# STATE OF CONNECTICUT OFFICE OF THE TREASURER

2017



# COMBINED INVESTMENT FUNDS COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the fiscal year ended June 30, 2017

# **STATE OF CONNECTICUT Office of the State Treasurer**



The State Motto, "Qui Transtulit Sustinet" (He Who Transplanted Still Sustains), has been associated with various versions of the State Seal from the creation of the Saybrook Colony Seal.

# STATE OF CONNECTICUT OFFICE OF THE TREASURER

2017



# COMBINED INVESTMENT FUNDS COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the fiscal year ended June 30, 2017

Prepared by: State of Connecticut

Office of the Treasurer

55 Elm Street

Hartford, CT 06106-1773

# **STATE OF CONNECTICUT Office of the State Treasurer**



# COMBINED INVESTMENT FUNDS COMPREHENSIVE ANNUAL FINANCIAL REPORT

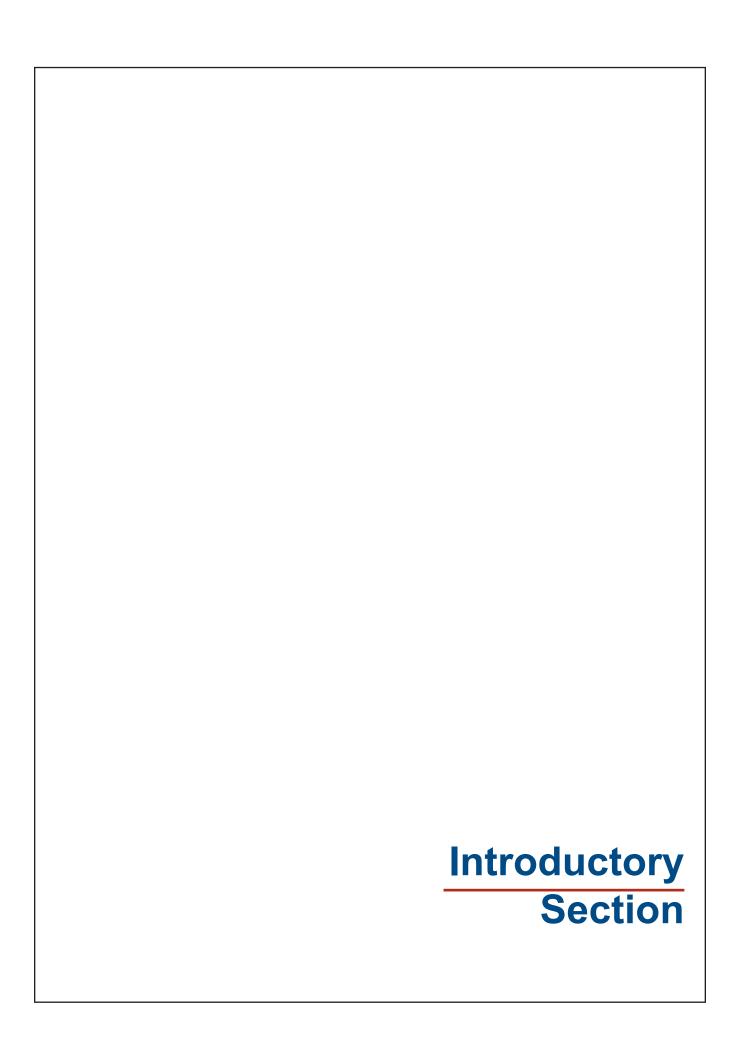
FOR THE FISCAL YEAR ENDED JUNE 30, 2017

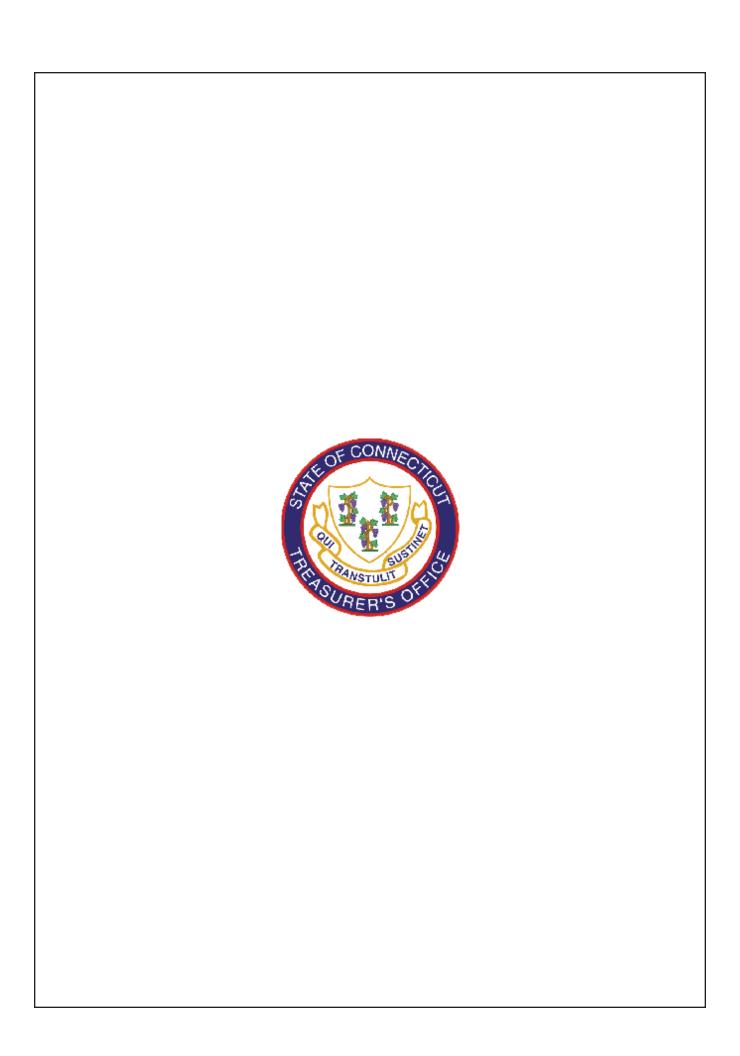
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DENISE L. NAPPIER TREASURER

December 29, 2017

To the State of Connecticut Combined Investment Funds

Fellow Beneficiaries.

I am pleased to submit this Comprehensive Annual Financial Report for the State of Connecticut Combined Investment Funds (CIF) for the fiscal year ended June 30, 2017. The CIF generated a net investment return of 14.18 percent for the fiscal year. The State's three largest pension funds – the Teachers' Retirement Fund (TRF), the State Employees' Retirement Fund (SERF), and the Connecticut Municipal Employees' Retirement Fund (CMERF) – returned 14.38 percent, 14.32 percent and 13.05 percent, respectively, outperforming their benchmarks by 114, 115, and 98 basis points. Longer term, the five-year returns for the two largest funds, TRF and SERF, were 8.80 percent, while the seven-year returns were 8.96 percent and 9.02 percent, respectively.

The CIF performance for Fiscal Year 2017 added \$3.30 billion of market value to pension assets. After paying fees and expenses, including \$793 million of benefit payments in excess of contribution receipts, the CIF ended the fiscal year with an all-time record of \$32.5 billion in net assets.

The primary purpose of the CRPTF is to help the State pay its benefit obligations. Accordingly, from July 1, 1999 through June 30, 2017, it has distributed \$24.3 billion in benefits and received \$12.4 billion in contributions, resulting in \$11.9 billion of payments in excess of contributions.

Responsibility for both the accuracy of the data and the completeness and fairness of this report rests with Treasury management. All disclosures necessary and required to enable fellow beneficiaries and the financial community to gain an understanding of CIF financial activities are contained within this report.

The enclosed financial statements and data are presented fairly in all material respects and are reported in a manner designed to present the financial position and results of CIF operations accurately.

The CIF were established pursuant to Connecticut General Statutes Section 3-31b as a means to invest pension and trust fund assets entrusted to the Treasurer in a variety of investment classes. The CIF are comprised of separate pooled investment funds: Liquidity Fund, Alternative Investment Fund, Mutual Equity Fund, Core Fixed Income Fund, Inflation Linked Bond Fund, Emerging Market Debt Fund, High Yield Debt Fund, Developed Markets International Stock Fund, Emerging Markets International Stock Fund, Real Estate Fund, and Private Investment Fund.

The units of the CIF are owned by six pension funds: Teachers' Retirement Fund; State Employees' Retirement Fund; Connecticut Municipal Employees' Retirement Fund; State Judges' Retirement Fund; Probate Court Retirement Fund; and State's Attorneys' Retirement Fund. In addition, the CIF are owned by nine trust funds: Soldiers' Sailors' and Marines' Fund; Police and Fireman' Survivors' Benefit Fund; Connecticut Arts Endowment Fund; School Fund; Ida Eaton Cotton Fund; Hopemead State Park Fund; Andrew C. Clark Fund; Agricultural College Fund and State of Connecticut Other Post-Employment Benefits Trust Fund.

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#### LETTER FROM THE TREASURER

#### **Financial Information**

The consolidated CIF assets at the close of Fiscal Year 2017 were \$32.5 billion based on fair value and the CIF were in full compliance with the standards of the Governmental Accounting Standards Board. The CIF are invested across global public and private market equity, fixed income and alternative asset classes. Additional information on the CIF can be found in the Notes to the Financial Statements.

#### **Internal Control Structure**

Management is responsible for maintaining a system of adequate internal accounting controls designed to provide reasonable assurance that transactions are (i) executed in accordance with management's general or specific authorization, and (ii) recorded as necessary to maintain accountability for assets and to permit preparation of financial statements consistent with generally accepted accounting principles. We believe the internal controls in effect during Fiscal Year 2017 adequately safeguarded the CIF assets and provided reasonable assurance regarding the proper recording of financial transactions. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management.

#### **Independent Audit**

The State of Connecticut's independent Auditors of Public Accounts conducted an annual audit of this Comprehensive Annual Financial Report in accordance with generally accepted auditing standards. The Auditors' report on the basic financial statements is included in the Financial Section of this report.

#### **Management Discussion and Analysis**

Denise L. Rappier

The Government Accounting Standards Board requires a narrative introduction, overview and analysis to accompany the basic financial statements in the form of a Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement and be read in conjunction with the MD&A. The MD&A can be found in the Financial Section immediately following the report of the independent auditors.

#### **Awards**

The Government Finance Officers Association of the United States and Canada awarded the Combined Investment Funds a Certificate of Achievement for Excellence in Financial Reporting for its Comprehensive Annual Financial Report for the fiscal year ended June 30, 2016. The Certificate is a prestigious national award recognizing conformance with the highest standards for preparation of state and local government financial reports.

#### **Requests for Information**

This Comprehensive Annual Financial Report is designed to provide a general overview of investment activities of the CIF. We hope this report will prove both informative and useful. Questions concerning any of the information contained in this report or requests for additional financial information should be addressed to the Office of the Treasurer, 55 Elm Street, Hartford, Connecticut 06106-1773, or by telephone to (860) 702-3000. Copies of the report also will be available on the internet at www.ott.ct.gov.

Sincerely,

Denise L. Nappier Treasurer

State of Connecticut



DENISE L. NAPPIER TREASURER

December 29, 2017

This Comprehensive Annual Financial Report was prepared by the Office of the Treasurer, which is responsible for the accuracy of the data contained herein, the completeness and fairness of the presentation, and all disclosures. We present the financial statements and data as accurate in all material respects and prepared in conformity with generally accepted accounting principles. Such financial statements are audited annually by the State of Connecticut Auditors of Public Accounts.

To carry out this responsibility, the Office of the Treasurer maintains financial policies, procedures, accounting systems and internal controls that management believes provide reasonable, but not absolute, assurance that ac-curate financial records are maintained and investments and other assets are safeguarded.

It is our belief that the contents of this Annual Report make evident the Office of the Treasurer's support of the safe custody and conscientious stewardship of the State's property and money, including Trusts and Custodial accounts held by the State Treasurer. In addition, the Office of the Treasurer has sought to maximize earnings on the assets held by the State Treasurer within the boundaries of prudent investment guidelines authorized by Article Four, Section 22 of the Connecticut Constitution and by Title 3 of the Connecticut General Statutes, thereby stabilizing taxpayer costs and securing the safety of benefit commitments established by various general statutes covering the State retirement systems and other retirement systems administered by the State.

The State of Connecticut also issues a Comprehensive Annual Financial Report (the CAFR) available from the State Comptroller's Office. The material presented herein is intended to expand on, but not to conflict with, the State's CAFR.

In management's opinion, the internal control structure of the Office of the Treasurer is adequate to ensure that the financial information in this report fairly presents the financial condition and results of operations of the funds that follow.

Sincerely,

Lawrence A. Wilson Interim Deputy Treasurer State of Connecticut

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a G. Wan



Government Finance Officers Association

# Certificate of Achievement for Excellence in Financial Reporting

Presented to

## Connecticut State Treasurer's Combined Investment Funds

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2016

Christopher P. Morrill

Executive Director/CEO

#### THE CONNECTICUT STATE TREASURY

#### **Mission Statement**

To serve as the premier State Treasurer's Office in the nation through effective management of public resources, high standards of professionalism and integrity, and expansion of opportunity for the citizens and businesses of Connecticut.

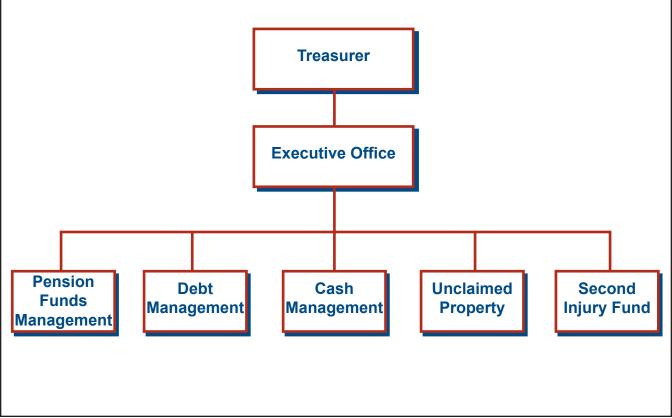
#### **Constitutional and Statutory Responsibilities**

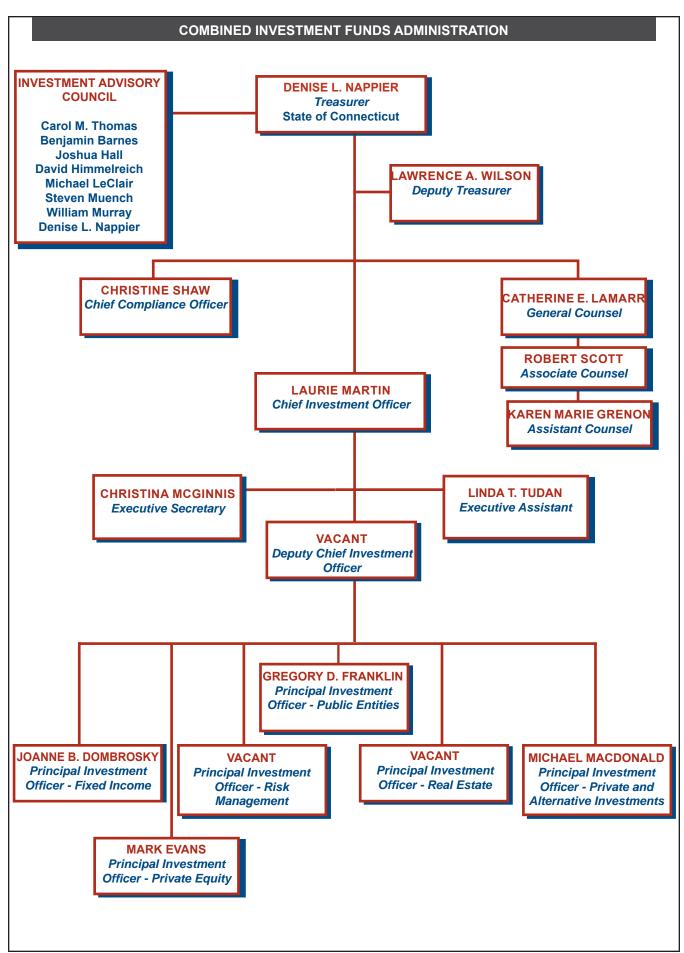
The Office of the Treasurer was established following the adoption of the fundamental orders of Connecticut in 1638. The Treasurer shall receive all funds belonging to the State and disburse the same only as may be directed by law, as described in Article Fourth, Section 22 of the Connecticut Constitution and in Title 3 of the Connecticut General Statutes.

The Treasurer, as chief elected fi nancial offi cer for the State, oversees the prudent preservation and management of State funds, including the investment of a \$32.5 billion portfolio of pension and trust fund assets, \$6.5 billion in total state and local short-term investments, and \$3.3 billion of assets in the Connecticut Higher Education Trust. The Treasurer maintains an accurate account of all funds through sophisticated security measures and procedures.

#### **Public Service**

The Office of the Treasurer includes an Executive Office as well as five distinct divisions, each with specific responsibilities: Pension Funds Management, Cash Management, Debt Management, Unclaimed Property, and the Second Injury Fund.





#### LIST OF PRINCIPAL OFFICIALS

#### **COMBINED INVESTMENT FUNDS**

55 Elm Street, 6th Floor Hartford, CT. 06106-2773 Telephone: (860) 702-3155 Facsimile: (860) 702-3042 World Wide Web: www.ott.ct.gov

Treasurer, State of Connecticut DENISE L. NAPPIER (860) 702-3010

Interim Deputy Treasurer, State of Connecticut LAWRENCE A. WILSON, CTP (860) 702-3070

Chief Investment Officer
LAURIE MARTIN, CIA, CPA (860) 702-3195

Deputy Chief Investment Officer VACANT

**General Counsel CATHERINE E. LAMARR (860) 702-3018** 

Chief Compliance Officer
CHRISTINE SHAW (860) 702-3211

#### INVESTMENT ADVISORY COUNCIL

The Investment Advisory Council (IAC) consists of the State Treasurer and the Secretary of the Office of Policy and Management (as ex-officio members of the Council); five public members, all of whom shall be experienced in matters relating to investments, appointed by the Governor and legislative leadership; three representatives of the State teachers' unions and two representatives of the State employees' unions (CGS Sec. 3-13b).

Pursuant to C.G.S. Sec.3-13b, the IAC annually reviews the Investment Policy Statement (IPS), recommended by the Treasurer, which outlines the standards governing investment of the Connecticut Retirement Plans and Trust Funds (CRPTF) assets by the Treasurer. The IPS includes, with respect to each plan and trust fund, (A) investment objectives; (B) asset allocation policies and risk tolerances; (C) asset class definitions, including specific types of permissible investments within each asset class and any specific limitations or other considerations governing the investment of any funds; (D) investment and money manager guidelines; (E) investment performance evaluation guidelines; (F) guidelines for the selection and termination of providers of investment related services, which shall include, but not be limited to, external investment and money managers, investment consultants, custodians, broker-dealers, legal counsel, and similar investment industry professionals; and (G) proxy voting guidelines. The Treasurer shall thereafter adopt the IPS, including any such changes recommended by the IAC the Treasurer deems appropriate, with the approval of a majority of the members appointed to the IAC. The latest IPS was adopted by the Treasurer and approved by the IAC in August 2012, and amended four times, reflecting revisions including the projected capital market returns, the liquidity needs of each plan and trust fund and other financial scenarios for the CRPTF, emanating from the 2012 Asset Liability Study that the Treasurer led, with the assistance of IAC members.

All plan and trust fund investments by the State Treasurer shall be reviewed by the IAC along with all information regarding such investments provided to the IAC which the Treasurer deems relevant to the Council's review and such other information as may be requested by the Council. The IAC shall also review the report provided by the Treasurer at each regularly scheduled meeting of the IAC as to the status of the plan and trust funds and any significant changes which may have occurred or which may be pending with regard to the funds. The Council shall promptly notify the Auditors of Public Accounts and the Comptroller of any unauthorized, illegal, irregular or unsafe handling or expenditure of plan and trust funds or breakdown in the safekeeping of plan and trust fund assets or contemplated action to do the same within their knowledge.

At the close of the fiscal year, the IAC shall make a complete examination of the security investments of the State and determine as of June thirtieth, the value of such investments in the custody of the Treasurer and report thereon to the Governor, the General Assembly and beneficiaries of plan and trust fund assets administered, held or invested by the Treasurer (CGS Sec. 3-13b(c)(2)).

Council members who contributed their time and knowledge to the IAC during fiscal year 2017 include:

**CAROL M. THOMAS**, Interim Chairperson, as appointed by the Governor; Representative of State employees' unions; Retiree, Department of Developmental Services

BENJAMIN B. BARNES, Secretary, State Office of Policy and Management (Ex officio member)

JOSHUA HALL, Representative of State teachers' unions; Hartford Federation of Teachers

**DAVID HIMMELREICH**, Principal, Hynes, Himmelreich, Glennon & Company

MICHAEL LeCLAIR, Senior Vice President/Investments, Stifel

STEVEN MUENCH, Representative of State teachers' unions; Conn. Education Association

WILLIAM MURRAY, Representative of State teachers' unions; NEA, Danbury

DENISE L. NAPPIER, Treasurer, State of Connecticut (Ex officio member) and Council secretary

#### **CONSULTANTS**

Cliffwater Associates - Marina del Rey, California
Aon Hewitt Investment Consulting, Inc. - Chicago, Illinois
Stepstone Group, LP - New York, New York
The Townsend Group - Cleveland, Ohio
Meketa Invesmtment Group - Boston, Massachusetts

#### **MASTER CUSTODIAN**

Bank of New York Mellon - New York, New York

#### **AUDITORS**

Auditors of Public Accounts - Hartford, Connecticut

#### INVESTMENT ADVISORS

#### **LIQUIDITY FUND**

State Street Global Advisors - Boston, Massachusetts
Payden & Rygel - Los Angeles, California
Pacifi c Investment Management Company - Newport Beach, California
Lazard Asset Management LLC - New York, New York
Colchester Global Investors Ltd. - London, England

#### **MUTUAL EQUITY FUND**

#### Large Cap

State Street Global Advisors - Boston, Massachusetts T. Rowe Price Associates - Baltimore, Maryland

#### All Cap

Capital Prospects, LLC - Stamford, Connecticut FIS Group, Inc. - Philadelphia, Pennsylvania

#### **Small/Mid Cap Active**

Bivium Capital Partners - San Francisco, California Frontier Capital Management Company, LLC - Boston, Massachusetts

#### **DEVELOPED MARKET INTERNATIONAL STOCK FUND (DMISF)**

#### Index

State Street Global Advisors - Boston, Massachusetts
Core

AQR Capital Management - Greenwich, Connecticut
Acadian Asset Management - Boston, Massachusetts
Progress Investment Management Company - San Francisco, California

Active-Growth

MFS Institutional Advisors, Inc. - Boston, Massachusetts

#### Active-Value

Grantham, Mayo, Van Otterloo & Co. - Boston, Massachusetts
Small Cap

Schroder Investment Management - New York, New York Dimensional Fund Advisors - Austin, Texas William Blair & Company - Chicago, Illinois

#### **EMERGING MARKET INTERNATIONAL STOCK FUND (EMISF)**

Aberdeen Asset Management, Inc. - Philadelphia, Pennsylvania Schroder Investment Management - New York, New York Grantham, Mayo, Van Otterloo & Co. - Boston, Massachusetts

#### **REAL ESTATE FUND (REF)**

AEW Capital Management, LP - Boston, Massachusetts American Realty Advisors - Glendale, California Apollo Real Estate Investment Fund - New York, New York Blackstone Real Estate Advisors - New York, New York Canyon Johnson Urban Funds - Beverly Hills, California Capri Capital Advisors - Chicago, Illinois Clarion Lion Industrial Trust - Baltimore, Maryland Colony Realty Partners II - Los Angeles, California Cornerstone Real Estate Advisors - Hartford, Connecticut Covenant Apartment Funds - Nashville, Tennessee Crow Holdings Realty Partners - Dallas, Texas Cypress Acquisition Partners - Dallas, Texas Gerding Edlen, LP- Portland, Oregon Hart Realty Advisors - Simsbury, Connecticut IL & FS India Realty Fund II, LLC - Ebene, Mauritius JP Morgan Investment Management, New York, New York Landmark Real Estate Partners, Simsbury, Connecticut Lone Star Global Acquisitions Ltd - dallas, Texas MacFarlane Urban Real Estate Fund - San Francisco, California Prime Property Fund - New York, New York Prudential Real Estate Investors - Madison, New Jersey Rockwood Capital - Greenwich, Connecticut Starwood Global Opportunity Funds - Greenwich, Connecticut UBS Trumbull Property - Hartford, Connecticut Urban Strategy America Fund - Boston, Massachusetts USAA EAgle Fund - San Antonio, Texas WLR Recovery Associates IV LLC - New York, New York

#### **CORE FIXED INCOME FUND (CFIF)**

State Street Global Advisors - Boston, Massachusetts
BlackRock Financial Management, Inc. - New York, New York
Wellington - Boston, Massachusetts
Conning-Goodwin Capital Advisers Inc. - Hartford, Connecticut
Progress Investment Management Company - San Francisco, California
Prudence Crandall Fund III Opportunistic (Rock Creek)- Washington, District of Columbia
Prudence Crandall Fund IV Opportunistic (K2 Advisors) - Stamford, Connecticut

#### **HIGH YIELD DEBT FUND (HYDF)**

Loomis Sayles & Co., Inc. - Boston, Massachusetts
Stone Harbor Investment Partners - New York, New York
Shenkman Capital Management - Stamford, Connecticut
Oaktree Capital Management, L.L.C. - Los Angeles, California
AllianceBernstein, LP New York, NY
DDJ Capital Management, LLC - Waltham, MA
Columbia Management Investment Advisers, LLC - Minneapolis, MN
Nomura Corporation Research & Asset Management, Inc. - New York, NY

#### **EMERGING MARKET INTERNATIONAL STOCK FUND (1)**

Ashmore Emerging Markets Debt Fund - London, England Pyramis Global Investors - Boston, Massachusetts Fidelity Institutional Asset Mgt. Trust Co. - Merrimack, NH Stone Harbor Investment Partners - New York, New York

<sup>(1)</sup> Not included in the listing are currency overlay managers: The Bank of New York - New York, New York and Bridegwater Associates, Inc. - Westport, Connecticut.

#### **INFLATION LINKED BOND FUND (ILBF)**

BlackRock Financial Management, Inc. - New York, New York Colchester Global Investors Ltd. - London, England New Century Advisors, LLC - Chevy Chase, Maryland

#### PRIVATE INVESTMENT FUND

#### **Corporate Buyouts**

AIG Altaris Health Partners - New York, New York Boston Ventures VII - Boston, Massachusetts Charterhouse Equity Partners - New York, New York Court Square Capital Partners - New York, New York Ethos Private Equity Fund V - Jersey, Channel Islands FS Equity Partners - Los Angeles, California GENNX360 Capital Partners II - New York, New York Hicks Muse Tate & Furst Equity Fund III - Dallas, Texas ICV Capital Partners II LLC - New York, New York JFL Equity Investors - Wilmington, Deleware KKR Funds - New York, New York Leeds Equity Partners - New York, New York Nogales Investors Fund II - Los Angeles, California RFE Investment Partners - New Canaan, Connecticut TA XI - Boston, Massachusetts Thomas H. Lee Equity Fund VI - Boston, Massachusetts Vista Equity Partners - San Francisco, California Wellspring Capital Partners V - New York, New York Welsh, Carson, Anderson & Stowe - New York, New York Yucaipa American Alliance Fund II LP - Los Angeles, California Yucaipa III - Los Angeles, California

#### **Venture Capital**

Crescendo III – Minneapolis, Minnesota Syndicated Communications Venture Partners V - Silver Spring, Maryland

#### Mezzanine

Audax Mezzanine III Limited Partnership - New York, New York GarMark Partners II LP – Stamford, Connecticut

#### International

Gilbert Global Equity Partners - Tacoma, Washington Pinebridge Global Emerging Markets Fund - New York, New York

#### **Fund of Funds**

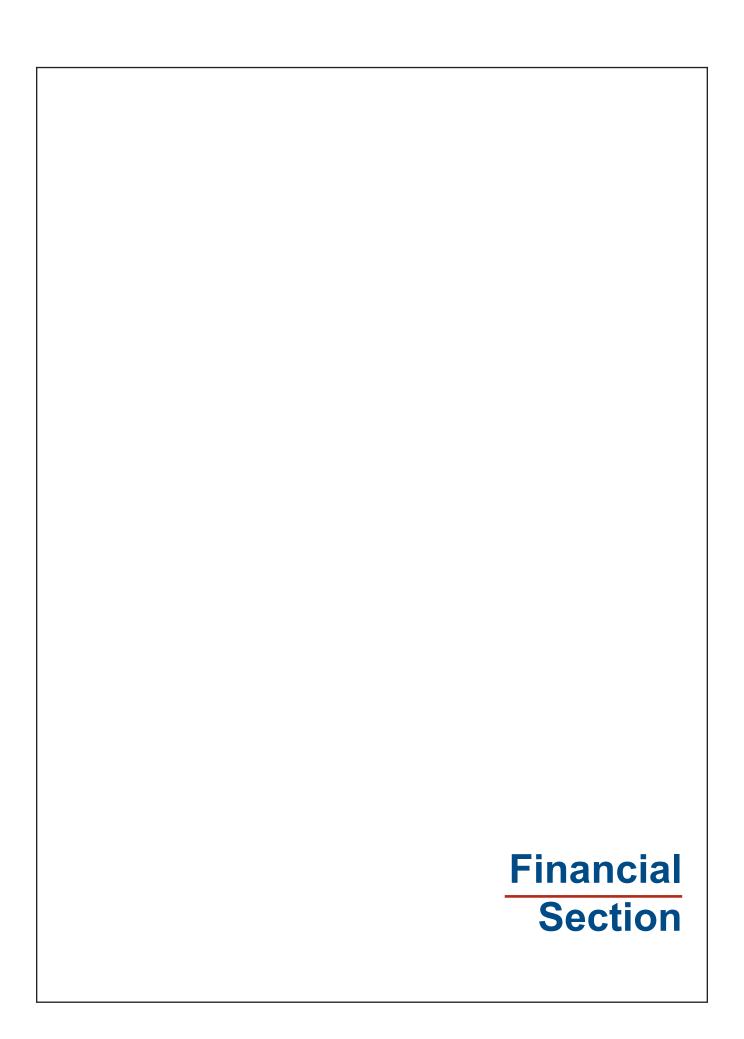
M2 CT Horizon Legacy Fund - Wilmington, Deleware
CT Growth Capital - Westport, Connecticut
CS/CT Cleantech Opportunities Fund - New York, New York
M2 CT Emerging Private Equity - Chicago, Illinois
Fairview Capital Partners, Inc - Farmington, Connecticut
JP Morgan Nutmeg Opportunity Fund - New York, New York
Landmark Private Equity Funds - Simsbury, Connecticut
Stepstone Pioneer Capital Funds - Chapel Hill, North Carolina

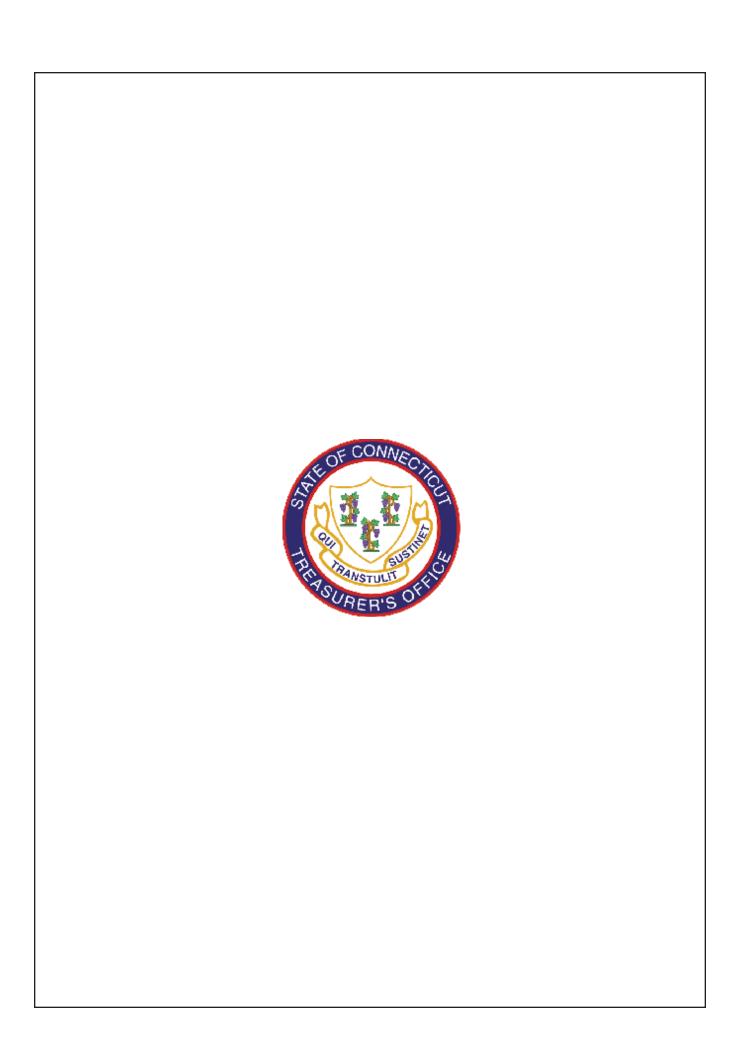
#### **Special Situations**

Apollo Investment Fund VIII LP - New York, New York
Castlelake II LP - MInneapolis, Minnesota
Clearlake Capital Partners – Santa Monica, California
Levine Leichtman Capital Partners - Beverly Hills, California
Pegasus Partners - Cos Cob, Connecticut
WLR Recovery Fund IV - New York, New York

#### **ALTERNATIVE INVESTMENT FUND**

Arclight Energy Partners Funds - Boston, Massachusetts
EIG Energy Fund XV Limited Partnership - Washington D.C.
Marathon European Credit Opportunity - New York, New York
Prudence Crandall I Permal Limited Partnership - New York, New York
Prudence Crandall II Prisma Limited Partnership - New York, New York
Prudence Crandall III Rock Creek Limited Partnership - Washington D.C.
Prudence Crandall IV K2 Limited Partnership - Stamford, Connecticut
Thomas Welles Funds - New York, New York





#### STATE OF CONNECTICUT



State Capitol

210 Capitol Avenue

Hartford, Connecticut 06106-1559

JOHN C. GERAGOSIAN

ROBERT J. KANE

#### INDEPENDENT AUDITORS' REPORT

Governor Dannel P. Malloy Members of the General Assembly:

#### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Combined Investment Funds, which comprise the statement of net position as of June 30, 2017, the statements of changes in net position for the fiscal years ended June 30, 2017 and 2016, and the related notes to the financial statements.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these 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 financial statements that are free from material misstatement, whether due to fraud or error.

#### Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the 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 entity'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 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 financial statements referred to above present fairly, in all material respects, the financial position of the Combined Investment Funds as of June 30, 2017, and the statements of changes in financial position for the fiscal years ended June 30, 2017 and 2016, in conformity with accounting principles generally accepted in the United States of America.

#### **Emphasis of Matter**

As explained in Note 1B to the financial statements of the combined investment funds, the real estate, private investment, alternative investment, and core fixed income funds include investments that are carried at the investment advisors' June 30, 2017 fair value, or net asset value equivalent. The Treasurer's staff reviews the estimated fair values provided by the investment advisors for reasonableness. In those instances in which an advisor's value appears to be overstated, this estimated fair value is adjusted accordingly. We reviewed the documentation and procedures used by the Treasury to determine the fair values, and found them to be appropriate and reasonable; however, because of the inherent uncertainty in valuing these investments, determination of the estimated fair value market values may differ from the actual values had a ready market existed for these investments. Our opinion is not modified with respect to this matter.

As discussed in Note 1 to the financial statements, the financial statements referred to in the first paragraph are intended to present only the Combined Investment Funds administered by the Office of the State Treasurer. They do not purport to, and do not, present fairly the financial position of the State of Connecticut as of June 30, 2017, and the changes in financial position for the fiscal years end June 30, 2017 and 2016, in conformity with generally accepted accounting principles in the United States of America. Our opinion is not modified with respect to this matter.

#### Other Matters

#### Required Supplementary Information

Management's Discussion and Analysis, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### Supplementary Information

Our audit was made for the purpose of forming an opinion on the financial statements of the Combined Investment Funds as a whole. Certain other financial information, which includes the Schedule of Net Position by Investment Fund, Schedules of Changes in Net Position by Investment Fund, Total Net Position Value by Pension Plans and Trust Funds and the Schedules of Investment Activity by Pension Plan and by Trust contained within the investment section of this document, is presented for purposes of additional analysis and is not a required part of the financial statements of the combined investment funds. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements of the combined investment funds and certain additional procedures, including comparing and

reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is presented fairly in all material respects in relation to the financial statements taken as a whole.

#### Other Information

The introductory, investment and statistical sections include information other than the schedules noted within the investment section that is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information other than the schedules specifically noted within the investment section, has not been subjected to the auditing procedures applied in the audit of the basic financial statement and, accordingly, we do not express an opinion or provide any assurance on it.

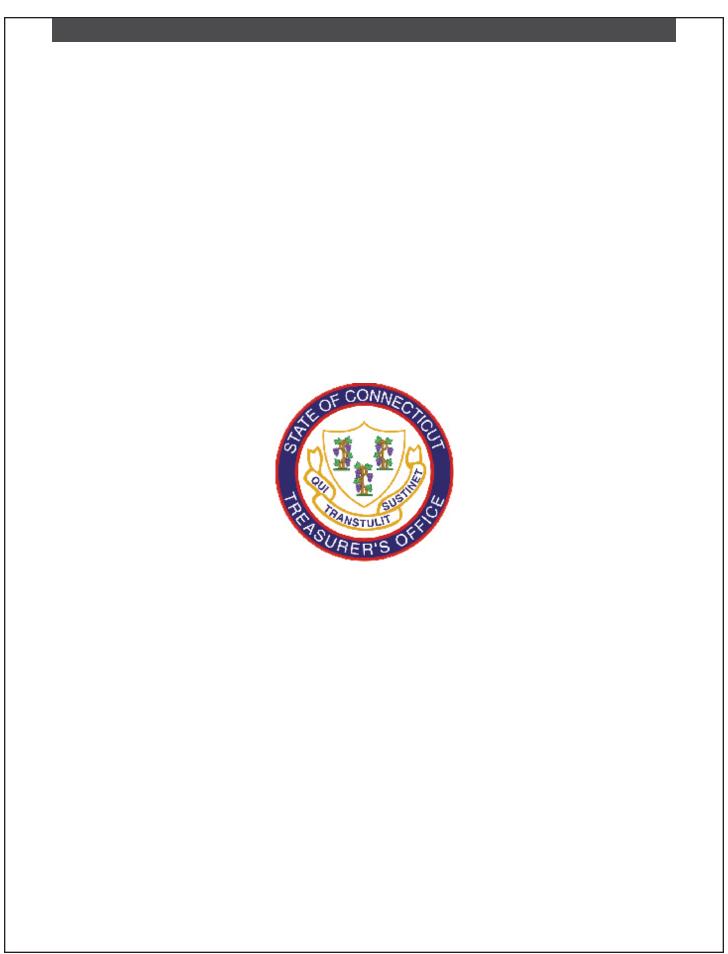
#### Other Reporting Required by Government Auditing Standards

In accordance with Government Auditing Standards, we have also issued our report dated December 29, 2017, on our consideration of the State Treasury's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report will be issued under separate cover in the Independent Auditors' Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with Government Auditing Standards for the Fiscal Year Ended June 30, 2017, and is an integral part of an audit performed in accordance with Government Auditing Standards and should be considered in assessing the results of our audit.

John C. Geragosian State Auditor

Robert J. Kane State Auditor

December 29, 2017 State Capitol Hartford, Connecticut



#### **MANAGEMENT'S DISCUSSION AND ANALYSIS**

This section presents Management's Discussion and Analysis (MD&A) of the Comprehensive Annual Financial Report (CAFR) of the State of Connecticut's Office of the Treasurer Combined Investment Funds (CIF) financial position and performance for the fiscal year ended June 30, 2017. It is presented as a narrative overview and analysis. Management of the State of Connecticut's Office of the Treasurer encourage readers to review it in conjunction with the transmittal letter included in the Introductory Section at the front of this report and the financial statements in the Financial Section that follow.

The Combined Investment Funds serve as an investment vehicle for the six State pension plans and nine trust funds collectively known as the Connecticut Retirement Plans and Trust Funds representing the pension funds of the State teachers, State and municipal employees, as well as non-retirement trust funds that support academic programs, grants and initiatives throughout the State and are managed for the sole benefit of the participants. CIF investments range in investment diversity from domestic and international stocks to fixed income, real estate and private investment equity. Investments of the pension plans and trust funds are combined in a commingled investment pool as authorized by state statute. Each pension plan and trust fund owns an equity position in the CIF and receives proportionate investment income from the CIF in accordance with each respective ownership percentage. The pension plan and trust fund's allocated share of each type of investment in the CIF is shown in the Schedule of Changes in Net. Investment gains or losses are also reported in the Statement of Changes in Net Position of each pension plan and trust. The Market Value per share is therefore approximately the same for each of the pension plans and trust funds investments in the CIF.

The CIF financial statements reported by the Treasurer's Office for which the Treasurer has fiduciary responsibility for the investment thereof follow this MD&A and provide detailed information about the individual funds.

## FINANCIAL HIGHLIGHTS Condensed Financial Information

#### **Combined Investment Funds**

#### Net Position and Changes in Net Position

The net position of the Combined Investment Funds at the close of the 2017 fiscal year was \$32.5 billion, an increase of \$3.3 billion from the previous year. The change in net position resulted from a \$4.1 billion increase from operations (realized and unrealized gains and investment income) partly offset by \$0.8 billion of net redemptions from the Combined Investment Funds comprised of net beneficiary distributions.

The net position of the Combined Investment Funds at the close of the 2016 fiscal year was \$29.2 billion, a decrease of \$0.6 billion from the previous year. The change in net position resulted from a minor increase from operations (realized and unrealized gains and investment income) offset by \$0.6 billion of net cash withdrawals from the Combined Investment Funds comprised of net beneficiary distributions.

#### Assets held in trust for Participants

A summary of the net position of assets held in trust for participants is presented below.

## Condensed Statement of Net Position Fiscal Year Ended June 30,

Assets	2017	Increase (Decrease)	2016	Increase (Decrease)	2015
Investments at Fair Value	¢22 E60 27E 166	#2 262 220 46E	¢20 206 055 004	¢/764 204 8E0\	¢20 070 256 951
Investments at Fair Value	\$32,568,375,166	\$3,362,320,165	\$29,206,055,001	\$(764,201,850)	\$29,970,256,851
Cash, Receivables and Other	10,300,741,694	(4,597,191,581)	14,897,933,275	4,289,147,010	10,608,786,265
Total Assets	42,869,116,860	(1,234,871,416)	44,103,988,276	3,524,945,160	40,579,043,116
Liabilities	(10,321,246,846)	4,536,821,669	(14,858,068,515)	(4,146,001,915)	(10,712,066,600)
Net Position	\$32,547,870,014	\$3,301,950,253	\$29,245,919,761	\$(621,056,755)	\$29,866,976,516

#### MANAGEMENT'S DISCUSSION AND ANALYSIS

## Condensed Statement of Changes in Net Position Fiscal Year Ended June 30,

Additions	2017	Increase (Decrease)	2016	Increase (Decrease)	2015
Dividends	\$510,388,935	\$50,435,311	\$459,953,624	\$(42,960,324)	502,913,948
Interest	308,532,848	(28,740,648)	337,273,496	75,263,268	262,010,228
Securities Lending & Other Incom	ne 48,252,029	19,482,997	28,769,032	6,012,543	22,756,489
Total Investment Income	867,173,812	41,177,660	825,996,152	38,315,487	787,680,665
Total Investment Expenses	99,529,828	8,875,246	90,654,582	3,156,155	87,498,427
Net Investment Income	767,643,984	32,302,414	735,341,570	35,159,332	700,182,238
Net Increase (Decrease) in Fair Value of Investments and					
Foreign Currency Net Increase (Decrease) in Net Position resulting	3,332,743,095	4,052,859,827	(720,116,732)	(933,063,096)	212,946,364
from operations	4,100,387,079	4,085,162,241	15,224,838	(897,903,764)	913,128,602
Purchase of Units by					
Participants	2,687,016,102	222,634,561	2,464,381,541	(546,025,125)	3,010,406,666
Total Additions	6,787,403,181	4,307,796,802	2,479,606,379	(1,443,928,889)	3,923,535,268
Deductions					
Administrative Expense	4,000,655	(602,017)	4,602,672	(19,373)	4,622,045
Distribution of Income to					
Unit Owners	24,306,542	10,836,504	13,470,038	4,006,919	9,463,119
Redemption of Units by					
Participants	3,457,145,731	374,555,307	3,082,590,424	(514,008,330)	3,596,598,754
Total Deductions	3,485,452,928	384,789,794	3,100,663,134	(510,020,784)	3,610,683,918
Change in Net Position	3,301,950,253	3,923,007,008	(621,056,755)	(933,908,105)	312,851,350
Net Position – Beginning of year	29,245,919,761	(621,056,755)	29,866,976,516	312,851,350	29,554,125,166
Net Position – End of year	\$32,547,870,014	\$3,301,950,253	\$29,245,919,761	\$(621,056,755)	\$29,866,976,516
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#### **OVERVIEW OF THE FINANCIAL STATEMENTS**

This discussion and analysis is an introduction to the Office of the Treasurer's Combined Investment Funds basic financial statements, which are comprised of: 1) Statement of Net Position, 2) Statement of Changes in Net Position and 3) Notes to the Financial Statements.

The Statements of Net Position and Changes in Net Position are two financial statements that report information about the Combined Investment Funds. These statements include all assets and liabilities using the accrual basis of accounting. The current year's revenues and expenses are taken into account regardless of when cash is received or paid.

The Statement of Net Position presents all of the Combined Investment Funds assets and liabilities, with the difference between the two reported as "net position". Over time, increases and decreases in net position measure whether the Combined Investment Funds financial position is improving or deteriorating.

The Statement of Changes in Net Position presents information showing how the Combined Investment Funds net assets changed during the most recent year. All changes in net assets are reported as soon as the underlying events giving rise to the change occurs, regardless of the timing of related cash flows. Therefore, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods (eg. security lending rebates and dividend and interest income).

The Notes to the Financial Statements provide additional information that is essential to a full understanding of the data provided in the Combined Investment Funds financial statements.

#### MANAGEMENT'S DISCUSSION AND ANALYSIS

#### **ECONOMIC CONDITIONS AND OUTLOOK**

Domestic growth, as measured by Gross Domestic Product (GDP), experienced modest growth during the fiscal year. For Fiscal Year 2017, GDP (on a year-over-year basis) ranged between 1.5 percent and 2.2 percent. For the entire fiscal year, GDP averaged a 1.9 percent year-over-year rate, up from Fiscal Year 2016's 1.8 percent rate. Meanwhile the unemployment rate ended the fiscal year at 4.4 percent, down from the 4.9 percent rate at the end of Fiscal Year 2016. During the course of the fiscal year, approximately 2.2 million people were added to payrolls.

Domestic inflation averaged 1.8 percent during the fiscal year, up sharply from 0.7 percent in fiscal year 2016. Excluding the more volatile food and energy components, inflation during the fiscal year averaged 2.1 percent, unchanged from Fiscal Year 2016. Similar to domestic inflation, inflation in the Eurozone was stronger as well, with an average inflation rate of 1.1 percent, up from 0.0 percent during the 2016 fiscal year period.

Connecticut's unemployment rate has continued to decline from a high of 9.5 percent in October 2010 to 5.0 percent in July 2017, compared to the national unemployment rate of 4.3 percent. The State Comptroller reported on September 29, 2017 that the State's General Fund ended the 2017 fiscal year with a pre-audited \$22.7 million deficit which will be eliminated through a transfer from the Budget Reserve Fund.

#### CONTACTING THE OFFICE OF THE TREASURER

This Comprehensive Annual Financial Report is designed to provide a general overview of the CIF and to show the Office of the Treasurer's accountability for its stewardship of CIF assets. Questions about this report or requests for additional information should be addressed to:

Office of the Treasurer 55 Elm Street Hartford, CT 06106-1773 Telephone (860) 702-3000 www.ott.ct.gov

## STATEMENT OF NET POSITION JUNE 30, 2017

	TOTAL
ASSETS	
Investments in Securities, at Fair Value	•
Liquidity Fund	\$ -
Cash Equivalents	283,293,693
Asset Backed Securities	254,922,819
Government Securities	3,701,714,063
Government Agency Securities	716,184,623
Mortgage Backed Securities	280,579,047
Corporate Debt	4,037,232,777
Convertible Securities	51,662,496
Common Stock	15,327,223,987
Preferred Stock	77,158,462
Real Estate Investment Trust	319,238,833
Business Development Corportation	57,625,395
Mutual Fund	228,915,053
Limited Liability Corporation	1,156,486
Trusts	-
Limited Partnerships	7,231,467,432
Total Investments in Securities, at Fair Value	32,568,375,166
Cash	89,144,432
Receivables	
Foreign Exchange Contracts	7,804,771,380
Interest Receivable	78,637,964
Dividends Receivable	34,440,797
Due from Brokers	259,182,529
Foreign Taxes	16,147,498
Securities Lending Receivable	1,237,681
Reserve for Doubtful Receivables	(4,655,941)
Total Receivables	8,189,761,908
Total Noodivasion	0,100,701,000
Invested Securities Lending Collateral	2,020,761,587
Prepaid Expenses	1,073,767
Total Assets	42,869,116,860
<b>LIABILITIES</b> Payables	, ,
Foreign Exchange Contracts	7,816,967,543
Due to Brokers	463,602,882
Income Distribution	3,033,211
Other Payable	217,027
Total Payables	8,283,820,663
Securities Lending Collateral	2,020,761,587
Accrued Expenses	16,664,596
Total Liabilities	10,321,246,846
NET POSITION HELD IN TRUST FOR PARTICIPANTS	\$ 32,547,870,014
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The accompanying notes are an integral part of these financial statements.

## STATEMENT OF CHANGES IN NET POSITION FOR THE FISCAL YEAR ENDED JUNE 30, 2017

ADDITIONS		TOTAL
OPERATIONS Investment Income		
Dividends	\$	510,388,935
Interest		308,532,848
Other Income		21,127,292
Securities Lending		27,124,737
Total Income		867,173,812
Expenses		
Investment Advisory Fees		77,960,003
Custody and Transfer Agent Fees		3,471,588
Professional Fees		2,852,273
Security Lending Fees		1,576,512
Security Lending Rebates		11,360,474
Investment Expenses		2,308,978
Total Expenses	-	99,529,828
Net Investment Income		767,643,984
Net Increase (Decrease) in the Fair Value of Investments and Foreign Currency		3,332,743,095
		-, , -,
Net Increase (Decrease) in Net Position Resulting from Operations		4,100,387,079
Resulting from Operations		4,100,007,073
Unit Transactions Purchase of Units by Participants		2,687,016,102
TOTAL ADDITIONS		6,787,403,181
DEDUCTIONS Administrative Expenses:		
Salary and Fringe Benefits		(4,000,655)
Distributions to Unit Owners: Income Distributed		(24,306,542)
Unit Transactions Redemption of Units by Participants		(3,457,145,731)
TOTAL DEDUCTIONS		(3,485,452,928)
Change in Net Position Held in Trust for Participants Net Position- Beginning of Period		3,301,950,253
		29,245,919,761
Net Position- End of Period	\$ 3	32,547,870,014

The accompanying notes are an integral part of these financial statements

## STATEMENT OF CHANGES IN NET POSITION FOR THE FISCAL YEAR ENDED JUNE 30, 2016

ADDITIONS		TOTAL
OPERATIONS		
Investment Income		
Dividends	\$	459,953,624
Interest		337,273,496
Other Income		7,688,194
Securities Lending		21,080,838
Total Income		825,996,152
Expenses		
Investment Advisory Fees		74,630,968
Custody and Transfer Agent Fees		3,284,270
Professional Fees		3,380,185
Security Lending Fees		1,574,507
Security Lending Rebates		5,335,764
Investment Expenses		2,448,888
Total Expenses		90,654,582
rotal Expenses		90,054,562
Net Investment Income		735,341,570
Net Increase (Decrease)		
in the Fair Value of Investments		
and Foreign Currency		(720,116,732)
Net Increase (Decrease) in Net Position		
Resulting from Operations		15,224,838
Unit Transactions		
Purchase of Units by Participants		2,464,381,541
, ,		
TOTAL ADDITIONS		2,479,606,379
DEDUCTIONS		
Administrative Expenses:		
Salary and Fringe Benefits		(4,602,672)
Distributions to Unit Owners:		
Income Distributed		(13,470,038)
Half Towns of the		
Unit Transactions		(2.002.500.424)
Redemption of Units by Participants		(3,082,590,424)
TOTAL DEDUCTIONS		(3,100,663,134)
Change in Net Position Held in Trust for Participants		(621,056,755)
Net Position- Beginning of Period	-	29,866,976,516
Net Position- End of Period	\$	29,245,919,761
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The accompanying notes are an integral part of these financial statements

#### **NOTES TO FINANCIAL STATEMENTS**

#### NOTE 1: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The Combined Investment Funds (CIF) are separate legally defined funds, which have been created by the Treasurer of the State of Connecticut (the Treasurer) under the authority of the Connecticut General Statutes (CGS) Section 3-31b. The CIF are open-end, unitized portfolios consisting of the Liquidity Fund, Alternative Investment Fund, Mutual Equity Fund, Core Fixed Income Fund, Inflation Linked Bond Fund, Emerging Market Debt Fund, High Yield Debt Fund, Developed Market International Stock Fund, Emerging Market International Stock Fund, and the Private Investment Fund. The CIF were established to provide a means for investing pension and other trust fund assets entrusted to the Treasurer in a variety of investment classes. The units of the CIF are owned by these pension and trust funds. For financial reporting purposes of the State of Connecticut, the CIF are considered to be external investment pools and are not reported in the State's combined financial statements. Instead, each fund type's investment in the CIF is reported as "equity in combined investment funds" in the State's combined balance sheet.

The Treasurer, as sole fiduciary of the CIF, is authorized to invest in a broad range of fixed income and equity securities, as well as real estate properties, mortgages and private equity. This authority is restricted only by statute. Such limitations include prohibitions against investment in companies doing business in Iran and those doing business in Northern Ireland, but who have failed to implement the MacBride Principles (CGS Section 3–13h). Other legislation restricts the maximum aggregate investment in equity securities to 60% of the fair value of the Trust Funds.

The CIF are not subject to regulatory oversight and are not registered with the Securities and Exchange Commission as an investment company.

The following is a summary of significant accounting policies consistently followed by the CIF in the preparation of their financial statements.

#### A. NEW PRONOUNCEMENTS

There were no new pronouncements for the fiscal year ending June 30, 2017.

#### **B. SECURITY VALUATION**

Investments are stated at fair value for each of the CIFs as described below.

For the Alternative Investment, Real Estate and Private Investment Funds substantially all of the investments, other than those in the Liquidity Fund, are shown at values that are carried at the general partner's June 30, 2017 fair value, or net asset value (NAV) equivalent. The Core Fixed Income Fund also include investments that are carried at the general partner's June 30, 2017 fair value, or net asset value (NAV) equivalent. The CIF's assets are fair valued quarterly by the General Partner and at such other times as determined by the General Partner and are based on Accounting Standards Codification (ASC) 820 "Fair Value Measurements and Disclosures". The fair value the General Partner assigned to these investments is based upon available information and does not represent necessarily the amount that ultimately might be realized upon sale or maturity. Because of the inherent uncertainty of the fair valuation process, this estimated fair value presented by the General Partner may differ significantly from the fair value that would have been used had a ready market for the security existed, and the difference could be material. The General Partner is responsible for coordination and oversight of all investment valuations.

The Treasurer's staff reviews the valuations for all investments in these alternative asset classes to see that they are reasonable and consistent. Due to the inherent uncertainty of valuation, those estimated values may differ significantly from the values that would have been used had a ready market for the securities existed and the differences could be material.

#### **Liquidity Fund**

Existing money market vehicles are valued at amortized cost on a daily basis, which approximates fair value. A standard price hierarchy is utilized in the daily valuation of the Liquidity Fund.

The Liquidity Fund at times may utilize foreign currency contracts to facilitate transactions in foreign securities and to manage the CIF's currency exposure. Contracts to buy are used to acquire exposure to foreign currencies, while contracts to sell are used to hedge the CIF's investments against currency fluctuations. Also, a contract to buy or sell can offset a previous contract. Losses may arise from changes in the value of the foreign currency or failure of the

#### **NOTES TO FINANCIAL STATEMENTS (Continued)**

counterparties to perform under the contracts' terms.

Investing in forward currency contracts may increase the volatility of the CIF's' performance. Price movements of currency contracts are influenced by, among other things, international trade, fiscal, monetary, and exchange control programs and policies; national and international political and economic events; and changes in worldwide interest rates. Governments from time to time intervene in the currency markets with the specific intent of influencing currency prices. Such intervention may cause certain currency prices to move rapidly. Additionally, the currency markets may be particularly sensitive to interest rate fluctuations.

The U. S. dollar value of forward foreign currency contracts is determined using forward currency exchange rates supplied by a quotation service.

Investments are valued based on quoted market prices when available. For securities that have no quoted market value, fair value is estimated based on yields currently available on comparable securities of issuers with similar credit ratings and maturities.

"When-issued" securities held in the fund are fully collateralized by U.S Government securities and such collateral is in the possession of the CIF's custodial bank. The collateral is evaluated daily to ensure its market value exceeds the current market value of the instruments including accrued interest.

The Liquidity Fund invests in Mortgage Backed Securities (MBSs) and Asset Backed Securities (ABSs), which are included in the Statement of Net Position. These are bonds issued by a special purpose trust that collects payments on an underlying collateral pool of mortgage or other loans and remits payments to bondholders. The bonds are structured in a series of classes or tranches, each with a different coupon rate and stated maturity date. Interest payments to the bondholders are made in accordance with the trust indentures and amounts received from borrowers in excess of interest payments and expenses are used to amortize the principal on the bonds. Such principal payments are made to retire the tranches of bonds in order of their stated maturity. Because mortgage prepayments are largely dependent on market interest rates, the ultimate maturity date of the bonds is unpredictable and is sensitive to changes in market interest rates, but is generally prior to the stated maturity date. At June 30, 2017, the Fund held MBSs of \$138,464,921 and ABSs of \$168,082,920.

Repurchase agreements held in the fund are collateralized at 100 percent of the securities' value. Such transactions are only entered into with primary government securities dealers who report directly to the Federal Reserve Bank of New York. The collateral is evaluated daily to ensure its fair value exceeds the current fair value of the repurchase agreements including accrued interest.

#### Alternative Investment Fund

Investments in securities not listed on security exchanges and investments in limited partnerships, which comprise substantially all of the CIF's investments, are carried at the general partner's June 30, 2017 fair value, or net asset value (NAV) equivalent. The Treasurer's staff reviews the estimated fair values provided by the investment advisors for reasonableness. In those instances where an advisor's value appears to be overstated, this estimated fair value is adjusted accordingly.

#### Mutual Equity Fund

Securities traded on securities exchanges are valued at the last reported sales price on the last business day of the fiscal year. Corporate bonds and certain over-the-counter stocks are valued at the mean of bid and asked prices as furnished by broker-dealers.

#### Core Fixed Income Fund

Investments are valued based on quoted market prices when available. For securities that have no quoted market value, fair value is estimated based on yields currently available on comparable securities of issuers with similar credit ratings and maturities.

"When-issued" securities held in the CIF are fully collateralized by U.S Government securities and such collateral is in the possession of the CIF's custodial bank. The collateral is evaluated daily to ensure its market value exceeds the current market value of the instruments including accrued interest.

#### **NOTES TO FINANCIAL STATEMENTS (Continued)**

The Core Fixed Income Fund invests in Mortgage Backed Securities (MBSs) and Asset Backed Securities (ABSs), which are included in the Statement of Net Position. These are bonds issued by a special purpose trust that collects payments on an underlying collateral pool of mortgage or other loans and remits payments to bondholders. The bonds are structured in a series of classes or tranches, each with a different coupon rate and stated maturity date. Interest payments to the bondholders are made in accordance with the trust indentures and amounts received from borrowers in excess of interest payments and expenses are used to amortize the principal on the bonds. Such principal payments are made to retire the tranches of bonds in order of their stated maturity. Because mortgage prepayments are largely dependent on market interest rates, the ultimate maturity date of the bonds is unpredictable and is sensitive to changes in market interest rates, but is generally prior to the stated maturity date. At June 30, 2017, the CIF held MBSs of \$142,114,126 and ABSs of \$87,031,155.

Interest-only stripped mortgage backed securities (IOs), a specialized type of Collateralized Mortgage Obligation (CMO), are included as Mortgage Backed Securities on the Statement of Net Position. The cash flow on these investments is derived from the interest payments on the underlying mortgage loans. Prepayments on the underlying loans curtail these interest payments, reducing the value of the IOs and, as such, these instruments are extremely sensitive to changes in interest rates, which encourage or discourage such prepayments. At June 30, 2017 the CIF's holdings had a fair value of \$470,097 and a cost of \$822,382. The valuations were provided by the custodian.

