SHELBY COUNTY RETIREMENT SYSTEM

FINANCIAL STATEMENTS

June 30, 2020 and 2019

Watkins Uiberall
Certified Public Accountants
Independent Member of BKR International

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SHELBY COUNTY, TENNESSEE
SHELBY COUNTY RETIREMENT SYSTEM

June 30, 2020

ROSTER OF MANAGEMENT OFFICIALS

Mathilde Crosby	Director of Finance & Administration
Jesse Turner	Manager of Pension Investments
Brenda Greene	Deputy Administrator of Human Resources
Nicole Taylor	Manager of Pension Administration

ROSTER OF BOARD MEMBERS

Lee Harris, Mayor
Craig Cardwell
Shelandra Ford
Debra Gates
LaSonya Hall
Eddie Jones
James B. Martin
Mathilde Crosby
Christine Richards
Wanda Richards
Van Turner

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INDEPENDENT AUDITOR'S REPORT

To the Chairman and Members of the Shelby County
Retirement System Board of Administration
Shelby County Retirement System
Memphis, Tennessee

Report on the Financial Statements

We have audited the accompanying statements of fiduciary net position of the Shelby County Retirement System as of June 30, 2020 and 2019, the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements, which collectively comprise the Shelby County Retirement System's 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.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audits. 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 auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Shelby County Retirement System as of June 30, 2020 and 2019, and the changes in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1, the financial statements present only the Shelby County Retirement System and do not purport to, and do not, present fairly the financial position of Shelby County, Tennessee, as of June 30, 2020 and 2019; the changes in its financial position; or its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America. Our opinions are not modified with respect to this matter.

Other Matters

Required Supplementary Information

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

Other Information

Our audits were conducted for the purpose of forming opinions on the financial statements that collectively comprise Shelby County Retirement System's basic financial statements. The introductory section is presented for purposes of additional analysis and is not a required part of the financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 23, 2020, on our consideration of the Shelby County Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of the 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 Shelby County Retirement System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Governmental Auditing Standards* in considering the Shelby County Retirement System's internal control over financial reporting and compliance.

Watkins Uhlmann, PLLC

Memphis, Tennessee
December 23, 2020

SHELBY COUNTY RETIREMENT SYSTEM

MANAGEMENT'S DISCUSSION AND ANALYSIS

JUNE 30, 2020

This discussion and analysis of the Shelby County Retirement System ("SCRS" or the "Plan") financial performance provides a narrative overview and analysis of the Plan's financial activities and funding conditions for the fiscal year ending June 30, 2020. Please read it in conjunction with the Plan's financial statements, which follow this section.

Financial Highlights

- The Plan Net Position held in trust for pension benefits at June 30, 2020 was $1,179 million, which decreased $45 million, or 3.7%, from the Plan Net Position at June 30, 2019. The Plan Net Position at June 30, 2019 was $1,224 million, which increased $33 million, or 2.7%, from the Plan Net Position at June 30, 2018.

- Cash and cash equivalents at June 30, 2020 were $43 million, which increased $1 million, or 1.8%, from cash and cash equivalents at June 30, 2019. Cash and cash equivalents at June 30, 2019 were the same $42 million as at June 30, 2018.

- Contributions for fiscal year 2020 decreased by $1 million, or 1.7%, to $77 million from fiscal year 2019. Contributions for fiscal year 2019 increased by $8 million, or 12.1%, to $78 million from fiscal year 2018.

- Net investment loss for fiscal year 2020 totaled $(20) million, a decrease of $71 million, or 139.9%, from fiscal year 2019. Net investment income for fiscal year 2019 totaled $51 million, a decrease of $21 million, or 29.2%, from fiscal year 2018.

- Benefit payments, member refunds and administrative expenses totaled $102 million for fiscal year 2020, an increase of $5 million, or 5.5%, from fiscal year 2019. Benefit payments, member refunds and administrative expenses totaled $97 million for fiscal year 2019, an increase of $6 million, or 6.5%, from fiscal year 2018.

Overview of the Financial Statements

The basic financial statements of the Plan are the Statements of Plan Fiduciary Net Position, the Statements of Changes in Fiduciary Net Position, and notes to the financial statements. This report also contains required supplementary information in addition to the basic financial statements. Statements are shown for the most recent and previous fiscal years for comparison and analysis to changes in individual line items. The statements are presented using the accrual basis of accounting in the accordance with the Government Accounting Standards Board ("GASB") Statement No. 67.

The Statements of Plan Fiduciary Net Position are a measure of the Plan assets, deferred outflows of resources, liabilities, and deferred inflows of resources at the close of the fiscal years. Total assets plus deferred outflows of resources, less total liabilities, less deferred inflows of resources equal fiduciary net position.

The Statements of Changes in Plan Fiduciary Net Position present how the Plan's net position changed during the fiscal years as a result of contributions, investment income (loss), benefit payments, refunds, and administrative expenses.

The Plan pays retirement benefits using a defined formula based on the years of service, salary, and age. The Plan also provides for disability and survivor benefits.

The Notes to the Financial Statements are a fundamental part of the financial statements and provide important information to support the amounts in the financial statements. The notes describe accounting policies along with plan description and benefits.

The Required Supplementary Information consists of a Schedule of Changes in the Net Pension Liability and Related Ratios, a Schedule of Employer Contributions, a Schedule of Investment Returns, and related notes concerning the actuarial assumptions.

Analysis of Plan Fiduciary Net Position

At June 30, 2020, the net position was $1,179 million. The value of the net position decreased by $45 million, or 3.7%, from $1,224 million at June 30, 2019. The decrease was due primarily to the decreasing market value of the assets held for fiscal year 2020. At June 30, 2019, the value of the net position increased by $33 million, or 2.7%, from $1,192 million at June 30, 2018.

As of June 30, 2020, cash and cash equivalents were $43 million, which increased $1 million, or 1.8%, from cash and cash equivalents at June 30, 2019. As of June 30, 2019, cash and cash equivalents were the same $42 million as of June 30, 2018.

The Plan's assets consist primarily of investments in domestic and international equities, government securities, corporate bonds, mutual funds, collateralized mortgage obligations, mortgage-backed pooled securities, limited partnerships, hedge funds, private real estate and real assets, and infrastructure funds. At June 30, 2020, investments totaled $1,136 million, which represents a decrease of $49 million, or 4.2%, from $1,185 million at June 30, 2019. The decrease in the investment portfolio was due primarily to a decrease in the market value of equity investments. At June 30, 2019, investments increased $33 million, or 2.9%, from $1,152 million at June 30, 2018.

Total liabilities decreased $37 million from $94 million at June 30, 2019 to $57 million at June 30, 2020. The decrease was due primarily to a decrease in collateral subject to return to borrowers related to the securities lending program. At June 30, 2019, total liabilities increased by $36 million from $58 million at June 30, 2018.

Condensed financial information comparing SCRS Plan Fiduciary Net Position at June 30, 2020, June 30, 2019, and June 30, 2018 is presented in Table 1 below.

