2020 COMPREHENSIVE ANNUAL FINANCIAL REPORT

Arkansas Teacher Retirement System

A PENSION TRUST FUND OF THE STATE OF ARKANSAS

CLINT RHODEN, EXECUTIVE DIRECTOR

Prepared by the Staff of

ARKANSAS TEACHER RETIREMENT SYSTEM

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ARTRS
Arkansas Teacher Retirement System

TABLE OF CONTENTS

Arkansas Teacher Retirement System

INTRODUCTION

ARTRS
Arkansas Teacher Retirement System

LETTER OF TRANSMITTAL

April 7, 2021

Board of Trustees
Arkansas Teacher Retirement System
1400 West Third
Little Rock, AR 72201

The Arkansas Teacher Retirement System (the "System" or ATRS) is pleased to submit this Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2020. The ATRS CAFR provides comprehensive information on the retirement plan that ATRS administers. Responsibility for both the accuracy of the data and the completeness and fairness of presentation rests with the System. To the best of the System's knowledge and belief, the enclosed data is accurate in all material respects and presents fairly the System's financial status and changes in the financial condition.

The 2020 Financial Report is presented in five sections.
Contents are summarized below (a detailed Table of Contents may be found on Page 2).

Introductory Section:
This section contains the transmittal letter, the Board of Trustees, and organizational chart.

Financial Section:
This section provides the System's financial statements, required supplementary information, and supporting schedules with additional information about the System's expenses.

Investment Section:
This section includes the investment consultant's report, investment policies, asset allocation, and investment results.

Actuarial Section:
This section provides the certification letter from the independent actuary, supporting schedules, and a summary of plan provisions.

Statistical Section:
This section presents schedules and tables of comparative data related to the membership, active and retired, of the System.

On March 17, 1937, ATRS was established by Act 266 of 1937. ATRS is a combination contributory/noncontributory retirement system governed by Arkansas retirement law, Title 24 of the Arkansas Code. ATRS is one of five state-supported retirement systems in Arkansas and provides retirement, disability, and survivor benefits to employees of Arkansas public schools and educationally related public agencies. The System has 349 participating employers.

Investments
Performance across capital markets was volatile during fiscal year 2020, with non-U.S. markets underperforming those in the U.S. While the global outlook is still uncertain and corrections should be anticipated, markets have shown momentum and resiliency.

ATRS has structured a diversified portfolio that has allocations to equity markets, bonds, private equity, real assets, and alternative investments. Investing in multiple asset classes not only allows the System to benefit from equity advances, but also offers protection during down markets. The approach is not static and changes in accordance with the changing investment environment. For example, investments in alternative classes such as real assets continue to be added. These target allocation alignments are designed to further stabilize the portfolio and match the ATRS assets to its liabilities.

Over the long-term, ATRS' investment approach has proved beneficial and is designed to weather investment market volatility. ATRS maintains a roster of compelling investment managers, and new opportunities that will benefit the System are being considered. ATRS still uses indexing to level out risk. A focus on long term growth potential, coupled with asset protection and cost containment, continue to be a focus for ATRS.

Additions/Deductions to Plan Net Assets

As a retirement system matures, employer and member contributions are supplemented from investment earnings to fully fund retirement benefits and operating costs. This process is intended to leave the investment nucleus untouched to continue providing the required investment income for future generations of plan participants.

Fiscal year 2020 contributions totaled about $599 million dollars ($446 million employer and $153 million member) and remained stable from previous years. As ATRS becomes a more mature system, the total active members compared to retirees will continue to move more towards a one-to-one ratio, and is now about a 1.4 to one ratio. This equalization trend will occur for some time as ATRS matures, as the Baby Boomer generation reaches retirement age, and as schools continue to consolidate and outsource nonteaching positions to private contractors in transportation, food service, custodial services, and substitute teachers.

Funding Status

ATRS had a 7.38% actuarially determined return as compared to its 7.5% assumed rate of return. To reduce the impact of wild swings in the financial markets, annual results are spread over a four-year period (four-year smoothing). ATRS remains a stable 80.6% funded. Amortization required to fund the unfunded accrued actuarial liability (UAAL) decreased to 27 years.

Internal Control

Internal controls are at the heart of safeguarding the System's assets. ATRS has an active internal audit department that is continually reviewing and updating control policies. As the System grows and technology advances, we feel it prudent to continuously monitor internal systems and policies to detect and correct potential errors before they occur and to correct any errors that are discovered.

Professional Services

The ATRS Board of Trustees employs firms that are proven experts to draw on their knowledge and expertise on policy and administration. ATRS' independent general investment consultant and real asset consultant is AON Hewitt Investment Consulting, headquartered in Chicago, IL; the private equity consultant is Franklin Park Associates, LLC of Bala Cynwyd, PA; and the independent actuary is Gabriel Roeder Smith & Company, headquartered in Southfield, MI. The System also uses the services of local legal firms.

Acknowledgements

This report is intended to provide complete and reliable information as a foundation for management decisions, determining compliance with legal provisions, and determining conscientious administration of the System's fund. Compilation of this report symbolizes the collective efforts of the staff, under the direction of the Board of Trustees.

This report is posted on the ATRS website (artrs.gov) and hard copies are available upon request.

Respectfully submitted,

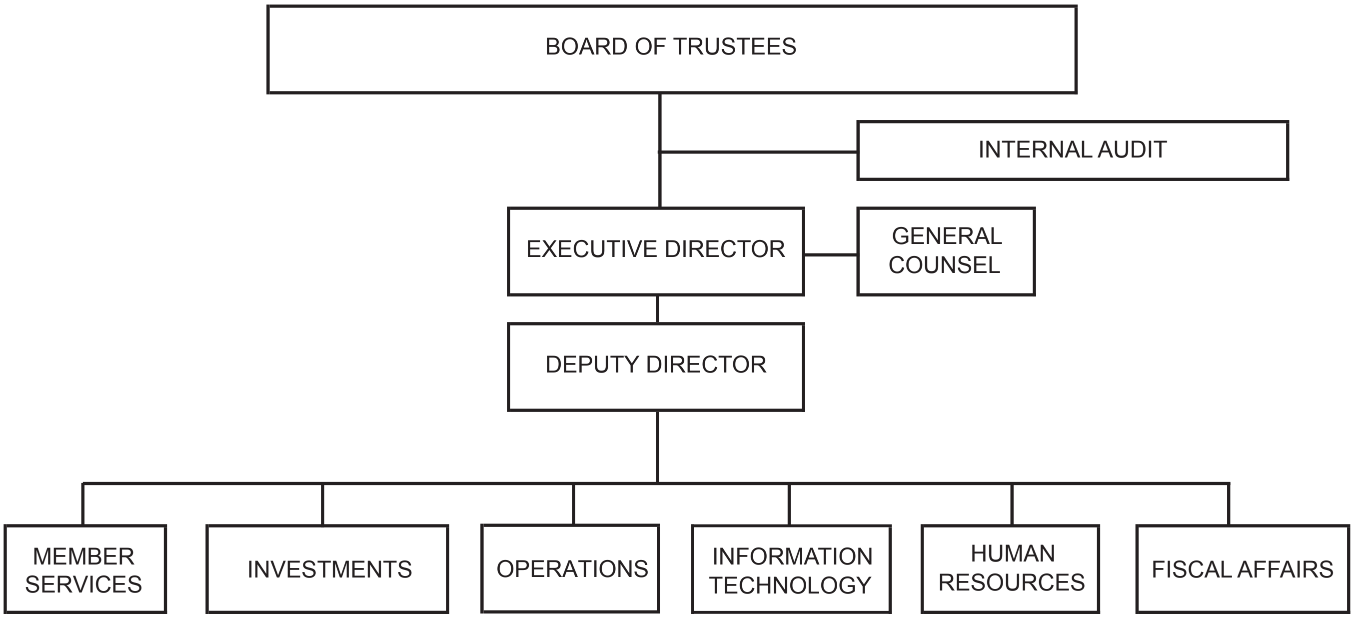
Clint Rhoden
Executive Director

BOARD OF TRUSTEES

MEMBER AND RETIRANT TRUSTEES

EX OFFICIO TRUSTEES

ARTRS
Arkansas Teacher Retirement System



ADMINISTRATIVE STAFF

Clint Rhoden
Executive Director

Rod Graves
Deputy Director

Martha Miller
General Counsel

Willie Kincade
Associate Director of Operations

Curtis Carter, CPA
Associate Director of Fiscal Affairs

Mullahalli Manjunath
Associate Director
of Information Technology

Brenda West, CPA
Internal Auditor

Vicky Fowler
Human Resources Manager

PROFESSIONAL CONSULTANTS

Actuary

Gabriel Roeder Smith & Company • Southfield, MI

Legal Counsel

Gill, Ragon, Owen, PA • Little Rock, AR

Ice Miller • Columbus, OH

Kutak Rock, LLP • Scottsdale, AZ

Rose Law Firm, PA • Little Rock, AR

Williams & Anderson • Little Rock, AR

Securities Monitoring Counsel

Bernstein, Litowitz, Berger & Grossman, LLP
New York, NY

Kaplan, Fox & Kilsheimer • New York, NY

Kessler, Topaz, Meltzer & Check, LLP • Radnor, PA

Labaton Sucharow, LLP • New York, NY

Nix, Patterson & Roach, LLP • Daingerfield, TX

Attorney General's Office Contact • Little Rock, AR

Investment Consultants

AON Hewitt Investment Consulting (AHIC) • Chicago, IL

Franklin Park • Bala Cynwyd, PA

Simmons • Little Rock, AR

Custodian (Domestic and International)

State Street Public Fund Services • Boston, MA

State Street Fund Services Toronto Inc. • Toronto, Ontario

Public Markets

Allianz Global Investors Capital • New York, NY

BlackRock • San Francisco, CA

Daruma Asset Management, Inc. • New York, NY

D.E. Shaw & Company, LP • New York, NY

GMO, LLC. • Boston, MA

Harris Associates, LP • Chicago, IL

Jacobs Levy Equity Management, Inc. • Florham Park, NJ

Kennedy Capital Management • St. Louis, MO

Lazard Asset Management, LLC • New York, NY

Loomis Sayles & Company, LP • Boston, MA

Pershing Square Capital Management, LP • New York, NY

Putnam Investments Management • Boston, MA

Reams Asset Management • Columbus, IN

Russell Implementation Services • Seattle, WA

State Street Global Advisors (SSGA) • Boston, MA

State Street Global Markets, LLC Transition Management
Boston, MA

State Street – Securities Lending • Boston, MA

Stephens Investment Management • Houston, TX

T. Rowe Price Associates, Inc. • Baltimore, MD

Trian Partners • New York, NY

Voya Investment Management (FKA ING) • Chicago, IL

Wellington Management Co., LLP • Boston, MA

Private Equity

Franklin Park • Bala Cynwyd, PA

21st Century Group I • Dallas, TX

Advent International Corporation • Boston, MA

Altaris Capital Partners, LLC • New York, NY

Altus Capital Partners • Westport, CT

American Industrial Partners • New York, NY

Arlington Capital Partners • Chevy Chase, MD

Atlas Holdings, LLC • Greenwich, CT

Audax • New York, NY

PROFESSIONAL CONSULTANTS

Big River Steel • Osceola, AR

Bison Capital Asset Management, LLC • Santa Monica, CA

BV Investment Partners (FKA Boston Ventures)
Boston, MA

Castlelake II & III • Minneapolis, MN

Clearlake Capital Group • Santa Monica, CA

Court Square Capital Partners III, LP • New York, NY

The Cypress Group • New York, NY

Diamond State Ventures
Diamond State Ventures III • Little Rock, AR

DLJ Investment Partners III • Darien, CT

Doughty Hanson & Company III
Doughty Hanson & Company Technology • London, England