Investments in non-U.S. fixed income securities are utilized on an opportunistic basis. Certain advisors within the Core Fixed Income Fund are authorized to invest in global fixed income securities.

Investments in securities not listed on security exchanges and investments in limited partnerships are carried at the general partner's June 30, 2017 fair value or net asset value (NAV) equivalent. The Treasurer's staff reviews the estimated fair values provided by the investment advisors for reasonableness. In those instances where an advisor's value appears to be overstated, this estimated fair value is adjusted accordingly.

#### Inflation Linked Bond Fund

Investments are valued based on quoted market prices when available. For securities that have no quoted market value, fair value is estimated based on yields currently available on comparable securities of issuers with similar credit ratings and maturities.

"When-issued" securities held in the CIF are fully collateralized by U.S Government securities and such collateral is in the possession of the CIF's custodial bank. The collateral is evaluated daily to ensure its market value exceeds the current market value of the instruments including accrued interest.

Investments in non-U.S. fixed income securities are utilized on an opportunistic basis. Certain advisors within the Inflation Linked Bond Fund are authorized to invest in global fixed income securities.

The Inflation Linked Bond Fund sometimes invests in Asset Backed Securities (ABSs), which are included in the Statement of Net Position. These are bonds issued by a special purpose trust that collects payments on an underlying collateral pool of mortgage or other loans and remits payments to bondholders. The bonds are structured in a series of classes or tranches, each with a different coupon rate and stated maturity date. Interest payments to the bondholders are made in accordance with the trust indentures and amounts received from borrowers in excess of interest payments and expenses are used to amortize the principal on the bonds. Such principal payments are made to retire the tranches of bonds in order of their stated maturity. Because mortgage prepayments are largely dependent on market interest rates, the ultimate maturity date of the bonds is unpredictable and is sensitive to changes in market interest rates, but is generally prior to the stated maturity date. At June 30, 2017, the CIF held ABSs, consisting of swaps and resulting in a fair value of \$754,194.

#### **Emerging Market Debt Fund**

Investments are valued based on quoted market prices when available. For securities that have no quoted market value, fair value is estimated based on yields currently available on comparable securities of issuers with similar credit ratings.

The Emerging Market Debt Fund invests in securities in emerging market countries that are either U.S. dollar-denominated or issued in the local currency of the country. In addition to bond interest rate sensitivity, the local currency bonds' values will fluctuate with exchange rates.

#### NOTES TO FINANCIAL STATEMENTS (Continued)

"When-issued" securities held in the CIF are fully collateralized by U.S Government securities and such collateral is in the possession of the CIF's custodian. The collateral is evaluated daily to ensure its market value exceeds the current market value of the instruments including accrued interest.

The Emerging Market Debt Fund sometimes invests in Asset Backed Securities (ABSs), which are included in the Statement of Net Position. These are bonds issued by a special purpose trust that collects payments on an underlying collateral pool of mortgage or other loans and remits payments to bondholders. The bonds are structured in a series of classes or tranches, each with a different coupon rate and stated maturity date. Interest payments to the bondholders are made in accordance with the trust indentures and amounts received from borrowers in excess of interest payments and expenses are used to amortize the principal on the bonds. Such principal payments are made to retire the tranches of bonds in order of their stated maturity. Because mortgage prepayments are largely dependent on market interest rates, the ultimate maturity date of the bonds is unpredictable and is sensitive to changes in market interest rates, but is generally prior to the stated maturity date. At June 30, 2017, the CIF held ABSs, consisting of swaps and resulting in a fair value of \$243,071.

#### High Yield Debt Fund

Investments are valued based on quoted market prices when available. For securities that have no quoted market value, fair value is estimated based on yields currently available on comparable securities of issuers with similar credit ratings and maturities.

"When-issued" securities held in the fund are fully collateralized by U.S Government securities and such collateral is in the possession of the CIF's custodial bank. The collateral is evaluated daily to ensure its market value exceeds the current market value of the instruments including accrued interest.

Investments in non-U.S. fixed income securities are utilized on an opportunistic basis. Certain advisors within the High Yield Debt Fund are authorized to invest in global fixed income securities.

The Inflation Linked Bond Fund sometimes invests in Asset Backed Securities (ABSs), which are included in the Statement of Net Position. These are bonds issued by a special purpose trust that collects payments on an underlying collateral pool of mortgage or other loans and remits payments to bondholders. The bonds are structured in a series of classes or tranches, each with a different coupon rate and stated maturity date. Interest payments to the bondholders are made in accordance with the trust indentures and amounts received from borrowers in excess of interest payments and expenses are used to amortize the principal on the bonds. Such principal payments are made to retire the tranches of bonds in order of their stated maturity. Because mortgage prepayments are largely dependent on market interest rates, the ultimate maturity date of the bonds is unpredictable and is sensitive to changes in market interest rates, but is generally prior to the stated maturity date. At June 30, 2017, the CIF held ABSs, consisting of swaps and resulting in a fair value of (\$1,188,521).

#### Developed Market International Stock Fund

The Developed Market International Stock Fund at times may utilize foreign currency contracts to facilitate transactions in foreign securities and to manage the CIF's currency exposure. Contracts to buy are used to acquire exposure to foreign currencies, while contracts to sell are used to hedge the CIF's' investments against currency fluctuations. Also, a contract to buy or sell can offset a previous contract. Losses may arise from changes in the value of the foreign currency or failure of the counterparties to perform under the contracts' terms.

Investing in forward currency contracts may increase the volatility of the CIF's' performance. Price movements of currency contracts are influenced by, among other things, international trade, fiscal, monetary, and exchange control programs and policies; national and international political and economic events; and changes in worldwide interest rates. Governments from time to time intervene in the currency markets with the specific intent of influencing currency prices. Such intervention may cause certain currency prices to move rapidly. Additionally, the currency markets may be particularly sensitive to interest rate fluctuations.

The U. S. dollar value of forward foreign currency contracts is determined using forward currency exchange rates supplied by a quotation service

Investments in securities listed on security exchanges are valued at the last reported sales price on the last business day of the fiscal year; securities traded in the over-the-counter market and listed securities for which no sale was reported

### NOTES TO FINANCIAL STATEMENTS (Continued)

on that date are valued at the mean of the last reported bid and asked prices.

Certain cash held in non-U.S. dollar denominated trading accounts is non-interest bearing.

### **Emerging Market International Stock Fund**

The Emerging Market International Stock Fund at times may utilize foreign currency contracts to facilitate transactions in foreign securities and to manage the CIF's' currency exposure. Contracts to buy are used to acquire exposure to foreign currencies, while contracts to sell are used to hedge the CIF's' investments against currency fluctuations. Also, a contract to buy or sell can offset a previous contract. Losses may arise from changes in the value of the foreign currency or failure of the counterparties to perform under the contracts' terms.

Investing in forward currency contracts may increase the volatility of the CIF's' performance. Price movements of currency contracts are influenced by, among other things, international trade, fiscal, monetary, and exchange control programs and policies; national and international political and economic events; and changes in worldwide interest rates. Governments from time to time intervene in the currency markets with the specific intent of influencing currency prices. Such intervention may cause certain currency prices to move rapidly. Additionally, the currency markets may be particularly sensitive to interest rate fluctuations.

The U. S. dollar value of forward foreign currency contracts is determined using forward currency exchange rates supplied by a quotation service

Investments in securities listed on security exchanges are valued at the last reported sales price on the last business day of the fiscal year; securities traded in the over-the-counter market and listed securities for which no sale was reported on that date are valued at the mean of the last reported bid and asked prices.

Certain cash held in non-U.S. dollar denominated trading accounts is non-interest bearing.

#### Real Estate Fund

Investments in securities not listed on security exchanges and investments in trusts, limited partnerships, and annuities, which comprise substantially all of the CIF's investments, are carried at the general partner's June 30, 2017 fair value, or net asset value (NAV) equivalent. The Treasurer's staff reviews estimated fair values provided by the investment advisors for reasonableness. In those instances where an advisor's value appears to be overstated, this estimated fair value is adjusted accordingly.

### Private Investment Fund

Investments in securities not listed on security exchanges and investments in limited partnerships and limited liability corporations, which comprise substantially all of the CIF's investments, are carried at the general partner's June 30, 2017 fair value, or net asset value (NAV) equivalent. The Treasurer's staff reviews estimated fair values provided by the investment advisors for reasonableness. In those instances where an advisor's value appears to be overstated, this estimated fair value is adjusted accordingly.

Fair values of the underlying investments are generally represented by cost unless there has been an additional arms-length indication of value, such as a public offering or a new investment by a third party.

### C. INVESTMENT TRANSACTIONS AND RELATED INCOME

Investment transactions are accounted for on a trade date basis. Dividend income is recognized as earned on the ex-dividend date. Interest income is recorded on the accrual basis as earned. Realized gains and losses are computed on the basis of the average cost of investments sold. Such amounts are calculated independent of and are presented as part of the Net Increase(Decrease)in the Fair Value of Investments on the Statement of Changes in Net Position. Realized gains and losses on investments held more than one fiscal year and sold in the current year were included as a change in the fair value of investments reported in the prior year(s) and the current year. Unrealized gains and losses represent the difference between the fair value and the cost of investments. The increase (decrease) in such difference is also accounted for in the Net Increase (Decrease) in Fair Value of Investments. In the CIF's' cost basis records, premiums are amortized using the straight-line method that approximates the interest method.

Dividends earned by the Private Investment, Real Estate and Alternative Investment Funds relate to investments that are not listed on security exchanges. Such dividends are recognized as income when received, generally net of

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

advisory fees.

#### D. FOREIGN CURRENCY TRANSLATION

The value of investments, assets and liabilities denominated in currencies other than U.S. dollars are translated into U.S. dollars based upon appropriate fiscal year end foreign exchange rates. Purchases and sales of foreign investments and income and expenses are converted into U.S. dollars based on currency exchange rates prevailing on the respective dates of such transactions. The CIF do not isolate that portion of the results of operations arising from changes in the exchange rates from that portion arising from changes in the market prices of securities.

#### E. SHARE TRANSACTIONS AND PRICING

All unit prices are determined at the end of each month based on the net asset value of each CIF divided by the number of units outstanding. Purchases and redemptions of units are based on the prior month end price and are generally processed on the first business day of the month.

#### F. EXPENSES

Expenses of the CIF, excluding certain management fees as discussed in more detail in note 1J, are recognized on the accrual basis and are deducted in calculating net investment income and net asset value on a monthly basis. Each of the CIF bears its direct expenses, such as investment advisory fees, and, in addition, each of the CIF is allocated a portion of the overhead expenses of the Pension Funds Management Division of the Office of the State Treasurer, which services the CIF. These expenses include salary and fringe benefit costs and other administrative expenses. Certain of these costs are allocated among the CIF based on relative net asset values. Other costs are charged directly based on the specific duties of personnel.

### G. DISTRIBUTIONS

Distributions to unit holders of the CIFs were discontinued after September 30, 2013.

### H. DERIVATIVE FINANCIAL INSTRUMENTS

GASB Statement Number 53 Accounting and Financial Reporting for Derivative Instruments, requires that the fair value of financial arrangements called derivatives or derivative instruments be reported in the financial statements. GASB defines a derivative instrument as a financial instrument or other contract with all of the following characteristics: a) It has one or more reference rates and (2) one or more notional amounts or payment provisions or both. b) It requires no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors. c) Its terms require or permit net settlement, it can readily be settled net by a means outside the contract, or it provides for delivery of an asset that puts the recipient in a position not substantially different from net settlement.

For the fiscal year ended June 30, 2017, the CIF maintained positions in a variety of such securities that are all reported at fair value on the Statement of Net Position. The following is a listing of such securities:

### Adjustable Rate Securities:

Adjustable Rate Securities:		
CIF	Cost	Fair Value
Liquidity	\$485,158,234	\$468,961,661
Core Fixed Income	144,901,985	145,297,233
Inflation Linked Bond	5,056,091	5,048,778
Emerging Market Debt	8,253,885	8,380,712
High Yield Debt	24,463,583	24,494,322
Asset Backed Securities:		
CIF	Cost	Fair Value
Liquidity	\$171,616,700	\$168,082,920
Core Fixed Income	86,850,325	87,031,155

#### **NOTES TO FINANCIAL STATEMENTS (Continued)**

Mortgage Backed Securities, Net of CMO's:					
CIF	Cost	Fair Value			
Liquidity	\$138,799,019	\$129,083,007			
Core Fixed Income	86,620,005	86,863,327			
CMO's:					
CIF	Cost	Fair Value			
Liquidity	\$9,530,700	\$9,381,914			
Core Fixed Income	55,469,343	55,250,799			
TBA's:					
CIF	Cost	Fair Value			
Core Fixed Income	\$118,613,510	\$118,184,621			
Interest Only:					
CIF	Cost	Fair Value			
Core Fixed Income	\$822,382	\$470,097			
Options:					
CIF	Cost	Fair Value			
Inflation Linked Bond	\$863,057	\$775,491			

The Inflation Linked Bond Fund held futures with a negative notional cost of (\$198,263,037) and an unrealized loss of \$412,624 reported in the Due from Brokers in the Statement of Net Position. The Core Fixed Income Fund held futures with a negative notional cost of (\$13,943,831) and an unrealized gain of \$84,506 reported in the Due from Brokers in the Statement of Net Position. The High Yield Debt Fund held futures with a negative notional cost of (\$16,140,454) and an unrealized gain of \$46,371 reported in the Due from Brokers in the Statement of Net Position The Developed Market International Stock also held futures with a notional cost of \$132,460,661 and an unrealized loss of \$2,498,395 reported in the Due from Brokers in the Statement of Net Position.

The Liquidity, Core Fixed Income, Inflation Linked, Emerging Market Debt, High Yield Debt, Developed Market International Stock and Emerging Market International Stock Funds were invested in foreign exchange contracts. The specific nature of these investments is discussed more fully in the foreign exchange contract note for each respective fund, where appropriate. These financial instruments are utilized for trading and other purposes. Those that are used for other than trading purposes are foreign exchange contracts, which can be used to facilitate trade settlements, and may serve as foreign currency hedges. The credit exposure resulting from such contracts is limited to the recorded fair value of the contracts on the Statement of Net Position.

The remaining such securities are utilized for trading purposes and are intended to enhance investment returns. All positions are reported at fair value and changes in fair value are reflected in income as they occur. The CIF's' credit exposure resulting from such investments is limited to the recorded fair value of the derivative financial instruments.

The Liquidity, Mutual Equity, Emerging Market Debt, and the Emerging Market International Stock Funds also utilize derivatives indirectly through participation in mutual funds. These mutual funds may hold derivatives from time to time. Such derivatives may be used for hedging, investment and risk management purposes. These transactions subject the investor to credit and market risk.

#### I. COMBINATION/ELIMINATION ENTRY

The financial statements depict a full presentation of each of the CIF. However, one of these funds, the Liquidity Fund, is owned both directly by the pension plans and trust funds which have accounts in the Liquidity Fund, and also indirectly because each of the other CIF has an account with the Liquidity Fund. As a result, elimination entries are presented for the purpose of netting out balances and transactions relating to the ownership of the Liquidity Fund by the other CIF. The combined presentation totals to the overall net assets owned by the pension plans and trust funds. In order to help the Liquidity Fund managers better manage their cash balances, realized gains (losses) are no longer included in the Liquidity Fund income sweep.

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

### J. FEES AND REALIZED GAINS

Investment advisory fees incurred for certain investments in the Alternative Investment, Core Fixed Income, Private Investment and Real Estate Funds are generally charged to the entity in which the CIF has been invested. In such cases, these amounts are either capitalized in the cost basis of the investment on a cash basis and become a component of unrealized gain (loss) or are netted against the corresponding income generated. Certain other fees are incurred directly by the CIF and are expensed. These expensed amounts are accrued and the expense is reflected as Investment Advisory Fees on the Statement of Changes in Net Position. The appropriate treatment is determined depending on the terms of the investment agreement. Capitalized fees are not separately presented on the Statement of Changes in Net Position. These fees are borne by the partners in their respective shares. The following is a listing of the Funds total fees for the fiscal year ended June 30, 2017:

CIF	Ne	etted	Capital	ized	Expe	ensed	Total	
Alternative Investment	\$ 10,49	92,724	\$ 549	9,956	\$	-	\$ 11,042,680	0
Core Fixed Income	9	19,783		-	2,	602,485	3,522,268	8
Private Investment	11,0	50,087	16,068	3,437	2,	656,009	29,774,533	3
Real Estate	9,9	55,336	4,359	9,943	9,	398,239	23,713,518	8

Periodically the Private Investment and Real Estate Funds may receive security distributions in lieu of cash. These securities are included as Common Stock and Real Estate Investment Trust, respectively on the Statement of Net Position. When one of these individual securities is sold the realized gain or loss is included in the Net Increase (Decrease) in the Fair Value of Investments presented on the Statement of Changes in Net Position. The Private Investment Fund incurred realized gain of \$873,759 for such transactions for the fiscal year ended June 30, 2017.

The Liquidity, Mutual Equity, Emerging Market Debt and the Emerging Market International Stock funds include investments in a limited partnership and investments in mutual funds. Fees incurred from these investments are deducted from the operations of the CIF and are not separately presented on the Statement of Changes in Net Position. The following is a listing of the corresponding fees incurred for the fiscal year ended June 30, 2017:

CIF		Amount
Liquidity	\$	175,794
Emerging Market Debt		17,224,896
Developed Market International Stock	(	8,091
Emerging Market International Stock		1,203,271

Investment advisory fees for the Liquidity, Mutual Equity, Core Fixed Income, Inflation Linked Bond, Emerging Market Debt, High Yield Debt, Developed Market International Stock and the Emerging Market International Stock Funds, except those noted above are estimated monthly based on periodic reviews of asset values. Accordingly, the amounts listed as Investment Advisory Fees on the Statement of Changes in Net Position represent estimates of annual management fee expenses.

#### K. RECLASSIFICATIONS

Certain prior year amounts have been reclassified to conform to the current year presentation. Net Realized Gain (Loss) and Net Change in Unrealized Gain(Loss) on investments and foreign currency is now presented as Net Increase (Decrease) in the Fair Value of Investments and Foreign Currency.

### L. RELATED PARTY AND OTHER TRANSACTIONS

There were no related party transactions during the fiscal year. Additionally, there were no "soft dollar" transactions. Soft dollar transactions result from arrangements whereby firms doing business with organizations such as the Treasury arrange for third parties to provide other services in lieu of cash payment. These arrangements tend to obscure the true cost of operations and can result in potential overpayment for services. Such transactions have been prohibited by the Treasurer.

#### M. ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

revenues and expenses during the reporting period. Actual results could differ from those estimates.

# NOTE 2: DEPOSITS, INVESTMENTS AND SECURITIES LENDING PROGRAM Deposits:

The CIF minimize custodial credit risk by maintaining certain restrictions set forth in the Investment Policy Statement. Custodial credit risk is risk associated with the failure of a depository financial institution. In the event of a depository financial institution's failure the CIF would not be able to recover its deposits or collateralized securities that are in the possession of the outside parties. The CIF utilize a Liquidity Account that is a cash management pool investing primarily in highly liquid money market securities such as commercial paper, certificates of deposit, bank notes and other cash equivalents, asset backed securities, and floating rate corporate bonds. Deposits shall consist of cash instruments generally maturing in less than one year and having a quality rating, by at least one widely recognized rating agency, of A-1 or P-1 and earn interest at a rate equal to or better than the International Business Communications (IBC) First Tier Institutions-Only Rated Money Fund Report Index.

At June 30, 2017, the reported amount of Funds deposits were \$89,144,432 and the bank balance was \$89,144,432. Of the bank amount, \$89,144,432 was uncollateralized and uninsured. Through the Securities Lending Program, \$2,023,662,776 was collateralized with securities held by the counterparty's trust department or agent but not in the State's name.

### Investments:

The CIF measure and record their investments using fair value measurement guidelines established by GAAP. The guidelines recognize a three tired fair value hierarchy, as follows: Level 1: Quoted prices for identical investments in active market; Level 2: Observable inputs other than quoted market price; and, Level 3 Unobservable inputs. At June 30, 2017 the CIF have the following recurring fair value measurements.

		Fair Value	<u>Measurements</u>					
Investments by Fair Value Level	Total	Level 1	Level 2	Level 3				
Liquidity Fund	\$ -	\$ -	\$ -	\$ -				
Cash Equivalents	283,293,693	652,000	282,641,693					
Asset Backed Securities	254,922,819	-	254,922,819	-				
Government Securities	3,701,714,063	1,256,715,059	2,444,999,004	-				
Government Agency Securities	716,184,623	-	716,184,623	-				
Mortgage Backed Securities	280,579,047	-	280,579,047	-				
Corporate Debt	4,037,232,777	-	3,939,687,518	97,545,259				
Convertible Securities	51,662,496	-	51,662,496	-				
Common Stock	15,327,223,987	15,327,223,987	-	-				
Preferred Stock	77,158,462	59,690,903	17,467,559	-				
Real Estate Investment Trust	319,238,833	273,995,685	45,243,148	-				
Business Development Corporation	57,625,395	57,625,395	-	-				
Mutual Fund	228,915,053	228,915,053	-	-				
Limited Partnerships (publicly traded)	522,410	522,410	-					
Total	\$25,336,273,658	\$17,205,340,492	\$8,033,387,907	\$97,545,259				

Investments Measured at the Net Asset Value(NAV)			Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Limited Liability Corporation	1,156,486	\$	-	Illiquid	N/A
Limited Partnerships	7,230,945,022		1,868,389,612	Illiquid	N/A
Total	7,232,101,508	\$	1,868,389,612		
Total Investments in Securities at Fair Value	\$32,568,375,166	_		<u>-</u>	

Pursuant to the Connecticut General Statutes, the Treasurer is the principal fiduciary of the plans and trusts, authorized to invest in a broad range of equity and fixed income securities, as well as real estate properties, mortgages and private equity. The CIF minimize credit risk, the risk of loss due to the failure of the security issuer or backer, in accordance with a comprehensive Investment Policy Statement (IPS), as developed by The Office of the Treasurer and the State's Investment Advisory Council (IAC), that provides policy guidelines for the plans and trusts and the CIF and includes an asset allocation plan. The asset allocation plan's main objective is to maximize investment returns over the long term at an acceptable level of risk. There have been no violations of these investment restrictions during the 2017 fiscal year.

The CIF's concentration of credit risk is the risk attributed to the magnitude of an investment in a single issuer. There are no restrictions in the amount that can be invested in Government Securities and Government Agency Securities.

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

The following table provides average credit quality and exposure levels information on the credit ratings associated with Funds investments in debt securities.

		Percentage
	Fair Value	of Fair Value
Aaa	\$2,614,408,280	28.04%
Aa	612,132,025	6.56
A	886,350,713	9.51
Baa	820,963,491	8.80
Ва	742,742,033	7.96
В	967,039,117	10.38
Caa	439,933,802	4.72
Ca	9,343,490	0.10
C	5,016,575	0.05
Prime 1	748,364,737	8.02
Prime 2	24,269,973	0.26
Prime 3	1,802,928	0.02
U.S. Government fixed income securities (not rated)	130,876,265	1.40
Non US Government fixed income securities (not rated)	304,998,050	3.27
Not Rated	1,017,348,039	10.91
	\$9,325,589,518	100.00%

The investments in the Private Equity, Real Estate and Alternative Investment Funds generally utilize investment vehicles such as annuity contracts, common stocks, limited partnerships and trusts to comply with investment guidelines against direct ownership of such investment assets.

The investments of the Liquidity, Mutual Equity, Core Fixed Income, Inflation Linked Bond, Emerging Market Debt, High Yield Debt, Developed Market International Stock and the Emerging Market International Stock Funds have securities registered under the Bank of New York Mellon's nominee name MAC & Co. and held by a designated agency of the Pension Plans and Trust Funds of the State of Connecticut, or bearer and held by a designated agency of the Pension Plans and Trust Funds of the State of Connecticut.

Investments of cash collateral received and invested under securities lending arrangements are registered and maintained by a third party administrator exclusively for the CIF. In circumstances where securities or letters of credit are received as collateral under securities lending arrangements, the collateral is held by the master custodian in a commingled pool in the third party administrator's name as trustee. Securities Lending collateral of \$2,023,662,776 is invested in various short term repurchase agreements classified which is classified as cash equivalents.

The following table provides information about the interest rate risks associated with the CIF investments. Interest rate risk is the risk that the value of fixed income securities will decline because of rising interest rates. The prices of fixed income securities with a longer time to maturity tend to be more sensitive to changes in interest rates and therefore, more volatile than those with shorter maturities. Investment Managers that manage the CRPTF portfolio are given full discretion to manage their portion of CRPTF assets within their respective guidelines and constraints. The guidelines and constraints require each manager to maintain a diversified portfolio at all times. In addition, each core manager is required to maintain a target duration that is similar to its respective benchmark which is typically the Barclay's Aggregate – an intermediate duration index.

The investments include certain short-term cash equivalents which include certificate of deposits and collateral, various long term items, and restricted assets by maturity in years.

		Investment Maturities (in Years)				
Investment Type	Fair Value	Less Than 1	<u>1 - 5</u>	<u>6 - 10</u>	More Than 10	
Cash Equivalents	\$283,293,693	\$283,293,693	\$0	\$0	\$0	
Asset Backed Securities	254,922,819	3,421,310	104,431,066	104,468,147	42,602,296	
Government Securities	3,701,714,063	226,328,300	1,522,901,765	856,578,687	1,095,905,311	
Government Agency Securities	716,184,623	95,297,380	53,914,240	21,968,013	545,004,990	
Mortgage Backed Securities	280,579,047	-	63,067,629	20,776,800	196,734,618	
Corporate Debt	4,037,232,777	1,360,182,144	1,448,360,981	916,313,518	312,376,134	
Convertible Debt	51,662,496	1,156,915	9,879,736	12,517,162	28,108,683	
	\$9,325,589,518	\$1,969,679,742	\$3,202,555,417	\$1,932,622,327	\$2,220,732,032	

Exposure to foreign currency risk results from investments in foreign currency-denominated equity or fixed income securities. As a means of limiting its exposure, the CIF utilize a strategic hedge ratio of 50% for the Developed Market

### NOTES TO FINANCIAL STATEMENTS (Continued)

International Stock Fund (DMISF). This strategic hedge ratio represents the neutral stance or desired long-term exposure to currency for the DMISF. To implement this policy, currency specialists actively manage the currency portfolio as an overlay strategy to the equity investment managers. These specialists may manage the portfolio passively or actively depending on opportunities in the market place. While managers within the fixed income portion of the portfolio are allowed to invest in non-U.S. dollar denominated securities, managers are required to limit that investment to a portion of their respective portfolios. The following table provides information on deposits and investments held in various foreign currencies, which are stated in U.S. dollars. Negative amounts are reflective of short positions.

				Fixed Income Securities				Equities		
Foreign Currency	Total	Cash	Cash Equiv	Government Securities	Corporate Debt	Asset Backed	Mortgage Backed	Common Stock	Preferred Stock	Real Estate Investment Trust
Argentine Peso	\$25,554,055	\$736,936	\$ -	\$23,355,279	\$1,461,840	\$ -	\$ -	\$ -	\$ -	\$ -
Australian Dollar	438,685,449	498,930	-	97,524,852	7,887,460	-	-	308,418,265	-	24,355,942
Brazilian Real	258,327,654	813,899	-	107,363,513	-	(9,821)	-	143,789,893	6,370,170	-
Canadian Dollar	120,512,388	1,497,599	-	21,062,610	-	(45,772)	-	97,935,729	-	62,222
Chilean Peso	18,436,190	-	-	413,756	-	-	-	18,022,434	-	
Colombian Peso	59,622,298	1,266,909	-	58,175,410	-	-	-	179,979	-	-
Czech Koruna	18,091,334	(737)	-	12,538,803	-	-	-	5,553,268	-	-
Danish Krone	117,933,921	119,558	-	1,281,442	-	-	-	116,532,921	-	-
Egyptian Pound	7,446,542	1,569,121	_	-	3,723,615	_	-	2,153,806	-	-
Euro Currency	2,352,030,954	4,207,687	_	246,731,502	6,902,529	(26,460)	-	2,066,018,579	17,323,865	10,873,252
Georgian Lari	2,128,403	-	_	· · · -	2,128,403		-	-	-	· · ·
Ghanaian Cedi	2,696,564	-	_	_	2,696,564	-	-	-	-	-
Hong Hong Dollar	715,345,683	1,500,269	_	-	-	-	-	706,795,556	-	7,049,858
Hungarian Forint	73,330,616		_	29,992,181	_	_	_	42,526,049	_	-
Iceland Krona	2.330	2,330	_	-	-	-	-	-	-	-
Indian Rupee	4,810,355	_	_	300,909	4,509,446	_	_	_	_	_
Indonesian Rupiah	155,857,832	613,129	_	54,873,446	38,907,320	_	_	61,463,937	_	_
Israeli Shekel	36,423,523	235.632	_	-	-	_	_	36,187,891	_	_
Japanese Yen	1,408,203,467	5,917,457	_	35,454,990	_	212,190	_	1,359,217,449	_	7,401,381
Malaysian Ringgit	93,381,385		_	77,031,244	_		_	14,798,879	_	
Mexican Peso	233,226,077		_	185.996.928	3.630.783	252.892	_	43,044,225	_	_
New Zealand Dollar		877,405	_	127,517,617	0,000,.00		_	14,825,129	_	_
Nigerian Naira	205,424	66,626	_	-	_	_	_	138,798	_	_
Norwegian Krone	58.528.632	,	_	6,414,408	_	_	_	51.654.797	_	_
Peruvian Nouveau S			_	26,245,810	_	_	_	-	_	_
Philippine Peso	46,124,646	5,418	_	1,945,313	_	_	_	44,173,915	_	_
Polish Zloty	145,366,374	67,406	_	100,203,598	_	_	_	45,095,370	_	_
Pound Sterling	1,233,149,377	2,466,504	6,374	240,599,792	7,082,254	(61,166)	3,216,406	967,733,881	_	12,105,332
Romanian Leu	9,501,944	264,132	-	9,237,812	,002,20.	-	-	-	_	-
Russian Ruble	57,047,215	1,331,200	_	55,591,169	_	_	_	124,846	_	_
Singapore Dollar	118,118,676	, ,	_	22,029,445	_	_	_	92,054,025	_	3,581,577
South African Rand	193,635,476		_	92,469,905	_	_	_	100,658,751	_	98,488
South Korean Won	453,526,347	173,889	_	-	_	_	_	425,914,678	27,437,780	-
Sri Lanka Rupee	6.676.950	170,000	_	_	6,645,952	_	_	30.998	27,107,700	_
Swedish Krona	190,501,456	(43,618)	_	4,384,320	5,040,002	_	_	186,160,754	_	-
Swiss Franc	501,034,722	. , ,	_	1,001,020	_	_	_	500,601,214	_	_
Thailand Baht	147,823,924	93,755	_	26,369,024	_	_	_	121,265,943	_	95,202
Turkish Lira	170,169,267	247,875	_	57,057,963	4,030,887	_	_	108,757,144	_	75,398
Uruquayan Peso	3,981,055	2-1,010	_	3,981,055	+,000,007	_	_	100,707,144	_	70,000
	\$9,646,904,466	\$28 949 104	\$6.374	\$1,726,144,096	\$89 607 053	\$321.863	\$3 216 406	\$7,681,829,103	\$51,131,815	\$65.698.652
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### **Securities Lending:**

Certain of the CIF engage in securities lending transactions to provide incremental returns. The CIF are permitted to enter into securities lending transactions pursuant to Section 3-13d of the Connecticut General Statutes. The CIF's third party securities lending administrator is authorized to lend available securities to authorized broker-dealers and banks subject to a formal loan agreement.

During the period ended June 30, 2017, the Agent lent certain securities and received cash or other collateral as indicated on the Agency Securities Lending Agreement. The Agent did not have the ability to pledge or sell collateral securities delivered therefore absent a borrower default. Borrowers were required to deliver collateral for each loan equal to at least 102 percent of the fair value of domestic loaned securities or 105 percent of the fair value of foreign loaned securities.

Pursuant to the Agency Securities Lending Agreement, the Agent has an obligation to indemnify the CIFs in the event any borrower failed to return the loaned securities or pay distributions thereon. There were no such failures

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

by any borrowers to return loaned securities or pay distributions thereon during the fiscal year that resulted in a declaration or notice of default by a borrower. During the fiscal year, the CIF and the borrowers maintained the right to terminate all securities lending transactions upon notice. The cash collateral received on each loan is eligible for investment in cash, securities guaranteed by the U. S. government or any agency of the U. S. government, securities guaranteed by a sovereign government that participates in the General Arrangements to Borrow (Group of 10 or G10) and rated AA or better, or reverse transactions on an overnight or term basis. On June 30, 2017, the CIF had no credit risk exposure to borrowers. The fair value of collateral held for the CIF as of June 30, 2017 was \$2,020,761,587 as cash. The fair value of securities on loan for the CIF as of June 30, 2017 was \$1,973,294,759 as cash.

Under ordinary circumstances, the net weighted average maturity (weighted average maturity of assets less the weighted average maturities of liabilities) will not exceed 60 days. As of June 30, 2017 the cash collateral investment pool had an average duration of 8.86 days and an average weighted final maturity 53.79 days.

The fair value of collateral held and the fair value of securities on loan are as follows for the CIF as of June 30, 2017:

	Fair Value of	Fair Value of
CIF	Collateral	Securities Lent
Mutual Equity	\$778,701,169	\$760,779,648
Core Fixed Income	181,891,304	177,884,431
Inflation Linked Bond	243,894,814	238,729,786
Emerging Market Debt	26,952,510	26,376,550
High Yield Investment	523,258,667	511,955,351
Developed Market International Stock	62,998,657	60,166,734
Emerging Market International Stock	203,064,465	197,402,259
	\$2,020,761,586	\$1,973,294,759

Investments made using the cash collateral received from security loans were included in the Statement of Net Position. The fair value of these amounts is as follows:

		Cash
CIF		Equivalents
Mutual Equity	\$	779,380,031
Core Fixed Income		182,049,885
Inflation Linked Bond		244,107,437
Emerging Market Debt		26,976,004
High Yield Debt		523,714,851
Developed Market International Stock		64,193,069
Emerging Market International Stock		203,241,499
Total	\$ 2	2,023,662,776

These investments are held in a separate accounting consisting of individual securities custodied by the Agent in the name of the CIF. The above total amounts were included on the Statement of Net Position in "Invested Securities Lending Collateral".

#### NOTE 3: PURCHASES AND SALES OF INVESTMENT SECURITIES

For the period ended June 30, 2017, the aggregate cost of purchases and proceeds from sales of investment securities were as follows:

CIF	Purchases	Sales
Alternative Investment	\$293,992,305	\$219,356,110
Mutual Equity	3,218,982,933	3,921,887,127
Core Fixed Income	5,778,237,131	5,657,204,275
Inflation Linked Bond	1,025,238,157	1,012,487,413
Emerging Market Debt	5,126,513,620	5,030,163,319
High Yield Debt	4,354,122,550	4,227,851,102
Developed Market International Stock	3,067,258,281	2,955,491,616
Emerging Market International Stock	1,645,532,118	1,632,116,493
Real Estate	975,318,965	911,896,196
Private Investment	1,702,913,546	1,507,563,473

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

The above amounts include the effect of cost adjustments processed during the year.

## NOTE 4: UNREALIZED APPRECIATION AND DEPRECIATION ON INVESTMENTS AND FOREIGN EXCHANGE CONTRACTS

At June 30, 2017, the gross appreciation of investment securities in which there was an excess of fair value over cost, the gross depreciation of investment securities in which there was an excess of cost over fair value and the resulting net appreciation (depreciation) by the CIF were as follows:

	Gross	Gross	Net Appreciation
CIF	Appreciation	Depreciation	(Depreciation)
Liquidity Investment Fund	\$8,877,003	\$26,632,208	(\$17,755,205)
Alternative Investment Fund	261,317,409	14,986,831	246,330,578
Mutual Equity	2,439,744,551	122,220,936	2,317,523,615
Core Fixed Income	49,395,299	11,882,224	37,513,075
Inflation Linked Bond	26,054,204	40,944,373	(14,890,169)
Emerging Market Debt	34,177,140	42,854,022	(8,676,882)
High Yield Debt	67,746,704	60,717,609	7,029,095
Developed Market International Stock	1,451,375,043	287,502,750	1,163,872,293
Emerging Market International Stock	729,748,933	86,157,680	643,591,253
Real Estate	324,411,230	85,710,413	238,700,817
Private Investment Fund	711,405,110	240,638,719	470,766,391

#### **NOTE 5: FOREIGN EXCHANGE CONTRACTS**

From time to time the Liquidity, Core Fixed Income, Inflation Linked Bond Fund, Emerging Market Debt, High Yield Debt Fund, Developed Market International Stock, Emerging Market International Funds utilize foreign currency contracts to facilitate transactions in foreign securities and to manage the CIF's currency exposure. Contracts to buy are used to acquire exposure to foreign currencies, while contracts to sell are used to hedge the CIF's investments against currency fluctuations. Also, a contract to buy or sell can offset a previous contract. Losses may arise from changes in the value of the foreign currency or failure of the counterparties to perform under the contracts' terms.

The U. S. dollar value of forward foreign currency contracts is determined using forward currency exchange rates supplied by a quotation service.

Investing in forward currency contracts may increase the volatility of the CIF's performance. Price movements of currency contracts are influenced by, among other things, international trade, fiscal, monetary, and exchange control programs and policies; national and international political and economic events; and changes in worldwide interest rates. Governments from time to time intervene in the currency markets with the specific intent of influencing currency prices. Such intervention may cause certain currency prices to move rapidly. Additionally, the currency markets may be particularly sensitive to interest rate fluctuations.

At June 30, 2017, the CIF had recorded unrealized gains (losses) from open forward currency contracts as follows:

#### **Liquidity Funds:**

Local Currency Name	Value	Unrealized Gain/(Loss)
Contracts to Buy:		
Argentina Peso	\$6,072,997	(\$180,051)
Brazil Real	3,081,000	(14,916)
Canadian Dollar	1,033,596	14,704
Chilean Peso	5,134,000	4,252
Chinese Yuan Renminbi	5,999,000	56,180
Colombian Peso	5,154,000	(179,915)
Czech Koruna	9,029,288	504,558
Dominican Rep Peso	1,016,097	9,412
Egyptian Pound	5,064,569	(14,289)
Euro Currency Unit	20,142,936	385,476
Ghanaian Cedi	1,535,000	37,151
Hungarian Forint	9,861,385	162,190
Indian Rupee	4,981,000	21,418
Indonesian Rupiah	3,749,000	13,903
Israeli Shekel	1,041,696	13,419

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

Japanese Yen Kazakhstan Tenge New Zealand Dollar Norwegian Krone	5,735,016 3,621,000 1,422,123 5,683,963	(57,300) (58,933) 14,649 69,396
Peruvian Sol	2,513,404	28,482
Philippines Peso	3,011,000	(63,168)
Polish Zloty	4,078,573	33,725
Pound Sterling	13,536,925	230,259
Romanian Leu	5,869,080	339,066
Russian Ruble (New)	1,270,000	17,035
Serbian Dinar	502,000	(2,173)
Singapore Dollar	2,496,090	6,219
South African Rand	2,998,000	28,860
South Korean Won	2,500,000	(44,703)
Swedish Krona	10,153,270	330,587
Thailand Baht	3,023,000	(4,272)
Turkish Lira	1,496,000	16,088
Uganda Shilling	1,688,939	26,898
	\$154,493,947	\$1,744,207
Contracts to Sell:		
Australian Dollar	35,073,724	(287,994)
Brazil Real	1,003,000	(6,704)
Canadian Dollar	6,674,615	(158,865)
Chilean Peso	1,138,877	875
Czech Koruna	8,983,226	(1,117,738)
Euro Currency Unit	21,488,966	(850,983)
Ghanaian Cedi	511,477	(28,430)
Hungarian Forint	5,410,292	(53,187)
Israeli Shekel	1,042,117	(12,998)
Japanese Yen	2,043,000	25,761
Mexican Peso	21,156,092	9,895
New Zealand Dollar	55,735,971	(640,509)
Polish Zloty	25,721,837	(462,564)
Pound Sterling	7,163,015	(31,994)
Romanian Leu	3,891,988	(294,490)
Singapore Dollar	23,632,240	(163,947)
South African Rand	564,000	6,569
Turkish Lira	820,193	702
Uganda Shilling	1,688,000	(32,684)
	223,742,630	(4,099,285)
Grand total	\$378,236,577	(\$2,355,078)

### **Financial Statement Amounts:**

	Receivable	Payable	Net
FX Value	\$ 378,236,577	\$ 378,236,577	\$ -
Unrealized Gain/Loss	1,744,207	(4,099,285)	(2,355,078)
Net	\$ 379,980,784	\$ 382,335,862	\$(2,355,078)

#### Inflation Linked Bond Fund:

Local Currency Name	Value	Unrealized Gain/(Loss)
Contracts to Buy:		
Australian Dollar	\$2,725,624	\$35,955
Canadian Dollar	2,756,377	39,846
Danish Krone	441,684	5,080
Euro Currency Unit	20,732,035	124,836
Japanese Yen	22,906,041	(175,151)
Mexican Peso	3,141,925	23,602
New Zealand Dollar	6,226,983	2,597
Norwegian Krone	22,956,261	280,273
Pound Sterling	195,862,430	3,059,225
South African Rand	4,715,405	(89,704)
Swedish Krona	39,897,150	1,268,624
	\$322,361,915	\$4,575,183

### Contracts to Sell:

Australian Dollar 57,030,881 (456,629)

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

Canadian Dollar	2,603,274	(51,038)
Danish Krone	142,622	17
Euro Currency Unit	56,622,487	(951,769)
Japanese Yen	8,579,676	61,719
Mexican Peso	17,369,816	(39,720)
New Zealand Dollar	70,209,944	(832,038)
Polish Zloty	2,334,839	(41,709)
Pound Sterling	19,853,114	(102,909)
Swedish Krona	677,489	(2,068)
	235,424,142	(2,416,144)
Grand total	\$557,786,057	\$2,159,039

### **Financial Statement Amounts:**

	Receivable	Payable	Net
FX Value	\$557,786,057	\$557,786,057	\$ -
Unrealized Gain/Loss	4,575,183	(2,416,144)	2,159,039
Net	\$562,361,240	\$560,202,201	\$ 2,159,039

### **Emerging Market Debt Fund:**

Local Currency Name	Value	Unrealized Gain/(Loss)
Contracts to Buy:		
Argentina Peso	\$4,003,119	(\$107,949)
Brazil Real	53,627,273	(129,957)
Chilean Peso	12,723,072	(36,790)
Colombian Peso	4,742,093	(216,760)
Czech Koruna	33,127,736	1,301,354
Egyptian Pound	1,707,000	4,717
Euro Currency Unit	12,503,763	445,131
Hungarian Forint	8,546,131	147,614
Indian Rupee	8,474,087	28,752
Indonesian Rupiah	4,923,125	18,136
Japanese Yen	5,461,709	(139,284)
Malaysian Ringgit	3,388,806	(22,121)
Mexican Peso	12,608,400	458,982
Peruvian Sol	3,165,611	18,874
Polish Zloty	34,307,886	726,927
Romanian Leu	9,898,740	369,752
Russian Ruble (New)	7,480,461	(200,046)
South African Rand	2,311,562	(30,860)
Thailand Baht	23,048,618	275,772
Turkish Lira	20,063,330	95,131
	\$266,112,522	\$3,007,375

### Contracts to Sell:

Argentina Peso	3,586,151	91,459
Brazil Real	63,713,636	844,475
Colombian Peso	2,815,000	53,715
Czech Koruna	7,184,358	(638,104)
Euro Currency Unit	1,376,084	(84,257)
Hungarian Forint	1,086,419	(44,029)
Indonesian Rupiah	2,662,533	(26,967)
Japanese Yen	5,510,010	187,585
Mexican Peso	14,725,458	(565,581)
Peruvian Sol	6,108,550	(76,412)
Philippines Peso	596,095	5,936
Polish Zloty	1,140,000	(49,614)
Romanian Leu	230,000	(9,896)
Russian Ruble (New)	9,921,170	235,160
South African Rand	7,205,290	(62,203)
Thailand Baht	2,038,499	(6,541)
Turkish Lira	8,529,484	(5,516)
	138,428,737	(150,790)
Grand total	\$404,541,259	\$2,856,585

### **Financial Statement Amounts:**

	Receivable	Payable	Net
FX Value	\$404,541,259	\$404,541,259	\$ -
Unrealized Gain/Loss	3,007,375	(150,790)	2,856,585

### NOTES TO FINANCIAL STATEMENTS (Continued)

Net	\$407,548,634	\$404,692,049	\$ 2,856,585
High Yield Debt Fund:			
Local Currency Name	Value	Unrealized Gain/(Loss)	_
Contracts to Buy:		, ,	
Euro Currency Unit	\$1,070,830	\$18,633	
Pound Sterling	584,498	4,925	
. cama cuaning	\$1,655,328	\$23,558	
Contracts to Sell:			
Euro Currency Unit	1,142,926	(11,406)	
Pound Sterling	1,962,243	(11,030)	_
	3,105,169	(22,436)	_
Grand total	\$ 4,760,497	\$ 1,122	=
Financial Statement Ar	nounts:		
	Receivable	Payable	Net
FX Value	\$ 4,760,497	\$4,760,497	\$ -
Unrealized Gain/Loss	23,558	(22,436)	1,122
Net	\$4,784,055	\$4,782,933	\$ 1,122
Developed Market Internati	ional Stock Eund		
Local Currency Name	Value	Unrealized Gain/(Loss)	
Contracts to Buy:	value	Cincunzoa Gain/(E035)	_
Australian Dollar	\$241,729,918	\$6,080,877	
Canadian Dollar	392,856,577	6,799,292	
Danish Krone	1,429,035	15,545	
Euro Currency Unit		· · · · · · · · · · · · · · · · · · ·	
,	74,237,067	1,000,234	
Hong Kong Dollar	3,555,928	(5,209)	
Israeli Shekel	5,385,246	102,744	
Japanese Yen	392,208,696	(4,473,426)	
Mexican Peso	72,320	(126)	
New Zealand Dollar	450,796,352	6,925,151	
Norwegian Krone	162,395,371	1,648,703	
Pound Sterling	323,212,643	6,560,724	
Singapore Dollar	237,049,365	1,040,668	
Swedish Krona	189,691,076	6,074,917	
Swiss Franc	2,488,923	21,242	
	\$2,477,108,517	\$31,791,336	
Contracts to Sell:			
Australian Dollar	480,336,497	(5,768,217)	
Canadian Dollar	442,364,410	(15,885,303)	
Danish Krone	49,486,110	(592,587)	
Euro Currency Unit	216,992,939	(3,589,282)	
Hong Kong Dollar	91,749,408	214,642	
Israeli Shekel			
Japanese Yen	20,399,975 715,657,689	(300,600) 11,280,691	
		, ,	
New Zealand Dollar	577,677,082	(17,065,958)	
Norwegian Krone	385,316,706	(3,352,573)	
Pound Sterling	431,377,162	(2,814,452)	
Singapore Dollar	263,543,910	(1,335,264)	
Swedish Krona	353,795,300	(8,220,498)	
Swiss Franc	287,086,861	(2,072,121)	
Grand total	4,315,784,049 \$6,792,892,566	(49,501,522) (\$17,710,186)	
		(ψ17,710,100)	
Financial Statement Ar		Dovehla	Nat
EV Value	Receivable	Payable %6 702 902 566	Net
FX Value	\$6,792,892,566	\$6,792,892,566	\$ -
Unrealized Gain/Loss	31,791,336	(49,501,522)	(17,710,186) \$(17,710,186)
Net	\$6,824,683,902	\$6,842,394,088	\$(17,710,186)
Emerging Market Internati		Uproplized Opin//Lean	
Local Currency Name Contracts to Buy:	Value	Unrealized Gain/(Loss)	_
Sommacia to buy.			

Brazil Real

(\$2,693)

\$259,328

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

547,935 166,262 1,382,421 1,519,186 40,620 3,915,752	69 (171) (16,304) (861) (67) \$(20,027)	l
1,382,421 1,519,186 40,620	(16,304) (861) (67)	l
40,620	(67)	
,	( )	
3,915,752	\$(20,027)	
581,712	60	
329,525	(235)	)
69,033	(75)	)
980,270	(250)	
4,896,022	(\$20,277)	)
	,	980,270 (250)

#### **Financial Statement Amounts:**

	Receivable	Payable	Net
FX Value	\$4,896,022	\$4,896,022	\$ -
Unrealized Gain/Loss	(20,027)	(250)	(20,277)
Net	\$4,875,995	\$4,896,272	\$ (20,277)

The net unrealized gain has been included in the Statement of Changes in Net Position as a component of Net Change in Unrealized Gain (Loss) on Investments and Foreign Currency.

#### **NOTE 6: COMMITMENTS**

In accordance with the terms of the individual investment agreements, the Private Investment, Real Estate, Alternative Investment Funds and Core Fixed Income Fund have outstanding commitments to make additional investments. These commitments will be fulfilled as suitable investment opportunities become available. Commitments at June 30, 2017, were as follows:

		Cumulative	
	Total	Amounts	Unfunded
CIF	Commitment	Funded	Commitment
Real Estate	\$3,281,467,201	\$2,866,281,403	\$415,185,798
Private Investment	6,349,570,922	4,955,392,253	1,394,178,669
Alternative Investment	1,730,000,000	1,670,974,855	59,025,145
Core Fixed Income	550 000 000	550 000 000	_

Certain Private Investment Funds allow the General Partner to recycle distributions without a reduction in unfunded commitments and accordingly have no impact upon the above amounts. Capital recycling is a tool frequently used by investment managers to fully invest the committed capital in portfolio investments. Since fees and expenses are a component of a General Partner's total capital commitments, capital recycling generally allows managers to: (i) mitigate the impact of fees and expenses and (ii) increase the possibility that limited partner capital is invested in portfolio companies. Recycling provisions allow managers to recall capital distributions if certain criteria are met. The use of recycling provisions varies by manager but generally limits capital recycling to a range between 0% and 20% of total commitments. As a result the actual commitment could be as much as 120% of the stated commitment amount.

### **NOTE 7: CONTINGENCY**

A limited partnership in the PIF invested \$15 million in a portfolio company that reported double digit revenue growth. In 2005, the General Partner initiated a sales process expecting to realize significant gain. Lack of cooperation from management challenged the sale process, resulting in legal action from the partnership and other investors in the portfolio company to force a sale. This process uncovered serious financial irregularities in the portfolio company, resulting in the removal and criminal investigation of the CEO and other senior managers. The portfolio company is currently in bankruptcy. In July 2008, the Bankruptcy Court approved the portfolio company's plan of liquidation. A liquidation trustee was appointed to oversee further liquidation efforts, including investigation and pursuit of potential litigation claims. The liquidation trustee has filed law suits or arbitration proceedings against certain parties, including the bank that issued the credit facility, the investment bank, an equipment manufacturer, accounting firms, and a law firm, among others. In January 2009, the liquidation trustee entered into a settlement agreement with the General Partner, exchanging mutual releases for the GP, the fund and its investors.

### **NOTES TO FINANCIAL STATEMENTS (Continued)**

Additionally, the settlement agreement provides for a sharing of recovery from further prosecution of the matter, including any settlement reached with the insurance carrier. Recoveries are anticipated to be quite modest, if at all. In 2009, the bank has filed a motion under seal which, if granted, may permit the bank to reduce any liability to the liquidation trustee by the proportionate amount that it can attribute to either the minority shareholders (including the fund). The liquidating trustee has prepared a motion to close out the bankruptcy case, which was heard on November 19, 2015. The bankruptcy was closed on November 20, 2015. No further recoveries from or related to Le-Natures' are expected.

### **NOTE 8: SUBSEQUENT EVENT**

The CRPTF has performed an evaluation of subsequent events through December 29, 2017, the date the basic financial statements wer available to be issued. No material events were identified.

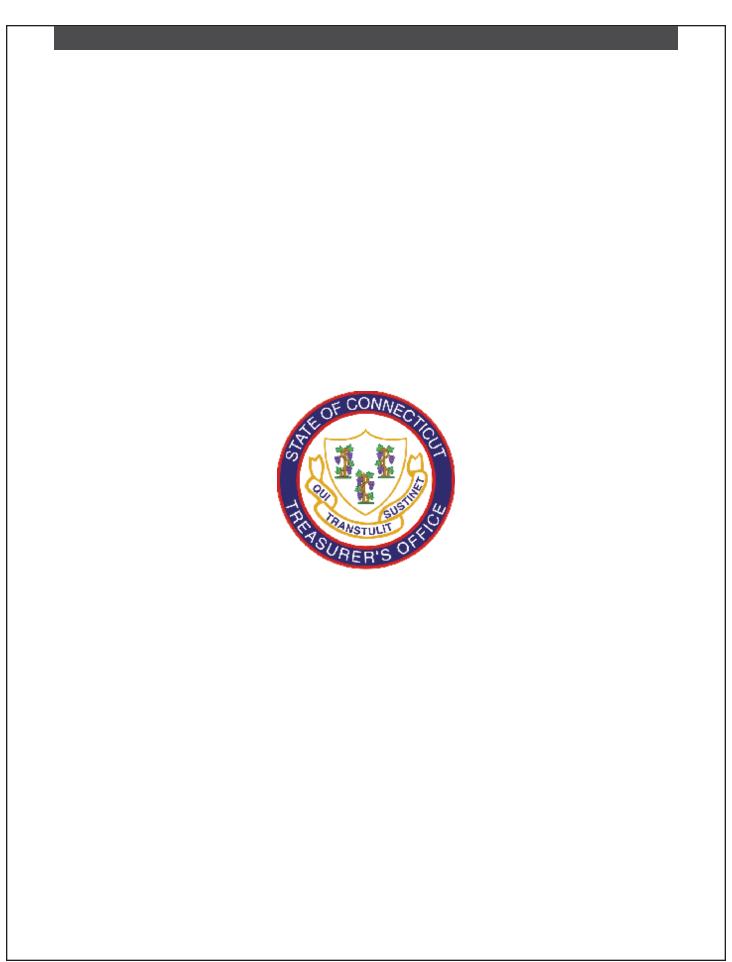
### **NOTE 9: COST BASIS OF INVESTMENTS**

The aggregate cost values of investments in the Funds are as follows at June 30, 2017:

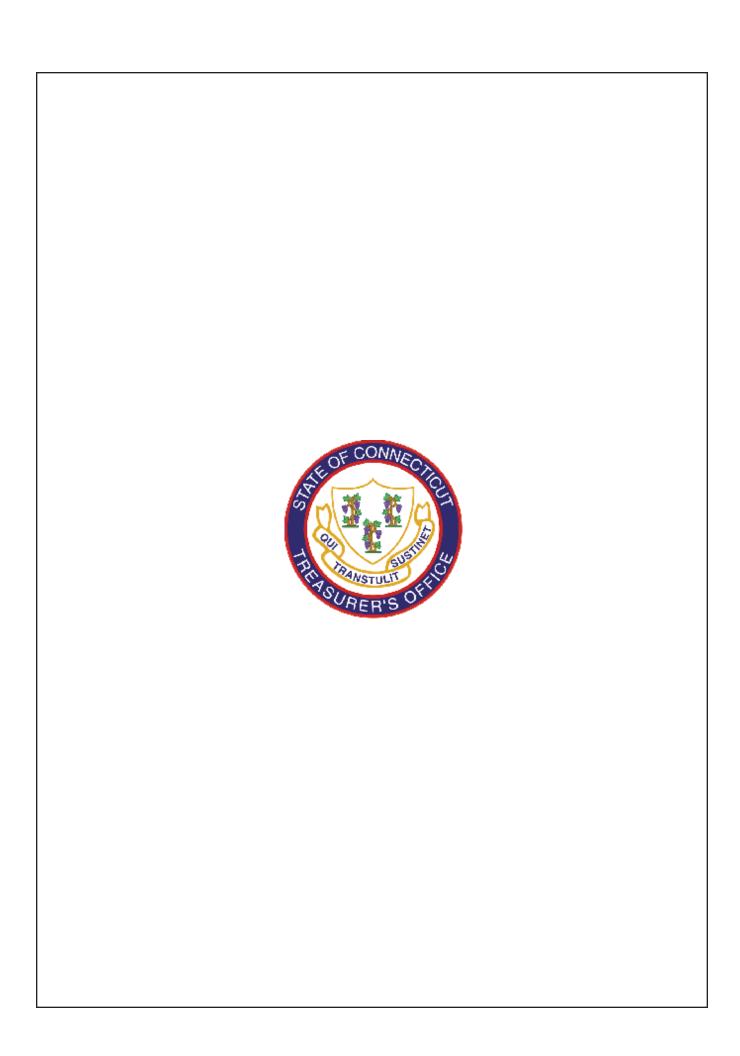
	LIQUIDITY	ALTERNATIVE INVESTMENT	MUTUAL EQUITY	CORE FIXED INCOME	INFLATION LINKED BOND
	FUND	FUND	FUND	FUND	FUND
Investments in Securities, at Cost					
Liquidity Fund	\$ -	\$176,833,266	\$411,822,610	\$150,342,325	\$38,016,392
Cash Equivalents	278,764,721	-	-	-	(252,599)
Asset Backed Securities	171,616,700	-	-	86,850,325	863,057
Government Securities	560,611,701	-	-	525,572,285	1,302,078,989
Government Agency Securities	179,379,418	-	-	535,995,940	-
Mortgage Backed Securities	148,329,719	-	-	142,089,348	-
Corporate Debt	1,517,538,188	-	-	554,821,517	6,921,982
Convertible Securities	-	-	-	-	-
Common Stock	-	-	4,125,007,180	-	-
Preferred Stock	-	-	-	2,877,939	-
Real Estate Investment Trust	-	-	171,905,383	15,391,183	-
Business Development Corp	-	-	-	-	-
Mutual Fund	83,711,810	-	-	-	-
Limited Liability Corporation	-	-	-	-	-
Trusts	-	-	-	-	-
Limited Partnerships	-	1,603,624,241	228,077	550,000,000	-
Partnerships	-	-	-	-	-
Annuities	-	-	-	-	-
Total Investments in Securities, at cost	\$2,939,952,257	\$1,780,457,507	\$ 4,708,963,250	\$ 2,563,940,862	\$ 1,347,627,821

### NOTES TO FINANCIAL STATEMENTS (Continued)

HI	GH YIELD DEBT FUND	DEVELOP MARKE INTERNATIO STOCK FU	NAL	EMERGIN MARKE INTERNATIO STOCK FL	T ONAL	REAL ESTATE FUND	INVES	VATE TMENT IND
\$1	52,794,257	\$124,436,7	67	\$49,193,0	010	\$86,226,795	5 \$3	01,086,109
	610,705	4,174,6	06		-		-	-
	(1,059,284)		-		-		-	-
	58,113,532		-		-		-	-
	-		-		-		-	-
	-		-		-		-	-
1,6	55,570,165		-		-		-	-
	43,551,000		-		-		-	-
	10,970,593	4,972,559,4	87	2,147,394,0	)44		-	1,347,145
	17,358,608	16,441,	41	32,234,7	711		-	-
	28,498,275	60,370,9	04	282,0	)16		-	-
(	61,275,483		-		-		-	-
	-	2,452,5	55	130,091,4	189		-	-
	-		-		-		-	1,432,734
	-		-		-		-	-
	-		-		-	1,917,730,50	6 2,19	96,097,547
	-		-		-		-	-
			-		-		-	
\$ 2,0	27,683,334	\$ 5,180,435,6	30	\$ 2,359,195,	270	\$2,003,957,30	1 \$2,49	99,963,535







# pension funds management division

### Division Overview

### Introduction

As principal fiduciary of six state pension funds and nine trust funds (known collectively as the Connecticut Retirement Plans and Trust Funds (CRPTF), the Treasurer is responsible for managing investment assets for retirement plans serving approximately 219,000 state and municipal employees, teachers, retirees and survivorships, as well as trust funds that support academic programs, grants, and initiatives throughout the state.

Prudent investment management requires the proper safeguard of the CRPTF assets to ensure the retirement security of the beneficiaries and to support the spending policies of the trust funds. Funding of the pension benefit liability is dependent upon state contributions, investment returns and the contribution requirements of eligible retirement plan participants. The spending requirements of the trust funds are met through the generation of investment income and capital gains with a focus on the preservation of capital.

The Combined Investment Funds (CIF) were established pursuant to Connecticut General Statutes Section 3-31b as a means to invest pension and other trust fund assets in a variety of investment classes. The CIF is comprised of the following separate pooled investment funds: Liquidity Fund; Mutual Equity Fund; Core Fixed Income Fund; Emerging Markets Debt Fund; High Yield Debt Fund; Inflation Linked Bond Fund; Developed Markets International Stock Fund; Real Estate Fund; Private Investment Fund; and Alternative Investment Fund.