Table 1
Plan Fiduciary Net Position

	June 30, 2020	June 30, 2019	June 30, 2018	FY19-FY20 Percentage Change
ASSETS				
Cash and cash equivalents	$ 42,573,799	$ 41,838,515	$ 41,789,880	1.8%
Investments at fair value	1,136,151,713	1,185,414,567	1,151,619,637	-4.2%
Receivables	2,267,068	2,901,904	3,007,433	-21.9%
Collateral held for securities on loan	54,166,642	87,402,467	54,629,194	-38.0%
TOTAL ASSETS	1,235,159,222	1,317,557,453	1,251,046,144	-6.3%
DEFERRED OUTFLOWS OF RESOURCES				
Fair value of hedging derivatives	-	260,920	-	-100.0%
LIABILITIES				
Liability for securities purchased	2,067,856	5,526,693	2,873,045	-62.6%
Accounts payable & accrued expenses	355,570	649,102	801,985	-45.2%
Collateral subject to return	54,166,642	87,402,467	54,629,194	-38.0%
TOTAL LIABILITIES	56,590,068	93,578,262	58,304,224	-39.5%
DEFERRED INFLOWS OF RESOURCES				
Fair value of hedging derivatives	-	-	1,168,273	0.0%
NET POSITION RESTRICTED FOR PENSIONS	$ 1,178,569,154	$ 1,224,240,111	$ 1,191,573,647	-3.7%

Analysis of Changes in Plan Fiduciary Net Position

Member and employer contributions for fiscal year 2020 were $77 million, a decrease of $1 million, or 1.7%, from fiscal year 2019. The decrease was due to a decrease in employer contributions, which more than offset an increase in employee contributions. Member and employer contributions for fiscal year 2019 were $78 million, an increase of $8 million, or 12.1%, from $70 million in fiscal year 2018. Members covered under SCRS Plan A were required to contribute 2% of pensionable earnings into the Plan, while members covered under SCRS Plan B, Plan C, and Plan D were required to contribute 8%. The contribution of Shelby County Government (the “County”) is based on actuarial valuation. The County contributed 22.1% of pensionable County employee earnings for fiscal year 2020, which was greater than the actuarially-determined annual contribution rate of 20.9%. The County contributed 23.1% of pensionable County employee earnings for fiscal year 2019, which was greater than the actuarially-determined annual contribution rate of 21.2%.

Net investment loss was $20 million for fiscal year 2020, a decrease of $71 million from $51 million for fiscal year 2019. The lower investment returns were due to a deep drop in markets from the economic dislocation resulting from the effects of the COVID-19 coronavirus pandemic. Net investment income for fiscal year 2019 totaled $51 million, a decrease of $21 million from fiscal year 2018.

Benefit payments were $94 million in fiscal year 2020, an increase from fiscal year 2019 of $5 million, or 5.4%. The fiscal year 2020 increase in benefit payments was due to an increase in the number of new retirees. Benefit payments were $89 million in fiscal year 2019, an increase from fiscal year 2018 of $6 million, or 7.5%. Refunds paid during fiscal year 2020 were $7.1 million, an increase of 6.3% from fiscal year 2019. Refunds paid during fiscal year 2019 were $6.6 million, a decrease of 1.7% from fiscal year 2018. The fiscal year 2020 increase in refunds was due primarily to an increase in the number of employees terminating or resigning before reaching normal retirement age and an increase in the amounts of refunds.

Condensed financial information comparing SCRS Changes in Plan Fiduciary Net Position for the years ended June 30, 2020, June 30, 2019 and June 30, 2018 is presented in Table 2 below.

Table 2
Changes in Plan Fiduciary Net Position

	June 30, 2020	June 30, 2019	June 30, 2018	FY19-FY20 Percentage Change
NET POSITION RESTRICTED FOR PENSIONS, BEGINNING OF YEAR	$ 1,224,240,111	$ 1,191,573,647	$ 1,140,289,440	2.7%
ADDITIONS				
Contributions	76,665,484	78,003,562	69,564,619	-1.7%
Net investment income (loss)	(20,454,026)	51,201,216	72,319,325	-139.9%
Net securities lending activities income	191,987	253,349	284,931	-24.2%
TOTAL ADDITIONS	56,403,445	129,458,127	142,168,875	-56.4%
DEDUCTIONS				
Benefit payments	94,034,561	89,207,406	83,006,953	5.4%
Refunds	7,050,050	6,631,787	6,748,700	6.3%
Administrative expenses	989,791	952,470	1,129,015	3.9%
TOTAL DEDUCTIONS	102,074,402	96,791,663	90,884,668	5.5%
NET INCREASE (DECREASE)	(45,670,957)	32,666,464	51,284,207	-239.8%
NET POSITION, END OF YEAR	$ 1,178,569,154	$ 1,224,240,111	$ 1,191,573,647	-3.7%

Funding Status

The "entry age normal" method is used in determining the funding requirement. Under this method, a calculation is made for pension benefits to determine the uniform and constant percentage rate of employer contribution, which, if applied to the compensation of the average new member during the entire period of his/her anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his/her behalf.

The valuation method for the Plan is based on a funded status target of 100%. If the funded status is more than or less than 100%, the surplus or deficit is amortized over a period of up to thirty years beginning with the valuation date coincident or following the plan change. At June 30, 2020 and 2019, the actuarial values of assets were $1,345,108,000 with a funding ratio of 71.6% and $1,302,528,000 with a funding ratio of 72.5%, respectively. At June 30, 2018, the actuarial value of assets was $1,239,548,000 with a funding ratio of 72.0%.

Retirement benefits are financed by employer and participant contributions and income earned on the Plan's investments. As mentioned in the Analysis of Changes in Plan Net Position section above, members covered under SCRS Plan A were required to contribute 2% of pensionable earnings into the Plan, while members covered under SCRS Plans B, C, and D were required to contribute 8%. The County is required to contribute the remaining amounts necessary to fund the Plan in accordance with actuarially-determined contribution requirements. The County contributed 22.1% of pensionable County employee earnings for fiscal year 2020, which was greater than the actuarially-determined annual contribution rate of 20.9%. The County contributed 23.1% of pensionable County employee earnings for fiscal year 2019, which was greater than the actuarially-determined annual contribution rate of 21.2%.

The County's contributions have equaled or exceeded the Actuarially Determined Annual Contributions in recent years. The contributions from the County, the contributions from the Plan participants, and the income from Plan investments have created a Net Pension Asset.

Over the long term, the investment portfolio returns have been a major component of additions to Plan assets. However, as was explained earlier, in fiscal year 2020, the Plan investment portfolio decreased in value.

Request for Information

Questions concerning any of the information provided in this report or requests for additional information should be addressed to:

Shelby County Retirement System
160 N. Main Street, Suite 701
Memphis, TN 38103

SHELBY COUNTY, TENNESSEE
SHELBY COUNTY RETIREMENT SYSTEM

STATEMENTS OF FIDUCIARY NET POSITION

June 30, 2020 and 2019

ASSETS	2020	2019
Cash and cash equivalents	$ 42,573,799	$ 41,838,515
Receivables		
Accrued interest and dividends	1,732,524	2,094,616
Investments sold	534,544	807,288
Total receivables	2,267,068	2,901,904
Investments, at Fair Value		
Domestic equity	425,448,984	353,213,251
International equity	175,875,389	222,057,132
Global low-volatility equity	55,860,486	59,154,341
Fixed income	212,379,459	219,595,010
Hedge funds	108,773,194	142,481,748
Private equity	48,738,202	51,667,668
Real assets	80,588,185	101,283,306
Credit opportunities	28,487,814	35,962,111
Total investments	1,136,151,713	1,185,414,567
Collateral held in trust for securities on loan	54,166,642	87,402,467
Total assets	1,235,159,222	1,317,557,453
DEFERRED OUTFLOWS OF RESOURCES		
Fair value of hedging derivatives	-	260,920
LIABILITIES		
Accounts payable and accrued expenses	355,570	649,102
Investments purchase payable	2,067,856	5,526,693
Collateral subject to return to borrowers	54,166,642	87,402,467
Total liabilities	56,590,068	93,578,262
Net position restricted for pensions	$ 1,178,569,154	$ 1,224,240,111

The accompanying notes are an integral part of these financial statements.

