	6.0%	6.3%	6.6%	3.1%	3.4%	3.3%	3.7%	3.2%	1.8%	0.7%	2.3%	0.3%	0.0%
VE	VA	1.0%	1.8%	0.2%	0.9%	0.2%	0.1%	0.2%	0.1%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%
VE	VB	0.0%	0.1%	0.0%	0.0%	0.1%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	VC	0.2%	1.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VE	VF	0.2%	0.3%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	0.0%
VE	VG	0.0%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VF	FX	1.6%	0.6%	0.6%	0.6%	0.0%	0.2%	0.2%	0.1%	1.8%	1.4%	0.0%	0.0%	0.0%	0.0%
VF	VA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
VF	VB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VF	VC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VF	VE	0.3%	0.0%	0.0%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.8%	0.1%	0.0%	0.0%	0.0%
VF	VG	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	FX	1.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VA	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VB	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VC	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
VG	VE	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%
VG	VF	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.0%	0.0%
		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Source: TRS query reports

- FX refers to the Fixed Return Fund
- VA refers to the Diversified Equity Fund
- VB refers to the Balanced Fund
- VC refers to the International Equity Fund
- VE refers to the Sustainable Equity Fund
- VF refers to the U.S. Equity Index Fund
- VG refers to the International Equity Index Fund

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