Over the last ten years, the net asset value of the CRPTF investments under Treasury management has grown from \$25.9 billion to approximately \$32.5 billion. The Teachers' Retirement Fund, with approximately \$17.1 billion of assets under management at June 30, 2017, is the largest participating plan. The State Employees' Retirement Fund and the Connecticut Municipal Employees' Retirement Fund have approximately \$12.0 billion and \$2.4 billion of assets, respectively. For the fiscal year ended June 30, 2017, total investment income (comprised of interest income, dividends, securities lending income, and net realized and unrealized capital gains, net of operating expenses) before allocation of administrative expenses, was approximately \$4.1 billion.

CRPTF's total investment in the CIF at fair value as of June 30, 2017 was:

INVESTMENT SUMMARY AT JUNE 30, 2017		
	Fair	% of Total Fund
	Value (1)(3)	Fair Value
Liquidity Fund (LF) (2)	\$ 1,387,328,362	4.26%
Mutual Equity Fund (MEF)	7,026,486,865	21.57%
Developed Markets International Stock Fund (DMISF)	6,344,307,953	19.48%
Emerging Markets International Stock Fund (EMISF)	3,002,786,523	9.22%
Real Estate Fund (REF)	2,242,658,118	6.89%
Core Fixed Income Fund (CFIF)	2,601,453,937	7.99%
Inflation Linked Bond Fund (ILBF)	1,332,942,016	4.09%
Emerging Market Debt Fund (EMDF)	1,598,180,952	4.91%
High Yield Debt Fund (HYDF)	2,034,712,429	6.25%
Alternative Investment Fund (AIF)	2,026,788,085	6.22%
Private Investment Fund (PIF)	2,970,729,926	9.12%
Total Fund	\$32,568,375,166	100.00%

- (1) "Fair value" includes securities and cash invested in the Liquidity Fund (LF), and excludes receivables (FX contracts, interest, dividends due from brokers, foreign tax, securities lending receivables, reserve for doubtful accounts, invested securities lending collateral and prepaid expenses), payables (FX contracts, due to brokers, income distribution, securities lending collateral and accrued expenses), and cash not invested in the LF.
- (2) The fair value of the LF represents the pension and trust assets allocated to the LF (excluding receivables and payables); the LF balances of the other combined investment funds are shown in the fair value of each fund.
- (3) Fair Value (\$32.6 billion) differs from net assets (\$32.5 billion) as net assets include additional balance sheet items.

### **Fund Management**

Under the supervision of a Chief Investment Officer, appointed by the Treasurer with the approval of the Investment Advisory Council (IAC), the Pension Funds Management Division (PFM) executes and manages the investment programs of the pension and trust funds with a 13 member professional staff. Internal resources are augmented by several outside consulting firms that provide research and analytical expertise to the Treasurer, the Chief Investment Officer and PFM professionals. During Fiscal Year 2017, The Bank of New York Mellon (BNY Mellon) served as the custodian of record for the CRPTF, maintaining physical custody of and safeguarding plan assets. BNY Mellon also provided recordkeeping services under the supervision of PFM, and Deutsche Bank was the provider of securities lending services.

The Treasurer employs external money and investment managers to manage the portfolios underlying each CIF. Money and investment managers are selected based upon asset class expertise, investment performance and style. Investment and money managers are expected to comply with the parameters, guidelines, and restrictions set forth in the CRPTF Investment Policy Statement (IPS). As of June 30, 2017, 159 external money and investment managers were employed by the Treasury to invest the pension and trust assets, an increase of 5 managers from June 30, 2016 (See Figure 1-5).

All operating overhead is allocated directly to the earnings of the pension and trust fund assets under management. The Treasury manages assets in a cost-effective manner, consistent with the maximization of long-term returns.

### **Investment Policy**

One of the immutable principles of investment management is that asset allocation decisions are responsible for as much as 90 percent of investment returns. In September 2012, the IAC approved the Treasurer's adopted IPS, including the asset allocation plan, which governs the CRPTF investment portfolios and each of the CIFs. Subsequently, in December 2012, January 2013, April 2013, and July 2013, the IAC approved the Treasurer's adopted modifications.

The asset allocation plan is customized for each plan and trust with the main objective being the maximization of investment returns over the long term at an acceptable level of risk, primarily through asset diversification. Risk, in this context, is defined as volatility of investment returns. (See Understanding Investment Performance under Supplemental Information.)

Diversification across asset classes is a critical component in structuring portfolios to maximize return at a given level of risk. In developing an asset allocation strategy, there is thorough analysis of the expected risk/return tradeoffs under different economic scenarios predicated on established correlations of investment returns and the diversification benefits of the available asset classes (i.e., those not restricted by statute).

As shown in Figure 1-4, the number and complexity of asset classes comprising the asset allocation policy have fluctuated during the last ten years. As of June 30, 2017, multiple asset classes were integrated in the IPS, including global public market equities and fixed income, as well as alternative investments such as real estate, private equity, hedge fund and real asset investment strategies.

At fiscal year-end, domestic, international developed and emerging markets equities (stocks) comprised the largest percentage of the total CRPTF, at approximately 52 percent. Publicly traded equities have an established record of maximizing investment returns over the long term. Fixed income, real estate and alternative investments were also included to enhance portfolio returns during highly inflationary or deflationary environments, to mitigate the effects of volatility in the stock market and to provide current income.

### **Asset Classes**

To realize the asset allocations set forth in the IPS for each plan and trust, the Treasurer administers the CIFs as a series of mutual funds in which the various retirement plans and trusts may invest through the purchase of ownership interests. The asset mix for each of the 15 plans and trusts is established by the Treasurer, with approval of the independent IAC, based upon (1) capital market theory, (2) financial and fiduciary requirements and (3) liquidity needs. However, there are instances in which the asset mix for a trust is set by the trust's governing document. A broad array of asset classes is considered for inclusion in a potential asset allocation structure. Each asset class has its own distinct characteristics, as well as expectations for long-term return and risk behavior.

The asset classes that make up the CRPTF portfolio include:

### **Domestic Equity**

The Mutual Equity Fund (MEF) assets are allocated across the broad U.S. stock market to ensure diversification by market capitalization and investment style, such as value and growth. The MEF may opportunistically invest up to 30 percent of assets to take advantage of shifts in the investment landscape or opportunities that offer diversification and/or risk-return benefits, and may include investments in any market capitalization and/or investment style as well as an allocation to stocks outside the US. As of June 30, 2017, the MEF structure was approximately 75.72 percent invested in large-cap stocks, 10.45 percent in small/mid-cap stocks, 8.97 percent in all-cap, and 4.86 percent in cash equivalents and other net assets. The MEF's ten largest holdings, aggregating 14.76 percent of Fund investments, included a variety of blue chip companies and were broadly diversified, with the largest holding of 2.71 percent in Apple Inc. Performance of the MEF is measured against the Russell 3000 Index (R3000).

Management of the MEF includes the use of pure indexing, enhanced indexing, active management, and opportunistic strategies executed by external money managers. Index and enhanced index strategies are referred to as passive strategies since their investment portfolios are similar to the index. The goal of enhanced indexing is to generate a return slightly in excess of the selected index. Indexing is particularly appropriate for the "large-cap" segment of the equity markets, which is defined as the securities of the largest capitalized public companies. Given the overall efficiency of the domestic equity market, approximately 76 percent of the portfolio is invested in passive strategies. The balance of the portfolio is actively managed, primarily in the less efficient "small and mid-cap" sectors of the equity markets. These securities are issued by companies that are smaller and not as closely monitored, researched or analyzed as the larger capitalization companies. As a result of this relative inefficiency, active money managers have the potential to outperform these markets over the long term, while earning an acceptable level of return per unit of risk.

### International Equity

Exposure to international equities is provided through two funds: the Developed Markets International Stock Fund (DMISF) and the Emerging Markets International Stock Fund (EMISF), each of which has distinct risk/return profiles. Stocks from developed market countries tend to offer lower risk and return potential compared to emerging market securities as a result of generally more stable economic and political environments and the depth and liquidity of their financial markets. The foreign currency exposure in the DMISF is partially hedged back to the U.S. dollar. DMISF and EMISF assets are allocated across foreign markets so that there is diversification by country, sector, capitalization and style, in a mix that is structured to replicate the characteristics of the comparable non-U.S. developed and emerging stock market indices to which each combined investment fund is benchmarked.

External money managers invest DMISF assets primarily in common stocks issued by companies in developed market countries domiciled outside of the U.S. The benchmark for DMISF is the Morgan Stanley Capital International Europe Australasia and Far East Investable Market Index (MSCI EAFE IMI) 50 percent hedged. The DMISF is comprised of passive indexing, core developed markets and opportunistic strategies. As of June 30, 2017, the DMISF structure was approximately 84.11 percent invested in large-cap stocks, 15.67 percent in small-cap stocks, and 0.22 percent in cash equivalents and other net assets. Mandates for active growth/value and small cap developed market strategies represent roughly 22.34 percent and 15.67 percent of the DMISF, respectively. The currency exposure of the DMISF investments is managed through a currency hedging overlay strategy.

The EMISF invests primarily in the common stocks of non-U.S. corporations domiciled in countries included in the EMISF benchmark, which is the Morgan Stanley Capital International Emerging Markets Investable Market Index (MSCI EM IMI). EMISF investments are made through portfolios managed by external money managers. The EMISF is invested 100 percent in active, unhedged emerging markets strategies.

### Fixed Income

Fixed income assets are diversified across four funds: the Core Fixed Income Fund (CFIF), the Inflation Linked Bond Fund (ILBF), the Emerging Markets Debt Fund (EMDF), and the High Yield Debt Fund (HYDF). Investments in the various fixed income CIFs serve to reduce the overall volatility of CRPTF returns under numerous economic scenarios. Further, the fixed income CIFs provide cash flow to the CRPTF in the form

of interest and principal payments.

The CFIF consists of externally managed, primarily investment grade, fixed income portfolios that include debt instruments issued by the U.S. Government and its agencies, quasi-government agencies, U.S. corporations and any other public or private U.S. corporation whose debt security is regulated by the Securities and Exchange Commission (including Eurobonds and quasi or sovereign debt). Assets are diversified across sectors, industries, credit quality and duration, and up to 30 percent may be opportunistically invested based on changes in the investment landscape that may improve diversification, reduce risk or enhance return. As of June 30, 2017, the CFIF structure approximated 41.0 percent invested in Treasury/agency securities, 21.9 percent in corporate securities, 5.5 percent in mortgage-backed securities, 3.3 percent in asset-backed securities, and 28.3 percent in cash equivalents and other net assets. The benchmark for CFIF is the Barclays U.S. Aggregate Bond Index.

The ILBF consists of externally managed fixed income portfolios containing domestic and foreign developed market sovereign bonds. These government bonds are primarily inflation-linked securities. Inflation linked bonds offer protection against inflation and contribute to overall portfolio diversification. As of June 30, 2017, the ILBF structure was comprised of securities from the following countries or regions: 41.2 percent in the U.S., 18.7 percent in the U.K., 17.2 percent in the Eurozone, 10.4 percent in Australia and New Zealand, 3.9 percent in Mexico and 8.6 percent in other countries and cash equivalents. The benchmark for ILBF is the Barclays World Government Inflation-Linked Bond Index.

The EMDF consists of externally managed fixed income portfolios that contain debt instruments issued by governments and companies located in emerging countries as defined by the benchmark and The World Bank. The benchmark for EMDF is the J.P. Morgan Emerging Markets Bond Index Global Diversified/J.P. Morgan Government Bond Index - Emerging Markets Global Diversified (50 percent/50 percent). As of June 30, 2017, the EMDF structure approximated 35.9 percent invested in Latin America, 31.2 percent in Europe, 16.4 percent in Asia, 9.2 percent in Africa, 4.4 percent in the Middle East and 2.9 percent in cash equivalents and other net assets. The benchmark accounts for U.S. dollar-denominated debt and for debt issued in local currencies. The local currency debt is not hedged as the foreign currency is considered an additional source of alpha, or return in excess of that predicted by its benchmark..

The HYDF consists of externally managed fixed income portfolios that include debt instruments rated below investment grade by a nationally recognized rating agency service. The assets are diversified by sector, industry, credit quality and duration. The majority of the bonds are U.S. dollar-denominated. As of June 30, 2017, the HYDF structure approximated 81.8 percent invested in corporate securities, 2.7 percent in Treasury securities, and 15.5 percent in cash equivalents and other net assets. The benchmark for HYDF is the Citigroup U. S. High Yield Market Capped Index.

### **Liquidity Fund**

The Liquidity Fund (LF) consists of externally managed fixed income portfolios intended to provide a liquid source of funds for investment operations and earn a return greater than money market instruments, with minimal exposure to risk of principal. While the majority of the LF is invested in money market instruments, there are allocations to intermediate maturities, developed market sovereign bonds and emerging market currencies. As of June 30, 2017, the LF structure approximated 55.8 percent invested in money market securities, 30.1 percent in short duration bond securities, and 14.1 percent in international sovereign bonds and currencies. The benchmark for the LF is the one month London Interbank Offered Rate (LIBOR) Index.

### Real Estate

The Real Estate Fund (REF) is the vehicle by which the CRPTF invests in the real estate asset class and may consist of a number of different investment strategies and investment vehicles, including externally managed commingled funds, open-end funds, separate accounts, and publicly traded real estate securities. The REF invests in real estate properties and mortgages and is designed to dampen the volatility of overall returns through diversification and to generate attractive risk-adjusted rates of return. The REF will invest in the following: core strategies; value added strategies (investments involving efforts to increase property value through repositioning, development and redevelopment); opportunistic strategies (strategies that target niche opportunities, market inefficiencies, or special

purpose markets); and publicly traded securities (primarily Real Estate Investment Trusts and Real Estate Operating Companies). Leverage at the aggregate of the REF is limited to 60 percent of REF's total valuation. These investments also adhere to the Responsible Contractor Policy. As of June 30, 2017, the REF structure was approximately 60.4 percent invested in core, 22.1 percent in value-added, 13.7 percent in opportunistic and 3.8 percent in cash equivalents and other net assets. The benchmark for REF is the National Council of Real Estate Investment Fiduciaries National Property Index (NCREIF-NPI), lagged by one quarter

### **Private Investments**

The Private Investment Fund (PIF) is the vehicle used to invest in private equity. PIF investments generally are made in externally managed limited partnerships or through separate accounts that focus on private investments. These vehicles include investments in both venture capital and corporate finance investment strategies. Venture capital typically involves equity capital invested in young or development stage companies, and may include start-up, early, mid or late-stage companies. Corporate finance typically involves equity and debt capital invested in growth, mature or distressed stage companies, often through the financing of acquisitions, spin-offs, mergers or changes in capitalization. As of June 30, 2017, the PIF structure was approximately 69 percent invested in Corporate Finance, 21 percent in Venture, and 11 percent in cash equivalents and other net assets. The benchmark for PIF is the Standard & Poor's 500 Index (S&P 500).

### Alternative Investments

The Alternative Investment Fund (AIF) invests in strategies that offer the potential to enhance return and/ or reduce risk. The AIF provides a vehicle for investment in portfolio strategies which are not easily classified, categorized, or described in other CIFs. Hybrid strategies which contain multiple asset classes are also considered part of the opportunity set. As of June 30, 2017, the AIF structure was approximately 84.7 percent invested in hedge fund of funds, 6.1 percent in real assets, 0.5 percent in opportunistic strategies, and 8.7 percent in cash equivalents and other net assets. AIF's benchmark is the 90-day Treasury Bill.

### Securities Lending

The CRPTF maintains a securities lending program designed to provide incremental risk adjusted returns. This program involves the lending of portfolio securities to broker/dealers in return for payment. Each loan is secured by collateral valued slightly in excess of the market value of the loaned securities. To further mitigate the risks of securities lending transactions, the CRPTF's securities lending bank carefully monitors the credit ratings of each counter-party and overall collateral levels.

Deutsche Bank was responsible for marketing the program, lending the securities, and obtaining adequate collateral during Fiscal Year 2017. As of June 30, 2017, securities with a market value of approximately \$2.0 billion had been loaned against collateral of approximately \$2.0 billion. Income generated by securities lending totaled \$14.2 million for the fiscal year.

### The Year in Review

### **Total Fund Performance**

For the fiscal year ending June 30, 2017, the CRPTF achieved an annual total return of 14.2 percent, net of all fees and expenses. The three largest pension plans, the Teachers' Retirement Fund, the State Employees' Retirement Fund, and the Connecticut Municipal Employees' Retirement Fund -- which represent 98 percent of total assets -- returned 14.4 percent, 14.3 percent and 13.1 percent and outperformed their benchmarks by 114, 115 and 98 basis points, respectively. In addition, the plans outperformed their actuarial assumed rates of return of 8.0 percent, 6.9 percent and 8.0 percent, respectively. The CIFs' investment performance for Fiscal Year 2017 added \$3.3 billion of market value to pension assets and every CIF posted positive returns. After paying fees and expenses, including \$793 million of benefit payments in excess of contribution receipts, the CIFs ended the fiscal year with assets of \$32.5 billion.

The DMISF returned 24.8 percent, outperforming its benchmark return of 22.4 percent. Developed international markets benefited from improving macroeconomic trends, continued European central bank

accommodative monetary policies, and election results across many countries. For the trailing three-, five- and seven-year periods, the DMISF compounded returns, net of all fees and expenses, were 5.3 percent, 11.9 percent and 9.9 percent, respectively.

The EMISF returned 23.0 percent, outperforming its benchmark return of 22.8 percent. Strong performance in emerging market equities during the year was primarily due to a steady recovery in global growth contributing positively to corporate earnings. For the trailing three-, five- and seven-year periods, the EMISF compounded returns, net of all fees and expenses, were 2.1 percent, 4.1 percent and 4.4 percent, respectively.

The MEF returned 19.3 percent, outperforming its benchmark return of 18.5 percent. Much like devloped and emerging market equities, U.S. equity performance during the year was driven by global growth that led to an increase in corporate earnings. In addition, the anticipation for fiscal policy, regulatory and tax changes were positive tailwinds for the asset class. For the trailing three-, five- and seven-year periods, the MEF compounded returns, net of all fees and expenses, were 9.2 percent, 14.6 percent and 15.2 percent, respectively.

The HYDF returned 12.6 percent, outperforming its benchmark return of 12.1 percent. Strong demand from investors combined with lack of quality supply, improved commodity prices, as well as positive global growth contributed to the positive returns for the year. For the trailing three-, five- and seven-year periods, the HYDF compounded returns, net of all fees and expenses, were 3.5 percent, 6.2 percent and 7.6 percent, respectively.

The PIF returned 11.0 percent, but underperformed its public market S&P 500 benchmark return of 17.9 percent. Utilizing the institutional standard for measuring private equity performance, Internal Rate of Return (IRR), PIF generated a net IRR of 14.4 percent. While the market for private equity and venture capital-backed exits was down from the prior fiscal year, the PIF portfolio continued to generate positive cash flow with investment distributions exceeding contributions by \$269 million for the year. For the trailing three-, five- and seven-year periods, the PIF compounded returns, net of all fees and expenses, were 11.3 percent, 11.9 percent and 12.1 percent, respectively.

The EMD returned 9.1 percent, outperforming its blended benchmark return of 6.3 percent. The stabilization of commodity prices combined with favorable economic conditions in emerging market countries has been supportive for the EMD asset class during the year. In addition, the rise of the U.S. dollar versus foreign currencies also has had a significant impact. For the trailing three-, five- and seven-year periods, the EMD compounded returns, net of all fees and expenses, were 2.3 percent, 3.1 percent and 5.1 percent, respectively.

The AIF, which invests in hedge funds, real assets and other opportunistic investments, returned 8.5 percent, outperforming its 90-day T-Bill benchmark return of 0.5 percent. Gains in equity sensitive hedge fund strategies such as equity long/short and event driven funds were the primary driver of returns as the public equities markets rallied. For the trailing three- and five-year periods, the AIF compounded returns, net of all fees and expenses, were 2.2 percent and 3.9 percent, respectively.

The REF returned 7.4 percent, slightly outperforming its benchmark return of 7.3 percent. Performance in open end core and core plus funds was very strong during the year and recent commitments to a number of new value add and opportunistic strategies has been accretive to the fund. For the trailing three-, five- and seven-year periods, the REF compounded returns, net of all fees and expenses, were 10.6 percent, 10.5 percent and 10.8 percent, respectively.

The CFIF returned 1.9 percent, outperforming its benchmark return of -0.3 percent. Corporate bonds performed well during the year, however, U.S. Treasury bonds lost value as interest rate yields across all time periods increased. The Federal Reserve implemented three rate hikes during the fiscal year. For the trailing three-, five- and seven-year periods, the CFIF compounded returns, net of all fees and expenses, were 2.4 percent, 2.3 percent and 3.3 percent, respectively.

The LF returned 1.0 percent, outperforming its benchmark return of 0.7 percent. Exposure to corporate securities benefited the LF during the year offset by increases in short term interest rates. For the trailing three-, five- and seven-year periods, the LF compounded returns, net of all fees and

expenses, were 0.2 percent, 0.4 percent and 0.4 percent, respectively.

The ILBF returned 0.7 percent, underperforming its benchmark return of 0.8 percent. The expectation that global inflation was going to increase during the year did not occur and this was the primary reason for the low performance of the ILBF. For the trailing three-, five- and seven-year periods, the ILBF compounded returns, net of all fees and expenses, were 0.0 percent, -0.1 percent and 2.6 percent, respectively.

### **2017 Management Initiatives**

The continued implementation in Fiscal Year 2017 of the CRPTF investment pacing plans established for real estate, alternative investment and private equity opportunities led to a total of \$925 million of new investment capital. Nine investment commitments totaling \$775 million were awarded to the Private Investment Fund and \$150 million was awarded to three Real Estate Fund managers. Also during the fiscal year, Treasurer Nappier continued funding her in-state opportunistic investment mandate, in the Private Investment Fund. In the CRPTF public market portfolios, the Treasurer hired five investment managers for the High Yield Debt Fund mandate; the assignment was effected through a competitive search. Additionally, Treasurer Nappier selected two consulting firms for general investment consulting services and Connecticut Higher Education Trust oversight duties, after a competitive search.

The Connecticut Horizon Fund (CHF), first funded in 2005, is an aggregate of public and private market funds. The CHF is a \$1 billion-plus fund-of-funds public market program and additionally includes a \$155 million private equity allocation and a \$170 million alternative investment allocation designed to provide the Office of the State Treasurer access to a wider number of women-owned, minority-owned, Connecticut-based and emerging firms. As of June 30, 2017, the public market program totaled 4 managers and 36 sub-managers. Emerging firms represent the largest allocation of total assets at 72 percent; minority-owned firms represent 42 percent; women-owned firms followed with 28 percent and Connecticut-based firms were 19 percent of total assets. Additionally, there were 3 private equity managers and 20 sub-managers; including 8 minority-owned, 3 emerging strategies, 1 women-owned and 8 Connecticut-based. In the separately managed Fund-of-Hedge Fund mandate sleeve within the AIF, there were 2 managers and 25 sub-managers; the breakdown includes 21 emerging strategies, 13 minority-owned firms, 7 Connecticut-based and 5 women-owned firms.

Expansion of the diversity of firms with which PFM does business continued during Fiscal Year 2017; overall, 35 minority-owned, women-owned, Connecticut-based and emerging firms, comprised 26.3 percent of the firms doing business with the division. These firms earned fees of \$37.7 million, representing over 39 percent of all fees paid by the division.

### **Corporate Governance**

In carrying out her fiduciary responsibilities, and in conformance with state law, the Treasurer considers the financial implications for long-term shareholder value of a portfolio company's environmental, social and governance corporate structure and practices. The primary method the Treasurer's Office utilizes to address corporate governance at publicly-traded companies in which the CRPTF invests is through proxy voting. These companies hold annual general meetings at which shareholders vote to approve or reject proposals presented by the company's management or by shareholders on significant transactions or activities at a company. The Treasurer's Office uses comprehensive guidelines approved by the independent Investment Advisory Council when casting proxy votes at these meetings. The guidelines, incorporate best practices on corporate structure, administration and control to reduce risk, encourage sustainability and increase opportunities for growth.

In Fiscal Year 2017, the Treasury filed or co-filed shareholder resolutions on behalf of the CRPTF at 14 companies on issues related to climate change, board diversity, access to the proxy, board declassification and independent chairs. In addition, Treasury staff held discussions with corporate leaders of more than two dozen companies about shareholder concerns. To support its efforts, the Treasury worked with a broad cross section of investors representing public pension funds, investment firms, labor funds and faith-based investors.

There were a number of noteworthy votes during the fiscal year. The CRPTF was lead-filer on a resolution filed at Vista Outdoor, Inc. which called for the annual election of directors (also known as board declassification). The resolution received support from 94 percent of shareholders – making it one of the most

successful votes of the 2017 proxy season.

There were also groundbreaking resolutions filed with oil and gas companies on climate change: the CRPTF garnered majority support from shareholders on resolutions filed at Occidental Petroleum (67%) -- the first such successful vote at a U.S. oil company -- and Exxon Mobil (62%). These companies were asked to prepare a report for shareholders assessing the impact on the company of technological advances and government policies to limit global warming to below 2 degrees Celsius.

Progress was also made as a result of engagements without formal shareholder votes. In the case of Wells Fargo, the Treasury filed a resolution calling for a change in the company's corporate bylaws to ensure an independent non-executive board chair, following news that the bank paid \$185 million in penalties and restitution associated with opening two million unauthorized deposit and credit card accounts. Wells Fargo agreed, and the Treasury withdrew its resolution.

The Treasury also actively promoted board diversity with FleetCor Technologies and Chimera Investment, and ultimately withdrew shareholder resolutions after successful engagements. In the case of FleetCor, the company added a woman to its board; and with Chimera, it agreed to amend its corporate governance guidelines and nominating charter to incorporate diversity considerations when selecting board nominees.

Resolutions filed on behalf of the CRPTF are consistent with Connecticut's proxy voting guidelines. Copies of the CRPTF's proxy voting guidelines and a report of proxy votes cast are available on the Treasury's website, www.ott.ct.gov/pension\_guidelines.html.

### Investment Restrictions

The Treasurer's Office is charged with administering three laws that authorize investment restrictions on companies doing business in Northern Ireland, Sudan and Iran. Connecticut's MacBride law, set forth in Section 3-13h of the Connecticut General Statutes, is based on the MacBride Principles, which are a corporate code of conduct for companies doing business in Northern Ireland designed to address religious discrimination in the workplace. During Fiscal Year 2017, the CRPTF restricted its managers from investing in two companies for failure to adopt these principles: Domino's Pizza Inc. and Yum Brands, Inc

The Treasurer's Office monitored companies doing business in Sudan pursuant to Section 3-21e of the Connecticut General Statutes. The Sudan law, adopted in 2006, authorizes the Treasurer to engage companies doing business in Sudan and potentially divest holdings in those companies if their business is contributing to the government's perpetuation of genocide in Sudan. As of the end of Fiscal Year 2017, the Treasurer's Office prohibited direct investment in eighteen companies: Bharat Heavy Electricals Ltd.; China North Industries Group; China North Industries Corporation a.k.a. NORINCO; NORINCO International Cooperation Ltd.; North Huajin Chemical Industries Co. Ltd.; North Navigation Control Technology Co. Ltd.; China Petroleum and Chemical Corp.; CNPC (Hong Kong); Dongfeng Motor Corporation; Jiangxi Hongdu Aviation Industry Ltd.; Oil and Natural Gas Corp.; Mangalore Refinery and Petrochemicals Ltd.; ONGC Nile Ganga BV, Amsterdam; ONGC Videsh Limited; ONGC Videsh Vankorneft; PetroChina Co. Ltd.; Petronas Capital Ltd.; and Sinopec Shanghai Petrochemical Corp.

Connecticut's Iran law, Connecticut General Statutes Section 3-13g, authorizes the Treasurer to engage with companies doing business in Iran, and potentially divest holdings in such companies if she determines such companies, by their business activities, may be contributing to the Iranian government's development of its nuclear program and its support of global terrorism. As of the end of Fiscal Year 2017, the Treasurer's Office prohibited direct investment in fourteen companies: Bongaigaon Refinery & Petrochemicals; Ca La Electricidad de Caracas; Chennai Petroleum Corp.; China Bluechemical; China National Offshore Oil Corporation; China Oilfield Services Ltd.; CNOOC; Daelim Industrial Co. Ltd.; IBP Co. Ltd.; Indian Oil Corporation Ltd.; Lanka loc Plc; Offshore Oil Engineering Co.; Oil India Ltd.; and Petroleos de Venezuela S.A..

### **Asset Recovery and Loss Prevention**

The Treasurer's Legal Unit works to manage risk by limiting opportunities for loss due to the malfeasance of others. Extensive pre-contracting due diligence helps the Office of the Treasurer select the best available vendors and suitable products to meet the needs of the Office. Careful contract negotiation, coupled with periodic review, development and implementation of best practice contract language, helps to ensure clarity

with respect to the obligations of the Office of the Treasurer and its vendors and investment partners. The Office maintains regular contact with other similar governmental offices and institutional investors, sharing ideas for enhancement of contract language, frequently sharing advice with counterparts in other states.

The Offi ce of the Treasurer deters malfeasance with its reputation for active and diligent pursuit of all opportunities to recover assets lost due to the misfeasance or malfeasance of others.

The Office of the Treasurer believes that most disputes can be resolved through dialogue designed to enforce contract terms or clarify misunderstanding. The Office is, however, prepared, when necessary, to pursue judicial solutions where negotiation is unsuccessful. Although very limited as a percentage of all investments, the Office, like all other investors, experiences losses due to corporate malfeasance. In these instances, the Office believes that litigation managed by investors is more effectively negotiated, efficiently litigated and achieves larger settlements for the benefit of all investors. As such, the Office is committed to taking on its fair share of the management responsibility of such litigation and will consider making application to serve as lead plaintiff in class action litigation where appropriate. From time to time, the Office has used litigation to encourage corporate governance enhancements. Although rare, the Office has filed individual and group actions to pursue specific rights where disputing parties are unwilling or unable to reach an extra-judicial conclusion. Since the U.S. Supreme Court's 2010 decision in Morrison v. National Australia Bank, the Office has experienced an increase in its participation in group actions as a means of seeking recovery of lost assets. The Office works with other institutional investors to collaborate and monitor Morrison-related matters.

### Class Action Securities Litigation

The Combined Investment Funds recovered \$1,658,628 million from class action settlements in the fiscal year ended June 30, 2017. The Office continues to closely monitor opportunities to recover lost assets through participation in class action litigation. As of the close of the fiscal year, the class action filing portion of the asset recovery program has exceeded \$50 million since inception.

The Office of the Treasurer, as the Trustee for the CRPTF, served as lead plaintiff in the matter known as In Re Amgen, Inc. Securities Litigation, filed in the federal district court for the Southern District of California. The case, settled for \$95 million prior to the commencement of the trial. The court has approved the terms of the settlement and the claims filing process is underway.

### Corporate Governance Related Litigation

Litigation has not been recommended for corporate governance matters in the 2017 fiscal year. The Office of the Treasurer has focused on engagement of companies to promote good corporate citizenship. The Office is judicious in its consideration of the merits of litigation.

### Other Litigation

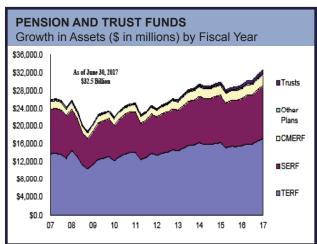
The Office of the Treasurer continues its participation in group action in Belgium adverse Fortis, N.A., France adverse Vivendi, S.A., Japan adverse Olympus, Denmark adverse O.W. Bunker, Germany adverse Volkswagen and Porsche and in Texas' state court adverse BP. The Fortis and Olympus matters have announced settlements, which are awaiting court approval and distribution of settlement proceeds. The Office evaluated the merits of joining other foreign group action during the fiscal year. Participation in foreign group action became necessary as the Supreme Court's decision in Morrison foreclosed all other avenues of recovery in matters of securities fraud

Figure 1-1

	TERF				SEI	RF			CIV	1ERF		
				r Upper			Lower				Lower	
	Actual	Polic	y Range	e Range	Actual	Policy	Range	Range	Actual	Policy	Range	Range
U.S. EQUITY												
Mutual Equity Fund (MEF)	22.3%	21.0%	17.0%	25.0%	22.2%	21.0%	17.0%	25.0%	16.1%	16.0%	13.0%	19.0%
INTERNATIONAL EQUITY												
Developed Market Intl Stock Fund (DMISF)	20.3%	18.0%	14.0%	22.0%	20.4%	18.0%	14.0%	22.0%	14.2%	14.0%	11.0%	17.0%
Emerging Market Intl Stock Fund (EMISF)	9.7%	9.0%	7.0%	11.0%	9.5%	9.0%	7.0%	11.0%	7.2%	7.0%	6.0%	8.0%
REAL ESTATE												
Real Estate Fund (REF)	7.0%	7.0%	5.0%	9.0%	6.9%	7.0%	5.0%	9.0%	7.0%	7.0%	5.0%	9.0%
FIXED INCOME												
Core Fixed Income Fund (CFIF)	6.7%	7.0%	6.0%	8.0%	7.4%	8.0%	6.0%	10.0%	7.9%	8.0%	6.0%	10.0%
Inflation Linked Bond Fund (ILBF)	3.5%	3.0%	2.0%	4.0%	5.1%	5.0%	4.0%	6.0%	4.9%	5.0%	4.0%	6.0%
Emerging Market Debt Fund (EMDF)	5.4%	5.0%	4.0%	6.0%	4.1%	4.0%	3.0%	5.0%	8.0%	8.0%	6.0%	10.0%
High Yield Debt Fund (HYDF)	5.7%	5.0%	4.0%	6.0%	5.4%	5.0%	4.0%	6.0%	13.9%	14.0%	11.0%	17.0%
Liquidity Fund (LF)*	5.2%	6.0%	5.0%	7.0%	3.4%	4.0%	3.0%	5.0%	2.8%		2.0%	4.0%
PRIVATE EQUITY												
Private Investment Fund (PIF)	8.1%	11.0%	8.0%	14.0%	9.6%	11.0%	8.0%	14.0%	10.1%	10.0%	7.0%	13.0%
ALTERNATIVE INVESTMENT												
Alternative Investment Fund (AIF)	6.1%	8.0%	6.0%	10.0%	6.0%	8.0%	6.0%	10.0%	7.9%	8.0%	6.0%	10.0%
TOTAL 1	00.0%	100 0%			100.0%	100 00/			100.0%1	100 00/		

<sup>\*</sup>Additional LF balances are included in actual allocations of other investment funds.

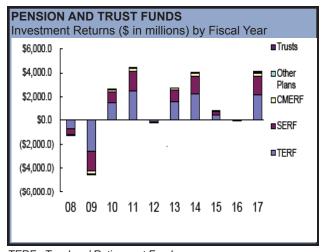
Figure 1-2



SERF - State Employees' Retirement Fund CMERF - Connecticut Municipal Employees' Retirement Fund

TERF - Teachers' Retirement Fund

Figure 1-3



TERF - Teachers' Retirement Fund SERF - State Employees' Retirement Fund CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 1-4

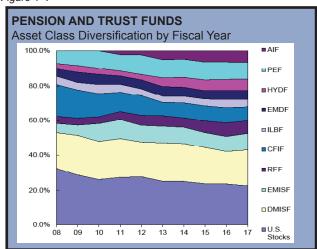
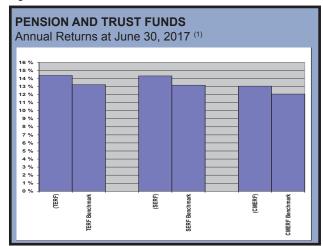


Figure 1-5

ISION AND TRU isor Breakdown	ST FUNDS		
C d	June 30,	June 30,	
Fund	2017	2016	
MEF	6	6	
DMISF(1)	9	9	
EMISF	3	3	
PIF	61	60	
CFIF	7	7	
ILBF	3	3	
EMDF	4	3	
HYDF	9	6	
REF	42	42	
LF	5	5	
AIF	10	10	
Total(2)	159	154	

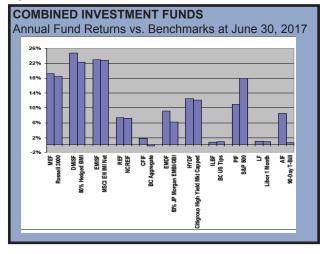
- (1) Does not include the Currency Overlay Manager.
- (2) Actual total advisors was 150 and 145, respectively when factoring in advisors across multiple funds. Private Investment partnerships with nonmaterial balances are not included.

Figure 1-6



(1) Each Plan benchmark composite represents the Plan's policy allocation weights times each investment Fund's benchmark return.

Figure 1-7



### **Combined Investment Funds Total Return Analysis (%)**

		Fiscal Ye	ars Ended	d June 30	,		Annualize	
	2017	2016	2015	2014	2013	3 Years	5 Years	10 Years
(Investment performance is calculated using a time-weighted rate of return	rn based on the	market rate o	f return.)					
PLANS								
Teachers' Retirement Fund (TERF)	14.38	0.25	2.79	15.67	11.83	5.63	8.80	4.97
TERF Custom Benchmark	13.24	(0.06)	3.21	15.09	11.95	5.32	8.52	4.87
State Employees' Retirement Fund (SERF)	14.32	0.26	2.84	15.62	11.90	5.63	8.80	4.87
SERF Custom Benchmark	13.17	(0.01)	3.24	15.15	11.88	5.32	8.52	4.87
Connecticut Municipal Employees' Retirement								
Fund (CMERF)	13.05	1.15	2.57	13.58	9.60	5.46	7.86	4.73
CMERF Custom Benchmark	12.07	0.77	2.32	13.85	10.32	4.94	7.74	4.90
U.S. Stocks								
Mutual Equity Fund	19.26	1.75	7.32	25.28	21.15	9.20	14.60	6.71
Russell 3000 Index	18.51	2.14	7.29	25.22	21.46	9.10	14.59	7.26
International Stocks								
Developed Markets International Stock Fund	24.81	(7.09)	0.67	22.31	22.56	5.30	11.86	2.80
MSCI EAFE IMI 50% Hedged	22.41	(9.26)	3.79	21.24	21.31	4.85	11.14	2.25
Emerging Markets International Stock Fund	23.00	(7.15)	(6.93)	11.50	3.29	2.06	4.14	1.57
MSCI Emerging Market Investable Market Index	22.82	(12.16)	(4.41)	14.31	3.66	1.03	4.09	2.09
Equity Commercial Real Estate								
Real Estate Fund	7.38	11.51	12.93	10.66	10.26	10.58	10.53	2.18
NCREIF (1 Qtr. Lag)	7.27	11.84	12.72	11.18	10.52	10.58	10.69	6.72
U.S. Fixed Income								
Core Fixed Income Fund	1.89	3.46	1.85	4.28	(0.24)	2.40	2.25	4.31
Barclays Aggregate Bond Index	(0.31)	6.00	1.86	4.37	(0.69)	2.48	2.21	4.48
Emerging Market Debt	9.11	6.01	(7.57)	6.99	1.69	2.25	3.07	5.87
50% JP Morgan EMBI/50% JPM GBI EMBI	6.26	5.96	(7.72)	7.61	2.82	1.28	2.83	6.08
High Yield Debt	12.59	(0.31)	(1.31)	12.24	8.46	3.47	6.19	6.77
Citigroup High Yield Market Capped Index	12.09	0.82	(0.80)	11.25	9.05	3.88	6.33	7.17
Inflation Linked Bonds	0.66	2.29	(2.85)	4.17	(4.28)	0.01	(0.05)	4.30
Barclays World Gov't Inflation Linked Bond Index	0.81	2.76	(3.21)	4.44	(4.78)	0.09	(0.06)	4.10
(2) Commercial Mortgage Fun	N/A	N/A	0.25	10.17	0.88	N/A	N/A	N/A
Barclays Aggregate Bond Index	N/A	N/A	1.86	4.37	(0.69)	N/A	N/A	N/A
Alternative Assets								
Private Investment Fund	10.97	8.87	14.04	16.06	9.50	11.27	11.85	9.51
S & P 500	17.90	3.99	7.42	24.61	20.60	9.61	14.63	7.18
Liquidity Fund								
(1) Liquidity Fund	0.96	0.68	(1.07)	0.54	0.66	0.18	0.35	0.98
LIBOR 1 Month Index	0.72	0.32	0.17	0.17	0.21	0.40	0.32	0.80
Alternative Investment Fund	8.51	(5.32)	3.98	6.63	6.39	2.22	3.92	N/A
90-Day T-Bill	0.49	0.19	0.02	0.05	0.11	0.23	0.17	N/A

<sup>(1)</sup> The Liquidity Fund includes all cash balances, including manager cash. However all fund returns still reflect cash balances.



### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Liquidity Fund (LF) is to: (1) provide a liquid source of funds for investment operations and (2) earn a return greater than that of money market investments.

Management Fees:

\$2,240,224

**Date of Inception:** November 1, 2007 **Total Net Position:** \$2,919,442,572

**Performance Objective:** A net return that matches the

benchmark, over rolling three to five year periods.

Benchmark: One Month London Interbank Offered Operating Expenses: \$651,869

Rate (LIBOR)

Number of Advisors: 5 external Expense Ratio: 0.12%

### **Description of the Fund**

The Liquidity Fund is structured into three distinct tiers to balance the need for liquidity with the need for positive investment returns.

- 1. The first tier is the most active portion of the LF and requires the highest liquidity. Tier I funds are invested in high quality money market instruments, which are considered the most liquid short-term assets.
- 2. The second tier slightly extends duration and credit quality for a higher expected return than Tier I. Investments include money market instruments, Government and agency paper, and high quality corporate and other short duration fixed income securities.
- 3. Global exposure in the third tier of the LF provides diversification. Short-to-medium term high quality foreign government bonds are held in this tier, in addition to foreign currencies.

### **Portfolio Characteristics**

The Liquidity Fund investments include U.S. Treasury and government agency securities, commercial paper, certificates of deposit, repurchase agreements, asset-backed securities, mortgage-backed securities, domestic and foreign corporate bonds, foreign sovereign debt and currencies. (See Figure 2-4.) As of June 30, 2017, the average maturity of the LF was 475 days and the average quality rating was AA-2. (See Figure 2-5.)

### **Market Review**

Three month Treasury yields rose from a first quarter low of 18 basis points to end the fiscal year at 1.03 percent and Libor also moved higher. For fiscal year 2017, the 2-year Treasury yield rose 78 basis points to 1.36 percent while the 10-year Treasury yield rose 81 basis points to 2.28 percent. The two-year Treasury yield more than doubled since the shock of the U.K. Brexit vote in June 2016. After bottoming in July, Treasury yields rose steadily as investors anticipated the Federal Reserve rate hike and then rates spiked with the presidential election in November. The Fed increased overnight lending rates by 25 basis points on three occasions during the fiscal period, with the Fed Funds target range ending the fiscal year at 1.0 percent to 1.25 percent. Inflation in the U.S. remained benign and unemployment dropped to 4.3 percent, the lowest rate since 2001, both indications of a further strengthening economy. Increases in European consumer confidence and business expectations helped the Euro reach a 52-week high and European sovereign debt yields moved higher. During this period of rising rates, non-Treasury sectors outperformed due to their income advantage as well as a tightening of spreads. Performance for the year ending June 30, 2017 for the Bank of American Merrill Lynch 1-3 Year Treasury Index was negative 11 basis points. Sector performance within the 1-3 year maturities showed corporates, asset-backed, agency, and municipal securities outperforming with excess returns over Treasuries of 156, 121, 31 and 41 basis points, respectively. A majority of emerging market currencies appreciated between 5 percent and 10 percent against the U.S. dollar.

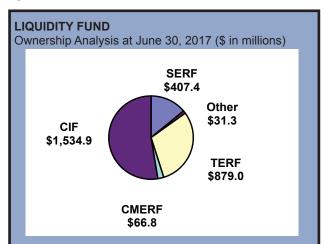
### **Performance Summary**

For the fiscal year ended June 30, 2017, the LF generated a return of .96 percent, outperforming one month LIBOR's return by 24 basis points. For the three- and five- year periods ending June 30th, the Fund returned 18 basis points and 35 basis points, versus 40 and 32 basis points, respectively, for each time period for one month LIBOR. The cumulative total returns of the LF for the three-, five- and ten-year periods were .55 percent, 1.75 percent, and 10.27 percent, respectively. (See Figure 2-6.)

### **Risk Profile**

Given the LF's investment policies and objectives, the Fund is exposed to some risks. Interest rate risk is somewhat mitigated by the Fund's 475 days average maturity and credit risk is moderated by investments being concentrated in high quality securities. Other potential risks include currency risk, reinvestment risk and inflation risk. Counter party risk is managed by dealing only with reputable, high quality firms.

Figure 2-1



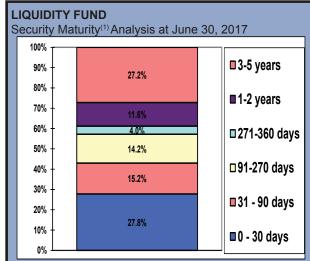
TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

CIF - Combined Investment Funds

Figure 2-3



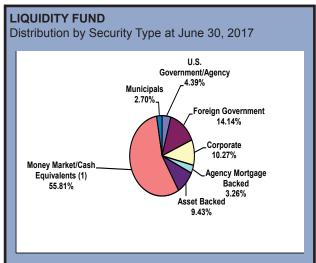
(1) Or Interest Rate Reset Period.

Figure 2-2

UIDITY FUND Profile at June 30, 2017 <sup>(1)</sup>		
Relative Volatility	10.14	
Standard Deviation	0.71	
R2	0.30	
Beta	0.13	
Alpha	0.03	

(1) Based upon returns over the last five years.

Figure 2-4



(1) Includes Commercial Paper, Certificates of Deposit and Repurchase Agreements.

Figure 2-5

	ITY FUND ehensive Pr	ofile		
Date	Number of Issues	Yield <sup>(1)</sup>	Average Maturity	Average Quality
2017	788	0.96%	475 days	AA-2
2016	776	0.68%	387 days	AA-2
2015	742	-1.07%	347 days	AA-2
2014	767	0.54%	343 days	AA-2
2013	495	0.66%	631 days	AA+
2012	329	-0.14%	482 days	AA-2
2011	337	1.20%	321 days	AA-1
2010	244	0.98%	202 days	AA-1
2009	162	1.54%	36 days	AA-2
2008	71	4.59%	39 days	A-1+/AA+

(1) Represents annual total return of the Fund for year ended

Figure 2-7

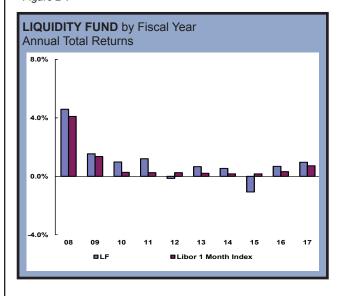


Figure 2-9

Investment Advisors	Net Asset Value	% of Fund
State Street Global Advisors	\$1,542,288,102	52.83%
Payden & Rygel	548,314,753	18.78%
PIMCO	431,429,437	14.78%
Lazard	99,657,597	3.41%
Colchester Global Investors Ltd.	297,752,345	10.20%
Other (1)	338	0.00%
Total LF	\$2,919,442,572	100.00%

(1) Other Represents cash equivalents, terminated advisors and other

Figure 2-6

	1 YR	3 YRS	5 YRS	10 YRS
Compounded, Annual Tot	al Retur	n (%)		
LF	0.96	0.18	0.35	0.98
LIBOR 1 MONTH INDEX	0.72	0.40	0.32	0.80
Cumulative Total Return (	%)			
LF	0.96	0.55	1.75	10.27
LIBOR 1 MONTH INDEX	0.72	1.20	1.59	8.25

Figure 2-8

LIQUIDITY FUND Investment Tiers at June 30, 2017			
Investments	Net Asset Value	% of Fund	
Tier I	\$1,542,288,102	52.83%	
Tier II	979,744,528	33.56%	
Tier III	397,409,942	13.61%	
Total LF	\$2,919,442,572	100.00%	
		ı	

Figure 2-10

LIQUIDITY FUND Ten Largest Holdings* at Ju	une 30, 20	017	
Security Name Ma	turity Date	Market Value	e %
CITIGROUP GLOBAL TRI REPO	7/3/2017	\$ 79,000,000	2.70%
FEDERAL NATL MTG ASSN DISC	7/3/2017	55,995,567	1.92%
WAL MART STORES DISC	7/10/2017	39,988,111	1.37%
U S TREASURY NOTE	12/31/2018	36,072,120	1.23%
MERRILL LYNCH TRI REPO	7/3/2017	33,000,000	1.13%
KELLS FDG LLC 144A DISC	9/12/2017	29,901,667	1.02%
REPUBLIC OF POLAND GVMT	7/25/2019	25,889,189	0.89%
U S TREASURY NOTE	2/15/2018	25,665,985	0.88%
NEW ZEALAND GVMT BO REGS	3/15/2019	25,546,107	0.87%
NATIONAL SEC CORP DISC	7/13/2017	24,988,229	0.86%
Top Ten		\$376,046,975	12.87%

A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.



### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Alternative Investment Fund (AIF) is to invest CRPTF assets in investment strategies that offer the potential to enhance overall portfolio expected returns, reduce risk, or a combination of both in a variety of market conditions. Additionally, the AIF is expected to provide diversification benefits and a degree of inflation protection. The AIF serves as a vehicle for strategies that are not easily classified, categorized, or described in the other Combined Investment Funds. Hybrid strategies that cut across multiple asset classes are also considered part of the opportunity set.

**Date of Inception:** February 1, 2011 **Total Net Position:** \$2,027,956,500

**Performance Objective:** To outperform the 90 day T-Bill **Expensed Management Fees:** \$0 Rate ("T-Bills") by 300 basis points net of all expenses.

Capitalized and Netted Fees: \$11,042,680

Benchmark: 90 Day T-Bills Operating Expenses: \$995,988

Number of Partnerships: 10 external Expense Ratio: 0.05%

\* Expense ratio is calculated using the management fee and operating expense totals.

### **Description of the Fund**

The AIF represents a unique investment exposure that differs from traditional, long-only funds. The strategies employed within the AIF represent a broad set of investment styles, mandates and products that focus primarily on the liquid equity, fixed income and derivatives markets, and may also include allocations to non-traditional investments, including illiquid securities and investments. AIF strategies may target absolute returns without reference to a traditional benchmark using a wide range of investment tools such as short-selling, leverage, derivatives and complex securities.

The AIF may invest in strategies that do not fit the constraints of existing Combined Investment Funds. Such strategies could include, but are not limited to, absolute return strategies, managed futures strategies, commodities, real assets and other alternative asset strategies.

The AIF mandate is executed through external investment advisors and money managers who actively manage fund of funds portfolios or through direct investments in single manager funds.

### **Portfolio Characteristics**

As of June 30, 2017, the AIF was invested in six absolute return oriented fund of hedge funds, including two fund of funds participating in the Connecticut Horizon Fund program, with a combined market value of \$1.85 billion. The portfolio also includes three real asset oriented private equity style funds that invest in energy infrastructure with a combined market value of \$122.7 million and a European distressed credit partnership with a market value of \$10.7 million.

### **Market Review**

The hedge fund industry experienced improved performance for the trailing 12 months ending June 30, 2017 driven by gains in equity sensitive strategies such as equity long/short and event driven funds as equity markets rallied. From a sector perspective, financials, and healthcare continued to drive positive performance and from a geographic perspective international exposure (i.e., Asia and Emerging Markets) out-performed U.S. exposure. With improved performance has come improved investor sentiment and positive flows into the market segment with investors refocusing on more traditional hedge fund products and concentrating their strategy decisions.

- Equity long/short managers benefited from positive equity beta, as stocks have rallied strongly since the elections in Nov 2016, and more alpha generation opportunities as dispersion in returns across stocks widened during 2017.
- Event driven managers, which lagged in 2016, performed well in 2017 due to an increase in M&A activity and stronger credit performance.
- Credit/distressed managers benefited from tighter yield spreads in 2017, particularly within the energy and metals/mining sectors with the retail sector continuing to lag.
- Market neutral strategies posted modest performance; low and stable volatility made it a challenge to managers that are long volatility. Fixed income relative value and statistical arbitrage managers also performed better.
- Convertible arbitrage managers posted solid returns during the fiscal year due to strong equity and credit markets.

Real asset investment activity rebounded during the first half of calendar year 2017 given the stable commodity price environment combined with profitable drilling and production of crude oil in the Permian Basin and mid-to-large size energy companies rationalizing non-core assets. During this same period energy IPO activity among upstream, midstream, and downstream companies rebounded from the multi-year low that occurred in 2016. In total, \$4.2 billion of IPO issuance occurred during the first half of 2017 compared to a total of \$1.2 billion in all of 2016.

### **Performance Summary**

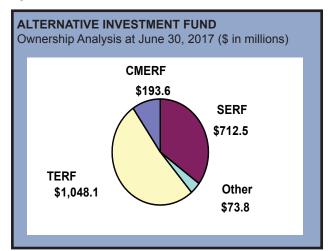
For the fiscal year ended June 30, 2017, the AIF generated a return of 8.51 percent, net of all expenses, which outperformed the 90-day Treasury bill return of 0.49 percent by 802 basis points. As of June 30, 2017, the trailing three- and five-year net annualized returns of the AIF were 2.22 percent and 3.92 percent, respectively. These returns outperformed the compounded 90-day Treasury bill return of 0.23 percent and 0.17 percent by 199 and 375 basis points, respectively.

Within the AIF, the fund of hedge funds portfolio returned 8.45 percent as of June 30, 2017. The consolidated hedge fund portfolios outperformed their fund of funds peer group (Hedge Fund Research, Inc. Fund of Funds Composite Index), which increased by 6.29 percent over the same period. It outperformed the broader Hedge Fund Research, Inc. Fund Weighted Composite Index, which increased by 7.98 percent. Within the AIF, the real assets portfolio returned 22.15 percent as of June 30, 2017.

### **Risk Profile**

Given the AIF's investment policy and objectives, the Fund is exposed to several forms of risk. These include, but are not limited to, risks attendant with alternative investments, such as management, operations and product risk, overall liquidity risk, leverage, short selling, derivative use, and transparency. Assuming these risks as part of a prudent, total portfolio strategy assists the AIF in achieving its investment objectives.

Figure 3-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 3-3

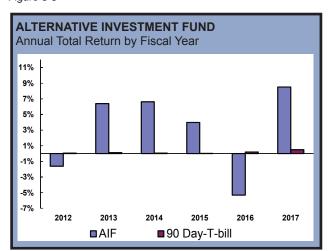


Figure 3-5

ALTERNATIVE INVESTMENT FUND Investment Advisors at June 30, 2017				
Investment Advisor	Net Asset Value	% of Fund		
Arclight Energy Partners Fund V	\$36,994,556	1.82%		
Arclight VI	49,413,209	2.44%		
EIG Energy Fund XV LP	36,262,167	1.79%		
Marathon European Credit Opportunity	10,702,910	0.53%		
Prudence Crandall I Permal LP	608,296,503	30.00%		
Prudence Crandall II Prisma LP	319,006,097	15.73%		
Prudence Crandall III Rock Creek LP	309,983,386	15.28%		
Prudence Crandall IV K2 LP	305,672,773	15.07%		
THOMAS WELLES FUND I	87,595,523	4.32%		
THOMAS WELLES FUND II	87,245,454	4.30%		
Other (1)	176,783,922	8.72%		
Total	\$2,027,956,500	100.00%		

(1) Other represents cash equivalents and other net assets.

Figure 3-2

ALTERNATIVE IN Periods ending Ju		UND		
	1 YR	3 YRS	5 YRS	
Compounded, Annual Total Return (%)				
AIF	8.51	2.22	3.92	
90 Day T-Bill	0.49	0.23	0.17	
Cumulative Total Return (%)				
AIF	8.51	6.82	21.17	
90 Day T-Bill	0.49	0.70	0.87	

Figure 3-4

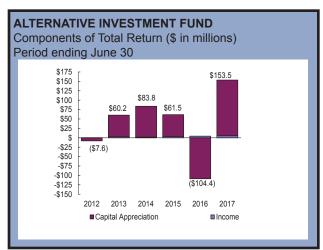


Figure 3-6

ALTERNATIVE INVESTMENT FUND Ten Largest Holdings* at June 30, 2017				
Partnership Name	Type	Market Value	%	
PC I Permal LP	Hedge F-o-F	\$608,296,503	30.01%	
PC II Prisma LP	Hedge F-o-F	319,006,097	15.74%	
PC III Rock Creek LP	Hedge F-o-F	309,983,386	15.29%	
PC IV K2 LP	Hedge F-o-F	305,672,773	15.08%	
Thomas Welles Fund I	Hedge F-o-F	87,595,523	4.32%	
Thomas Welles Fund II	Hedge F-o-F	87,245,454	4.31%	
Arclight Energy Prtnrs V	Real Assets	49,413,209	2.44%	
Arclight Energy Prtnrs V	Real Assets	36,994,556	1.83%	
EIG Energy Fund XV LP	Real Assets	36,262,167	1.79%	
Marathon Euro Credit Opp	Opportunistic	10,702,910	0.53%	
Top Ten		\$1,851,172,578	91.34%	

A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of



#### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Mutual Equity Fund (MEF) is to (1) achieve a long term, real rate of return significantly above the inflation rate; and (2) provide a source of diversification from other asset classes within the CRPTF during different economic environments.

Date of Inception: July 1, 1972 Total Net Position: \$7,022,130,703

Performance Objective: A net return that, at a minimum, Management Fees: \$13,261,733

matches the benchmark over rolling three- to five-year periods.

Benchmark: Russell 3000 Index Operating Expenses: \$7,952,650

Number of Advisors: 6 Expense Ratio: 0.31%

# **Description of the Fund**

The MEF assets are allocated across the U.S. stock market to ensure diversification by market capitalization and investment style, such as value and growth. The MEF may opportunistically invest up to 30 percent of assets to take advantage of shifts in the investment landscape or opportunities that offer diversification and/or risk-return benefits, and may include investments in any market capitalization and/or investment style as well as an allocation to stocks outside the U.S.

# **Portfolio Characteristics**

The MEF invests primarily in the common stock of U.S. corporations. The largest industry weightings at June 30, 2017 were financials (20.1 percent), followed by information technology (19.5 percent) and health care (14.1 percent) (See Figure 4-3).

The MEF's ten largest holdings, aggregating 14.8 percent of Fund investments, included a variety of blue chip companies and were broadly diversified, with the largest holding of 2.7 percent in Apple Inc. (See Figure 4-9).

#### **Market Review**

In the months leading up to the November elections, U.S. equities remained relatively flat due to political uncertainty and concerns about the timing of upcoming Federal Reserve interest rate increases. Following the election, U.S. equities soared higher amid hopes for rollback of regulatory reform, tax code changes, and increased infrastructure spending that could lead to stronger economic growth and corporate profits.

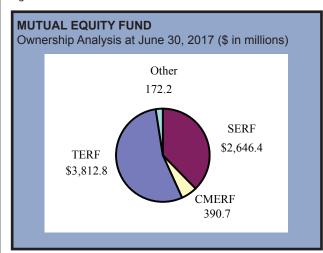
The U.S. stock market, as measured by the Russell 3000 index, increased 18.5 percent. Within the Russell 3000, small capitalization companies outperformed mid- and large capitalization companies. In the small cap space, growth and value stocks performed about the same, where in the large- and mid-caps growth stocks outperformed value stocks. The technology sector was the best performing sector in the index with a 34.8 percent return, followed by financial services with a return of 27.6 percent. The worst performing sectors were energy and utilities with a return of -4.7 and -2.0 percent, respectively.

# **Performance Summary**

For Fiscal Year 2017, the MEF generated a return of 19.26 percent, net of all expenses, which outperformed the Russell 3000 Index return by 75 basis points (See figure 4-4). As of June 30, 2017, the MEF

	CONNECTICUT STATE TREASURER'S COMBINED INVESTMENT FUNDS
	net annualized total returns, for the trailing three-, five- and ten-year periods were 9.20 percent and 6.71 percent, respectively.
Risk Profi	le
enchmark, t ne same as	n returns over the last five years, MEF has exhibited a similar degree of risk as that of it the Russell 3000 Index. With a relative volatility of 0.99, the MEF's volatility is approximatel the market. The Fund's active return, or its excess returns over the last five years, adjuste been a 0.01 (See figure 4-2).

Figure 4-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 4-3

MUTUAL EQUITY FUND Fiscal 2017 Industrial Sector vs. Index (%) Based on Investments in Securities, at Value (1)					
At 6/30/2017:	<u>MEF</u> % of Mrkt Value	Russel 3000 %of Mrkt Value			
Energy	5.1	5.6			
Materials	5.1	3.9			
Producer Durables	11.4	10.9			
Consumer Discretionary	13.5	13.8			
Consumer Staples	6.7	7.2			
Health Care	14.1	13.9			
Financials	20.1	21.3			
Information Technology	19.5	18.2			
Utilities	4.5	5.2			
	100.0	100.0			

(1) Excludes the Liquidity Fund.

Figure 4-5

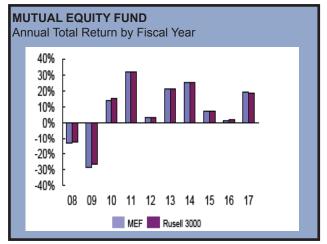


Figure 4-2

rual Equity Fund: Profile at June 30, 2017 <sup>(1)</sup>		
Relative Volatility	0.99	
Standard Deviation	9.63	
R2	1.00	
Beta	0.99	
Alpha	0.01	

(1) Based upon returns over the last five years.