DW Healthcare • Park City, UT

EnCap Investments, LP • Houston, TX

Greyrock Capital Group, LLC • Chicago, IL

Grosvenor Capital Management
FKA Credit Suisse Customized Fund Investment Group
New York, NY

GTLA • Pine Bluff, AR

Highland Pellets • Pine Bluff, AR

Insight Equity II
Insight Mezzanine I • Southlake, TX

J.F. Lehman & Company • New York, NY

KPS Capital Partners • New York, NY

Levine Leichtman III • Beverly Hills, CA

Lime Rock Resources III • Westport, CT

LLR Equity Partners III • Philadelphia, PA

Mason Wells • Milwaukee, WI

Natural Gas Partners (NGP) • Irving, TX

Oak Hill Capital Partners • New York, NY

One Rock Capital Partners, LLC • New York, NY

PineBridge Investments • New York, NY

Riverside Partners • Boston, MA

Siris Capital Group • New York, NY

SK Capital Partners • New York, NY

Sycamore Partners III • New York, NY

TA XI • Boston, MA

Tennenbaum • Santa Monica, CA

Thoma Bravo, LLC • San Francisco, CA

VISTA Equity Partners • San Francisco, CA

Wellspring Capital Management, LLC • New York, NY

The Wicks Group of Companies, LLC • New York, NY

WNG II • Dallas, TX • Dublin, Ireland

Real Assets

Infrastructure

Antin Infrastructure Partners • London, England

DIF • Amsterdam, Netherlands

Global Energy & Power Infrastructure
(FKA First Reserve) • Greenwich, CT

Global Infrastructure Partners • New York, NY

IFM Investors (US), LLC • New York, NY

Kohlberg Kravis Roberts & Co • New York, NY

Macquarie Infrastructure and Real Assets • Chicago, IL

Real Estate

Almanac Realty Securities • New York, NY

Blackstone Real Estate Partners • New York, NY

Calmwater • Los Angeles, CA

The Carlyle Group • New York, NY

Real Assets (Continued)

Real Estate (Continued)

CB Richard Ellis Strategic Partners • Los Angeles, CA

Cerberus • New York, NY

FPA Core Plus • Irvine, CA

Harbert Management Corporation • Dallas, TX

Heitman • Chicago, IL

J.P. Morgan Asset Management • New York, NY

Kayne Anderson • Los Angeles, CA

Landmark Partners • Simsbury, CT

LaSalle • Chicago, IL

Lone Star Real Estate Partners Fund IV, LP • Dallas, TX

Long Wharf Real Estate Partners, LLC • Boston, MA

MetLife Commercial • Morristown, NJ

Metropolitan Real Estate Partners Co-Investments Fund

New York, NY

New Boston Fund VII • Boston, MA

O'Connor North American Property Partners II

New York, NY

Olympus Real Estate Corporation • Addison, TX

PGIM Real Estate • New York, NY

Rockwood Capital Real Estate Partners • New York, NY

Torchlight Debt Opportunity Fund (Cayman) II, LP
Torchlight Debt Opportunity Fund III
New York, NY

UBS Realty Investors • Hartford, CT

Walton Street Capital • Chicago, IL

Westbrook Funds IX • New York, NY

Direct Real Estate Partnerships

CRI – American Center • Rogers, AR

Alternative Investments

Hedge Funds

Anchorage Capital Group, LLC • New York, NY

Breven Howard US, LLC • New York, NY

Capital Fund Management • Paris, France

Capula Investment US, LP • Greenwich, CT

Circumference Group • Little Rock, AR

Graham Capital Management, LP • Rowayton, CT

Man Group • London, UK

Parametric • Minneapolis, MN

York Capital Management • New York, NY

Re-Insurance

Aeolus • Hamilton, Bermuda

Nephila Capital Rubik Holdings, Ltd. • Hamilton, Bermuda

Farm Manager

Halderman Farm Management • Wabash, IN

UBS Agrivest • Dallas, TX

Timberland

BTG Pactual Timberland Investment Group • Atlanta, GA

FINANCIAL

ARTRS Arkansas Teacher Retirement System

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Arkansas Teacher Retirement System

STATEMENT OF FIDUCIARY NET POSITION
June 30, 2020

ASSETS	
Cash and cash equivalents	$ 348,739,106
Receivables:	
Member contributions	9,378,658
Employer contributions	24,093,069
Investment trades pending	21,871,383
Accrued investment income	12,922,708
Due from other funds	3,555,563
Other receivables	1,083,234
Total Receivables	72,904,615
Investments, at fair value:	
Domestic equities	2,071,795,588
International equities	961,079,504
Pooled equity funds	1,052,044,721
U.S. Government obligations	28,245,622
Corporate obligations	925,233,362
Asset- and mortgage-backed securities	23,104,762
Pooled fixed income funds	1,607,759,109
Promissory notes	257,463,572
Limited partnerships	28,276,070
Real estate	52,674,001
Alternative investments	9,351,605,145
State recycling tax credits	176,000,000
Investment derivatives	(13,433)
Total Investments	16,535,268,023
Securities lending collateral	315,801,222
Capital assets, net of accumulated depreciation	113,544
Other assets	74,552
TOTAL ASSETS	17,272,901,062
DEFERRED OUTFLOWS OF RESOURCES	
Deferred outflows related to OPEB	1,310,404
TOTAL ASSETS AND DEFERRED OUTFLOWS OF RESOURCES	17,274,211,466
LIABILITIES	
Accrued expenses and other liabilities	889,241
Compensated absences	530,170
Post-employment benefit liability	6,585,411
Investment trades pending payable	35,049,671
Accrued investment expenses	10,225,884
Securities lending liability	315,851,510
Due to other funds	2,284,259
TOTAL LIABILITIES	371,416,146
DEFERRED INFLOWS OF RESOURCES	
Deferred inflows of resources related to OPEB	719,096
TOTAL LIABILITIES AND DEFERRED INFLOWS OF RESOURCES	372,135,242
NET POSITION RESTRICTED FOR PENSION BENEFITS	$16,902,076,224

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

ARTRS
Arkansas Teacher Retirement System

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

June 30, 2020

ADDITIONS	
Contributions:	
Member	$153,105,134
Employer	446,228,128
Total contributions	599,333,262
Investment income	
From investing activities:	
Net appreciation (depreciation) in fair value of investments	(267,694,438)
Interest and dividends	130,592,889
Real estate operating income	7,545,561
Total investment income (loss)	(129,555,988)
Less investment expense	39,381,324
Net investment income (loss)	(168,937,312)
From securities lending activities:	
Securities lending gross income	8,224,492
Less securities lending expense	5,151,614
Net securities lending income (loss)	3,072,878
Other income	101,370
TOTAL ADDITIONS (LOSSES)	433,570,198
DEDUCTIONS	
Benefits	1,255,065,794
Refunds of contributions	9,592,091
Administrative expenses	8,457,862
TOTAL DEDUCTIONS	1,273,115,747
NET CHANGE IN NET POSITION	(839,545,549)
NET POSITION - BEGINNING OF YEAR	17,741,621,773
NET POSITION - END OF YEAR	$16,902,076,224

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

NOTES TO FINANCIAL STATEMENTS

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies

A. Reporting Entity/History

Act 266 of 1937, as amended, established the Arkansas Teacher Retirement System (ATRS) as an office of Arkansas state government for the purpose of providing retirement benefits for employees of any school or other educational agency participating in ATRS. Act 427 of 1973, as amended, provided that the general administration of ATRS, responsibility for its proper operation, and responsibility for making effective the provisions of the Teacher Retirement law are vested in a 15-member Board of Trustees. The State Bank Commissioner, Treasurer of State, Auditor of State, and Commissioner of Education are ex-officio trustees. The remaining 11 trustees are elected and consist of seven active members of ATRS with at least five years of actual service, three retired members receiving an annuity from ATRS, and one active or retired member from a minority racial ethnic group. The seven active trustees consist of one member from each of the four congressional districts; two employed in positions requiring an administrator's license, of which one must be an administrator; and one member employed in a position that does not require state licensure. The trustees are elected in accordance with rules adopted by the Board. Board members serve as trustees without compensation but are reimbursed for any necessary expenses incurred to attend Board meetings or perform other duties authorized by the Board.

B. Plan Description

ATRS is a cost-sharing, multiple-employer defined benefit pension plan that covers employees of schools and education-related agencies, including Arkansas School for the Blind, Arkansas School for the Deaf, Arkansas Activities Association, State Board of Education, regional education service cooperatives, ATRS, Arkansas Educational Television Commission, area vocational-technical schools, Arkansas Rehabilitation Services, enterprises privatized by a public school district, and educational nonprofit organizations licensed and regulated by Division of Developmental Disabilities Services of the Department of Human Services.

On June 30, 2020, the number of participating employers was as follows:	
Public schools	262
State colleges and universities	39
State agencies	17
Other/privatized	28
Total	346

On June 30, 2020, ATRS's membership consisted of the following:	
Retirees or beneficiaries currently receiving benefits	50,133
T-DROP participants	3,639
Inactive plan members (not receiving benefits)	13,338
Active Members	
Fully vested	45,209
Non-vested	21,691
Total	134,010

Members are eligible for full retirement benefits at age 60 with five or more years of actual or reciprocal service or at any age with 28 or more years of credited service. Members with 25 years of actual or reciprocal service who have not attained age 60 may receive an annuity reduced by 10/12 of 1% multiplied by the number of months by which the early retirement precedes the earlier of (1) completion of 28 years of credited service or (2) attainment of age 60. The normal retirement benefit, paid monthly, is determined based on (1) the member's final average salary (effective July 1, 2018, computed using the average of the annual salaries paid during the period of 5 years of credited service producing the highest annual average) and (2) the number of years of service. For active members as of June 30, 2018, a benchmark 3-year FAS was established as a minimum FAS.

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

B. Plan Description (Continued)

ATRS has contributory and noncontributory plans. The contributory plan has been in effect since the beginning of ATRS. The noncontributory plan became available July 1, 1986. Acts 81 and 907 of 1999, effective July 1, 1999, require all new members under contract for 181 or more days to be contributory. Act 93 of 2007 allows an active noncontributory member to make an irrevocable election to become contributory on July 1 of each fiscal year.

A cost of living adjustment (COLA) is payable on July 1 of each year to retirees, certain survivors, and annuity beneficiaries who received monthly benefits for the previous 12 months. The COLA is calculated by multiplying 100% of the member's base retirement annuity plus 3%. Act 780 of 2017 allows the Board of Trustees to evaluate any future COLA adjustments on an annual basis to determine if a simple or compound COLA increase will be given based on the financial condition of the system.

