NORTH CAROLINA DEPARTMENT OF STATE TREASURER INVESTMENT PROGRAMS

FINANCIAL STATEMENTS WITH INDEPENDENT AUDITORS' REPORT

FISCAL YEAR ENDED JUNE 30, 2019

NORTH CAROLINA DEPARTMENT OF STATE TREASURER INVESTMENT PROGRAMS
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This audit required approximately 590 hours at a cost of $79,980.

INDEPENDENT AUDITORS' REPORT

Dale R. Folwell, CPA, State Treasurer
North Carolina Department of State Treasurer
Investment Programs

Report on the Financial Statements

We have audited the accompanying financial statements of the External Investment Pool (the Pool), the Bond Index Investment Pool (the BIF), and the Equity Index Investment Account (the EIF) of the North Carolina Department of State Treasurer Investment Programs, collectively referred to as "Investment Programs," as of and for the year then ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the Investment Programs' basic financial statements as listed in the table of contents.

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 opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. 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 auditors' 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 Investment Program'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 Investment Program'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 respective financial position of the net position of the Investment Programs as of June 30, 2019, and the respective changes in financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the 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 financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements. The supplementary information is presented for purposes of additional analysis and is not a required part of the financial statements.

The supplementary 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. Such information has been subjected to the auditing procedures applied in the audit of the financial statements 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 supplementary Information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The other supplementary information, as listed in the table of contents, have not been subjected to the auditing procedures applied in the audits of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated October 11, 2019 on our consideration of the internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Investment Programs' internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
October 11, 2019

Introduction

This section of the financial statements of the North Carolina Department of State Treasurer Investment Programs (State Treasurer Investments) presents our discussion and analysis of the External Investment Pool's (the Pool), the Bond Index Investment Pool's (BIF), and the Equity Index Investment Account's (EIF) financial position as of June 30, 2019 and 2018. Since this discussion and analysis is designed to focus on current activities, it should be read in conjunction with the State Treasurer Investments' basic financial statements, which follow this section.

For the purposes of presenting the basic financial statements, investments of the Pool are allocated to broad classifications that follow the North Carolina General Statutes' definitions in Section 147-69.2(b). These "portfolios" are described in Note 3 and include the Short-Term Investment Fund (STIF), Long Term Investment Fund (LTIF), Equity Investment portfolio, Real Estate Investment portfolio, Alternative Investment portfolio, Opportunistic Fixed Income Investment portfolio, Cash Pool portfolio, and the Inflation Sensitive Investment portfolio. Amounts associated with these portfolios are presented in the tables in Note 3. The classifications defined in the Investment Policy Statement of the Department of State Treasurer Investments are used for the purposes of Management's Discussion and Analysis of the economic and financial environment, investment performance, and risk management of the Pool. The Supplementary Information contains a mapping of the Investment Policy Statement's classifications to the statutory classifications which are used to prepare the basic financial statements of the Pool as of June 30, 2019.

The BIF (Note 7) is an external government sponsored bond index investment pool in which the Treasurer is authorized to invest funds for governmental entities (Ancillary Governmental Participant Investment Program or AGPIP) which are outside the Retirement Systems defined as The Teachers' and State Employees' Retirement System, Consolidated Judicial Retirement System, Legislative Retirement System, Firefighters' and Rescue Squad Workers' Pension Fund, North Carolina National Guard Pension Fund, Local Governmental Employees' Retirement System, and Retiree Health Benefit Fund.

The EIF (Note 8) is an equity index investment account for AGPIP where the Treasurer has contracted with an external party to invest in a commingled equity index investment trust.

Financial Statements

The Pool's, BIF's, and EIF's basic financial statements include the statement of fiduciary net position and statement of changes in fiduciary net position, which have been presented in accordance with accounting principles generally accepted in the United States as applicable to governmental entities.

The statement of fiduciary net position provides information on the financial position of the Pool, BIF, and EIF for the fiscal year ended June 30, 2019. The statement of changes in fiduciary net position presents the results of the investing activities during the fiscal year ended June 30, 2019. The notes to the financial statements offer additional discussion that is essential to the full understanding of the data presented in the financial statements. The notes give more detail about accounting policies, significant account balances and activities, material risks, obligations, contingencies and subsequent events, if any.

Statements of Fiduciary Net Position

The following statements of fiduciary net position present the assets, liabilities, and net position held in trust (assets minus liabilities) of the Pool as of the end of each of the respective fiscal years and are point in time financial statements.

Statements of Fiduciary Net Position (External Pool)

	As of June 30	
	2019	**2018**
	(In Thousands)	
Assets		
Cash and cash equivalents	$ 440,357	$ 351,672
Securities lending collateral	1,946,595	709,909
Investments, at fair value	118,842,063	114,774,574
Receivables	767,772	450,692
Total assets	121,996,787	116,286,847
Liabilities		
Other payables	367,718	126,074
Obligations under securities lending	1,946,595	709,909
Total liabilities	2,314,313	835,983
Net Position		
Net position held in trust	$ 119,682,474	$ 115,450,864

The following statements of fiduciary net position present the assets, liabilities and net position held in trust (assets minus liabilities) of the BIF as of the end of each of the respective fiscal years and are point in time financial statements.

Statements of Fiduciary Net Position (BIF)

	As of June 30	
	2019	**2018**
	(In Thousands)	
Assets		
Investments, at fair value	$ 1,595,802	$ 1,533,104
Receivables	58,729	36,076
Total assets	1,654,531	1,569,180
Liabilities		
Other payables	43,749	25,978
Net Position		
Net position held in trust	$ 1,654,531	$ 1,569,180

Statements of Fiduciary Net Position (Continued)

The following statements of fiduciary net position present the assets, liabilities, and net position held in trust (assets minus liabilities) of the EIF as of the end of each of the respective fiscal years and are point in time financial statements.

Statements of Fiduciary Net Position (EIF)

	As of June 30	
	2019	2018
	(In Thousands)	
Assets		
Investments, at fair value	$ 634,147	$ 579,767
Total assets	634,147	579,767
Net Position		
Net position held in trust	$ 634,147	$ 579,767

Analysis of Statements of Fiduciary Net Position

Total investments in the Pool increased 3.5% to approximately $119 billion from approximately $115 billion during the fiscal year ended June 30, 2019, as gains from operations outpaced net share redemptions from the Pool.

Total investments in the BIF increased 4.1% to approximately $1.60 billion from $1.53 billion during the fiscal year ended June 30, 2019, as gains from operations outpaced net share redemptions.

Total investments in the EIF increased 9.4% to approximately $634 million from $580 million during the fiscal year ended June 30, 2019, as a result of gains from operations and net share purchases.

Statements of Changes in Fiduciary Net Position

The following statements of changes in net position present the net investment income earned by the Pool as well as expenses, net pension fund, and other withdrawals.

Statements of Changes in Fiduciary Net Position (Ext Pool)

	Fiscal Years Ended June 30	
	2019	2018
	(In Thousands)	
Additions		
Investment income		
Interest and dividend income	$ 2,253,719	$ 2,008,352
Net appreciation in fair value of investments	4,402,703	5,061,735
Other investment income	578,305	566,339
Securities lending income	39,513	19,158
Total investment income	7,274,240	7,655,584
Deductions		
Investment management expenses	488,173	543,299
Other and administrative expenses	78,011	82,597
Securities lending expenses	22,097	4,870
Total deductions	588,281	630,766
Net increase in net position resulting from operations	6,685,959	7,024,818
Distributions to participants		
Distributions paid and payable	(6,685,959)	(7,024,818)
Share transactions		
Reinvestment of distributions	6,684,798	7,025,144
Net share redemptions	(2,453,188)	(2,078,463)
Change in net position	4,231,610	4,946,681
Net position held in trust:		
Beginning of year	115,450,864	110,504,183
End of year	$ 119,682,474	$ 115,450,864

Statements of Changes in Fiduciary Net Position (Continued)

The following statements of changes in net position present the net investment income earned by the BIF as well as expenses and other purchases and withdrawals.

Statements of Changes in Fiduciary Net Position (BIF)

	Fiscal Years Ended June 30	
	2019	2018
	(In Thousands)	
Additions		
Investment income		
Interest and dividend income	$ 49,172	$ 47,251
Net appreciation (depreciation) in fair value of investments	70,746	(54,696)
Other investment income	178	113
Total investment income (loss)	120,096	(7,332)
Deductions		
Investment management expenses	348	266
Total deductions	348	266
Net increase (decrease) in net position resulting from operations	119,748	(7,598)
Distributions to participants		
Distributions paid and payable	(119,748)	7,598
Share transactions		
Reinvestment of distributions	119,748	(7,598)
Net share redemptions	(52,168)	(35,661)
Change in net position	67,580	(43,259)
Net position held in trust:		
Beginning of year	1,543,202	1,586,461
End of year	$ 1,610,782	$ 1,543,202

Statements of Changes in Fiduciary Net Position (Continued)

The following statements of changes in net position present the net investment income earned by the EIF as well as expenses and other purchases and withdrawals.

Statements of Changes in Fiduciary Net Position (EIF)

	Fiscal Years Ended June 30	
	2019	**2018**
	(In Thousands)	
Additions		
Investment income		
Interest and dividend income	$ 21	$ 81
Net appreciation in fair value of investments	36,525	45,811
Total investment income	36,546	45,892
Deductions		
Investment management expenses	83	109
Total deductions	83	109
Net increase in net position resulting from operations	36,463	45,783
Distributions to participants		
Distributions paid and payable	(36,463)	(45,783)
Share transactions		
Reinvestment of distributions	36,463	45,783
Net share purchases	17,917	122,147
Change in net position	54,380	167,930
Net position held in trust:		
Beginning of year	579,767	411,837
End of year	$ 634,147	$ 579,767

Analysis of Changes in Fiduciary Net Position

The Pool had total investment income of $7.3 billion in fiscal year 2019, a decrease of $0.4 billion from fiscal year 2018. The year over year decrease in total investment income was primarily attributable to a decrease in net appreciation. Net appreciation reflects realized and unrealized gains or losses. The Public Equity portfolio was the primary driver of the decrease in net appreciation. This decrease was due to lower total returns, as the Public Equity portfolio earned 5.1% in the current fiscal year, relative to 12.5% in the prior fiscal year. The LTIF portfolio offset some of the decrease in net appreciation caused by the lower returns in Public Equity, as the LTIF portfolio earned 9.7% in the current fiscal year, relative to a negative 0.6% in the prior fiscal year. Interest and dividend income for the Pool increased by $245.4 million relative to the prior fiscal year. The increase was primarily due to higher yields within the LTIF and STIF portfolios. Total deductions decreased by $42.5 million, which was largely attributable to decreases in overall investment management expenses. Investment management expenses include management and performance based fees paid to external investment managers. Net share redemptions from the Pool increased by $374.7 million.

The BIF had net appreciation in fair value of $70.7 million in fiscal year 2019, driven largely by falling yields. The fair value of bonds typically exhibit an inverse relationship to yields as a fall in yields results in a rise in fair value.

The EIF had net appreciation in fair value of $36.5 million as equity markets experienced positive returns over the fiscal year.

Legislative Restrictions

The State Treasurer is required to comply with the Sudan Divestment Act, North Carolina General Statutes §§ 147-86.41 through 147-86.49, which requires the State Treasurer to (i) develop and annually update a list of entities engaging in certain activities in Sudan, (ii) refrain from making investment in such companies, and (iii) divest from the same within 180 days of their being listed. The Iran Divestment Act, General Statutes §§ 147-86.55 through 147-86.63, is similar. It requires the State Treasurer to (i) develop and annually update a list of entities engaging in specific activities in Iran, (ii) refrain from contracting with or investing in such companies, and (iii) divest from the same within 180 days of their being listed. Indirect investments through structures such as index funds, commingled funds, limited partnerships, or derivative instruments are excepted from these two Acts under General Statutes §§ 147-86.42(5a) and 147-86.57(3), respectively.