Figure 4-4

MUTUAL EQUITY FUND Periods ending June 30, 2017					
	1 YR	3 YRS	5 YRS	10 YRS	
Compounded, Annual	Total Return (	%)			
MEF	19.26	9.20	14.60	6.71	
Russell 3000	18.51	9.10	14.59	7.26	
Cumulative Total Retur MEF Russell 3000	n (%) 19.26 18.51		97.63 97.53		

Figure 4-6

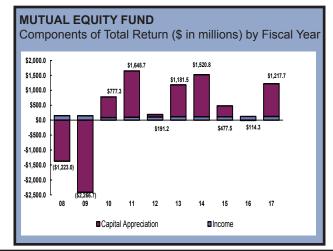


Figure 4-7

# **MUTUAL EQUITY FUND**

Comprehensive Profile for the Fiscal Years ending June 30,

	20	17	20	16	20	15	20	)14	2	013
	MEF	Russell	MEF	Russell	MEF	Russell	MEF	Russell	MEF	Russell
# of Issues	1,756	3,000	1,706	3,000	1,807	3,000	1,806	3,000	1,721	3,000
Cap (\$ Bil) P/E	\$137.0	\$140.2	\$114.1	\$114.6	\$108.1	\$108.9	\$102.1	\$101.7	\$85.5	\$85.8
P/E	25.0	24.3	22.8	22.1	22.0	21.7	21.2	20.8	19.3	19.2
Div Yield	1.73%	1.89%	1.92%	2.06%	1.81%	1.93%	1.74%	1.84%	1.90%	2.10%
ROE	16.2%	16.2%	16.6%	16.4%	17.7%	17.5%	16.9%	17.0%	17.3%	17.8%
P/B	3.0	3.0	2.6	2.4	2.8	2.8	2.8	2.7	3.8	3.7
Cash & Equiv.	5.7%	0.0%	1.2%	0.0%	1.1%	0.0%	0.9%	0.0%	0.8%	0.0%
Source: Custodian B	Source: Custodian Bank									

Figure 4-8

MUTUAL EQUITY FUND Investment Advisors at June 30, 2017				
Investment Advisor	Net Asset Value	% of Fund		
Large Cap	\$5,317,010,424	75.72%		
T. Rowe Price Associates	2,265,341,959	32.26%		
State Street Global Advisors	3,051,668,465	43.46%		
All Cap	629,717,239	8.97%		
Capital Prospects	324,236,955	4.62%		
FIS Group, Inc.	305,480,284	4.35%		
Small/Mid Cap	733,833,239	10.45%		
Frontier Capital Mgmt Co	408,898,925	5.82%		
Bivium	324,934,314	4.63%		
Other (1)	341,569,801	4.86%		
TOTAL MEF	\$7,022,130,703	100.00%		

<sup>(1)</sup> Other represents cash equivalents and other net assets.

Figure 4-9

MUTUAL EQUITY F Ten Largest Holding		2017	
Security Name	Sector	Market Value	%
Apple Inc	Information Tech	\$190,196,701	2.71%
Microsoft Corp	Information Tech	149,416,390	2.12%
Amazon.Com Inc	Consumer Discr	107,485,752	1.53%
Facebook Inc	Information Tech	104,412,031	1.49%
Exxon Mobil Corp	Energy	90,102,430	1.28%
Johnson & Johnson	Health Care	87,638,818	1.25%
JPMorgan Chase & C	o Financials	87,365,421	1.24%
Alphabet Inc-CL C	Information Tech	74,943,872	1.07%
Alphabet Inc-CL A	Information Tech	74,259,120	1.06%
Wells Fargo & Co	Financials	70,976,110	1.01%
Top Ten	\$1	,036,796,645	14.76%

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.



#### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Core Fixed Income Fund (CFIF) is to: (1) achieve a long-term real rate of return above the inflation rate; (2) generate a stream of income and (3) provide a source of diversification from other asset classes within the CRPTF during different economic environments.

**Expensed Management Fees: \$2,602,485** 

Date of Inception: November 1, 2007 Total Net Position: \$2,452,383,489

**Performance Objective:** A net return that matches its benchmark, over rolling three-to-five year periods.

Capitalized and Netted Fees: \$919,783

Benchmark: Barclays U.S. Aggregate Bond Index

Net Operating Expenses: \$1,648,294

Number of Advisors: 7 External Expense Ratio: 0.17%

# **Description of the Fund**

The CFIF assets are invested across debt instruments issued by the U.S. Government and its agencies, U.S. or international corporations, high quality quasi or sovereign debt and any other public or private U.S. regulated debt securities. The CFIF may invest up to 30 percent of its assets opportunistically to take advantage of shifts in the investment landscape or opportunities which offer diversification and/or risk-return benefits.

#### **Portfolio Characteristics**

At the end of fiscal 2017, the composition of the CFIF was: corporate bonds 21.9 percent, mortgage-backed securities 5.5 percent, U.S. Treasuries 20.3 percent, asset-backed securities 3.3 percent, and government agency securities 20.7 percent. The remaining assets were invested in the Liquidity Fund and other assets, including two opportunistic funds valued at \$566,040,052. As of June 30, 2017, the CFIF was overweight government agency securities, asset backed securities, and opportunistic investments compared to the Barclays U.S. Aggregate Bond Index, and underweight mortgage-backed securities, U.S. Treasury, and corporate bonds. (See Figure 5-4.) Fifty eight percent of the CFIF was invested in AAA-rated securities. (See Figure 5-5.) The duration of the Fund was 6.15 years, compared to 6.09 years for the benchmark. The yield to maturity was 2.91 percent for the CFIF versus 2.46 percent for the Barclays U.S. Aggregate Bond Index. (See Figure 5-11.)

# **Market Review**

The Barclays U.S. Aggregate Index had a 31 basis point loss for the fiscal year ending June 30, 2017, as rising bond yields more than offset the impact of coupon income and spread tightening. The negative return of 2.5 percent during the first half of the fiscal year was driven by the sell-off in rates after the U.S. presidential election. Reflationary trends emerged with stronger nominal growth, higher inflation expectations and the potential for fiscal policy to replace monetary policy as a driver of growth. Yields across the curve rose 60 to 90 basis points in the aftermath of the election as investors priced in the potential impact from a large infrastructure plan, tax code changes and relaxed regulatory reform. In December, the Federal Reserve began a normalization of monetary policy starting with the first of three rate hikes made during the fiscal year.

U.S Treasury securities lost 4.1 percent while investment grade credit sustained only 1.5 percent loss between July and December. In the second half of the fiscal year the core fixed income market generated a gain of 2.3 percent. The yield curve flattened during this period reflecting the lack of progress on stated legislative priorities. Inflation expectations declined as the U.S. economy expanded at its weakest pace in over three years causing yields for bonds with five or more years to maturity to decline materially, thereby erasing some of the losses of the first half of the fiscal period. Treasuries gained 1.9 percent during the period while investment grade credit was up 3.8 percent. Corporate bonds were the top performers, followed by taxable municipal bonds.

In the persistent low interest rate environment investors continued to seek higher yields and spread products and lower rated bonds outperformed.

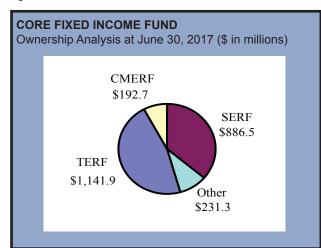
# **Performance Summary**

For the fiscal year ended June 30, 2017 the CFIF outperformed the Barclays U.S. Aggregate Bond Index by 220 basis points, generating a 1.89 percent net return compared to a -0.31 percent return for the benchmark. As of June 30, 2017, the CFIF's net annualized total returns for the trailing three and five-year periods were 2.40 percent and 2.25 percent, respectively, slightly underperforming the benchmark by 8 and 4 basis points, respectively. The cumulative total returns of the Fund were 7.36 percent over the past three years and 11.74 percent for the five-year period ending June 30th. (See Figure 5-8.)

#### **Risk Profile**

Given the CFIF's investment policies and objectives, the Fund is exposed to several forms of risk, such as credit default risk, interest rate risk, liquidity risk, inflation risk, reinvestment risk, counter party risk and geopolitical risk. These risks are monitored on an ongoing basis, and actions are taken to mitigate identified risks. External rating agencies assign credit ratings to individual securities reflecting their views of the underlying firm's credit worthiness or the underlying assets in the case of securitized debt. As of fiscal year end, over half of the CFIF was rated AAA.

Figure 5-1

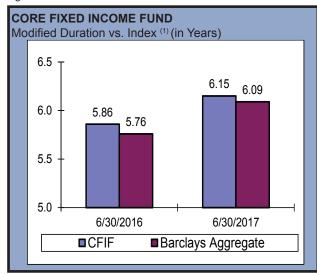


TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 5-3



(1) Computed without the effect of Cash and other assets.

Figure 5-5

CORE FIXED INCOME FUND Distribution by Quality Rating at June 30, 2017 Based on Investments in Securities, at Value				
	AAA	58.4%		
	AA-1 to AA3	3.9%		
	A-1 to A-3	12.7%		
	BAA-1 to BAA-3	17.3%		
	Less than BAA-3	0.4%		
	Not Rated1	7.3%		
	Total	100.0%		

(1) Represents securities for which ratings are unavailable.

Figure 5-2

RE FIXED INCOME FUND  ( Profile at June 30, 2017 (1)		
Relative Volatility Standard Deviation R2 Beta Alpha	0.86 2.45 0.93 0.83 0.04	

(1) Based upon returns over the last five years.

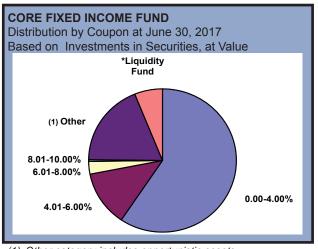
Figure 5-4

CORE FIXED INCOME FUND
Distribution by Sector at June 30, 2017
Based on Investments in Securities, at Value

	CFIF	Barclays Aggregate	Variance
Treasury	20.3%	37.0%	-16.7%
Agency	20.7%	3.5%	17.2%
Corporate	21.9%	25.3%	-3.5%
Mortgage-Backed	5.5%	28.2%	-22.7%
Asset-Backed	3.3%	0.5%	2.8%
Other (1)	<u>28.3%</u>	<u>5.5%</u>	22.8%
TOTAL	100.0%	100.0%	

(1) Other category includes opportunistic assets, Liquidity Fund and other assets.

Figure 5-6



(1) Other category includes opportunistic assets.

Figure 5-7

CORE FIXED INCOME FUND Duration Distribution at June 30, 2017 Based on Investments in Securities, at Value				
0-3 Years	22.0%			
3-5 Years	31.0%			
5-7 Years	16.3%			
7-10 Years	10.1%			
10+ Years	11.8%			
Undetermined ®	8.8%			
Total	100.0%			

<sup>(1)</sup> Represents securities for which the duration could not be calculated by the custodian.

Figure 5-8

CORE FIXED INCOME FUND Periods ending June 30, 2017								
	1 YR	3 YRS	5 YRS	10 YRS				
Compounded, Annual Total Return (%) Compounded, Annual Total Return (%) CFIF 1.89 2.40 2.25 4.31* Barclays Aggregate -0.31 2.48 2.21 4.48								
Cumulative Total Return CFIF Barclays Aggregate	(%) 1.89 -0.31	7.36 7.63	11.74 11.57	52.46* 54.97				

<sup>\*</sup>Represents historical returns at the portfolio composite level.

Figure 5-9

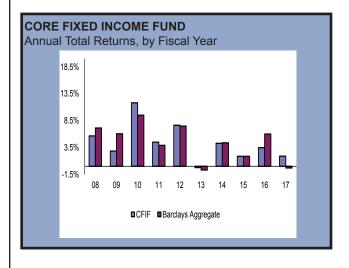


Figure 5-10

CORE FIXED INCOME FUND Investment Advisors at June 30, 2017									
Investment Advisors	Net Asset Value	% of Fund							
State Street Global Advisors	\$251,945,275	10.27%							
BlackRock Financial Management, Inc.	528,277,226	21.54%							
Wellington	538,592,555	21.96%							
Conning-Goodwin Capital	378,359,692	15.43%							
Progress	118,900,899	4.85%							
Prudence Crandall Fund III Opportunistic	279,748,952	11.41%							
Prudence Crandall Fund IV Opportunistic	286,291,100	11.67%							
Other (1)	70,267,790	2.87%							
TOTAL CFIF	\$2,452,383,489	100.00%							

<sup>(1)</sup> Other represents Liquidity Fund, other assets and terminated advisor balances.

Figure 5-11

		une 30		2010		0.1.5		4.4	-	240
	CFIF	17 BC AGG	CFIF	2016 BC AGG	CFIF	015 BC AGG	20 CFIF	BC AGG	CFIF 20	D13 BC AGG
# of Issues	4,129	9,355	3,844	9,804	3,448	9,496	3,080	8,818	3,227	8,382
Average Coupon	3.37%	3.11%	3.35%	3.21%	3.54%	3.31%	3.47%	3.41%	3.60%	3.50%
Yield Maturity	2.91%	2.46%	2.20%	1.74%	2.59%	2.29%	2.31%	2.10%	2.30%	2.30%
Average Maturity	8.40	8.00	7.78	7.85	8.73	7.57	8.05	7.29	7.20	6.90
Modified Duration	6.15	6.09	5.86	5.76	6.15	5.72	5.85	5.58	5.50	5.20
Average Quality	AA-2	AA-2	AA-2	AA-2	AA-2	AA-2	AA-2	AA-2	AA-2	AA-2
Liquidity Fund	5.8%	0.0%	3.8%	0.0%	7.2%	0.0%	6.5%	0.0%	8.4%	0.0%

Figure 5-12

# CORE FIXED INCOME FUND

Ten Largest Holdings\* at June 30, 2017

Security Name	Maturity	Market Value	%
U S TREASURY NOTE	5/31/2019	\$28,565,703	1.10%
U S TREASURY NOTE	6/30/2021	23,957,381	0.92%
FNMA TBA	8/1/2047	22,865,082	0.88%
U S TREASURY NOTE	4/30/2019	19,478,964	0.75%
U S TREASURY NOTE	5/15/2027	18,276,965	0.70%
U S TREASURY NOTE	2/28/2022	17,120,691	0.66%
FNMA TBA	7/1/2047	15,375,669	0.59%
GNMA TBA	7/20/2047	15,219,885	0.59%
FHLM TBA	8/1/2047	15,176,512	0.58%
<u>U S TREASURY NOTE</u>	8/15/2025	12,795,841	0.49%
Top Ten		\$188,832,693	7.26%

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

Figure 5-13

	6/30/17	3/31/17	12/31/16	9/30/16	6/30/16
CORE FIXED INCOME	3.24	3.29	3.93	3.33	3.48
Barclays Aggregate	2.92	2.94	2.97	2.87	2.90
Barclays Treasury	2.05	2.03	2.01	1.92	1.92
Barclays Agency	2.16	2.17	2.06	2.03	2.09
Barclays Mortgage	3.44	3.46	3.48	3.44	3.48
Barclays Corporate	3.69	3.75	3.81	3.66	3.74
Barclays Asset Backed	1.97	1.90	1.90	1.86	2.04

<sup>(1)</sup> Current Yield represents annual coupon interest divided by the market value of securities.



# Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Inflation Linked Bond Fund (ILBF) is to (1) achieve a long- term, real rate of return above the inflation rate; (2) provide protection against rampant inflation; and (3) offer a source of diversification relative to other asset classes within the CRPTF during different economic environments.

Management Fees: \$2,613,172

Net Operating Expenses: \$2,552,771

**Date of Inception:** November 1, 2007 **Total Net Position:** \$1,344,025,745

**Performance Objective:** A net return, which matches the benchmark, over rolling three-to five-year periods.

**Benchmark:** Barclays World Government Inflation-Linked

Bond Index

Number of Advisors: 3 external Expense Ratio: 0.39%

# **Description of the Fund**

Inflation linked bonds are high-quality securities issued primarily by governments in their home country currencies. While the benchmark for this Fund is unhedged, investment managers have discretion to hedge foreign currency exposure back to the U.S. dollar. Inflation-linked bonds carry a fixed interest rate and the principal of the bonds is adjusted semi-annually for any rise or decline in the inflation rate. (During fiscal year 2015, three firms were hired to invest in global inflation-linked bonds, replacing the firms who previously managed U.S. inflation-linked bonds.)

#### **Portfolio Characteristics**

At June 30, 2017, the ILBF was well diversified with issues of inflation-linked and nominal sovereign bonds from eight countries plus the United Kingdom and the Eurozone. (See Figure 6-3.) The average coupon of this Fund was 1.41 percent compared to 1.15 percent for the benchmark. Duration of the ILBF at 10.85 years was shorter than the 12.55 years of the benchmark. Credit quality of this Fund matched the benchmark at AA-2 on June 30, 2017. (See Figure 6-9.)

#### Market Review

The Barclays World Government Inflation Linked Bond Index posted a return of 0.81 percent for the fiscal year ending June 30, 2017. Hawkish central banks and political developments dominated markets and signs of global reflation appeared early in the period. Inflation markets broadly outperformed through the first three quarters of fiscal year 2017, with strong inflows into the asset class, especially in the U.S. Treasury Inflation Protected Securities (TIPS). Ten year TIPS' breakeven rates rallied as high as 2.08 percent before reversing to a low of 1.67 percent in June 2017. Post-election, U.S. inflation breakevens widened 30 basis points and then gave back 24 basis points by the end of the fiscal year. Fiscal policy delays, ongoing monetary tightening and weaker CPI data contributed to a tapering of inflation-linked inflows. After widening earlier in the year, global breakevens narrowed, weighed by increased energy volatility and central bank agression. While the U.S. Treasury nominal yield curve flattened in response to persistence from the Federal Reserve Bank, U.S. TIPS real rates lagged, although the breakeven curve did also flatten. In Germany, real rates followed nominals steeper on improved economic outlook but also lagged, steepening the breakeven curve in the process. The U.K real curve was mixed, following nominals flatter on initial recession concerns after

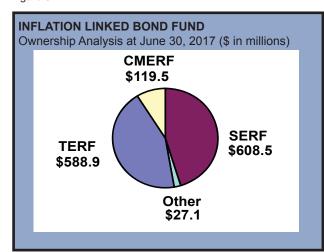
the Brexit vote before steepening on rising near-term inflation concerns after the sharp Sterling sell-off. Emerging markets benefitted from low and stable inflation and from a declining U.S. dollar through the last half of the fiscal year.

# **Performance Summary**

For the fiscal year ended June 30, 2017 the ILBF underperformed the Barclays World Government Inflation-Linked Bond Index by 15 basis points, generating a 0.66 percent net return compared to a 0.81 percent return for the benchmark. During the three- and five-year periods ending June 30th, assets then

invested primarily in U.S. inflation-linked bonds, generated annualized returns of 0.01 percent and -0.05 percent, compared with the benchmark returns of 0.09 percent and -0.06 percent, respectively. The cumulative total returns of the Fund were 0.03 percent over the past three years and -0.26 percent for the five-year period ending June 30th. (See Figure 6-7.)	€
Risk Profile	
Given the ILBF's investment policies and objectives, the Fund is exposed to various risks such as interest rate risk, deflation risk, currency risk, geopolitical risk, and credit risk.	,_ _

Figure 6-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

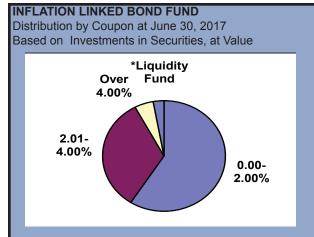
Figure 6-3

# INFLATION LINKED BOND FUND Distribution by Country at June 30, 2017 Based on Investments in Securities, at Value

	E	3C World Gov	't
	ILBF	Infl Linked	Variance*
U.S.	41.2%	43.8%	-2.6%
U.K.	18.7%	28.9%	-10.3%
Eurozone	17.2%	20.1%	-2.9%
Mexico	3.9%	0.0%	3.9%
Brazil	0.0%	0.0%	0.0%
Canada	1.2%	2.1%	-0.9%
South Africa	1.6%	0.0%	1.6%
Japan	1.3%	2.2%	-0.9%
Australia	4.8%	1.2%	3.6%
New Zealand	5.6%	0.5%	5.1%
Other	1.7%	1.2%	0.5%
Liquidity Fund	2.8%	0.0%	2.8%
TOTAL	100.0%	100.0%	

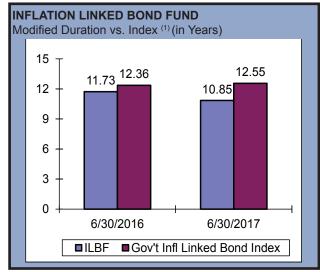
<sup>\*</sup> Results may be rounded.

Figure 6-5



\*Note: Ending weights

Figure 6-2



(1) Computed without the effect of Cash and other assets. Figure 6-4

#### INFLATION LINKED BOND FUND

Distribution by Quality Rating at June 30, 2017 Based on Investments in Securities, at Value

AAA	49.1%
AA-1 to AA-3	29.6%
A-1 to A-3	7.1%
BAA-1 to BAA-3	9.4%
Less than BAA-1	2.0%
Liquidity Fund (1)	2.8%
Total	100.0%

(1) Represents monies invested in Cash Equivalents.

Figure 6-6

INFLATION LINKED BOND FUND Duration Distribution at June 30, 2017 Based on Investments in Securities, at Value					
0-3 Years	14.6%				
3-5 Years	12.6%				
5-7 Years	13.6%				
7-10 Years	16.7%				
10+ Years	39.7%				
Liquidity Fund (1)	2.8%				
Total	100.0%				

(1) Represents monies invested in Cash Equivalents.

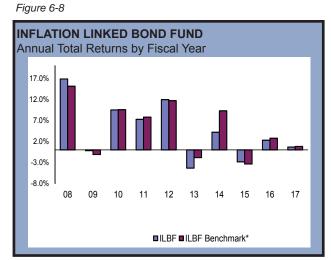
Figure 6-7

INFLATION LINKED BOND FUND Periods ending June 30, 2017								
	1 YR	3 YRS	5YRS	10YRS				
Compounded, Annual Tot	al Retur	n (%)	-0.05	4.30*				
BC World Gov't Infl Linked	0.00	0.01	-0.03	4.50				
Bond Index <sup>(1)</sup>	0.81	0.09	-0.06	4.10				
Cumulative Total Return (%)								
ILBF	0.66	0.03	-0.26	52.35*				
BC World Gov't Infl Linked Bond Index <sup>(1)</sup>	0.81	0.27	-0.28	49.52				

<sup>(1)</sup> The benchmark was changed during Fiscal Year 2015 from BC U.S. TIPS to BC World Government Inflation Linked Bond Index.
\*\*Represents historical returns at the portfolio composite level

\*Represents historical returns at the portfolio composite level.

Figure 6-9



\*Note: 2015 and forward the Benchmark is BC World Government Inflation Linked Bond Index. For prior years the benchmark is BC U.S. TIPS Index.

INFLATION LINKED BOND FUND Comprehensive Profile for the Fiscal Year ending June 30										
	20 ILBF	17 BC World Gov't Infl	<u>2</u> ILBF	016 BC World Gov't Infl	<u>2</u> ( ILBF	015 Barclays US TIPS	<b>20</b> : ILBF	14 Barclays US TIPS	<u>20</u> ILBF	D13 Barclays US TIPS
# of Issues	382	136	587	134	418	131	37	35	33	34
Average Coupon	1.41%	1.15%	1.65%	1.23%	2.08%	1.35%	1.53%	1.22%	1.45%	1.39%
Average Maturity	11.70	13.68	13.71	13.49	12.63	13.40	8.68	8.57	8.79	8.70
Modified Duration	10.85	12.55	11.73	12.36	11.32	12.07	7.31	7.72	8.20	7.96
Average Quality	AA-2	AA-2	AA-2	AA-1	AA-2	AA-1	AAA	AAA	AAA	AAA
Liquidity Fund(1)	2.8%	0.0%	3.1%	0.0%	2.4%	0.0%	5.6%	0.0%	3.6%	0.0%

<sup>(1)</sup> Ending Weights

Figure 6-10

INFLATION LINKED BOND FUND Investment Advisors at June 30, 2017								
Investment Advisors		Net Asset Value	% of Fund					
BlackRock	\$	515,186,615	38.33%					
Colchester		610,713,250	45.44%					
New Century		189,191,788	14.08%					
Other <sup>(1)</sup>		28,934,092	2.15%					
TOTAL ILBF	\$1	,344,025,745	100.00%					

(1) Other represents Liquidity Fund, other assets and terminated advisor balances.

Figure 6-11

INFLATION LINKED BOND FUND Ten Largest Holdings (1) at June 30, 2017							
		Market					
Security Name	Maturity	Value	%				
US TREAS-CPI INFLAT	4/15/2029	\$ 59,556,259	4.47%				
US TREAS-CPI INFLAT	4/15/2019	54,596,993	4.10%				
ITALY GOVERNMENT BOND	9/15/2023	51,492,593	3.86%				
US TREAS-CPI INFLAT	1/15/2027	51,404,516	3.86%				
US TREAS-CPI INFLAT	7/15/2022	46,737,288	3.51%				
US TREAS-CPI INFLAT	2/15/2042	43,573,827	3.27%				
US TREAS-CPI INFLAT	4/15/2022	38,739,825	2.91%				
NEW ZEALAND GOVERNMENT BOND	9/20/2030	35,925,949	2.69%				
FRANCE GOVERNMENT BOND	7/25/2040	34,993,349	2.62%				
UNITED KINGDOM GILT INFLA REGS	3/22/2044	33,235,116	2.49%				
Top Ten		\$450,255,715	33.78%				

<sup>(1)</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.



#### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Emerging Market Debt Fund (EMDF) is to (1) achieve long-term, real rate of return above the inflation rate and (2) provide some diversification relative to other asset classes within CRPTF given the different global economic environments.

**Date of Inception:** November 1, 2007 **Total Net Position:** \$1,637,181,016

Performance Objective: A net return that Management Fees: \$5,645,057

exceeds the benchmark by 100 basis points,

**Benchmark:** J.P. Morgan Emerging Markets Bond Index Global Diversified (JPM EMBI GD) (50%) J.P. Morgan Government Bond Index Emerging Markets Global Diversified (JPM GBI EM GD) (50%)

Number of Advisors: 4 external Expense Ratio: 0.39%

# **Description of the Fund**

The EMDF invests primarily in debt instruments issued by governments and companies operating in developing countries as identified by the benchmark, the World Bank, or the United Nations. The EMDF is generally weighted 50 percent to U.S. dollar-denominated securities and 50 percent to securities issued in local currencies. For performance measurement purposes, the dollar-denominated securities are benchmarked to the JPM EMBI GD and the local currency securities are benchmarked to the JPM GBI EM GD.

# **Portfolio Characteristics**

The EMDF is well diversified with broad geographic and currency exposures. Latin America and Europe have the highest representation; while the Middle East and Africa have the lowest exposure, relatively consistent with the benchmark. (See Figure 7-3.) The Fund had an overall yield to maturity of 6.72 percent compared to the EMBI benchmark yield of 5.58 percent. The average quality of EMDF was BA-1 versus the EMBI benchmark average of BAA-3. The duration of the EMDF was 5.69 years versus 5.96 years for the benchmark. (See Figure 7-11.)

#### Market Review

Emerging Market Debt (EMD) investments were positive contributors to fiscal year performance. Developing countries enjoyed a broadly supportive external environment, including solid economic activity in developed countries and a cyclical improvement in Chinese data. Growth trends began to recover and external accounts continued to mend. Inflation declined notably in several large emerging countries allowing central banks to lower interest rates. The favorable emerging market debt environment attracted robust inflows into the asset class during the fiscal year.

The U.S. dollar-denominated emerging market debt, as measured by the JPM EMBI GD, returned 6.0 percent during fiscal year 2017. The return was primarily based on yield. EMD credit spreads declined by 80 basis points, but that was fully offset by rising U.S. Treasury yields. Non-investment grade credit outperformed investment grade bonds due to higher yield and greater spread tightening. Regionally, Africa and the Middle East delivered outsized performance, reflective of the higher tolerance for idiosyncratic risk among investors over the period.

In local currency markets, total return was starkly different depending on the currency of measurement. The JP Morgan GBI EM GD index returned 6.4 percent, driven mostly by coupon income. The market yield

declined 15 basis points during the fiscal year, but a small currency translation loss back to the U.S. largely offset this. The currency performance factor split the universe with half benefitting from stronger currencies relative to the U.S. dollar, and half experiencing weaker currencies. Most countries produced a positive total return with the exceptions of Turkey, the Philippines and Malaysia. In contrast, South Africa returned over 20 percent in U.S. dollar terms, generating two thirds of the return from a strengthening currency. Russia also delivered outsized returns as very high real interest rates attracted investors to the local market.

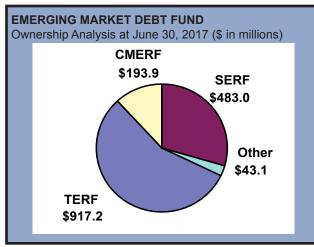
# **Performance Summary**

For the fiscal year ended June 30 2017, the EMDF generated a return of 9.11 percent, net of all expenses, outperforming the benchmark return of 6.26 percent by 285 basis points. As of June 30, 2017, the EMDF compounded net annualized returns for the three- and five-year periods were 2.25 percent, and 3.07 percent, respectively, versus 1.28 percent and 2.83 percent for the blended benchmark. The cumulative returns of the EMDF for the three- and five-year periods were 6.90 percent and 16.34 percent, respectively, outperforming the benchmark returns of 3.89 percent and 14.96 percent. (See Figure 7-7).

# **Risk Profile**

Given the EMDF's investment policies and objectives, the Fund is exposed to multiple types of risk. These risks include, but are not limited to, credit risk, currency risk, interest rate risk, liquidity risk, inflation risk and geopolitical risk. Approximately half of the Fund is rated as investment grade.

Figure 7-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

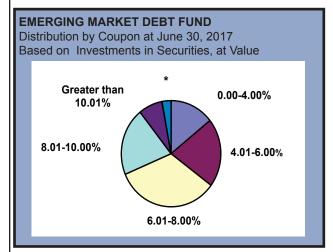
CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 7-3

EMERGING MARK Distribution by Regi			
	EMDF	50% JPM EMB GD/ 50% JPM GBI EM GD	=
Asia	16.4%	17.8%	-1.4%
Africa	9.2%	9.2%	0.0%
Europe	31.2%	32.1%	-0.9%
Latin America	35.9%	33.4%	2.5%
Middle East	4.4%	7.5%	-3.1%
United States (1)	<u>2.9%</u>	0.0%	2.9%
TOTAL	100.0%	100.0%	

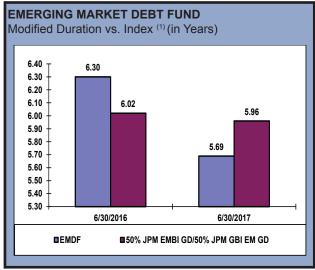
<sup>(1)</sup> Mainly Liquidity Fund holdings.

Figure 7-5



<sup>\*</sup>Liquidity Fund and other assets.

Figure 7-2



(1) Computed without the effect of Cash and other assets.

Figure 7-4

Dis	EMERGING MARKET DEBT FUND Distribution by Quality Rating at June 30, 2017 Based on Investments in Securities, at Value					
	Aaa	0.7%				
	AA-1 to AA3	0.2%				
	A-1 to A-3	13.9%				
	BAA-1 to BAA3	32.3%				
	Less than BAA-3 44.7%					
	Not Rated <sup>(1)</sup> 8.2%					
	Total	100.0%				

(1) Represents securities for which ratings are unavailable.

Figure 7-6

EMERGING MARKET DEBT FUND Duration Distribution at June 30, 2017 Based on Investments in Securities,	
0-3 Years	19.4%
3-5 Years	27.4%
5-7 Years	19.5%
7-10 Years	17.4%
10+ Years	11.9%
Undetermined (1)	1.5%
Liquidity Fund (2)	2.9%
Total	100.0%

- (1) Represents securities for which the duration could not be calculated by the custodian.
- (2) Represents monies invested in the Liquidity Fund and other assets.

Figure 7-7

EMERGING MARKET DI Periods ending June 30, 2	فالتاكن	UND		
	1 YR	3 YRS	5YRS	10 YRS
Compounded, Annual Tota	al Retu	rn (%)		
EMDF	9.11	2.25	3.07	5.87*
50% JPM EMBI GD/	0.00	4.00	0.00	
50% JPM GBI EM GD	6.26	1.28	2.83	6.08
Cumulative Total Return (	%)			
EMDF	9.11	6.90	16.34	76.86*
50% JPM EMBI GD/ 50% JPM GBI EM GD	6.06	2 00	14.96	00.40
50% JAM GRI EM GD	0.20	3.89	14.90	80.48
-				

<sup>\*</sup> Represents historical returns at the portfolio composite level.

Figure 7-9

EMERGING MARKET DEBT FUND Investment Advisors at June 30, 2017							
Investment Advisors		Net Asset Value	% of Fund				
Ashmore Investment Mgt. Ltd.	\$	576,148,444	35.19%				
Payden & Rygel		556,352,645	33.98%				
Fidelity Institutional Asset							
Mgt. Trust Co.		478,378,770	29.22%				
Stone Harbor Investment Partners	;	13,909,252	0.85%				
Other (1)		12,391,905	0.76%				
TOTAL EMDF	\$1	,637,181,016	100.00%				

<sup>(1)</sup> Liquidity Fund, other assets and terminated advisor balances.

Figure 7-8

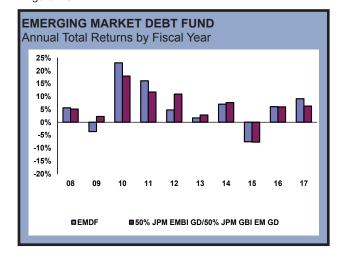


Figure 7-10

<b>EMERGING MARKET DEBT I</b>	FUND
Ten Largest Holdings* at June	30, 2017

Security Name	Maturity	Market Value	%
Brazil Notas Do Tesouro	1/1/2021	\$ 34,209,134	2.14%
South Africa Gvmt Bond	2/28/2031	24,959,057	1.56%
Colombia Gvemt Bond	5/4/2022	21,040,245	1.32%
Brazil Notas Do Tesouro	1/1/2023	20,080,271	1.26%
Mexican Bonds	6/10/2021	19,666,840	1.23%
Colombia Gvmt Bond	7/24/2024	14,238,523	0.89%
Russian Gvmt Bond	4/14/2021	14,064,928	0.88%
Brazil Notas Do Tesouro	1/1/2025	14,038,676	0.88%
Brazil Notas Do Tesouro	1/1/2027	13,457,482	0.84%
JPM Chase Bank NA	9/17/2026	13,271,837	0.83%
Top Ten		\$ 189,026,993	11.83%

A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act..

Figure 7-11

EMERGING MARKET DEBT FUND
Comprehensive Profile for the Fiscal Years ending June 30

	201	17	20	16	2	015	20	14	2	013
	EMDF	EMBI								
# of Issues	1,114	818	978	714	968	686	880	631	866	368
Yield to Maturity	6.72%	5.58%	7.56%	5.81%	8.54%	6.68%	5.32%	5.86%	6.66%	5.82%
Average Maturity	8.69	9.11	9.25	9.28	9.23	9.23	7.57	8.60	10.31	12.52
Modified Duration	5.69	5.96	6.30	6.02	6.17	5.87	5.69	5.74	6.06	7.10
Average Quality	BA-1	BAA-3	BA-1	BAA-3	BA-1	BAA-2	BAA-3	BAA-2	BAA-2	BAA-2
Liquidity Fund*	2.9%	0.0%	2.7%	0.0%	3.0%	0.0%	3.2%	0.0%	1.6%	0.0%

<sup>\*</sup> Note: Ending Weights



#### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the High Yield Debt Fund (HYDF) is to (1) achieve a long-term, real rate of return above the inflation rate; and (2) provide diversification to other asset classes within the CRPTF under different economic environments.

Date of Inception: November 1, 2007 Total Net Position: \$2,044,334,030

**Performance Objective:** A net return that matches

its benchmark, over rolling three- to five-year periods. Management Fees: \$4,896,835

Benchmark: Citigroup U.S. High Yield Market Capped Index Operating Expenses: \$2,966,738

Number of Advisors: 9 external Expense Ratio: 0.41%

# **Description of the Fund**

The HYDF invests primarily in debt instruments rated below-investment grade by one or more nationally recognized rating agencies.

#### **Portfolio Characteristics**

The HYDF is well diversified across a range of corporate high yield bonds and bank loans. These securities are predominantly U.S. based. The Fund's average quality rating was B-1 on June 30, 2017, matching the average quality of the benchmark, and had a yield to maturity of 5.51 percent compared to 6.02 percent yield for the benchmark. As of June 30, 2017, the duration of the HYDF was 4.84 years, compared to the benchmark duration of 4.88 years. (See Figure 8-10.)

#### **Market Review**

Strong demand from investors, weak new issuance, improved commodity prices, U.S. economic growth and positive earnings expectations, as well as an accommodating global central bank landscape over the past fiscal year, contributed to a rally in the U.S. high yield market. Spreads tightened approximately 230 basis points over the period. Pessimism about oil supply, Chinese growth, U.S. dollar strength, and U.S. growth eased dramatically, allowing the market to return to more normal valuations. During the fi rst half of the fi scal year, investor sentiment was supported by the prospects of rollback of regulatory reform, tax code changes and increased infrastructure spending. However, optimism waned with legislative issues. In June 2017, the action of the U.S Federal Reserve Bank to raise rates despite a weaker than expected Consumer Price Index (CPI) increase, along with an indication the Fed might reduce its balance sheet faster than expected, put pressure on the high yield market in the last month of the fi scal year. The best performing sectors over the period were energy refi ners and metals & mining, while the healthcare and pharmaceuticals sectors performed poorly. At the end of June 2017, the par-weighted U.S. high yield default rate declined to 1.5 percent from 3.56 percent at the beginning of the fi scal year.

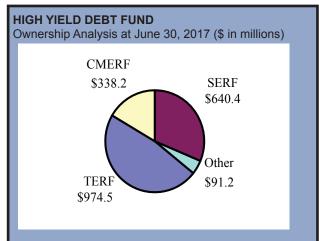
# **Performance Summary**

For the fiscal year ended June 30, 2017, the HYDF generated a return of 12.59 percent, net of all expenses, outperforming the Citigroup U.S. High Yield Market Capped Index return of 12.09 percent by 50 basis points. Cumulative net total returns over the three-year and five-year periods ending June 30th were 10.77 percent and 35.00 percent, respectively, for the Fund, and 12.10 percent and 35.94 percent, respectively, for the benchmark. (See Figure 8-8.)

#### Risk Profile

Given the HYDF's investment policies and objective, the Fund is exposed to several forms of risk. These risks include, but are not limited to, credit default risk, interest rate risk, liquidity risk, pre-payment risk, reinvestment risk and inflation risk. In addition, the Fund is occasionally exposed to political, economic and currency risk resulting from investments in international high yield securities. The average quality of the Fund is B-1, which matches the benchmark.

Figure 8-1

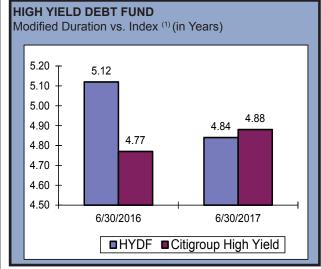


TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 8-3



(1) Computed without the effect of Cash and other assets.

Figure 8-2

H YIELD DEBT FUND Profile at June 30, 2017 <sup>(1)</sup>		
Relative Volatility	0.97	
Standard Deviation	5.24	
R2	0.98	
Beta	0.96	
Alpha	-0.14	

(1) Based upon returns over the last five years.

Figure 8-4

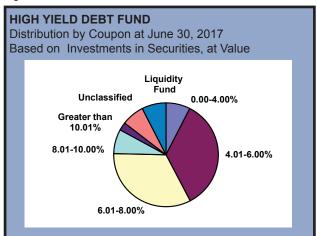
HIGH YIELD DEBT FUND Distribution by Sector at June 30, 2017 Based on Investments in Securities, at Value							
HYDF	Citigroup	Variance					
2.7%	0.0%	2.7%					
0.0%	0.0%	0.0%					
81.8%	100.0%	-18.2%					
0.0%	0.0%	0.0%					
0.0%	0.0%	0.0%					
15.5%	0.0%	15.5%					
100.0%	100.0%						
	HYDF  2.7%  0.0%  81.8%  0.0%  0.0%  15.5%	r at June 30, 2017 hts in Securities, at Value  HYDF Citigroup  2.7% 0.0% 0.0% 0.0% 81.8% 100.0% 0.0% 0.0% 0.0% 0.0% 15.5% 0.0%					

(1) Other category includes non fixed-income securities such as common and preferred stock and convertible securities, Real Estate Investment Trust, Business Development Corporation, Liquidity Fund and other assets.

Figure 8-5

#### **HIGH YIELD DEBT FUND** Distribution by Quality Rating at June 30, 2017 Based on Investments in Securities, at Value AAA to A3 2.7% BAA1 to BAA3 3.1% BA1 to BA3 30.1% B1 to B3 38.8% CAA1 to CAA3 16.3% CA to C 0.3% Not Rated (1) 8.7% 100.0% Total

Figure 8-6



(1) Represents securities for which ratings are unavailable.

Figure 8-7

HIGH YIELD DEBT FUND  Duration Distribution at June 30, 20  Based on Investments in Securities	
0-3 Years	27.0%
3-5 Years	33.0%
5-7 Years	16.8%
7-10 Years	7.1%
10+ Years	2.7%
Unknown <sup>(1)</sup>	5.9%
Liquidity Fund <sup>(2)</sup>	7.5%_
Total	100.0%

<sup>(1)</sup> Represents securities for which the duration could not be calculated by the custodian.

Figure 8-9

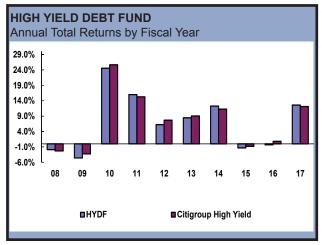


Figure 8-8

HIGH YIELD DEBT FUI Periods ending June 30				
	1 YR	3 YRS	5 YRS	10 YRS
Compounded, Annual To	otal Retur	n (%)		
HYDF	12.59	3.47	6.19	6.77*
Citigroup High Yield				
Market Capped Index	12.09	3.88	6.33	7.17
Cumulative Total Return	(%)			
HYDF	12.59	10.77	35.00	92.46*
Citigroup High Yield				
Market Capped Index	12.09	12.10	35.94	99.91

<sup>\*</sup>Represents historical returns at the portfolio composite level.

<sup>(2)</sup> Represents monies invested in the Liquidity Fund.

Figure 8-10

	HIGH YIELD DEBT FUND Comprehensive Profile for the Fiscal Year ending June 30										
# of Issues	<u><b>20</b></u> HYDF 1,354	Citigroup 2,043		2,179		<u>20</u> HYDF 972	015 Citigroup 2,220	20° HYDF 884	14 Citigroup 2,183	<u>20</u> HYDF 740	013 Citigroup 1,752
Average Coupon	5.60%	6.45%	5.67%	6.54%		5.80%	6.73%	5.88%	7.08%	6.90%	7.60%
Yield Maturity	5.51%	6.02%	6.87%	7.32%		6.34%	6.77%	5.13%	5.73%	6.90%	7.00%
Average Maturity	5.33	5.71	6.17	5.64		6.29	5.74	5.99	5.04	7.30	5.30
Modified Duration	4.84	4.88	5.12	4.77		5.36	4.95	5.42	5.12	5.60	4.40
Average Quality	B-1	B-1	B-1	B-1		B-1	B-1	B-1	B-1	B-2	B-2
Liquidity Fund*	7.5%	0.0%	4.4%	0.0%		4.6%	0.0%	6.6%	0.0%	6.1%	0.0%

\*Note: Ending Weights

Figure 8-11

HIGH YIELD DEBT FUND Investment Advisors at June 30, 2017						
Investment Advisors	Net Asset Value	% of Fund				
Loomis Sayles & Co., Inc.	\$381,183,907	18.65%				
Stone Harbor Investment Partners	20,153,947	0.99%				
Shenkman Capital Management,	nc. 232,440,304	11.37%				
Oaktree Capital Management, L.L	.C. 7,466,324	0.36%				
AllianceBernstein, LP	283,040,061	13.84%				
DDJ Capital Management, LLC	160,811,548	7.87%				
Columbia Management Investmer	nt					
Advisers, LLC	369,708,326	18.08%				
Nomura Corporation Research						
& Asset Management, Inc.	444,026,436	21.72%				
TCG BDC, Inc.	57,625,395	2.82%				
Other (1)	87,877,782	4.30%				
TOTAL HYDF	\$2,044,334,030	100.00%				

<sup>(1)</sup> Other represents Liquidity Fund, other assets and terminated advisor balances.

Figure 8-12

HIGH YIELD DEBT FUND Ten Largest Holdings* at June 30, 2017						
		Market				
Security Name	Maturity	Value	%			
US Treasury Note	5/31/2019	\$11,357,448	0.56%			
Dish Network Corp. 144A	8/15/2026	10,973,125	0.54%			
Indonesia Gvmnt Bond	1/15/2024	9,802,538	0.48%			
New Albertson's Inc.	8/1/2029	9,239,250	0.45%			
Micron Technology. Inc.	11/15/2043	8,510,625	0.42%			
Tenet Healthcare Corp.	11/15/2031	8,263,440	0.41%			
Tenet Healthcare Corp.	6/15/2023	7,962,000	0.39%			
Morgan Stanley	11/16/2018	7,887,460	0.39%			
Transdigm Inc.	7/15/2024	7,749,945	0.38%			
Sprint Capital Corp.	11/15/2028	7,747,643	0.38%			
Top Ten		\$89,493,474	4.40%			

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

# developed market international stock fund

# Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Developed Markets International Stock Fund (DMISF) is to (1) achieve a long-term, real rate of return above the U.S. inflation rate; and (2) provide additional measures of diversification to other asset classes within the CRPTF under different economic scenarios.

Date of Inception: November 1, 2007 Total Net Position: \$6,381,040,191

**Performance Objective:** A net return that matches the benchmark, over rolling three- to five-year periods.

Management Fees: \$21,770,263

Benchmark: Morgan Stanley Capital International Europe,

Australasia and Far East Investable Market Index

(MSCI EAFE IMI) (1) 50% Hedged Operating Expenses: \$2,113,677

Number of Advisors: 10 external Expense Ratio: 0.41%

(1) The CRPTF signed a licensing agreement with MSCI to provide benchmark data commencing in fiscal year 2015. For the three, five and ten year performance periods, the CRPTF is using the prior benchmark, S&P/Citigroup Broad Market Index Europe, Pacific and Asia Composite Index 50% Hedged.

# **Description of the Fund**

DMISF assets are allocated across foreign developed equity markets to provide diversification by country, market capitalization and style. Non-U.S. equities are issued by companies domiciled outside of the United States. The DMISF may invest up to 30 percent of assets opportunistically to take advantage of shifts in the investment landscape, or opportunities that offer diversification and/or risk-return benefits within non-U.S. equity markets.

# **Portfolio Characteristics**

At fiscal year-end, the DMISF was invested in the developed markets across Europe, Asia and Australia, with the two largest allocations in Japan (22.0 percent) and the United Kingdom (14.8 percent) (see Figure 9.5). The portfolio's largest country overweight positions relative to the benchmark were Canada (1.9 percent vs. the benchmark's 0.0 percent) and the Netherlands (4.5 percent vs. the benchmark's 3.3 percent). The largest underweights were the United Kingdom (14.8 percent vs. the benchmark's 17.8 percent) and Japan (22.0 percent vs. the benchmark's 24.4 percent).

#### Market Review

International developed equities posted strong positive returns for the fiscal year. The local currency return versus the market was 180 basis points higher than the U.S. dollar return. The primary reason for the lower return after conversion to USD was a very weak Yen. The developed foreign markets have benefited from improving macroeconomic trends, continued European Central Bank (ECB) stimulus, and election results in several countries that reflected a rejection of extremist candidates.

Overall, the MSCI EAFE index returned 20.3 percent in U.S. dollar terms. Value stocks significantly outperformed growth stocks by 930 basis points and small capitalization stocks outperformed large capitalization stocks during the year. From a region standpoint, MSCI Europe returned 21.1 percent and MSCI Pacific returned 19.3 percent. Within Europe, Austria returned 65.0 percent and Spain returned 38.4 percent. For the developed Asian markets, Hong Kong lead the way with a return of 24.0 percent. Every sector within the MSCI EAFE generated a positive return for the year.

The best performing sectors were financials (38.1 percent) and information technology (35.9 percent). The worst performing sectors were telecommunication services (2.2 percent) and health care (6.4 percent).

# **Performance Summary**

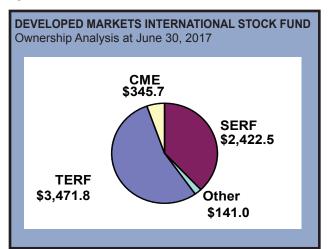
For the fiscal year ended June 30, 2017, the DMISF generated a return of 24.81 percent, net of all expenses, which outperformed the benchmark return of 22.41 percent by 240 basis points (See Figure 9.3). As of June 30, 2017, the DMISF compounded net annualized total returns, for the trailing three-, five- and ten-year periods were 5.30 percent, 11.86 percent, and 2.80 percent, respectively. The returns outperformed the DMISF's benchmark for the three-, five- and ten-year periods.

The cumulative returns of the DMISF for the three-, five-, and ten-year periods were 16.74 percent, 75.15 percent, and 31.87 percent, respectively.

# **Risk Profile**

Given the DMISF's investment policies and objectives, the Fund is exposed to several forms of risk. These include, but are not limited to, political and economic risk, currency risk, market risk, and individual company risk. A 50 percent currency hedging strategy is employed to reduce the portfolio's currency risk over time. The Fund's volatility over a five year period is only slightly lower than the market at 0.96. On a risk adjusted basis, the Fund has generated excess return of 0.72, which indicates that it is producing a higher risk adjusted return than the benchmark.

Figure 9-1



TERF - Teachers' Retirement Fund SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 9-3

	1 YR	3 YRS	5YRS	10YR
Compounded, Annual	Total Retur	n (%)		
DMISF	24.81	5.30	11.86	2.80*
MSCI EAFE				
IMI 50% Hedged	22.41	4.85	11.14	2.25
Cumulative Total Retu	rn (%)			
DMISF	24.81	16.74	75.15	31.87*
MSCI EAFE IMI 50% Hedged	22.41	15.28	69.54	

<sup>\*</sup>Represents historical returns at the portfolio composite level.

Figure 9-2

ELOPED MARKETS INTERNATE Profile at June 30, 2017 (1)	FIONAL STOCK FU	JND
Relative Volatility	0.96	
Standard Deviation	9.99	
R2	0.98	
Beta	0.97	
Alpha	0.72	

(1) Based upon returns over the last five years.

Figure 9-4

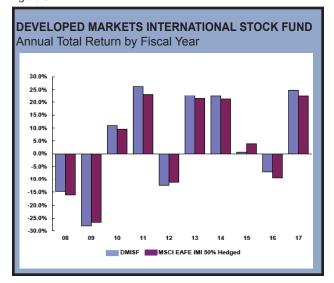


Figure 9-5

# DEVELOPED MARKETS INTERNATIONAL STOCK FUND

Diversification by Benchmark Country at June 30, 2017<sup>(1)</sup>

	DMISF % of Net Assets 6/30/17	Benchmark % of Net Assets 6/30/17	Variance
Japan	22.0	24.4	-2.4
United Kingdom	14.8	17.8	-3.0
Korea	0.1	0.0	0.1
Hong Kong	3.1	3.3	-0.2
United States	0.2	0.0	0.2
France	9.7	9.6	0.1
Germany	9.3	9.1	0.2
Switzerland	8.6	8.0	0.6
Australia	5.4	6.9	-1.6
China	0.3	0.0	0.3
Netherlands	4.5	3.3	1.1
Italy	2.5	2.5	0.0
Spain	3.0	3.3	-0.3
Sweden	3.0	3.3	-0.3
Singapore	1.5	1.4	0.1
Canada	1.9	0.0	1.9
Turkey	0.1	0.0	0.1
Other	10.0	7.1	2.9
Total	100.0	100.0	

<sup>(1)</sup> Based upon currency exposures of the underlying securities.

Figure 9-6

<b>DEVELOPED MARKETS INTERNATIONAL STOCK FUND</b> Investment Advisors at June 30, 2017				
et	% of Fund			
,419	35.16%			
,419	35.16%			
,096	26.61%			
,778	12.21%			
,461	12.14%			
,857	2.26%			
,822	14.33%			
,822	14.33%			
,008	8.01%			
,008	8.01%			
,967	15.67%			
,280	5.64%			
,481	4.97%			
,206	5.06%			
,879	0.22%			
,191	100.00%			
	,879 , <b>191</b>			

(1) Other represents Liquidity Fund, other assets and terminated advisor balances, as well as, currency overlay balances for the DMISF (managed by First Quadrant).

Figure 9-7

Security Name	Country	Market Value	%
Nestle SA REG	Switzerland	\$106,804,410	1.68%
Roche Holding AG Genusschein	Switzerland	70,831,897	1.12%
HSBC Holdings PLC	United Kingdom	60,715,152	0.95%
Bayer AG REG	Germany	56,241,204	0.88%
ING GROEP NV	Netherlands	55,237,133	0.87%
Novartis AG REG	Switzerland	53,980,181	0.85%
WPP PLC	United Kingdom	42,269,383	0.67%
SAP SE	Germany	41,733,731	0.66%
Reckitt Benckiser Group PLC	United Kingdom	38,499,656	0.61%

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

# emerging markets international stock fund

#### Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Emerging Markets International Stock Fund (EMISF) is to (1) achieve a long-term, real rate of return above the U.S. inflation rate; and (2) provide additional measures of diversification within the CRPTF under different economic scenarios.

Date of Inception: November 1, 2007 Total Net Position: \$3,015,322,058

**Performance Objective:** A net return that matches the benchmark, over rolling three- to five-year periods.

Management Fees: \$13,891,017

Benchmark: Morgan Stanley Capital International Emerging

Markets Investable Market Index (MSCI EM IMI)<sup>(1)</sup> Operating Expenses: \$3,301,344

Number of Advisors: 3 external Expense Ratio: 0.63%

(1) The CRPTF signed a licensing agreement with MSCI to provide benchmark data commencing in fiscal year 2015. For the three, five and ten year performance periods, the CRPTF is using the prior benchmark, S&P/Citigroup Broad Market Index Europe, Pacific and Asia Composite Index 50% Hedged.

# **Description of the Fund**

EMISF assets are allocated across foreign emerging equity markets and are diversified by market, capitalization and style. Emerging market equities are defined as common stocks issued by companies domiciled in developing countries, including the 23 companies in the MSCI EM IMI.

#### **Portfolio Characteristics**

At fiscal year-end, the EMISF's portfolio holdings were diversified over a number of emerging market countries (see Figure 10.6). Notable overweight positions versus the benchmark include Hong Kong (8.2 percent versus the benchmark's 0.0 percent) and Turkey (3.5 percent versus the benchmark's 1.2 percent). Underweight positions include China (12.2 percent versus the benchmark's 26.9 percent), South Africa (2.9 percent versus the benchmark's 6.4 percent), and Malaysia (0.5 percent versus the benchmark's 2.5 percent) (See Figure 10.6).

#### **Market Review**

Emerging market equities initially lost value in the wake of the U.S.election, primarily due to uncertainty over U.S. foreign and trade policy and the prospect of tighter U.S.dollar liquidity. However, a steady recovery in global growth, receding trade policy concerns, and U.S. dollar weakness supported a strong rebound in emerging market equities. The MSCI Emerging Market IMI index returned 22.8 percent for the fiscal year.

The emerging Asian region returned 26.0 percent outperforming emerging Europe, which had a return of 13.7 percent. Taiwan lead the emerging Asian markets with a return of 31.9 percent, followed by China, which returned 30.1 percent. South Korea also had a strong return of 28.8 percent. Within the emerging Europe region, Greece lead with a return of 54.3 percent, followed by Poland, which returned 47.3 percent.

The best performing sectors within the emerging market was information technology (45.3 percent) and materials (27.3 percent). The worst performing sectors were health care (0.50 percent) and consumer staples (2.6 percent).

# **Performance Summary**

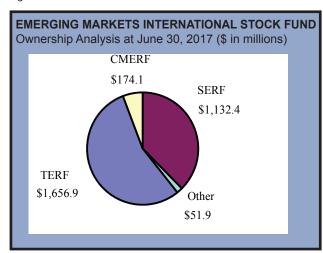
For the fiscal year ended June 30, 2017, the EMISF generated a return of 23.00 percent, net of all expenses, which outperformed the benchmark return of 22.82 percent by 18 basis points (See Figure 10.4). As of June 30, 2017, the EMISF compounded net annualized total returns, for the trailing three-, five- and ten-year periods were 2.06 percent, 4.14 percent, and 1.57 percent, respectively. The returns outperformed the EMISF's benchmark for the three- and five-year periods.

The cumulative returns of the EMISF for the three-, five-, and ten-year periods were 6.29 percent, 22.48 percent, and 16.85 percent, respectively.

# **Risk Profile**

Given the EMISF's investment policies and objectives, the Fund is exposed to several forms of risk. These include, but are not limited to, political and economic risk, currency risk, market risk, and individual company risk. Based on returns over the last five years, the Fund's risk profile equaled that of the benchmark as evidenced by a relative volatility of 1.00. The EMISF's annualized alpha over the five-year period was 0.05, indicating that the fund slightly outperformed the benchmark for the five years on a risk adjusted basis (see Figure 10.2).

Figure 10-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 10-3

# **EMERGING MARKETS INTERNATIONAL STOCK FUND** Fiscal Year 2017 Economic Sector vs. Index (%)

	EM	MSCI	Vari-
	ISF	Index	ance
Energy	4.8	6.0	-1.2
Materials	6.0	7.7	-1.7
Industrials	3.5	7.0	-3.5
Consumer Discretionary	9.8	11.4	-1.6
Consumer Staples	7.9	6.8	1.1
Health Care	1.3	3.2	-1.9
Financials	26.5	21.8	4.7
Information Technology	27.2	25.1	2.1
Telecommunication Service	es 6.9	4.9	2.0
Utilities	1.3	2.8	-1.5
Commingled Fund	0.0	0.0	0.0
Preferred Stock	0.0	0.0	0.0
Private Placement	0.0	0.0	0.0
Other	3.2	3.3	-0.1
Liquidity Fund	<u>1.6</u>	0.0	1.6
	100.0	100.0	

Figure 10-2

RGING MARKETS INTERNA Profile at June 30, 2017 (1)	TIONAL STOCK FU	ND
Relative Volatility	1.00	
Standard Deviation R2	13.97 0.98	
Beta	0.99	
Alpha	0.05	

(1) Based upon returns over the last five years.

Figure 10-4

<b>EMERGING MARKETS INTERNATIONAL STOCK FUND</b> Periods ending June 30, 2017				
	1 YR	3 YRS	5 YRS	10 YRS
Compounded, Annual To	tal Retur	n (%)		
EMISF	23.00	2.06	4.14	1.57*
MSCI EMERGING				
MARKETS IMI INDEX	22.82	1.03	4.09	2.09
Cumulative Total Return	(%)			
EMISF	23.00	6.29	22.48	16.85*
MSCI EMERGING				
MARKETS IMI INDEX	22.82	3.12	22.19	23.03

<sup>\*</sup>Represents historical returns at the portfolio composite level.

Figure 10-5



Figure 10-6

**EMERGING MARKETS INTERNATIONAL STOCK FUND**Diversification by Benchmark Country at June 30, 2017 (1)

	EMISF Percent of Net Assets 6/30/17	Benchmark Percent of Net Assets 6/30/17
Brazil	8.4%	6.3%
Korea	16.9	15.7
Hong Kong	8.2	0.0
Russia	4.5	2.8
China	12.2	26.9
Taiwan	13.1	13.2
United States	2.3	0.0
Mexico	3.1	3.6
Thailand	3.8	2.4
South Africa	2.9	6.4
Turkey	3.5	1.2
Indonesia	2.0	2.5
Malaysia	0.5	2.5
India	9.6	9.5
Philippines	1.4	1.2
United Kingdom	0.6	0.0
Other Countries	7.0	5.8
Total	<del>100.0</del> %	100.0%

(1) Includes Liquidity Fund and cash equivalents at each country level.