Act 1096 of 1995 created a teacher deferred retirement option plan (T-DROP) for members with 30 or more years of service credit. Effective September 1, 2003, Act 992 of 2003 requires employers to make contributions on behalf of all members participating in T-DROP at rates established by the Board of Trustees. Member contributions and accumulation of service credit will cease once a member enters T-DROP. During participation in T-DROP, ATRS will credit the member account with plan deposits and interest. The plan deposits will be calculated beginning with the member's plan benefit reduced by 1% for each year of credited service. The Board of Trustees may authorize early participation in T-DROP for members with at least 28 years but less than 30 years of credited service. The plan deposit for early participation will be calculated the same as the regular T-DROP deposit with a further reduction of at least .5% but not more than 1% for each month of credited service under 30 years. The T-DROP account accrues interest at a variable rate that is set annually by the ATRS Board of Trustees. T-DROP deposits into member accounts cease at the completion of 10 years of participation in the program; however, a member may continue employment and will continue to receive interest on the account balance at the 10-year plus interest rate that is also set annually by the Board of Trustees. When T-DROP participation ceases, the member may receive the T-DROP distribution as a lump-sum cash payment or an annuity or may roll it over into another tax-deferred account. A member may also elect to defer all or part of the distribution into a T-DROP cash balance account held by ATRS.

Disability retirement benefits are payable to members who are vested and demonstrate total and permanent incapacity to perform the duties of their position while in active employment. The disability annuity is computed in the same manner as the age and service annuity.

Survivor benefits are payable to qualified survivors upon the death of an active, vested member. Eligible spouse survivors receive a survivor annuity that is based on the member's years of service credit prior to their death, and minor child survivors receive a percentage of the member's highest salary earned. ATRS also provides a lump sum death benefit for active and retired members with 10 or more years of credited service. The amount for contributory members will be up to $10,000 and up to $6,667 for noncontributory members. The amount will be prorated for members who have both contributory and non-contributory service, however, members with 15 or more years of contributory service will receive the full $10,000.

C. Basis of Presentation – Fund Accounting

The accounting system is organized and operated on a fund basis. A fund is defined as a fiscal and accounting entity with a self-balancing set of accounts recording cash and other financial resources, together with all related liabilities and residual equities or balances and changes therein, which are segregated for purposes of carrying on specific activities or attaining certain objectives in accordance with special regulations, restrictions, or limitations.

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

C. Basis of Presentation – Fund Accounting (Continued)
The following types of funds, if applicable to this Agency, are recognized in the accompanying financial statements.

Fiduciary Funds

Trust and Agency Funds – Trust and Agency Funds are used to report resources held by the Agency in a trustee capacity or as an agent for individuals, other governmental units, and other funds. These include Pension Trust Funds, Employee Health Trust Funds, Investment Trust Funds, Private-Purpose Trust Funds, and Agency Funds. The specific activity accounted for at this Agency includes the following:

Arkansas Teacher Retirement System Fiduciary Pension Trust Fund

D. Basis of Accounting

Basis of accounting refers to when revenues and expenditures or expenses are recognized and reported in the financial statements. The economic resources measurement focus and accrual basis of accounting are used in the Fiduciary Fund financial statements. Under the accrual basis, contributions and other revenues are recognized when earned, and benefits, refunds, and other expenses are recorded when incurred.

E. Federal Income Tax Status

During the year ended June 30, 2020, ATRS was a qualified plan under 26 USC § 401(a) and was exempt from federal income taxes under 26 USC § 501(a).

F. Cash and Cash Equivalents

Cash and cash equivalents include demand accounts, imprest accounts, cash on hand, cash in State Treasury, all short-term investments with maturities at purchase of 90 days or less, and all deposits in the Short-Term Investment Fund (STIF). The STIF is created through daily sweeps of excess cash by the custodial bank into bank–sponsored commingled funds that are invested in U.S. Government and agency securities and other short-term investments.

G. Deposits and Investments

Deposits

Deposits are carried at cost and consist of cash in bank, cash in State Treasury, cash on deposit with investment managers, and cash in Short-Term Investment Funds. At June 30, 2020, these totals were $24,922,043, $853,111, $105,877,308 and $217,086,569, respectively. State Treasury Management Law governs the management of funds held in the State Treasury, and the Treasurer of State is responsible for ensuring these funds are adequately insured and collateralized.

Custodial Credit Risk – Custodial credit risk for deposits is the risk that, in the event of the failure of a depository institution, the Agency will not be able to recover deposits or will not be able to recover collateral securities that are in the possession of an outside party. The Agency has adopted the State Board of Finance Policy requiring the use of depository insurance and collateralization procedures to manage the risk that deposits may not be returned. As of June 30, 2020, none of the Agency's bank balance of $24,932,035 was exposed to custodial credit risk as it was fully insured by the FDIC. As of June 30, 2020, none of the cash in the Short-Term Investment Fund was exposed to custodial credit risk as it was collateralized with securities held by the custodial agent in the name of ATRS. As of June 30, 2020, $1,002,127 of $106,080,937 in cash held by investment managers was exposed to custodial credit risk as it was uninsured and uncollateralized.

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

Investments

Ark. Code Ann. §§ 24-2-601 — 24-2-619 authorizes the ATRS Board of Trustees to have full power to invest and reinvest monies of ATRS and to hold, purchase, sell, assign, transfer or dispose of any of the investments, or investment proceeds in accordance with the prudent investor rule.

Each investment manager is required to invest within the specific guidelines and parameters set by the Board of Trustees. Asset allocation guidelines have been established as follows:

Asset Allocation	Minimum	Target	Maximum
Total equity	48.0%	53.0%	58.0%
Fixed income	13.0%	15.0%	17.0%
Alternatives	N/A*	5.0%	N/A*
Real assets***	N/A*	15.0%	N/A*
Private equity	N/A*	12.0%	N/A*
Cash equivalents	0.0%	0.0%	5.0%

*Due to the illiquid nature of alternatives, real assets, and private equity, it is not prudent to set rebalancing ranges for these asset classes.
**Additional allocations to total equity may be made beyond the maximum range to serve as a placeholder for unfunded and uncommitted alternatives, real assets, and private equity.
***Real assets include real estate, timber, agriculture, and infrastructure.

The fair value measurement of investments is categorized within the hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities and the lowest priority to unobservable inputs. In instances where inputs used to measure fair value fall into different levels, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation.

The hierarchy of inputs is defined as follows:

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 are observable.

Level 3: Valuations derived from valuation techniques in which significant inputs are unobservable.

For investments that do not have a readily determinable fair value and fall outside of the fair value hierarchy, the system establishes the value by utilizing the Net Asset Value (NAV) or its equivalent as a practical expedient.

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

The fair value measurement of plan investments and securities lending collateral as of June 30, 2020 was as follows:

Investments measured at fair value	Total	Level 1	Level 2	Level 3
Equity investments:				
Domestic equities	$ 2,071,795,588	$ 2,071,795,588		
International equities	961,079,504	961,079,504		
Pooled equity investments	1,052,044,721	1,052,044,721		
Fixed income investments:				
U.S. Government obligations	28,245,622		$ 28,245,622	
Corporate obligations	925,233,362		925,233,362	
Asset- and mortgage-backed securities	23,104,762		23,104,762	
Pooled fixed income funds	1,607,759,109		1,607,759,109	
Promissory notes	257,463,572			$ 257,463,572
Real estate investments:				
Limited partnerships	28,276,070			28,276,070
Real estate	52,674,001			52,674,001
State recycling tax credits:	176,000,000		176,000,000	
Derivative investments:				
Forward contracts	(13,433)		(13,433)	
Total plan investments at fair value	7,183,662,878	$ 4,084,919,813	$ 2,760,329,422	$ 338,413,643
Investments measured at net asset value (NAV)				
Alternative investments:				
Commingled funds	3,221,564,400			
Private equity funds	2,418,195,701			
Real estate funds	1,233,979,683			
Timberland funds	292,958,655			
Farmland funds	204,544,403			
Infrastructure funds	279,610,477			
Re-insurance funds	265,564,463			
Hedge funds	1,397,222,277			
Opportunistic funds	37,965,086			
Total plan investments at net asset value	9,351,605,145			
Total plan investments	$ 16,535,268,023			
Securities Lending Collateral:				
Quality D short term investment pool*	$ 315,801,222			

*Cash collateral received totaled $315,851,510. The amount reported in the GASB 40 footnote above is the market value of the collateral received at June 30, 2020.

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

Cash equivalents invested in the Short-Term Investment Fund are valued at amortized cost, which approximates fair value. The fund may issue and redeem shares at any time.

Equity investments are classified as Level 1 and are exchange-traded securities whose values are based on published market prices and quotations from either national security exchanges or active markets for those securities.

Fixed income investments are classified as Level 2 and include publicly traded securities in inactive markets. Investments in this category are sourced from reputable pricing vendors using price matrix models and techniques. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Fair value is defined as the quoted market value on the last trading day of the period.

Real estate and partnerships are classified as Level 3 and are comprised mostly of owned properties leased to commercial enterprises. These investments are valued using professional property valuations or appraisals, net of debt borrowed against the related assets. Appraisals and valuations are updated every 3 years.

Derivative investments include forward contracts and rights and are classified as Level 2 and valued using observable exchange, dealer or broker market pricing.

Alternative investments generally do not have readily obtainable market values and are valued using the net asset value (NAV) per share (or its equivalent). These values are based on the capital account balance of the general partner reports at the end of each reporting period, adjusted by subsequent contributions, distributions, management fees, and changes in values of foreign currency. There are inherent uncertainties in estimating fair values for these types of investments, and it is possible that the estimates will change in the near-term or the subsequent sale of assets will be different from the reported net asset value. Generally, the investments cannot be redeemed or have certain redemption restrictions and distributions are from the liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

The unfunded commitments and redemption terms for investments measured at the net asset value (NAV) per share (or its equivalent) is presented in the following table:

Investments measured at net asset value (NAV)	Total	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Alternative investments:				
Commingled funds	$ 3,221,564,400		Daily - Quarterly	1-30 days
Private equity funds	2,418,195,701	$ 1,190,898,503	N/A	N/A
Real estate funds	1,233,979,683	396,836,280	Quarterly	45-90 days
Timberland funds	292,958,655		Quarterly	90 days
Farmland funds	204,544,403	15,463,892	Daily - Quarterly	30-60 days
Infrastructure funds	279,610,477	46,114,685	Quarterly	90 days
Re-insurance funds	265,564,463		Semiannually - Annually	60-90 days
Hedge funds	1,397,222,277	18,287,776	Weekly - Annually	3-90 days
Opportunistic funds	37,965,086	73,800,000	Quarterly	60 days
Total plan investments at net asset value	$ 9,351,605,145	$ 1,741,401,136		

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Commingled funds – Commingled funds consist of assets from several accounts that are blended together to lower trading costs per dollar of investment. The System has funds invested in domestic and international equities. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed with proper notification to the fund manager. Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

Private equity funds – Private equity includes 54 buyout funds, 3 distressed debt funds, 2 growth equity funds, 13 hard asset funds, 4 mezzanine funds, 5 multi-strategy funds, 8 turnaround funds, 13 venture capital funds and 3 structured capital funds that invest mostly in private companies across a variety of industries. The value of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. The nature of private equity investments is that distributions are received through the liquidation of the underlying assets of the fund. The expected holding period of a private equity portfolio company is 2 to 10 years.