The Divestment from Companies Boycotting Israel Act, North Carolina General Statutes §§ 147-86.80 through 147-86.84, functions similarly to the Sudan and Iran Divestment Acts. Specifically, pursuant to a policy adopted in compliance with the statute, the State Treasurer must not invest in companies on its list of those engaged in a "boycott of Israel," a statutorily-defined term. The State Treasurer is required to annually update the list and divest from such companies within 180 days of their being listed. In addition, listed companies are ineligible to contract with the State or any of its political subdivisions where the value of the contract is over $1,000.

Economic Discussion

Over the course of the year, the U.S. economy continued to grow, with falling unemployment rates and steady inflation. For the year ended June 30, 2019, Gross Domestic Product (GDP) adjusted for inflation and seasonality increased at a rate of 2.3%; the unemployment rate was 3.7%, consumer price inflation was 1.6% year over year; and core consumer price inflation (i.e., removing the volatile food and energy sectors) was 2.1% year over year. The Federal Reserve completed two rate hikes during the fiscal year, increasing the target federal funds rate by 0.25% each time in September and December 2018. After December, the Federal Reserve reversed course and signaled a pause on rate hikes with the possibility of rate cuts, as trade tensions escalated and economies across the globe began to show signs of weakness. The target federal funds rate ended the fiscal year at 2.25 to 2.50%. Despite a series of unexpected political events and global tensions throughout the fiscal year, including volatility at the end of 2018, markets remained relatively orderly, thanks in part to improving corporate profits and generally accommodative central bank policies around the globe. Over the course of the year, the price of West Texas Intermediate (WTI) crude oil fluctuated from a low of $45 to a high of $74 per a barrel. The price of WTI crude oil ended the year at $58 a barrel, down from $63 at the start of the year.

Given the shift from tightening to signaling a loosening of monetary policy by the Federal Reserve, slowdown in GDP growth, and a downtick in inflation, U.S. Treasury interest rates ended the fiscal year lower across the yield curve. The reduction in rates occurred over the entire curve starting around two-year rates and was most significant through the middle of the curve, with 10-year maturity rate falling 85 basis points, resulting in an inversion of the yield curve between three-month and ten-year rates. Investment grade corporate bonds (i.e., credit quality ratings) experienced a slight decrease in their yield premiums compared to similar duration U.S. Treasury bonds during the year, while noninvestment grade corporate bonds experienced a slight increase in their yield premiums. Domestic equity markets, as measured by the Russell 3000 index, experienced strong returns for the fiscal year, gaining nearly 9%. International equity markets, as measured by the Morgan Stanley Capital International All Country World Index (MSCI ACWI) ex US index, experienced much more modest returns, gaining nearly 2% for the year.

External Investment Pool Portfolio Discussion

The Investment Management Division of the Department of State Treasurer's goal is to strengthen and sustain the retirement systems by providing a long-term rate of return that approximates the actuarial rate of return while managing risk in the portfolio. The division conducts its activities in accordance with the Investment Policy Statement for the North Carolina Retirement Systems, which is approved by the State Treasurer in consultation with the Investment Advisory Committee. This policy covers investment objectives, asset allocation ranges, rebalancing processes and other issues.

It is the policy of the State Treasurer to invest consistent with the following objectives:

A. Provide investment returns sufficient for the pension fund to make timely payment of statutory benefits to current and future members and keep contribution rates at a reasonable level over the long-term. To achieve this, long-term projected investment returns should be generally consistent with the actuarial assumed rate of return unless otherwise determined by the State Treasurer.

B. Avoid excessive volatility in contribution rates over the intermediate-term by maintaining a moderate risk profile and diversifying with respect to economic and financial risk factors. It is acceptable to limit the use of return-seeking strategies in order to avoid excessive volatility.

C. Additionally:

1. Achieve cost-efficiency in the overall investment program
2. Exceed composite benchmark returns for the pension fund and broad categories of investments within reasonable risk limits and over market cycles
3. Ensure sufficient liquidity to meet the pension fund's obligations over all time periods
4. Comply with all governing statutes as consistent with fiduciary obligations

North Carolina's defined benefit plans are consistently ranked in the top ten of state retirement funding ratios.

The discussion below refers to classifications in the Investment Policy Statement. The Supplementary Information contains a mapping of the Investment Policy Statement's classifications to the statutory classifications.

The Total Pension Plan generated a total return of 6.6% for the fiscal year, outperforming the benchmark's 6.1% return.

The Public Equity portfolio generated a total return of 5.1% for the fiscal year, outperforming the benchmark's 4.4% return. The Domestic Equity portfolio returned 9.7% for the year, while the International Equity portfolio returned only 0.7%. As of June 30, 2019, nearly $16 billion of domestic equity securities were managed by the internal public equity team.

The Private Equity portfolio generated a total return of 12.1% for the fiscal year, outperforming the benchmark's 8.7% return. While all segments of the portfolio contributed positively to returns, the strongest gains came from the Venture Capital/Growth Equity strategies with a total return of 19.6%.

External Investment Pool Portfolio Discussion (Continued)

The Non-Core Real Estate portfolio generated a total return of 8.0% for the fiscal year, outperforming the benchmark's 4.4% return. The Core Real Estate portfolio generated a total return of 6.9%, outperforming the benchmark's 5.2% return. Real estate returns were supported by steady fundamentals and healthy capital markets during the year. While the pace of appreciation has moderated following several years of robust growth, demand for high quality, well-located assets with stable cash flows continued to outpace supply, which was supportive of returns. In addition, well-executed business plans for the Pool's investments contributed to benchmark outperformance in both the Non-Core and Core Real Estate asset classes.

The Opportunistic Fixed Income portfolio generated a total return of 4.1% for the fiscal year, outperforming the benchmark's 2.3% return. The portfolio's allocations to private debt strategies, bank loans, as well as structured and distressed credit, generated steady returns. Given the lower duration profile of the portfolio, the upside returns from rate decreases were rather muted.

The Investment Grade Fixed Income portfolio generated a total return of 8.9%, underperforming the benchmark's return of 9.2%. The portfolio was propelled by declining interest rates over the fiscal year.

The Pension Cash portfolio generated a total return of 2.3% for the fiscal year, outperforming the benchmark's 2.2% return.

The Inflation Sensitive portfolio generated a total return of 4.4% for the fiscal year, outperforming the benchmark's 2.9% return. The strongest component of the asset class on an absolute basis was Real Assets & Other Diversifiers, as lending, infrastructure, and secondary strategies generated strong returns. Inflation Linked Bonds also contributed positively to the asset class' return, as rates declined during the year.

The Multi-Strategy portfolio generated a total return of 3.3% for the fiscal year, outperforming the benchmark's 2.7% return. This outperformance was largely driven by the equity rebalancing strategy employed within the portfolio.

In July of 2019, a de-risking strategy was implemented within the Total Pension Plan. Due to continued concerns with the economic environment and with equity valuations, as well as a desire for additional downside protection, approximately $7.5 billion was reallocated from the Public Equity portfolio and into the Pension Cash portfolio.

BIF Portfolio Discussion

The BIF portfolio generated a total return of 7.9% for the fiscal year, in line with the benchmark return. This strong performance was mostly driven by price appreciation, as the 10 year treasury yield fell nearly 80 basis points while credit spreads remained relatively constant over the year. The BIF portfolio is designed to passively replicate the return and risk profile of the Bloomberg Barclays U.S. Aggregate Bond Index.

EIF Portfolio Discussion

The EIF generated a total return of 6.1% for the fiscal year, outperforming the benchmark's 5.7% return. The EIF portfolio is designed to passively replicate the return and risk profile of the Morgan Stanley Capital International All Country World Index. Both the portfolio and the benchmark benefited from strong domestic equity markets.

Request for Information

This financial report is designed to provide our citizens, taxpayers, customers, investors, and creditors with a general overview of the North Carolina Department of State Treasurer's investment finances and to demonstrate the accountability of the Department and State Treasurer for the money they receive. If you have questions about this report or need additional financial information, contact the North Carolina Department of State Treasurer, 3200 Atlantic Avenue, Raleigh, NC 27604, United States. The Department's website is www.nctreasurer.com and investment reports are available on that site at that address.

NORTH CAROLINA DEPARTMENT OF
STATE TREASURER INVESTMENT PROGRAMS
STATEMENT OF FIDUCIARY NET POSITION
AS OF JUNE 30, 2019
(IN THOUSANDS)

	External Investment Pool	Bond Index Investment Pool	Equity Index Investment Account
Assets			
Cash and cash equivalents	$ 440,357	$ -	$ -
Securities lending collateral	1,946,595	-	-
Investments, at fair value	118,842,063	1,595,802	634,147
Receivables:			
Accrued interest and dividends	418,994	10,239	-
Investments sold, but not settled	343,373	48,490	-
Other receivables	5,405	-	-
Total receivables	767,772	58,729	-
Total assets	121,996,787	1,654,531	634,147
Liabilities			
Accounts payable and accrued liabilities	18,823	-	-
Investments purchased, but not settled	348,895	43,749	-
Obligations under securities lending	1,946,595	-	-
Total liabilities	2,314,313	43,749	-
Net Position			
Fiduciary net position held in trust	$ 119,682,474	$ 1,610,782	$ 634,147

See accompanying Notes to Financial Statements.

NORTH CAROLINA DEPARTMENT OF
STATE TREASURER INVESTMENT PROGRAMS
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FISCAL YEAR ENDED JUNE 30, 2019

(IN THOUSANDS)

	External Investment Pool	Bond Index Investment Pool	Equity Index Investment Account
Additions:			
Investment income:			
Interest and dividend income	$ 2,253,719	$ 49,172	$ 21
Net appreciation			
in fair value of investments	4,402,703	70,746	36,525
Other investment income	578,305	178	-
Securities lending income	39,513	-	-
Total investment income	7,274,240	120,096	36,546
Deductions			
Investment management expenses	488,173	348	83
Administrative and other expenses	78,011	-	-
Securities lending expense	22,097	-	-
Total deductions	588,281	348	83
Net increase in net			
position resulting from operations	6,685,959	119,748	36,463
Distributions to participants			
Distributions paid and			
payable	(6,685,959)	(119,748)	(36,463)
Share transactions			
Reinvestment of distributions	6,684,798	119,748	36,463
Net share purchases (redemptions)	(2,453,188)	(52,168)	17,917
Change in net position	4,231,610	67,580	54,380
Fiduciary net position held in trust:			
Beginning of year	115,450,864	1,543,202	579,767
End of year	$ 119,682,474	$ 1,610,782	$ 634,147

See accompanying Notes to Financial Statements.

1. Financial Reporting Entity

The North Carolina Department of State Treasurer Investment Programs (State Treasurer Investments) contain deposits from funds and component units of the State of North Carolina, except for certain investments of the Escheat Fund and the Bond Proceeds Investment Accounts. State Treasurer Investments include the External Investment Pool (the Pool), the Bond Index Investment Pool (BIF), and the Equity Index Investment Account (EIF).

The primary participants of the Pool include Teachers' and State Employees' Retirement System, Consolidated Judicial Retirement System, Legislative Retirement System, Firefighters' and Rescue Squad Workers' Pension Fund, North Carolina National Guard Pension Fund, Local Governmental Employees' Retirement System, and Retiree Health Benefit Fund.

The Pool, a governmental set of investments of the Treasurer, consists of the following individual investment portfolios: Short-term Investment Fund (STIF), Long-term Investment Fund (LTIF), Equity Investment Portfolio, Real Estate Investment Portfolio, Alternative Investment Portfolio, Opportunistic Fixed Income Investment Portfolio, Cash Pool, and Inflation Sensitive Investment Portfolio. The Pool operates under General Statutes 147-69.1 to 147-69.3. The statutes address credit and other risks to which the Treasurer adheres in the management of the Pool. The deposits are commingled; therefore, the North Carolina Department of State Treasurer (the Treasurer) considers all investment portfolios listed above to be part of the Pool. The Pool is not a legally separate entity within the state of North Carolina. Also, the Pool is not registered with the Securities and Exchange Commission and is not subject to any formal oversight other than that of the legislative body of the state of North Carolina.