Figure 10-8

Security Name	Country I	Market Value	%
Taiwan Semiconductor			
Manufacture	Taiwan	\$144,116,447	4.80%
Samsung			
Electronics Co LTD	Republic of Korea	118,333,698	3.94%
Tencent Holdings LTD	China	99,104,743	3.30%
China Mobile LTD	Hong Kong	87,839,679	2.92%
Alibaba Group Holding LTD	Cayman Islands	78,380,838	2.61%
HDFC Bank LTD	India	67,396,532	2.24%
AIA Group LTD	Hong Kong	60,241,795	2.01%
China Construction			
Bank Corp	China	59,665,286	1.99%
Samsung Electronic Co			
LTD GDR	Republic of Korea	57,735,096	1.92%
Hon Hai Precision			
Industry Co	Taiwan	45,240,693	1.51%
Top Ten		\$818,054,807	27.24%

 A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

Figure 10-7

<b>EMERGING MARKETS INTERNATIONAL STOCK FUND</b>			
Investment Advisors at June 30, 2017			
	Net Asset	% of	
Investment Advisor	Value	Fund	
Grantham, Mayo, Van Otterloo	\$798,499,456	26.48%	
Aberdeen Asset Management	943,572,024	31.29%	
Schroders Investment Mgt	1,263,640,304	41.91%	
Other (1)	9,610,274	0.32%	
TOTAL EMISF	\$3,015,322,058	100.00%	
1			

(1) Other represents Liquidity Fund, other assets and terminated advisor balances.



# Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Real Estate Fund (REF) is to 1) provide diversification to the overall CRPTF investment program, 2) preserve investment capital, 3) generate attractive risk-adjusted rates of return, 4) provide consistent current income and 5) act as a hedge against inflation under different economic scenarios.

Date of Inception: July 1, 1982 Total Net Position: \$2,248,480,820

**Performance Objective:** A net return that **Management Fees** (1): \$9,398,239 matches the benchmark over rolling

three-to-five year periods. Capitalized and Netted Fees: \$14,315,279

**Benchmark:** National Council of Real Estate **Operating Expenses:** \$1,007,389 Investment Fiduciaries - National Properties Index

("NCREIF-NPI") Expense Ratio: 0.47%

Number of Investment Partnerships: 42

(1) See note 1 to the Financial Statements for a discussion of similar fees incurred at the investment level.

# **Description of the Fund**

The REF is the vehicle by which the CRPTF makes investments in the real estate asset class. The REF may invest in real estate properties, real estate related equity investments, or real estate related debt and mortgages. The REF consists of a number of investment strategies and vehicles including externally managed commingled funds, open-end funds, separate accounts, publically traded real estate securities, limited partnerships, and other indirect ownership structures managed by professional real estate investment managers.

#### **Portfolio Characteristics**

As of June 30, 2017, the portfolio was approximately 25.9 percent invested in close-end fund vehicles, 60.7 percent in open-end funds, and 13.3 percent held in two separate accounts, in which the REF holds 100 percent ownership interest in properties within the portfolio. These separate account vehicles are managed by external managers and employ a core investment strategy. The majority of investments in the REF are comprised of commingled private equity funds vehicles in which the CRPTF holds limited partnership interests. These commingled funds employ three main real estate investment sub-asset classes: core, value-add, and opportunistic strategies. In accordance with the Investment Policy Statement, leverage levels in the REF shall not exceed 60 percent, and investments are diversified across geography and property types, with approximately 94.7 percent located in the markets within the United States and 5.3 percent to real estate markets abroad.

As of June 30, 2017, the REF allocation to sub-strategies was 60.4 percent to core, 22.1 percent to value-Aad and 13.7 percent to opportunistic. The portfolio is well diversified geographically. While the National Properties Index (NPI) remains the tracked real estate investments benchmark, the CRPTF at any given time may be tactically under- or over-weight in specific property types, regions, vintage years or other characteristics of the index.

#### **Market Review**

The U.S. economy continues to grow at a steady pace. Total employment is up 1.3 percent year-over-year and property values across all sectors have increased. Cap rate spreads versus U.S. Treasuries are at or slightly higher than long term averages and capital flows into real estate are slowing. As the current economic cycle matures, future returns in real estate are expected to moderate.

Market fundamentals in most real estate sectors were strong during the fiscal year, while reduced transaction volumes indicate that capital market activity may decrease in all but a few key markets going forward. Fundraising by private real estate managers fell by 24 percent in the last year but there is a significant amount of capital that has not been deployed.

Industrial properties were the most favored real estate sector, driven primarily by fulfillment and ware-housing demand. Investor appetite for multi-family properties has subsided, except in select urban subsectors. After a multi-year run as a top real estate sector, office now is near the bottom and the retail sector continues to suffer, as large department and apparel brick and mortar stores close and mid-priced retailers face competition from e-commerce and discount retailers. Finally, commercial real estate transaction activity continues to decline.

# **Performance Summary**

For fiscal year 2017 the Fund generated a total fiscal year to date return of 7.4 percent net of all expenses, outperforming its benchmark NCREIF-NPI, which posted a gross return of 7.3 percent. The one-year return reflects an ongoing positive trend in the REF portfolio, which can be attributed to recent accretive commitments to open-ended core and core-plus funds, as well as a number of new value-add strategies in the Fund.

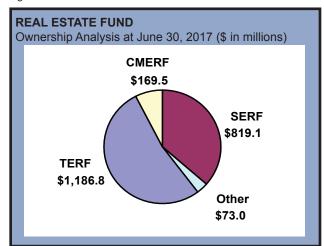
For the trailing three-five-and ten-year periods, the REF's compounded annual returns, net of all expenses, were 10.6 percent, 10.5 percent, and 2.2 percent, respectively (See Figure 11.8). Longer-term portfolio returns continue to lag the benchmark, with five-and ten-year returns underperforming by 16 basis points and 454 basis points, respectively. However, since the Great Recession, REF's net returns have outperformed the gross benchmark in five of the past seven calendar years. The Fund has continued to invest through the recent real estate cycle, with new commitments in value-add and opportunistic strategies during the fiscal year, which has helped to maintain diversification in the fund.

# **Risk Profile**

The REF takes both a total portfolio and asset class specific approach to risk management. Risk is managed at the portfolio level through diversification and strategic asset allocation and the implementation of strategy. Risks attendant to alternative investments, such as management, operations, local/regional property markets, and liquidity risk, are managed at the asset class level with additional risk management focused on financing, geography, and property type risks specific to a fund manager's portfolio investments.

The REF has lower volatility than NPI, as expected (See Figure 11.2) largely due to allocations to core funds, which generally have lower leverage than value-add and opportunistic strategies and have reduced risk. Also, the REF's core sub-portfolio, which most closely tracks NPI, has a leveraged amount of approximately 35.1 percent. NPI is comprised of a portfolio of 6,000+ properties, many of which are levered, but for purposes of constructing the NPI benchmark, are de-levered for the index. The REF volatility is typical and not excessive relative to a benchmark comprised of unlevered core properties.

Figure 11-1



TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

Figure 11-3

DEAL ESTA	REAL ESTATE FUND					
Investments Analysis (1)						
Investments	Allalysis					
At	No. of REF Investments	REF Book Value	REF Market Value			
6/30/2017	42 \$	1,917,730,506	\$2,156,493,225			
6/30/2016	42	1,798,740,547	2,065,132,526			
6/30/2015	38	1,646,736,485	1,732,052,523			
6/30/2014	33	1,398,172,794	1,429,069,066			
6/30/2013	30	1,366,354,620	1,227,275,238			
6/30/2012	36	1,376,611,668	1,180,717,977			
6/30/2011	36	1,310,614,926	1,057,213,580			
6/30/2010	35	1,097,439,251	715,310,010			
6/30/2009	34	996,474,812	745,643,849			
6/30/2008	31	920,921,272	968,885,960			

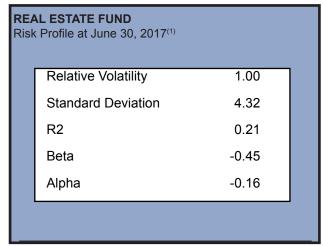
<sup>(1)</sup> Number of investments in annuities, partnerships, corporations, and trusts, excluding the Liquidity Fund.

Figure 11-5

REAL ESTATE FUND Distribution by Investment Type at June 30, 2017 Based on Investments in Securities, at Value		
100%		
75%		
50%		
25%		
0%		
■Liquidity Fund	□Ltd Partnerships	

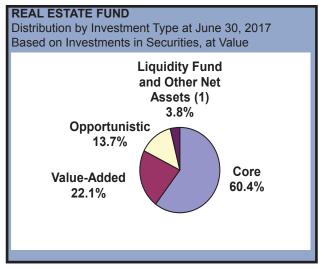
(1) Liquidity Fund and other monetary assets.

Figure 11-2



(1) Based upon returns over the last five years.

Figure 11-4



(1) Liquidity Fund and Other Net Assets

Figure 11-6

REAL ESTATE FUND  Distribution by Geographic Location at June 30, 2017  Based on Investments in Securities, at Value				
ı		REF	NCREIF	Variance
ı	East	27.4%	33.2%	-5.8%
ı	Midwest	9.6%	8.6%	1.0%

South 25.4% 19.8% 5.6% West 31.7% 38.4% -6.7% 5.3% International 5.3% 0.0% Other Net Asset 0.6% 0.6% 0.0% 100.0% 100.0%

Figure 11-8

Figure 11-7

REAL ESTATE FUND Diversification by Property Type at June 30, 2017 Based on Investments in Securities, at Value				
	REF	NCREIF	Variance	
Apartment	24.8%	24.3%	0.5%	
Industrial	20.0%	14.2%	5.7%	
Office	22.6%	36.8%	-14.2%	
Retail	20.6%	23.8%	-3.2%	
Hotel	4.0%	0.9%	3.1%	
Other Net Assets <sup>(1)</sup>	8.0%	0.0%	8.0%	
	100.0%	100.0%		

REAL ESTATE FUNI Periods ending June				
	1 YR	3 YRS	5 YRS	10 YRS
Compounded, Annual Total Return (%)				
REF	7.38	10.58	10.53	2.18
NCREIF Property	7.27	10.58	10.69	6.72
Cumulative Total Retu	urn (%)			
REF	7.38	35.22	64.99	24.01

7.27

35.23 66.16

91.58

(1) Includes senior living, real estate/mixed use and land.

Figure 11-9

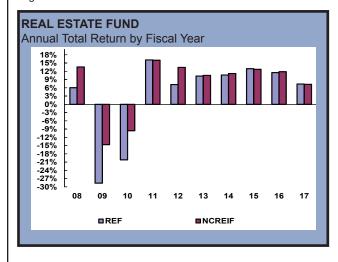


Figure 11-10

NCREIF Property

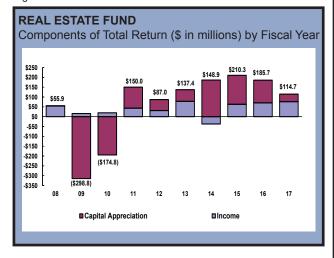


Figure 11-11

# **REAL ESTATE FUND** Funds at June 30, 2017

	Net Asset	% of
Fund	Value	Fund
AEW Partners III	\$270,172	0.01%
American Realty Advisors	90,401,538	4.02%
Apollo Real Estate	205,358	0.01%
Blackstone Real Estate Partner Europe III		1.52%
Blackstone Real Estate Spec Sit II LP	2,180,550	0.10%
Blackstone Real Estate VI LP	20,576,572	0.91%
Blackstone Real Estate Partners VIII LP	47,335,962	2.10%
Blackstone Real Estate Partners EURO V	4,173,260	0.19%
Canyon Johnson Urban Fund II	150,125	0.01%
Canyon Johnson Urban Fund III	447,568	0.02%
Capri Select Income II LLC	60,778	0.00%
Clarion Lion Industrial Trust	116,734,432	5.19%
Colony Realty Partners II LP	9,143,800	0.41%
Cornerstone Patriot Fund LP	293,039,605	13.03%
Covenant Apartment Fund V LP	339,907	0.02%
Covenant Apartment Fund VI	187,454	0.01%
Covenant Apartment Fund VIII	20,879,913	0.93%
Crow Hldgs Realty Partners VII LP	56,054,600	2.49%
Cypress Acquisition Prtnrs Retail FD LP	50,654,012	2.25%
Gerding Edlen Green Cities II	31,154,380	1.39%
Gerding REF III	32,708,305	1.45%
Hart Realty Advisors	197,380,637	8.78%
IL & FS India Realty Fund II LLC	25,244,922	1.12%
JP Morgan Strategic Property	85,542,816	3.80%
Landmark RE Partners VII LP	19,942,161	0.89%
Lone Star Real Estate Part II LP	11,907,393	0.53%
Macfarlane Urban Real Estate Fund II LP	2,654,118	0.12%
Prime Property Fund LLC	263,749,584	11.73%
PRISA	200,459,653	8.92%
Rockwood Capital Fund V	151,000	0.01%
Rockwood Capital VI Limited Partnership	323,897	0.01%
Rockwood Capital VII Limited Partnership	20,343,110	0.90%
Starwood Opportunity Fund VII	15,357,828	0.68%
Starwood Opportunity Fund VIII	10,340,094	0.46%
Starwood Opportunity Fund IX	33,857,966	1.51%
Starwood Opportunity Fund X	71,224,496	3.17%
UBS-Trumbull Property Income	59,078,880	2.63%
UBS-Trumbull Property G&I (TPG)	67,163,079	2.99%
UBS-Trumbull Property Fund LP	86,612,748	3.85%
Urban Strategy America Fund LP	28,574,190	1.27%
USAA Eagle RE Fund WLR IV PPIP Co Invest LP	136,225,933	6.06%
Other (1)	9,434,720	0.42% <b>4.09%</b>
	91,987,594 \$2,248,480,820	100.00%
SOBIOTAL REF	p2,240,400,020	100.00%

Figure 11-12

# **REAL ESTATE FUND**

Ten Largest Holdings\* at June 30, 2017

		Market	
Property Name	Type	Value	%
Cornerstone Patriot Fund LP	Core	\$293,039,605	13.07%
Prime Property Fund LLC	Core	263,749,584	11.76%
PRISA	Core	200,459,653	8.94%
Hart Realty Advisors	Core	197,380,637	8.80%
USAA Eagle RE Fund	Core	136,225,933	6.07%
Clarion Lion Industrial Trust	Value Adde	d 116,734,432	5.21%
American Realty Advisors	Core	90,401,538	4.03%
UBS-Trumbull			
Property Fund LP	Core	86,612,748	3.86%
JP Morgan Strategic Property	Core	85,542,816	3.81%
Starwood Opportunity Fund X	Opportunistic	71,224,496	3.18%
Top Ten	\$	1,541,371,442	68.73%

A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

(1) Other represents moneys earmarked for distribution to participants, reinvestment and expenses as well as terminated advisor balances.

Figure 11-13

# REAL ESTATE FUND

New Investments Made in Fiscal Year 2017 (in Excess of \$3 Million)

Partnership Name	Commitment Amount	Investment Type
Blackstone Real Estate Partners Europe V	\$50 million	Opportunistic
Gerding Edlen Green Cities II, LP	50 million	Value-Add
Starwood Opportunity Fund XI Global, LP	50 million	Opportunistic
Total	\$150 million	

# private investment fund

# Fund Facts at June 30, 2017

**Investment Strategy/Goals:** The purpose of the Private Investment Fund (PIF) is to: 1) earn returns in excess of the public equity markets, 2) generate attractive risk-adjusted rates of return, and 3) provide diversification for the CRPTF under different economic environments.

Date of Inception: July 1, 1987 Total Net Position: \$2,990,442,381

**Performance Objective:** A net return that outperforms **Management Fees**<sup>(1)</sup>: \$2,656,009 the Standard & Poor Index (S&P 500) over rolling

ten year periods.

Benchmark: S&P 500

**Number of Partnerships:** 61

Capitalized and Netted Fees: \$27,118,524

**Operating Expenses:** \$2,159,547

Expense Ratio: 0.17%

(1)See Note 1 to the Financial Statements for a discussion of similar fees incurred at the investment level.

# **Description of the Fund**

The PIF invests in externally managed funds that are executing strategies divided into two sub-asset classes: venture capital and corporate finance. Venture capital invests equity into young or development stage companies. Corporate finance encompasses several underlying strategies, including leveraged buyout, mezzanine debt, and special situations.

# **Portfolio Characteristics**

The PIF invests in private equity funds either directly as a Limited Partner to a specific fund or indirectly as a Limited Partner to a fund of funds vehicle. Fund-of-funds invest in multiple private equity partnerships that invest in underlying companies and are typically used to execute a strategic objective within the PIF. Private equity investments include two general areas of strategic focus.

# Corporate Finance

- Buyout focused investments are defined as controlling or majority investments in private equity or equity-like securities of more established companies on the basis of the company's asset value and/or cash flow.
- Mezzanine debt focused investments are defined as investments in securities located between equity and senior debt in the company's capital structure. Mezzanine debt investments offer higher current income than senior debt securities and often offer equity participation features that may take the form of warrants or contingent equity interests.
- Special situation focused investments are defined as investments in a variety of securities (debt, preferred equity and/or common equity) in portfolio companies at a variety of stages of development.
- International private equity focused investments are defined as investments in private equity or equity-like securities in companies located outside the continental United States. International private equity investments provide the benefit of geographic and economic diversification and may include exposure to higher growth economies in select markets.

# **Venture Capital**

Venture capital focused investments can be narrowly defined as investments in private equity or equity-like securities of developing companies in need of growth or expansion capital. These investments can range from early-stage financing, where a company has little more than a marketable idea, to expansion financing, where a company has a marketable product but requires additional capital to bring the product to market.

<sup>\*</sup>Expense ratio is calculated using the management fee and operating expense totals.

The PIF had 61 active funds and aggregate capital commitments totaling \$8.6 billion as of June 30, 2017. Approximately 84 percent, or \$7.2 billion, had been "drawn down" for investment purposes as of that date while the balance of approximately \$1.4 billion, or 16 percent, was committed but not drawn (See Figure 13-6).

#### **Market Review**

Despite potential headwinds from uncertainties surrounding economic trends, major elections in the U.S. and Europe, and growing geopolitical risks, global market conditions continued to be favorable and accommodative to the private equity industry. A robust fundraising market combined with access to low cost debt continued to provide managers with ample capital for investment. However, high valuations have presented challenges to private equity managers seeking to deploy capital into new investments.

Fundraising for global private equity totaled \$363.3 billion during the fiscal year representing a 20 percent increase from the prior year. Notably, fiscal year 2017 saw the largest ever European and Asian buyout funds raised, highlighting the trend of increasing investor interest in proven managers investing globally. Buyout funds raised \$225.9 billion in the fiscal year, representing 62 percent of total capital raised, while venture capital funds raised \$73.5 billion, or just over 20 percent of all capital raised globally.

Global buyout and venture capital investment activity in the fiscal year was down from the prior year as managers exhibited discipline in a high valuation cycle while facing continued competition from strategic buyer and public market exit alternatives. More than \$335 billion was invested in close to 4,200 private equity-backed buyout transactions, with aggregate deal value and volume down 12 percent and 1 percent, respectively, from the prior year. The U.S. continued to hold a dominant share of global buyout activity, representing 56 percent of total deal value. Private equity-backed buyout exits generated \$309 billion of value during the year, a decline of 16 percent from the previous year.

Venture capital managers invested \$136 billion globally during the fiscal year, representing a decline of 14 percent from the prior year. The number of investments also declined 14 percent year over year with more than 10,600 venture investments made globally. Venture capital activity in the U.S. represented 42 percent of global venture transactions, down from 40 percent in the prior year. Greater China represented the second most active market with 21 percent of all venture deals closed during the year, outpacing Europe for the second consecutive year.

# **Performance Summary**

For the fiscal year ended June 30, 2017, PIF generated a net compounded annual rate of return of 10.97 percent (See Figure 13-5). This return was measured using a time weighted return calculation methodology.

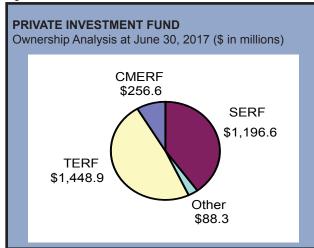
While short-term returns are reviewed, longer term (e.g., 10 years) returns are more meaningful in evaluating private equity portfolio performance. Long-term horizons better reflect the illiquid nature of PIF's holdings and the time it takes for investments to realize their potential. PIF's performance is benchmarked against the S&P 500. Over the last 10 years through June 30, 2017, PIF's performance has exceeded that of the S&P 500 by 233 basis points on a compounded annual basis (See Figure 13-5).

The institutional standard for measuring private equity performance is the Internal Rate of Return (IRR). IRR is a dollar-weighted annualized return that considers both cash flows and time. Since its inception in 1987, PIF has generated a 9.2 percent IRR. A tool commonly used by institutional investors to benchmark IRR performance is the public market equivalent (PME). From inception through June 30, 2017, PIF has generated 213 basis points of annual performance in excess of its S&P 500 PME.

During Fiscal Year 2017, ten new partnership commitments were made to eight managers (See Figure 13-10).

PIF's risk profile is complex given the valuation judgments and liquidity constraints placed on it consistent with an alternative investment strategy. Over the last five years, PIF's volatility relative to its benchmark has been 0.53 with a correlation of 0.00. Over the last five years, the Fund has returned an annual alpha, or return relative to that predicted by its benchmark, of -2.78 (See Figure 13.2).

Figure 13-1

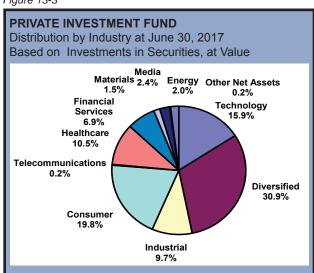


TERF - Teachers' Retirement Fund

SERF - State Employees' Retirement Fund

CMERF - Connecticut Municipal Employees' Retirement Fund

iaure 13-3



(1) Data for Private Equity Funds held in PIF; excludes Liquidity Fund and other PIF Assets.

Figure 13-5

PRIVATE INVESTME Periods ending June				
	1 YR	3 YRS 5	YRS 1	0 YRS
Compounded, Annua PIF S & P 500	al Total Retu 10.97 17.90	rn (%) 11.27 9.61	11.85 14.63	
Cumulative Total Ret	urn (%)			
PIF	10.97	37.77	75.09	147.98
S & P 500	17.90	31.70	97.92	100.08

Calculated with time weighted return methodology.

Figure 13-2

 VATE INVESTMENT FUND  Profile at June 30, 2017 (1)		
Relative Volatility	0.53	
Standard Deviation	4.99	
R2	0.00	
Beta	0.00	
Alpha	-2.78	

(1) Based upon quarterly returns over the last five years.

Figure 13-4

PRIVATE INVESTMENT FUND Distribution by Geographic Location at June Based on Investments in Securities, at Value 1.	
Region	%
Northeast (Excludes Connecticut)	17.1%
International	8.2%
West Coast	20.3%
Other Assets & Liabilities	0.2%
Southeast	16.7%
Mid-Atlantic	3.9%
MidWest	11.2%
Southwest	11.1%
Connecticut	10.5%
Northwest	0.8%
TOTAL	100.00%

 Data for Private Equity Funds held in PIF; excludes Liquidity Fund and other PIF Assets.

Figure 13-6

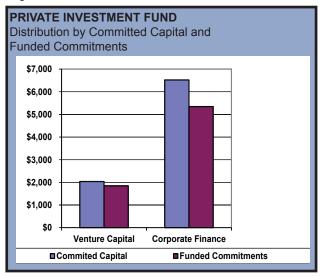


Figure 13-7

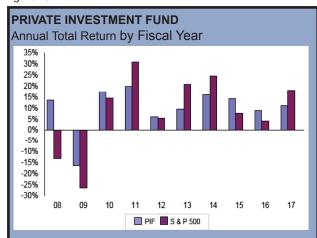


Figure 13-8

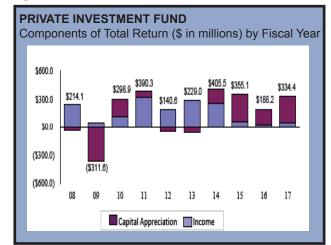


Figure 13-9

Ten Largest Holdings* at June 30, 2017			
		Market	
Partnership Name	Partnership Type	Value	%
FAIRVIEW CONSTITUTION III LP	Fund of Funds	\$315,539,659	10.62%
FAIRVIEW CONSTITUTION IV LP	Fund of Funds	139,545,704	4.70%
STEPSTONE PIONEER CAPITAL II LP	Fund of Funds	132,208,263	4.45%
FS EQUITY PARTNERS VI	Buyout	124,505,984	4.19%
FAIRVIEW CONSTITUTION II LP	Fund of Funds	90,387,736	3.04%
APOLLO INVESTMENT FUND VIII LP	Special Situations	86,564,648	2.92%
NUTMEG OPPORTUNITIES FUND LP	Fund of Funds	83,953,234	2.83%
YUCAIPA AMERICAN ALLIANCE FUND II	Buyout	81,384,745	2.74%
PEGASUS PARTNERS V LP	Special Situations	81,157,517	2.73%
VISTA EQUITY PARTNERS FUND IV	Buyout	73,479,303	2.47%
Top Ten		\$1,208,726,793	40.69%

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act.

Figure 13-10

PRIVATE INVESTMENT FUND New Commitments Made in Fiscal Year 20	017		
Partnership Name	Commitment Amount	Investment Type	Investment Date
JFL Equity Investors IV, L.P.	\$75 million	Buyout	11/15/2016
Vista Equity Partners Fund VI, L.P.	100 million	Buyout	11/16/2016
Leeds Equity Partners VI, L.P.	50 million	Buyout	11/25/2016
Constitution Fund V, LLC - Series A	130 million	Fund-of-Funds	12/30/2016
Constitution Fund V, LLC - Series B	20 million	Fund-of-Funds	12/30/2016
Ironwood Mezzanine Fund IV, L.P.	50 million	Special Situations	5/19/2017
Apollo Investment Fund IX, L.P.	125 million	Buyout	5/31/2017
Nutmeg Opportunities Fund II, LLC	150 million	Fund-of-Funds	6/9/2017
Altaris Constellation Partners IV, L.P.	10 million	Buyout	6/30/2017
Altaris Health Partners IV, L.P.	40 million	Buyout	6/30/2017
Total:	\$750 million	•	

Figure 13-11

### PRIVATE INVESTMENT FUND Investment Advisors at June 30, 2017

THE STITICHE / NOVISORS OF GUILD GO,	2017	
	Net Asset	% of
Investment Advisor	Value	Fund
Buyout	\$1,090,300,470	36.46%
AIG Altaris Health Partners II	14,208,866	0.47%
AIG Altaris Health Partners III	29,429,972	0.98%
Boston Ventures VII	43,313,369	1.45%
Charterhouse Equity Partners IV	4,037,714	0.13%
Court Square Capital Partners II	27,058,106	0.90%
Court Square Capital Partners III LP	16,688,090	0.56%
Ethos Private Equity Fund V	5,324,415	0.18%
FS Equity Partners V	6,508,219	0.22%
FS Equity Partners VI	124,505,984	4.16%
GENNX360 Capital Partners II	18,646,010	0.62%
Hicks, Muse Tate & Furst Equity Fund III	3,551,237	0.12%
ICV Partners II LP	8,962,675	0.30%
JFL Equity Investors III, LP	50,122,324	1.68%
JFL IV	26,233,339	0.88%
KKR 2006 Fund	64,659,031	2.16%
KKR Millennium Fund	9,244,888	0.31%
Leeds Equity Partners V LP	32,509,095	1.09%
Leeds VI	9,898,141	0.33%
Nogales Investors Fund II	1,685,506	0.06%
RFE Investment Partners VII	44,319,391	1.48%
RFE Investments Partners VIII	22,912,390	0.77%
TA XI, L.P.	66,429,959	2.22%
Thomas H. Lee Equity Fund VI	65,215,336	2.18%
Vista Equity Partners Fund III	22,508,517	0.75%
Vista Equity Partners Fund IV	73,479,303	2.46%
Vista Equity Partners Fund VI	46,933,363	1.57%
Wellspring Capital Partners V	36,761,719	1.23%
Welsh Carson Anderson & Stowe X LP	18,865,693	0.63%
Welsh Carson Anderson & Stowe XI	68,992,263	2.31%
WCAS XII, LP	31,951,782	1.07%
Yucaipa American Alliance Fund II LP	81,384,745	2.72%
Yucaipa III	13,959,028	0.47%
Venture Capital	9,014,785	0.30%
Crescendo III	1,156,486	0.04%
Syndicated Communications V	7,858,299	0.26%
Mezzanine	47,691,968	1.59%
Audax Mezzanine III Limited Partnership	38,109,974	1.27%

GarMark Partners II LP	9,581,994	0.32%
International	46,579,869	1.56%
Gilbert Global Equity Partners	44,851,779	1.50%
Pinebridge Global Emerging Markets Fund	, ,	0.06%
Fund of Funds	1,010,862,137	33.80%
Connecticut Horizon Legacy	5,860,236	0.20%
CT Growth Capital	7,830,409	0.26%
CS/CT Cleantech Opp Fund	8,123,759	0.27%
CT Emerging M-2 Pvt Equity	73,164,810	2.45%
Fairview Constitution II LP	90,387,736	3.02%
Fairview Constitution III	315,539,659	10.55%
Fairview Constitution IV LP	139,545,704	4.67%
JP Morgan Nutmeg I	83,953,234	2.81%
Landmark Equity Partners XIV LP	38,412,767	1.28%
Landmark Equity Partners XV LP	37,475,763	1.25%
Stepstone Pioneer Capital I LP	19,007,759	0.64%
Stepstone Pioneer Capital II LP	132,208,263	4.42%
Constitution Fund V	22,556,900	0.75%
The Constitution Liquidating Fund	36,795,138	1.23%
Special Situations	452,045,315	15.12%
Apollo Investment Fund VIII LP	86,564,648	2.90%
Castlelake II LP	45,509,284	1.52%
Clearlake Capital Partners III LP	64,676,117	2.16%
Clearlake IV	48,347,212	1.62%
Levine Leichtman Capital Partners	20,220,581	0.68%
Levine Leichtman Capital Partners V LP	64,570,094	2.16%
Pegasus Partners IV	29,311,713	0.98%
Pegasus Partners V	81,157,517	2.71%
WLR Recovery Fund IV	11,688,149	0.39%
Other (1)	333,947,837	11.17%
SUBTOTAL PIF	\$2,990,442,381	100.00%

<sup>(1)</sup> Other includes partnerships with nonmaterial balances, as well as moneys earmarked for distribution to participants, reinvestment, expenses and other net assets.

### CONNECTICUT STATE TREASURER'S COMBINED INVESTMENT FUNDS SCHEDULE OF EXPENSES IN EXCESS OF \$5,000 (1) FISCAL YEAR ENDED JUNE 30, 2017

		Contract	Aggregate Comp. Paid	Status at June 30,
Name of Firm	Description of Services	Date	in FY 2017	2017
INVESTMENT ADVISORY SERVICES				-
Domestic Equity Investment Advisory Services	;			
Bivium Capital Partners, LLC	Equity Advisor	Jul-05	\$2,673,611	Active
Capital Prospects LLC	Equity Advisor	Jul-05	1,729,334	Active
FIS Group Inc.	Equity Advisor	Jul-05	1,465,004	Active
Frontier Capital Management Co.LLC	Equity Advisor	Oct-10	\$2,552,740	Active
State Street Global Advisors	Equity Advisor	Mar-96	\$266,819	Active
T. Rowe Price Associates, Inc.	Equity Advisor	Nov-08	4,342,761	Active
Total Domestic Equity Advisor Compensation			\$13,030,268	
Core Fixed Income Investment Advisory Service	es			
Blackrock Financial Management	Core Income Advisor	Mar-96	\$1,161,626	Active
Goodwin Capital Advisors(Phoenix)	Core Income Advisor	Nov-97	551,055	Active
Progress Investment Management	Core Income Advisor	Jul-05	406,597	Active
State Street Global Advisors	Core Income Advisor	Mar-96	100,000	Active
Wellington Asset Management	Core Income Advisor	Nov-97	808,017	Active
Total Core Fixed Income Advisor Compensation	n		\$3,027,295	
Inflation Linked Bond Investment Advisory Ser	vices			
BlackRock Financial Management, Inc	Inflation Income Advisor	Sep-14	\$950,053	Active
Colchester Global Investors Limited	Inflation Income Advisor	Nov-14	1,413,852	Active
New Century Advisors, LLC	Inflation Income Advisor	Sep-14	371,046	Active
Total Inflation Linked Bond Advisor Compensa		оор	\$2,734,951	7101170
Emerging Market Debt Investment Advisory Se	rvices			
Ashmore Investment Management Limited	Emerging Market Income Advisor	Sep-16	\$1,132,517	Active
BlackRock Institutional Trust Co.	Transition Manager	May-96	\$274,960	Terminated
Payden & Rygel	Emerging Market Income Advisor	Jul-16	713,090	Active
Pyramis Global Advisors	Emerging Market Income Advisor	Oct-07	2,139,429	Active
Stone Harbor Investment Partners	Emerging Market Income Advisor	Oct-07	1,191,463	Terminated
Total Emerging Market Debt Advisor Compensa		00007	\$5,451,459	Terrimated
High Yield Debt Advisory Services	Lligh Viold Income Advisor	Nov 16	¢226.242	Activo
DDJ Capital Management	High Yield Income Advisor	Nov-16	\$226,313	Active
Loomis Sayles & Co., Inc. Nomura	High Yield Income Advisor High Yield Income Advisor	Mar-96 Feb-17	892,160 18,170	Active Active
	High Yield Debt Advisor	Mar-96	965,221	Terminated
Oaktree Capital Management Shenkman Capital Management	High Yield Debt Advisor	Dec-07	1,669,618	Active
Stone Harbor Investment Partners	High Yield Debt Advisor	Oct-07	818,896	Active
Total High Yield Debt Advisor Compensation	Tilgit Held Debt Advisor	OCI-01	\$4,590,467	Active
			ψ+,000,+01	
Liquidity Fund Advisory Services	Lincold the French Advisor	M 00	#004 000	A =45
Colchester Global Investors Limited	Liquidity Fund Advisor	May-09	\$691,033	Active
Lazard Asset Management LLC	Liquidity Fund Advisor	Aug-09	481,333	Active
Pacific Investment Management Co. LLC	Liquidity Fund Advisor	Mar-09	569,264	Active
Payden & Rygel	Liquidity Fund Advisor	Mar-09	529,548	Active
State Street Global Advisors  Total Liquidity Fund Advisor Compensation	Liquidity Fund Advisor	Mar-96	179,895 <b>\$2,451,072</b>	Active
			<del>+-,,</del>	
Developed Market International Equity Investm Acadian Asset Management	International Equity Advisor	Sep-06	¢2 222 775	Activo
AQR Capital Management, LLC	International Equity Advisor	Sep-06 Sep-06	\$2,228,775 2,961,717	Active Active
Dimensional Fund Advisors LP		Mar-09	2,961,717 1,755,113	
First Quadrant LP	International Equity Advisor International Equity Advisor	Jul-14	3,877,558	Active Active
Grantham, Mayo, Van Otterloo & Co	International Equity Advisor	Mar-96	2,290,415	Active
MFS Institutional Advisors	International Equity Advisor	Aug-03	2,463,823	Active
Progress Investment Management	International Equity Advisor	Jul-05	801,122	Active
Schroder Investment Management	International Equity Advisor	Sep-03	1,701,537	Active
State Street Global Advisors William Blair & Company J. I. C	International Equity Advisor	Mar-96	1,010,889 2,278,150	Active
William Blair & Company, LLC  Total Developed Market International Equity Ad	International Equity Advisor	Mar-09	2,278,159 <b>\$21,429,107</b>	Active
	or compensation		Ψ= 1,7£0,10 <i>1</i>	

### SCHEDULE OF EXPENSES IN EXCESS OF \$5,000 (1) (Continued) FISCAL YEAR ENDED JUNE 30, 2017

Name of Firm	Description of Services	Contract Date	Aggregate Comp. Paid in FY 2017	Status at June 30, 2017
Emerging Market International Equity Advisory	Services			
Aberdeen Asset Management INC	International Equity Advisor	Jul-09	\$4,405,400	Active
Grantham, Mayo, Van Otterloo & Co	International Equity Advisor	Feb-00	3,935,600	Active
Schroder Investment Management	International Equity Advisor	Jan-10	4,965,684	Active
Total Emerging Market International Equity Adv	. , ,		\$13,306,684	
Alternative Investment Advisory Services (2)				
ArcLight Energy Partners Fund VÍ	Alternative Investment Advisor	Jul-15	\$1,245,940	Active
EIG Energy Fund XV, LP	Alternative Investment Advisor	Apr-11	295,468	Active
Total Alternative Investment Advisor Compens	ation	'	\$1,541,408	
Real Estate Investment Advisory Services (2)				
American Realty Advisors	Real Estate Advisor	Mar-12	\$498,867	Active
Blackstone Real Estate Advisors Europe	Real Estate Advisor	Nov-08	371,936	Active
Blackstone Real Estate Partners VI	Real Estate Advisor	Aug-07	316,496	Active
Blackstone Real Estate Partners VIII	Real Estate Advisor	Mar-15	1,500,000	Active
Canyon Johnson Urban Fund III, LP	Real Estate Advisor	Feb-08	7,671	Active
Clarion Lion Industrial Trust LP	Real Estate Advisor	Sep-14	1,229,044	Active
Cornerstone Patriot Fund, LP	Real Estate Advisor	Dec-07	1,788,872	Active
Crow Holdings Capital Partners LLC	Real Estate Advisor	Nov-14	1,687,500	Active
Cypress Retail Fund LP	Real Estate Advisor	May-13	703,204	Active
Gerding Elden Fund Management, LP	Real Estate Advisor	May-14	1,570,438	Active
Hart Realty Advisors, Inc. (CORE)	Real Estate Advisor	Nov-11	1,531,417	Active
JP Morgan Investment Mgmt.	Real Estate Advisor	May-14	845,664	Active
Rockwood Capital Partners Fund VII	Real Estate Advisor	Jun-06	18,249	Active
UBS Trumbull Property Growth & Income Fund LP		Nov-13	672,452	Active
UBS Trumbull Property Fund LP	Real Estate Advisor	Nov-13	825,750	Active
UBS Trumbull Property Income Fund, LP Total Real Estate Advisor Compensation	Real Estate Advisor	Nov-13	470,124 <b>\$14,037,685</b>	Active
·			, ,,	
Private Investment Advisory Services (2) AIG Altaris Healthcare Partners III, LP	Private Investment Advisor	Oct-07	\$800,970	Active
Apollo Advisors VIII, LP	Private Investment Advisor	Nov-13	732,161	Active
Audax Mezzanine Fund III, LP	Private Investment Advisor	May-10	376,599	Active
Boston Ventures LP VII	Private Investment Advisor	May-07	118,236	Active
Clearlake Capital Partners III, LP	Private Investment Advisor	Nov-12	203,547	Active
Clearlake Capital Partners IV, LP	Private Investment Advisor	Aug-15	559,859	Active
Connecticut Growth Capital, LLC	Private Investment Advisor	Dec-15	727,857	Active
Constitution Fund V, LLC	Private Investment Advisor	Dec-16	1,209,962	Active
Constitution Liquidating Fund, LP	Private Investment Advisor	Jul-87	108,303	Active
Court Square Capital Partners III	Private Investment Advisor	May-13	681,203	Active
CT Horizon Legacy Fund LP Total	Private Investment Advisor	Jun-08	50,000	Active
Ethos Capital Fund V, LP	Private Investment Advisor	Aug-06	70,132	Active
Fairview Constitution II, LP	Private Investment Advisor	May-05	468,149	Active
Fairview Constitution III, LP	Private Investment Advisor	Jun-07	1,050,000	Active
Fairview Constitution IV, LP	Private Investment Advisor	Dec-11	975,000	Active
FS Equity Partners V, LP	Private Investment Advisor	Mar-04	36,469	Active
FS Equity Partners VI, LP	Private Investment Advisor	Mar-04	253,951	Active
Garmark Partners, II LP	Private Investment Advisor	Jun-95	63,213	Active
GCM Grosvenor -CT Cleantech	B		400.044	A (*
(formerly CS/CT Cleantech)	Private Investment Advisor	Jul-07	132,014	Active
GenNx360 Capital Partners II, LP	Private Investment Advisor	Mar-14	378,023	Active
JFL Equity Investors IV, L.P.	Private Investment Advisor	Sep-16	1,654,984	Active
JFL Investors III, LP	Private Investment Advisor	Aug-11	444,394	Active
KKR Associates 2006 Fund, LP	Private Investment Advisor	May-07	143,682	Active
KKR Millennium Fund LP	Private Investment Advisor	Jul-01	8,738	Active
KKR2006 Fund	Private Investment Advisor	Mar-09	222,550 387,971	Active
Loodo Fauity Dortners VIII D		Nov-16	.187 971	Active
Leeds Equity Partners VI, L.P.	Private Investment Advisor		•	
Leeds Equity Partners VI, L.P. Levine Leichtman Capital Partners IV, LP Levine Leichtman Capital Partners V, LP	Private Investment Advisor Private Investment Advisor Private Investment Advisor	Jul-08 Aug-12	73,628 1,142,351	Active Active

### SCHEDULE OF EXPENSES IN EXCESS OF \$5,000 <sup>(1)</sup> (Continued) FISCAL YEAR ENDED JUNE 30, 2017

Name of Firm	Description of Services	Contract Date	Aggregate Comp. Paid in FY 2017	Status at June 30, 2017
Nutmeg Opportunities Fund LP	Private Investment Advisor	Nov-06	645,000	Active
Pegasus Investors IV, LP	Private Investment Advisor	Aug-07	450,458	Active
Pegasus Investors V, LP	Private Investment Advisor	May-12	936,723	Active
RFE Associates VIII, LP	Private Investment Advisor	Apr-12	201,093	Active
StepStone Pioneer Capital Buyout Fund I, LP	Private Investment Advisor	May-05	40,875	Active
StepStone Pioneer Capital Buyout Fund II, LP	Private Investment Advisor	Jun-06	449,712	Active
Syncom Partners V, LP	Private Investment Advisor	Apr-06	19,651	Active
THL Equity Advisors VI, LLC	Private Investment Advisor	Aug-07	384,423	Active
Vista Equity Partners III, LP	Private Investment Advisor	Feb-12	99,720	Active
Vista Equity Partners IV, LP	Private Investment Advisor	May-12	1,078,025	Active
Vista Equity Partners VI, LP	Private Investment Advisor	Nov-16	1,611,047	Active
Yuciapa American Alliance Fund III, LP	Private Investment Advisor	Jul-15	290,624	Active
Total Private Equity Advisor Compensation	Tittate iiiveetiioiit/tavieet	001 10	\$19,717,560	7101170
TOTAL COMPENSATION TO INVESTMENT AD	OVISORS	;	\$101,317,957	
Custody Services				
Bank of New York Mellon	Master Custodian	Oct-13	\$1,742,861	Active
TOTAL CUSTODY SERVICES COMPENSATION	N		\$1,742,861	
CONSULTING SERVICES				
Cliffwater LLC	Consultant - Alternative Investmer	nt Jun-13	\$535,000	Active
Hewitt EnnisKnupp, Inc.	Consulting - Pension Funds	Aug-11	596,192	Active
Hudepohl & Associates Inc	Consultant -Executive Search	Jul-12	87,367	Active
Mercer Investment Consulting, INC	Consultant - Strategic Asset Study	/ May-15	30,000	Active
Stepstone Group LP	Consultant -Private Investment	Oct-15	877,310	Active
The Townsend Group, Inc.	Consultant -Pension Funds	Mar-08	312,500	Active
TOTAL CONSULTING SERVICES COMPENSA	TION		\$2,438,369	
MISCELLANEOUS SERVICES				
A & A Office Systems.	Photocopier Lease	N/A	\$7,590	Active
		NI/A	16,348	Active
	Computer Equipment	N/A	·	Active
Anderson Kill P.C.	Legal Services	Dec-11	10,549	Active
Anderson Kill P.C. Bloomberg Finance LP		Dec-11 N/A	10,549 65,980	
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc.	Legal Services On-Line Information service Dues	Dec-11 N/A N/A	10,549 65,980 5,000	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting	Legal Services On-Line Information service Dues Corporate Governance Services	Dec-11 N/A N/A N/A	10,549 65,980 5,000 9,045	Active Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors	Legal Services On-Line Information service Dues Corporate Governance Services Dues	Dec-11 N/A N/A N/A N/A	10,549 65,980 5,000	Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services	Dec-11 N/A N/A N/A N/A Mar-12	10,549 65,980 5,000 9,045 30,000 55,304	Active Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription	Dec-11 N/A N/A N/A N/A Mar-12 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167	Active Active Active Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000	Active Active Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140	Active Active Active Active Active Active Active Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Legal Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Subscription	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC Reinhart Boerner Vandeuren	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Subscription Legal Services Legal Services Legal Services Subscription Legal Services	Dec-11 N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A Dec-11	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361 16,849	Active
Advanced Corporate Networking Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC Reinhart Boerner Vandeuren Shipman & Goodwin LLP Snet	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Subscription Legal Services Legal Services Legal Services Subscription Legal Services Legal Services Legal Services Legal Services Legal Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A Dec-11 Dec-11	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361 16,849 66,076 9,791	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC Reinhart Boerner Vandeuren Shipman & Goodwin LLP Snet	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Subscription Legal Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A Dec-11 Dec-11 Mar-12 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361 16,849 66,076 9,791 15,330	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC Reinhart Boerner Vandeuren Shipman & Goodwin LLP Snet Squire Patton Boggs	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A Dec-11 Dec-11 Mar-12 N/A Sep-10	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361 16,849 66,076 9,791 15,330 36,046	Active
Anderson Kill P.C. Bloomberg Finance LP CERES, Inc. Corporate Governance Consulting Council of Institutional Investors Day Pitney LLP Financial Recovery Technologies LLC Institutional Limited Partners Institutional Shareholder Services IW Financial McCarter & English MCI Worldcom International Inc Murphy Security Services LLC Nextel Communications Nossaman Orrick, Herrington, & Sutcliffe PRI Association Pullman & Comley, LLC Reinhart Boerner Vandeuren Shipman & Goodwin LLP Snet	Legal Services On-Line Information service Dues Corporate Governance Services Dues Legal Services Subscription Subscription Proxy Voting Subscription Legal Services Telecomm Services Premises Security Services Telecomm Services Legal Services Legal Services Subscription Legal Services	Dec-11 N/A N/A N/A N/A N/A Mar-12 N/A Nov-99 N/A Dec-11 N/A May-10 N/A Dec-16 Jun-12 N/A Dec-11 Dec-11 Mar-12 N/A	10,549 65,980 5,000 9,045 30,000 55,304 29,167 7,000 83,140 7,500 49,759 7,767 11,518 10,225 8,342 34,366 10,361 16,849 66,076 9,791 15,330	Active

### SCHEDULE OF EXPENSES IN EXCESS OF \$5,000 (1) (Continued) FISCAL YEAR ENDED JUNE 30, 2017

Name of Firm	Description of Services	Contract Date	Aggregate Comp. Paid in FY 2017	Status at June 30, 2017
West Group	Subscription	N/A	9,680	Active
TOTAL MISCELLANEOUS SERVICES COMPENSATION			\$849,397	
GRAND TOTAL			106,348,583	

<sup>(1)</sup> Expenses are presented on a cash basis.

<sup>(2)</sup> Alternative Investment Management fees for the Alternative Investment Fund, Private Investment Fund and the Real Estate Fund include capitalized fees and expensed fees. Capitalized fees are part of the cost of the investment and become a component of unrealized gain (loss). Capitalized fees are disclosed in Note 1 of the Combined Investment Funds Financial Statements. Expensed fees which are not part of the cost of the investment are recorded in the Statement of Operations.

### SCHEDULE OF BROKERAGE COMMISSIONS FOR THE FISCAL YEAR ENDED JUNE 30, 2017

	¢	Charas	A		\$	Charast	A. 100
Broker Name	\$ Commission	Shares/ Par Value	Avg Comm	Broker Name	φ Commission	Shares/ Par Value	Avg Comm
ABG SEC AS (NORGE), FILIAL, STOCKHOLM	503.58	14,444.00	0.03	CITIBANK NA, HONG KONG	3,877.04	3,286,901.00	0.00
ABG SECS, OSLO	2,308.67	181,880.00	0.03	CITIBANK NA, HONG KONG	34.74	5,718.00	0.00
ABN AMRO CLEARING BANK N.V, AMSTERDAM	766.60	57,179.00	0.01	CITIBANK NY (MER)	48.02	5,600.00	0.01
ABN AMRO MORGANS, BRISBANE	3,943.31	1,765,693.00	0.00	CITIBANK, NY	29.30	4,485.00	0.01
ALLEN & COMPANY LLC, JERSEY CITY	965.82	32,194.00	0.03	CITIGROUP GBL MKTS AUSTRALIA PTY, SYDNEY	592.51	176,482.00	0.00
APEX CLEARING CORPORATION, DALLAS	941.88	23,547.00	0.04	CITIGROUP GBL MKTS INC, NEW YORK	92,104.72	5,379,613.00	0.02
AUERBACH GRAYSON & CO INC, JERSEY CITY	180.00	6,000.00	0.03 0.04	CITIGROUP GBL MKTS/SALOMON, NEW YORK CITIGROUP GLOBAL MARKETS LTD, LONDON	64,647.30 215,663.02	21,459,631.00 36,073,855.00	0.00 0.01
AVONDALE PARTNERS LLC, NASHVILLE B.RILEY & CO.,LLC, LOS ANGELES	917.55 1,249.28	23,150.00 36,926.00	0.04	CJS SECURITIES INC, JERSEY CITY	151.50	3,830.00	0.01
BAIRD, ROBERT W & CO INC, MILWAUKEE	24,712.57	704,702.00	0.04	CLSA AUSTRALIA PTY LTD, SYDNEY	8,735.25	2,225,301.00	0.00
BANCO BTG PACTUAL SA, RIO DE JANEIRO	4,139.31	535,600.00	0.01	COMPASS POINT RESEARCH & TR, JERSEY CITY	1,300.71	37,920.00	0.03
BANCO DE INVESTIMENTUS GARATIA	5,410.13	736,400.00	0.01	CONCORDIA SA CVMCC, RIO DE JANEIRO	621.06	127,880.00	0.00
BANCO ITAU S.A., NEW YORK	6,002.71	592,747.00	0.01	CONVERGE LLC, NEW YORK	72.25	3,400.00	0.02
BANCO ITAU, SAO PAULO	4,689.39	602,171.00	0.01	CORNERSTONE MACRO LLC, NEW YORK	1,726.93	71,140.00	0.02
BANCO SANTANDER, NEW YORK	15,524.45	2,478,821.00	0.01	COWEN AND COMPANY LLC, NEW YORK CRAIG HALLUM, MINNEAPOLIS	4,464.17 2,286.64	174,598.00 77,689.00	0.03
BANK J VONTOBEL & CO LTD, ZURICH BANK OF AMERICA, N.A, SAN FRANCISCO,CA	13,479.12 6,243.25	139,148.00 75,770,000.00	0.10 0.00	CREDIT LYONNAIS SEC, SEOUL	12,334.39	501,387.00	0.03
BANQUE PARIBAS, PARIS	8,066.49	1,583,588.00	0.00	CREDIT LYONNAIS SECS (ASIA), HONG KONG	12,494.48	13,221,554.00	0.00
BARCLAYS BK PLC WHOLESALE, LONDON		28,440,000.00	0.00	CREDIT LYONNAIS SECS, SINGAPORE	18,484.75	12,064,500.00	0.00
BARCLAYS BK PLC, NEW YORK	3,345.40	83,635.00	0.04	CREDIT SUISSE (EUROPE), LONDON	34,307.18	5,561,658.00	0.01
BARCLAYS CAPITAL INC./LE, NEW JERSEY	44,412.30	6,356,077.00	0.01	CREDIT SUISSE (EUROPE), SEOUL	20,564.60	298,721.00	0.07
BARCLAYS CAPITAL INC, JERSEY CITY	15.75	2,100.00	0.01	CREDIT SUISSE (HK) LIMITED, HONG KONG	22,726.38	14,726,535.00	0.00
BARCLAYS CAPITAL LONDON (PARCERS)	10,448.29	651,019.00 3,838,084.00	0.02 0.01	CREDIT SUISSE AUSTRALIA EQ, MELBOURNE CREDIT SUISSE, NEW YORK (CSUS)	541.45 142,413.09	74,575.00 57,796,758.00	0.01 0.00
BARCLAYS CAPITAL, LONDON (BARCGB33) BARCLAYS CAPITAL, NEW YORK	25,585.08 832.79	247,247.00	0.01	CREDIT SUISSE, SAO PAULO	3,659.77	599,104.00	0.00
BARRINGTON RESEARCH ASSOCIATES, CHICAGO	1,127.91	37,597.00	0.03	CREST DEPOSITORY LTD, LONDON	24.96	1,081.00	0.02
BB&T SECURITIES, LLC, RICHMOND	112.80	3,760.00	0.03	CSL STOCKBROKERS LIMITED, LAGOS	111.45	180,220.00	0.00
BELTONE SEC BROKERAGE S.A.E, CAIRO	67.27	34,939.00	0.00	CUTTONE & CO, JERSEY CITY	63.78	3,189.00	0.02
BERENBERG GOSSLER & CIE, HAMBURG	34,732.43	3,888,853.00	0.01	D CARNEGIE AB, STOCKHOLM	5,473.08	616,097.00	0.01
BERNSTEIN SANFORD C & CO, NEW YORK		30,463,126.00	0.00	DAEWOO SECURITIES CO LTD, SEOUL	4,913.64	150,780.00	0.03
BLOOMBERG TRADEBOOK LLC, NEW YORK BLOOMBERG TRADEBOOK, LONDON	53.27 472.65	1,902.00	0.03	DAIWA SECS (HK) LTD, HONG KONG DAIWA SECS AMER INC, NEW YORK	13,679.40 23,480.26	5,033,184.00 1,818,735.00	0.00 0.01
BLOOMBERG TRADEBOOK, LONDON BLOOMBERG TRADEBOOK, NEW YORK	472.05 22,111.45	1,215,137.00 571,109.00	0.00	DAVIDSON(D A) & CO INC, NEW YORK	2,215.79	58,092.00	0.01
BMO CAPITAL MARKETS CORP, NEW YORK	7,120.98	233,753.00	0.03	DAVY STOCKBROKERS, DUBLIN	2,402.80	178,852.00	0.01
BNP PARIBAS PEREGRINE SEC LTD, HONG KONG		16,905,951.00	0.00	DBS VICKERS SEC PTE LTD, SINGAPORE	2,372.17	83,600.00	0.03
BNP PARIBAS PRIME BROKERAGE, JERSEY CITY	6.00	200.00	0.03	DEN DANSKE BANK, COPENHAGEN	2,118.89	73,132.00	0.03
BNP PARIBAS PRIME BROKERAGE, INC, NEW YORK	210.00	7,000.00	0.03	DEN NORSKE CREDITBANK, OSLO	53.27	26,364.00	0.00
BNP PARIBAS SEC SRVS SA, SINGAPORE	22,696.61	9,350,331.00	0.00	DEUTSCHE BANK SAE, BARCELONA	27.74	6,141.00	0.00
BNP PARIBAS SEC SVCS, LONDON (PARBGB2L) BNP PARIBAS SECS SERVS, SYDNEY	2,119.05 1,300.68	536,872.00 555,794.00	0.00	DEUTSCHE BK AG, LONDON DEUTSCHE BK INTL EQ, LONDN (DEUTGB22EEQ)	2,538.79 22,210.47	37,185,000.00 2,899,384.00	0.00 0.01
BNP PARIBAS SECURITIES SVCS, HONG KONG	5,245.33	2,761,300.00	0.00	DEUTSCHE BK SECS INC, NY (NWSCUS33)	114,373.83	46,644,099.00	0.00
BNY CONVERGEX EXECUTION SOL, NEW YORK	46,017.05	5,061,833.00	0.01	DEUTSCHE MORGAN GRENFELL SEC, SYDNEY	34.87	4,946.00	0.01
BNY CONVERGEX, NEW YORK	10,575.54	313,181.00	0.03	DEUTSCHE SEC ASIA LTD, HONG KONG	4,445.58	349,815.00	0.01
BRADESCO S.A. CTVM, SAO PAULO	2,976.49	370,881.00	0.01	DEXIA BK (FORMERLY KEMPEN), AMSTERDAM	172.60	15,820.00	0.01
BRADESCO S/A CTVM, SAO PAULO	2,093.01	240,800.00	0.01	DMG N PARTNERS SEC, SINGAPORE	1,278.38	915,800.00	0.00
BREAN CAPITAL LLC, JERSEY CITY	305.32	21,132.00	0.01 0.04	DNB NOR MARKETS CUSTODY, OSLO DOUGHERTY & COMPANY LLC, MINNEAPOLIS	210.80 1,496.70	13,173.00 47,896.00	0.02 0.03
BROADCORT CAPITAL CORP FI, NEW YORK BROCKHOUSE AND COOPER, MONTREAL	31.20 2,013.74	780.00 127,400.00	0.04	DOWLING & PARTNERS, JERSEY CITY	1,388.86	39,433.00	0.03
BTIG LLC, SAN FRANCISCO	3.205.25	292,185.00	0.02	DREXEL HAMILTON LLC, JERSEY CITY	748.58	29,330.00	0.03
CABRERA CAPITAL MARKETS, CHICAGO	4,116.03	263,790.00	0.02	ED AND F MAN CAPITAL MARKETS, LONDON	3,171.10	1,799,409.00	0.00
CACEIS BANK DEUTSCHLAND, GERMANY	98.14	286.00	0.34	ERSTE BK SPARKASSEN, PRAGUE	389.93	2,937.00	0.13
CANACCORD GENUITY INC.NEY YORK	2,248.23	69,661.00	0.03	EXANE, PARIS (EXANFRPP)	4,063.17	209,585.00	0.02
CANACCORD GENUITY LTD, LONDON	2,751.84	237,543.00	0.01	FBN SECURITIES INC, JERSEY CITY	47.94	1,598.00	0.03
CANTOR CLEARING SERV, NEW YORK CANTOR CLEARING SERVICE, NEW YORK	10,106.99 16.60	1,039,802.00 830.00	0.01 0.02	FBR CAPITAL MARKETS & CO, ARLINGTON FIG PARTNERS LLC, ATLANTA	2,931.20 1,473.05	154,358.00 45,300.00	0.02 0.03
CANTOR GLEAKING SERVICE, NEW YORK	10,975.60	437,196.00	0.02	FINANCIAL BROKERAGE GROUP (FBG), CAIRO	13.55	1,951.00	0.03
CANTOR FITZGERALD EUROPE, LONDON	287.25	15,449.00	0.02	FIRST ANALYSIS SECS CORP, CHICAGO	382.98	12,766.00	0.03
CAPITAL INSTITUTIONAL SVCS, NEW YORK	550.90	27,545.00	0.02	FIRST CLEARING LLC, RICHMOND	5,465.19	174,772.00	0.03
CARNEGIE ASA, OSLO	2,468.75	150,508.00	0.02	FIRST NZ CAP SECS, WELLINGTON	515.21	167,969.00	0.00
CARNEGIE BANK AS, COPENHAGEN	2,046.57	49,343.00	0.04	FLOW CORRETORA DE MERCADORIAS, SAO PAULO		13,000.00	0.01
CARNEGIE SECS LTD, HELSINKI (CASFFIH1)	9,019.23	207,093.00	0.04	FOKUS BANK, TRONDHEIM FOX RIVER EXECUTION TECH,LLC,JERSEY CITY	1,966.07	119,200.00	0.02
CASTLEOAK SEC/CANTOR FITZGERALD & CO, NY CELADON FINANCIAL GROUP, LLC, NEW YORK	3,123.19 404.60	307,801.00 47,600.00	0.01 0.01	FUJI SECURITIES INC, JERSEY CITY	93.00 908.48	18,600.00 22,712.00	0.01 0.04
CELFIN CAPITAL SA CORREDORES, SANTIAGO	16,241.35	3,942,115.00	0.01	GK GOH SECURITIES	3,438.70	2,711,836.00	0.04
CHEEVERS & CO INC, CHICAGO	72.86	9,100.00	0.01	GOLDMAN SACHS & CO, NY		112,079,727.00	0.00
CHEEVERS & CO. INC.,CHICAGO	1,688.00	83,235.00	0.02	GOLDMAN SACHS ASIA SEC LTD, HONG KONG	812.92	1,974,688.00	0.00
CHINA INTL CAP CORP HK SECS, HONG KONG	13,552.35	8,492,908.00	0.00	GOLDMAN SACHS AUSTRALIA PTY LTD, MELBOURN	88.58	88,782.00	0.00
CHINA INTL CAP CORP LTD, BEIJING	714.07	326,594.00	0.00	GOLDMAN SACHS DO BRASIL, SAO PAULO	8,359.01	872,208.00	0.01
CIBC WORLD MARKETS CORP, NEW YORK CIBC WORLD MKTS INC, TORONTO	640.00 3.619.72	16,000.00 175,751.00	0.04 0.02	GOLDMAN SACHS EXECUTION & CLEARING, NY GOLDMAN SACHS INTL, LONDON (GSILGB2X)	2,366.74 54,860.21	165,848.00 6,084,704.00	0.01 0.01
CIBC WORLD MKTS INC, TORONTO  CIBC WORLD MKTS INC, TORONTO (WGDB)	3,619.72 851.01	175,751.00 62,000.00	0.02	GOLDMAN SACHS INTL, LONDON (GSILGB2X)	1,454.65	29,093.00	0.01
CIMB GK SECURITIES PTE LTD, SINGAPORE	47.75	10,502.00	0.01	GOLDMAN SACHS INTL, TORONTO (GSCI)	2,197.88	111,100.00	0.03
CIMB INVESTMENT BK BERHAD, KUALA LUMPUR	2,934.98	3,804,307.00	0.00	GOODBODY STOCKBROKERS, DUBLIN	1,027.34	293,556.00	0.00
CIMB SECURITIES (USA), INC, NEW YORK	918.31	297,028.00	0.00	GOODBODY STOCKBROKERS, DUBLIN	1,557.95	258,960.00	0.01
CITIBANK (COR), NEW YORK	104.50	103,063.00	0.00	GORDON HASKETT CAP CORP, NJ	925.48	29,612.00	0.03
CITIBANK CUSTODIAL, TORONTO (CITC)	49.85	2,200.00	0.02	GREEN STREET ADVISORS, JERSEY CITY	1,248.47	40,749.00	0.03
CITIBANK LTD, MELBOURNE	5.93	19,772.00	0.00	GREEN STREET TRADING LLC, NEW YORK	1,589.49	50,988.00	0.03