Real estate funds – Real estate funds include 6 core funds, 18 value added funds, and 20 opportunistic funds that invest primarily in the United States, Europe and Asia. Fund investments can be made in the debt, equity, or a combination of both in real estate property ventures. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed with proper notification to the fund manager. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets in the real estate funds is 2 to 10 years.

Timberland funds – The System has 2 timberland funds that invest in acquisition, growth, and disposition of timber and associated properties. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from the fund may be received as cash flows from operations or return of capital from sales of assets. The holding period for these assets is at the discretion of the fund manager based on the fund's purchase or sale of the underlying assets.

Farmland funds – The System has 2 farmland funds. One fund is an open-ended fund comprised of units that represent the System's ownership of underlying agricultural related assets. This fund may be redeemed quarterly with proper notification to the fund manager. The other fund holds the System's direct investments in farmland and related assets. These investments cannot be easily redeemed. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. Distributions from the fund may be received in cash flows from operations or return of capital from sales of assets. The holding period is at the discretion of the fund manager based on the fund's purchase or sale of the underlying assets in the portfolio.

Infrastructure funds – Infrastructure funds include 7 funds that primarily invest in physical, operational, systems and in monopolistic opportunities such as governmental functions (transmission lines and toll roads). The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments cannot be easily redeemed. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets in the real estate funds is 2 to 10 years.

Re-insurance funds – Re-insurance funds invest in insurance products designed to collect premiums from an insurance company for taking a specific type and level of risk associated with natural disasters. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed annually. Distributions from each fund may be received as cash flows from operations or return of capital from sales of assets. The expected holding period of underlying assets is 6 months to 1 year.

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

Hedge funds – Hedge funds consist of 3 risk premia funds that target absolute returns through long-short positions across various factors and classes, 2 long/short equity funds that seek to profit from securities identified as both undervalued and overvalued, 2 global macro funds that profit from broad market swings caused by political or economic events, 2 credit funds that invest primarily in debt instruments of other companies and 1 event driven fund and 1 co-investment fund that acquire enough shares of a company to gain a controlling interest in order to make corrections to potentially increase a stock's value. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. Redemption ranges from monthly to annually depending on the manager (with the exception of one fund that currently has a 1 year hold). Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

Opportunistic funds – Opportunistic funds utilize operational experience of the fund managers in the fields of information technology, telecommunications, and business services industries to seek quality returns. The value of the investments in this asset class have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. These investments can be redeemed quarterly with proper notification to the fund manager. Distributions are received through liquidation of the underlying assets. The expected holding period is dependent on the discretion of the fund manager.

Securities lending collateral – Cash collateral received from borrowers in the securities lending program is invested in a Quality D short-term investment fund that consists of a liquidating account with a liquidity pool and a duration pool. The value of this fund has been determined by the fund administrator using the NAV per share (or its equivalent).

Rate of Return – The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested. For the year ended June 30, 2020, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was -.96%.

Interest Rate Risk – Interest Rate Risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Agency does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates. The summary shown below indicates that 87% of the Agency's investment maturities are one year or longer.

		Investment Maturities (In Years)			
Investment Type	Fair Value	Less than 1	1 - 5	6 - 10	More than 10
U.S. Government obligations	$ 28,245,622		$ 14,504,761		$ 13,740,861
Corporate obligations	925,233,362	$ 21,291,768	433,509,823	$ 363,003,387	107,428,384
Asset- and mortgage-backed securities	23,104,762		7,095,419	1,227,164	14,782,179
Pooled fixed income funds	1,607,759,109	347,511,514	30,526,705	1,229,720,890	
Promissory notes	257,463,572		102,298,022		155,165,550
State recycling tax credits	176,000,000	16,000,000	64,000,000	80,000,000	16,000,000
Total	$ 3,017,806,427	$ 384,803,282	$ 651,934,730	$ 1,673,951,441	$ 307,116,974
Securities Lending Collateral					
Quality D short term investment pool	$ 315,801,222	$ 314,876,043		$ 925,179	

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Asset-Backed Securities – As of June 30, 2020, ATRS held asset-backed securities with a fair value of $18,217,762. These securities represent interests in various trusts consisting of pooled financial assets other than mortgage loans conveyed by the issuing parties. ATRS's ability to recover the amount of principal invested in these securities depends on the performance and quality of the trust assets.

Mortgage-Backed Securities – As of June 30, 2020, mortgage-backed securities had a fair value of $1,232,391. The yields and maturities of mortgage-backed securities generally depend on when the underlying mortgage loan principal and interest are repaid. Although the full amount of principal will be received if prepaid, the interest income that would have been collected during the remaining period to maturity, net of any market adjustment, is lost.

Corporate Bonds – As of June 30, 2020, ATRS held corporate bonds with a fair value of $325,664,164. Corporate bonds are debt instruments that are issued by private corporations. These bonds have a term maturity and can have either a fixed or variable interest rate. Variable interest rate bonds have adjustments that are made periodically and vary directly with movements in interest rates.

Convertible Corporate Bonds – As of June 30, 2020, ATRS held convertible bonds with a fair value of $599,569,199. Convertible bonds convey an option to the bondholder to exchange each bond for a specified number of shares of common stock of the corporation. Convertible bonds generally offer lower coupon rates and promised yields to maturity in exchange for the value of the option to trade the bond into stock.

Promissory Notes – ATRS also held 4 promissory notes with a fair value of $257,463,572 at June 30, 2020. Promissory notes are a form of debt that companies use to raise money in exchange for payment of a fixed amount of periodic income at a specified date or on demand. Three unsecured promissory notes were issued to Big River Steel Holdings, LLC and one secured note was issued to Highland Pellets, LLC.

Credit Risk – Credit Risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations. The risk is measured by the credit quality of investments in debt securities as described by nationally-recognized statistical rating organizations. A formal investment policy that limits investment in debt based on their statistical rating as a means of managing exposure to credit risk has not been adopted by the Agency.

As of June 30, 2020, the Agency's exposure to credit risk as rated by Standard and Poor's and Moody's Investors Service is as follows:

Standard and Poor's		Moody's Investors Service	
Rating	Fair Value	Rating	Fair Value
AAA	$ 4,414,675	Aaa	$ 27,906,261
AA	30,870,068	Aa	207,024
A	18,229,377	A	24,639,866
BBB	231,729,951	Baa	196,209,728
BB	89,402,445	Ba	81,455,122
B	69,618,539	B	37,436,921
CCC or below	17,780,446	Caa or below	3,382,874
Unrated	2,555,760,926	Unrated	2,646,568,631
Total	$ 3,017,806,427	Total	$ 3,017,806,427
Securities Lending Collateral			
Unrated	$ 315,801,222	Unrated	$ 315,801,222

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

Custodial Credit Risk – Custodial Credit Risk for investments is the risk that, in the event of the failure of the counterparty to a transaction, the Agency will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Agency, and are held by either the counterparty or the counterparty's trust department or agent but not in the Agency's name. The Agency has adopted the State Board of Finance Policy requiring the use of depository insurance and collateralization procedures to manage custodial credit risk for all investments other than loaned securities. As of June 30, 2020, none of the Agency's investments were exposed to custodial credit risk.

Concentration of Credit Risk – Concentration of Credit Risk is the risk of loss attributed to the magnitude of the Agency's investment in a single issuer (not including investments issued or explicitly guaranteed by the U.S. Government, investments in mutual funds, external investment pools, or other pooled investments). The Agency has not adopted a formal investment policy to limit the amount it may invest in any one issuer to manage the concentration of credit risk. As of June 30, 2020, none of the Agency's investments in any one issuer represent more than 5% of total investments.

Foreign Currency Risk – Foreign Currency Risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Agency does not have an investment policy that limits investment in foreign currency.

The Agency's exposure to foreign currency risk in U.S. dollars for investments and deposits at June 30, 2020, was as follows:

			Investments			
Currency		Fair Value	Fixed Income	Equities	Forward Contracts	Cash Deposits
Argentine Peso	ARS	$ 985,858	$ 609,284		$ (9,897)	$ 386,471
Australian Dollar	AUD	2,284,572		$ 2,284,572		
Brazilian Real	BRL	22,134,760		22,134,759		1
British Pound Sterling	GBP	323,323,814		321,935,813	1,376,404	11,597
Canadian Dollar	CAD	12,025,276		12,025,193		83
Chinese Yuan Renminbi	CNH	26,082,132		26,082,184	(57,490)	57,438
Danish Krone	DKK	388				388
Euro	EUR	293,299,451		292,738,193	569,390	(8,132)
Hong Kong Dollar	HKD	37,206,465		36,234,390	972,073	2
Indian Rupee	INR	430,924				430,924
Indonesian Rupiah	IDR	17,097,376		17,097,359		17
Japanese Yen	JPY	156,341,019		156,383,342	(165,149)	122,826
Mexican Peso	MXN	2,244,163		2,244,163		
New Taiwan Dollar	TWD	22,271,689		22,271,687		2
New Zealand Dollar	NZD	3,767,789		3,767,789		
South African Rand	ZAR	44,390,039		44,390,039		
South Korean Won	KRW	57,546,379		57,546,379		
Swedish Krona	SEK	73,503,772		73,492,263	11,483	26
Swiss Franc	CHF	65,421,341		72,539,929	(7,119,071)	483
Thailand Baht	THB	2,031,662		2,031,662		
Totals		$ 1,162,388,869	$ 609,284	$ 1,165,199,716	$ (4,422,257)	$ 1,002,126

For Forward Currency Contracts in the schedule above, a positive number represents the market value of contracts to purchase that currency in excess of the market value of contracts to sell that currency. A negative number, therefore, represents the market value of contracts to sell foreign currency in excess of contracts to purchase that currency.

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investments (Continued)

Derivatives – Derivative instruments are financial contracts or agreements whose values depend on the values of one or more underlying assets, reference rates, and/or financial indexes. Derivative instruments include futures contracts, forward contracts, swap contracts, options contracts, forward foreign currency exchange and rights. ATRS investment guidelines state that derivatives may be used to reduce the risk in a portfolio but should not be used to create a position of leverage or substantially increase the risk of the overall portfolio. Futures and options should be matched by cash or cash equivalent securities, and all short futures positions should be matched by equivalent long security positions. Each investment manager's derivative usage is specified in the investment management agreement or specific guidelines.