Participants in the BIF may include public hospitals, the local government other post employment benefit (OPEBs) trusts, the Law Enforcement Officer Special Separation Allowance trusts (LEOSSAs), the Death Benefit Plan of N.C., the Disability Income Plan of N.C., the Register of Deeds' Supplemental Pension Fund, and other funds and component units of the state of North Carolina with investment authority under General Statue 147-69.2. See Note 7 for additional information.

The EIF's primary participants are public hospitals, local government OPEBs, and LEOSSAs. See Note 8 for additional information.

The accompanying financial statements present only the net position of the State Treasurer Investments and do not purport to, and do not, present fairly the financial position of the state of North Carolina as of June 30, 2019 and the changes in its financial position for the year then ended in conformity with accounting principles generally accepted in the United States.

2. Summary of Significant Accounting Policies

Basis of Presentation

The accompanying financial statements were prepared in accordance with accounting principles generally accepted in the United States (GAAP) for governments as applicable to governmental units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and reporting principles.

Measurement Focus and Basis of Accounting

The financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded at the time liabilities are incurred, regardless of the timing of related cash flows.

Cash and Cash Equivalents

The Pool reports all cash on hand, deposits in banks including demand deposits, and restricted cash held by counterparties, as cash and cash equivalents. Restricted cash represents the Pool’s cash held by counterparties as collateral against the Pool’s derivatives. Cash held by counterparties as collateral is not available to the Pool for general operating purposes but may be applied against amounts due to derivative counterparties or returned to the Pool when the collateral requirements are exceeded or at the maturity of the derivatives. Cash equivalents are highly liquid investments with an original maturity of ninety days or less when purchased.

Securities Lending

Cash received as collateral on securities lending transactions is used to purchase investments. These investments are reported as securities lending collateral in the accompanying financial statements and are primarily repurchase agreements, which are reported at cost. A corresponding liability is also reported as obligations under securities lending in the accompanying financial statements of the Pool for the amount owed to the broker at the termination of the lending agreement. Income and expenses related to securities lending are reported at gross amount.

Valuation of Investments and Derivatives

Investments and derivatives are reported at fair value with significant exceptions noted below. Repurchase agreements and non-negotiable certificates of deposit in the STIF are reported at amortized cost which approximates fair value.

In the Pool, fair values are determined daily for the LTIF and Equity Investment portfolios, and quarterly for the Real Estate Investment and Alternative Investment portfolios. The Opportunistic Fixed Income Investment portfolio is valued quarterly except for hedge fund investments which are valued monthly. The Inflation Sensitive Investment portfolio consists primarily of limited partnerships which are valued quarterly. It also contains futures and fixed income securities which are valued daily or monthly. In the LTIF portfolio, the fair value of fixed income securities is calculated by a third-party pricing vendor based on future principal and interest payments discounted using market yields. For the Alternative Investment portfolio (private equity investment partnerships and hedge funds), the Real Estate Investment portfolio (limited partnerships and other investments), the Opportunistic Fixed Income Investment and Inflation Sensitive Investment portfolios (limited partnerships, hedge funds, and other nonpublicly traded investments) the methodology for determining an estimated fair value is established by the general partner, which may utilize a third-party pricing source or an independent real estate appraiser.

Valuation of Investments and Derivatives (Continued)

Contracts with these partnerships, hedge funds, and other investments require an annual audit, except for certain older investments that are immaterial to the financial statements.

For the BIF and EIF, fair values are determined daily. In addition, the fair values for the fixed income securities in the BIF are calculated by a third-party pricing vendor based on future principal and interest payments discounted using market yields.

The general partners' estimated fair values are based on the partnership's and fund's respective net asset values (NAV). The most significant input into the NAV of such an entity is the fair value of its holdings. These nonpublicly traded assets are valued at current fair value, taking into consideration the financial performance of the issuer, cash flow analysis, recent sales prices, market comparable transactions, a new round of financing, a change in economic conditions, and other pertinent information. The fair values of certain investments may require significant management judgment or estimation. Fair value is determined using the best information available for a hypothetical transaction at the measurement date, not using forced sale or fire sale pricing. Participants' shares sold and redeemed are determined in the same manner as is used to report investments, and the Treasurer does not provide or obtain legally binding guarantees to support share values. Net investment income earned by the Pool and BIF is generally distributed on a pro rata basis.

Forward foreign currency contracts and futures contracts are included in the Statements of Fiduciary Net Position as "Investments, at fair value." Investments, at fair value, incorporate unrealized gains or losses on outstanding forward foreign currency contracts and futures contracts. Gains or losses, incurred when forward foreign currency contracts and futures contracts entered into by the Pool mature or are closed out, are included in "Net appreciation (depreciation) in fair value of investments" in the Statements of Changes in Fiduciary Net Position.

Accounts Payable and Accrued Liabilities

Accounts payable and accrued liabilities include amounts due for administrative and investment management expenses.

Income Recognition

Investment transactions are accounted for on a trade (investment) date basis. Net appreciation (depreciation) in the fair value of investments consists of both the realized and unrealized gains or losses which include those resulting from the sale of assets during the year as well as changes in the fair market value of the investments held at fiscal year-end. Interest and dividend income is recorded on the accrual basis, with dividends accruing on the ex-dividend date.

Investment Management Expenses

The Investment Management Division (IMD) at the North Carolina Department of State Treasurer hires external investment managers to invest a significant portion of the investment assets. The State Treasurer typically pays investment management fees based on individually negotiated investment management agreements. The fees, usually paid quarterly, may be based on a sliding scale of the portfolio's net asset value at quarter-end, calculated by multiplying each level of net position by a specified basis point charge, or may be performance-related, typically associated with exceeding a market benchmark and/or hurdle rate. Fees are paid from the appropriate manager's portfolio and are recognized as an expense over the time period for which the fees are applicable. These charges are reported on the Statements of Changes in Net Fiduciary Position as part of the State Treasurer's investment management expenses.

Administrative and Other Expenses

Certain administrative expenses of the Pool are paid by the Treasurer. These expenses consist of charges to the individual funds administered by IMD and include custodial fees, bank charges, the Treasurer's allocated costs of administering the Pool, partnership expenses, and other costs of administering the investment portfolios. These charges are reported on the Statements of Changes in Fiduciary Net Position as part of the Pool's administrative and other expenses.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of income and expense during the reporting period. Actual results could differ from those estimates.

3. External Investment Pool Deposits and Investments

All deposits are cash and cash equivalents. As of June 30, 2019, the balance of the Pool's deposits was $440.4 million. Also at June 30, 2019, the amount of restricted cash held by the Pool was $14.5 million.

Unless specifically exempt, every agency of the state and certain component units are required by General Statute 147-77 to deposit moneys received with the Treasurer or with a depository institution in the name of the Treasurer. Deposits to the Pool may be made in any bank, savings and loan association, or trust company in the state as approved by the Treasurer. General Statute 147-79 requires depositories to collateralize all balances that are not FDIC insured. The depositories must maintain specified security types in a third-party escrow account established by the Treasurer.

The Treasurer is directed by statute to establish, maintain, administer, manage, and operate investment programs for the Pool's assets, pursuant to the applicable statutes. In doing so, the Treasurer has full powers as a fiduciary and, with IMD staff, manages the investment programs so assets may be readily converted into cash when needed.

3. External Investment Pool Deposits and Investments (Continued)

In establishing the comprehensive management program, the Treasurer, utilizing a professional investment staff, has developed an investment strategy for each portfolio that recognizes the guidelines of the governing General Statutes. In addition to the Treasurer and IMD staff managing these programs, the Investment Advisory Committee (IAC) provides opinions on policies and opinions on general strategy for the Pension Fund investments, including asset allocation, in consultation with IMD staff.

Investment Portfolios

The Pool invests in the following individual investment portfolios as of June 30, 2019:

Statutory Asset Allocation
(in Thousands)

Short-Term Investment Fund	$ 21,992,410
Long-Term Investment Fund	26,795,557
Equity Investment	40,501,273
Real Estate Investment	8,921,736
Alternative Investment	7,498,008
Opportunistic Fixed Income Investment	5,801,998
Inflation Sensitive Investment	6,266,816
Cash Pool	3,010,860
Total investments and securities lending collateral	$ 120,788,658

STIF – This fixed-income investment portfolio is the primary cash management account and is managed in such a manner as to be readily convertible into cash. The primary participants of this portfolio are the General Fund and the Highway Funds. Other participants may include universities and various boards, commissions, community colleges, and school administrative units that make voluntary deposits with the Treasurer as well as the remaining portfolios listed below. The Teachers' and State Employees' Retirement System, Consolidated Judicial Retirement System, Legislative Retirement System, Firefighters' and Rescue Squad Workers' Pension Fund, North Carolina National Guard Pension Fund, Local Governmental Employees' Retirement System, and Retiree Health Benefit Fund (collectively the North Carolina Retirement Systems) hold a cash allocation that is invested in STIF and provides liquidity for the Pool.

LTIF – This portfolio holds fixed-income investments, including Government National Mortgage Association (GNMA) certificates, corporate bonds, U.S. Treasuries, and U.S. agency obligations. Since the deposits in this fund are typically not needed for day-to-day operations, the investment vehicles used generally have a longer term and higher yield than those held in the STIF. The sole participants of the portfolio are the North Carolina Retirement Systems.

Equity Investment – This portfolio primarily holds an equity-based trust. The North Carolina Retirement Systems are the sole participants in the portfolio.

Investment Portfolios (Continued)

Real Estate Investment – This portfolio holds investments in real estate-based trust funds, limited partnerships and other limited liability investment vehicles, group annuity contracts, and accounts managed under contractual relationships giving an external investment manager discretion. The North Carolina Retirement Systems are the sole participants in the portfolio.

Alternative Investment – This portfolio holds investments in limited partnerships and other limited liability investment vehicles, hedge funds, and equities received in the form of distributions from its primary investments. The North Carolina Retirement Systems are the sole participants in the portfolio.

Opportunistic Fixed Income Investment – This portfolio holds investments in debt-related strategies made primarily through limited partnerships or other limited liability vehicles. The North Carolina Retirement Systems are the sole participants in the portfolio.

Inflation Sensitive Investment – This portfolio holds investments in assets that are acquired for the primary purpose of providing protection against risks associated with inflation made primarily through limited partnerships or other limited liability vehicles which hold fixed income securities including U.S. Treasuries and corporate bonds. The North Carolina Retirement Systems are the sole participants in the portfolio.

Cash Pool – The cash pool is managed in a manner to be readily convertible into cash. It holds a collective investment fund with a maturity of less than 60 days. The sole participants are the North Carolina Retirement Systems.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of debt instruments. There is no formally adopted investment policy to manage interest rate risk. Fixed income assets of the STIF are invested in a laddered maturity approach that focuses on short maturity securities with ample liquidity. The STIF had a weighted average maturity of 1.3 years as of June 30, 2019. Most of the cash and cash equivalents of the major governmental and enterprise funds are invested in this portfolio.

The Pool maintained by the Treasurer had the following investments and maturities in the STIF as of June 30, 2019:

		Investment Maturities (in Years)			
STIF	**Carry Amount**	**Less Than 1**	**1 to 5**	**6 to 10**	**More Than 10**
			(In Thousands)		
As of June 30, 2019					
U.S. treasuries	$ 5,976,532	$ 5,976,532	$ -	$ -	$ -
U.S. agencies	13,036,987	4,338,987	8,698,000	-	-
Securities purchased with cash collateral under securities lending program:					
Repurchase agreements	1,391,391	1,391,391	-	-	-
Repurchase agreements	1,580,000	1,580,000	-	-	-
Total short-term investment fund assets	$ 21,984,910	$ 13,286,910	$ 8,698,000	$ -	$ -

Excluded from this chart are non-negotiable certificates of deposit totaling $7.5 million.

Interest Rate Risk (Continued)

The assets of the LTIF are primarily invested in securities with maturities longer than five years. The longer maturity range is more sensitive to interest rate changes; however, the longer duration structure of the portfolio provides a better match to the long duration characteristics of the North Carolina Retirement Systems' liabilities. The Treasurer considers the maturity for interest rate risk purposes to be the length of time to the next reset date rather than the stated maturity. The LTIF had a weighted average maturity of 18.4 years as of June 30, 2019.