SHELBY COUNTY, TENNESSEE
SHELBY COUNTY RETIREMENT SYSTEM

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

For the Years Ended June 30, 2020 and 2019

	2020	2019
Additions:		
Contributions		
Employer contributions	$ 58,778,143	$ 60,714,844
Member contributions	17,887,341	17,288,718
Total contributions	76,665,484	78,003,562
Investment Income		
Net change in market value of investments	(37,780,581)	28,102,858
Interest income	6,711,180	7,181,216
Dividend income	13,908,188	19,419,493
Other income	158,153	162,143
	(17,003,060)	54,865,710
Less investment management expenses	3,450,966	3,664,494
Net investment income (loss)	(20,454,026)	51,201,216
Security Lending Activities		
Securities lending income	274,370	361,837
Securities lending expenses	(82,383)	(108,488)
Net securities lending activities income	191,987	253,349
Total net investment income	(20,262,039)	51,454,565
Total additions	56,403,445	129,458,127
Deductions:		
Benefit payments	94,034,561	89,207,406
Refund of member contributions	7,050,050	6,631,787
Administrative expenses	989,791	952,470
Total deductions	102,074,402	96,791,663
Net change in net position	(45,670,957)	32,666,464
Net position restricted for pensions		
Beginning of year	1,224,240,111	1,191,573,647
End of year	$ 1,178,569,154	$ 1,224,240,111

The accompanying notes are an integral part of these financial statements.

NOTE 1 - ORGANIZATION

The Shelby County Retirement System (“SCRS”) is a single employer public employee retirement system (“PERS”) established by Shelby County, Tennessee, for the employees of Shelby County, Tennessee. SCRS is administered by the Shelby County Retirement System Board of Administration (the “Board”), the majority of whose members are nominated by the Shelby County Mayor, subject to approval by the Shelby County Board of Commissioners. SCRS is considered to be part of the Shelby County, Tennessee (the “County”) financial reporting entity and is included in the County's financial reports as a pension trust fund.

The County provides office space and certain administrative services at no cost to SCRS. All other costs to administer the plan are paid from plan earnings.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

The financial statements of SCRS are reported using the economic resources measurement focus and the accrual basis of accounting. Under the accrual basis of accounting, revenue is recorded as earned, and expenses are recorded as incurred.

Cash and Cash Equivalents

SCRS considers investments purchased with an original maturity date of three months or less to be cash equivalents.

Investments Sold and Investments Purchased

Receivables for investments sold represent amounts due from brokers for unsettled security sales transactions at year end. Liabilities for investments purchased represent amounts due to brokers for unsettled security purchases at year end.

Investments

Investments are stated at fair market value, as defined by generally accepted accounting principles. See Note 6 for disclosure of fair value measurement.

Purchases and sales of securities are recorded on a trade-date basis. Consequently, investments have been increased for certain pending but unsettled purchases, and investments have been reduced for certain pending but unsettled sales.

In accordance with GASB 40, each of the following investments comprises 5% or more of total investments. As of June 30, 2020, 31% of SCRS’s investments are in RhumbLine S&P 500 Pooled Index Funds, Vanguard Institutional Index Fund Institutional Shares, and GT ERISA Limited Partnership Fund.

As of June 30, 2019, 23% of SCRS's investments are in Oppenheimer OFI GTC Emerging Markets Equity Funds, Vanguard Developed Markets Index Fund, Vanguard Institutional Index Fund Institutional Shares, and GT ERISA Limited Partnership Fund.

Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires SCRS management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

Deferred Outflows of Resources

In addition to assets, the statement of net position reports a separate section for deferred outflows of resources. This separate financial statement element, represents a consumption of net position that applies to a future period and so is not recognized as an outflow of resources (expense/expenditure) until then. SCRS only has one item that qualifies for reporting in this category: the fair value of derivative instruments.

Deferred Inflows of Resources

In addition to liabilities, the statement of net position reports a separate section for deferred inflows of resources. This separate financial statement element, represents an increase to net position that applies to a future period and is not recognized as an inflow of resources (revenue) until that time. SCRS has one item that qualifies for reporting in this category: the fair value of derivative instruments.

NOTE 3 – SCRS COMPONENT PLANS

Overview

SCRS consists of four component plans: Plan A, Plan B, Plan C, and Plan D. Each Plan is governed by a separate plan document (the "Plan Agreement"), and the Administration and Trust Agreement of the Shelby County Retirement System (the "Trust Agreement"). The Plans and the Trust Agreement were established by various resolutions of the Shelby County Commission having the force and effect of legislation.

The Trust Agreement contains all administrative provisions applicable to Plans A, B, C, and D, and it further establishes a formal common trust to hold all of the assets of these plans (the "Trust Fund"). All assets of SCRS's four component Plans are accounted for as a single reporting entity and are available for payment of benefits to participants of any of the Plans.

Participation in SCRS is mandatory for eligible employees hired after March 1, 2005. Substantially all full-time and permanent part-time employees of the County, including its component units, are eligible employees. Employees exempted from the requirement and, in fact, not permitted to participate consist primarily of Shelby County Board of Education employees and employees who are covered by Social Security.

Employee contributions to the Trust Fund are established in the Plan documents. The County is required to contribute the remaining amounts necessary to fund the Plan. Such employer contributions are based on annual actuarial valuations.

At June 30, 2020 and 2019, SCRS membership consisted of:

	2020	2019
Retirees and beneficiaries currently receiving benefits	4,094	4,040
Terminated members entitled to, but not yet receiving, benefits	213	210
Terminated participants entitled to a refund of contributions	431	402
County to City transfers	138	158
Current active members	5,026	5,053
Total	9,902	9,863

Plan B

Plan B, the original Plan, is a contributory defined benefit pension plan for employees hired prior to December 1, 1978 and thereafter closed to new entrants.

All participants in Plan B are fully vested, and all active participants have now completed more than 25 years of service. Participants may retire after completing 25 years of service at any age or after completing 10 years of service upon attaining age 60 (age 55 for deputy sheriffs). The annual retirement benefit is the product of the average of the participant's highest three consecutive years' compensation (or, if the participant had completed 10 years of service before September 1, 1977, the participant's highest 12-months' compensation) and 2.7% a year for up to 25 years of service and an additional 1% per year for up to 10 further years of service. Plan B provides disability benefits for disabled participants and survivor benefits for certain survivors of retirees and of participants who die while actively employed.

Member contributions are made by Plan B participants in the amount of 8% of their earnings (or 8% of a lesser amount of their earnings in the case of participants with more than 35 years of service).

Plan A

Plan A was established as a non-contributory defined benefit pension plan for those eligible employees hired on and after December 1, 1978 and for those employees who elected to transfer to Plan A from Plan B before January 1, 1981. Plan A was closed to new entrants as of February 28, 2005.

Effective July 1, 2011, Plan A was amended to mandate employee contributions of 0.5% for all active employees participating in Plan A. Employee contributions were phased in over a period of four years at a 0.5% increase each year, reaching 2% by July 1, 2014.

Participants in Plan A accrue non-forfeitable benefits after having completed seven and one-half (7 ½) years of service or attainment of age 65, regardless of years of service); although, the benefits of participants who terminated service before January 1, 1998 were vested only after completion of 10 years of service. A participant's normal retirement age is age 65. If a participant retires at or after his/her normal retirement age, his/her monthly retirement benefit is a percentage of his/her highest 36 consecutive months' earnings, with the percentage based upon a mathematical table in the Plan document that takes into account the participant's years of service and his/her age.

A vested participant of Plan A may also elect early retirement to begin at any time after attaining age 55. The early retirement monthly benefit is calculated using a different table that takes into account the same factors. A vested participant who terminates before age 55 may elect to begin receiving monthly benefits at any time after the participant attains age 55 (but no later than age 65), and his/her benefits are calculated under a third table. However, if the present value of a vested participant's accrued benefit is under $30,000, the distribution is required to be made in the form of a lump sum payment. If the present value of the accrued benefit is between $30,000 and $50,000, the participant may elect to receive a lump sum distribution. If the present value is more than $50,000, the participant will receive an automatic monthly pension.