At June 30, 2020, the fair value balance of derivative instruments and the changes in fair value for the year then ended, were as follows:

	Changes in Fair Value		Fair Value at June 30, 2020	
Type	Classification	Amount	Classification	Amount
Foreign currency forwards	Investment income	$ 81,640	Investments	$ (13,434)

Foreign Currency Forwards – ATRS enters into various currency contracts to manage exposure of foreign portfolio holdings to changes in foreign currency exchange rates. A forward exchange contract is a commitment to purchase or sell a foreign currency at a future date at a negotiated forward rate. Risks associated with such contracts include movement in the value of the foreign currency relative to the U.S. dollar and the ability of the counterparty to perform. The contracts are valued at forward exchange rates, and the changes in value of open contracts are recognized as unrealized appreciation (depreciation) in fair value of investments, a component of investment income, in the statement of changes in plan net position. The realized gain or loss on closed forward currency contracts represents the difference between the value of the original contracts and the closing value of such contracts and is included in net appreciation (depreciation) in fair value of investments, a component of investment income, in the statement of changes in plan net position. At June 30, 2020, ATRS had outstanding forward exchange currency contracts to purchase foreign currencies with contract amounts of $3,681,897 and market values of $3,684,353, resulting in a net gain of $2,456. Outstanding forward exchange currency contracts to sell foreign currencies with contract amounts of $8,090,720 had market values of $8,106,610, resulting in a net loss of $15,890. The net fair value and net notional amounts of foreign currency forwards as of June 30, 2020 were as follows:

Foreign Curency Forward	Fair Value	Net Notional	
Argentine Peso	$ 394	ARS	697,253
British Pound Sterling	7	GBP	9,062
Chinese Yuan Renminbi	(70)	CNH	406,323
Japanese Yen	1,210	JPY	17,817,065
Swedish Krona	440	SEK	5,895,026
Swiss Franc	(17,871)	CHF	6,710,986
United States Dollar	2,456	USD	3,681,897
Totals	$ (13,434)		

Securities Lending Transactions – Arkansas Code Annotated and Board policy permit ATRS to participate in a securities lending program administrated by State Street Bank (the "Custodian"). The Custodian enters into agreements with broker-dealers or other entities to loan securities for collateral with a simultaneous agreement to return the collateral for the same securities in the future. There were no restrictions on the dollar amount of securities loaned by ATRS. Securities on loan to participating brokers at year-end include U.S. Government securities, corporate securities, and international securities. Brokers who borrow the securities provide cash or other collateral, including securities issued or guaranteed by the U.S. Government.

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

G. Deposits and Investment (Continued)

Collateral must be provided in the amount of at least 100% of the market value of the loaned securities. ATRS cannot pledge or sell collateral securities received unless the borrower defaults. The cash collateral received on each loan is invested in a collective investment fund comprised of a liquidity pool and a duration pool.

As of June 30, 2020, the liquidity pool had an average duration of 26.81 days and an average weighted final maturity of 70.20 days for USD collateral. The duration pool had an average duration of 18.22 days and an average weighted final maturity of 1,602.55 days for USD collateral. Because the loans are terminable at will, their duration generally will not match the duration of the investments made with cash collateral.

At year-end, ATRS had no credit risk exposure to borrowers due to the custodian's indemnification agreement to purchase replacement securities, or return cash collateral in the event a borrower fails to return a loaned security or fails to pay the Agency for income of the securities while on loan. No borrowers failed to return loaned securities or pay distributions during the year. Investments made with cash collateral appear as an asset on the Statement of Plan Net Position. Corresponding liabilities are recorded, as ATRS must return the cash collateral to the borrower upon expiration of the loan.

ATRS is exposed to investment risk, including the possible loss of principal value in the cash collateral pool, due to fluctuation in the market value of the assets held by the cash collateral pool. As of June 30, 2020, the fair value of the securities lending liabilities exceeded the securities lending assets by $50,288.

H. Capital Assets

Capital assets purchased and in the custody of this Agency were recorded as expenditures at the time of purchase. Assets with costs exceeding $5,000 and an estimated useful life exceeding one year are reported at historical cost, including ancillary costs (such as professional fees and costs, freight costs, preparation or setup costs, and installation costs). Gifts or contributions are generally recorded in the accounts at acquisition value at the time received. Acquisition value is the market value if the Agency would have purchased the item. Depreciation is reported based on a straight-line method, with no salvage value. Estimated useful lives generally assigned are as follows:

Assets:	Years
Equipment	5-20

Capital assets activity for the year ended June 30, 2020, was as follows:

	Beginning Balance	Additions	Retirements	Ending Balance
Fiduciary activities:				
Equipment	$ 1,064,259	$ 244,439	$ 332,766	$ 975,932
Less: Accumulated depreciation	914,489	148,050	200,151	862,388
Fiduciary activities, net	$ 149,770	$ 96,389	$ 132,615	$ 113,544

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

I. Compensated Absences – Employee Leave

Annual leave is earned by all full-time employees. Upon termination, employees are entitled to receive compensation for their unused accrued annual leave up to 30 days. Liabilities for compensated absences are determined at the end of the year based on current salary rates.

Sick leave is earned by all full-time employees and may be accrued up to 120 days. Compensation up to a maximum of $7,500 for unused sick leave is payable to employees upon retirement.

Compensated absences are reported in the State's "Government-Wide" financial statements but are not reported as liabilities or expenditures in the governmental funds. However, the compensated absences payable attributable to this Agency's employee annual and sick leave as of June 30, 2020 and 2019, amounted to $530,170 and $445,890, respectively. The net changes to compensated absences payable during the year ended June 30, 2020, amounted to $84,280.

J. Post-Employment Benefits Other Than Pensions

Arkansas State Employee Health Insurance Plan (Plan)
<u>Plan Description</u> – The Department of Finance and Administration – Employee Benefits Division (DFA-EBD) provides medical and prescription drug benefits for eligible state employees and retirees. Policies for DFA-EBD related to medical and prescription drug plans are established by the State and Public School Life and Health Insurance Board (Board) and may include ad hoc benefit changes or annual cost redeterminations. For the current year, no ad hoc or cost redetermination changes occurred. The Constitution of Arkansas, Article 5, vests the General Assembly with legislative power to enact and amend duties of and benefit provisions of the Board and DFA-EBD, respectively, as published in Subchapter 4, Chapter 5 of Title 21 of the Arkansas Code Annotated. DFA-EBD is included in the State of Arkansas's Comprehensive Annual Financial Report (CAFR), which includes all applicable financial information, notes, and required supplementary information. That report may be obtained by writing to Department of Finance and Administration, 1509 West Seventh Street, Suite 403, Little Rock, Arkansas 72201 or by calling 501-682-1675.

The Agency contributes to the Plan, to a single employer defined benefit OPEB plan administered by the DFA-EBD, on a monthly basis. The Board establishes medical and prescription drug benefits for three classes of individuals covered as follows: active employees, terminated employees with accumulated benefits, and retires and beneficiaries. The Plan is established on the basis of a pay-as-you-go financing requirement and no assets are accumulated in a trust as defined by Governmental Accounting Standards Board Statement (GASBS) Number 75. The State's annual OPEB cost for the Plan is based on an actuarially determined calculated amount made in accordance with GASBS Number 75.

<u>Funding Policy</u> – Employer contributions for the Plan are established by Ark. Code Ann. § 21-5-414 not to exceed $450 per budgeted position. Employees, retirees, and beneficiaries contribute varying amounts based on the type of coverage and inclusion of family members. Benefits for Medicare-eligible retirees are coordinated with Medicare Part A and B and the Plan is the secondary payer. The portion of the State's annual OPEB liability attributable to ATRS as of June 30, 2020 is $6,585,411.

K. Deferred Inflows and Outflows of Resources

Deferred outflows of resources represent a decrease of net position that applies to future periods. Thus, these items will not be recognized as an outflow of resources (an expense or expenditure) until a future period.

Deferred inflows of resources represent an increase of net position that applies to future periods. These items will not be recognized as an inflow of resources (revenue) until a future period.

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 1: Summary of Significant Accounting Policies (Continued)

L. Contributions

The Agency's funding policy provides for periodic employer contributions at statutorily-established rates based on annual actuarial valuations. The employer contribution rate was 14.25% for the fiscal year ending June 30, 2020. Contributory members are required to contribute 6.25% of gross wages to ATRS. Employee contributions are refundable if ATRS-covered employment terminates before a monthly benefit is payable. Employee contributions remaining on deposit with ATRS for a period of one or more years earn interest credits, which are included in the refund.

M. Reserves

In accordance with the provisions of Ark. Code Ann. § 24-7-405, ATRS must maintain reserve accounts showing net assets available for benefits. At June 30, 2020, the reserve accounts were funded at a level that complied with the code provisions.

	Total
Members' deposit account reserve	$ 10,195,620,369
Employers' accumulation account reserve	(6,237,129,203)
Retirement reserve	12,389,040,912
Teacher deferred retirement option plan account reserve	442,391,622
Survivor benefit account reserve	102,904,404
Income - expense account reserve	9,248,120
Total	$ 16,902,076,224

The Code provisions define each of the reserve accounts as follows:

Members' Deposit Account Reserve – The account in which members' contributions shall be accumulated with regular interest and from which shall be made transfers and refunds of contributions.

Employers' Accumulation Account Reserve – The account in which shall be accumulated the employer's contributions to ATRS and from which shall be made transfers as provided in the code.

Retirement Reserve – The account from which shall be paid all annuities and benefits in lieu of annuities payable as provided in this act to retirants who retired on account of superannuation or disability and to beneficiaries of such retirants.

Teacher Deferred Retirement Option Plan Account Reserve – The account in which shall be accumulated plan deposits made on behalf of the member with plan interest.

Survivor Benefit Account Reserve – The account from which shall be paid survivor benefits payable as provided in this act.

Income - Expense Account Reserve – The account to which shall be credited all investment income from invested assets of ATRS. It shall also be the account in which shall be accumulated the contributions made by employers for the administrative expenses of ATRS, from which shall be made annual transfers of interest credits and excess amounts to the other accounts of ATRS, and from which shall be paid all the expenses of the Board necessary for the administration and operation of ATRS.

NOTES TO FINANCIAL STATEMENTS (Continued)
June 30, 2020

NOTE 2: Net Pension Liability

The components of the net pension liability of the participating employers at June 30, 2020, were as follows:

Total pension liability	$ 22,562,958,162
Plan net position	(16,902,076,224)
Net pension liability	$ 5,660,881,938
Plan net position as a percentage of the total pension liability	74.91%

Actuarial Assumptions – The total liability was determined by an actuarial valuation as of June 30, 2020 using the following actuarial assumptions, applied to all prior periods included in the measurement:

Wage inflation rate	2.75%
Salary increases	2.75 - 7.75%
Investment rate of return	7.50%

Mortality rates were based on the RP-2014 Healthy Annuitant, Disabled Annuitant, and Employee Mortality headcount weighted tables for males and females adjusted for future mortality improvements using projection scale MP-2017 Table from 2006.

The actuarial assumptions used in the June 30, 2020, valuation were based on the results of an actuarial experience study for the period July 1, 2010 through June 30, 2015.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return were adopted by the plan's trustees after considering input from the plan's investment consultant and actuary.

For each major asset class that is included in the pension plan's target asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

Asset Allocation	Target	Long-Term Expected Real Rate of Return
Total equity	53.0%	5.2%
Fixed income	15.0%	-0.1%
Alternatives	5.0%	3.5%
Real assets	15.0%	5.1%
Private equity	12.0%	7.2%
Cash equivalents	0.0%	-1.0%
	100.0%	

NOTES TO FINANCIAL STATEMENTS (Continued)

June 30, 2020

NOTE 2: Net Pension Liability (Continued)

Single Discount Rate – A single discount rate of 7.50% was used to measure the total pension liability based on the expected rate of return on pension plan investments. The current member and employer contribution rates are 6.25% and 14.25% of active member payroll, respectively. Although not all members contribute, the member and employer rates are scheduled to increase by 0.25% increments ending in Fiscal Year 2023. The ultimate member and employer rates will be 7% and 15%, respectively. The projection of cash flows used to determine this single discount rate assumed that member and employer contributions will be made in accordance with this schedule. Based on these 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.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 7.50%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1% lower or 1% higher:

	Sensitivity of the Net Pension Liability to the Single Discount		
	1% Decrease 6.50%	Current Rate 7.50%	1% Increase 8.50%
Net pension liability	$ 8,423,120,901	$ 5,660,881,938	$ 3,370,051,058

NOTE 3: Required Supplementary Schedules

Detailed historical information about the pension liabilities for which the pension plan's assets are being held and managed and the significant assumptions used to measure these liabilities are required supplementary information. This required supplementary information, prepared in accordance with the parameters of GASB Statement no. 67, is included immediately following the notes to the financial statements.