The LTIF holds investments in GNMA mortgage pass-through funds. Critical to the pricing of these securities are the specific features of the cash flows from the interest and principal payments of the underlying mortgages. Therefore, these valuations are sensitive to the potential of principal prepayments by mortgagees in periods of changing interest rates. Also, included within the LTIF are U.S. government agencies and corporate bonds which may carry call options in which the issuer has the option to prepay the principal at certain dates over the life of the security. As such, these types of securities are more sensitive to the decline in long-term interest rates than similar securities without call options. In addition to the corporate bonds with call options, there are corporate bonds with variable coupon rates that reset on specific dates. Critical to the cash flows and pricing of these securities are the changes in interest rates.

The Pool maintained by the Treasurer had the following investments and maturities in the LTIF as of June 30, 2019:

		Investment Maturities (in Years)			
LTIF	**Carry Amount**	**Less Than 1**	**1 to 5**	**6 to 10**	**More Than 10**
			(In Thousands)		
As of June 30, 2019					
U.S. treasuries	$ 7,067,754	$ -	$ 101,090	$ 3,191,649	$ 3,775,015
U.S. agencies	751,548	-	-	-	751,548
Mortgage pass-through	9,283,534	-	4,815	26,360	9,252,359
Securities purchased with cash collateral under securities lending program:					
Repurchase agreements	198,312	198,312	-	-	-
Domestic corporate bonds	9,494,409	57,523	430,490	4,263,127	4,743,269
Total long-term investment fund assets	$ 26,795,557	$ 255,835	$ 536,395	$ 7,481,136	$ 18,522,191

Interest Rate Risk (Continued)

The Other Investment Portfolios of the Pool (Equity, Real Estate, Alternative, Opportunistic Fixed Income, Cash Pool, and Inflation Sensitive) hold fixed income investments in U.S. treasuries, corporate bonds, and collective investment funds. The Pool maintained by the Treasurer had the following investments and maturities separated by Other Investment Portfolios as of June 30, 2019:

		Investment Maturities (in Years)			
Other Investment Portfolios	**Carry Amount**	**Less Than 1**	**1 to 5**	**6 to 10**	**More Than 10**
			(In Thousands)		
As of June 30, 2019					
U.S. treasuries	$ 312,073	$ 195,974	$ 116,099	$ -	$ -
Asset-backed securities	17,736	11,978	-	-	5,758
Commercial mortgage-backed securities	10,834	-		-	10,834
Collateralized mortgage obligations	77,949	40,985	277	-	36,687
Collective investment funds	3,323,981	3,323,981	-	-	-
Domestic corporate bonds	602,512	207,591	105,840	141,925	147,156
Foreign government bonds	10,722	-	5,950	4,545	227
Securities purchased with cash collateral under securities lending program:					
Asset-backed securities	25,431	25,431	-	-	-
Repurchase agreements	331,021	331,021	-	-	-
Total other investment portfolios assets	$ 4,712,259	$ 4,136,961	$ 228,166	$ 146,470	$ 200,662

The major investment classifications had the following attributes as of June 30, 2019:

As at June 30, 2019

Investment Classification	**Principal Amount**	**Range of Interest Rates**
	(In Thousands)	
STIF		
U.S. treasuries	$ 6,000,000	0.88%-2.38%
U.S. agencies	13,037,000	1.20%-2.92%
Securities purchased with cash collateral under securities lending program:		
Repurchase agreements	1,391,391	2.48%-2.62%
Repurchase agreements	1,580,000	2.45%-2.65%
LTIF		
U.S. treasuries	6,115,646	0.75%-7.63%
U.S. agencies	530,786	4.65%-7.13%
Mortgage pass-throughs	8,904,576	3.00%-9.00%
Securities purchased with cash collateral under securities lending program:		
Repurchase agreements	198,312	2.48%-2.62%
Domestic corporate bonds	8,583,209	1.85%-10.50%

Interest Rate Risk (Continued)

Investment Classification (Continued)	Principal Amount	Range of Interest Rates
	(In Thousands)	
Other investment portfolios		
U.S. treasuries	$ 314,761	0.00%-1.50%
Asset-backed securities	28,998	2.55%-5.79%
Commercial mortgage-backed securities	120,335	0.77%-5.57%
Collateralized mortgage obligations	114,898	1.44% - 6.50%
Collective investment funds	3,323,981	0.00%-2.41%
Domestic corporate bonds	977,701	0.00%-11.50%
Foreign government bonds	11,200	2.88% - 10.00%
Securities purchased with cash collateral under securities lending program:		
Asset-backed securities	26,056	2.53%-3.33%
Repurchase agreements	331,021	2.50%-2.62%

Credit Risk

Credit risk is the risk an issuer or other counterparty to an investment will not fulfil its obligations such as the chance that a bond issuer will fail to pay interest or principal in a timely manner, or that negative perceptions of the issuer's ability to make these payments will cause security prices to decline. These circumstances may arise due to a variety of factors such as financial weakness, bankruptcy, litigation, and/or adverse political developments. Certain fixed income securities, including obligations of the U.S. government or those explicitly guaranteed by the U.S. government, are not considered to have credit risk.

General Statute 147-69.1 limits credit risk by restricting the STIF's corporate obligations, asset-backed securities, and commercial paper to securities that bear the highest rating of at least one nationally recognized rating service and do not bear a rating below the highest by any nationally recognized rating service.

The STIF had the following credit quality distribution for securities with credit exposure as of June 30, 2019:

STIF	Aaa/AAA	Aa/AA	A	Baa/BBB	Less than Investment Grade	Unrated
			(In Thousands)			
As of June 30, 2019						
U.S. agencies	$ -	$ 13,036,987	$ -	$ -	$ -	$ -
Securities purchased with cash collateral under securities lending program:						
Repurchase agreements	-	1,391,391	-	-	-	-
Repurchase agreements	-	1,580,000	-	-	-	-
Total short-term investment fund assets	$ -	$ 16,008,378	$ -	$ -	$ -	$ -

Excluded from this chart are securities exempt from credit risk such as U.S. Treasuries and GNMAs.

Also excluded from this chart are non-negotiable certificates of deposit totaling $7.5 million.

Credit Risk (Continued)

General Statute 147-69.2 specifies the cash investment options for the LTIF and limits credit risk by restricting the LTIF's asset-backed securities and corporate obligations to securities that bear one of the four highest ratings of at least one nationally recognized rating service when acquired. In the LTIF, all holdings were rated BBB (or equivalent) or higher at the time of purchase by at least one of the nationally recognized rating agencies.

The LTIF had the following credit quality distribution for securities with credit exposure as of June 30, 2019:

LTIF	Aaa/AAA	Aa/AA	A	Baa/BBB	Less than Investment Grade	Unrated
			(In Thousands)			
As of June 30, 2019						
U.S. agencies	$ -	$ 751,548	$ -	$ -	$ -	$ -
Domestic corporate bonds	69,195	954,474	4,483,631	3,742,613	244,496	-
Securities purchased with cash collateral under securities lending program:						
Repurchase agreements	-	198,312	-	-	-	-
Total long-term investment fund assets	$ 69,195	$ 1,904,334	$ 4,483,631	$ 3,742,613	$ 244,496	$ -

Excluded from this chart are securities exempt from credit risk such as U.S. Treasuries and GNMAs.

The Other Investment Portfolios of the Pool had the following credit quality distribution for securities with credit exposure as of June 30, 2019:

Other Investment Portfolios	Aaa/AAA	Aa/AA	A	Baa/BBB	Less than Investment Grade	Unrated
			(In Thousands)			
As of June 30, 2019						
Asset-backed securities	$ -	$ -	$ 2,398	$ 2,360	$ 12,978	$ -
Commercial mortgage-backed securities	3,579	2,909	2,032	430	1,542	342
Collateralized mortgage obligations	277	27,588	-	-	39,980	10,104
Collective investment funds	-	-	-	-	-	3,323,981
Domestic corporate bonds	7,059	21,256	14,081	175,223	242,766	142,127
Foreign government bonds	-	-	981	6,172	3,569	-
Securities purchased with cash collateral under securities lending program:						
Asset-backed securities	-	23,033	-	-	2,398	-
Repurchase agreements	-	331,021	-	-	-	-
Total other investment portfolios assets	$ 10,915	$ 405,807	$ 19,492	$ 184,185	$ 303,233	$ 3,476,554

Excluded from this chart are securities exempt from credit risk such as U.S. Treasuries and GNMAs.

Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a bank failure, the Pool's deposits may not be recovered. As of June 30, 2019, the Pool's deposits were exposed to custodial credit risk for non-negotiable certificates of deposit in the amount of $7.5 million. The non-negotiable certificates of deposit were uninsured and were collateralized with securities not in the name of the Treasurer and held by an agent.

For an investment, custodial credit risk is the risk that, in the event of the failure of the counterparty, the Treasurer will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. As of June 30, 2019, the investments purchased with cash collateral under the securities lending programs of $1.947 billion were not exposed to custodial credit risk since the securities were held by the counterparty in separate accounts in the name of the Treasurer. All other investments of the Pool were not exposed to custodial credit risk at year-end. There is no formally adopted investment policy to manage custodial credit risk for these investment types.

The Treasurer's deposit policy for custodial credit risk is limited to complying with the collateralization rules of the North Carolina Administrative Code (Chapter 20 NCAC 7). The collateral securities must be governmental in origin (e.g., U.S. Treasury, U.S. agency, Federal Home Loan Bank letters of credit, or state and local government obligations) or the highest-grade commercial paper, surety bonds and bankers' acceptances. The market value of the collateral must not be less than the value of the uninsured deposits. The depositories may elect to collateralize deposits separately (dedicated method) or include deposits of the North Carolina local government units in a collateral pool with the state and certain component units (pooling method).

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Mutual funds, money market funds, and external pooled accounts are excluded from this disclosure requirement. Obligations explicitly guaranteed by the U.S. Government are not considered to have credit risk. However, more than 5% of the Pool's securities were invested in Federal Home Loan Mortgage Corporation. These investments totaled $8.3 billion and comprised 7% of the Pool's total investments. These investments are held primarily by the STIF and LTIF portfolios and are classified as U.S. Agencies. Effective June 30, 2019 there is no formal policy regarding concentration of credit risk.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. There is no formally adopted investment policy to limit foreign currency exposure.

The Pool had the following exposure to foreign currency risk as of June 30, 2019:

	Carrying Value As of June 30, 2019				
	Investment Type				
Currency	Equity Based Trust - International	Alternative Investment - Private Equity Investment Partnerships	Real Estate Trust Funds	Opportunistic Fixed Income Investment Partnership	Total
	(In Thousands)				
Euro	$ 3,959,764	$ 265,334	$ 56,990	$ 52,339	$ 4,334,427
Japanese Yen	2,763,763	-	34,126	-	2,797,889
Pound Sterling	1,884,106	58,259	285,381	-	2,227,746
Hong Kong Dollar	1,229,010	-	67,282	-	1,296,292
Swiss Franc	1,026,629	-	2,964	-	1,029,593
Australian Dollar	584,816	-	14,515	-	599,331
Swedish Krona	391,612	-	4,899	-	396,511
Danish Krone	324,252	-	-	-	324,252
Canadian Dollar	186,979	-	9,068	-	196,047
Singapore Dollar	182,786	-	10,850	-	193,636
South Korean Won	143,930	-	-	-	143,930
Indian Rupee	131,982	-	1,245	-	133,227
New Taiwan Dollar	122,089	-	-	-	122,089
Brazil Cruzeiro Real	87,762	-	4,817	-	92,579
Norwegian Krone	64,538	-	617	-	65,155
S. African Rand	30,677	-	6,374	-	37,051
New Zealand Dollar	32,860	-	204	-	33,064
Mexican Peso	26,189	-	3,708	-	29,897
Chinese Yuan Renminbi	23,132	-	734	-	23,866
Malaysian Ringgit	20,222	-	2,419	-	22,641
Indonesian Rupiah	20,327	-	1,425	-	21,752
Thai Baht	16,197	-	4,114	-	20,311
Israeli Shekel	18,868	-	256	-	19,124
Philippines Peso	2,906	-	6,872	-	9,778
UAE Dirham	7,056	-	977	-	8,033
Other Currencies	17,493	-	1,164	-	18,657
Total investments subject to foreign currency risk	$ 13,299,945	$ 323,593	$ 521,001	$ 52,339	$ 14,196,878

The Pool recognized an aggregate foreign currency transaction loss of $331.9 million for the fiscal year ended June 30, 2019 as part of the Pool's net appreciation in fair value of investments. Transaction gains or losses result from a change in exchange rates between the U.S. dollar and the currency in which a foreign currency transaction is denominated.