Plan A also provides disability benefits for participants who became disabled before January 1, 2002, and it provides survivor benefits for certain survivors of retirees and of participants who die while actively employed.

Each Plan A active participant as of September 1, 2005 had the option to stay in Plan A or to move his/her participation to Plan C. In Plan A, Public Safety Employees were initially entitled to retire before age 65 with unreduced benefits if they had completed 25 years of service as Public Safety Employees; to preserve this entitlement and avoid reverting to the Plan A normal retirement provisions, such Public Safety Employees were required to move to Plan C.

Plan C

Plan C became effective March 1, 2005 for newly hired employees and September 1, 2005 for current employees. Plan C was closed to new entrants on June 30, 2011.

Prior to 2011, participants were required to contribute 6% of earnings. Effective July 1, 2011, increases in employee contributions were phased in over a period of four years at a 0.5% increase each year, reaching 8% by July 1, 2014. These contributions accrue “interest” at the rate of 2% annually, all of which is reflected in a bookkeeping account. The County matches 3% of each participant’s earnings, and a separate bookkeeping account is maintained. Interest is credited to this account in the same percentage and in the same way as interest is added to the participant’s contributions account.

The participant’s own contributions account is fully vested at all times. The County’s matching account is vested only after the participant has completed seven and one-half (7 ½) years of service. Credited service is calculated in exactly the same way as it is calculated in Plan A.

Plan C contained a five-year transition period for Plan A participants who elected to become participants in Plan C. The complete terms are described in the Plan document. If the transitional period was satisfied, a Plan C participant is entitled to the following benefits. Upon termination but before beginning to receive a monthly pension, the participant will have the right to withdraw from the Trust Fund an amount equal to the lesser of (1) the maximum permissible cash distribution as of the date of termination up to $50,000 or (2) the present value of the participant’s accrued benefit at the relevant time. This withdrawal is called an “optional cash distribution”. No optional cash distributions may be made before termination of employment or after beginning to receive a monthly pension.

A Plan C participant is entitled to an unreduced “normal retirement pension” benefit if the participant has at least 25 years of credited service upon termination, regardless of age. If a participant attains age 65, having completed at least seven and one-half (7 ½) years but less than 25 years of credited service, the participant is also entitled to retire with a “normal” retirement pension. The amount of the normal retirement pension is the higher of two calculated amounts. In the first calculation, three figures are multiplied together: (1) the participant’s “final average earnings” (determined in the same way as in Plan A); (2) the participant’s years of credited service (no more than 35); and (3) 2.35%; the result is then reduced actuarially by the amount of any optional cash distributions the participant has elected to receive. The second figure is calculated by actuarially converting the sum of the participant contributions account and matching account (after reduction for all optional cash distributions) into a monthly pension for life or, if the participant is married, into a 75% joint and survivor pension.

If a Plan C participant terminates employment between age 55 and 65 with between seven and one-half (7 ½) and 25 years of credited service, the participant is entitled to a monthly “early” retirement pension for life. Again, the amount of the early retirement pension is the higher of two calculated amounts similar to those used for calculating the normal retirement pension. Participants who terminate employment before age 55 are also entitled to future benefits. Also, as in Plan A, deferred vested retirement pensions are required to be paid in the form of a lump sum if the actuarial value is $30,000 or less.

Plan C is the only plan that provides its participants with an optional cash distribution (OCD) election upon retirement. Participants under Plan C can take this option within increments of $10,000 not to exceed $60,000. If the OCD election pulls the plan participants monthly pension benefit under $200, the participant will then receive an automatic lump sum refund of their contributions plus interest or their present day value amount, whichever is greater.

Plan C provides survivor benefits for certain survivors, but it does not provide any disability benefits except for participants transferred from a prior Plan.

Plan D

Plan D became effective July 1, 2011 for all newly hired employees. Each Plan D participant is required to contribute 8% of his/her base compensation to the Trust Fund. These contributions accrue "interest" at the rate of 2% annually, all of which is reflected in a bookkeeping account. The participant's contributions account is fully vested at all times. Credited service is calculated in exactly the same way as it is calculated in Plan A.

A Plan D participant is entitled to an unreduced "normal retirement pension" benefit if the participant has at least seven and one-half (7 ½) years of credited service and has reached age 67. Public Safety Employees are also entitled to an unreduced "normal retirement pension" benefit if the participant is at least age 55 and has earned at least seven and one-half (7 ½) years of credited service, with either (i) his/her last 20 years of credited service constituted as Public Safety Service or (ii) all of his/her years constituted as Public Safety Service if s/he has fewer than 20 years.

The amount of the normal retirement pension is the higher of two calculated amounts. In the first calculation, three figures are multiplied together: (1) the participant's "final average earnings" (determined as the average of the participant's five highest consecutive years of earnings); (2) the participant's years of credited service (no more than 35); and (3) the percentage factor set forth in the Plan document which is based on the participant's age at his/her annuity starting date (or 2.175% for Public Safety Employees). The second figure is calculated by actuarially converting the sum of the participant contributions account (after reduction for all optional cash distributions) into a monthly pension for life or, if the participant is married, into a 75% joint and survivor pension.

If a Plan D participant terminates employment between age 62 and 67 with seven and one-half (7 ½) years of credited service (or a Public Safety Employee terminates employment between age 50 and 55 with 20 years of credited service), the participant is entitled to a monthly "early" retirement pension for life. Again, the amount of the early retirement pension is the higher of two calculated amounts similar to those used for calculating the normal retirement pension. Participants who terminate employment before age 55 but have fulfilled the seven- and one-half (7 ½) years of credited service are eligible for deferred benefits. Also, as in Plan C, deferred vested retirement pensions are required to be paid in the form of a lump sum if the actuarial value is $30,000 or less.

Plan D provides survivor benefits for certain survivors, but it does not provide any disability benefits except for participants transferred from a prior Plan.

Contributions and Funding Policy

All contributions to the Plan are made to the Trust Fund and invested and administered in accordance with the Trust Agreement. The Plan Agreements establish employee contribution percentages. The County Commission establishes the employer funding policy; the County's funding amount must be at least sufficient to meet current and anticipated near future benefit payment requirements.

For fiscal years 2020 and 2019, the County's contribution requirements were based on the actuarially determined contribution rate, which was calculated using the entry age normal cost method for participants in Plans A, B, C, and D. For the year ended June 30, 2020, the actuarially determined employer contribution rate was 20.85% of covered payroll. Actual employer contributions were made at a rate of 22.09% of pensionable County employee earnings, totaling $58,778,143; and employee contributions were $17,887,341. Pensionable earnings do not include County to City transfer employees. The actuarially determined employer contribution is significantly impacted by the amortization of the actuarial surplus created from the investment results in prior years. The County has chosen to fund a level amount that is approximately the normal cost for benefits earned.

During the year ended June 30, 2019, the employer contributions were $60,714,844, which was 23.06% of the related covered payroll costs; and the employee contributions were $17,288,718.