ARTRS
Arkansas Teacher Retirement System

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

For the ten-year period ended June 30, 2020

TOTAL PENSION LIABILITY	2020	2019	2018	2017	2016	2015	2014 (2013, 2012, 2011*)
Service cost	$ 331,035,218	$ 325,464,537	$ 315,864,318	$ 307,786,503	$ 305,086,337	$ 298,134,477	$ 326,999,276
Interest	1,608,463,162	1,551,511,422	1,504,613,059	1,485,759,965	1,433,768,167	1,371,168,271	1,326,709,192
Changes in benefit terms				(469,205,711)			(27,405,705)
Difference between actual and expected experience	(24,869,157)	119,427,343	(7,365,993)	(76,812,667)	(15,341,738)	123,519,055	(103,017,525)
Changes in assumptions				1,374,950,899			
Benefit payments	(1,255,065,793)	(1,205,326,555)	(1,160,738,238)	(1,092,952,357)	(1,035,958,950)	(970,719,484)	(914,250,015)
Refunds	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)
NET CHANGE IN TOTAL PENSION LIABILITY	649,971,339	781,396,964	642,917,741	1,518,652,629	677,408,345	811,328,197	598,550,120
TOTAL PENSION LIABILITY - BEGINNING OF YEAR	21,912,986,823	21,131,589,859	20,488,672,118	18,970,019,489	18,292,611,144	17,481,282,947	16,882,732,827
TOTAL PENSION LIABILITY - END OF YEAR (A)	$ 22,562,958,162	$ 21,912,986,823	$ 21,131,589,859	$ 20,488,672,118	$ 18,970,019,489	$ 18,292,611,144	$ 17,481,282,947
PLAN NET POSITION							
Contributions - employer	$ 446,228,128	$ 430,864,656	$ 424,488,126	$ 414,954,939	$ 410,358,229	$ 408,230,472	$ 404,920,440
Contributions - member	153,105,134	141,885,632	138,766,747	133,109,939	131,100,983	128,555,684	125,225,906
Net investment income	(165,766,491)	898,384,867	1,824,094,695	2,289,818,591	35,579,657	632,166,951	2,429,334,097
Benefit payments	(1,255,065,793)	(1,205,326,555)	(1,160,738,237)	(1,092,952,357)	(1,035,958,950)	(970,719,484)	(914,250,015)
Refunds	(9,592,091)	(9,679,783)	(9,455,405)	(10,874,003)	(10,145,471)	(10,774,122)	(10,485,103)
Administrative expense	(8,454,436)	(7,134,784)	(9,336,430)	(7,825,595)	(8,059,030)	(8,034,857)	(8,034,236)
NET CHANGE IN PLAN NET POSITION	(839,545,549)	248,994,033	1,207,819,496	1,726,231,514	(477,124,582)	179,424,644	2,026,711,089
PLAN NET POSITION - BEGINNING OF YEAR	17,741,621,773	17,492,627,740	16,284,808,244	14,558,576,730	15,035,701,312	14,856,276,668	12,829,565,579
PLAN NET POSITION - END OF YEAR (B)	$ 16,902,076,224	$ 17,741,621,773	$ 17,492,627,740	$ 16,284,808,244	$ 14,558,576,730	$ 15,035,701,312	$ 14,856,276,668
NET PENSION LIABILITY - END OF YEAR (A) - (B)	$ 5,660,881,938	$ 4,171,365,050	$ 3,638,962,119	$ 4,203,863,874	$ 4,411,442,759	$ 3,256,909,832	$ 2,625,006,279
Plan net position as a percentage of total pension liability	74.91%	80.96%	82.78%	79.48%	76.75%	82.20%	84.98%
Covered employee payroll	$ 3,077,558,814	$ 3,027,154,131	$ 2,986,026,715	$ 2,921,965,125	$ 2,888,392,668	$ 2,873,988,053	$ 2,850,860,174
Net pension liability as a percentage of covered employee payroll	183.94%	137.80%	121.87%	143.87%	152.73%	113.32%	92.08%

* ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

SCHEDULE OF CONTRIBUTIONS

For the ten-year period ended June 30, 2020

							2013, 2012, 2011*
	2020	2019	2018	2017	2016	2015	2014
Actuarially-determined contribution	$ 450,612,124	$ 447,791,482	$ 422,365,685	$ 423,846,831	$ 437,434,470	$ 474,773,530	$ 485,904,529
Actual contribution	446,228,128	430,864,656	424,488,126	414,954,939	410,358,229	408,230,472	404,920,440
Contribution deficiency (excess)	$ 4,383,996	$ 16,926,826	$ (2,122,441)	$ 8,891,892	$ 27,076,241	$ 66,543,058	$ 80,984,089
Covered employee payroll	$ 3,077,558,814	$ 3,027,154,131	$ 2,986,026,715	$ 2,921,965,125	$ 2,888,392,668	$ 2,873,988,053	$ 2,850,860,174
Actual contribution as a percentage of covered employee payroll	14.50%	14.23%	14.22%	14.20%	14.21%	14.20%	14.20%

* ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

SCHEDULE OF INVESTMENT RETURNS

For the ten-year period ended June 30, 2020

							2013, 2012, 2011*
	2020	2019	2018	2017	2016	2015	2014
Annual money-weighted rate of return	-0.96%	5.25%	11.46%	16.09%	0.24%	4.34%	19.27%

*ATRS is only required to present those years for which information is available until the full 10-year trend is completed.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

June 30, 2020

NOTE 1: Summary of Significant Information Related to Required Supplementary Schedules

A. Changes in Benefit Terms

There were no significant changes in benefit terms for the year ended June 30, 2020.

B. Changes in Assumptions

There were no significant changes in assumptions for the year ended June 30, 2020.

C. Methods and Assumptions Used in Calculations of Actuarially-Determined Contributions

Valuation date: June 30, 2018

Actuarially determined contribution rates are calculated as of June 30 in the year which is one year prior to the beginning of the fiscal year in which contributions are reported.

The following actuarial methods and assumptions were used to determine contribution rates reported in the schedule of contributions:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll
Amortization period	30 years
Asset valuation method	4-year smoothed market for funding purposes; 20% corridor
Payroll growth	2.75%
Salary increases	2.75 to 7.75% including inflation
Investment rate of return	7.50%
Mortality table	RP-2014 Healthy Annuitant, Disabled Annuitant, and Employee Mortality headcount weighted tables were used for males and females. Mortality rates were adjusted for future mortality improvements using projection scale MP-2017 from 2006.

	Scaling Factor	
Table	Males	Females
Healthy Annuitant	101%	91%
Disabled Annuitant	99%	107%
Employee Mortality	94%	84%

SCHEDULE OF SELECTED INFORMATION
For the five-year period ended June 30, 2020 (Unaudited)

	2020	2019	2018	2017	2016
Total Assets	$ 17,272,901,062	$ 18,281,516,802	$ 18,088,381,003	$ 16,792,590,856	$ 15,236,170,821
Total Deferred Outflows of Resources	1,310,404				
Total Liabilities	371,416,146	539,895,029	595,753,263	507,782,612	677,591,091
Total Deferred Inflows of Resources	719,096				
Net Position Restricted for Pension Benefits	16,902,076,224	17,741,621,773	17,492,627,740	16,284,808,244	14,558,576,730
Total Additions (Losses)	433,570,198	1,471,135,154	2,387,349,568	2,837,883,469	577,038,869
Total Deductions	1,273,115,747	1,222,141,121	1,179,530,072	1,111,651,955	1,054,163,451

INVESTMENTS

2020 COMPREHENSIVE ANNUAL FINANCIAL REPORT

ARTRS
Arkansas Teacher Retirement System

March 31, 2021

Board of Trustees
Arkansas Teacher Retirement System
1400 West Third Avenue
Little Rock, AR 72201

Market Overview

Certainly the 2020 fiscal year can be described as a roller coaster of a year, but without a doubt the prevailing story is the onset and impact of the Coronavirus-19 pandemic (COVID-19) on public health, the global economy and global capital markets.

Though paling in comparison to the pandemic, the start of the fiscal year certainly had its commotion. Trade tensions between the U.S. and China, new rounds of global bank economic stimulus, an impeachment inquiry into U.S. President Donald Trump, and the ongoing Brexit saga, among other geopolitical concerns, had investors on edge. The dreary outlook for global economic growth drove the U.S. Federal Reserve (Fed) to cut rates by 0.25% in both July and September 2019 and pushed the 10-year Treasury yield from 2.00% to 1.68% at the end of September. Mario Draghi also announced a new round of stimulus from the European Central Bank after portraying a very gloomy depiction of the region. However, after a bleak start to the fiscal year, sentiment changed course in the closing months of 2019 and the market started to resemble a normal 'risk-on' environment. A U.S.-China trade agreement and central bank easing helped a year-end rally with global equity markets posting a 9.1%[1] return for the closing quarter of 2019 as risk was embraced. This would be the first of multiple market reversals throughout the fiscal year.

The 2019 year-end rally persisted through to the start of the 2020 calendar year, but shortly thereafter in late February, the pandemic scare in the U.S. broke out and caused an incredibly volatile second half of the year. What seemed to be a localized China health issue was suddenly seen differently as the transmissibility of COVID-19 dawned on markets. Bullish sentiment had been riding high and markets were caught unprepared. The impact on capital markets was amplified by fear of the economic repercussions driven by governmental lockdowns that swept the globe in early March. The VIX breached 80 in mid-March and equity markets broke down very rapidly recording the swiftest bear market on record. At its worst point, the global equity market fall reached about 33%, well over the 20% threshold normally assigned to bear markets. Bond markets were also hit hard. The yield on 10-year U.S. Treasury fell to 0.70% by the end of the March and credit notched up the fastest rise in spreads on record, with some spreads tripling and quintupling over government bonds from their pre-COVID-19 levels. If that wasn't enough, amidst all this was the fallout between OPEC and Russia regarding oil production limits. An oversupply and complete plunge in global demand led oil prices to plummet and oil futures to turn negative for the first time in history.

Very quickly recognizing the severity of the situation, governments and central banks across the world brought much-needed support for markets by late March. The scale and range of global central bank and public finance support in fighting the pandemic's economic effects dwarfs the 2008-9 financial crisis stimulus. The Fed slashed rates by 150 basis points, implemented and expanded several lending facilities and grew its balance sheet by over $2 trillion in just a few weeks. The Fed vowed to buy not only government bonds, but also made clear that it would also be buying investment grade corporate bonds as well. Rapid balance sheet growth was seen across the world's major central banks in a no-holds barred attempt to liquify the financial system and prevent another financial crisis.