4. External Investment Pool Fair Value Measurement

The Pool categorizes fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy levels are summarized in the three broad levels listed below:

Level 1 – Unadjusted quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs and significant value drivers are observable.

Level 3 – Valuations derived from valuation techniques in which significant value drivers are unobservable.

4. External Investment Pool Fair Value Measurement (Continued)

The Pool had the following recurring fair value measurements as of June 30, 2019:

Investments and Derivative Instruments at Fair Value

		Fair Value Measurements Using		
	As of June 30, 2019	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Investments measured at fair value		*(In Thousands)*		
STIF				
U.S. Treasuries	$ 5,976,532	$ -	$ 5,976,532	$ -
U.S. Agencies	13,036,987	-	13,036,987	-
Subtotal	19,013,519	-	19,013,519	-
LTIF				
U.S. Treasuries	7,067,754	-	7,067,754	-
U.S. Agencies	751,548	-	751,548	-
Mortgage pass-through	9,283,534	-	9,283,534	-
Securities purchased with cash collateral under fixed income securities lending program:				
U.S. agencies	-	-	-	-
Domestic corporate bonds	-	-	-	-
Domestic corporate bonds	9,494,409	-	9,494,409	-
Foreign government bonds	-	-	-	-
Subtotal	26,597,245	-	26,597,245	-
Other investment portfolios				
U.S. Treasuries-inflation	312,073	-	312,073	-
Asset-backed securities	17,736	-	17,736	-
Collateralized mortgage obligations	77,949	-	77,949	-
Commercial mortgage-backed securities	10,834	-	10,834	-
Securities purchased with cash collateral under equity securities lending program:				
U.S. Treasuries	-	-	-	-
U.S. agencies	-	-	-	-
Asset-backed securities	25,431	-	25,431	-
Euro certificates of deposit	-	-	-	-
Yankee certificates of deposit	-	-	-	-
Bank notes	-	-	-	-
Equity securities - domestic	19,572,982	19,572,982	-	-
Equity securities - foreign	14,922,686	14,922,686	-	-
Equity securities - preferred domestic	32,710	11,100	-	21,610
Equity securities - preferred foreign	62,528	62,528	-	-
Domestic corporate bonds	602,512	-	538,857	63,655
Foreign government bonds	10,722	-	10,722	-
Subtotal	35,648,163	34,569,296	993,602	85,265
Investment derivative instruments				
Futures contracts	6,239	6,239	-	-
Futures contracts (liability)	(3,221)	(3,221)	-	-
Total investment derivative instruments	3,018	3,018	-	-
Total investments by fair value level	$ 81,261,945	$ 34,572,314	$ 46,604,366	$ 85,265

4. External Investment Pool Fair Value Measurement (Continued)

Investments measured at the Net Asset Value (NAV)

		Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period (days)
Commingled international equity funds [(1)]	$ 4,062,197	$ -	Daily	1
Commingled real estate funds [(2)]	803,367	-	Daily, quarterly	1 - 60
Core real estate funds [(3)]	4,484,252	439,520	Quarterly, illiquid	90-illiquid
Equity rebalancing [(4)]	1,642,093	-	Daily	1 - 5
Hedge funds				
Global public equity - hedged [(5)]	617,705	-	Daily, monthly, quarterly, illiquid	3 - 180
Inflation sensitive - real assets and other diversifiers [(6)]	142,695	-	Quarterly	60
Multi-strategy funds [(7)]	135,746	-	Weekly, quarterly, illiquid	5 - illiquid
Opportunistic fixed income - distressed credit [(8)]	110,683	-	Illiquid	Illiquid
Opportunistic fixed income - hedged fixed income [(9)]	2,742,828	18,752	Monthly, quarterly, annually	15 - 90
Inflation protected bonds [(10)]	410,218	-	Monthly	30
Long-only public equity [(11)]	964,549	-	Illiquid	Illiquid
Non-core real estate funds [(12)]	3,253,544	1,315,171	Illiquid	Illiquid
Private credit [(13)]	2,948,487	811,257	Daily, annually, illiquid	60 - illiquid
Private equity funds [(14)]	5,435,920	2,220,969	Illiquid	Illiquid
Private infrastructure funds [(15)]	641,781	24,029	Illiquid	Illiquid
Private multi-strategy funds [(16)]	270,697	95,025	Illiquid	Illiquid
Private natural resources funds [(17)]	2,670,196	704,251	Illiquid	Illiquid
Private real asset funds [(18)]	1,357,550	999,507	Illiquid	Illiquid
Collective investment funds [(19)]	3,323,981	-	Daily	1
Total investments at the NAV	36,018,489			
Subtotal	117,280,434			
Certificates of deposit (non-negotiable)	7,500			
Repurchase agreements	3,500,724			
Investments at amortized cost	3,508,224			
Total investments and securities lending collateral	$ 120,788,658			

4. External Investment Pool Fair Value Measurement (Continued)

(1) *Commingled International Equity Funds* Six funds. Each are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

(2) *Commingled Real Estate Funds* Two funds. Each are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments.

(3) *Core Real Estate Funds* Eighteen funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments include a mix of predominately U.S. domiciled equity and debt investments in core commercial real estate. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(4) *Equity rebalancing* One fund. This investment is valued at NAV per share. This investment is an options-based equity-rebalancing program used as a tool to maintain asset exposures within *plan policy portfolio tolerances.*

(5) *Hedge funds – Global Public Equity-Hedged* Four funds. These investments are valued at the NAV per share, and may include various equity-based hedge fund strategies.

(6) *Hedge Funds - Inflation Sensitive-Real Assets and Other Diversifiers* One fund. This investment is valued at NAV per share. These investments may include infrastructure, real assets (e.g. ships, airplanes, rail cars, mines, real estate, etc.), royalties, and combinations of any of this and other investments whose primary purpose is providing protection against risks associated with inflation. Currently, the strategy represented in this category is one which invests in a combination of equity and debt instruments of companies which derive at a minimum 50% of their revenues from energy infrastructure and natural resources.

(7) *Hedge Funds - Multi-Strategy Funds* Two funds. These investments are valued at NAV per share. These investments have the flexibility to invest across markets, asset classes, commodities, and currencies, including hedging. Strategies may include opportunistic, event-driven, relative value, global macro, rebalancing, tail hedging, and overlays.

(8) *Hedge Funds - Opportunistic Fixed Income-Distressed Credit* One fund. This investment is valued at NAV per share. These investments may include strategies that trade distressed debt, but occasionally actively participate in restructuring and seek control post-reorganization of target issuers. These strategies may have equity exposure.

(9) *Hedge Funds - Opportunistic Fixed Income - Hedged Fixed Income* Ten funds. These investments are valued at NAV per share. These investments include hedged implementations of market neutral strategies, relative value strategies, and multi-strategy (i.e., predominantly fixed income) utilizing non-investment grade instruments.

4. External Investment Pool Fair Value Measurement (Continued)

(10) *Inflation Protected Bonds* One fund. This investment is valued at NAV per share. These strategies may invest in Treasury Inflation Protected Securities, non-U.S. inflation linked bonds, or floating rate debt. Currently, the strategy represented in this category is one which invests primarily in publicly traded securities, but also has the ability to invest up to 15% in private investments.

(11) *Long-only Public Equity* Two funds. These investments are valued at NAV per share. These investments may include publicly traded U.S. equity, non-U.S. equity, and global equity securities held in long-only vehicles. Currently, the strategies represented in this category have a North American focus, which takes an activist role in investing. As such, its portfolio will tend to be concentrated in its positioning. ***These strategies have multi-year initial lockups. Funds may be withdrawn as of the last day of each calendar year following the expiration of the initial lockup period, provided that 90 days written notice is given.*

(12) *Non-Core Real Estate Funds* 76 funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments include a mix of global equity and debt investments in commercial and residential real estate, and each strategy falls into one of three major categories: Value (with a target allocation of 50%), Opportunistic (with a target allocation of 50%) and Special Situations (with a target allocation of 0%). These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(13) *Private Credit Funds* 27 funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments include a mix of non-investment grade or unrated obligations, debt securities and asset-backed securities, including but not limited to bank loans, high yield, mortgage-backed securities, convertibles, whole loans, mezzanine debt, credit default swaps, collateralized debt obligations and sovereign debt. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(14) *Private Equity Funds* 113 funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments include a mix of buyout, venture capital, growth equity, and private special situations vehicles. All investments fall into one of three major categories: Growth (with a target allocation of 20%), Buyout (with a target allocation of 50%), and Special Situations (with a target allocation of 30%). These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(15) *Private Infrastructure Funds* Three funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These strategies invest in various infrastructure-related markets including but not limited to utilities, transportation, energy, and communication. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

4. External Investment Pool Fair Value Measurement (Continued)

(16) *Private Multi-Strategy Funds* Two funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments have the flexibility to invest across markets, asset classes, commodities, and currencies, including hedging. Strategies may include opportunistic, event-driven, relative value, global macro, rebalancing, tail hedging, and overlays. Currently the strategy represented in this category is considered opportunistic and will tactically invest across a broad range of investible assets. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(17) *Private Natural Resources Funds* 30 funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These strategies make non-public equity or debt investments in timberland, energy, agriculture, and other natural resources implementations. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(18) *Private Real Asset Funds* 13 funds. These investments are valued using net assets valued as of the previous quarter end, plus current quarter cash flows. These investments represent a mix of strategies including ships, airplanes, rail cars, mines, real estate, and other markets whose primary purpose is providing protection against risks associated with inflation. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of 5-10 years.

(19) *Collective Investment Funds* One fund. This is invested in the BNY Mellon EB Temporary Investment Fund. This fund primarily invests in instruments issued by the U.S. Government and Federal agencies, short-term corporate obligations, commercial paper, and certificates of deposit. The average weighted maturity of these funds does not exceed 60 days.

Valuation Methodologies and Inputs

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

Level 2 U.S. Treasuries are evaluated by using data from several live feeds which include active market makers and inter-dealer brokers. Sources are reviewed on the basis of their historical accuracy for individual issues and maturity ranges.

Level 2 U.S. Agencies, which are primarily mortgage pass-through securities, use a dealer derived to-be-announced (TBA) security as a benchmark, plus a dollar (or pay up) adjustment which is based on market data for the underlying collateral. When the underlying TBA is not applicable or observable, a discounted cash flow is calculated using a spread to the treasury curve based on applicable market data and internally generated long-term speed.

Valuation Methodologies and Inputs (Continued)

Level 2 mortgage pass-through securities are evaluated on interest rate movements and other market data to derive spread, yield and/or price data as appropriate allowing data points to be extrapolated for application across a range of related securities.

Level 2 bonds are priced using both spread-based and priced-based evaluations. For spread-based evaluations, an option adjusted spread model is developed incorporating credit risk and based on the new issue market, secondary trading, and dealer quotes. For priced-based evaluations, evaluators use recently executed transactions of similar securities and dealer quotes to arrive at appropriate pricing. These methods also are used to value Canadian government bonds, which make up foreign government bonds classified as Level 2.

Level 2 asset-backed securities are priced using a model which considers days to final maturity to generate a yield based on the relevant curve for the security. Adjustments to the yield can be made as market conditions warrant. Days are counted from settlement to final maturity using the relevant settlement convention for each market. A bid evaluation is calculated from these inputs.

Level 2 collateralized mortgage obligations and commercial mortgage-backed securities are evaluated using predicted cash flows, adjusted by an applicable spread/yield/price adjustment incorporating benchmark yields, collateral performance, and prevailing market conditions.