The components of the net pension liability of SCRS at June 30, 2020 and 2019 were as follows (*dollars in thousands*):

	2020	2019
Total pension liability	$ 1,879,540	$ 1,796,061
Fiduciary net position	1,178,569	1,224,240
Net pension liability	$ 700,971	$ 571,821

The total pension liability was determined by an actuarial valuation as of June 30, 2020 and 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

	2020	2019
Inflation	2.40 percent	2.75 percent
Salary increases	2.65 – 5.15 percent, including inflation	2.75 – 5.25 percent, including inflation
Investment rate of return	6.80 percent, net of pension plan investment expense, including inflation	7.00 percent, net of pension plan investment expense, including inflation

Expenses:	0.55 percent of payroll
Cost-of-living Adjustments:	1.00 percent per year, compounded for Plan B; 2.75 percent per year, compounded for Plans A and C; and 2.00 percent per year, compounded for Plan D
Percent married:	65% of male active members and 40% of female active members are assumed to be married, with the male three years older than his spouse.
Assets:	Market Value of Assets
Valuation Method:	Entry Age Normal actuarial cost method

For the actuarial valuation as of June 30, 2020 and 2019, the RP-2014 Mortality Table with Blue Collar Adjustment and projected to 2020 with projection scale MP-2017 is used for both males and females while in active service. Mortality rates after retirement and for dependent beneficiaries were based on the RP-2014 Mortality Table with Blue Collar Adjustment and projected to 2020 with projection scale MP-2017, set forward two years for males and set forward three years for females, with rates at ages 70 and below adjusted by 125% for both males and females and rates at ages above 70 adjusted by 85% for females only. The RP-2014 Disabled Mortality Table projected to 2020 with projection scale MP-2017 is used for the period after disability retirement. The actuarial assumptions used in the June 30, 2019 and 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2012 through June 30, 2017.

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

The target asset allocation and best estimates of arithmetic real rates of return for each major asset class for the year ended June 30, 2020 and 2019 are summarized in the following table:

2020			
Asset Class	Target Asset Allocation	Expected Return	Expected Standard Deviation
Fixed Income			
Cash and Cash Equivalents	1.50%	0.75%	1.25%
Fixed Income Funds			
Core	13.00%	1.25%	5.15%
Emerging Markets	3.00%	3.50%	10.00%
High Yield	4.50%	4.40%	7.30%
Equities			
U.S Equities	32.00%	6.00%	17.00%
International Equities	7.00%	6.50%	18.00%
Emerging Market Equities	4.00%	6.50%	26.00%
Low Volatility Equities	5.00%	6.50%	13.60%
Alternatives			
Structured Credit	4.00%	9.00%	12.20%
Hedged Strategies-Absolute Return	6.00%	4.60%	6.60%
Real Assets			
MLP Infrastructure	4.00%	8.55%	19.00%
Private Real Estate	4.00%	6.80%	14.00%
Public REITs	2.00%	5.30%	15.80%
Private Real Assets	2.00%	7.65%	11.25%
Private Equity	8.00%	8.15%	28.00%

Asset Class	2019 Target Asset Allocation	Expected Return	Expected Standard Deviation
Domestic Equity	14.10%	6.25%	17.00%
International Equity	10.40%	6.45%	18.70%
Low Volatility Equity	8.20%	6.45%	13.40%
Private Equity	6.60%	8.70%	27.50%
Core Fixed Income	6.70%	3.25%	5.00%
High Yield	1.00%	5.00%	10.00%
EMD Hard Currency	6.40%	5.50%	10.00%
Global Fixed Income	5.10%	2.35%	3.90%
Credit Opportunities	6.40%	6.20%	13.40%
Absolute Return	16.00%	5.85%	6.50%
Private Real Estate	1.00%	5.55%	14.00%
Private Real Asset	8.00%	6.80%	15.00%
MLPs	10.00%	9.00%	17.00%
Cash	0.00%	1.55%	1.25%

The discount rate used to measure the total pension liability was 6.80 percent for 2020 and 7.00 percent for 2019. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rates and that employer contributions will be made at the actuarially determined rates in future years. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The following presents the net pension liability of SCRS as of June 30, 2020 and 2019 calculated using the current discount rate of 6.80 percent and 7.00 percent, respectively, and a discount rate that is 1-percentage-point lower and 1-percentage-point higher than the current rate (*dollars in thousands*), as there is no guarantee that the current assumption of 6.8 percent for 2020 and 7.00 percent for 2019 will be achieved.

	2020		
	1% Decrease (5.80%)	**Current Discount Rate (6.80%)**	**1% Increase (7.80%)**
Retirement System's net pension liability	$ 929,729	$ 700,971	$ 509,283

	2019		
	1% Decrease (6.00%)	**Current Discount Rate (7.00%)**	**1% Increase (8.00%)**
Retirement System's net pension liability	$ 790,721	$ 571,821	$ 388,436

NOTE 4 – CUSTODIAL CREDIT RISK

Custodial credit risk for deposits and investments is the risk that, in the event of a financial institution's failure, SCRS would not be able to recover the value of its deposits, investments, or collateralized securities that are in the possession of an outside party. Deposits and investments are exposed to custodial credit risk if they are not insured, are unregistered or not registered in the name of SCRS, or are not collateralized. SCRS cash deposits may be covered by Federal Deposit Insurance Corporation ("FDIC") insurance or by collateral held in a multiple financial institution collateral pool administered by the State. FDIC insures the first $250,000 of SCRS's interest bearing deposits at each financial institution. Deposit balances over $250,000 are insured by the collateral pool for those participating financial institutions. At June 30, 2020 and 2019, deposits of $39,990,729 and $40,783,468 were uncollateralized, respectively.

NOTE 5 - INVESTMENTS

The Trust Agreement vests the Board with exclusive control over SCRS's investment portfolio. The Trust Agreement provides for specific investment authority and limitations in accordance with applicable state laws and county regulations. The Board exercises its authority and control over investments solely in the interest of plan participants and beneficiaries. Additionally, the Board executes its policies with the aid of external investment advisors. Investments are governed by an Investment Policy Statement adopted by the Board. Additionally, the Trust Agreement generally provides that the Board may invest in the following:

a) Bonds, notes or treasury bills of the United States or other obligations guaranteed as to principal and interest by the United States or any of its agencies.
b) Certificates of deposit and other evidences of deposit at Tennessee or federally chartered financial institutions. The institutions must be federally insured.
c) Obligations of the United States or its agencies under a repurchase agreement.
d) Prime commercial paper, which is rated at least A2 and issued by a corporation having no record of default of obligations during the ten (10) years preceding the investment.
e) Prime banker's acceptances eligible for purchases by the Federal Reserve System.
f) Corporate bonds rated B3 or better by Moody's or B- or better by Standard & Poor's.
g) Common or preferred shares of stock in any entity listed on the New York Stock Exchange, American Stock Exchange, or NASDAQ Stock Exchange or in American Depository Receipts ("ADRs"). The total market value of ADRs and common or preferred shares of stock, calculated on a monthly basis, shall not exceed 70% of the total market value of the Trust Fund.
h) Covered call and put options on individual stocks or indexes, with the prior approval of the Investment Committee.
i) Financial futures contracts on a limited basis for bona fide hedging purposes and only with prior approval of the Investment Committee.
j) Real estate including interests in real estate investment trusts, provided, however, that the total real estate investments of SCRS shall not exceed five percent (5%) of the total value of the Trust Fund.
k) International equities provided, however, that the total international investments of SCRS, excluding ADRs, shall not exceed thirty percent (30%) of the total value of the Trust Fund. Investments in international equities must be recommended by the Investment Committee and approved by a two-thirds vote of the Board.
l) Co-mingled funds, including registered mutual funds and interest in collective trusts as approved by the Investment Committee.
m) Other investments, as approved individually by the Investment Committee, including securities offered through private placement memoranda.

Please refer to the Trust Agreement and Investment Policy Statement for a complete description of investment policies.

Rate of Return

For the years ended June 30, 2020 and 2019, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was -1.58 percent and 4.54 percent, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment or deposit. Duration is the measure of the price sensitivity of a fixed income portfolio to changes in interest rates. The longer the duration of a portfolio, the greater is its price sensitivity to changes in interest rates. SCRS limits its exposure to interest rate risk by diversifying its investments by security type and institution.