[1] MSCI All Country World IMI Index

The quick policy response brought upon a surprising recovery that began in the last week of March and persisted through to the end of June. The government and central bank actions successfully lifted all market boats, as equity and credit rebounded, and global bond yields moved lower still. The S&P 500 recorded its best monthly return in April since 1987 and global equities rallied 19.8%[2] in the final quarter of the fiscal year. Bond markets with embedded credit risk also recovered strongly, with the U.S. high yield bond market returning 10.2%[3] and emerging market debt returning 12.3%[4] for the quarter. At the end of the fiscal year markets appeared to be riding on the hope of a V-shaped market recovery and returning to business as usual.

Reflecting on the fiscal year-end results we saw mixed returns across the major capital markets. The best performing securities were in the safe-haven government bond markets, though surprisingly global equities generated modest, yet positive results. Represented by the MSCI All Country World IMI Index, global equities generated a 1.2% return for the one-year period. The positive results were driven by the U.S. equity market, which returned 6.4% as measured by the Dow Jones U.S. Total Stock Market Index. International equity markets were less fortunate in USD terms, as both developed and emerging markets declined. The MSCI EAFE Index returned -5.1% and the MSCI Emerging Markets Index returned –3.4%. However, as the U.S. dollar appreciated relative to most emerging market currencies, in local currency terms, emerging markets posted a positive 1.4% return for the year.

Across bond markets there was a wide dispersion of returns. Broadly, U.S. yields fell dramatically and the U.S. bond market, as represented by the Bloomberg Barclays Aggregate Bond Index, returned 8.7%. Safe-haven government bonds performed the greatest, posting a 10.3%[5] return over the year. Despite an unprecedented dislocation across credit, U.S. high yield bonds were able to stay out of negative territory, earning 0.0%[3] return for the year. Overall, for the one-year period ending June 30, 2020, markets were able to ward off mass destruction due to COVID-19 with the help of significant policy support combined with the start of economies reopening.

Overview of ATRS Fund Structure

The ATRS portfolio is well-diversified across several asset classes, including global public equities, fixed income, alternative investments, real assets, and private equity. The asset allocation is a long-term Policy determined through periodic asset-liability studies and assessments of risk and liquidity needs. Within these asset classes, the investments are diversified across investment types, styles, regions and vintage years. A variety of investment firms are employed within each category to minimize manager- and firm-specific risks. We continue to believe the diversification and overall risk level of the portfolio is appropriate given the goals and objectives of the ATRS.

During the 2020 fiscal year there were minimal changes to the overall asset allocation and the underlying manager structure. The portfolio continued to progress towards its long-term policy targets, where currently the real assets portfolio is the only allocation that is still building up to its long-term target. The real assets portfolio ended the year at 12.7% of Total Fund assets, still slightly shy of its long-term target of 15.0%. From a manager structure perspective, there was one manager termination within the equity asset class, AllianzGI Structured Alpha. The assets were reinvested within the equity asset class, which replenished index exposure for liquidity and allowed the portfolio to participate in the subsequent stock market recovery.

Aon and the ATRS Investment Team continue to regularly review the portfolio allocation, structure and manager line-up, and evaluate additional types of strategies in order to best position the fund to achieve its investment objectives.

[2] MSCI All Country World Investable Market Index

[3] Bloomberg Barclays U.S. Corporate High Yield

[4] JPM EMBI Global Diversified Index

[5] Bloomberg Barclays U.S. Government Index

ARTRS
Arkansas Teacher Retirement System

AON

ATRS Performance Overview (annualized returns)

Periods ending 6/30/2020	1 Year		3 Years		5 Years	
	Return	Rank	Return	Rank	Return	Rank
Total Fund	**-1.4%**	**92**	**5.1%**	**43**	**6.0%**	**19**
Performance Benchmark	2.3	35	6.2	17	6.6	9
Total Equity	**-6.4**	**75**	**3.4**	**62**	**5.1**	**54**
Performance Benchmark	2.7	41	6.9	34	7.4	30
Total Fixed Income	**6.4**	**69**	**4.7**	**67**	**4.5**	**42**
Performance Benchmark	7.9	43	5.2	39	4.4	51
Total Opportunistic/Alternatives	**-5.3**	**--**	**-1.7**	**--**	**0.0**	**--**
Custom Alternatives Benchmark	-2.4	--	1.0	--	0.4	--
Total Real Assets	**4.0**	**--**	**6.3**	**--**	**7.2**	**--**
Total Real Assets Benchmark	4.1	--	5.3	--	6.5	--
Total Private Equity	**4.9**	**--**	**13.1**	**--**	**12.7**	**--**
Private Equity Policy	-7.5	--	6.0	--	7.8	--

The Total Fund ended the fiscal year with approximately $16.7 billion representing a decrease of approximately $921 million over the year. Investment losses of $203 million and net of withdrawals of approximately $718 million drove the asset decline. The investment losses equate to a decline of 1.4%, net-of-fees on Total Fund assets. Despite the volatile year, all asset classes, with the exception of the Opportunistic/Alternatives and Total Equity, generated positive investment results. Fixed Income generated the strongest absolute returns, returning 6.4% over the one-year period, followed by Private Equity which returned 4.9%. Real Assets also generated a positive 4.0% return over the one-year period. On a relative basis, the Total Fund trailed its Performance Benchmark return of 2.3%. Relative performance was primarily driven by the Total Equity asset class and losses resulting from the Allianz Structured Alpha fallout. Relative to a peer group of U.S. Public Pension Plans with assets over $1 billion, the Plan ended the year below the median plan. Longer-term performance remains positive, as the Total Fund returned an annualized 6.0% over the five-year period, 8.8% over the ten-year period and 8.2% since inception (4/1986). Additionally, the Total Fund ranked above median over the three-year period and in the top quartile of the peer universe over the five, ten and since inception time periods.

During the year, the total equity asset class returned -6.4%, trailing its benchmark return of 2.7%. While active management was mixed over the year, the underperformance was primarily driven by the losses realized by the AllianzGI Structured Alpha products, as well as from a modest overweight to small cap securities within the Total Equity asset class. Global small cap securities, as measured by the MSCI All Country World Small Cap Index, declined 5.5% during the year, while broad global equity markets gained 1.2% as measured by the MSCI All Country World Investable Markets Index. While longer-term absolute performance remains strong, returning an annualized 9.5% over the trailing 10-years, recent underperformance has impacted the longer-term returns relative to the Performance Benchmark.

AON

Fixed income market returns outperformed global equity returns, as yields fell meaningfully over the year. The Bloomberg Barclays Universal Index returned 7.9%. The ATRS fixed income portfolio generated a 6.4% return. The core and core plus bond managers generated the strongest absolute returns and also notably outpaced their respective benchmarks. Despite meaningfully outperforming their respective benchmarks, the absolute return managers lagged the broader fixed income markets due primarily to minimal interest rate exposure. The trailing 5- and 10-year fixed income portfolio returns exceeded those of the benchmark.

The fiscal year return of the opportunistic/alternatives portfolio fell by 5.3% and trailed the Custom Alternatives Benchmark return of -2.4%. From an absolute return perspective, the alternative risk premia strategies struggled in the volatile market environment and was a primary driver of the negative returns; however, relative to their peer benchmarks performance was mixed. Event driven hedge fund manager, York, continues to methodically wind down its portfolio which also negatively impacted performance. On the positive side, the insurance-related investments, Aeolus Keystone Fund and Nephila Rubik Holdings, both generated positive absolute returns over the year and outperformed their benchmarks. Additionally, Circumference Group returned 5.0% over the year and outperformed its benchmark by 11.6 percentage points, and macro hedge fund manager, Capula, returned 9.8% and outperformed its index by 8.9 percentage points.

The real assets category, which includes real estate, timber, agriculture and infrastructure, returned 4.0% during the fiscal year and performed mostly in line with its performance benchmark. The real estate allocation which is approximately 65% of the portfolio, returned 2.0% over the year and trailed its benchmark return of 3.9%. The Infrastructure portfolio, still relatively young, returned 8.0% over the year and meaningfully outperformed its benchmark. In aggregate, the real assets portfolio has been additive from both an absolute and relative perspective over the trailing 5-year period.

The ATRS private equity portfolio returned 4.9% on a time-weighted return basis during the fiscal year benefitting the Total Fund's absolute and relative performance. The private equity portfolio also exceeded its long-term objective of adding over 2 percentage points above publicly traded equities during both the fiscal year period, as well as over the trailing 3-year, 5-year and since inception (4/1997) periods.

We are pleased to report on the great success of the ATRS portfolio and feel it is well positioned going-forward to achieve its long-term goals.

Sincerely,

Patrick J. Kelly, CFA, CAIA	Katie Comstock
Partner	Associate Partner

INVESTMENT POLICIES AND PROCEDURES

Amended: October 4, 2010 | February 7, 2011 | June 3, 2013 | October 7, 2013 | February 17, 2014 | June 1, 2015
April 21, 2016 | November 13, 2017 | April 1, 2019 | February 3, 2020 | December 7, 2020

STATEMENT OF INVESTMENT POLICY

This Investment Policy has been prepared within the context of applicable Arkansas laws and is intended to allow for sufficient flexibility in the investment process to capture opportunities, yet ensure that both prudence and care are maintained in the execution of the investment program. While safety of principal is given primary consideration, the Arkansas Teacher Retirement System Board of Trustees, hereinafter "Board" may take appropriate levels of risk to earn higher levels of investment return.

The Board has arrived at this policy through careful study of the rates of return and risks associated with various investment strategies in relation to the current and projected liabilities of the Arkansas Teacher Retirement System, hereinafter, "the System". This policy has been chosen as the most appropriate for achieving the financial objectives of the System. The policy will be reviewed periodically as circumstances dictate.

The Board has adopted a long-term investment horizon so that the chances and duration of investment losses are carefully weighed against the long-term potential for appreciation of assets. The assets of the System will be invested in a manner that provides the safeguards and diversity to which a prudent investor would adhere. All transactions undertaken on behalf of the System will be in the sole interest of the members of the System.

To achieve the overall investment goal of the System, one or more investment consultants may be retained by the Board as investment advisors. The scope of duties, together with the terms and conditions of engagement, of any investment consultant will be set forth in a contract approved by the Board. Throughout this document, investment advisors are referred to as investment consultants.

The System shall manage those assets not specifically allocated to investment managers. No investment shall be made without an investment consultant's recommendation.

Standard of Care

The standard of care for the Board and Executive Director of the assets of the System is: when investing and reinvesting trust assets and in acquiring, retaining, managing and disposing of investments of the trust assets, there shall be exercised the reasonable care, skill, and caution that a prudent investor would use after considering the purposes, terms, distribution requirements, and other circumstances of the trust. Investment and management decisions respecting individual assets shall be evaluated not in isolation but in the context of the trust portfolio as a whole and as a part of an overall investment strategy having risk and return objectives reasonably suited to the trust. The investments of the trust shall be diversified unless the Board reasonably determines that, because of special circumstances, the purposes of the trust are better served without diversifying. The trust assets shall be invested and managed solely in the interest of the members and benefit recipients of the trust. The trust assets shall be invested in a manner to only incur costs that are appropriate and reasonable in relation to the assets and purposes of the investment. Compliance with the standard of care is determined in light of facts and circumstances at the time of action, not in hindsight.