### SCHEDULE OF BROKERAGE COMMISSIONS (Continued) FOR THE FISCAL YEAR ENDED JUNE 30, 2017

Broker Name	\$ Commission	Shares/ Par Value	Avg Comm	Broker Name	\$ Commiss	Shares/ sion Par Value	Avg Comm
GUGGENHEIM CAPITAL MKT LLC, JERSEY CITY	596.12	26,256.00	0.02	LUMINEX TRADING AND ANALYTICS. BOSTON	166.14	66.449.00	0.00
GUZMAN & COMPANY, CORAL GABLES	33.58	1,679.00	0.02	M RAMSEY KING SECURITIES INC, BROOKLYN	2,306.28	47,076.00	0.05
HAITONG INTL SEC CO LTD, HONG KONG	3,508.29	3,633,000.00	0.00	MACQUARIE BANK LIMITED, SYDNEY	8,444.83	2,145,415.00	0.00
HANWHA SECS CO LTD, SEOUL	1,068.97	88,910.00	0.01	MACQUARIE BANK LTD, HONG KONG	33,487.82	19,072,487.00	0.00
HC ISTANBUL MENKUL DEGERLER, ISTANBUL	3,573.67	662,614.00	0.01	MACQUARIE BANK LTD, SYDNEY	828.73	157,500.00	0.01
HILLTOP SECURITIES INC, DALLAS	6,771.44	207,769.00	0.03	MACQUARIE CAPITAL (USA) INC., NEW YORK MACQUARIE CAPITAL LTD, LONDON	12,722.64	832,435.00	0.02 0.02
HONG KONG & SHANGHAI BKG CORP, HONG KONG HSBC BANK PLC (MIDLAND BK)(JAC), LONDON	6,176.84 47,794.09	2,185,900.00 6,694,119.00	0.00 0.01	MACQUARIE SECS (SINGAPORE), SINGAPORE	1,973.36 191.87	124,025.00 205,400.00	0.02
HSBC BROKERAGE (USA) INC., NEW YORK	67.50	4,500.00	0.01	MACQUARIE SECURITIES LTD, AUCKLAND	126.03	44,379.00	0.00
HSBC JAMES CAPEL, SEOUL	10,515.79	360.607.00	0.02	MACQUARIE SECURITIES LTD. SEOUL	6.726.25	264,980.00	0.03
HSBC SECS INC, NEW YORK	10,327.70	7,866,625.00	0.00	MACQUARIE SECURITIES(USA)INC JERSEY CITY	1,414.61	50,166.00	0.03
HSBC SECURITIES (USA) INC, NEW YORK	6,752.34	335,099.00	0.02	MAINFIRST BANK AG,FRANKFURT AM MAIN	3,166.22	32,232.00	0.10
HSBC,(ALL HK OFFICES & HEAD OFFICE), HK	2,070.19	6,536,904.00	0.00	MALAYAN BANKING, KUALA LUMPUR	2,430.01	730,964.00	0.00
ICAP DO BRASIL DTVM LTDA, RIO DE JANEIRO	1,214.95	91,010.00	0.01	MAXIM GROUP, JERSEY CITY	1,509.98	48,782.00	0.03
ICBC FINCL SVCS, NEW YORK ICHIYOSHI SEC CO LTD, TOKYO	4,156.44	232,427.00	0.02	MAYBANK INV BANK BERHAD, KUALA LUMPUR MEDIOBANCA SPA, MILANO	260.14 3,014.75	239,848.00 135,191.00	0.00 0.02
INSTINET AUSTRALIA CLEARING SERV, SYDNEY	230.80 7,844.47	8,600.00 2,340,818.00	0.03	MERLIN SECURITIES LLC, JERSEY CITY	817.98	109,055.00	0.02
INSTINET CANADA, TORONTO	555.39	99,280.00	0.00	MERRILL LYNCH & CO INC ATLAS GLOBAL, NY	3,649.76	211,917.00	0.02
INSTINET CORP, NEW YORK	27,025.44	2,675,458.00	0.01	MERRILL LYNCH BROADCORT CAP, NEW YORK	468.25	46,825.00	0.01
INSTINET CORP, NY	10,219.17	604,843.00	0.02	MERRILL LYNCH GILTS LTD, LONDON	37,353.88	15,122,864.00	0.00
INSTINET EUROPE LIMITED, LONDON	109,401.09	59,192,492.00	0.00	MERRILL LYNCH INTL LONDON EQUITIES	173,884.88	75,259,143.00	0.00
INSTINET PACIFIC LTD, HONG KONG		36,843,561.00	0.00	MERRILL LYNCH PIERCE FENNER SMITH INC NY	197,363.93	85,991,863.00	0.00
INSTINET, SINGAPORE	674.95	253,300.00	0.00	MERRILL LYNCH PIERCE FENNER, WILMINGTON	44,647.75	7,477,591.00	0.01
INVESTEC SECURITIES (221) LONDON	4,346.56	156,411.00	0.03	MERRILL LYNCH PROFESSIONAL CLRG, PURCHAS MERRILL LYNCH SA CVTM. SAO PAULO	294.25 3,714.21	8,758.00	0.03 0.01
INVESTEC SECURITIES (331), LONDON INVESTEC SECURITIES LTD, JOHANNESBURG	7,505.79 7,350.38	406,398.00 644,260.00	0.02 0.01	MIRAE ASSET SEC (HK) LTD,HONG KONG	3,714.21 2,244.16	364,100.00 1,187,853.00	0.01
INVESTMENT TECHNOLOGY GROUP LTD, DUBLIN	45,103.28	7,564,407.00	0.01	MIRAE ASSET SECURITIES, SEOUL	5,044.94	217,480.00	0.02
INVESTMENT TECHNOLOGY GROUP, NEW YORK	2,238.10	84,993.00	0.03	MISCHLER FINL/EQUITIES, CORONA DELMAR	1,491.38	55,505.00	0.03
IPOPEMA SECURITIES S.A., WARSZAWA	230.27	1,507.00	0.15	MITSUBISHI UFJ SECS INTL PLC, LONDON	626.84	29,300.00	0.02
ISI GROUP INC, NY	5,796.85	213,827.00	0.03	MITSUBISHI UFJ SECURITIES, NEW YORK	10,704.09	597,700.00	0.02
ITAU USA SECURITIES INC, NEW YORK	622.55	80,340.00	0.01	MIZUHO SECURITIES ASIA, HONG KONG	101.05	4,100.00	0.02
ITG AUSTRALIA LTD, MELBOURNE	13,596.07	5,920,562.00	0.00	MIZUHO SECURITIES USA INC. NEW YORK	3,118.44	320,637.00	0.01
ITG CANADA CORP, TORONTO	3,006.71	176,515.00	0.02	MIZUHO SECURITIES USA INC, NEW YORK	6,695.72	199,889.00	0.03
ITG HONG KONG LIMITED, HONG KONG		11,658,328.00	0.00 0.01	MKM PARTNERS LLC, GREENWICH MORGAN STANLEY & CO INC, NY	5,237.98 197,873.43	185,014.00 51,791,725.00	0.03
ITG INC, NEW YORK ITG INC, NY	34,049.58 256.77	3,399,678.00 75,513.00	0.00	MORGAN STANLEY & CO INC, NY MORGAN STANLEY & CO INTL LTD, SEOUL	16,077.85	352,755.00	0.00
IXIS SECURITIES, PARIS	1,261.82	36,503.00	0.03	MORGAN STANLEY & CO, LONDON (MSLNGB2X)	50,770.35	8,811,681.00	0.01
J & E DAVY, DUBLIN	2,213.45	361,453.00	0.01	MORGAN STANLEY DEAN WITTER, SYDNEY	372.37	294,026.00	0.00
J P MORGAN SEC LTD/STOCK LENDING, LONDON	4,433.15	317,011.00	0.01	MS SECS SVCS INC INTL, BROOKLYN	49.82	41,244.00	0.00
J P MORGAN SEC, SYDNEY	1,064.92	519,586.00	0.00	NATIONAL FINL SVCS CORP, NEW YORK	60,173.12	2,664,276.00	0.02
J P MORGAN SECS LTD, LONDON		19,063,974.00	0.01	NATIONAL SECS CO LTD, BANGKOK	7,783.19	5,265,565.00	0.00
J P MORGAN SECURITIES INC, BROOKLYN	12,303.76	1,020,419.00	0.01	NBCN INC, TORONTO (NBCS)	799.98	52,974.00	0.02
J.P. MORGAN CLEARING CORP, NEW YORK		14,044,025.00	0.02	NEEDHAM AND COMPANY LLC, JERSEY CITY NESBITT BURNS, TORONTO (NTDT)	650.11 1,438.97	18,317.00 171,777.00	0.04 0.01
J.P. MORGAN SECURITIES, HONG KONG JANNEY MONTGOMERY SCOTT, PHILADELPHIA	29,184.80 2,233.10	15,244,204.00 70,472.00	0.00	NOMURA FINANCIAL & INVESTMENT, SEOUL	13,003.88	696,845.00	0.01
JEFFERIES & CO INC, NEW YORK		15,828,537.00	0.03	NOMURA SECS INTL, LONDON	104.75	14,200.00	0.02
JEFFERIES & CO LTD, LONDON	-,	12,657,833.00	0.00	NORDEA BANK FINLAND PLC,HELSINKI	1,992.73	217,866.00	0.01
JEFFERIES HONG KONG LIMITED, HONG KONG	1,580.19	834,796.00	0.00	NORDEA BK PLC, HELSINKI (NDEAFIHH030)	296.65	53,016.00	0.01
JMP SECURITIES, SAN FRANCISCO	1,598.83	53,124.00	0.03	NORTH SOUTH CAPITAL LLC, JERSEY CITY	1,108.93	85,474.00	0.01
JOHNSON RICE & COMPANY LLC, NEW ORLEANS	545.00	25,382.00	0.02	NORTHLAND SECS INC, JERSEY CITY	555.29	17,344.00	0.03
JONES & ASSOC, WESTLAKE VILLAGE	1,823.60	51,427.00	0.04	NUMIS SECURITIES INC., NEW YORK	7,111.60	946,900.00	0.01
JONESTRADING INSTL SVCS LLC, WESTLAKE	3,591.55	137,601.00	0.03	NUMIS SECURITIES LTD, LONDON	809.80	162,337.00	0.00
JP MORGAN SECS (FAR EAST) LTD, SEOUL JP MORGAN SECS, SINGAPORE	7,566.89 297.14	281,669.00 45,200.00	0.03 0.01	ODDO ET CIE, PARIS OPPENHEIMER & CO INC, NEW YORK	1,146.27 10,371.26	62,605.00 321,205.00	0.02 0.03
JPMORGAN CHASE BK, DALLAS	1,239.64	225,689.00	0.01	ORIEL SECURITIES LTD, LONDON	75.99	13,000.00	0.03
JPMORGAN SECURITIES INC, NEW YORK	40,855.73	7,049,515.00	0.01	OSK INVESTMENT BANK BERHAD, KUALA LUMPUR	7,576.79	3,691,046.00	0.00
KAS BANK NV, AMSTERDAM	470.84	15,876.00	0.03	PANMURE GORDON & CO LTD, LONDON	2,108.50	585,340.00	0.00
KEB SALOMON SMITH BARNEY SECS, SEOUL	5,707.04	31,658.00	0.18	PAREL, PARIS	7,526.58	268,179.00	0.03
KEEFE BRUYETTE AND WOODS, JERSEY CITY	715.01	19,877.00	0.04	PEEL HUNT LLP, LONDON	3,279.49	1,612,878.00	0.00
KEPLER EQUITIES, PARIS	893.78	23,682.00	0.04	PENSERRA SECURITIES, NEW YORK	6,144.13	649,502.00	0.01
KEYBANC CAPITAL MARKETS INC, JERSEY CITY	7,727.62	217,870.00	0.04	PEREGRINE SECS PHILIPPINES INC, MANILA	1,574.39	3,737,310.00	0.00
KEYBANC CAPITAL MARKETS INC, NEW YORK KIM ENG SEC LTD, HONG KONG	6,198.61 225.68	293,577.00 74,400.00	0.02	PERSHING LLC, JERSEY CITY PERSHING SECURITIES LIMITED, LIVERPOOL	24.96	1,001,286,472.63 4,097.00	0.00 0.01
KIM ENG SECS PT, JAKARTA		15,826,300.00	0.00	PERSHING SECURITIES LIMITED, LIVERPOOL PERSHING SECURITIES LTD, LONDON	11,585.17	2,178,613.00	0.01
KING (CL) & ASSOCIATES, ALBANY	13,813.31	435,725.00	0.00	PIPER JAFFRAY & CO, MINNEAPOLIS	20,346.34	617,243.00	0.03
KNIGHT CAPITAL EUROPE LTD, LONDON	4,588.10	1,334,845.00	0.00	PT. MANDIRI SEKURITAS,JAKARTA	622.94	97,500,600.00	0.00
KNIGHT CLEARING SERVICES LLC, JERSEY CIT	2,596.49	336,071.00	0.01	RAYMOND JAMES & ASSOC INC, ST PETERSBURG	41,815.38	1,317,788.00	0.03
KNIGHT DIRECT LLC, JERSEY CITY	162.00	21,600.00	0.01	RBC CAPITAL MARKETS LLC, NEW YORK	58,990.95	3,580,135.00	0.02
KNIGHT EQUITY MARKETS L.P., JERSEY CITY	92.57	4,697.00	0.02	RBC DOMINION SECS INC, TORONTO (DOMA)	8,201.35	342,250.00	0.02
KOREA INVESTMENT AND SEC CO.LTD,SEOUL	11,051.36	459,391.00	0.02	REDBURN PARTNERS LLP, LONDON	1,408.21	314,425.00	0.00
LARRAIN VIAL, SANTIAGO	33.96 692.32	253,082.00	0.00 0.04	RENAISSANCE CAPITAL LTD, LONDON ROTH CAPITAL PARTNERS LLC, IRVINE	9,119.58 73.10	797,550.00 1,990.00	0.01 0.04
LEERINK SWANN & CO, JERSEY CITY LIBERUM CAPITAL INC, NEW YORK	2,302.49	17,308.00 162,024.00	0.04	ROYAL BANK OF CANADA EUROPE LTD, LONDON	1,071.93	1,990.00	0.04
LIQUIDNET CANADA INC, TORONTO	3,600.42	240,529.00	0.01	S G WARBURG, SEOUL	13,598.17	892,318.00	0.01
LIQUIDNET EUROPE LIMITED, LONDON	375.21	21,980.00	0.02	SAMSUNG SECS, SEOUL	259.43	1,034.00	0.25
LIQUIDNET INC, NEW YORK	10,032.02	449,985.00	0.02	SAMUEL A. RAMIREZ & COMPANY INC, JERSEY	288.34	38,451.00	0.01
LOOP CAPITAL MARKETS, JERSEY CITY	12,517.05	790,480.00	0.02	SANDLER O'NEILL & PARTNERS LP, NEW YORK	1,811.90	54,220.00	0.03
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### SCHEDULE OF BROKERAGE COMMISSIONS (Continued) FOR THE FISCAL YEAR ENDED JUNE 30, 2017

Broker Name	\$ Commission	Shares/ n Par Value	Avg Comm	Broker Name	\$ Commission	Shares/ Par Value	Avg Comm
SANFORD C BERNSTEIN & CO INC, LONDON	16,766.64	1,479,269.00	0.01				
SANTANDER CENTRAL HISPANO INVT, MADRID	6,364.50	3,383,341.00	0.00				
SANTANDER INVESTMENT SECS, JERSEY CITY	816.11	108,814.00	0.01				
SCB SECURITIES CO LTD, BANGKOK	9,604.85	14,648,976.00	0.00				
SCOTIA CAPITAL (USA) INC, NEW YORK	780.07	12,751.00	0.06				
SCOTIA CAPITAL INC, NEW YORK	1,389.06	2,259,776.00	0.00				
SCOTIA CAPITAL MKTS, TORONTO	809.21	98,716.00	0.01				
SEAPORT GROUP SECS LLC, NEW YORK SG AMERICAS SECURITIES LLC, NEW YORK	506.79	46,843.00	0.01				
SG SEC (LONDON) LTD, LONDON	1,754.62 39,364.89	59,936.00 6,521,345.00	0.03 0.01				
SG SECURITIES, HONG KONG	27,318.80	11,353,890.00	0.00				
SHENYIN WANGUO SECS LTD, HONG KONG	1,828.61	2,029,500.00	0.00				
SHORE CAPITAL STOCKBROKERS, LONDON	541.04	45,129.00	0.01				
SIDOTI & CO LLC, NEW YORK	3,019.57	89,587.00	0.03				
SKANDINAVISKA ENSKILDA BANKEN, COPENHAGE	2,558.28	31,370.00	0.08				
SKANDINAVISKA ENSKILDA BANKEN, LONDON	3,350.33	148,140.00	0.02				
SKANDINAVISKA ENSKILDA BANKEN, STOCKHOLM	3,867.16	187,764.00	0.02				
SMBC NIKKO SECURITIES LTD, WAN CHAI SMBC SECURITIES, INC NEW YORK	1,479.03 2,876.25	60,300.00 239,300.00	0.02 0.01				
SOCIETE GENERALE LONDON BRANCH, LONDON	30,872.90	8,130,255.00	0.00				
SOFTLOGIC STOCKBROKERS PVT LTD, COLUMBO	125.74	1,734,386.00	0.00				
STANDARD BANK, LONDON	4,932.34	519,824.00	0.01				
STATE STREET BROKERAGE SVCS, BOSTON	3,619.08	150,211.00	0.02				
STATE STREET GLOBAL MARKETS LLC, BOSTON	8,055.11	464,152.00	0.02				
STEPHENS INC, LITTLE ROCK	26,787.38	1,004,648.00	0.03				
STIFEL NICOLAUS	43,111.04	1,877,287.00	0.02				
STURDIVANT & CO INC, BROOKLYN SUNTRUST CAPITAL MARKETS INC, ATLANTA	1,604.92 4,359.24	41,248.00 123,331.00	0.04 0.04				
SVENSKA HANDELSBANKEN, STOCKHOLM	3,897.58	148,103.00	0.04				
TELSEY ADVISORY GROUP LLC, DALLAS	1,365.93	136,593.00	0.01				
THE BANK OF NEW YORK MELLON, BRUSSELS	433.38	4,000.00	0.11				
TONG YANG SECURITIES INC, SEOUL	1,609.97	122,818.00	0.01				
TORONTO DOMINION SEC, TORONTO	5,468.02	200,932.00	0.03				
UBS EQUITIES, LONDON	13,861.93	21,479,278.00	0.00				
UBS SECS SINGAPORE PTE LTD	315.11	1,687,800.00	0.00				
UBS SECURITIES CANADA, TORONTO (BWIT) UBS SECURITIES HONG KONG LTD, HONG KONG	2,907.67 91.26	364,737.00 538,000.00	0.01 0.00				
UBS SECURITIES LLC, STAMFORD	131,095.07	19,187,022.00	0.00				
UBS WARBURG ASIA LTD, HONG KONG	57,843.21	49,361,730.00	0.00				
UBS WARBURG AUSTRALIA EQUITIES, SYDNEY	379.95	73,905.00	0.01				
UBS WARBURG, LONDON	90,252.10	15,448,512.00	0.01				
VTB BANK EUROPE PLC, LONDON	1,246.78	215,297.00	0.01				
WEDBUSH MORGAN SECS INC, LOS ANGELES	12,472.69	488,270.00	0.03				
WEEDEN & CO, GREENWICH	1,605.79	303,000.00	0.01				
WEEDEN & CO, NEW YORK WELLS FARGO SECURITIES LLC, CHARLOTTE	13,447.55 3,803.43	688,394.00 117,311.00	0.02 0.03				
WELLS FARGO SECURITIES LLC, CHARLOTTE WELLS FARGO SECURITIES LLC, CHARLOTTE	9,660.35	342,475.00	0.03				
WILLIAM BLAIR & CO, CHICAGO	26,756.06	991,262.00	0.03				
WILLIAMS CAPITAL GROUP LP, JERSEY CITY	3,777.75	183,481.00	0.02				
WINTERFLOOD SECS, LONDON	346.87	235,558.00	0.00				
WOLFE TRAHAN SECURITIES, NEW YORK	238.14	7,938.00	0.03				
WOORI INVESTMENT & SECURITIES, SEOUL	1,257.52	34,460.00	0.04				
XP INVESTIMENTOS CCTVM SA,RIO DE JANEIRO	197.30	18,500.00	0.01				
YAMNER & COMPANY INC, JERSEY CITY	1,656.62	165,662.00	0.01				
TOTAL \$5	,307,689.62						

## COMBINED INVESTMENT FUNDS TOTAL NET POSITION VALUE BY PENSION PLANS AND TRUST FUNDS JUNE 30, 2017

Retirement Funds	Net Position Value
Teachers' Retirement Fund	\$17,126,802,473
State Employees' Retirement Fund	11,955,374,580
Municipal Employees' Retirement Fund	2,441,303,399
State Judges' Retirement Fund	210,022,249
The Probate Court Retirement Fund	95,047,753
State's Attorneys Retirement Fund	1,798,493
Non-retirement Trust Funds	
Soldiers' Sailors' & Marines' Fund	75,901,175
Police & Firemans' Survivors' Benefit Fund	32,348,872
Connecticut Arts Endowment Fund	19,953,445
School Fund	11,629,717
Ida Eaton Cotton Fund	2,577,251
Hopemead State Park Fund	3,797,945
Andrew C. Clark Fund	1,212,149
Agricultural College Fund	660,208
OPEB Fund	569,440,305
TOTAL	\$32,547,870,014

### SCHEDULE OF NET POSITION BY INVESTMENT FUND JUNE 30, 2017

764,721 082,920 446,428 510,219 464,921 216,033 - - - 711,810 - - 197,052 773,510 980,784 913,403 - 638,439	\$175,615,507	\$411,748,512 - - - - - - 6,405,918,911 - 208,297,032 - - - - - 522,410 7,026,486,865 - - 238,115 6,534,504	\$150,040,141 87,031,155 529,464,895 538,674,404 142,114,126 568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	\$37,703,198 (252,453) 754,194 1,287,875,567 - 6,861,510 - - - - - - - - - - - - - - - - - - -	\$46,741,492 (3,886) 243,071 1,269,152,678 - 281,596,010 451,587 - - - - - - - - - - - - - - - - - - -
082,920 446,428 510,219 464,921 216,033 - - 711,810 - - 197,052 773,510 980,784 913,403	1,851,172,578 2,026,788,085 879,077	- - - - - - - - - - - - - - - - - - -	87,031,155 529,464,895 538,674,404 142,114,126 568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	(252,453) 754,194 1,287,875,567 - 6,861,510 - - - - - - - - - - - - - - - - - - -	(3,886) 243,071 1,269,152,678 - 281,596,010 451,587 - - - - - - - 1,598,180,952 10,563,267 407,548,634
082,920 446,428 510,219 464,921 216,033 - - 711,810 - - 197,052 773,510 980,784 913,403	1,851,172,578 2,026,788,085 879,077	- - - - - - - - - - - - - - - - - - -	87,031,155 529,464,895 538,674,404 142,114,126 568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	(252,453) 754,194 1,287,875,567 - 6,861,510 - - - - - - - - - - - - - - - - - - -	(3,886) 243,071 1,269,152,678 - 281,596,010 451,587 - - - - - - - 1,598,180,952 10,563,267 407,548,634
082,920 446,428 510,219 464,921 216,033 - - 711,810 - - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	529,464,895 538,674,404 142,114,126 568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	754,194 1,287,875,567 - 6,861,510 - - - - - - - - - - - - -	243,071 1,269,152,678 - 281,596,010 451,587 - - - - - - 1,598,180,952 10,563,267 407,548,634
446,428 510,219 464,921 216,033 - - 711,810 - - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	529,464,895 538,674,404 142,114,126 568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	1,287,875,567	1,269,152,678 281,596,010 451,587
510,219 464,921 216,033 - - 711,810 - - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	538,674,404 142,114,126 568,908,990 - - 3,249,926 15,930,248 - - - 566,040,052 2,601,453,937 213,629	6,861,510 - - - - - - - - - - - - - - - - - - -	281,596,010 451,587 - - - - - - - - - - - - - - - - - - -
464,921 216,033 - - - 711,810 - - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	142,114,126 568,908,990 - - 3,249,926 15,930,248 - - - 566,040,052 2,601,453,937 213,629	1,332,942,016 4,411,429 562,361,240	451,587 - - - - - - - 1,598,180,952 10,563,267 407,548,634
216,033 - - - - 711,810 - - 1197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	568,908,990 - 3,249,926 15,930,248 - - 566,040,052 2,601,453,937 213,629	1,332,942,016 4,411,429 562,361,240	451,587 - - - - - - - 1,598,180,952 10,563,267 407,548,634
711,810 - 711,810 - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	3,249,926 15,930,248 - - - 566,040,052 2,601,453,937 213,629	1,332,942,016 4,411,429 562,361,240	451,587 - - - - - - - 1,598,180,952 10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	15,930,248 - - - - 566,040,052 2,601,453,937 213,629	4,411,429 562,361,240	1,598,180,952 10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	208,297,032 - - - - 522,410 7,026,486,865 - 238,115	15,930,248 - - - - 566,040,052 2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	15,930,248 - - - - 566,040,052 2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	566,040,052 2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
- - 197,052 773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
773,510 980,784 913,403	2,026,788,085 879,077	7,026,486,865 - 238,115	2,601,453,937 213,629	4,411,429 562,361,240	10,563,267 407,548,634
773,510 980,784 913,403	879,077	238,115	213,629	4,411,429 562,361,240	10,563,267 407,548,634
773,510 980,784 913,403	879,077	238,115	213,629	4,411,429 562,361,240	10,563,267 407,548,634
980,784 913,403 -	-		-	562,361,240	407,548,634
913,403			- 11,385,574		
913,403			- 11,385,574		
913,403			11,385,574		
-	-		, , -		- ,,-
638.439			_	_	-
		8,903,416	165,083,958	3,106,066	13,078,672
108,918	_	-	62	202,682	393,200
_	_	403,930	47,271	51,388	23,274
_	_	(116,467)	(1,131,504)	(41,211)	(310,733)
641,544	346,952	15,963,498	175,385,361	570,742,734	452,783,557
-	-	778,701,169	181,891,304	243,894,815	26,952,510
612 106	2,028,014,114	7,821,151,532	2,958,944,231	2,151,990,994	2,088,480,286
012,100	2,020,014,114	7,021,101,002	2,000,044,201	2,101,000,004	2,000,400,200
335,862	-	-	-	560,202,201	404,692,049
663,928	-	16,763,588	324,074,399	3,261,423	18,520,963
	-	-	-	-	-
_	-	217,027	-	-	-
664,803	-	16,980,615	324,074,399	563,463,624	423,213,012
_	-	778,701,169	181,891,304	243,894,815	26,952,510
504,731	57,614	3,339,045	595,039	606,810	1,133,748
	57,614	799,020,829	506,560,742	807,965,249	451,299,270
				· · · · · · · · · · · · · · · · · · ·	\$1,637,181,016
					9,396,762
742.648	.,000,000,002	5,700,772	. 5,5 11,7 54	5,511,200	5,555,752
742,648					\$174.23
	663,928 665,013 	663,928 - 665,013 - - - 664,803 - 504,731 57,614	663,928     -     16,763,588       665,013     -     -       -     -     217,027       664,803     -     16,980,615       -     -     778,701,169       504,731     57,614     3,339,045       169,534     57,614     799,020,829       442,572     \$2,027,956,500     \$7,022,130,703	663,928     -     16,763,588     324,074,399       665,013     -     -     -       -     -     217,027     -       664,803     -     16,980,615     324,074,399       -     -     778,701,169     181,891,304       504,731     57,614     3,339,045     595,039       169,534     57,614     799,020,829     506,560,742       442,572     \$2,027,956,500     \$7,022,130,703     \$2,452,383,489	663,928       -       16,763,588       324,074,399       3,261,423         665,013       -       -       -       -         -       -       217,027       -       -         664,803       -       16,980,615       324,074,399       563,463,624         -       -       -       778,701,169       181,891,304       243,894,815         504,731       57,614       3,339,045       595,039       606,810         169,534       57,614       799,020,829       506,560,742       807,965,249         442,572       \$2,027,956,500       \$7,022,130,703       \$2,452,383,489       \$1,344,025,745

### SCHEDULE OF NET POSITION BY INVESTMENT FUND (Continued) JUNE 30, 2017

HIGH YIELD- DEBT FUND	DEVELOPED MARKET INTERNATIONAL STOCK FUND	EMERGING MARKET INTERNATIONA STOCK FUND	REAL L ESTATE FUND	PRIVATE INVESTMENT FUND	ELIMINATION ENTRY	TOTAL	
\$152,617,846	\$124,308,159	\$49,157,004	\$86 164 803	\$300 771 938	\$(1,534,868,690)	\$ -	
610,705	4,174,606	Ψ-3,137,00-	ψου, τοπ,ουσ	Ψ300,771,330	ψ(1,334,000,030)	283,293,693	
(1,188,521)	4,174,000	_	_	_	_	254,922,819	
55,774,495	-	-	-	-	-	3,701,714,063	
33,774,433	_	_	_	_	_		
-	-	-	-	-	-	716,184,623	
4 000 050 004	-	-	-	-	-	280,579,047	
1,663,650,234	-	-	-	-	-	4,037,232,777	
51,210,909	- 420 000 050	- 0 774 044 754	-	44 500 005	-	51,662,496	
8,521,335	6,130,006,652	2,771,214,754	-	11,562,335	-	15,327,223,987	
16,577,131	17,937,060	39,394,345	-	-	-	77,158,462	
29,312,900	65,429,565	269,088	-	-	-	319,238,833	
57,625,395			-	-	-	57,625,395	
-	2,451,911	142,751,332	-		-	228,915,053	
-	-	-	-	1,156,486	-	1,156,486	
-	-	-	-	-	-	-	
	-	-	2,156,493,225	2,657,239,167		7,231,467,432	
2,034,712,429	6,344,307,953	3,002,786,523	2,242,658,118	2,970,729,926	(1,534,868,690)	32,568,375,166	
5,250,944	35,520,404	6,870,072	6,287,724	19,147,886	(773,510)	89,144,432	
4,784,055	6,824,683,902	4,875,995	-	_	(379,463,230)	7,804,771,380	
28,248,645	306,230	120,288	324,874	554,207	(7,913,403)	78,637,964	
32,844	13,049,783	14,823,666	_	-	-	34,440,797	
10,953,685	54,797,252	3,259,480	-	-	(2,638,439)	259,182,529	
447	15,319,064	232,043	-	-	(108,918)	16,147,498	
279,715	248,037	184,066	-	-	-	1,237,681	
(604,309)	(1,988,266)	(463,451)	-	-	_	(4,655,941)	
43,695,082	6,906,416,002	23,032,087	324,874	554,207	(390,123,990)	8,189,761,908	
523,258,667	62,998,657	203,064,465	-	-	-	2,020,761,587	
	-	-	-	1,073,767	-	1,073,767	
2,606,917,122	13,349,243,016	3,235,753,147	2,249,270,716	2,991,505,786	(1,925,766,190)	42,869,116,860	
4 700 000	0.040.204.000	4 000 070			(202 225 002)	7.040.007.540	
4,782,933	6,842,394,088	4,896,272	-	-	(382,335,862)	7,816,967,543	
33,319,404	57,190,282	10,472,823	-	-	(5,663,928)	463,602,882	
-	-	-	-	-	(2,631,802)	3,033,211	
-		45.000.005	-	-	(000 004 500)	217,027	
38,102,337	6,899,584,370	15,369,095	-	-	(390,631,592)	8,283,820,663	
523,258,667	62,998,657	203,064,465	700.000	4 000 40=	(005.407)	2,020,761,587	
1,222,088	5,619,798	1,997,529	789,896	1,063,405	(265,107)	16,664,596	
562,583,092	6,968,202,825	220,431,089	789,896	1,063,405	(390,896,699)	10,321,246,846	
\$2,044,334,030	\$6,381,040,191	\$3,015,322,058	\$2,248,480,820	\$2,990,442,381	1 \$(1,534,869,49	1) \$32,547,870,014	
13,200,858	11,879,604	7,145,303	42,108,577	38,044,338			
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60			

### SCHEDULE OF CHANGES IN NET POSITION BY INVESTMENT FUND FOR THE FISCAL YEAR ENDED JUNE 30, 2017

ADDITIONS	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND
OPERATIONS						
Investment Income Dividends	\$ -	\$3,675,456	\$130,853,122	\$7,415	\$459	\$ -
Interest	47,272,487	2,775,092	1,557,805	53,982,946	846,960	100,777,661
Other Income	13,908	23,518	1,272,856	608,095	17,231	17,312,548
Securities Lending		-	11,869,343	1,699,211	2,876,399	332,417
Total Income	47,286,395	6,474,066	145,553,126	56,297,667	3,741,049	118,422,626
Expenses						
Investment Advisory Fees	2,240,224	-	13,261,733	2,602,485	2,613,172	5,645,057
Custody and Transfer Agent Fees	160,666	188,495	703,492	244,697	136,366	156,178
Professional Fees	51,404	573,708	228,862	51,521	27,929	41,474
Security Lending Fees	-	-	652,152	77,010	93,113	24,477
Security Lending Rebates	-	-	5,348,677	929,110	1,945,268	87,652
Investment Expenses	12,774	10,433	42,193	38,683	172,699	24,068
Total Expenses	2,465,068	772,636	20,237,109	3,943,506	4,988,547	5,978,906
Net Investment Income	44,821,327	5,701,430	125,316,017	52,354,161	(1,247,498)	112,443,720
Net Increase (Decrease) in the Fair Value of Investments and Foreign Currency	(16,931,128)	147,986,010	1,093,439,042	(9,942,660)	10,408,838	24,349,950
Net Increase (Decrease) in Net Position Resulting from Operations	27,890,199	153,687,440	1,218,755,059	42,411,501	9,161,340	136,793,670
Unit Transactions Purchase of Units by Participants	10,670,233,604	73,221,868	25,848,399	50,171,440	13,067,857	9,119,611
TOTAL ADDITIONS	10,698,123,803	226,909,308	1,244,603,458	92,582,941	22,229,197	145,913,281
DEDUCTIONS Administrative Expenses: Salary and Fringe Benefits	(427,025)	(223,352)	(977,274)	(307,273)	(177,396)	(181,723)
Distributions to Unit Owners: Income Distributed	(44,443,763)	-	-	-	-	-
Unit Transactions Redemption of Units by Participants	(9,713,904,136)	(3,070,100)	(863,600,297)	(46,756,545)	-	(6,331,026)
TOTAL DEDUCTIONS	(9,758,774,924)	(3,293,452)	(864,577,571)	(47,063,818)	(177,396)	(6,512,749)
Change in Net Position Held in Trust						
for Participants	939,348,879	223,615,856	380,025,887	45,519,123	22,051,801	139,400,532
Net Position- Beginning of Period	1,980,093,693		6,642,104,816	2,406,864,366	1,321,973,944	1,497,780,484
Net Position- End of Period	\$2,919,442,572		\$7,022,130,703			\$1,637,181,016
Other Information:						
Units	10 072 404 005	64 400 400	AE 470	200 040	05.053	EE 407
Purchased	10,973,461,035	64,193,409	15,479	386,610	85,657	55,127
Redeemed Net Increase (Decrease)	(9,988,401,748) 985,059,287	(2,675,765) 61,517,644	(501,504) (486,025)	(357,863) 28,747	- 85,657	(38,165) 16,962
Net molease (Deolease)	300,008,207	01,017,044	(400,023)	20,141	03,037	10,802

### SCHEDULE OF CHANGES IN NET POSITION BY INVESTMENT FUND (Continued) FOR THE FISCAL YEAR ENDED JUNE 30, 2017

HIGH YIELD- DEBT FUND	DEVELOPED MARKET INTERNATIONAL STOCK FUND	EMERGING MARKET INTERNATIONAL STOCK FUND	REAL L ESTATE FUND	PRIVATE INVESTMENT FUND	ELIMINATION ENTRY	TOTAL	
\$11,598,458 113,359,654 1,323,824	\$174,761,976 2,398,866 114,531	\$57,931,072 1,084,545 22,788	\$84,913,699 2,100,048 28,768	\$46,647,278 3,795,686 395,527	\$ - (21,418,902) (6,302)	\$510,388,935 308,532,848 21,127,292	
5,104,339 131,386,275	2,781,738 180,057,111	2,461,290 61,499,695	87,042,515	50,838,491	(21,425,204)	27,124,737 867,173,812	
4,896,835 195,000 47,359	21,770,263 602,595 129,903	13,891,017 471,686 63,664	9,398,241 310,010 449,555	2,656,009 375,200 1,210,185	(1,015,033) (72,797) (23,291)	77,960,003 3,471,588 2,852,273	
325,031 1,854,032	247,612 305,614	157,117 890,121	-	-	- - (5.700)	1,576,512 11,360,474	
289,911 7,608,168	157,154 23,213,141	1,393,591 16,867,196	12,410 10,170,216	160,850 4,402,244	(5,788) (1,116,909)	2,308,978 99,529,828	
123,778,107	156,843,970	44,632,499	76,872,299	46,436,247	(20,308,295)	767,643,984	
101,465,790	1,125,951,807	522,156,606	38,116,638	288,361,287	7,380,915	3,332,743,095	
225,243,897	1,282,795,777	566,789,105	114,988,937	334,797,534	(12,927,380)	4,100,387,079	
13,149,010	17,140,296	7,204,576	66,607,366	35 661 393	(8,294,409,208)	2,687,016,102	
					, , ,		
238,392,907	1,299,936,073	573,993,681	181,596,303	370,458,817	(8,307,336,588)	6,787,403,181	
(255,405)	(670,799)	(325,165)	(235,414)	(413,312)	193,483	(4,000,655)	
-	-	-	-	-	20,137,221	(24,306,542)	
(16,952,242)	(142,029,995)	(41,816,972)	(139,968,974)	(149,413,229)	7,666,697,785	(3,457,145,731)	
(17,207,647)	(142,700,794)	(42,142,137)	(140,204,388)	(149,826,541)	7,687,028,489	(3,485,452,928)	
221,185,260 1,823,148,770	1,157,235,279 5,223,804,912	531,851,544 2,483,470,514	41,391,915 2,207,088,905	220,632,276 2,769,810,105	(620,308,099) (914,561,392)	3,301,950,253 29,245,919,761	
\$2,044,334,030			\$2,248,480,820			\$32,547,870,014	
87,988 (116,161)	37,301 (296,111)	19,508 (110,695)	1,291,886 (2,788,325)	489,630 (2,128,299)			
(28,173)	(258,810)	(91,187)	(1,496,439)	(1,638,669)			

### SCHEDULE OF CHANGES IN NET POSITION BY INVESTMENT FUND FOR THE FISCAL YEAR ENDED JUNE 30, 2016

	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND			
ADDITIONS -									
OPERATIONS									
Investment Income									
Dividends	\$ -	\$4,592,789	\$128,695,580	\$188	\$ -	\$ -			
Interest	26,545,360	924,448	775,588	56,716,843	1,885,985	143,311,719			
Other Income	3,647	-	2,812,646	495,044	-	4,313,152			
Securities Lending	-	-	10,003,339	1,046,315	1,680,725	359,452			
Total Income	26,549,007	5,517,237	142,287,153	58,258,390	3,566,710	147,984,323			
Expenses									
Investment Advisory Fees	1,537,535	_	13,228,298	2,592,136	2,280,298	3,837,786			
Custody and Transfer Agent Fees	45,602	215,561	749,893	267,116	125,742	144,601			
Professional Fees	32,873	613,483	264,026	56,812	27,247	33,011			
Security Lending Fees	32,073	010,400	701,246	58,626	62,343	34,670			
Security Lending Rebates			2,990,883	460,056	1,057,297	12,757			
Investment Expenses	72,372	13,999	59,966	8,500	677,354	100,893			
Total Expenses	1,688,382	843,043	17,994,312	3,443,246	4,230,281	4,163,718			
	.,000,002	0.0,0.0	,00.,01	0,1.0,2.0	.,	.,			
Net Investment Income	24,860,625	4,674,194	124,292,841	54,815,144	(663,571)	143,820,605			
Net Increase (Decrease) in the Fair Value) of Investments and Foreign Currency (10,935,758) (108,780,398) (8,764,298) 28,333,543 29,877,580 (58,123,703)									
Net Increase (Decrease) in Net Position									
Resulting from Operations	13,924,867	(104,106,204)	115,528,543	83,148,687	29,214,009	85,696,902			
Unit Transactions Purchase of Units by Participants	7,876,647,399	95,771,498	36,280,951	35,482,297	165,326,702	9,496,930			
TOTAL ADDITIONS	7,890,572,266	(8,334,706)	151,809,494	118,630,984	194,540,711	95,193,832			
DEDUCTIONS Administrative Expenses: Salary and Fringe Benefits	(270,687)	(271,189)	(1,185,700)	(407,561)	(196,997)	(238,334)			
Distributions to Unit Owners: Income Distributed	(24,272,621)	-	-	-	-	-			
Unit Transactions Redemption of Units by Participants	(8,079,489,731)	(8,487,904)	(279,384,694)	(148,326,233)	(3,149,355)	(11,753,875)			
TOTAL DEDUCTIONS	(8,104,033,039)	(8,759,093)	(280,570,394)	(148,733,794)	(3,346,352)	(11,992,209)			
Change in Net Position Held in Trust									
for Participants	(213,460,773)	(17,093,799)	(128,760,900)	(30,102,810)	191,194,359	83,201,623			
Net Position- Beginning of Period	2,193,554,383	, , ,	6,770,865,716	2,436,967,176	1,130,779,585	1,414,578,861			
Net Position- End of Period	\$1,980,093,610		\$6,642,104,816			\$1,497,780,484			
Other Information: Units									
Purchased	8,075,012,237	82,949,169	25,101	282,187	1,087,346	65,636			
Redeemed	(8,283,939,204)	(7,373,331)	(184,532)	(1,168,906)	(21,090)	(76,803)			
Net Increase (Decrease)	(208,926,967)	75,575,838	(159,431)	(886,719)	1,066,256	(11,167)			
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### SCHEDULE OF CHANGES IN NET POSITION BY INVESTMENT FUND (Continued) FOR THE FISCAL YEAR ENDED JUNE 30, 2016

HIGH YIELD- DEBT FUND	DEVELOPED MARKET INTERNATIONAL STOCK FUND	EMERGING MARKET INTERNATIONA STOCK FUND	REAL L ESTATE FUND	COMMERCIAI MORTGAGE FUND	L PRIVATE INVESTMENT FUND	ELIMINATION ENTRY	TOTAL
\$8,541,540 109,098,735 62,838	\$162,777,688 1,346,352 559	\$54,678,155 5,511,628 1,905	\$78,117,664 1,079,732	\$ - 136	\$22,550,020 1,891,043 26	\$ - (11,814,073) (1,623)	\$459,953,624 337,273,496 7,688,194
2,906,369 120,609,482	3,103,844 167,228,443	1,980,794 62,172,482	79,197,396	136	24,441,089	(11,815,696)	21,080,838 825,996,152
5,689,980 186,649 40,587	21,720,999 779,277 163,611	13,834,642 218,278 68,746	7,554,325 244,560 539,176	1	3,039,252 327,285 1,555,243	(684,283) (20,295) (14,630)	74,630,968 3,284,270 3,380,185
243,093 475,436	305,401 49,822	169,128 289,513	559,176	-	1,000,240	(14,630)	1,574,507 5,335,764
13,596	168,859 23,187,969	1,330,774 15,911,081	14,166 8,352,227	<u>-</u> 1	20,618 4,942,398	(32,209) (751,417)	2,448,888 90,654,582
						· · · · · · · · · · · · · · · · · · ·	
113,960,141	144,040,474	46,261,401	70,845,169	135	19,498,691	(11,064,279)	735,341,570
(115,157,340)	(552,420,065)	(212,309,468)	115,122,056	(15,453)	169,119,347	3,937,225	(720,116,732)
(1,197,199)	(408,379,591)	(166,048,067)	185,967,225	(15,318)	188,618,038	(7,127,054)	15,224,838
60,674,737	42,596,214	193,164,163	131,094,177	-	16,552,234	(6,198,705,861)	2,464,381,541
59,477,538	(365,783,377)	27,116,096	317,061,402	(15,318)	205,170,372	(6,205,832,915)	2,479,606,379
(292,321)	(854,845)	(336,036)	(285,970)	(2,836)	(380,666)	120,470	(4,602,672)
-	-	-	-	-	-	10,802,583	(13,470,038)
(10,302,127)	(318,801,669)	(16,597,298)	(27,923,172)	(14,400)	(330,071,249)	6,151,711,283	(3,082,590,424)
(10,594,448)	(319,656,514)	(16,933,334)	(28,209,142)	(17,236)	(330,451,915)	6,162,634,336	(3,100,663,134)
48,883,090 1,774,265,680	(685,439,891) 5,909,244,803	10,182,762 2,473,287,752	288,852,260 1,918,236,645	(32,554) 32,637	(125,281,543) 2,895,091,648	(43,198,579) (871,362,813)	(621,056,755) 29,866,976,516
\$1,823,148,770	\$5,223,804,912	\$2,483,470,514	\$2,207,088,905	\$83	\$2,769,810,105	\$(914,561,392)	\$29,245,919,761
452,139 (75,718)	98,517 (716,920)	595,224 (50,439)	2,730,330 (586,760)	(968)	245,166 (5,015,234)		
376,421	(618,403)	544,785	2,143,570	(968)	(4,770,068)		

### COMBINED INVESTMENT FUNDS SCHEDULE OF INVESTMENT ACTIVITY BY PENSION PLAN FOR THE FISCAL YEAR ENDED JUNE 30, 2017

		ALTERNATIVE	MUTUAL	CORE	INFLATION	EMERGING
	LIQUIDITY FUND	INVESTMENT FUND	EQUITY FUND	FIXED INCOME FUND	FUND	MARKET DEBT FUND
Teachers' Retirement Fund						
Book Value at June 30, 2016	\$629,861,699	\$877,868,000	\$532,298,299	\$959,419,399	\$498,447,781	\$651,600,289
Market Value at June 30, 2016	\$629,661,146	\$941,316,173	\$3,721,807,837	\$1,150,153,590	\$585,087,153	\$840,642,760
Shares Purchased	1,925,169,726	27,200,000	-	-	-	-
Shares Redeemed	(1,669,529,245)	-	(580,000,000)	(28,000,000)	-	-
Returns of Capital	- (4.000.540)	-	-	-	-	-
Gain/(Loss) on Shares Redeemed Net Investment Income Earned	(4,229,549)	-	504,950,202	4,847,800	-	-
Net Investment Income Earned Net Investment Income Distributed	15,178,473	-	-	-	-	-
Changes in Market Value of Fund Shares	(15,178,473) (2,105,766)	79,568,238	166,008,894	14,858,014	3,844,861	76,581,229
_						
Market Value at June 30, 2017	\$878,966,312	\$1,048,084,411	\$3,812,766,933	\$1,141,859,404	\$588,932,014	\$917,223,989
Book Value at June 30, 2017	\$881,272,631	\$905,068,000	\$457,248,501	\$936,267,199	\$498,447,781	\$651,600,289
Shares Outstanding =	906,755,632	863,067,538	2,060,969	8,665,858	3,774,653	5,264,498
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23
State Employees' Retirement Fund						
Book Value at June 30, 2016	\$351,715,827	\$588,420,000	\$310,398,658	\$752,304,161	\$539,055,068	\$318,201,035
Market Value at June 30, 2016	\$345,957,820	\$626,360,495	\$2,429,010,702	\$889,231,302	\$604,482,740	\$442,660,632
Shares Purchased	255,078,273	32,200,000	-	-	-	-
Shares Redeemed Returns of Capital	(191,013,926)	-	(235,000,000)	(18,000,000)	-	-
Gain/(Loss) on Shares Redeemed	(3,049,182)	_	208,173,414	2,905,009	_	-
Net Investment Income Earned	6,264,344	-	-	-	-	-
Net Investment Income Distributed	(6,264,344)	-	-	-	-	-
Changes in Market Value of Fund Shares	417,607	53,962,761	244,256,483	12,361,049	3,972,318	40,325,683
Market Value at June 30, 2017	\$407,390,592	\$712,523,256	\$2,646,440,599	\$886,497,360	\$608,455,058	\$482,986,315
Book Value at June 30, 2017	\$412,730,992	\$620,620,000	\$283,572,072	\$737,209,170	\$539,055,068	\$318,201,035
Shares Outstanding	420,270,630	586,742,290	1,430,518	6,727,851	3,899,782	2,772,148
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23
Municipal Employees' Retirement Fund						
Book Value at June 30, 2016	\$61,212,324	\$166,583,433	\$66,713,141	\$154,655,334	\$94,209,092	\$156,218,869
Market Value at June 30, 2016	\$60,726,701	\$179,542,868	\$356,090,812	\$178,734,077	\$109,918,687	\$178,502,735
Shares Purchased	61,737,128	2,105,019	7,545,579	10,874,509	8,674,361	4,623,694
Shares Redeemed	(55,202,633)	(2,759,359)	(39,941,684)	(146,022)	-	(5,440,687)
Returns of Capital	-		-	-	-	
Gain/(Loss) on Shares Redeemed	(503,130)	256,171	32,850,493	20,546	-	848,428
Net Investment Income Earned	1,057,869	-	-	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares	(1,057,869) 12,821	14,425,437	34,132,149	3,221,803	929,458	15,321,892
Market Value at June 30, 2017	\$66,770,887	\$193,570,136	\$390,677,349	\$192,704,913	\$119,522,506	\$193,856,062
Book Value at June 30, 2017	\$67,243,689	\$166,185,264	\$67,167,529	\$165,404,367	\$102,883,453	\$156,250,304
Shares Outstanding	68,881,920	159,399,408	211,178	1,462,486	766,058	1,112,656
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23

HIGH YIELD DEBT FUND	DEVELOPED MARKET INTERNATIONAL STOCK FUND	EMERGING MARKET INTERNATIONAL STOCK FUND	REAL ESTATE FUND	PRIVATE INVESTMENT FUND	TOTAL	
735,399,049	\$1,591,488,148	\$905,417,118	\$1,047,240,158	\$1,342,629,595	\$9,771,669,535	
8867,182,093	\$2,882,041,042	\$1,365,932,645	\$1,186,792,255	\$1,413,947,520	\$15,584,564,214	
-	-	-	50,000,000	15,000,000	2,017,369,726	
-	(110,000,000)	(20,000,000)	(110,000,000)	(142,000,000)	(2,659,529,245)	
-	- 54,523,544	7,772,306	- 12,105,802	- 7,815,066	- 587,785,171	
_	34,323,344	7,772,500	12,103,002	7,013,000	15,178,473	
_	_	_	_	_	(15,178,473)	
107,282,285	645,244,020	303,232,833	47,912,634	154,185,365	1,596,612,607	
107,202,203	043,244,020	303,232,033	47,912,034	134, 163,363	1,390,012,007	
\$974,464,378	\$3,471,808,606	\$1,656,937,784	\$1,186,810,691	\$1,448,947,951	\$17,126,802,473	
\$735,399,049	\$1,536,011,692	\$893,189,424	\$999,345,960	\$1,223,444,661	\$9,717,295,187	
6,292,400	6,463,478	3,926,388	22,226,078	18,433,482	1,846,930,974	
			<u> </u>		1,010,000,011	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60		
\$494,458,589	\$1,008,726,606	\$616,857,122	\$720,514,538	\$1,042,956,083	\$6,743,607,687	
\$569,912,171	\$1,940,894,238	\$920,911,372	\$804,708,147	\$1,062,573,026	\$10,636,702,645	
-	-	-	-	-	287,278,273	
-	-	-	(28,000,000)	-	(472,013,926)	
-	-	-	-	-	-	
-	-	-	2,698,144	-	210,727,385	
-	-	-	-	-	6,264,344	
	-	-	-	-	(6,264,344)	
70,505,837	481,620,190	211,488,681	39,715,695	134,053,899	1,292,680,203	
\$640,418,008	\$2,422,514,428	\$1,132,400,053	\$819,121,986	\$1,196,626,925	\$11,955,374,580	
\$494,458,589	\$1,008,726,606	\$616,857,122	\$695,212,682	\$1,042,956,083	\$6,769,599,419	
4,135,365	4,510,004	2,683,409	15,340,163	15,223,460	1,063,735,620	
		· ·	<u> </u>		1,000,700,020	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60		
\$283,166,613	\$158,851,301	\$120,265,307	\$132,567,364	\$204,757,966	\$1,599,200,744	
\$311,907,135	\$296,145,316	\$155,137,550	\$158,659,157	\$226,658,160	\$2,212,023,198	
3,567,713	3,054,452	2,714,964	3,899,041	7,802,537	116,599,087	
(14,906,610)	(26,199,954)	(17,825,211)	(1,758,930)	(6,560,131)	(170,741,221)	
2,127,120	14,269,696	5,413,536	312,294	762,945	56,358,099	
, , <u>-</u>	-	, -,	- ,	- ,	1,057,869	
_	_	_	_	_	(1,057,869)	
35,554,270	58,471,469	28,674,936	8,428,975	27,891,026	227,064,236	
\$338,249,628	\$345,741,069	\$174,115,775	\$169,540,537	\$256,554,537	\$2,441,303,399	
· · · · · · · · · · · · · · · · · · ·						
\$273,954,836	\$149,975,585	\$110,568,596	\$135,019,769	\$206,763,317	\$1,601,416,709	
2,184,176	643,667	412,596	3,175,082	3,263,881	241,513,109	

	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND
Probate Court Retirement Fund						
Book Value at June 30, 2016	\$2,208,581	\$4,066,303	\$1,888,918	\$6,572,589	\$3,703,566	\$6,037,437
Market Value at June 30, 2016	\$2,210,362	\$4,439,889	\$14,089,176	\$7,955,807	\$4,349,058	\$7,062,632
Shares Purchased	5,165,911	33,838	294,543	431,225	277,076	157,668
Shares Redeemed	(4,965,112)	(113,277)	(1,772,992)	(72,022)	-	(292,128)
Returns of Capital	-	-		-	-	<del>-</del>
Gain/(Loss) on Shares Redeemed	(13,178)	11,338	1,541,541	12,934	-	51,515
Net Investment Income Earned	42,348	-	-	-	-	-
Net Investment Income Distributed	(42,348)	-	-	-	-	-
Changes in Market Value of Fund Shares	(8,023)	348,211	1,090,150	130,159	36,994	583,646
Market Value at Jun. 30, 2017	\$2,389,960	\$4,719,999	\$15,242,418	\$8,458,103	\$4,663,128	\$7,563,333
Book Value\Cost at Jun 30, 2017	\$2,396,202	\$3,998,202	\$1,952,010	\$6,944,726	\$3,980,642	\$5,954,492
Shares Outstanding	2,465,522	3,886,782	8,239	64,191	29,887	43,411
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23
Judges' Retirement Fund						
Book Value at June 30, 2016	\$5,401,499	\$14,257,508	\$6,171,614	\$13,156,352	\$8,021,331	\$13,225,425
Market Value at June 30, 2016	\$5,351,878	\$15,383,376	\$30,509,429	\$15,314,244	\$9,418,320	\$15,295,144
Shares Purchased	4,589,155	184,312	697,050	980,803	781,254	409,354
Shares Redeemed Returns of Capital	(4,105,233)	(181,208)	(3,359,348)	-	-	(422,079)
Gain/(Loss) on Shares Redeemed	(44,183)	17,511	2,716,471	_	_	71,838
Net Investment Income Earned	91,888	-	_, ,	_	_	- 1,000
Net Investment Income Distributed	(91,888)	_	_	_	_	_
Changes in Market Value of Fund Shares	1,201	1,244,502	3,037,815	279,074	80,291	1,318,926
Market Value at Jun. 30, 2017	\$5,792,818	\$16,648,493	\$33,601,417	\$16,574,121	\$10,279,865	\$16,673,183
Book Value\Cost at Jun 30, 2017	\$5,841,238	\$14,278,123	\$6,225,787	\$14,137,155	\$8,802,585	\$13,284,538
Shares Outstanding	5,975,965	13,709,555	18,163	125,785	65,887	95,697
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23
State's Attorneys' Retirement Fund						
Book Value at June 30, 2016	\$21,556	\$-	\$150,681	\$313,066	\$23,165	\$71,208
Market Value at June 30, 2016	\$21,531	\$-	\$451,020	\$359,202	\$30,743	\$93,625
Shares Purchased	25,925	-	10,974	41,392	4,139	5,079
Shares Redeemed	(23,486)	-	(27,798)	-	-	(488)
Returns of Capital	-	-	-	-	-	-
Gain/(Loss) on Shares Redeemed	(110)	-	19,220	-	-	107
Net Investment Income Earned	350	-	-	-	-	-
Net Investment Income Distributed	(350)	-	-	-	-	-
Changes in Market Value of Fund Shares	(60)	-	67,111	6,721	267	8,556
Market Value at Jun. 30, 2017	\$23,800	\$-	\$520,527	\$407,315	\$35,149	\$106,879
Book Value\Cost at Jun 30, 2017	\$23,885	\$-	\$153,077	\$354,458	\$27,304	\$75,906
Shares Outstanding	24,549	-	281	3,091	225	613
Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$156.02	\$174.23

IIGH YIELD DEBT	DEVELOPED MARKET INTERNATIONAL	EMERGING MARKET INTERNATIONAL	REAL ESTATE	PRIVATE INVESTMENT	TOTAL	
FUND	STOCK FUND	STOCK FUND	FUND	FUND	TOTAL	
\$11,907,950	\$5,930,520	\$4,514,920	\$5,420,982	\$7,749,704	\$60,001,470	
513,222,483	\$12,554,291	\$6,138,198	\$6,277,593	\$8,968,014	\$87,267,503	
114,469	20,296	85,778	64,849	210,979	6,856,632	
(785,529)	(1,180,896)	(769,390)	(70,449)	(289,485)	(10,311,280)	
-	740.000	-	-	-	-	
117,521	710,666	260,469	10,663	45,200	2,748,669 42.348	
-	_	-	-	-	(42,348)	
1,470,476	2,349,103	1,078,419	332,042	1,075,052	8,486,229	
1,470,470	2,049,100	1,070,419	332,042	1,073,032	0,400,229	
514,139,420	\$14,453,460	\$6,793,474	\$6,614,698	\$10,009,760	\$95,047,753	
\$11,354,411	\$5,480,586	\$4,091,777	\$5,426,045	\$7,716,398	\$59,295,491	
91,302	26,908	16,098	123,877	127,344	6,883,562	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60		
*		,	****	,		
S24.197.972	\$13.707.636	\$10,030,843	\$11,881,609	\$18,245,063	\$138,296,852	
326,724,528	\$25,374,142	\$13,293,411	\$13,593,674	\$19,419,905	\$189,678,051	
289,437	316,157	243,620	365.818	696,683	9.553.643	
,		,	(129,072)	,	- , , -	
(1,157,890)	(2,205,269)	(1,491,584)	(129,072)	(515,071)	(13,566,754)	
168,028	1,195,409	482,817	18,044	41,960	4,667,895	
-	-	-	-	-	91,888	
-	-	-	-	-	(91,888)	
3,068,048	5,056,476	2,447,259	733,409	2,422,413	19,689,414	
200 000 454	P00 700 04F	£44.075.500	£44 £04 072	¢22.005.000	#040 000 040	
§29,092,151	\$29,736,915	\$14,975,523	\$14,581,873	\$22,065,890	\$210,022,249	
23,497,547	\$13,013,933	\$9,265,696	\$12,136,399	\$18,468,635	\$138,951,636	
187,856	55,361	35,487	273,083	280,722	20,823,562	
107,000	00,001	00,401	270,000	<u> </u>	20,020,002	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60		
\$135,799	\$302,966	\$111,881	\$-	\$-	\$1,130,322	
\$155,725	\$325,295	\$108,515	\$-	\$-	\$1,545,656	
6,383	8,654	3,779	-	-	106,325	
(3,575)	(16,255)	(8,682)	-	-	(80,284)	
-	-	-	-	-	-	
613	3,528	600	-	-	23,958	
-	-	-	-	-	350	
-	-	-	-	-	(350)	
18,473	78,027	23,743	-	-	202,838	
\$177,619	\$399,249	\$127,955	\$-	\$-	\$1,798,493	
\$139,220	\$298,893	\$107,578	\$-	\$-	\$1,180,321	
1,147	743	303	_	_	30,953	
\$154.86	\$537.14	\$421.99	\$-	\$-		