The fair values of fixed income investments grouped by maturity at June 30, 2020 and, 2019, are as follows:

	2020	2019
Current to one year	$ 3,260,595	$ 9,523,652
One to two years	2,688,807	17,492,562
Two to three years	12,107,075	16,227,390
Three to four years	9,054,815	8,841,993
Four to five years	10,510,100	4,559,064
Five years or more	174,758,067	162,950,349
	$ 212,379,459	$ 219,595,010

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. To control credit risk, credit quality guidelines have been established. Investment parameters as established by the Trust Agreement and the Investment Committee are summarized above. There are no restrictions on U.S. Government or Agency issues. SCRS exposure to credit risk at June 30, 2020 and 2019 is presented below by investment category as rated by Standard & Poor’s Financial Services credit-rating agency:

Investment Type	Ratings	2020 Fair Value	2019 Fair Value
Asset Backed Securities	AAA	$ 6,926,121	1,550,584
	BBB	156,044	334,668
	Not Rated	2,662,126	1,320,526
	US Government Guaranteed	5,990,819	-
Collateralized Bonds	Not Rated	-	1
Commercial Mortgage-Backed	BBB	211,980	-
	Not Rated	5,796,627	339,977
Corporate Bonds	AAA	969,161	1,007,016
	AA	3,824,917	846,336
	A	21,594,917	8,133,463
	BBB	37,131,002	19,782,349
	BB	211,212	-
	Not Rated	53,956,793	43,227,914
Government Agencies	AAA	551,930	-
	AA	5,482,498	6,370,554
	Not Rated	1,346,393	-
	US Government Guaranteed	5,201,484	-
Government Bonds (1)	A	-	14,355,548
	BBB	-	2,525,556
	BB	-	8,098,904
	Not Rated	541,350	13,603,422
	U.S Government Guaranteed	17,236,104	41,253,361
Government Mortgage Backed Securities	U.S. Government Guaranteed	22,990,712	4,263,835
Gov't-Issued Commercial Mortgage-Backed Securities	AAA	849,749	-
	U.S. Government Guaranteed	8,789,160	718,011
Hedge Multi Strategy	Not Rated	1	41,115,738
Municipal Bonds	AAA	1,504,718	1,692,093
	AA	5,373,532	4,656,311
	A	237,809	266,081
	Not Rated	812,454	802,916
Non-Government Backed CMOs	BB	-	97,226
	B	-	435,168
	Not Rated	588,192	1,414,336
Index Linked Corporate Bonds	BBB	443,534	415,055
Index Linked Government Bonds	U.S Government Guaranteed	998,120	968,061
Total Fixed Income		$ 212,379,459	$ 219,595,010

(1) At June 30, 2020, Moody's ratings and amounts of Government Bonds were Aaa of $15,491,877, and U.S. Government Guaranteed of $2,285,578. At June 30, 2019, Moody's ratings and amounts of Government Bonds were Aaa of $43,647,214, A of $20,908,002, Baa of $9,524,647, Ba of $4,207,369, and Not Rated of $1,549,559.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of the investment. SCRS exposure to foreign currency risk in U.S. Dollars as of June 30, 2020, is as follows:

Currency	Equities	Government Bonds and Agencies	Other Fixed Income	Hedge Funds	Total
British sterling pound	$ 9,887,515	$ -	$ -	$ -	$ 9,887,515
Canadian dollar	3,098,123	-	-	-	3,098,123
Danish krone	1,635,662	-	-	-	1,635,662
Euro	25,255,661	-	-	-	25,255,661
Hong Kong Dollar	1,205,343	-	-	-	1,205,343
Japanese yen	10,152,835	-	-	-	10,152,835
New Israeli shekel	741,625	-	-	-	741,625
Norwegian krone	1,660,390	-	-	-	1,660,390
Singapore dollar	1,179,005	-	-	-	1,179,005
Swedish krona	2,534,212	-	-	-	2,534,212
Swiss franc	5,037,852	-	-	-	5,037,852
Total securities subject to foreign currency risk	62,388,223	-	-	-	62,388,223
International portfolio in U.S. dollars	192,357,259	551,930	4,820,524	25,304,386	223,034,099
Total international securities	$ 254,745,482	$ 551,930	$ 4,820,524	$ 25,304,386	$ 285,422,322

SCRS exposure to foreign currency risk in U.S. Dollars as of June 30, 2019, is as follows:

Currency	Equities	Government Bonds and Agencies	Other Fixed Income	Hedge Funds	Total
Australian dollar	$ 892,580	$ 4,203,739	$ -	$ -	$ 5,096,319
Brazilian real	-	4,207,369	-	-	4,207,369
British sterling pound	14,606,188	-	-	-	14,606,188
Canadian dollar	4,017,610	-	-	-	4,017,610
Colombian peso	-	4,075,115	-	-	4,075,115
Danish krone	1,388,284	-	-	-	1,388,284
Euro	21,818,557	-	532,395	-	22,350,952
Indonesian rupiah	-	3,107,556	-	-	3,107,556
Japanese yen	9,813,365	-	-	-	9,813,365
Malaysian ringgit	-	5,291,767	-	-	5,291,767
Mexican peso	-	10,932,586	-	-	10,932,586
New Israeli shekel	889,479	-	-	-	889,479
Norwegian krone	1,752,248	-	-	-	1,752,248
Polish zloty	-	4,683,650	-	-	4,683,650
Singapore dollar	1,964,465	-	-	-	1,964,465
South Africa rand	-	3,891,535	-	-	3,891,535
Swedish krona	3,276,362	-	-	-	3,276,362
Swiss franc	3,560,439	-	-	-	3,560,439
Total securities subject to foreign currency risk	63,979,577	40,393,317	532,395	-	104,905,289
International portfolio in U.S. dollars	217,231,896	-	3,820,254	99,830,928	320,883,078
Total international securities	$ 281,211,473	$ 40,393,317	$ 4,352,649	$ 99,830,928	$ 425,788,367

Securities Lending Transactions

SCRS has authorized its custodial agent to enter into, on behalf of SCRS, securities lending transactions comprised of loans of securities to broker-dealers and other entities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. Securities are loaned versus collateral that may include cash, U.S. government securities, and irrevocable letters of credit. SCRS does not have the ability to pledge or sell non-cash collateral unless the borrower defaults. Borrowers were required to deliver collateral for each loan in amounts equal to not less than 102% of the market value of loaned domestic securities and 105% of the market value of loaned foreign securities.

SCRS imposed a restriction of $151,501,302 on the amount of securities lent by the custodial agent for 2020 and 2019 on SCRS's behalf. There was no violation of legal or contractual provisions, and there was no borrower or lending agent default losses during 2020 and 2019. The contract with the custodial agent requires indemnification only in cases of custodial negligence.

All securities loans can be terminated on demand by either the lender or the borrower. The average term of SCRS's loans was approximately 121 and 68 days as of June 30, 2020 and 2019, respectively. Cash collateral is invested in a short-term investment pool.

At June 30, 2020 and 2019, SCRS had no credit risk exposure to borrowers as amounts owed to the borrowers exceeded amounts the borrowers owed to SCRS. The cash collateral is recorded as both an asset and a liability on SCRS's financial statements.

The fair value of investment securities loaned for collateral and held by broker-dealers at June 30, 2020 and 2019 are summarized as follows:

	2020	2019
Domestic equity	$ 27,304,824	$ 60,379,027
International equity	782,099	1,838,218
Fixed income	24,948,512	23,844,467
	$ 53,035,435	$ 86,061,712

Risks and Uncertainties

SCRS invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the statements of plan assets.

SCRS contributions are made based upon certain assumptions pertaining to interest rates, inflation rates, and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimation and assumption processes, it is at least reasonably possible that changes in these estimates and assumptions in the near term could materially affect the amounts reported and disclosed in the financial statements.

NOTE 6 – FAIR VALUE MEASUREMENT

Generally accepted accounting principles establish a framework for measuring fair value which provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (level 1) and the lowest priority to unobservable inputs (level 3).

The three levels of the fair value hierarchy are described below:

Level 1 - Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that SCRS has the ability to access.