Level 3 bonds are priced using broker quotes. Level 3 equity securities are priced using manager pricing.

5. External Investment Pool Securities Lending

Based on General Statute 147-69.3(e), the Treasurer lends securities from its Pool to broker-dealers and other entities (borrowers) for collateral that will be returned for the same securities in the future. The Treasurer’s custodian manages the securities lending program for the internally managed fixed income portfolios and for the equity based trust. During the year, the securities lending program lent U.S. government and agency securities, corporate bonds, equity securities and notes for collateral. The program is permitted to receive cash, U.S. government, and agency securities as collateral for the securities lent.

The collateral is initially pledged at 102% of the market value of the domestic securities lent in both the fixed income portfolios and the equity based trust and 105% of the market value of foreign securities lent in the equity based trust program. Additional collateral is required if its value falls to less than 100% of the market value of the securities lent. There are no restrictions on the amount of loans that can be made. Substantially all security loans can be terminated on demand by either the Treasurer or the borrower. The Treasurer cannot pledge or sell the collateral securities received unless the borrower defaults.

The cash collateral received is invested by the lending provider and held in a separate account in the name of the Treasurer. The policies for investments purchased with cash collateral under the securities lending program are set forth in the contract with the lending provider. The weighted average maturities of the cash collateral investments do not match the weighted average maturities of the securities loans as current securities lending guidelines require collateral to be invested in overnight investments and loan maturities are extended beyond overnight in an effort to stabilize loan balances. At June 30, 2019, the weighted average maturity of all securities loans was two days.

5. External Investment Pool Securities Lending (Continued)

As of June 30, 2019, the Treasurer had no credit risk exposure to borrowers because the amounts the Treasurer owed the borrowers exceeded the amounts the borrowers owed the Treasurer. The lending provider is contractually obligated to indemnify the Treasurer for certain conditions, the most important is default on the part of the borrowers.

As of September 15, 2016, securities purchased with cash collateral under the current securities lending guidelines are limited to repurchase agreements and shares in money market funds registered under the Investment Company Act of 1940 and that comply with Rule 2a-7. The securities pledged as collateral for repurchase agreements are limited to securities issued or guaranteed by the U.S. government or its agencies. All counterparties for repurchase agreements must have a short-term debt rating of at least A2, P2, or F2 by at least one of the nationally recognized statistical rating organizations.

Under prior securities lending contractual guidelines, additional flexibility was given with regards to acceptable assets purchased with cash collateral. As of June 30, 2019, a total of $25.4 million remained in securities approved under prior guidelines, consisting of asset-backed securities. These securities will remain in the account until maturity or until sold. The weighted average maturity of investments, including the securities purchased under prior guidelines, was one day.

As of June 30, 2019, the fair value of loaned securities was $7.3 billion; the fair value of the associated collateral was $7.5 billion of which $1.9 billion was cash.

6. External Investment Pool Derivatives

Derivative instruments are securities that derive value from another asset and are in the form of a contract between two or more parties. Common derivatives are futures contracts, forward contracts, options, and swaps.

The Pool maintained by the Treasurer has investments in equity and commodity futures, foreign currency forward and spot currency contracts. All of these derivative instruments are designated as investment derivatives; they are used to implement portfolio strategies, capture valuation opportunities, and to exploit market inefficiencies. The primary risks managed by using these derivative instruments include foreign exchange rate and market price risks.

Futures contracts are standardized, exchange-traded contracts to purchase or sell a specific financial instrument at a predetermined price. Gains and losses on futures contracts are settled daily based on underlying principal value and do not involve an actual transfer of the specific instrument. The exchange assumes the risk that the counterparty will not pay and generally requires margin payments to minimize such risk. Futures are generally used to achieve the desired market exposure of a security or index or to rebalance the total portfolio.

6. External Investment Pool Derivatives (Continued)

Forward currency contracts are agreements to exchange the currency of one country for the currency of another country at an agreed-upon price and settlement date. These forward commitments are not standardized and carry credit risk due to the possible non-performance of one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened; however, the likelihood of such a loss is remote. In addition to forward currency contracts, the Pool also utilizes spot currency contracts. Spot currency contracts are used primarily for trade settlement and currency repatriation.

As of June 30, 2019 the counterparties' credit ratings for forward currency contracts that are subject to credit risk had a rating of no less than BBB by one of the nationally recognized ratings agencies.

The following table is a summary of derivative instrument activity during the fiscal year and balances at year-end, classified by type with notional amount for the year ending June 30, 2019:

	Increase (Decrease) in in Fair Value		Fair Value		
Investment Derivatives	**Classification**	**Amount (In U.S. $)**	**Classification**	**Amount (In U.S. $)**	**Notional (In U.S. $)**
		(In Thousands)			
Foreign equity futures a)	Investment Income	$ 520	Investment	$ 520	$ 37,725
Commodity futures b)	Investment Income	2,498	Investment	2,498	207,968
Forward currency contracts	Investment Income	91	Investment	91	79,515
Spot currency contracts	Investment Income	(7)	Investment	(7)	17,721

a) 5.2 million Australian Dollar; 14.0 million Euro; 1,054.7 million Japanese Yen; 6.6 million British Pound Sterling.

b) 529,000 barrels of Brent crude oil; 154,000 barrels of West Texas Intermediate crude oil; 10,580,000 pounds live cattle; 5,292,000 gallons gasoline; 16,400 fine troy ounces gold.

6. External Investment Pool Derivatives (Continued)

Schedule of all foreign derivatives outstanding at June 30, 2019 are presented below by currency:

Fair value of foreign currency contracts, Assets (Liabilities)
As of June 30, 2019

Currency (In Thousands)	Forward Currency Contracts	Spot Currency Contracts	Foreign Equity Futures	Total
Australian Dollar	$ 22	$ -	$ 44	$ 66
Brazilian Real	(2)	-	-	(2)
British Pound Sterling	27	(5)	91	113
Canadian Dollar	9	-	-	9
Chilean Peso	(2)	-	-	(2)
Chinese Yuan	(10)	-	-	(10)
Euro	4	3	407	414
Hong Kong Dollar	7	(1)	-	6
Indian Rupee	2	-	-	2
Indonesian Rupiah	(24)	-	-	(24)
Japanese Yen	6	(1)	(22)	(17)
Malaysian Ringgit	1	-	-	1
Mexican Peso	2	-	-	2
New Zealand Dollar	(1)	-	-	(1)
Norwegian Krone	(13)	1	-	(12)
Philippine Peso	(5)	-	-	(5)
Singapore Dollar	6	-	-	6
South African Rand	7	(2)	-	5
Swedish Krona	(12)	-	-	(12)
Swiss Franc	61	-	-	61
Thai Baht	2	(1)	-	1
Turkish Lira	4	(1)	-	3
Total	$ 91	$ (7)	$ 520	$ 604

7. Bond Index Investment Pool

North Carolina Department of State Treasurer provides an external government sponsored bond index investment pool (BIF) in which the Treasurer is authorized to invest funds for governmental entities which are outside the Retirement Systems. The BIF invests in high quality debt securities eligible under General Statute 147-69.2(b) (1)-(6). The BIF consists of a separate account managed by a fund manager selected by the Department of State Treasurer.

The deposits are commingled; and therefore, the State Treasurer considers all funds to be part of a single pool. The BIF contains deposits from funds and component units of the state of North Carolina reporting entity as well as deposits from certain legally separate organizations outside the state of North Carolina reporting entity. The BIF is not registered with the Securities and Exchange Commission and is not subject to any formal oversight other than that of the legislative body of the state of North Carolina.

7. Bond Index Investment Pool (Continued)

Participants in the BIF may include public hospitals, Law Enforcement Officer Special Separation Allowance trusts (LEOSSAs), local government Other Post Employment Benefit trusts (OPEBs), the Death Benefit Plan of N.C., the Disability Income Plan of N.C., the Register of Deeds' Supplemental Pension Fund, and other funds and component units of the state of North Carolina with investment authority under General Statue 147-69.2.

At June 30, 2019, there were twenty OPEBs, three LEOSSAs, and one hospital participating in the BIF.

Net investment income earned by the BIF is distributed on a pro rata basis to all participants on a monthly basis net of fees.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of debt instruments. There is no formally adopted investment policy to manage interest rate risk. The BIF had a weighted average effective maturity of 7.81 years as of June 30, 2019.

The BIF maintained by the Treasurer had the following investments and maturities as of June 30, 2019:

		Investment Maturities (in Years)			
Bond Index	**Carry Amount**	**Less Than 1**	**1 to 5**	**6 to 10**	**More Than 10**
			(In Thousands)		
As of June 30, 2019					
U.S. Treasuries	$ 627,411	$ -	$ 361,342	$ 156,994	$ 109,075
U.S. Agencies	22,846	-	7,707	11,550	3,589
Commercial mortgage-backed securities	28,547	-	-	841	27,706
Asset-backed securities	8,081	-	7,073	1,008	-
Mortgage pass-through	434,124	-	-	13,237	420,887
Collective investment funds	15,395	15,395	-	-	-
Municipal bonds	10,816	-	181	693	9,942
Domestic corporate bonds	394,367	-	135,967	115,845	142,555
Foreign government bonds	54,215	-	34,416	14,281	5,518
Total investment fund assets	$ 1,595,802	$ 15,395	$ 546,686	$ 314,449	$ 719,272

Interest Rate Risk (Continued)

The major investment classifications had the following attributes as of June 30, 2019:

As at June 30, 2019

Investment Classification	Principal Amount	Range of Interest Rates
	(In Thousands)	
Bond Index		
U.S. Treasuries	$ 601,231	1.13%-6.88%
U.S. Agencies	21,035	2.38%-6.25%
Commercial mortgage-backed securities	27,322	1.68%-4.12%
Asset-backed securities	8,100	1.59%-2.29%
Mortgage pass-through	418,767	2.50%-5.50%
Collective investment funds	15,395	0.94%
Municipal bonds	8,105	3.00%-7.55%
Domestic corporate bonds	371,081	1.38%-9.25%
Foreign government bonds	52,250	1.13%-8.13%

Credit Risk

Credit risk is the risk an issuer or other counterparty to an investment will not fulfil its obligations such as the chance that a bond issuer will fail to pay interest or principal in a timely manner, or that negative perceptions of the issuer's ability to make these payments will cause security prices to decline. These circumstances may arise due to a variety of factors such as financial weakness, bankruptcy, litigation, and/or adverse political developments. Certain fixed income securities, including obligations of the U.S. government or those explicitly guaranteed by the U.S. government, are not considered to have credit risk.

General Statute 147-69.2 specifies the cash investment options for the BIF and limits credit risk by restricting the BIF's asset-backed securities and corporate obligations to securities that bear one of the four highest ratings of at least one nationally recognized rating service when acquired. In the BIF, all holdings were rated BBB (or equivalent) or higher at the time of purchase by at least one of the nationally recognized rating agencies.

Credit Risk (Continued)

The BIF had the following credit quality distribution for securities with credit exposure as of June 30, 2019:

Bond Index	Aaa/AAA	Aa/AA	A	Baa/BBB	Less than Investment Grade	Unrated
			(In Thousands)			
As of June 30, 2019						
U.S. Agencies	$ -	$ 22,846	$ -	$ -	$ -	$ -
Commercial mortgage-backed securities	27,706	841	-	-	-	-
Asset-backed securities	8,081	-	-	-	-	-
Mortgage pass-through	-	327,080	-	-	-	-
Collective investment funds	15,395	-	-	-	-	-
Municipal bonds	604	6,012	2,768	1,432	-	-
Domestic corporate bonds	2,091	27,557	125,844	221,312	17,563	-
Foreign government bonds	29,443	4,297	6,736	13,739	-	-
Total investment fund assets	$ 83,320	$ 388,633	$ 135,348	$ 236,483	$ 17,563	$ -

Excluded from this chart are securities exempt from credit risk such as U.S. Treasuries and GNMAs.