Market Value at June 30, 2016         \$1,687,084         \$ 10,964,998         \$49,150,682         \$-\$           Shares Purchassed         1,933,535         169,381         1,204,183         -         -           Gain/Loss) on Shares Redeemed         (1,811,072)         -         (1,622,773)         (333,399)         -         -         -           Gain/Loss) on Shares Redeemed         (12,094)         -         1,111,105         62,462         -         <	_	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND
Market Value at June 30, 2016         \$1,657,084         \$10,964,998         \$49,150,682         \$-\$           Shares Purchased         1,933,535         169,381         1,204,183         \$-\$           Shares Redeemed         (1,811,072)         \$169,381         1,204,183         \$-\$           Gain/LOss) on Shares Redeemed         (12,094)         \$-\$         \$-\$         \$-\$           Mel Investment Income Earned         31,317         \$-\$         \$-\$         \$-\$           Net Investment Income Distributed         (31,317)         \$-\$         \$25,084,767         \$-\$         \$-\$           Changes in Market Value of Fund Shares         (4,692)         \$925,941         800,829         \$-\$         \$-\$           Book Value at June 30, 2017         \$1,773,950         \$\$         \$3,471,266         \$41,153,945         \$-\$         \$-\$           Book Value at June 30, 2017         \$1,786,2761         \$\$         \$1,849,99         \$131,77         \$-\$         \$-\$           Brace Outstanding         1,818,492         \$0,72         \$1,849,99         \$131,77         \$-\$         \$-\$           Brown to fire the Arts         \$0,97         \$\$         \$1,849,99         \$131,77         \$-\$         \$-\$           Book Value at June 30, 2016         <	Soldiers' Sailors' & Marines' Fund						
Shares Purchased   1,933,555   168,381   1,204,183   -	Book Value at June 30, 2016						
Shares Redeemed   (1,811,072)   - (1,822,773)   (333,399)	· · · · · · · · · · · · · · · · · · ·		\$-			\$-	\$-
Returns of Capital			-			-	-
Gain/Loss) on Shares Redeemed   (12,094)   - 1,111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   62,462   - 1, 111,105   - 1, 111,1		(1,811,072)	-	(1,622,773)	(333,399)	-	-
Net Investment Income Earned National Stributed (31,317)		-	-	-	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares (4,692)   - 925,941   800,829			-	1,111,105	62,462	-	-
Changes in Market Value of Fund Shares		·	-	-	-	-	-
Market Value at June 30, 2017         \$1,762,761         \$-\$11,548,652         \$50,884,757         \$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-\$-			-	-	-	-	-
Shares Outstanding	Changes in Market Value of Fund Shares –	(4,692)	-	925,941	800,829	-	
Shares Outstanding	Market Value at June 30, 2017	\$1,762,761	\$-	\$11,548,652	\$50,884,757	\$-	\$-
Market Value per Share   \$0.97	Book Value at June 30, 2017	\$1,773,950	\$-	\$3,471,266	\$41,153,945	\$-	\$-
Endowment for the Arts	Shares Outstanding	1,818,492	-	6,243	386,177	-	
Book Value at June 30, 2016   \$562,671   \$-\$1,860,242   \$10,961,402   \$-\$4	Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$-	\$-
Market Value at June 30, 2016   \$561,912   \$- \$2,854,297   \$12,795,813   \$- \$- \$- \$- \$- \$- \$- \$- \$- \$- \$- \$- \$-							
Shares Purchased   431,571   - 44,604   270,638       Shares Redeemed   (397,379)   - (404,456)       Shares Redeemed   (397,379)   - (404,456)       Gain/(Loss) on Shares Redeemed   (3,700)   - 163,442       Met Investment Income Earned   9,011       Net Investment Income Distributed   (9,011)       Changes in Market Value of Fund Shares   (1,246)   - 358,113   223,311       Market Value at June 30, 2017   \$591,158   \$- \$3,016,000   \$13,289,762   \$- \$-     Shares Outstanding   609,849   - 1,630   100,859       Market Value per Share   \$0.97   \$- \$1,649,99   \$131,77   \$- \$-     Agricultural College Fund Book Value at June 30, 2016   \$625   \$-   \$- \$588,958   \$- \$-     Shares Redeemed   (250,250)   700       Shares Redeemed   (250,250)   700       Shares Redeemed   (250,250)       Calin/(Loss) on Shares Redeemed   56       Calin/(Loss) on Shares Redeemed   51       Calin/(Loss) on Shares Redeemed   51       Net Investment Income Earned   51       Net Investment Income Earned   51       Net Investment Income Earned   51       Market Value at June 30, 2017   \$151   \$     Shares Outstanding   560,057   \$     Shares Outstanding   560,007   \$     Shar	Book Value at June 30, 2016		\$-			\$-	\$-
Shares Redeemed   (397,379)   - (404,456)   -   -   -   -	Market Value at June 30, 2016		\$-		\$12,795,813	\$-	\$-
Returns of Capital		·	-	·	270,638	-	-
Sain/(Loss) on Shares Redeemed   (3,700)   - 163,442   -   -   -   -   -   -   -   -   -		(397,379)	-	(404,456)	-	-	-
Net Investment Income Earned   9,011   -   -   -   -   -   -   -   -   -		(2.700)	-	400 440	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares         (1,246)         -		, ,	-	103,442	-	-	-
Changes in Market Value of Fund Shares         (1,246)         - 358,113         223,311            Market Value at June 30, 2017         \$591,158         \$- \$3,016,000         \$13,289,762         \$-         \$-           Book Value at June 30, 2017         \$593,163         \$- \$1,663,832         \$11,232,040         \$-         \$-           Shares Outstanding         609,849         - 1,630         100,859          -           Market Value per Share         \$0.97         \$- \$1,849.99         \$131.77         \$-         \$-           Agricultural College Fund         Book Value at June 30, 2016         \$625         \$-         \$-         \$588,958         \$-         \$-           Market Value at June 30, 2016         \$625         \$-         \$-         \$661,986         \$-         \$-           Shares Redeemed         249,719         -         -         700         -         -         -           Shares Redeemed         (250,250)         -         -         14,000)         -         -         -           Returns of Capital         -         -         -         -         -         -         -         -         -         -         -         -         -         -		· ·	-	-	-	-	-
Shares Outstanding   S593,163   S- \$1,663,832   \$11,232,040   S- S- Shares Outstanding   S593,163   S- \$1,663,832   \$11,232,040   S- S- Shares Outstanding   S09,849   S131.77   S- S- S- S4,849.99   S131.77   S- S4,849.99   S131			-	358,113	223,311	-	-
Shares Outstanding         609,849         -         1,630         100,859         -         -           Market Value per Share         \$0.97         \$-         \$1,849.99         \$131.77         \$-         \$-           Agricultural College Fund         Book Value at June 30, 2016         \$625         \$-         \$-         \$588,958         \$-         \$-           Market Value at June 30, 2016         \$627         \$-         \$-         \$661,986         \$-         \$-           Shares Purchased         249,719         -         -         700         -         -         -           Shares Redeemed         (250,250)         -         -         (14,000)         -         -         -           Returns of Capital         -	Market Value at June 30, 2017	\$591,158	\$-	\$3,016,000	\$13,289,762	\$-	\$-
Market Value per Share         \$0.97         \$-         \$1,849.99         \$131.77         \$-         \$-           Agricultural College Fund         Book Value at June 30, 2016         \$625         \$-         \$-         \$588,958         \$-         \$-           Market Value at June 30, 2016         \$627         \$-         \$-         \$661,986         \$-         \$-           Shares Purchased         249,719         -         -         700         -         -           Shares Redeemed         (250,250)         -         -         (14,000)         -         -           Returns of Capital         -         -         -         (14,000)         -         -         -           Returns of Capital         -	Book Value at June 30, 2017	\$593,163	\$-	\$1,663,832	\$11,232,040	\$-	\$-
Agricultural College Fund	= Shares Outstanding	609,849	-	1,630	100,859	-	-
Book Value at June 30, 2016         \$625         \$-         \$-         \$588,958         \$-         \$-           Market Value at June 30, 2016         \$627         \$-         \$-         \$661,986         \$-         \$-           Shares Purchased         249,719         -         -         700         -         -           Shares Redeemed         (250,250)         -         -         (14,000)         -         -           Returns of Capital         -	= Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$-	\$-
Book Value at June 30, 2016         \$625         \$-         \$-         \$588,958         \$-         \$-           Market Value at June 30, 2016         \$627         \$-         \$-         \$661,986         \$-         \$-           Shares Purchased         249,719         -         -         700         -         -           Shares Redeemed         (250,250)         -         -         (14,000)         -         -           Returns of Capital         -	= Agricultural College Fund						
Market Value at June 30, 2016       \$627       \$-       \$-       \$661,986       \$-       \$-         Shares Purchased       249,719       -       -       700       -       -         Shares Redeemed       (250,250)       -       -       (14,000)       -       -         Returns of Capital       -	Book Value at June 30, 2016	\$625	\$-	\$-	\$588,958	\$-	\$-
Shares Purchased       249,719       -       -       700       -       -         Shares Redeemed       (250,250)       -       -       (14,000)       -       -         Returns of Capital       -       -       -       -       -       -       -         Gain/(Loss) on Shares Redeemed       56       -       -       1,653       -       -         Net Investment Income Earned       51       -       -       -       -       -       -         Net Investment Income Distributed       (51)       - </td <td>Market Value at June 30, 2016</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	Market Value at June 30, 2016						
Shares Redeemed       (250,250)       -       -       (14,000)       -       -         Returns of Capital       -       -       -       -       -       -       -         Gain/(Loss) on Shares Redeemed       56       -       -       1,653       -       -         Net Investment Income Earned       51       -       -       -       -       -       -         Net Investment Income Distributed       (51)       -		249,719	-	-	700	-	-
Gain/(Loss) on Shares Redeemed         56         -         -         1,653         -         -           Net Investment Income Earned         51         - <td></td> <td></td> <td>-</td> <td>-</td> <td>(14,000)</td> <td>-</td> <td>-</td>			-	-	(14,000)	-	-
Net Investment Income Earned       51       - <t< td=""><td>Returns of Capital</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></t<>	Returns of Capital	-	-	-	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares         (51)         -	Gain/(Loss) on Shares Redeemed	56	-	-	1,653	-	-
Changes in Market Value of Fund Shares         (1)         -         -         9,718         -         -           Market Value at June 30, 2017         \$151         \$-         \$-         \$660,057         \$-         \$-           Book Value at June 30, 2017         \$150         \$-         \$-         \$577,311         \$-         \$-           Shares Outstanding         156         -         -         5,009         -         -         -	Net Investment Income Earned	51	-	-	-	-	-
Market Value at June 30, 2017 \$151 \$- \$- \$660,057 \$- \$-  Book Value at June 30, 2017 \$150 \$- \$- \$577,311 \$- \$-  Shares Outstanding 156 5,009		(51)	-	-	-	-	-
Book Value at June 30, 2017 \$150 \$- \$- \$577,311 \$- \$- Shares Outstanding 156 5,009	Changes in Market Value of Fund Shares	(1)	-	-	9,718	-	
Shares Outstanding 156 5,009	Market Value at June 30, 2017	\$151	\$-	\$-	\$660,057	\$-	\$-
	Book Value at June 30, 2017	\$150	\$-	\$-	\$577,311	\$-	\$-
Market Value per Share \$0.97 \$- \$- \$131.77 \$- \$-	Shares Outstanding =	156	-	-	5,009		
	Market Value per Share	\$0.97	\$-	\$-	\$131.77	\$-	\$-

HIGH YIELD DEBT	DEVELOPED MARKET INTERNATIONAL	EMERGING MARKET INTERNATIONAL	REAL ESTATE	PRIVATE INVESTMENT		
FUND	STOCK FUND	STOCK FUND	FUND	FUND	TOTAL	
\$- \$-	\$6,260,250	\$3,074,967	\$-	\$-	\$55,033,050	
\$-	\$7,640,490	\$2,908,875	\$-	\$-	\$72,322,129	
-	30,394	<del>.</del>	-	-	3,337,493	
-	(948,943)	(398,873)	-	-	(5,115,060)	
-	-	-	-	-	-	
-	288,436	21,317	-	-	1,471,226	
-	-	-	-	-	31,317	
-	1 EEC 011	-	-	-	(31,317)	
-	1,556,911	606,398	<u>-</u>	<u>-</u>	3,885,387	
\$-	\$8,567,288	\$3,137,717	\$-	\$-	\$75,901,175	
\$-	\$5,630,137	\$2,697,411	\$-	\$-	\$54,726,709	
_	15,950	7,435	_	_	2,234,297	
	10,000	1,100			_,,_,	
\$-	\$537.14	\$422.00	\$-	\$-		
			_	_		
\$-	\$1,634,006	\$802,298	\$-	\$-	\$15,820,619	
\$-	\$1,989,091	\$757,469	\$-	\$-	\$18,958,582	
-	31,208	-	-	-	778,021	
-	(262,788)	(101,742)	-	-	(1,166,365)	
-	70.400	-	-	-	-	
-	76,129	5,227	-	-	241,098	
-	-	-	-	-	9,011	
-	400.540	450.404	-	-	(9,011)	
-	403,510	158,421	-	-	1,142,109	
\$-	\$2,237,150	\$819,375	\$-	\$-	\$19,953,445	
\$-	\$1,478,555	\$705,783	\$-	\$-	\$15,673,373	
	4,165	1,942	_	_	718,445	
					7 10,445	
\$-	\$537.14	\$422.00	<b>\$-</b>	\$-		
¢	\$-	\$-	<b>c</b>	¢	\$589,583	
\$- \$-	φ-	φ-	\$- \$	\$- \$-	\$662,613	
φ-	φ-	φ-	φ-	φ-	250,419	
_	_	_	_	_	(264,250)	
_	_	_	_	_	(204,200)	
_	_	-	_	_	1,709	
_	_	_	_	_	51	
_	_	-	_	_	(51)	
-	-	-	-	-	9,717	
\$-	\$-	\$-	\$-	\$-	\$660,208	
\$-	\$-	\$-	\$-	\$-	\$577,461	
	-				5,165	
					5,105	
\$-	\$-	\$-	\$-	\$-		

	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND
Ida Eaton Cotton Fund						
Book Value at June 30, 2016	\$72,818	<b>\$-</b>	\$55,610	\$1,423,036	\$-	\$-
Market Value at June 30, 2016	\$72,552	\$-	\$368,527	\$1,652,115	\$-	\$-
Shares Purchased	54,865	-	-	68,709	-	-
Shares Redeemed	(50,868)	-	(47,249)	(32,716)	-	-
Returns of Capital	(470)	-	40.000	4 400	-	-
Gain/(Loss) on Shares Redeemed	(170)	-	40,930	4,199	-	-
Net Investment Income Earned	1,064	-	-	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares	(1,064) (21)	-	27,353	24,236	-	-
Changes in Market value of Fund Shares	(21)	-	21,333	24,230		
Market Value at Jun. 30, 2017	\$76,358	\$-	\$389,561	\$1,716,543	\$-	\$-
Book Value\Cost at Jun 30, 2017 =	\$76,645	\$-	\$49,291	\$1,463,228	\$-	\$-
Shares Outstanding	78,770	-	211	13,027	-	-
Market Value per Share	\$0.97	\$-	\$1,849.98	\$131.77	\$-	\$-
Andrew Clark Fund						
Book Value at June 30, 2016	\$34,241	\$-	\$26,244	\$683,969	\$-	\$-
Market Value at June 30, 2016	\$34,125	\$-	\$173,327	\$777,028	\$-	\$-
Shares Purchased	25,802	-	(00,000)	32,316	-	-
Shares Redeemed	(23,923)	-	(22,222)	(15,386)	-	-
Returns of Capital Gain/(Loss) on Shares Redeemed	(76)	-	10 241	- 1,682	-	-
Net Investment Income Earned	498	-	19,241	1,002	-	-
Net Investment Income Distributed	(498)	-	-	-	-	-
Changes in Market Value of Fund Shares	(15)	-	12,875	11,694	-	
Market Value at Jun. 30, 2017	\$35,913	\$-	\$183,221	\$807,334	\$-	\$-
Book Value\Cost at Jun 30, 2017	\$36,044	\$-	\$23,263	\$702,581	\$-	\$-
Shares Outstanding	37,047	-	99	6,127	-	-
Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$-	\$-
School Fund						
Book Value at June 30, 2016	\$327,138	\$-	\$262,055	\$6,398,092	\$-	\$-
Market Value at June 30, 2016	\$327,034	\$-	\$1,662,675	\$7,450,995	\$-	\$-
Shares Purchased	302,425	-	29,539	306,110	-	-
Shares Redeemed	(282,364)	-	(246,075)	(143,000)	-	-
Returns of Capital	(0.005)	-	-	40.005	-	-
Gain/(Loss) on Shares Redeemed Net Investment Income Earned	(2,025)	-	209,406	19,685	-	-
Net Investment Income Distributed	5,271 (5,271)	-	-	-	-	-
Changes in Market Value of Fund Shares	(784)	-	102,586	111,015	-	-
Market Value at Jun. 30, 2017	\$344,286	\$-	\$1,758,131	\$7,744,805	\$-	\$-
Book Value\Cost at Jun 30, 2017	\$345,174	\$-	\$254,925	\$6,580,887	\$-	\$-
Shares Outstanding	355,177	-	950	58,777	-	-
Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$-	\$-

GH YIELD DEBT	DEVELOPED MARKET INTERNATIONAL	EMERGING MARKET INTERNATIONAL	REAL ESTATE	PRIVATE INVESTMENT	
FUND	STOCK FUND	STOCK FUND	FUND	FUND	TOTAL
\$-	\$209,843	\$103,524	\$-	\$-	\$1,864,831
\$-	\$256,821	\$97,798	\$-	\$-	\$2,447,813
-	4,029	541	-	-	128,144
-	(33,665)	(13,448)	-	-	(177,946)
-	-	-	-	-	-
-	9,764	516	-	-	55,239
-	-	-	-	-	1,064
-	-	-	-	-	(1,064)
-	52,009	20,424	-	-	124,001
\$-	\$288,958	\$105,831	\$-	\$-	\$2,577,251
\$-	\$189,971	\$91,133	\$-	\$-	\$1,870,268
-	538	251	-	-	92,796
\$-	\$537.15	\$422.00	\$-	\$-	
\$-	\$98,691	\$48,713	\$-	\$-	\$891,858
\$-	\$120,788	\$46,000	\$-	\$-	\$1,151,268
-	1,895	255	-	-	60,268
-	(15,833)	(6,325)	-	-	(83,689)
-	4.500	-	-	-	-
-	4,593	239	-	-	25,679
-	-	-	-	-	498
-	24,461	9,608	-	-	(498) 58,623
	24,401	9,000			56,025
\$-	\$135,904	\$49,777	\$-	\$-	\$1,212,149
\$-	\$89,346	\$42,882	\$-	\$-	\$894,116
<u> </u>			Ψ	Ψ	φου 1,110
-	253	118	-	-	43,644
\$-	\$537.15	\$422.02	\$-	\$-	
\$-	\$958,417	\$464,811	\$-	\$-	\$8,410,513
\$-	\$1,158,291	\$440,729	\$-	\$-	\$11,039,724
-	18,142	1,965	-	-	658,181
-	(155,149)	(61,157)	-	-	(887,745)
-	-	-	-	-	-
-	47,001	4,291	-	-	278,358
-	-	-	-	-	5,271
-	-	-	-	-	(5,271)
-	236,403	91,979	-	-	541,199
\$-	\$1,304,688	\$477,807	\$-	\$-	\$11,629,717
\$-	\$868,411	\$409,910	\$-	\$-	\$8,459,307
_	2,429	1,132	_	-	418,465
		0.400.00			
\$-	\$537.14	\$422.00	\$-	\$-	

_	LIQUIDITY FUND	ALTERNATIVE INVESTMENT FUND	MUTUAL EQUITY FUND	CORE FIXED INCOME FUND	INFLATION LINKED BOND FUND	EMERGING MARKET DEBT FUND
Hopemead Fund						
Book Value at June 30, 2016	\$107,262	<u>\$-</u>	\$121,477	\$2,112,694	<u>\$-</u>	<u>\$-</u>
Market Value at June 30, 2016	\$104,725	\$-	\$531,961	\$2,384,788	\$-	\$-
Shares Purchased	8,653	-	8,313	102,318	-	-
Shares Redeemed	(5)	-	(66,018)	-	-	-
Returns of Capital	-	-	- E2 142	-	-	-
Gain/(Loss) on Shares Redeemed Net Investment Income Earned	1 010	-	52,142	-	-	-
Net Investment Income Distributed	1,810 (1,810)	-	-	-	-	_
Changes in Market Value of Fund Shares	(851)	_	47,679	42,466	-	-
Changes in Market value of Fund Shares _	(651)	<u>-</u>	47,079	42,400		
Market Value at June 30, 2017	\$112,522	\$-	\$574,077	\$2,529,572	\$-	\$-
Book Value at June 30, 2017 =	\$115,910	\$-	\$115,914	\$2,215,012	\$-	\$-
Shares Outstanding	116,079	-	310	19,198	_	-
Market Value per Share	\$0.97	\$-	\$1,849.99	\$131.77	\$-	\$-
Police & Fireman's Survivors' Benefit Fund	l					
Book Value at June 30, 2016 _	\$844,392	\$2,512,535	\$2,421,698	\$1,787,696	\$988,897	\$1,608,228
Market Value at June 30, 2016	\$830,373	\$2,606,706	\$4,882,409	\$2,018,359	\$1,134,959	\$2,016,003
Shares Purchased	221,654	69,723	133,482	171,073	117,769	68,368
Shares Redeemed	(97,038)	(16,257)	(461,253)	-	-	(29,639)
Returns of Capital	-	-	-	-	-	
Gain/(Loss) on Shares Redeemed	(2,115)	1,028	253,382	-	-	7,089
Net Investment Income Earned Net Investment Income Distributed	14,746	-	-	-	-	-
Changes in Market Value of Fund Shares	(14,746) (4,827)	214,736	673,666	37,373	10,032	178,225
Market Value at June 30, 2017	\$948,047	\$2,875,936	\$5,481,686	\$2,226,805	\$1,262,760	\$2,240,046
Book Value at June 30, 2017	\$966,893	\$2,567,029	\$2,347,309	\$1,958,769	\$1,106,666	\$1,654,046
Shares Outstanding	978,022	2,368,252	2,963	16,900	8,093	12,857
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23
OPEB Fund						
Book Value at June 30, 2016	\$17,995,995	\$34,645,576	\$58,907,226	\$83,829,083	\$7,420,991	\$11,046,190
Market Value at June 30, 2016	\$18,014,431	\$34,691,137	\$68,707,646	\$88,224,378	\$7,552,284	\$11,506,953
Shares Purchased	120,830,054	11,428,977	16,914,935	35,687,465	3,213,259	3,855,448
Shares Redeemed	(119,453,734)	-	(628,430)	-	-	(146,006)
Returns of Capital	-	-	-	-	-	-
Gain/(Loss) on Shares Redeemed	1,705	-	124,577	-	-	7,684
Net Investment Income Earned	96,692	-	-	-	-	-
Net Investment Income Distributed Changes in Market Value of Fund Shares	(96,692) (24,940)	3,414,155	- 14,811,404	2,110,795	- 109,722	1,307,130
_			14,611,404	2,110,793		
Market Value at June 30, 2017	\$19,367,516	\$49,534,269	\$99,930,132	\$126,022,638	\$10,875,265	\$16,531,209
Book Value at June 30, 2017 =	\$19,374,020	\$46,074,553	\$75,318,308	\$119,516,548	\$10,634,250	\$14,763,316
Shares Outstanding =	19,979,842	40,790,038	54,017	956,417	69,703	94,882
Market Value per Share	\$0.97	\$1.21	\$1,849.99	\$131.77	\$156.02	\$174.23

HIGH YIELD DEBT	DEVELOPED MARKET INTERNATIONAL	EMERGING MARKET INTERNATIONAL	REAL ESTATE	PRIVATE INVESTMENT		
FUND	STOCK FUND	STOCK FUND	FUND	FUND	TOTAL	
\$-	\$306,401	\$149,036	\$-	\$-	\$2,796,870	
\$-	\$370,711	\$141,172	\$-	\$-	\$3,533,357	
-	5,816	644	-	-	125,744	
-	(41,260)	(16,650)	-	-	(123,933)	
-	- 12,163	901	-	-	65,206	
_	12,103	901	-	-	1,810	
_	_	_	_	_	(1,810)	
-	78,387	29,890	-	-	197,571	
\$-	\$425,817	\$155,957	\$-	\$-	\$3,797,945	
\$-	\$283,120	\$133,931	<u> </u>	<u> </u>	\$2,863,887	
Ψ-			Ψ-	Ψ-		
	793	370	-	-	136,749	
\$-	\$537.14	\$422.00	\$-	\$-		
£2,000,440	<b>#2.040.020</b>	<b>CO OF4 454</b>	£4.740.004	<b>#0.050.040</b>	<b>#22.250.504</b>	
\$3,069,118 \$3,450,265	\$3,810,630 \$4,094,938	\$2,351,151 \$2,288,615	\$1,712,631 \$2,047,397	\$2,252,618 \$3,217,470	\$23,359,594 \$28,587,494	
57,020	64,788	58,208	87,965	143,783	1,193,833	
(98,636)	(285,796)	(228,401)	(10,524)	(48,542)	(1,276,086)	
-	-	-	-	-	-	
15,208	64,537	18,958	1,850	14,889	374,826	
-	-	-	-	-	14,746	
-	-	-	-	-	(14,746)	
404,971	953,039	490,252	112,234	399,104	3,468,805	
\$3,828,828	\$4,891,506	\$2,627,632	\$2,238,922	\$3,726,704	\$32,348,872	
\$3,042,710	\$3,654,159	\$2,199,916	\$1,791,922	\$2,362,748	\$23,652,167	
24,724	9,107	6,227	41,930	47,411	3,516,484	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60		
	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		<u> </u>		
\$29,298,840	\$50,042,690	\$15,591,512	\$28,476,985	\$27,940,896	\$365,195,984	
\$30,594,370	\$50,839,458	\$15,268,165	\$35,010,682	\$35,026,010	\$395,435,514	
9,113,989	13,584,375	4,094,821	12,189,692	11,807,298	242,720,313	
-	(684,185)	(895,506)	-	-	(121,807,861)	
-	- 05 257	- 67 61 5	-	-	286,938	
-	85,357	67,615	-	-	96,692	
_	-	-	-	_	(96,692)	
4,255,639	14,710,148	4,062,303	2,371,739	5,677,306	52,805,401	
\$43,963,998	\$78,535,153	\$22,597,398	\$49,572,113	\$52,510,614	\$569,440,305	
<u> </u>			\$40,666,677			
\$38,412,829	\$63,028,237	\$18,858,442		\$39,748,194	\$486,395,374	
283,888	146,209	53,548	928,365	668,039	64,024,949	
\$154.86	\$537.14	\$422.00	\$53.40	\$78.60	\$8.89	

# COMBINED INVESTMENT FUNDS LIST OF INVESTMENT ADVISORS AND NET ASSETS UNDER MANAGEMENT JUNE 30, 2017

Name of Fund	Investment Strategy		Net Assets Under Management	Percent of Fund Total
	Otrategy		Management	Total
LIQUIDITY (LF)				
State Street Global Advisors	Active	\$	1,542,288,102	52.83%
Payden & Rygel	Active		548,314,753	18.78%
PIMCO	Active		431,429,437	14.78%
Lazard	Active		99,657,597	3.41%
Colchester Global Investors Ltd.	Active		297,752,345	10.20%
Other (1)			338	0.00%
SUBTOTAL LF		\$	2,919,442,572	100.00%
MUTUAL EQUITY FUND (MEF)				
Large Cap		\$	5,317,010,424	75.72%
T. Rowe Price Associates	Enhanced - Index	Ψ		
			2,265,341,959	32.26%
State Street Global Advisors	Passive - Indexed		3,051,668,465	43.46%
All Cap			629,717,239	8.97%
Capital Prospects	Active		324,236,955	4.62%
FIS Group, Inc.	Active		305,480,284	4.35%
Small/Mid Cap			733,833,239	10.45%
Frontier Capital Mgmt Co	Active		408,898,925	5.82%
Bivium	Active		324,934,314	4.63%
Other (1)			341,569,801	4.86%
SUBTOTAL MEF		\$	7,022,130,703	100.00%
OOD TO TAL WILL		Ψ	1,022,100,100	100.00 /0
CORE FIXED INCOME FUND (CFIF)	Deseive	^	054 045 075	40.070/
State Street Global Advisors	Passive	\$	251,945,275	10.27%
BlackRock Financial Management, Inc.	Active		528,277,226	21.54%
Wellington	Active		538,592,555	21.96%
Conning-Goodwin Capital	Active		378,359,692	15.43%
Progress	Active		118,900,899	4.85%
Prudence Crandall Fund III Opportunistic	Active		279,748,952	11.41%
Prudence Crandall Fund IV Opportunistic	Active		286,291,100	11.67%
Other (1)	7700170		<b>70,267,790</b>	2.87%
SUBTOTAL CFIF		\$	2,452,383,489	100.00%
OUD TO TALL OF II		Ψ	2,702,000,700	100.00 /0
INFLATION LINKED BOND FUND (ILBF)	A .:	_	E4E 400 04E	00 222/
BlackRock	Active	\$	515,186,615	38.33%
Colchester	Active		610,713,250	45.44%
New Century	Active		189,191,788	14.08%
Other (1)			28,934,092	2.15%
SUBTOTAL ILBF		\$	1,344,025,745	100.00%
EMERGING MARKET DEBT FUND (EMDF)				
Ashmore Investment Mgt. Ltd.	Active	\$	576,148,444	35.19%
Payden & Rygel	Active	Ψ	556,352,645	33.98%
Fidelity Institutional Asset Mgt. Trust Co.	Active		478,378,770	29.22%
Stone Harbor Investment Partners	Active		13,909,252	0.85%
Other (1)			12,391,905	0.76%
SUBTOTAL EMDF		\$	1,637,181,016	100.00%
HIGH YIELD DEBT FUND (HYDF)				
Loomis Sayles & Co., Inc.	Active	\$	381,183,907	18.65%
Stone Harbor Investment Partners	Active	•	20,153,947	0.99%
Shenkman Capital Management, Inc.	Active		232,440,304	11.37%
Oaktree Capital Management, L.L.C.	Active		7,466,324	0.36%
AllianceBernstein, LP	Active		283,040,061	13.84%
DDJ Capital Management, LLC	Active		160,811,548	7.87%
Columbia Management Investment Advisers, LLC	Active		369,708,326	18.08%
Nomura Corporation Research &	A ativa		444 026 426	24 720/
Asset Management, Inc.	Active		444,026,436	21.72%
TCG BDC, Inc.	Active		57,625,395	2.82%
Other (1)		\$	87,877,782	4.30%
SUBTOTAL HYDF			2,044,334,030	100.00%

# COMBINED INVESTMENT FUNDS LIST OF INVESTMENT ADVISORS AND NET ASSETS UNDER MANAGEMENT (Continued) JUNE 30, 2017

	Investment		Net Assets Under	Percent of Fund
Name of Fund	Strategy		Management	Total
Name of Fund	Ottategy		Management	Total
DEVELOPED MARKET INTERNATIONAL STO	CK EIIND (DMISE)			
DEVELOPED MARKET INTERNATIONAL STO	CK FUND (DINISF)	\$	2,243,712,419	35.16%
State Street Global Advisors	Index-Passive	Ψ	2,243,712,419	35.16%
Core	index-rassive			
	A -45		1,698,253,096	26.61%
AQR Capital Management	Active		779,558,778	12.21%
Acadian Asset Management	Active		774,528,461	12.14%
Progress	Active		144,165,857	2.26%
Active-Growth			914,303,822	14.33%
MFS Institutional Advisors, Inc.	Active		914,303,822	14.33%
Active-Value			511,113,008	8.01%
Grantham, Mayo, Van Otterloo	Active		511,113,008	8.01%
Small Cap			999,897,967	15.67%
Schroder Investment Mgmt.	Active		360,217,280	5.64%
DFA	Active		316,886,481	4.97%
William Blair & Company	Active		322,794,206	5.06%
Other (1)	7.00.70		13,759,879	0.22%
SUBTOTAL DMISF		\$	6,381,040,191	100.00%
CODICIAL DINIO		Ψ	0,001,070,131	100.00 /0
EMERGING MARKET INTERNATIONAL STOC	K FUND (EMISF)			
Aberdeen Asset Management	Active	\$	943,572,024	31.29%
Schroders Investment Mgt	Active	Ψ	1,263,640,304	41.91%
Grantham, Mayo, Van Otterloo	Active		798,499,456	26.48%
Other (1)	Active		9,610,274	0.32%
SUBTOTAL EMISF		\$	3,015,322,058	100.00%
SOBTOTAL LIMIST		Ψ	3,013,322,030	100.00 /6
REAL ESTATE FUND (REF)				
AEW Partners III	Active	\$	270,172	0.01%
American Realty Advisors	Active	Ψ	90,401,538	4.02%
Apollo Real Estate	Active		205,358	0.01%
Blackstone Real Estate Partner Europe III LP	Active		34,225,710	1.52%
Blackstone Real Estate Spec Sit II LP	Active		2,180,550	0.10%
Blackstone Real Estate VI LP	Active		20,576,572	0.91%
Blackstone Real Estate Partners VIII LP	Active		47,335,962	2.10%
Blackstone Real Estate Partners EURO V	Active		4,173,260	0.19%
Canyon Johnson Urban Fund II	Active		150,125	0.01%
Canyon Johnson Urban Fund III	Active		447,568	0.02%
Capri Select Income II LLC	Active		60.778	0.00%
Clarion Lion Industrial Trust	Active		116,734,432	5.19%
Colony Realty Partners II LP	Active		9,143,800	0.41%
Cornerstone Patriot Fund LP				
	Active		293,039,605	13.03%
Covenant Apartment Fund V LP	Active		339,907	0.02%
Covenant Apartment Fund VI	Active		187,454	0.01%
Covenant Apartment Fund VIII	Active		20,879,913	0.93%
Crow Hldgs Realty Partners VII LP	Active		56,054,600	2.49%
Cypress Acquisition Prtnrs Retail FD LP	Active		50,654,012	2.25%
Gerding Edlen Green Cities II	Active		31,154,380	1.39%
Gerding REF III	Active		32,708,305	1.45%
Hart Realty Advisors	Active		197,380,637	8.78%
IL & FS India Realty Fund II LLC	Active		25,244,922	1.12%
JP Morgan Strategic Property	Active		85,542,816	3.80%
Landmark RE Partners VII LP	Active		19,942,161	0.89%
Lone Star Real Estate Part II LP	Active		11,907,393	0.53%
Macfarlane Urban Real Estate Fund II LP	Active		· · ·	0.12%
			2,654,118	
Prime Property Fund LLC	Active		263,749,584	11.73%
PRISA	Active		200,459,653	8.92%
Rockwood Capital Fund V	Active		151,000	0.01%
Rockwood Capital VI Limited Partnership	Active		323,897	0.01%
Rockwood Capital VII Limited Partnership	Active		20,343,110	0.90%
Starwood Opportunity Fund VII	Active		15,357,828	0.68%
	Active		10,340,094	0.46%
Starwood Opportunity Fund VIII	ACIIVE		10,040,004	0.4070

# COMBINED INVESTMENT FUNDS LIST OF INVESTMENT ADVISORS AND NET ASSETS UNDER MANAGEMENT (Continued) JUNE 30, 2017

	Investment	Net Assets Under	Percent of Fund
Name of Fund	Strategy	Management	Total
Starwood Opportunity Fund X	Active	71,224,496	3.17%
UBS-Trumbull Property Income	Active	59,078,880	2.63%
UBS-Trumbull Property G&I (TPG)	Active	67,163,079	2.99%
UBS-Trumbull Property Fund LP	Active	86,612,748	3.85%
Urban Strategy America Fund LP	Active	28,574,190	1.27%
			6.06%
USAA Eagle RE Fund	Active	136,225,933	
WLR IV PPIP Co Invest LP	Active	9,434,720	0.42%
Other (2)	Active	91,987,594	4.09%
SUBTOTAL REF		\$ 2,248,480,820	100.00%
PRIVATE INVESTMENT FUND (PIF)			
Buyout		\$ 1,090,300,470	36.46%
AIG Altaris Health Partners II	Active	14,208,866	0.47%
AIG Altaris Health Partners III	Active	29,429,972	0.98%
Boston Ventures VII	Active	43,313,369	1.45%
			0.13%
Charterhouse Equity Partners IV	Active	4,037,714	
Court Square Capital Partners II	Active	27,058,106	0.90%
Court Square Capital Partners III LP	Active	16,688,090	0.56%
Ethos Private Equity Fund V	Active	5,324,415	0.18%
FS Equity Partners V	Active	6,508,219	0.22%
FS Equity Partners VI	Active	124,505,984	4.16%
GENNX360 Capital Partners II	Active	18,646,010	0.62%
Hicks, Muse Tate & Furst Equity Fund III	Active	3,551,237	0.12%
ICV Partners II LP	Active	8,962,675	0.30%
JFL Equity Investors III, LP	Active	50,122,324	1.68%
JFL IV	Active	26,233,339	0.88%
KKR 2006 Fund	Active	64,659,031	2.16%
KKR Millennium Fund	Active	9,244,888	0.31%
Leeds Equity Partners V LP	Active	32,509,095	1.09%
Leeds VI	Active	9,898,141	0.33%
Nogales Investors Fund II	Active	1,685,506	0.06%
RFE Investment Partners VII	Active	44,319,391	1.48%
RFE Investments Partners VIII	Active	22,912,390	0.77%
TA XI, L.P.	Active	66,429,959	2.22%
Thomas H. Lee Equity Fund VI	Active	65,215,336	2.18%
Vista Equity Partners Fund III	Active	22,508,517	0.75%
Vista Equity Partners Fund IV	Active	73,479,303	2.46%
Vista Equity Partners Fund VI	Active	46,933,363	1.57%
Wellspring Capital Partners V	Active	36,761,719	1.23%
Welsh Carson Anderson & Stowe X LP	Active	18,865,693	0.63%
Welsh Carson Anderson & Stowe XI	Active	68,992,263	2.31%
WCAS XII, LP	Active	31,951,782	1.07%
Yucaipa American Alliance Fund II LP	Active	81,384,745	2.72%
Yucaipa III	Active	13,959,028	0.47%
Venture Capital		9,014,785	0.30%
Crescendo III	Active	1,156,486	0.04%
Syndicated Communications V	Active	7,858,299	0.26%
Mezzanine	Active		
	Activo	47,691,968	1.59%
Audax Mezzanine III Limited Partnership	Active	38,109,974	1.27%
GarMark Partners II LP	Active	9,581,994	0.32%
International		46,579,869	1.56%
Gilbert Global Equity Partners	Active	44,851,779	1.50%
Pinebridge Global Emerging Markets Fund	Active	1,728,090	0.06%
Fund of Funds		1,010,862,137	33.80%
Connecticut Horizon Legacy	Active	5,860,236	0.20%
CT Growth Capital	Active	7,830,409	0.26%
•	Active		0.27%
CS/CT Cleantech Opp Fund		8,123,759	
CT Emerging M-2 Pvt Equity	Active	73,164,810	2.45%
Fairview Constitution II LP	Active	90,387,736	3.02%
Fairview Constitution III	Active	315,539,659	10.55%
Fairview Constitution IV LP	Active	139,545,704	4.67%

# COMBINED INVESTMENT FUNDS LIST OF INVESTMENT ADVISORS AND NET ASSETS UNDER MANAGEMENT (Continued) JUNE 30, 2017

Name of Fund	Investment Strategy		Net Assets Under Management	Percent of Fund Total
JP Morgan Nutmeg I	Active		83,953,234	2.81%
Landmark Equity Partners XIV LP	Active		38,412,767	1.28%
Landmark Equity Partners XV LP	Active		37,475,763	1.25%
Stepstone Pioneer Capital I LP	Active		19,007,759	0.64%
Stepstone Pioneer Capital II LP	Active		132,208,263	4.42%
Constitution Fund V	Active		22,556,900	0.75%
The Constitution Liquidating Fund	Active		36,795,138	1.23%
Special Situations	Active		452,045,315	15.12%
Apollo Investment Fund VIII LP	Active		86,564,648	2.90%
Castlelake II LP	Active		45,509,284	1.52%
Clearlake Capital Partners III LP	Active		64,676,117	2.16%
Clearlake IV	Active		48,347,212	1.62%
Levine Leichtman Capital Partners	Active		20,220,581	0.68%
Levine Leichtman Capital Partners V LP	Active		64,570,094	2.16%
Pegasus Partners IV	Active		29,311,713	0.98%
Pegasus Partners V	Active		81,157,517	2.71%
WLR Recovery Fund IV	Active		11,688,149	0.39%
Other (2)			333,947,837	11.17%
SUBTOTAL PIF		\$	2,990,442,381	100.00%
ALTERNATIVE INVESTMENT FUND (AIF)				
Arclight Energy Partners Fund V	Active	\$	36,994,556	1.82%
Arclight VI	Active	Ψ	49,413,209	2.44%
EIG Energy Fund XV Limited Partnership	Active		36,262,167	1.79%
Marathon European Credit Opportunity	Active		10,702,910	0.53%
Prudence Crandall I Permal Limited Partnership	Active		608,296,503	30.00%
Prudence Crandall II Prisma Limited Partnership	Active		319,006,097	15.73%
Prudence Crandall III Rock Creek	7101170		010,000,001	10.7070
Limited Partnership	Active		309,983,386	15.28%
Prudence Crandall IV K2 Limited Partnership	Active		305,672,773	15.07%
Thomas Welles Fund I	Active		87,595,523	4.32%
Thomas Welles Fund II	Active		87,245,454	4.30%
Other (2)	, 100140		176,783,922	8.72%
SUBTOTAL AIF		\$	2,027,956,500	100.00%
		<u> </u>	_,=_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	10010070
TOTAL		\$	34,082,739,505	
Adjustments (3)			(1,534,869,491)	
GRAND TOTAL		\$	32,547,870,014	

<sup>(1)</sup> Other represents cash equivalents, other net assets and terminated advisor balances, as well as, currency overlay balances for the DMISF.

<sup>(2)</sup> Other includes partnerships with nonmaterial balances, as well as moneys earmarked for distribution to participants, reinvestment, expenses and other net assets.

<sup>(3)</sup> Represents Elimination Entry to account for investment of Combined Investment Funds in the Liquidity Fund.

### COMBINED INVESTMENT FUNDS TOP TEN HOLDINGS\* BY FUND AT JUNE 30, 2017

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Security Name	Maturity Date	Market Value	%
CITIGROUP GLOBAL TRI REPO	7/3/2017	79,000,000	2.70%
FEDERAL NATL MTG ASSN DISC	7/3/2017	55,995,567	1.92%
WAL MART STORES DISC	7/10/2017	39,988,111	1.37%
U S TREASURY NOTE	12/31/2018	36,072,120	1.23%
MERRILL LYNCH TRI REPO	7/3/2017	33,000,000	1.13%
KELLS FDG LLC 144A DISC	9/12/2017	29,901,667	1.02%
REPUBLIC OF POLAND GOVERNMENT	7/25/2019	25,889,189	0.89%
U S TREASURY NOTE	2/15/2018	25,665,985	0.88%
NEW ZEALAND GOVERNMENT BO REGS	3/15/2019	25,546,107	0.87%
NATIONAL SEC CORP DISC	7/13/2017	24,988,229	0.86%
Top Ten		\$376,046,975	12.87%

FAIR VALUE LF \$2,922,197,052

### **ALTERNATIVE INVESTMENT FUND**

Partnership Name	Partnership Type	Market Value	%
PRUDENCE CRANDALL I PERMAL	Hedge Fund-of-Funds	608,296,503	30.01%
PRUDENCE CRANDALL II PRISMA	Hedge Fund-of-Funds	319,006,097	15.74%
PRUDENCE CRANDALL III RCREEK	Hedge Fund-of-Funds	309,983,386	15.29%
PRUDENCE CRANDALL IV K2	Hedge Fund-of-Funds	305,672,773	15.08%
THOMAS WELLES FUND I	Hedge Fund-of-Funds	87,595,523	4.32%
THOMAS WELLES FUND II	Hedge Fund-of-Funds	87,245,454	4.31%
ARCLIGHT ENERGY PARTNERS VI	Real Assets	49,413,209	2.44%
ARCLIGHT ENERGY PARTNERS V	Real Assets	36,994,556	1.83%
EIG ENERGY FUND XV LP	Real Assets	36,262,167	1.79%
MARATHON EUROPEAN CREDIT OPP FUND SPC B	Opportunistic	10,702,910	0.53%
Top Ten		\$1,851,172,578	91.34%

FAIR VALUE AIF \$2,026,788,085

### **MUTUAL EQUITY FUND**

Security Name	Industry Sector	Market Value	%
APPLE INC	INFORMATION TECHNOLOGY	190,196,701	2.71%
MICROSOFT CORP	INFORMATION TECHNOLOGY	149,416,390	2.12%
AMAZON.COM INC	CONSUMER DISCR	107,485,752	1.53%
FACEBOOK INC	INFORMATION TECHNOLOGY	104,412,031	1.49%
EXXON MOBIL CORP	ENERGY	90,102,430	1.28%
JOHNSON & JOHNSON	HEALTH CARE	87,638,818	1.25%
JP MORGAN CHASE & CO	FINANCIALS	87,365,421	1.24%
ALPHABET INC-CL C	INFORMATION TECHNOLOGY	74,943,872	1.07%
ALPHABET INC-CL A	INFORMATION TECHNOLOGY	74,259,120	1.06%
WELLS FARGO & CO	FINANCIALS	70,976,110	1.01%
Top Ten		\$1.036.796.645	14.76%

FAIR VALUE MEF \$7,026,486,865

### **COMBINED INVESTMENT FUNDS TOP TEN HOLDINGS\* BY FUND AT JUNE 30, 2017 (Continued)**

#### **CORE FIXED INCOME FUND**

Security Name	Coupon	Maturity	Security Type	Market Value	%
U S TREASURY NOTE	1.250	5/31/2019	U.S. Govt/Agency	28,565,703	1.10%
U S TREASURY NOTE	1.125	6/30/2021	U.S. Govt/Agency	23,957,381	0.92%
FNMA TBA	3.500	8/1/2047	U.S. Govt/Agency	22,865,082	0.88%
U S TREASURY NOTE	1.250	4/30/2019	U.S. Govt/Agency	19,478,964	0.75%
U S TREASURY NOTE	2.375	5/15/2027	U.S. Govt/Agency	18,276,965	0.70%
U S TREASURY NOTE	1.875	2/28/2022	U.S. Govt/Agency	17,120,691	0.66%
FNMA TBA	3.500	7/1/2047	U.S. Govt/Agency	15,375,669	0.59%
GNMA TBA	3.000	7/20/2047	U.S. Govt/Agency	15,219,885	0.59%
FHLM TBA	3.500	8/1/2047	U.S. Govt/Agency	15,176,512	0.58%
U S TREASURY NOTE	2.000	8/15/2025	U.S. Govt/Agency	12,795,841	0.49%
Top Ten				\$188,832,693	7.26%

**FAIR VALUE CFIF** \$2,601,453,937

### INFLATION LINKED BOND FUND

Security Name	Coupon	Maturity	Security Type	Market Value	<u>%</u>
US TREAS-CPI INFLAT	3.875	4/15/2029	U.S. Govt/Agency	59,556,259	4.47%
US TREAS-CPI INFLAT	0.125	4/15/2019	U.S. Govt/Agency	54,596,993	4.10%
ITALY GOVERNMENT BOND	2.600	9/15/2023	Italy Govt/Agency	51,492,593	3.86%
US TREAS-CPI INFLAT	2.375	1/15/2027	U.S. Govt/Agency	51,404,516	3.86%
US TREAS-CPI INFLAT	0.125	7/15/2022	U.S. Govt/Agency	46,737,288	3.51%
US TREAS-CPI INFLAT	0.750	2/15/2042	U.S. Govt/Agency	43,573,827	3.27%
US TREAS-CPI INFLAT	0.125	4/15/2022	U.S. Govt/Agency	38,739,825	2.91%
NEW ZEALAND GOVERNMENT BOND	3.000	9/20/2030	New Zealand Govt/Agency	35,925,949	2.69%
FRANCE GOVERNMENT BOND	1.800	7/25/2040	France Govt/Agency	34,993,349	2.62%
UNITED KINGDOM GILT INFLA REGS	0.125	3/22/2044	U.K. Govt/Agency	33,235,116	2.49%
Top Ten				\$450,255,715	33.78%

**FAIR VALUE ILBF** \$1,332,942,016

### **EMERGING MARKET DEBT FUND**

Security Name	Coupon	Maturity	Market Value	%
BRAZIL NOTAS DO TESOURO	10.000	1/1/2021	34,209,134	2.14%
SOUTH AFRICA GOVERNMENT BON	D 7.000	2/28/2031	24,959,057	1.56%
COLOMBIA GOVERNMENT BOND	7.000	5/4/2022	21,040,245	1.32%
BRAZIL NOTAS DO TESOURO	10.000	1/1/2023	20,080,271	1.26%
MEXICAN BONDS	6.500	6/10/2021	19,666,840	1.23%
COLOMBIA GOVERNMENT BOND	10.000	7/24/2024	14,238,523	0.89%
RUSSIAN GOVERNMENT BOND	7.600	4/14/2021	14,064,928	0.88%
BRAZIL NOTAS DO TESOURO	10.000	1/1/2025	14,038,676	0.88%
BRAZIL NOTAS DO TESOURO	10.000	1/1/2027	13,457,482	0.84%
JP MORGAN CHASE BANK NA 144A	8.375	9/17/2026	13,271,837	0.83%
Ton Ton			£400 00C 000	44 020/

Top Ten \$189,026,993 11.83%

**FAIR VALUE EMDF** \$1,598,180,952

### COMBINED INVESTMENT FUNDS TOP TEN HOLDINGS\* BY FUND AT JUNE 30, 2017 (Continued)

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Security Name	Coupon	Maturity	Market Value	%
US TREASURY NOTE	1.250	5/31/2019	11,357,448	0.56%
DISH NETWORK CORP 144A	3.375	8/15/2026	10,973,125	0.54%
INDONESIA GOVERNMENT BOND	5.875	1/15/2024	9,802,538	0.48%
NEW ALBERTSON'S INC	7.450	8/1/2029	9,239,250	0.45%
MICRON TECHNOLOGY INC	3.000	11/15/2043	8,510,625	0.42%
TENET HEALTHCARE CORP	6.875	11/15/2031	8,263,440	0.41%
TENET HEALTHCARE CORP	6.750	6/15/2023	7,962,000	0.39%
MORGAN STANLEY	4.750	11/16/2018	7,887,460	0.39%
TRANSDIGM INC	6.500	07/15/2024	7,749,945	0.38%
SPRINT CAPITAL CORP	6.875	11/15/2028	7,747,643	0.38%
Top Ten			\$89,493,474	4.40%

FAIR VALUE HYDF \$ 2,034,712,429

### **DEVELOPED MARKET INTERNATIONAL STOCK FUND**

Security Name	Country	Market Value	%
NESTLE SA REG	SWITZERLAND	106,804,410	1.68%
ROCHE HOLDING AG GENUSSCHEIN	SWITZERLAND	70,831,897	1.12%
HSBC HOLDINGS PLC	UNITED KINGDOM	60,715,152	0.95%
BAYER AG REG	GERMANY	56,241,204	0.88%
ING GROEP NV	NETHERLANDS	55,237,133	0.87%
NOVARTIS AG REG	SWITZERLAND	53,980,181	0.85%
WPP PLC	UNITED KINGDOM	42,269,383	0.67%
SAP SE	GERMANY	41,733,731	0.66%
RECKITT BENCKISER GROUP PLC	UNITED KINGDOM	38,499,656	0.61%
AIA GROUP LTD	HONG KONG	37,963,666	0.60%
Top Ten		\$564,276,413	8.89%

FAIR VALUE DMISF \$6,344,307,953

### **EMERGING MARKET INTERNATIONAL STOCK FUND**

Security Name	Country	Market Value	%
TAIWAN SEMICONDUCTOR MANUFACTURE	TAIWAN	\$144,116,447	4.80%
SAMSUNG ELECTRONICS CO LTD	REPUBLIC OF KOREA	118,333,698	3.94%
TENCENT HLDGS LTD	CHINA	99,104,743	3.30%
CHINA MOBILE LTD	HONG KONG	87,839,679	2.92%
ALIBABA GROUP HOLDING LTD	CAYMAN ISLANDS	78,380,838	2.61%
HDFC BANK LTD	INDIA	67,396,532	2.24%
AIA GROUP LTD	HONG KONG	60,241,795	2.01%
CHINA CONSTRUCTION BANK CORP	CHINA	59,665,286	1.99%
SAMSUNG ELECTRONIC CO LTD GDR	REPUBLIC OF KOREA	57,735,096	1.92%
HON HAI PRECISION INDUSTRY CO	TAIWAN	45,240,693	1.51%
Top Ten		\$818,054,807	27.24%

FAIR VALUE EMISF \$3,002,786,523

### COMBINED INVESTMENT FUNDS TOP TEN HOLDINGS\* BY FUND AT JUNE 30, 2017 (Continued)

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Partnership Name	Partnership Type	Market Value	%
CORNERSTONE PATRIOT FUND LP	Core	293,039,605	13.07%
PRIME PROPERTY FUND LLC	Core	263,749,584	11.76%
PRISA	Core	200,459,653	8.94%
HART REALTY ADVISORS	Core	197,380,637	8.80%
USAA EAGLE RE FUND	Core	136,225,933	6.07%
CLARION LION INDUSTRIAL TRUST	Value Added	116,734,432	5.21%
AMERICAN REALTY ADVISORS	Core	90,401,538	4.03%
UBS-TRUMBULL PROPERTY FUND LP	Core	86,612,748	3.86%
JP MORGAN STRATEGIC PROPERTY	Core	85,542,816	3.81%
STARWOOD OPPORTUNITY FUND X	Opportunistic	71,224,496	3.18%
Top Ten		\$1,541,371,442	68.73%

FAIR VALUE REF \$2,242,658,118

### **PRIVATE INVESTMENT FUND**

Partnership Name	Partnership Type	Market Value	%
FAIRVIEW CONSTITUTION III LP	Fund of Funds	315,539,659	10.62%
FAIRVIEW CONSTITUTION IV LP	Fund of Funds	139,545,704	4.70%
STEPSTONE PIONEER CAPITAL II LP	Fund of Funds	132,208,263	4.45%
FS EQUITY PARTNERS VI	Buyout	124,505,984	4.19%
FAIRVIEW CONSTITUTION II LP	Fund of Funds	90,387,736	3.04%
APOLLO INVESTMENT FUND VIII LP	Special Situations	86,564,648	2.92%
NUTMEG OPPORTUNITIES FUND LP	Fund of Funds	83,953,234	2.83%
YUCAIPA AMERICAN ALLIANCE FUND II	Buyout	81,384,745	2.74%
PEGASUS PARTNERS V LP	Special Situations	81,157,517	2.73%
VISTA EQUITY PARTNERS FUND IV	Buyout	73,479,303	2.47%
Top Ten	•	\$1,208,726,793	40.69%

FAIR VALUE PIF \$2,970,729,926

<sup>\*</sup> A complete list of portfolio holdings is available upon request from the Office of the Treasurer, in accordance with the Connecticut Freedom of Information Act..

#### **GLOSSARY OF INVESTMENT TERMS**

- **Active extension** Active extension is defined as an investment strategy that allows for both long and short positions in an investment portfolio with a gross exposure above 100% of total portfolio value on an absolute basis, while maintaining a beta of one.
- **Agency Securities** Securities, usually bonds, issued by U.S. Government agencies. These securities have high credit ratings but are not backed by the full faith and credit of the U.S. Government.
- **All-cap** An investment approach that disregards market capitalization (i.e. small, medium, or large cap) in its security selection process.
- **Alpha** A coefficient which measures risk-adjusted performance, factoring in the risk due to the specific security, rather than the overall market. A high value for alpha implies that the stock or mutual fund has performed better than would have been expected given its beta (volatility).
- **Asset** Anything owned that has economic value; any interest in property, tangible or intangible, that can be used for payment of debts.
- **Asset Backed Security** Bonds or notes collateralized by one or more types of assets including real property, mortgages, and receivables.
- At Value A term used to denote the current value of an asset at a point in time. Generally used in presentations containing a mix of assets some of which are traded on an exchange and some that are valued on an appraisal or similar basis.
- **Banker's Acceptance (BA)** A high-quality, short-term negotiable discount note, drawn on and accepted by banks which are obligated to pay the face amount at maturity.
- **Basis Point (bp)** The smallest measure used in quoting yields or returns. One basis point is 0.01% of yield, 100 basis points equals 1%. For example, a yield that changed from 8.75% to 9.50% has increased by 75 basis points.
- **Benchmark** A standard unit used as the basis of comparison; a universal unit that is identified with sufficient detail so that other similar classifications can be compared as being above, below, or comparable to the benchmark.
- **Benchmark composite** A term used when reporting on a portfolio containing multiple asset classes. The composite is generally calculated as a weighted average of the benchmarks of the underlying portfolios.
- Beta A quantitative measure of the volatility of a given stock, mutual fund or portfolio relative to the overall market.
- **Book Value (BV)** The value of individual assets, calculated as actual cost minus accumulated depreciation. Book value may be more or less than current market value.
- Buyout See "Leveraged Buyout"
- Capital Gain (Loss) Also known as capital appreciation (depreciation), capital gain (loss) measures the increase (decrease) in valuation of an asset over time.
- Capitalized Fees Fees (and expenses) that increase the cost basis of an investment.
- Certificates of Deposit (CDs) A debt instrument issued by banks, usually paying interest, with maturities ranging from 3 months to six years.
- **Citigroup Broad Investment-Grade Bond Index (CBIG)** A market value-weighted index composed of over 4,000 individually priced securities with a quality rating of at least BBB. Each issue has a minimum maturity of one year with an outstanding par amount of at least \$25 million.
- Citigroup World Government Bond Index Non-U.S. (CWGBI) An unhedged index measuring government issues of 12 major industrialized countries.
- Close-End fund Funds that have set limits on the life of the fund and/or the total amount to be invested.
- Coefficient of Determination (R2) A measurement of how closely the returns of an investment portfolio and its benchmark match. An R2 of 1.0 indicates that portfolio returns perfectly match the returns of the benchmark, while a value less than 1.0 indicates that the returns of the portfolio do not match the benchmark return. The closer the value is to 1 the closer the return of the portfolio is to the benchmark.
- Collateral Assets pledged by a borrower to secure a loan or other credit, and subject to seizure in the event of default.
- **Collateralized Mortgage Obligation (CMO)** A mortgage-backed, investment-grade bond that separates mortgage pools into different maturity classes. CMO payment obligations are backed by mortgage-backed securities with a fixed maturity.
- **Commercial Paper** Short-term obligations with maturities ranging from 2 to 270 days. An unsecured obligation issued by a corporation or bank to finance its short-term credit needs.
- **Commingled fund** A fund consisting of assets from multiple investors that are blended together. A mutual fund is a common example of a commingled fund.

- **Committed capital** Money that is committed by limited partners to a private investment fund. Company risk The risk of investing in any single company's stock or bonds.
- Compounded Annual Total Return Compounded annual total return measures the implicit annual percentage change in value of an investment, assuming reinvestment of dividends, interest, and realized capital gains, including those attributable to currency fluctuations. In effect, compounded annual total return "smoothes" fluctuations in long-term investment returns to derive an implied year-to-year annual return.
- Consumer Price Index (CPI) A measure of change in the cost of a fixed basket of products and services as determined by a monthly survey of the U.S. Bureau of Labor Statistics. Components of the CPI include housing costs, food, transportation, and electricity.
- **Core real estate strategy** Lower risk, low leverage, vehicles that invest in stabilized income-producing properties that provide steady net operating income or cash flow. Properties are usually located in major regional markets, have investment grade tenants, at-market rents, and high occupancy levels.
- Cost basis The original price paid for an investment.
- **Counter-party risk** The risk to each party of a contract that the counterparty will not live up to its contractual obligations. Credit default risk The risk that a debtor will not make payments in accordance with the terms of the debt.
- Credit risk The risk that a borrower will fail to make payments in a timely manner.
- **Cumulative Rate of Return** A measure of the total return earned for a particular time period. This calculation measures the absolute percentage change in value of an investment over a specified period, assuming reinvestment of dividends, interest income, and realized capital gains. For example, if a \$100 investment grew to \$120 in a two-year period, the cumulative rate of return would be 20%.
- **Currency exchange risk** The risk that a foreign country's currency may appreciate or depreciate relative to the U. S. dollar, thus impacting the value of foreign investments.
- **Currency hedging** Transactions intended to manage the foreign exchange rate risk associated with investing in foreign securities.
- **Currency spot** A contract for the purchase or sale of a commodity, security or currency for settlement (payment and delivery) on the spot date, which is normally two business days after the trade date.
- **Current Yield** The relationship between the stated annual interest or dividend rate and the market price of a security. In calculating current yield, only income payments are considered; no consideration is given to capital gain/loss.
- **Default risk** The chance that an issuer will not make the required coupon payments or principal repayments to its debt holders.
- **Derivative** Derivatives are generally defined as contracts whose value depend on, or are derived from, the value of an underlying asset, reference rate, or index. For example, an option is a derivative instrument because its value derives from an underlying stock, stock index, commodity.
- **Discount Rate** The interest rate that the Federal Reserve charges banks for loans, using government securities or eligible paper as collateral.
- **Diversification** A portfolio strategy designed to reduce exposure to risk by putting assets in several different securities or categories of investments.
- **Drawdown** (a) A request for cash charged against capital committed to a limited partnership, limited liability corporation, or other like entity; (b) a decline in the current value of an investment or other asset. Duration Duration is a measure of the price sensitivity of a fixed-income investment to a change in interest rates. (See Modified and Macaulay Duration).
- **Economic risk** The risk that economic activities will negatively impact an investment.
- **Enhanced indexing** Refers to the application of strategies to an index fund designed to generate higher rates of returns. Equity The ownership interest possessed by shareholders in a corporation in the form of common stock or preferred stock.
- **ERISA (Employee Retirement Income Security Act)** The 1974 federal law which established legal guidelines for private pension plan administration and investment practices.
- **Expense Ratio** Operating costs (including management fees) expressed as a percentage of the fund's average net assets for a given time period.
- **Fair Value** The amount at which a financial instrument could be exchanged in a current transaction between willing parties, other than in a forced or liquidation sale.
- **Federal Funds Rate** The interest rate that banks charge each other for the use of Federal Funds. This rate changes daily and is a sensitive indicator of general interest rate trends.