Level 2 - Inputs to the valuation methodology include:

- Quoted prices for similar assets or liabilities in active markets;
- Quoted prices for identical or similar assets or liabilities in inactive markets;
- Inputs other than quoted prices that are observable for the asset or liability; and
- Inputs that are derived principally from or corroborated by observable market data by correlation or other means.

If the asset or liability has a specified (contractual) term, the level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 - Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The asset's or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used maximize the use of observable inputs and minimize the use of unobservable inputs.

The following is a description of the valuation methodologies used for assets measured at fair value. There have been no changes in the methodologies used at June 30, 2020.

For SCRS, level 1 securities are valued using prices quoted in active markets for those securities. Level 2 securities are valued using a matrix pricing technique. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Level 3 securities are valued using unobservable inputs (i.e. extrapolated data, proprietary models, indicative quotes, and estimated net asset value) as provided by the investment manager of the investee company.

The methods described above may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, while SCRS believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

The following table sets forth by level, within the fair value hierarchy, SCRS's assets at fair value as of June 30, 2020 and 2019.

	Assets at Fair Value as of June 30, 2020			
	Level 1	Level 2	Level 3	Total
Equities				
Consumer discretionary total	$ 26,376,114	$ -	$ -	$ 26,376,114
Consumer staples total	6,281,965	-	-	6,281,965
Energy total	2,591,970	-	-	2,591,970
Financials total	16,530,303	-	-	16,530,303
Health Care total	26,572,038	-	-	26,572,038
Industrials total	34,255,078	-	-	34,255,078
Information technology total	44,038,454	-	-	44,038,454
Materials total	9,963,920	-	-	9,963,920
Real estate total	5,190,730	-	-	5,190,730
Communication services total	22,115,371	-	-	22,115,371
Utilities total	4,265,514	-	-	4,265,514
Miscellaneous total	200,303,778	202,770,892	68,246	403,142,916
Total equities	398,485,235	202,770,892	68,246	601,324,373
Fixed Income				
Asset backed securities	-	15,735,111	-	15,735,111
Commercial mortgage-backed	-	6,008,606	-	6,008,606
Corporate bonds	18,682,691	99,005,342	-	117,688,033
Government agencies	-	12,582,305	-	12,582,305
Government bonds	-	17,777,455	-	17,777,455
Government mortgage backed securities	-	32,629,620	-	32,629,620
Municipal/provincial bonds	-	7,928,482	-	7,928,482
Non-government backed C.M.O.s	-	588,192	-	588,192
Index linked government bonds	-	998,120	-	998,120
Index linked corporate bonds	-	443,535	-	443,535
Total fixed income	18,682,691	193,696,768	-	212,379,459
Global low-volatility equity	-	55,860,486	-	55,860,486
Hedge funds	-	-	108,773,194	108,773,194
Private equity	-	-	48,738,202	48,738,202
Real assets	48,233,227	-	32,354,958	80,588,185
Credit Opportunities	-	-	28,487,814	28,487,814
Total investments measured at fair value	$ 465,401,153	$ 452,328,146	$ 218,422,414	$ 1,136,151,713

	Level 1	Level 2	Level 3	Total
Equities				
Consumer discretionary	$ 36,045,740	$ -	$ -	$ 36,045,740
Consumer staples	8,781,320	-	-	8,781,320
Energy	16,576,253	-	-	16,576,253
Financials	22,772,540	-	-	22,772,540
Health Care	27,141,839	-	-	27,141,839
Industrials	41,785,997	-	-	41,785,997
Information technology	46,933,325	-	-	46,933,325
Materials	12,766,992	-	-	12,766,992
Real estate	6,418,302	-	-	6,418,302
Communication services	27,158,279	-	-	27,158,279
Utilities	2,195,773	-	-	2,195,773
Miscellaneous	190,585,848	136,039,930	68,245	326,694,023
Total equities	439,162,208	136,039,930	68,245	575,270,383
Asset backed securities	-	3,205,777	-	3,205,777
Commercial mortgage-backed securities	-	339,977	-	339,977
Corporate bonds	19,277,281	53,719,797	-	72,997,078
Funds - other fixed income	-	41,115,739	-	41,115,739
Government agencies	-	6,370,554	-	6,370,554
Government bonds	-	79,836,790	-	79,836,790
Government mortgage backed securities	-	4,981,849	-	4,981,849
Municipal/provincial bonds	-	7,417,401	-	7,417,401
Non-government backed C.M.O.s	-	1,946,729	-	1,946,729
Index linked government bonds	-	968,061	-	968,061
Index linked corporate bonds	-	415,055	-	415,055
Total fixed income	19,277,281	200,317,729	-	219,595,010
Global low-volatility equity	-	59,154,341	-	59,154,341
Hedge fund	-	-	142,481,748	142,481,748
Private equity	-	-	51,667,668	51,667,668
Real assets	83,503,303	-	17,780,003	101,283,306
Credit opportunities	-	-	35,962,111	35,962,111
Total investments measured at fair value	$ 541,942,792	$ 395,512,000	$ 247,959,775	$ 1,185,414,567

NOTE 7 – DERIVATIVE INSTRUMENTS – FORWARD CONTRACTS

SCRS may enter into foreign currency forward exchange contracts primarily to hedge against foreign currency exchange rate risks on its non-U.S. dollar denominated investment securities. When entering into a forward currency contract, SCRS agrees to receive or deliver a fixed quantity of foreign currency for an agreed-upon price on an agreed future date. SCRS's net equity therein, representing unrealized gain or loss on the contracts, as measured by the difference between the forward foreign exchange rates at the dates of entry in the contracts and the forward rates at the reporting date is included in SCRS's Statements of Fiduciary Net Position. Realized and unrealized gains and losses are included in SCRS's Statements of Changes in Fiduciary Net Position. These instruments involve market risk, credit risk, or both kinds of risks in excess of the amount recognized in the statement of fiduciary net position. Risks arise from the possible inability of counterparties to meet the terms of their contracts and movement of currency and securities values and interest rates.

At June 30, 2020, SCRS has no foreign currency forward exchange contracts.

At June 30, 2019, SCRS has the following foreign currency forward exchange contracts:

	Settlement	Unrealized (Gain)/Loss
2,410,000 Australian dollar vs. $1,732,954	July 24, 2019	$ (40,130)
3,890,000 Australian dollar vs. $2,695,142	August 26, 2019	39,921
3,370,000 British pound vs. $4,293,582	September 20, 2019	11,587
790,000,000 Chilean peso vs. $1,185,404	July 15, 2019	(21,463)
830,000,000 Chilean peso vs. $1,250,207	August 14, 2019	(26,951)
1,045,000,000 Chilean peso vs. $1,523,268	September 13, 2019	16,905
1,020,000,000 Chilean peso vs. $1,471,527	October 7, 2019	31,841
37,300,000 Czech Koruna vs. $1,668,588	September 26, 2019	3,215
3,210,000 Euro vs. $3,667,361	September 12, 2019	10,618
10,900,000,000 Indonesian rupiah vs. $764,188	July 25, 2019	4,986
2,500,000 New Zealand dollar vs. $1,664,238	September 25, 2019	17,688
2,510,000 New Zealand dollar vs. $1,670,141	August 27, 2019	17,810
3,200,000 Norway krone vs. $375,338	July 26, 2019	350
17,300,000 Norway krone vs. $1,976,793	August 23, 2019	55,809
29,900,000 Norway krone vs. $3,448,902	August 28, 2019	64,537
17,300,000 Norway krone vs. $1,986,702	September 24, 2019	47,313
70,000,000 Russion ruble vs. $1,061,564	August 13, 2019	40,627
54,500,000 South African rand vs. $3,702,040	August 14, 2019	(139,461)
11,800,00 South African rand vs. $794,295	August 14, 2018	37,405
11,200,000 South African rand vs. $744,295	September 11, 2019	(42,368)
3,833,000,000 South Korean won vs. 3,331,508	September 27, 2019	(2,257)
22,000,000 Swedish krona vs. $2,303,472	August 16, 2019	76,525
42,700,00 Swedish krona vs. $4,553,817	September 17, 2019	56,413
		$ 260,920

NOTE 8 - COMMITMENTS

SCRS has capital commitments totaling approximately $140.9 million to thirteen investment fund managers and $106.5 million to eight investment fund managers as of June 30, 2020 and 2019, respectively. As of June 30, 2020 and 2019, approximately $37 million and $11.6 million is unfunded, respectively.