Custodial Credit Risk

Custodial credit risk is the risk that, in the event of the failure of the counterparty, the Treasurer will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. As of June 30, 2019, the investments of the BIF were not exposed to custodial credit risk since the securities were held in separate accounts in the name of the Treasurer. There is no formally adopted investment policy to manage custodial credit risk for these investment types.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Mutual funds, money market funds, and external pooled accounts are excluded from this disclosure requirement. Obligations explicitly guaranteed by the U.S. Government are not considered to have credit risk. However, more than 5% of the BIF's securities were invested in Federal Home Loan Mortgage Corporation (FHLMC) and Federal National Mortgage Association (FNMA). FHLMC investments totaled $114 million and comprised 7.1% of BIF's total investments; FNMA investments totaled $237 million and comprised 14.9% of BIF's total investments. FHLMC investments are classified as U.S. Agencies and FNMA investments are classified as Mortgage pass-throughs. At June 30, 2019, there is no formal policy regarding concentration of credit risk.

Fair Value Measurement

The BIF categorizes fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The BIF had the following recurring fair value measurements as of June 30, 2019:

Investments and Derivative Instruments at Fair Value

		Fair Value Measurements Using		
	As of June 30, 2019	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
Investments measured at fair value		*(In Thousands)*		
Bond Index Fund				
U.S. Treasuries	$ 627,411	$ -	$ 627,411	$ -
U.S. Agencies	22,846	-	22,846	-
Asset-backed securities	8,081	-	8,081	-
Commercial mortgage-backed securities	28,547	-	28,547	-
Mortgage pass-through	434,124	-	434,124	-
Municipal bonds	10,816	-	10,816	-
Domestic corporate bonds	394,367	-	394,367	-
Foreign government bonds	54,215	-	54,215	-
Total investments by fair value level	$ 1,580,407	$ -	$ 1,580,407	$ -

Investments measured at the Net Asset Value (NAV)		Unfunded commitments	Redemption frequency	Redemption notice (days)
Collective investment fund (1)	15,395	-	Daily	1
Total investments	$ 1,595,802			

(1) One fund. This fund invests in a diversified portfolio of U.S. government securities, U.S. government agency securities, and repurchase agreements. It is operated on an amortized cost basis, and transacts at $1.00 per unit.

Valuation Methodologies and Inputs

Level 2 U.S. Treasuries are evaluated by using data from several live feeds which include active market makers and inter-dealer brokers. Sources are reviewed on the basis of their historical accuracy for individual issues and maturity ranges.

Level 2 U.S. Mortgage pass-through securities use a dealer derived to-be-announced (TBA) security as a benchmark, plus a dollar (or pay up) adjustment which is based on market data for the underlying collateral. When the underlying TBA is not applicable or observable, a discounted cash flow is calculated using a spread to the treasury curve based on applicable market data and internally generated long-term spread.

Level 2 domestic corporate bonds are priced using both spread-based and priced-based evaluations. For spread-based evaluations, an option adjusted spread model is developed incorporating credit risk and based on the new issue market, secondary trading, and dealer quotes. For price-based evaluations, evaluators use recently executed transactions of similar securities and dealer quotes to arrive at appropriate pricing. These methods are also used to value Canadian government bonds. For non-US/Canadian foreign government bonds, the majority of issues are evaluated using discounted cash flow models, incorporating option-adjusted features as appropriate.

8. Equity Index Investment Account

The State Treasurer has contracted with an external party (Trustee) to create the equity index investment account (EIF). Participation in this equity index investment account consists of deposits from funds of the state of North Carolina reporting entity as well as public hospital trusts, LEOSSAs, and local government other post-employment benefit trust (OPEB) funds. These funds and trusts are part of a commingled equity index investment trust (Trust). The Trustee manages the assets in the Trust primarily in equity and equity-based securities in accordance with the General Statutes. The Trustee maintains custody of the underlying securities in the name of the Trust, services the securities, and maintains all related accounting records.

Pursuant to General Statute 159-30.1, the State Treasurer manages the OPEB trusts' assets. These trusts are established for local governments, public authorities, any entity eligible to participate in the state's Local Governmental Employees' Retirement System, and local school administrative units. Eligible participants make voluntary contributions to the trusts for the purpose of depositing and investing all or part of the contribution from their other post-employment benefit plans. As of June 30, 2019 there were 25 participants of which 22 participate in the EIF. Each participant is responsible for making its own investment decision with respect to the allocation of assets between investment options.

The State Treasurer also manages the public hospitals' assets. As of June 30, 2019, there were four participants consisting of the Margaret R. Pardee Hospital Trust, New Hanover Regional Medical Center Trust, Columbus Regional Healthcare Trust, and Watauga Medical Center Trust. One public hospital is also a participant in the BIF.

Custodial Credit Risk

Custodial credit risk is the risk that, in the event of the failure of the counterparty, the Treasurer will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. As of June 30, 2019, the investments of the EIF were not exposed to custodial credit risk. There is no formally adopted investment policy to manage custodial credit risk for these investment types.

Fair Value Measurement

EIF investments, a commingled global equity index fund, are valued at the net asset value of units held at the end of the period based upon the fair value of the underlying investments. As of June 30, 2019, the EIF had a recurring fair value measurement of $634.1 million. The redemption frequency of the EIF is daily, with a two-day redemption notice.

9. Commitments and Contingencies

The Treasurer has entered into contracts with external fund managers of the Real Estate Investment, Alternative Investment, Inflation Sensitive Investment, and Opportunistic Fixed Income Investment portfolios, where the Treasurer agrees to commit capital to these investments. The unfunded balances of these capital commitments by fund type are presented as unfunded commitments in the Investments measured at the Net Asset Value (NAV) table in Note 4. The portfolios are part of the Treasurer's Pool as described in Note 3.

The Treasurer is a defendant in legal proceedings and claims arising out of the ordinary course of business. The Treasurer believes it has adequate legal defenses and that the ultimate outcome of these actions will not have a material adverse effect on the State Treasurer Investment Programs' financial position.

Introduction

The financial statements include investments managed by the Treasurer. The tradition of conservative fiscal management has served North Carolina's public workers and taxpayers well throughout the years. The Teachers' and State Employees' Retirement System, Consolidated Judicial Retirement System, Legislative Retirement System, Firefighters' and Rescue Squad Workers' Pension Fund, North Carolina National Guard Pension Fund, Local Governmental Employees' Retirement System, and Retiree Health Benefit Fund (collectively NCRS) continue that tradition with a significant allocation in fixed income assets (bonds) combined with reasonable exposure to more volatile growth-oriented assets and a diversified portfolio. The result of this strategy is a fund that obtains lower returns than the typical large public fund peer in strong equity markets, but is a top performer in turbulent economic and financial market environments.

NCRS comprised 85% of the total net position of the Pool. Following is a discussion of the Investment Policy Statement and management and incentive fees paid relative to NCRS.

Investment Policy Statement

The pension fund investments are allocated according to the Investment Policy Statement (IPS), which was finalized during fiscal year 2014 and became effective July 1, 2014. Periodically, the Investment Management Division conducts an asset liability study utilizing updated capital market assumptions, and presents the results to the Treasurer and the Investment Advisory Committee. There have been no changes to the asset allocation policy since July 1, 2014. The table below maps the investment policy statement's classifications to the statutory classifications which are used to prepare the financial statements as of June 30, 2019. The numbers only reflect net position of the NCRS funds in the statutory asset classes excluding securities lending. The Investment Portfolios chart in Note 3 for these portfolios reflects gross investments for all of the State Treasurer Pool.

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	Statutory Classification									
IPS Classification	Public Equity [1]	Long Term [2]	Pension Cash [2]	Fixed Income [2,8]	Alternatives [3]	Real Estate [4]	Inflation Sensitive [5]	Opportunistic Fixed Income [6]	Public Equity Limited Liability [7]	Total
					(In Thousands)					
Public Equity	$38,694,567								$1,582,257	$40,276,824
Private Equity					$5,457,524					5,457,524
Non-Core Real Estate						$3,298,098				3,298,098
Opportunistic Fixed Income								$5,803,272		5,803,272
Investment Grade Fixed Income and Cash		$26,967,154		$3,080,343						30,047,497
Pension Cash			$3,121,454							3,121,454
Inflation Sensitive							$6,279,734			6,279,734
Core Real Estate						5,673,270				5,673,270
Multi-Strategy					2,048,536					2,048,536
Total	$38,694,567	$26,967,154	$3,121,454	$3,080,343	$7,506,060	$8,971,368	$6,279,734	$5,803,272	$1,582,257	$102,006,209

[1] NCGS 147-69.2(b)(8)(a),(c)
[2] NCGS 147-69.1(c) and NCGS $ 147-69.2(b)(1)-(6b)
[3] NCGS 147-69.2(b)(9)
[4] NCGS 147-69.2(b)(7)
[5] NCGS 147-69.2(b)(9a)
[6] NCGS 147-69.2(b)(6c)
[7] NCGS 147-69.2(b)(8)(b)
[8] Consists solely of investments in STIF

As of June 30, 2019
NCRS assets only

Cost

The IMD utilizes external managers for a portion of the Retirement Systems. Over time, the department, with advice and counsel of the Investment Advisory Committee, has used a lower risk and lower cost approach to investing the Retirement Systems when compared to peers. While costs have risen somewhat over time as more diverse external investment strategies were pursued, the all-in cost of investing the North Carolina Retirement Systems remains modest and IMD continues to seek out cost-efficiencies in their operations.

Management and Incentive Fees for the External Investment Pool

The management and incentive fees incurred to external investment managers, by asset class, were as follows for the year ended June 30, 2019.

Total Investment Management Fees Incurred as of June 30, 2019

Asset Classification	Management Fees	Incentive Fees	Total Fees	Portfolio Market Value (1)	Ratio of Fees to Market Value
		(In Thousands)			
Public Equity	$ 60,363	$ 3,302	$ 63,665	$ 40,276,824	0.16%
Private Equity	58,634	80,272	138,906	5,457,524	2.55%
Non-Core Real Estate	43,621	33,875	77,496	3,298,098	2.35%
Opportunistic Fixed Income	50,382	25,912	76,294	5,803,272	1.31%
Investment Grade Fixed Income and Cash	-	-	-	30,047,497	0.00%
Pension Cash	-	-	-	3,121,454	0.00%
Inflation Sensitive	48,411	14,855	63,266	6,279,734	1.01%
Core Real Estate	33,415	29,140	62,555	5,673,270	1.10%
Multi-Strategy	5,991	-	5,991	2,048,536	0.29%
Total	$ 300,817	$ 187,356	$ 488,173	$ 102,006,209	

(1) **NCRS assets only**

In addition to the fees shown in this table, internal administrative expenses of the Pool and trade transaction costs (for the internally managed fixed income portfolio) are paid by the Treasurer. These charges are reported on the Statements of Changes in Fiduciary Net Position.