- **Federal Reserve Board** The seven member Board of Governors that oversees Federal Reserve Banks, establishes monetary policy and monitors the economic health of the economy.
- **Fiduciary** A person, company, or association holding assets in trust for a beneficiary. The fiduciary is charged with the responsibility to invest the assets prudently and solely for the beneficiary's benefit.
- Fitch Investor Services A financial services rating agency.
- Floating Rate Note A fixed principal instrument which has a long or even indefinite life and whose yield is periodically reset relative to a reference index rate to reflect changes in short- or intermediate-term interest rates.
- **Forward contract** A contract between two parties that requires the parties to sell or purchase an asset at a price set when the contract is entered into for settlement at a specified future date.
- Funded Capital Amount of cash invested. Geopolitical risk See "Political risk".
- **Gross Domestic Product** Total market value of goods and services produced in a country over a particular period of time, usually one year. The GDP growth rate is the primary indicator of the health of the economy.
- **Hedge** An investment in assets which serves to reduce the risk of adverse price movements in a security, by taking an offsetting position in a related security, such as an option or short sale.
- Index A benchmark of securities used as an independent representation of market performance. Example: S&P 500 index.
  Index Fund A passively managed fund constructed to mirror the performance of a specific index, such as the S&P 500.
  Individual company risk The risk associated with investment in the securities of any single company.
- **Inflation** The overall general upward price movement of goods and services in an economy, usually as measured by the Consumer Price Index and the Producer Price Index.
- Inflation risk The risk that the value of an investment will erode as a result of inflationary pressures.
- Interest rate risk The risk that changes in the general level of interest rates will adversely affect the fair value of an investment.
- Investment Income The equity dividends, bond interest, and/or cash interest paid on an investment.
- **J-Curve** An economic theory stating that a policy designed to have one effect will initially have the opposite effect. With regard to closed end commingled fund investments, this generally refers to a trend whereby a fund's return tends to be negative in the early years of a fund's existence until income and valuations increase in the later periods as investments mature and as the relative size of fees and other costs diminish relative to the value of invested capital.
- JP Morgan Emerging Markets Bond Index Plus (EMBI+) An index which tracks total returns for traded external debt instruments in the emerging markets. The instruments include external-currency-denominated Brady bonds, loans and Eurobonds, as well as U.S. dollar denominated local market instruments. The EMBI+ expands upon JP Morgan's original Emerging Markets Bond Index, which was introduced in 1992 and covers only Brady bonds.
- Letter of Credit An instrument or document issued by a bank, guaranteeing the payment of a customer's drafts up to a stated amount for a specified period. It substitutes the bank's credit for the buyer's and reduces the seller's risk.
- **Leverage** The use of borrowed funds to increase purchasing power and, ideally, to increase profitability of an investment transaction or business.
- **Leveraged buyout** A leveraged buyout (LBO) is an acquisition (usually of a company) financed through a combination of equity and debt and in which the cash flows or assets of the target are used to secure and repay the debt used to finance the acquisition.
- **Liability** The claim on the assets of a company or individual excluding ownership equity. An obligation that legally binds an individual or company to settle a debt.
- **Limited Partnership** A partnership formed by two or more entities with at least one limited partner and one general partner. Limited partner responsibility for debts and losses is limited to the amount of their investment in the partnership. In addition, the limited partner does not participate in the activities of the partnership. The general partner has control over the management of the partnership and has unlimited liability for partnership debt and losses.
- Liquidity risk The risk that an investment cannot be immediately liquidated unless discounted in value.
- **Macaulay Duration** The weighted-average term to maturity of a bond's cash flows. The weighting is based on the present value of each cash flow divided by price.
- Management risk The risks associated with ineffective, destructive or underperforming management.
- **Marked-to-market pricing** An accounting practice in which the price of an investment recorded within the accounting records is the market value at the end of the month.
- Market Risk The risk that fluctuations in the overall market for securities will impact an investment portfolio.

- Market Value A security's last reported sale price or its current bid and ask prices. The price as determined dynamically by buyers and sellers in an open market.
- **Master Custodian** An entity, usually a bank, used for safekeeping of securities and other assets. May be responsible for other functions including accounting, performance measurement and securities lending.
- Maturity Date The date on which the principal amount of a bond or other debt instrument becomes payable or due. Mezzanine Debt Debt that incorporates equity-based options, such as warrants, and is subordinated debt.
- MFR Index (iMoneyNet's First Tier Institutional-only Rated Money Fund Report AveragesTM Index) An index which represents an average of the returns of institutional money market mutual funds that invest primarily in first-tier (securities rated A-1, P-1) taxable securities.
- **Modified Duration** A measure of the price sensitivity of a bond to interest rate movements. It is the primary basis for comparing the effect of interest rate changes on prices of fixed income securities.
- **Money Market Fund** An open-ended mutual fund that invests in commercial paper, bankers' acceptances, repurchase agreements, government securities, certificates of deposit, and other highly liquid and safe securities and pays money market rates of interest. The fund's net asset value remains a constant \$1 per share only the interest rate goes up or down.
- Moody's (Moody's Investors Service) A financial services rating agency.
- **MSCI EAFE** Morgan Stanley Europe Australasia Far East foreign equity index. An arithmetic value weighted average of the performance of over 900 securities on the stock exchanges of 23 countries on three continents. NCREIF (National Council of Real Estate Investment Fiduciaries) National Council of Real Estate Investment Fiduciaries, a non-profit organization established to serve the institutional real estate investment community as a non-partisan collector, processor, validator and disseminator of real estate performance information.
- **Net Asset Value (NAV)** The total assets (including any valuation gains or losses on investments or currencies) minus total liabilities divided by shares outstanding.
- **Netted Fees** Refers to instances in which investment management fees/expenses are offset against income normally distributed to investors. May also refer to practices whereby investment management fees/expenses are added to the cost basis of an investment.
- **NPI** NCREIF Property Index. The NCREIF Property Index is a quarterly time series composite total rate of return measure of investment performance of a very large pool of individual commercial real estate properties acquired in the private market for investment purposes only. Properties comprising this benchmark, which include wholly owned and joint venture investments, are held on an all-cash, non-leveraged basis, and is restricted to investment-grade, nonagricultural, and income-producing properties.
- **Open-End fund** A fund operated by an investment company in accordance with a stated set of objectives. Open-end funds raise money by periodically selling shares of the fund to the public.
- **Operations risk** The risk associated with negative operating events (net operating losses, inventory write-downs, breakdown in internal procedures, etc).
- **Par Value** The stated or face value of a stock or bond. While it has little significance for common stocks, for bonds, it specifies the payment amount at maturity.
- **Pension Fund** A fund set up by a corporation, labor union, governmental entity, or other organization to provide retirement income.
- Percentile A description of the percentage rank of a portfolio's performance, relative to a larger universe of portfolios. Political Risk The risk resulting from political changes or instability in a country's system of government, laws or regulation. Prepayment risk The risk associated with the prepayment of fixed income investments in a declining rate environment.
- **Present Value** The current value of a future cash flow or series of cash flows discounted at an appropriate interest rate or rates. For example, at a 12% interest rate, the value of one dollar a year from now has a present value of \$0.89286.
- **Price/Book (P/B)** A ratio showing the price of a stock divided by its book value per share. The P/B measures the multiple at which the market is capitalizing the net asset value per share of a company at any given time.
- **Price/Earnings (P/E)** A ratio showing the price of a stock divided by its earnings per share. The P/E measures the multiple at which the market is capitalizing the earnings per share of a company at any given time.
- **Principal** Face value of an obligation, such as a bond or a loan, that must be repaid at maturity. Product risk The risk associated with the introduction of a new product or process.
- **Prudent Person Rule** The standard adopted by some states to guide those fiduciaries with responsibility for investing the money of others. Such fiduciaries must act as a prudent person would be expected to act, with discretion and intelligence, to seek reasonable income, preserve capital, and, in general, avoid speculative investments.

- Purchasing power risk- See "Inflation risk"
- **Pure indexing** Refers to the application of strategies to an index fund designed to exactly match the returns of the portfolio benchmark.
- R2 See "Coefficient of Determination"
- Real interest rate An interest rate that has been adjusted to remove the effects of inflation.
- Real rate of return The return realized on an investment adjusted for changes due to inflation or other external effects.
- Realized Gain (Loss) A gain (loss) that has occurred financially. The difference between the principal amount received and the cost basis of an asset realized at sale.
- Reinvestment risk The risk that cash flows received from a security will be reinvested at lower rates due to declining interest rates.
- **Relative Volatility** The standard deviation of the Fund divided by the standard deviation of its selected benchmark. A relative volatility greater than 1.0 suggests comparatively more volatility in Fund returns than those of the benchmark.
- **Repurchase Agreements ("Repos")** A contract in which the seller of securities, such as Treasury Bills, agrees to buy them back at a specified time and price. Repos are widely used as a money market instrument.
- **Return on Equity (ROE)** Net income of a company (after payment of preferred stock dividends but before payment of common stock dividends) divided by common shareholder equity. Reverse Repurchase Agreements ("Reverse Repos") A purchase of securities with an agreement to resell them at a higher price at a specific future date.
- Risk Adjusted Return A measure of investment return which accounts for the amount of risk taken over a specified period.
- **Russell 3000** An equity index comprised of the securities of the 3,000 largest public U.S. companies as determined by total market capitalization. This index represents approximately 98% of the U.S. equity market's capitalization.
- **Securities Lending** A collateralized process of loaning portfolio positions to custodians, dealers, and short sellers who must make physical delivery of positions. Securities lending may reduce custody costs or enhance annual returns by a full percentage point or more in certain market environments.
- Senior debt securities Debt that must be paid off before other liabilities in the event of a business failure or bankruptcy.
- **Separate accounts** An investment portfolio managed by a third party investment manager in which the investor directly owns the securities within the portfolio.
- **Soft Dollars** The value of research or other services that brokerage houses and other service entities provide to a client "free of charge" in exchange for the client's brokerage.
- **S&P 500 (Standard & Poor's)** A basket of 500 stocks chosen for market size, liquidity and industry grouping, among other factors, designed to represented a US equity universe of large capitalization stocks.
- **S&P Credit Ratings Service** A financial services rating agency.
- **Special situations** Private equity investments in a variety of securities (Debt, Preferred Equity and/or Common Equity) in portfolio companies at a variety of stages of development (Seed, Early Stage, Later Stage).
- **Standard Deviation** A measure of the dispersion of a set of data from its mean. Often used as a measure of investment volatility or risk, it measures how much an investment return may vary from its average return.
- Tail risk The risk that a loss (or gain) would be three standard deviations from the mean or current price.
- **Treasury Bill (T-Bill)** Short-term, highly liquid government securities issued at a discount from the face value and returning the face amount at maturity.
- **Treasury Bond or Note** Debt obligations of the Federal government that make semiannual coupon payments and are sold at or near par value in denominations of \$1,000 or more.
- **Trust** A fiduciary relationship in which a person, called a trustee, holds title to property for the benefit of another person, called a beneficiary.
- **TUCS** Trust Universe Comparison Service. TUCS is a universe based upon a pooling of quarterly trust accounting data from participating banks and other organizations that provide custody for trust assets.
- **Turnover** Security purchases and sales divided by the fiscal year's average market value {(P+S)/[(BMV+EMV)/2]} for a given portfolio.
- Unhedged Not protected from market actions.
- **Un-levered** Investments made without the use of debt or debt like securities.
- **Unrealized Gain (Loss)** A profit (loss) that has not been realized through the sale of a security. The gain (loss) is realized when a security or futures contract is actually sold or settled.

- Variable Rate Note Floating rate notes with a coupon rate adjusted at set intervals, such as daily, weekly, or monthly, based on different interest rate indices, such as LIBOR, Fed Funds, and Treasury Bills.
- **Vintage year** The year in which a capital commitment is made to an investment, most often applied to real estate and private equity investments.
- **Volatility** A statistical measure of the tendency of a market price or yield to vary over time. Volatility is said to be high if the price, yield, or return typically changes dramatically in a short period of time.
- **Warrant** A security that entitles the holder to buy a specific security at a specified price within a specified time frame. Yield The income return on an investment.
- **Yield Curve** A graph showing the term structure of interest rates by plotting the yields of all bonds of the same quality with maturities ranging from the shortest to the longest. The Y-axis represents the interest rate and the X-axis represents time, generally with a normal curve that is convex in shape.
- Zero Coupon Bond A bond paying no interest that sells at a discount and returns principal only at maturity.

#### **UNDERSTANDING INVESTMENT PERFORMANCE**

#### Introduction

This section discusses the Treasury's approach to measuring performance, including risk and return of the Connecticut Retirement Plans and Trust Funds (CRPTF).

#### **Understanding Performance**

To measure success in achieving the primary objective of the Asset Allocation Plan, the Fund's performance is evaluated in two principal areas: risk and return. The results of these reviews, coupled with information on portfolio characteristics, are used to monitor and improve the performance of the Fund's external investment managers.

To monitor and evaluate Fund performance and measurements of risk and return, CRPTF performance is compared to those of similarly structured peer groups and indices. In addition, the performance of the Combined Investment Funds (CIF) invested in by the various plans and trusts is compared to the performance of their respective benchmarks. Each CIF's benchmark is selected on the basis of portfolio composition, investment style, and objectives. The benchmark comparisons enable plan participants, the Treasurer and the Investment Advisory Council, to determine whether and by how much CIF returns exceeded or fell short of their respective benchmarks. The comparisons provide an understanding of the reason for the CIF's performance relative to their benchmarks.

Comparative performance is reviewed over both the near-term and the long-term for two reasons. First, pension management is, by its very nature, a long-term process. While both young and old employees comprise the pool of plan beneficiaries, the increasing life span of plan participants makes it important that plan assets be managed for the long term. Second, as experience has shown, results attained in the short term are not necessarily an indicator of results to be achieved over the long term. Performance must be viewed in a broad context.

Overall performance is measured by calculating monthly returns and linking them to provide one-, three-, fiveand ten-year histories of overall investment performance. Short-term performance is measured by total return over one-month, quarter-end, and trailing one-year time periods. Risk is also measured over both short- and long-term periods.

#### Risk

The measurement of risk is a critical component in investment management. It is the basis for both strategic decision-making and investment evaluation. Investors assume risk to enhance portfolio returns. The primary objective is to generate returns in excess of those available in "risk-free" investments, such as Treasury Bills. The amount of excess returns varies in magnitude according to the degree of risk assumed. Many investors focus on the negative aspects of risk and in doing so forego substantial upside potential, which can significantly enhance long-term returns. Thus, while risk can never be completely eliminated from a portfolio, the prudent management of risk can maximize investment returns at acceptable levels of risk.

Risk can take several forms and include: <u>market risk</u>, the risk of fluctuations in the overall market for securities; <u>company risk</u>, the risk of investing in any single company's stock or bonds; <u>currency-exchange risk</u>, the risk that a foreign country's currency may appreciate or depreciate relative to the U.S. dollar, thus impacting the value of foreign investments; and <u>political risk</u>, risk incurred through investing in foreign countries with volatile economies and political systems.

With respect to fixed income investments, investors also assume: reinvestment risk, the risk that cash flows received from a security will be reinvested at lower rates due to declining interest rates; credit or default risk, the risk that the issuer of a fixed income security may fail to make principal and interest payments on the security; interest rate risk, the risk that the market value of fixed coupon bonds will decline in the event of rising market interest rates; and inflation or purchasing power risk, the risk that the real value of a security and its cash flows may be reduced by inflation. The level of risk incurred in fixed income investing increases as the investment time horizon is lengthened. This is demonstrated by the comparatively higher yields available on "long bonds," or bonds maturing in 20 to 30 years, versus those available on short-term fixed income securities.

#### **UNDERSTANDING INVESTMENT PERFORMANCE (Continued)**

In the alternative investment category, risks are significantly greater than those of publicly traded investments. Assessment of progress is more tenuous and valuation judgments are more complex. The investor assumes not only <u>management, product, market, and operations risk</u>, similar to equity investing, but also assumes <u>liquidity risk</u>, the risk that one's investment cannot be immediately liquidated at other than a substantially discounted value. An additional risk to this category is transparency risk, the risk associated with not knowing the underlying investments within a portfolio.

#### Volatility

To measure the effects of risk on the portfolio, the volatility of returns is calculated over time. Volatility, viewed as the deviation of returns from an average of these returns over some period of time, is measured statistically by <u>standard deviation</u>. Funds with high standard deviations are considered riskier than those with low standard deviations.

To evaluate the significance of the CIF's standard deviation, each CIF's <u>relative volatility</u>, or the ratio of the CIF's standard deviation to that of the benchmark is calculated. A relative volatility greater than 1.0 indicates that the CIF is more volatile than the benchmark while a measure less than 1.0 indicates less volatility. A relative volatility of 1.0 indicates that the volatility of the CIF is the same as the benchmark.

As an extension of standard deviation, each CIF's <u>beta</u>, (a measure of the relative price fluctuation of the CIF to its benchmark) is also calculated. The measurement of beta allows one to evaluate the sensitivity of Fund returns to given movements in the market and/or its benchmark. A beta greater than 1.0 compared to the selected market benchmark signifies greater price sensitivity while a beta less than 1.0 indicates less sensitivity.

To measure the degree of correlation between CIF returns and the benchmark, the Division calculates the <u>coefficient of determination</u>, or R2. This calculation, which is used in conjunction with beta, allows one to evaluate how much of the volatility in CIF returns is explained by returns in the selected market benchmark. An R2 of 1.0 indicates that CIF returns are perfectly explained by returns of the benchmark, while a value less than 1.0 indicates that the returns of the benchmark explain only a portion of the fund return.

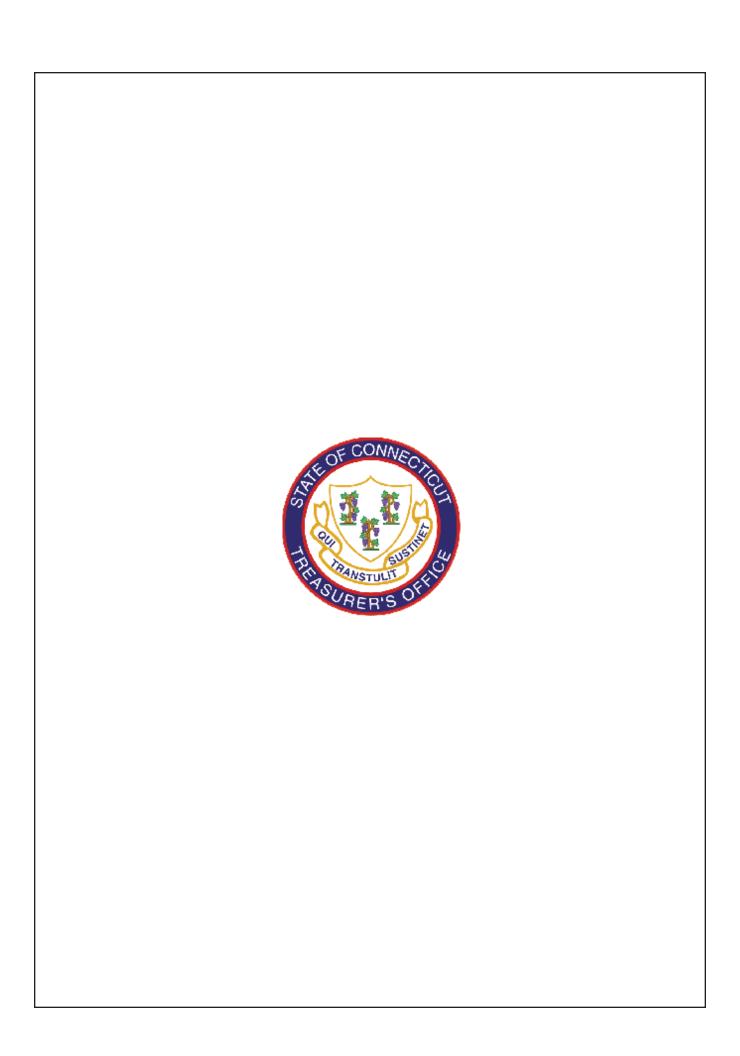
Finally, to evaluate how well each of the above measures actually predicted returns of the CIF, a calculation is performed on the CIF's <u>alpha</u>. This calculation measures the absolute difference between the CIF's monthly return and that predicted by its beta. Used together, these measures provide a comprehensive view of a CIF's relative risk profile.

#### Return

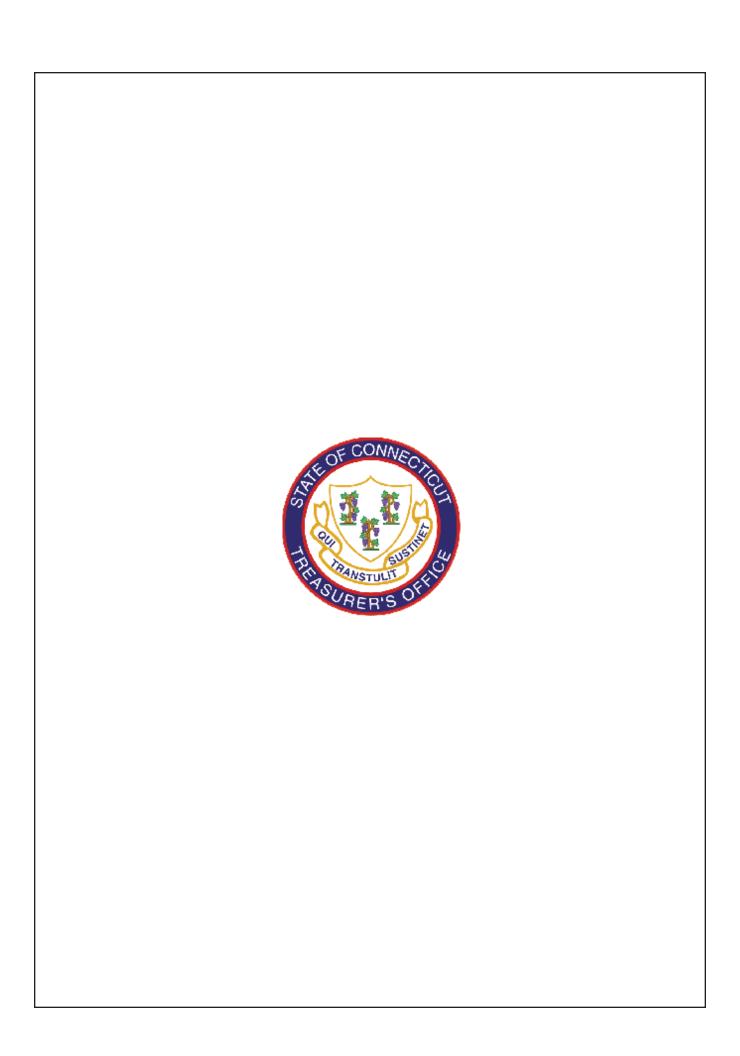
The Pension and Trust Funds are managed to maximize return and minimize risk. Return, viewed in this context, includes realized and unrealized gains in the market value of a security, including those attributable to currency fluctuations, as well as income distributed by a security such as dividends and interest. Return is measured through two calculations: compounded annual total return and cumulative total return.

<u>Compounded Annual Total Return</u> - This return measure evaluates performance over the short and long-term. Compounded annual total return measures the implicit annual percentage change in value of an investment, assuming reinvestment of dividends, interest, and realized and unrealized capital gains, including gains attributable to currency fluctuations. In effect, compounded annual total return "smoothes" fluctuations in long-term investment returns to derive an implied year-to-year annual return.

<u>Cumulative Total Return</u> - This calculation measures the absolute percentage change in value of an investment over a specified period, assuming reinvestment of dividends, interest income, and realized capital gains. While this calculation does not "smooth" year-to-year fluctuations in long-term returns to derive implied annual performance, cumulative total return allows one to see on an absolute basis the percentage increase in the total Fund's value over a specified time. Viewed graphically, cumulative total return shows one what a \$10 million investment in the CRPTF a set number of years ago would be worth today.







# CONNECTICUT STATE TREASURER'S COMBINED INVESTMENT FUNDS STATISTICAL SECTION

This part of the Combined Investment Fund's (CIF's) comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial schedules and other supplementary information say about the overall financial health of CIF. The schedules within this statistical section comply with the requirements of GASB 44.

#### Financial Trends

These schedules contain the ten-year trend information on the financial performance of CIF.

Sc	hedule	Page Page
0	Per share data	143
0	Schedule of rates of return	143
0	Schedule of financial ratios	143
0	Schedule of balances in Combined Investment Funds	145

### Revenue Capacity

Revenue capacity is not applicable to CIF.

### **Borrowing Capacity**

Borrowing capacity is not applicable to CIF.

# Demographic and Economic Information

These schedules show the breakdown between CIF funds, growth of the fund and rate of return information.

<u>Sc</u>	chedule control of the control of th	<u>Page</u>
0	Investment summary	146
0	Annual money-weighted rates of return	149

#### **Operating Information**

The summary of operations schedule outlines the expenses, additions and deductions associated with the management of CIF.

Scl	hedule	Page Page
0	Schedule of Net Position	150

Sources: Unless otherwise noted, the information in these schedules is derived from the comprehensive annual financial reports for the relevant year.

#### SUPPLEMENTAL SCHEDULE OF FINANCIAL HIGHLIGHTS

FISCAL YEAR ENDED JUNE 30,	2017	LIQ1 2016	JIDITY FU 2015	ND 2014	2013	AL 2017	TERNAT 2016	IVE INVE	STMENT F 2014	UND 2013
PER SHARE DATA  Net Position- Beginning of Period	\$0.98	\$0.98	\$1.00	\$1.00	\$1.00	\$1.19	\$1.19	\$1.13	\$1.06	\$1.00
INCOME FROM INVESTMENT OPERATIONS Net Investment Income (Loss) Net Gains or (Losses) on Securities	\$0.02	\$0.01	\$0.01	\$0.01	\$0.01	\$-	\$-	\$-	\$-	\$-
(Both Realized and Unrealized) Total from Investment Operations	\$- \$0.02	\$- \$0.01	\$(0.02) \$(0.01)	\$- \$0.01	\$- \$0.01	\$0.09 \$0.09	\$(0.07) \$(0.07)	\$0.06 \$0.06	\$0.07 \$0.07	\$0.06 \$0.06
LESS DISTRIBUTIONS										
Dividends from Net Investment Income	\$(0.02)	\$(0.01)	\$(0.01)	\$(0.01)	\$(0.01)	\$-	\$-	\$-	\$-	\$-
Net Position - End of Period TOTAL RETURN	<u>\$0.98</u> 0.96%	\$0.98 0.68%	\$0.98 -1.07%	\$1.00 0.54%	\$1.00 0.66%	\$1.28 8.51%	\$1.12 -5.32%	\$1.19 3.98%	\$1.13 6.63%	\$1.06 6.39%
	0.96%	0.06%	-1.07%	0.54%	0.00%	0.51%	-5.32%	3.96%	0.03%	0.39%
RATIOS Net Position - End of Period (\$000,000 Omitted) Ratio of Expenses to Average Net Position		\$1,980	\$2,194	\$2,188	\$2,464	\$2,028	\$1,804	\$1,821	\$1,350	\$1,248
(excl. sec. lending fees & rebates)	0.12%	0.09%	0.25%	0.24%	0.30%	0.05%	0.06%	0.08%	0.08%	0.13%
Ratio of Expenses to Average Net Position Ratio of Net Investment Income	0.12%	0.09%	0.25%	0.24%	0.30%	0.05%	0.06%	0.08%	0.08%	0.13%
( Loss) to Average Net Position	1.81%	1.18%	0.83%	0.57%	0.65%	0.29%	0.24%	0.19%	0.14%	0.31%
		MIIT	UAL EQU	ITV			COP	RE FIXED	INCOME	
FISCAL YEAR ENDED JUNE 30, PER SHARE DATA	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
Net Position- Beginning of Period	\$1,524.55	\$1,524.55	\$1,420.60	\$1,138.66	\$957.67	\$125.17	\$125.17	\$122.59	\$118.20	\$122.75
INCOME FROM INVESTMENT OPERATIONS Net Investment Income (Loss) Net Gains or (Losses) on Securities	\$30.79	\$28.23	\$24.23	\$21.53	\$19.49	\$2.80	\$2.86	\$2.63	\$2.91	\$3.45
(Both Realized and Unrealized)	\$267.96	\$(1.54)	\$79.72	\$265.34	\$180.89	\$ <u>(0.55)</u>	\$1.49	\$(0.05)	\$2.02	\$(3.83)
Total from Investment Operations LESS DISTRIBUTIONS	\$298.75	\$26.69	\$103.95	\$286.87	\$200.38	\$2.25	\$4.35	\$2.58	\$4.93	\$(0.38)
Dividends from Net Investment Income	\$-	\$-	\$-	\$(4.93)	\$(19.39)	\$-	\$-	\$-	\$(0.54)	\$(4.17)
Net Position - End of Period TOTAL RETURN	\$1,82 <u>3.30</u> 19 <u>.26%</u>	\$1,551.24 \$ 1.75%	\$1,524.55 7.32%	\$1,420.60 25.28%	\$1,138.66 21.15%	\$1 <u>27.42</u> 1.89%	\$129.52 3.46%	\$125.17 1.85%	\$122.59 4.28%	\$118.20 -0.24%
	19 <u>.2070</u>	1.7570	7.52/0	23.2070	21.13/0	1.0370	J. <del>T</del> U /0	1.0370	4.20 /0	-0.24 /0
RATIOS Net Position - End of Period (\$000,000 Omitted) Ratio of Expenses to Average Net Position	\$7,022	\$6,642	\$6,771	\$7,058	\$6,237	\$2,452	\$2,407	\$2,437	\$2,415	\$1,905
(excl. sec. lending fees & rebates) Ratio of Expenses to Average Net Position	0.22% 0.31%	0.23% 0.29%	0.22% 0.23%	0.22% 0.23%	0.23% 0.26%	0.13% 0.17%	0.14% 0.16%	0.15% 0.16%	0.17% 0.18%	0.18% 0.21%
Ratio of Net Investment Income (Loss) to Average Net Position	1.82%	1.84%	1.65%	1.73%	1.86%	2.14%	2.25%	2.12%	2.56%	3.00%
FISCAL YEAR ENDED JUNE 30,	2017	INFLATIO	ON LINKEI 2015	D BOND 2014	2013	2017	EMER(	GING MAR 2015	KET DEB	
PER SHARE DATA Net Position- Beginning of Period	\$151.53	\$151.53	\$155.97	\$150.54	\$159.40	\$150.63	\$150.63	\$162.98	\$152.34	\$150.57
NCOME FROM INVESTMENT OPERATIONS Net Investment Income (Loss)	\$(0.17)	\$(0.11)	\$(0.76)	\$4.65	\$1.62		\$15.30	\$10.11	\$8.68	\$5.21
Net Gains or (Losses) on Securities										
(Both Realized and Unrealized) otal from Investment Operations ESS DISTRIBUTIONS	\$ <u>1.19</u> \$ <u>1.02</u>	\$3.58 \$3.47	\$(3.68) \$(4.44)	\$1.50 \$6.15	\$(8.32) \$(6.70)	\$2.59 \$14.55	\$(6.25) \$9.05	\$(22.46) \$(12.35)	\$1.96 \$10.64	\$(2.60) \$2.61
Dividends from Net Investment Income	\$-	\$-	\$-	\$(0.72)	\$(2.16) \$150.54	\$- \$165.18	\$- \$159.68	\$- \$150.63	\$- \$162.98	\$(0.84) \$152.34
Net Position - End of Period	\$15 <u>2.55</u> 0.66%	\$155.00 5 2.29%	\$151.53 -2.85%	\$155.97 4.17%		9.119	6.01%	√ -7.57%		1.69%
Net Position - End of Period TOTAL RETURN RATIOS Net Position - End of Period (\$000,000 Omitted)	\$152.55					9.11%	<u>6.01%</u> \$1,498	% -7.57% \$1,415		1.69% \$1,410
Net Position - End of Period TOTAL RETURN RATIOS	\$15 <u>2.55</u> 0.66%	\$1,322 6 0.27%	\$1,131 0.23%	\$1,079 0.22%	-4.33% \$888 0.13%	9.11%	\$1,498 % 0.309	\$1,415 % 0.33%	\$1,514 6 0.27%	\$1,410 0.45% 0.45%

Source: Amounts were derived from custodial records.

#### SUPPLEMENTAL SCHEDULE OF FINANCIAL HIGHLIGHTS (Continued)

		HIGH	YIELD DE	ВТ		DEVE	LOPED N	IARKET I	NTERNAT	IONAL
FISCAL YEAR ENDED JUNE 30,	2017	2016	2015	2014	2013	2017	2016	2015	2014	2013
PER SHARE DATA  Net Position- Beginning of Period	\$138.05	\$138.05	\$139.80	\$125.63	\$121.79	\$463.22	\$463.22	\$460.14	\$378.32	\$314.31
INCOME FROM INVESTMENT OPERATIONS										
Net Investment Income (Loss) Net Gains or (Losses) on Securities	\$9.35	\$8.72	\$8.06	\$7.86	\$8.37	\$13.00	\$11.50	\$11.36	\$13.40	\$10.35
(Both Realized and Unrealized) Total from Investment Operations	\$7.70 \$17.05	\$(8.96) \$(0.24)	\$(9.81) \$(1.75)	\$7.30 \$15.16	\$2.22 \$10.59		\$(44.37) \$(32.87)	\$(8.28) \$3.08	\$70.75 \$84.15	\$60.42 \$70.77
LESS DISTRIBUTIONS	•	¢	¢	¢(0,00)	¢(6.75)	•	¢	¢	¢(2.22)	¢(6.76)
Dividends from Net Investment Income Net Position - End of Period	\$- \$155.10	\$- \$137.81	\$- \$138.05	\$(0.99) \$139.80	\$(6.75) \$125.63	\$- \$570.01	\$- \$430.35	\$- \$463.22	\$(2.33) \$460.14	\$(6.76) \$378.32
TOTAL RETURN	12.59%	-0.31%	-1.31%	12.24%	8.46%	24.81%	-7.09%	0.67%	22.31%	22.56%
RATIOS Net Position - End of Period (\$000,000 Omitted) Ratio of Expenses to Average Net Position	\$2,044	\$1,823	\$1,774	\$1,588	\$1,248	\$6,381	\$5,224	\$5,909	\$6,135	\$5,447
(excl. sec. lending fees & rebates)	0.29%	0.35%	0.33%	0.35%	0.36%	0.40%	0.43%	0.40%	0.40%	0.43%
Ratio of Expenses to Average Net Position Ratio of Net Investment Income	0.41%	0.39%	0.34%	0.36%	0.39%	0.41%	0.43%	0.41%	0.40%	0.45%
( Loss) to Average Net Position	6.39%	6.32%	5.80%	5.91%	6.07%	2.69%	2.57%	2.46%	3.17%	3.02%
FISCAL YEAR ENDED JUNE 30, PER SHARE DATA	EMERGIN 2017	IG MARKE 2016	T INTERNA 2015	ATIONAL S 2014	STOCK 2013	2017	2016	EAL ESTA 2015	TE 2014	2013
Net Position- Beginning of Period	\$369.61	\$369.61	\$397.12	\$358.76	\$351.61	\$46.27	\$46.27	\$39.48	\$36.46	\$35.21
INCOME FROM INVESTMENT OPERATIONS Net Investment Income (Loss)	\$6.16	\$6.59	\$8.22	\$6.81	\$6.36	\$1.79	\$1.66	\$1.59	\$(0.97)	\$2.04
Net Gains or (Losses) on Securities (Both Realized and Unrealized)	\$72.65	\$(33.01)	\$(35.73)	\$34.08	\$5.57	\$0.99	\$2.69	\$5.20	\$4.84	\$1.55
Total from Investment Operations	\$78.81	\$(26.42)	\$(27.51)	\$40.89	\$11.93	\$2.78	\$4.35	\$6.79	\$3.87	\$3.59
LESS DISTRIBUTIONS Dividends from Net Investment Income	\$-	\$-	\$-	\$(2.53)	\$(4.78)	\$-	\$-	\$-	\$(0.85)	\$(2.34)
Net Position - End of Period	\$448.42	\$343.19	\$369.61	\$397.12	\$358.76	\$49.05	\$50.62	\$46.27	\$39.48	\$36.46
TOTAL RETURN	23.00%	-7.15%	-6.93%	11.50%	3.29%	7.38%	11.51%	12.93%	10.66%	10.26%
RATIOS Net Position - End of Period (\$000,000 Omitted) Ratio of Expenses to Average Net Position	\$3,015	\$2,483	\$2,473	\$2,655	\$2,369	\$2,248	\$2,207	\$1,918	\$1,510	\$1,482
(excl. sec. lending fees & rebates) Ratio of Expenses to Average Net Position	0.59% 0.63%	0.64% 0.66%	0.70% 0.71%	0.69% 0.70%	0.84% 0.85%	0.47% 0.47%	0.42% 0.42%	0.39% 0.39%	0.55% 0.55%	0.35% 0.35%
Ratio of Net Investment Income (Loss) to Average Net Position	1.61%	1.85%	2.15%	1.81%	1.78%	3.44%	3.42%	3.69%	-2.50%	5.56%
		PRIVATI	E INVESTI	MENT						
FISCAL YEAR ENDED JUNE 30,	2017	2016	2015	2014	2013					
PER SHARE DATA  Net Position- Beginning of Period	\$65.13	\$65.13	\$54.72	\$48.06	\$49.83					
INCOME FROM INVESTMENT OPERATIONS Net Investment Income (Loss)	\$1.18	\$0.46	\$1.31	\$4.72	\$5.51					
Net Gains or (Losses) on Securities (Both Realized and Unrealized)	\$7.62	\$4.21	\$9.10	\$2.79	\$(1.23)					
Total from Investment Operations LESS DISTRIBUTIONS	\$8.80	\$4.67	\$10.41	\$7.51	\$4.28					
Dividends from Net Investment Income Net Position - End of Period	\$- \$73.93	\$- \$69.80	\$- \$65.13	\$(0.85) \$54.72	\$(6.05) \$48.06					
TOTAL RETURN	10.97%	8.87%	14.04%	16.06%	9.50%					
RATIOS										
Net Position - End of Period (\$000,000 Omitted) Ratio of Expenses to Average Net Position	\$2,990	\$2,770	\$2,895	\$2,919	\$2,550					
(excl. sec. lending fees & rebates) Ratio of Expenses to Average Net Position Ratio of Net Investment Income	0.17% 0.17%	0.19% 0.19%	0.17% 0.17%	0.22% 0.22%	0.29% 0.29%					
( Loss) to Average Net Position	1.60%	0.68%	2.20%	9.21%	11.23%					

Source: Amounts were derived from custodial records.

#### PENSION AND TRUST FUNDS **BALANCES IN COMBINED INVESTMENT FUNDS (Dollars in Thousands) TEN YEAR COMPARISON**

	20	)17	
	Percent o	f	
Pension Plans	Total Syste	m Assets	
Teachers' Retirement Fund	52.6%	17,126.8	
State Employees' Retirement Fund	36.7%	11,955.4	
Municipal Employees' Retirement Fund	7.5%	2,441.3	
State Judges' Retirement Fund	0.6%	210.0	
The Probate Court Retirement Fund	0.3%	95.0	
State's Attorneys Retirement Fund	0.1%	1.8	
Trust Funds	2 2%	717 5	
Tract raines	100.00%		

2008	
Percent of	
Total System Assets	
52.6% 14,541.6	
36.7% 9,329.7	
nd 7.5% 1,627.7	
0.3% 177.2	
0.6% 81.5	
0.0% 0.1	
2.2% 113.2	
100.0% \$ 25,871.0	
	Percent of Total System Assets 52.6% 14,541.6 36.7% 9,329.7 and 7.5% 1,627.7 0.3% 177.2 0.6% 81.5 0.0% 0.1 2.2% 113.2

# COMBINED INVESTMENT FUNDS INVESTMENT SUMMARY AT JUNE 30, 2017 (1)

		Liquidity F	Fund (2)			Mutual Equit	y Fund	
	Book Value	Fair Value	% of Total Fund FV	Rate of Return	Book Value	Fair Value	% of Total Fund FV	Rate of Return
2017	\$1,405,083,566	\$1,387,328,362	4.26%	0.96%	\$4,708,963,250	\$7,026,486,865	21.57%	19.26%
2016	1,036,810,247	1,018,293,290	3.49%	0.68%	4,681,029,693	6,647,482,185	22.76%	1.75%
2015	1,358,875,058	1,282,270,968	4.31%	-1.07%	4,584,447,046	6,784,028,571	22.80%	7.32%
2014	1,157,564,578	1,158,961,835	3.93%	0.54%	4,612,970,046	7,055,012,881	23.93%	25.28%
2013	1,062,418,543	1,041,232,312	4.01%	0.66%	4,664,358,346	6,236,082,798	24.07%	21.15%
2012	772,408,827	770,217,574	3.20%	-0.14%	5,144,712,429	6,417,508,518	26.65%	3.38%
2011	756,915,969	775,433,903	3.07%	1.20%	5,327,666,479	6,634,922,151	26.28%	31.92%
2010	1,626,177,183	1,621,182,259	7.44%	0.98%	5,175,570,74	7 5,288,853,566	24.28%	14.01%
2009	952,212,787	950,605,428	4.65%	1.54%	6,019,782,554	5,588,272,211	27.35%	-28.36%
2008	1,140,821,830	1,140,821,830	4.36%	4.59%	7,563,373,750	8,017,007,807	30.68%	-12.99%
	C	ore Fixed Inc	ome Fun	ıd	Inf	lation Linked	Bond Fu	nd
	Book	Fair	% of Total	Rate of	Book	Fair	% of Total	Rate of
	Value	Value	Fund FV	Return	Value	Value	Fund FV	Return
2017	\$2,563,940,862	\$2,601,453,937	7.99%	1.89%	\$1,347,627,82	1 \$1,332,942,016	4.09%	0.66%
2016	2,442,024,334	2,490,655,941	8.53%	3.46%	1,338,629,40	5 1,321,779,931	4.52%	2.29%
2015	2,603,408,489	2,627,250,626	8.83%	1.85%	1,189,323,64	3 1,120,365,183	3.77%	-2.85%
2014	2,528,639,885	2,573,846,130	8.73%	4.28%	1,057,661,50	3 1,075,489,795	3.65%	4.17%
2013	2,042,090,874	2,056,321,868	7.94%	-0.24%	886,052,044	879,482,495	3.39%	-4.33%
2012	2,726,575,207	2,859,134,784	11.88%	7.63%	864,059,93	932,982,728	3.88%	11.91%
2011	2,911,577,713	3,001,125,667	11.89%	4.49%	1,075,894,193	3 1,115,148,171	4.42%	7.23%
2010	2,682,943,303	2,789,605,943	12.81%	11.81%	1,033,720,440	1,070,660,872	4.91%	9.48%
2009	3,400,625,343	3,215,718,047	15.74%	2.84%	813,926,65	829,543,021	4.06%	-0.20%
2008	4,979,684,914	4,851,300,830	18.57%	5.65%	1,152,973,04	7 1,162,545,028	4.45%	16.81%
	Em	erging Marke	et Debt F	und		High Yield De	bt Fund	
	Book Value	Fair Value	% of Total Fund FV	Rate of Return	Book Value	Fair Value	% of Total Fund FV	Rate of Return
2017	\$1,606,817,274	\$1,598,180,952	4.91%	9.11%	\$2,027,683,334	\$2,034,712,429	6.25%	12.59%
2016	1,577,124,552	1,483,772,612	5.08%	6.01%	1,905,160,58	7 1,808,188,496	6.19%	-0.31%
2015	1,523,207,614	1,399,864,819	4.70%	-7.57%	1,824,316,12	7 1,772,254,243	5.96%	-1.31%
2014	1,470,166,119	1,500,069,627	5.09%	6.99%	1,520,226,270	1,592,980,848	5.40%	12.24%
2013	1,415,363,738	1,388,070,525	5.36%	1.69%	1,261,124,83	1 1,267,238,204	4.89%	8.46%
2012	1,098,205,685	1,176,095,315	4.88%	4.78%	693,951,103	3 706,123,033	2.93%	6.23%
2011	1,012,164,604	1,141,817,330	4.52%	16.06%	685,595,880	710,362,023	2.81%	15.96%
2010	1,082,027,071	1,155,351,613	5.30%	23.02%	659,015,939	9 656,175,724	3.01%	24.54%
2009	1,153,012,696	1,125,226,197	5.51%	-3.62%	801,755,72	718,563,903	3.52%	-4.59%
2008	1,006,342,436	1,040,295,964	3.98%	5.59%	784,159,49	1 745,137,049	2.85%	-1.88%

# COMBINED INVESTMENT FUNDS INVESTMENT SUMMARY AT JUNE 30, 2017 (1) (Continued)

Rate o	% of Total Fund FV	Fair Value	Book Value	Rate of Return	% of Total Fund FV	Fair Value	Book Value
23.009	9.22%	\$3,002,786,523	\$2,359,195,270	24.81%	19.48%	\$6,344,307,953	\$5,180,435,660
-7.159	8.45%	2,467,083,187	2,305,345,878	-7.09%	17.76%	5,187,629,818	4,943,295,363
-6.939	8.28%	2,463,358,430	2,313,960,007	0.67%	19.76%	5,879,680,883	5,052,512,834
11.50	8.97%	2,645,431,257	2,278,127,868	22.31%	20.70%	6,101,761,491	4,806,622,148
3.29	9.14%	2,367,182,053	2,241,227,436	22.56%	20.81%	5,393,071,695	4,861,705,636
-14.16	9.21%	2,216,901,370	2,086,716,284	-12.48%	18.90%	4,550,036,799	4,586,337,006
28.55°	10.41%	2,629,250,556	2,114,345,516	26.30%	21.35%	5,391,257,095	4,684,676,553
25.23	9.48%	2,065,255,957	1,860,837,675	11.03%	19.87%	4,328,450,937	1,552,279,820
-30.90	5.59%	1,141,401,975	1,110,911,776	-27.98%		4,464,491,006	4,847,669,826
0.19	4.96%	1,295,936,888	1,111,317,184	-14.60%	19.43%	5,077,825,949	4,879,325,913
(3) (6)	ge Fund	ercial Mortga	Comm		und <sup>(3)</sup>	Real Estate F	F
	% of Total Fund FV		Book Value	Rate of Return	% of Total Fund FV	Fair Value	Book Value
0.00	0.00%	\$0	\$0	7.38%	6.89%	\$2,242,658,118	\$2,003,957,301
0.00	0.00%	83	83	11.51%	7.56%	2,207,396,472	1,941,003,659
0.25	0.00%	29,799	29,834	12.93%	6.21%	1,848,291,148	1,763,256,288
10.17	0.00%	67,609	67,723	10.66%	5.12%	1,509,757,272	1,478,885,377
0.88	0.00%	70,099	70,239	10.26%	5.68%	1,471,299,222	1,611,385,620
-6.48	0.00%	765,779	717,122	7.19%	5.52%	1,328,560,229	1,524,367,937
4.61	0.01%	2,386,359	2,338,063	16.12%	4.35%	1,097,203,255	1,350,551,373
6.75	0.02%	3,818,115	3,769,581	-20.18%	3.64%	792,483,221	1,174,718,491
-3.14	0.02%	5,135,144	5,084,919	-28.66%	3.77%	770,955,194	1,021,805,530
12.05	0.03%	6,906,096	6,255,651	6.04%	3.84%	1,002,243,816	954,279,128
d <sup>(5)</sup>	nent Fun	native Investm	Alterr	(3)	ent Fund	ivate Investm	Pri
Rate of Retur	% of Total Fund FV	Fair Value	Book Value	Rate of Return	% of Total Fund FV	Fair Value	Book Value
8.51	6.22%	\$2,026,788,085	\$1,780,457,507	10.97%	9.12%	\$2,970,729,926	\$2,499,963,535
-5.32	6.18%	1,804,337,067	1,705,961,044	8.87%	9.48%	2,769,435,919	2,306,644,120
3.98	6.06%	1,804,487,746	1,611,126,633	14.04%	9.32%	2,773,374,435	2,286,868,807
0.00	4.58%	1,349,977,450	1,210,080,164	16.06%	9.90%	2,918,978,182	2,449,109,360
6.63	4.040/	1,247,574,910	1,190,675,281	9.50%	9.90%	2,564,877,605	2,246,698,441
	4.81%			5.92%	10.67%	2,569,809,038	2,221,945,727
6.39	4.81% 2.28%	549,205,302	550,080,365				
6.39 -1.62		549,205,302 519,007,742	511,873,555	19.89%	8.83%	2,229,679,980	1,909,670,699
6.39 -1.62 0.00	2.28%			19.89% 17.32%	8.83% 9.24%	2,229,679,980 2,013,101,198	1,909,670,699 1,859,585,108
6.39 -1.62 0.00 0.00	2.28% 2.06%	519,007,742	511,873,555		9.24%		

# COMBINED INVESTMENT FUNDS INVESTMENT SUMMARY AT JUNE 30, 2017 (1) (Continued)

#### Total Fund (4)

	Book	Fair	% of Total	Rate of
	Value	Value	Fund FV	Return
2017	\$27,484,125,381	\$32,568,375,166	100.00%	14.18%
2016	26,183,028,965	29,206,055,001	100.00%	0.35%
2015	26,111,332,380	29,755,256,851	100.00%	2.79%
2014	24,570,121,041	29,482,334,377	100.00%	15.43%
2013	23,483,171,029	25,912,503,786	100.00%	11.64%
2012	22,270,077,625	24,077,340,469	100.00%	-0.90%
2011	22,343,270,597	25,247,594,232	100.00%	20.75%
2010	21,710,645,358	21,784,939,405	100.00%	12.88%
2009	21,945,913,372	20,431,180,148	100.00%	-17.37%
2008	25,388,309,339	26,129,160,510	100.00%	-4.71%

- (1) All rates of return are net of management fees and division operating expenses.
- (2) The fair value of the Liquidity Fund for the periods presented represents the fair value of the pension and trust balances in the Liquidity Fund only (excluding receivables and payables); the Liquidity Fund balances of the other combined investment funds are shown in the fair value of each fund.
- (3) Investment returns published for prior years were net of management fees, but were restated in 2008 net of all expenses.
- (4) Represents a composite return of the total pension and trust funds. Individual returns for the three primary pension funds (Teachers, State Employees and Municipal Employees) are separately presented elsewhere due to different asset allocations of each fund.
- (5) Inception of the Alternative Investment Fund during Fiscal 2011.
- (6) Investments in Commercial Mortgage Fund were redeemed by plan participants.

# SCHEDULE OF INVESTMENT RETURNS ANNUAL MONEY-WEIGHTED RATES OF RETURN NET OF INVESTMENT EXPENSES

	6/30/2017*	6/30/2016	6/30/2015	6/30/2014
Teachers' Retirement Fund	14.37	0.17%	2.79%	15.67%
State Employees' Retirement Fund	14.32	0.23%	2.84%	15.62%
Municipal Employees' Retirement Fund	13.05	1.15%	2.57%	13.58%
State Judges' Retirement Fund	13.04	1.11%	2.58%	13.66%
The Probate Court Retirement Fund	13.19	1.17%	2.49%	13.86%
State's Attorneys' Retirement Fund	14.67	-0.21%	1.58%	13.66%
Soldiers' Sailors' & Marines' Fund	7.65	1.63%	2.17%	9.44%
Police & Fireman's Survivors' Benefit Fund	13.52	0.98%	2.85%	14.17%
Connecticut Arts Endowment Fund	7.54	1.58%	2.19%	9.40%
School Fund	7.69	1.66%	2.17%	9.56%
Ida Eaton Cotton Fund	7.64	1.66%	2.17%	9.50%
Hopemead State Park Fund	7.61	1.66%	2.15%	9.41%
Andrew C. Clark Fund	7.64	1.66%	2.18%	9.50%
Agricultural College Fund	1.94	3.47%	1.85%	4.29%
OPEB Fund	11.83	2.44%	3.40%	11.75%

<sup>\*</sup>This schedule is to be built prospectively until it contains ten years of data.

	CONNE	CTICUT S	TATE TRE	ASURER'S	NNECTICUT STATE TREASURER'S COMBINED INVESTMENT FUNDS	ED INVEST	MENT FU	NDS		
	COI FISCAL	NDENSED . YEAR EN	SCHEDUI IDED JUN	LE OF NET E 30 (dolla	CONDENSED SCHEDULE OF NET POSITION FISCAL YEAR ENDED JUNE 30 (dollars in millions)	ns)				
Assets	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Investments at Fair Value Cash, Receivables and Other	\$32,568.4 10,300.7	\$29,206.1 14,897.9	\$29,970.3 10,608.8	\$29,608.5 6,096.3	\$25,912.5 9,430.8	\$24,077.3 6,964.2	\$25,247.6 7,959.9	\$21,784.9 7,494.7	\$20,431.2 11,520.3	\$26,129.2 15,884.6
Total Assets Liabilities	42,869.1	44,104.0 14.858.1	40,5794.0	35,704.8	35,388.3	31,041.5	33,207.5	29,279.6 7,410.0	31,951.5	42,013.8
Net Position	\$32,547.9	\$29,245.9	\$29,867.0	\$29,554.1	\$25,940.8	\$23,976.8	\$25,183.7	\$21,869.6	\$20,382.2	\$25,871.8
	CONDENS	ED SCHEI	NDENSED SCHEDULE OF CHAN FISCAL YEAR ENDED JUNE 30	CHANGES E 30 (dolla	CONDENSED SCHEDULE OF CHANGES IN NET POSITION FISCAL YEAR ENDED JUNE 30 (dollars in millions)	SITION (sns)				
Fiscal Year Ended June 30,										
Additions	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Dividends Interest	510.4	460.0	502.9	474.6	747.9	622.9	703.3	\$417.4	\$399.9	\$650.1
Securities Lending & Other Income	48.3	28.7	22.8	16.5	29.1	28.4	30.0	29.1	74.9	162.4
Total Investment Income Total Investment Expenses	867.2 99.5	826.0 90.7	787.7 87.5	761.7 84.3	958.8 86.9	892.5	1,017.1 89.6	770.5 83.8	833.7 89.9	1,272.5 201.8
Net Investment Income Net Increase (Decrease) in the Eair Value	7.797	735.3	700.2	677.4	871.9	809.0	927.5	686.7	743.8	1,070.7
of Investments and Foreign Currency Purchase of Units by Participants Total Additions	3,332.7 2,687.0 6,787.4	(720.1) 2,464.4 2,479.6	212.9 3,010.4 3,923.5	3,455.8 2,955.3 7,088.4	1,905.8 4,981.5 7,759.2	(1,023.8) 2,716.0 2,501.2	3,525.6 3,118.5 7,571.6	1,952.1 3,647.0 6,285.8	(5,276.0) 6,599.3 2,067.1	(2,328.6) 8,184.5 6,926.6
Deductions Administrative Expense Distributions to Unit Holders Redemption of Units by Participants Total Deductions	(4.0) (24.3) (3,457.1) (3,485.4)	(4.6) (13.5) (3,082.6) (3,100.7)	(4.6) (9.5) (3,596.6) (3,610.7)	(4.9) (190.4) (3,279.8) (3,475.1)	(4.3) (813.2) (4,977.7) (5,795.2)	(4.1) (660.6) (3,043.4) (3,708.1)	(4.1) (813.3) (3,440.1) (4,257.5)	(3.8) (579.3) (4,215.3) (4,798.4)	(3.4) (707.6) (6.845.7) (7,556.7)	(3.2) (972.4) (6.007.4) (6,983.0)
Net Change in Position	3,302.0	(621.1)	312.9	3,613.3	1,964.0	(1,206.9)	3,314.1	1,487.4	(5,489.6)	(56.5)
Beginning Net Position	29,245.9	29,887.0	29,554.1	25,940.8	\$23,976.8	25,183.7	21,869.6	20,382.2	25,871.8	25,928.3
Ending Net Position	\$32,547.9	\$29,245.9	\$29,867.0	\$29,554.1	\$25,940.8	\$23,976.8	\$25,183.7	\$21,869.6	\$20,382.2	\$25,871.8

# Office of the State Treasurer LIST OF PRINCIPAL OFFICIALS AND PHONE NUMBERS

# Denise L. Nappier

Treasurer, State of Connecticut Tel: (860) 702-3010 Fax: (860) 702-3043

#### Lawrence A. Wilson

Interim Deputy Treasurer Tel: (860) 702-3070 Fax: (860) 728-1290

#### Laurie Martin

Interim Chief Investment Officer Pension Funds Management Tel: (860) 702-3195 Fax: (860) 702-3042

# Sarah K. Sanders

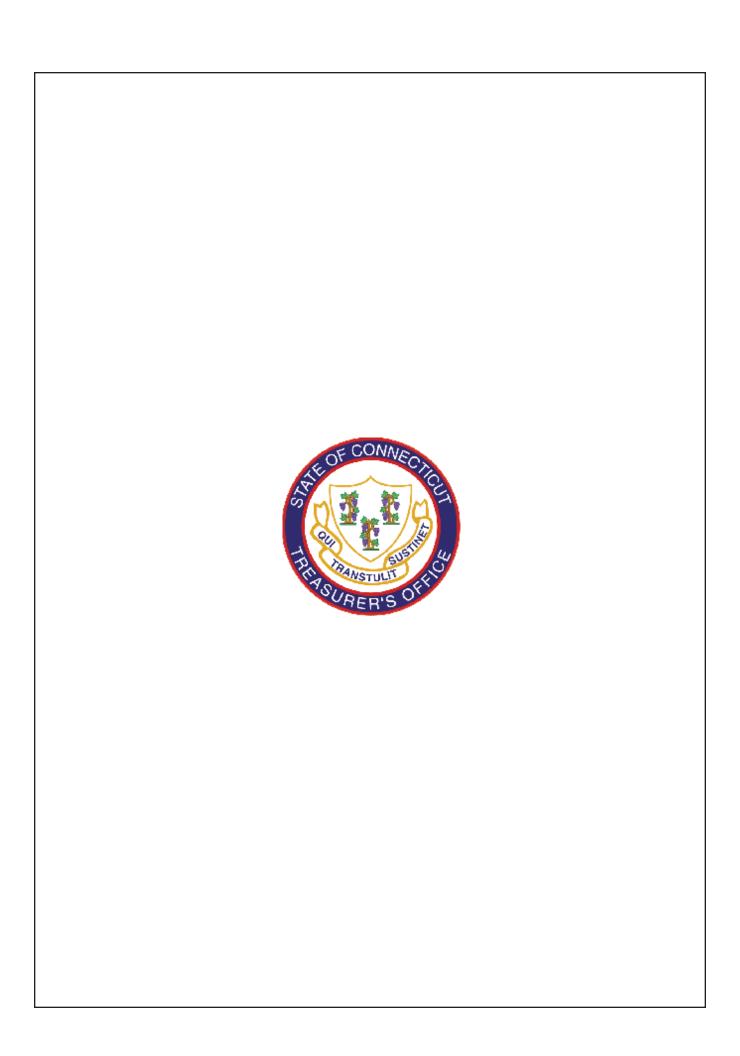
Assistant Treasurer Debt Management Tel: (860) 702-3288 Fax: (860) 702-3034

### Maria M. Greenslade

Assistant Deputy Treasurer Second Injury Fund and Unclaimed Property Tel: (860) 702-3125 Fax: (860) 702-3021

# Lawrence A. Wilson Assistant Treasurer

Cash Management Tel: (860) 702-3126 Fax: (860) 702-3041





# CONNECTICUT STATE TREASURY

55 Elm Street
Hartford, CT 06106-1773
Tel: (860) 702-3000
www.ott.ct.gov