REQUIRED SUPPLEMENTARY INFORMATION

SHELBY COUNTY, TENNESSEE
SHELBY COUNTY RETIREMENT SYSTEM

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

Last Ten Fiscal Years ($ in Thousands)

	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability							
Service cost	$ 28,593	$ 27,937	$ 27,509	$ 27,640	$ 24,763	$ 25,533	$ 23,641
Interest	122,246	117,135	115,865	112,438	110,121	108,830	104,501
Difference between expected and actual experience	(4,036)	26,366	14,741	(3,124)	(4,524)	(6,934)	-
Changes in assumptions	37,760	-	(47,235)	-	90,986	59,700	-
Benefit payments	(94,034)	(89,207)	(83,007)	(78,552)	(73,833)	(69,788)	(71,577)
Refunds of contributions	(7,050)	(6,632)	(6,749)	(7,733)	(8,069)	(6,774)	-
Net change in total pension liability	83,479	75,599	21,124	50,669	139,444	110,567	56,565
Total pension liability - beginning	1,796,061	1,720,462	1,699,338	1,648,669	1,509,225	1,398,658	1,342,090
Total pension liability - ending (a)	$ 1,879,540	$ 1,796,061	$ 1,720,462	$ 1,699,338	$ 1,648,669	$ 1,509,225	$ 1,398,655
Fiduciary Net Position							
Contributions - employer	$ 58,778	$ 60,715	$ 53,251	$ 41,888	$ 35,864	$ 34,213	$ 31,976
Contributions - member	17,887	17,289	16,314	15,688	15,599	15,235	13,917
Net investment income	(20,262)	51,453	72,605	118,103	(30,836)	6,327	156,598
Benefit payments	(94,034)	(89,207)	(83,007)	(78,552)	(73,833)	(69,788)	(71,577)
Administrative expense	(990)	(952)	(1,129)	(1,242)	(1,722)	(1,705)	(1,337)
Refunds of contributions	(7,050)	(6,632)	(6,749)	(7,733)	(8,069)	(6,774)	-
Net change in fiduciary net position	(45,671)	32,666	51,285	88,152	(62,997)	(22,492)	129,577
Fiduciary net position - beginning	1,224,240	1,191,574	1,140,289	1,052,137	1,115,134	1,137,626	1,008,049
Fiduciary net position - ending (b)	$ 1,178,569	$ 1,224,240	$ 1,191,574	$ 1,140,289	$ 1,052,137	$ 1,115,134	$ 1,137,626
Net pension liability - ending (a) - (b)	$ 700,971	$ 571,821	$ 528,888	$ 559,049	$ 596,532	$ 394,091	$ 261,029
Ratio of fiduciary net position to total pension liability	62.71%	68.16%	69.26%	67.10%	63.82%	73.89%	81.34%
Covered payroll	$ 266,076	$ 263,235	$ 254,182	$ 245,415	$ 244,818	$ 243,655	$ 240,466
Net pension liability as a percentage of covered employee payroll	263.45%	217.23%	208.07%	227.80%	243.66%	161.74%	108.55%

See independent auditor’s report.

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS (Continued)

Last Ten Fiscal Years ($ in Thousands)

Notes to the Schedule of Changes in the Net Pension Liability and Related Ratios:

Changes of Benefit Terms: none

Changes of Assumptions: In 2013, assumed rates of withdrawal, disability, retirement, and salary increases were adjusted to more closely reflect actual and anticipated experience. These assumptions were recommended as part of the Experience Study for SCRS for the five-year period ended June 30, 2012. In 2015, the price inflation was lowered from 3.00% to 2.75%, and the assumed investment rate of return was lowed from 8% to 7.50%. In addition, the expected salary increases were lowered by 0.25% at each service level. These assumptions were recommended as part of the Economic Experience Investigation as of June 30, 2015. In 2016, the investment rate of return was lowered from 7.5% to 7.00% as approved by the Board on September 13, 2016. In 2018, assumed rates of withdrawal, disability, retirement, mortality, and salary increases were adjusted to more closely reflect actual and anticipated experience. These assumptions were recommended as part of the Experience Study for SCRS for the five-year period ended June 30, 2017. In 2020, the investment rate of return was lowered from 7.00% to 6.80%, the price inflation was reduced from 2.50% to 2.40%, and the total salary scale was reduced by 0.10% at all service levels. These assumptions were approved by the Retirement Board of Trustees on December 1, 2020.

*Only seven years of information was available from the actuarial valuation. Prior years are unavailable.

See independent auditor’s report.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Last Ten Fiscal Years ($ in Thousands)

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Actuarially determined employer contribution	$ 55,488	$ 55,832	$ 51,289	$ 38,668	$ 32,113	$ 33,220	$ 32,983	$ 31,826	$ 23,402	$ 18,571
Actual employer contributions	58,778	60,715	53,251	41,888	35,864	34,213	31,976	30,170	23,402	18,788
Annual contribution deficiency (excess)	$ (3,290)	$ (4,883)	$ (1,962)	$ (3,220)	$ (3,751)	$ (993)	$ 1,007	$ 1,656	$ -	$ (217)
Covered payroll	$ 266,076	$ 263,235	$ 254,182	$ 245,415	$ 244,818	$ 243,655	$ 240,466	$ 250,367	$ 258,670	$ 265,137
Actual contributions as a percentage of covered payroll	22.09%	23.06%	17.07%	14.65%	14.04%	13.30%	12.05%	9.05%	7.09%	7.27%

Notes to the Schedule of Employer Contributions:

The actuarially determined employer contributions in this schedule are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine the most recent contributions reported in that schedule:

Actuarial cost method	Entry Age Normal
Amortization method	Level Dollar, closed
Single equivalent amortization period	20 years
Asset valuation method	10-year smoothed market
Inflation	3.00 percent
Salary Increase	2.75 - 5.25 percent, including inflation
Investment rate of return	7.00 percent, net of investment related expense

Although 2013 and 2014 show a deficiency in contribution dollars, SCRS contributed the full actuarial determined contribution as a percentage of payroll.

See independent auditor's report.

SHELBY COUNTY, TENNESSEE
SHELBY COUNTY RETIREMENT SYSTEM

SCHEDULE OF INVESTMENT RETURNS

Last Ten Fiscal Years

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Annual money-weighted rate of return, net of investment expense	-1.58%	4.54%	6.84%	10.76%	-2.02%	0.22%	15.49%	12.74%	-3.70%	23.57%

See independent auditor's report.

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INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH *GOVERNMENT AUDITING STANDARDS*

To the Chairman and Members of the Shelby County
Retirement System Board of Administration
Shelby County Retirement System
Memphis, Tennessee

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Shelby County Retirement System as of and for the years ended June 30, 2020 and 2019, and the related notes to the financial statements, which collectively comprise the Shelby County Retirement System's basic financial statements, and have issued our report thereon dated December 23, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered Shelby County Retirement System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Shelby County Retirement System's internal control. Accordingly, we do not express an opinion on the effectiveness of the entity's internal control.

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

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

Compliance and Other Matters

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

Purpose of this Report

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

Watkins Uiberall, PLLC

Memphis, Tennessee
December 23, 2020