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Expenses Paid: Management and Incentive Fee ($ Billions of Average Market Value)

	0 bps	0 - 25bps	25 - 50bps	50 - 100bps	100 - 150bps	150+bps	Total
				(In Thousands)			
Public Equity	$ 14,574,001	$ 11,288,920	$ 10,761,797	$ 965,323	$ 197,458	$ 383,346	$ 38,170,845
Private Equity	673,388	40,553	415,197	1,345,921	989,354	1,894,851	5,359,264
Non-Core Real Estate	35,323	36,519	45,957	701,746	789,680	1,646,999	3,256,224
Opportunistic Fixed Income	67,212	-	1,457,634	1,595,845	1,477,822	1,132,599	5,731,112
Investment Grade Fixed Income & Cash	28,351,851	-	-	-	-	-	28,351,851
Pension Cash	3,967,407	-	-	-	-	-	3,967,407
Inflation Sensitive	376,572	216,536	1,453,191	1,553,396	1,213,055	1,446,291	6,259,041
Core Real Estate	134,167	738,502	806,239	2,602,800	461,154	726,204	5,469,066
Multi-Strategy	375	-	1,574,403	267,851	139,856	-	1,982,485
Total Fund	$ 48,180,296	$ 12,321,030	$ 16,514,418	$ 9,032,882	$ 5,268,379	$ 7,230,290	$ 98,547,295

Expenses Paid: Management and Incentive Fee (% of Asset Class Average Market Value)

	0 bps	0 - 25bps	25 - 50bps	50 - 100bps	100 - 150bps	150+bps	Total
Public Equity	38.18%	29.57%	28.19%	2.53%	0.53%	1.00%	100.00%
Private Equity	12.56%	0.76%	7.75%	25.11%	18.46%	35.36%	100.00%
Non-Core Real Estate	1.08%	1.12%	1.41%	21.55%	24.25%	50.59%	100.00%
Opportunistic Fixed Income	1.17%	0.00%	25.43%	27.85%	25.79%	19.76%	100.00%
Investment Grade Fixed Income & Cash	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Pension Cash	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
Inflation Sensitive	6.02%	3.46%	23.22%	24.81%	19.38%	23.11%	100.00%
Core Real Estate	2.45%	13.50%	14.74%	47.60%	8.43%	13.28%	100.00%
Multi-Strategy	0.02%	0.00%	79.42%	13.51%	7.05%	0.00%	100.00%
Total Fund	48.88%	12.50%	16.76%	9.17%	5.35%	7.34%	100.00%

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Fee Type by Contract (Asset Class Average Market Value)

	No Fees	Management Only	Incentive Only	Management & Incentive	Total
			(In Thousands)		
Public Equity	$ 13,788,519	$ 22,901,430	$ 32,323	$ 1,448,570	$ 38,170,842
Private Equity	105,850	16,935	-	5,236,479	5,359,264
Non-Core Real Estate	-	-	-	3,256,225	3,256,225
Opportunistic Fixed Income	-	298,342	-	5,432,770	5,731,112
Investment Grade Fixed Income & Cash	28,351,851	-	-	-	28,351,851
Pension Cash	3,967,407	-	-	-	3,967,407
Inflation Sensitive	133,321	1,212,229	189,675	4,723,817	6,259,042
Core Real Estate	-	1,201,445	-	4,267,622	5,469,067
Multi-Strategy	-	1,574,403	-	408,082	1,982,485
Total Fund	$ 46,346,948	$ 27,204,784	$ 221,998	$ 24,773,565	$ 98,547,295

Fee Type by Contract (% of Asset Class Average Market Value)

	No Fees	Management Only	Incentive Only	Management & Incentive	Total
Public Equity	36.12%	60.01%	0.08%	3.79%	100.00%
Private Equity	1.98%	0.32%	0.00%	97.70%	100.00%
Non-Core Real Estate	0.00%	0.00%	0.00%	100.00%	100.00%
Opportunistic Fixed Income	0.00%	5.21%	0.00%	94.79%	100.00%
Investment Grade Fixed Income & Cash	100.00%	0.00%	0.00%	0.00%	100.00%
Pension Cash	100.00%	0.00%	0.00%	0.00%	100.00%
Inflation Sensitive	2.13%	19.37%	3.03%	75.47%	100.00%
Core Real Estate	0.00%	21.97%	0.00%	78.03%	100.00%
Multi-Strategy	0.00%	79.42%	0.00%	20.58%	100.00%
Total Fund	47.02%	27.61%	0.23%	25.14%	100.00%

Average Market Value

The market value of investments held by investment managers are averaged monthly from July 1, 2018 to June 30, 2019. This schedule is presented in average market value because it measures the performance of an investment manager over the past year, instead of ending market value where the performance is measured as of June 30, 2019. Note: The Investment Returns schedule is reported at ending market value and the External Investment Pool Fee Schedule by Basis Points and the External Investment Pool Fee Schedule-Fee Type by Contract are presented at average market value. Thus, the asset market values reported on these schedules will not agree.

Management Fee

A management fee represents a charge by the investment manager as consideration for serving as a delegated fiduciary with respect to investment duties and powers assigned under a contract. Generally, this fee is expressed as an annual fixed percentage of some base value. Depending on the type of investment structure and strategy, this base value can be a function of the market value of the investments, cost basis of the investments, or the total capital that the investment manager may request under a contractual commitment.

Incentive Fee

An incentive fee represents a profit sharing arrangement with the investment manager as consideration for serving as a delegated fiduciary with respect to investment duties and powers assigned under a contract. These profit sharing arrangements may also be referred to as carried interest or a performance fee. Depending on the type of investment structure and strategy, incentive fees can be charged against all profits earned or applied only to the profits above an agreed upon level that is often referred to as a hurdle rate of return. Incentive fees can be paid annually based on realized and/or unrealized profits, at agreed to interim milestones, or paid only as a measure of realized profits (i.e., generally all are subject to certain criteria and conditions). The incentive fees shown in the preceding tables represent paid incentive fees. They do not include accrued incentive fees.

Fund of Funds

Consistent with industry convention, cost figures do not include the fees and expenses of investment managers that are held within fund of fund vehicles.

Investment Returns and Peer Comparison Information

The following other supplementary information includes a discussion of the retirement system's risk and returns compared to benchmarks and comparisons to peer cost benchmarks. The tables below relate to NCRS as defined in the Introduction section of Supplementary Information.

As of June 30, 2019, the NCRS had the following investment returns over applicable one, three, five and ten-year periods:

Investment Returns as of June 30, 2019 (%, Net of Fees)

Asset Classification	1 Year	3 Year	5 Year	10 Year
Growth	5.91	11.59	6.95	10.76
Benchmark	4.88	9.91	5.64	9.77
Public Equity	5.11	12.07	6.47	11.01
Benchmark	4.43	10.88	5.74	10.20
Private Equity	12.12	12.68	10.34	10.70
Benchmark	8.71	10.53	8.41	12.15
Non-Core Real Estate	8.01	11.63	13.33	8.91
Benchmark	4.39	6.85	7.16	6.11
Opportunistic Fixed Income	4.09	7.40	3.33	9.35
Benchmark	2.27	4.01	1.05	3.57
Rates & Liquidity	8.17	2.46	3.27	5.13
Benchmark	8.96	2.55	3.53	5.12
Investment Grade Fixed Income and Cash	8.88	2.65	3.44	5.22
Benchmark	9.21	2.59	3.63	5.16
Pension Cash	2.28	1.55	1.19	-
Benchmark	2.21	1.35	0.84	-
Inflation Sensitive & Diversifiers	5.56	7.66	4.16	3.08
Benchmark	3.97	4.57	3.32	3.11
Inflation Sensitive	4.35	7.52	1.51	(1.08)
Benchmark	2.94	3.11	(0.77)	(0.67)
Core Real Estate	6.92	7.87	7.83	8.72
Benchmark	5.16	6.31	8.34	8.43

Investment Returns as of June 30, 2019 (%, Net of Fees) (Continued)

Asset Classification (Continued)	1 Year	3 Year	5 Year	10 Year
Multi-Strategy	3.33	7.52	4.45	8.23
Benchmark	2.67	6.84	3.41	6.81
Total Pension Plan	6.58	8.21	5.49	8.44
Implementation Benchmark	6.11	7.18	4.83	7.85
Long-Term Policy Benchmark	6.18	7.02	4.48	7.63

The Growth benchmark used is a blend of the Public Equity, Private Equity, Non-Core Real Estate, and Opportunistic Fixed Income benchmarks at their policy weights. The Public Equity benchmark is a dynamically weighted combination of the MSCI ACWI IMI Net (Long-Only) and a beta adjusted MSCI ACWI IMI Net (Hedged Equity). Private Equity's benchmark is comprised of the following Burgiss Group Private iQ indices: 50% Buyout, 20% Venture Capital, and 30% Distressed. The Non-Core Real Estate benchmark is comprised of the following Burgiss Group Private iQ indices: 80% U.S. Non-Core Real Estate (Opportunistic and Value-Added) and 20% Non-U.S. Non-Core Real Estate (Opportunistic and Value-Added). Opportunistic Fixed Income's benchmark is comprised of 50% HFRX Distressed Securities Index, 20% HFRX Relative Value Index, 15% Credit Suisse Leveraged Loan Index, and 15% BOAML High Yield Index.

The overall Rates & Liquidity benchmark is a blend of the Investment Grade Fixed Income & Cash and Pension Cash benchmarks at their policy weights. The benchmark used for Investment Grade Fixed Income & Cash is comprised of 10% iMoneyNet First Tier Institutional Money Market Funds Net Index and 90% custom BOAML Core Investment Grade Index. The Custom BOAML index is comprised of the following weightings: 30% BOAML 5+ Years Governments, 35% BOAML 5+ Years Investment Grade Corporates, and 35% BOAML Mortgage Master. The Pension Cash benchmark used is the iMoneyNet First Tier Institutional Money Market Net Index.

The Inflation Sensitive & Diversifiers benchmark used is a blend of the Inflation Sensitive and Core Real Estate benchmarks at their policy weights. The Inflation Sensitive benchmark is a dynamically weighted combination of the Bank of America Merrill Lynch 1-3 Years U.S. Inflation-Linked Treasury Index (TIPS), the Bloomberg Commodities Index (Commodities), and a combination of benchmarks of investments classified within Private Natural Resources or Other Real Assets and Diversifiers. The Core Real Estate Benchmark is comprised of 80% NCREIF ODCE Net and 20% FTSEEPRA NAREIT Global Index.

The Multi-Strategy benchmark is comprised of a dynamically weighted combination of the HFRX ED: Multi-Strategy Index, net of fees, and the market value weighted benchmarks for any other total fund strategies within the portfolio.

The Benchmarks used for the total plan are the Implementation and Long-Term Policy Benchmarks. The Implementation Benchmark is a blend of the asset class benchmarks at policy weights. It is currently as follows: 58% Growth, 29% Rates and Liquidity, 11% Inflation Sensitive & Diversifiers, and 2% Multi-Strategy. Lastly, the Long-Term Policy Benchmark is comprised of 57% MSCI ACWI IMI Net, 33% BOAML 5+ Years U.S. Treasury Index, 6% Bloomberg Commodity Index, and 4% BOAML 1-3 Years U.S. Inflation-Linked Treasury Index.

Peer Comparison of Returns and Risks

The below chart outlines the one, three, five and ten-year average returns and exposure to risk within the different percentiles of public funds in comparison to the performance and exposure to risk of the North Carolina Retirement System.

National Peer Data on Gross of Fees Returns and Exposure to Risk as of June 30, 2019 (%)

	1 Year	3 Year	5 Year	10 Year
Returns				
25th Percentile	7.65	9.66	6.92	9.86
Median	6.79	9.37	6.37	9.38
75th Percentile	6.35	9.19	6.09	8.99
NC Pension Fund	7.03	8.73	6.05	8.98
Risk*				
25th Percentile	9.48	6.42	6.51	7.65
Median	8.11	5.66	5.83	7.02
75th Percentile	6.90	4.84	5.12	6.09
NC Pension Fund	6.85	4.66	5.06	6.14

Source: BNY Mellon Total Funds - Public Funds $20+ Billion (Gross of Fees)

* Volatility of Returns (Standard Deviation)

Peer Cost Comparison

For the years ended December 31, 2018 and 2017, the Treasurer's cost of investment can be compared to the median peer amount utilizing the following table.

Cost of Investment Compared to Peers as of December 31

Total (bps)

	2018	2017
Median Peer	54.5	59.8
North Carolina Retirement Systems	35.0	42.9
Percentile	8%	15%

Source: CEM [Cost Effectiveness Measurement]. Note that 2018 data is based upon preliminary CEM data as of September 25, 2019. CEM benchmarking methodology excludes certain fees that are reported by the Pool, but not reported by most peers. See text below.

For the calendar years ended 2018 and 2017, the peer group consisted of 14 U.S. public pension funds managing $47 billion to $155 billion, and 14 U.S. public pension funds managing $48 billion to $170 billion, respectively. For the calendar year ended December 31, 2018, the median peer managed $79 billion versus North Carolina's $98 billion. For the calendar year ended December 31, 2017, the median peer managed $87 billion versus North Carolina's $94 billion. The CEM benchmarking methodology excludes carry/performance fees for private investments because some peers do not provide such data. All such fees and expenses have been deducted from all reported investment returns. The CEM methodology differs from that used by the Department in preparing the data in the section titled "Management and Incentive Fees."