Investment and management functions may be delegated to an investment agent that a prudent trustee of comparable skills could properly delegate under the circumstances. When making such delegation, the Board shall establish the scope and terms of the delegation, consistent with the purposes and terms of the trust, and shall monitor the investment agent performance and compliance with the terms of the delegation. In performing a delegated function, an investment agent owes a duty to the System and the trust to exercise reasonable care to comply with the terms of the delegation. In addition, the Executive Director may delegate certain duties to the System's investment staff without relieving the Executive Director from the ultimate responsibility.

Each party serving in a fiduciary capacity for the trust shall apply the standard of care set forth herein.

Asset Allocation

The Board is responsible for the prudent investment of funds and to maintain a proper allocation of the System's investment assets. The Board, in conjunction with its investment consultants, shall set and adjust the System's asset allocation ranges as necessary to provide an optimal allocation to obtain its target returns. The general investment consultant shall notify the Executive Director and the Board when an asset liability modeling study should be undertaken. It shall be the goal of the System to maintain the following asset allocation targets and ranges:

Asset Category	Minimum*	Target	Maximum*
Total Equity	48.0	53.0	58.0**
Fixed Income	13.0	15.0	17.0
Opportunistic/Alternatives	N/A	5.0	N/A
Real Assets***	N/A	15.0	N/A
Private Equity	N/A	12.0	N/A
Cash Equivalents	0.0	0.0	5.0

** Due to the illiquid nature of opportunistic/alternatives, real assets, and private equity, it is not prudent to set rebalancing ranges for these asset classes*

***Additional allocations to total equity may be made beyond the maximum range to serve as a placeholder for unfunded and uncommitted opportunistic/alternatives, real assets, and private equity*

****Real assets includes real estate, timber, agriculture, and infrastructure*

Rebalancing

The asset allocation ranges established by the Board represent the Board's judgment of a portfolio mix that provides the greatest risk/return value. Allowing the portfolio to exceed the Board limits strays from the financial discipline, which the Board believes will – over time – provide the appropriate risk-adjusted return to the System.

The Executive Director is responsible for rebalancing the allowable asset classes and the individual portfolios if any of the asset classes falls outside of the designated range. The general investment consultant shall provide guidance and advice to the Executive Director to best achieve the rebalancing.

Rebalancing among individual investment manager portfolios within asset classes may also be necessary to ensure the appropriate level of diversification is achieved by investment style, market capitalization or risk levels (see total asset class guidelines) and/or to take advantage of market conditions, fund manager expertise, opportunities, or other circumstances that could be beneficial to ATRS.

The Executive Director may rebalance across all equity managers, all equity holdings, all fixed income managers, and all fixed income holdings. A Board approved transition manager may be used for rebalancing. Rebalancing including the use of a Board approved transition manager, as needed, may be initiated by the Executive Director after recommendation from the appropriate investment consultant and positive notice to the Board Chair. The Executive Director and general investment consultant will monitor the asset values by classification for each asset manager on a monthly basis, based on month-end data provided by the custodial bank. The Executive Director and general investment consultant shall regularly inform the Board on the rebalancing pacing and strategy.

Whenever the minimum or maximum range of total equity or fixed income has been exceeded, a transfer of funds or other appropriate action will occur to bring the actual allocation within the prescribed range within a time frame determined to be prudent by the Executive Director in consultation with the general investment consultant.

Normal plan cash flows should be used to the extent possible to rebalance. Interest, dividends, and plan contributions should be used to the extent possible to fund asset classes that are below their target. Withdrawals should be made from asset classes that are above their target.

Investment Manager Selection

In order to implement its investment strategy, the System will use individual investment managers. Arkansas Code § 24-3-401 et seq. requires ATRS to always operate under the prudent investor rule. The prudent investor rule requires all investment decisions to be made based on the experience of management, rates of return, appropriate risk, reasonable cost, and all other relevant factors that should be used by prudent investors.

It is the policy of the Board to include, whenever appropriate, qualified minority–owned and women-owned business enterprises in the System's investment manager selection process and to objectively evaluate all qualified investment manager candidates regardless of race, gender or disability.

The Board will evaluate all qualified investment manager candidates with emphasis on demonstrated professional performance, organizational depth, institutional investment management capability, and reasonableness of fee structure regardless of the amount of investment assets under management or the age of the investment management firm.

The Board will use professional consultants that do not use discriminatory practices in the creation and maintenance of their investment manager databases and will require the investment consultants to affirm their use of non-discriminatory practices when recommending investment manager candidates to the Board.

Goals

Recognizing the purpose of the System is to remain actuarially sound and pay member benefits, the overall investment goal is to achieve, over a period of years, the greatest rate of return for the System with due consideration given to preserving capital and its purchasing power, and to maintain an appropriate level of risk consistent with the obligations of a prudent investor. The return of the System should exceed, net of fees, a policy benchmark comprised of the respective asset class benchmarks weighted by the asset class policy targets over a full market cycle (approximately five years). During periods of transition to and from non-marketable and illiquid asset classes such as private equity and real assets, actual allocations may be used over extended periods to reflect these changes in the policy targets. Periodic performance reports will provide a detailed description of the policy benchmark composition over time.

The System's actuary sets an expected return based on the Board's policy decisions. Market cycles may result in the System earning a return materially above or below the actuarial rate of return for extended periods of time. Therefore, the actuarial rate of return will not be used for performance comparison purposes.

Total Equity

The total equity exposure of the portfolio shall be well diversified with broad exposures to small, mid, and large capitalization companies and growth and value style sectors across U.S. and non-U.S. markets. The goal for total equity shall be to achieve a total rate of return that will exceed, net of all fees and costs, the return of the aggregate global equity market as measured by the Morgan Stanley Capital International (MSCI) All Country World Index (ACWI) Investable Market Index (IMI) over a full market cycle (approximately five years). Because the total equity portfolio was previously segregated into domestic and global equity components, the total equity portfolio has a bias to domestic equity relative to the MSCI ACWI IMI. Therefore, to ensure appropriate performance measurement, the benchmark for total equity will be appropriately weighted between the Dow Jones U.S. Total Stock Market Index and the MSCI ACWI IMI Index to reflect the current domestic / global asset mix until the domestic allocation is in line with the global opportunity set as defined by the MSCI ACWI IMI. The manager structure of the total equity portfolio should resemble the weighted average of their respective benchmarks and avoid any material biases due to a concentration of managers or management styles. To achieve this goal, the Board may employ various actively managed and passive mandates. The structure of the equity component will be analyzed annually to ensure proper diversification is achieved.

Fixed Income

The manager structure of the aggregate fixed income portfolio's risk exposure should resemble the aggregate domestic fixed income market as measured by the Barclays U.S. Universal Bond Index. To help achieve this goal, the Board will employ investment managers that invest assets in a broad array of sectors (government, mortgage backed, credits, asset backed, and commercial mortgage backed bonds), maturities, and credit qualities so that the overall portfolio structure is not materially different from that of the domestic and global fixed income markets. To provide a broad base of low-cost diversification and readily available liquidity, the Board may allocate a portion of the fixed income assets to a passive investment portfolio that approximates the return of the broad fixed income market.

The goal for fixed income investments shall be to achieve a total rate of return that will exceed, net of all costs and fees, the return of the Barclays U.S. Universal Bond Index over a full market cycle (approximately five years).

Opportunistic/Alternative Investments

The Opportunistic/Alternatives asset class may include investments in direct hedge funds, hedge fund of funds, commodities, currency mandates, and other alternative strategies that are not closely correlated or related to the traditional asset classes (fixed income, equities, private equity, and real assets). Unique investments that do not fit within the other asset class categories may also be included in the Opportunistic/Alternative category at the Board's discretion.

Because this category may include illiquid investments made through closed end investment partnerships, it may take a period of time to reach and maintain the target allocation of 5%. Assets will be invested in the total equity asset class when the opportunity/alternative allocation is below its long-term target of 5%.

The benchmark for the category will be a weighted average of the benchmarks of the underlying strategies.

The goal of the credit, global macro, and other liquid alternative investments shall be to achieve a total rate of return that will exceed, net of all fees and costs, the return of the appropriate institutional quality hedge fund index over a full market cycle (approximately five years). Appropriate benchmarks will be determined as investments are added to the portfolio.

Real Assets

The Real Asset category may include real estate, timber, agriculture, and infrastructure. While no fixed targets are set, the following general parameters have been identified:

10% Real Estate
2% Timber
1% Agriculture
2% Infrastructure

The total target of the asset class will be 15%. Because this category may include illiquid investments made through closed end investment partnerships, it will take a period of time to reach these targets. Assets will be invested in the total equity asset class until the total target is attained.

The System may initiate investments in real estate as governed by the Real Asset Statement of Investment Policy. The System's goal for real estate is to not materially exceed the System's approved target asset allocation for total real estate investments as determined by the Board at the beginning of each fiscal year. Should the real estate target asset allocation be exceeded, the Executive Director, working with the Real Estate Consultant, shall develop a pacing and strategy plan to address the over allocation.

ATRS' Real Estate portfolio is benchmarked on a net of fee basis against the NCREIF Fund Index Open-end Diversified Core Equity Index ("NFI-ODCE"). Once ATRS' Real Estate portfolio reaches its full target allocation for a five year period, it is expected to meet or exceed the NFI-ODCE over rolling five year periods.

The System may initiate direct ownership in timberland or indirect investments in fund of funds, partnerships, corporations, or real estate investment trusts ("REITs") investing in investment grade properties of like kind.

The goal of the timberland investments shall be to achieve a total rate of return that will exceed, net of all fees and costs, the return of the NCREIF Timberland Property Index ("NTPI") over a five year rolling period.

The goal of the agriculture investments shall be to achieve a total rate of return that will exceed, net of all fees and costs, the return of the NCREIF Farmland Index ("NFI") over a five year rolling period.

The goal of the infrastructure investments shall be to achieve a total rate of return that will exceed, net of all fees and costs, the return of the Consumer Price Index (CPI) plus 5 percentage points over a full market cycle (approximately ten years). The Consumer Price Index plus 5 percentage points will be used as the benchmark to reflect the opportunity cost of investing in infrastructure. Similar infrastructure programs of institutional investors will also be used as a secondary benchmark to the extent such data is made available.

The ATRS Total Real Asset Benchmark is weighted by the allocations based on Net Asset Values across the various sub-categories, and thus defined as Real Estate benchmark, Timber benchmark, Agriculture benchmark and Infrastructure benchmark. The net of fee return for ATRS' Total Real Asset Portfolio is expected to meet or exceed the Total Real Asset Benchmark over rolling five year periods.

Private Equity

The System may initiate investments in private equity as governed by the Private Equity Statement of Investment Policy. Private equity investments may include domestic and foreign private equity partnerships, venture capital, and mezzanine financing partnerships that are intended to diversify the assets and reduce the likelihood of material losses in any individual investment classification. The investment consultant responsible for private equity shall advise the Executive Director and Board on the Private Equity Statement of Investment Policy and the structure of private equity investments best suited for the System.

The System's goal for private equity investments is to achieve a total rate of return that will exceed, net of all costs and fees, the return of the public equity markets, as measured by the Dow Jones U.S. Total Stock Market Index, plus a liquidity premium of 2 percentage points per year over a full market cycle for private equity (approximately ten years).

Cash Equivalents

The System may hold direct ownership in short-term investments or may permit or require managers to hold cash or cash equivalents to meet liquidity needs of the investment manager or of the System.

The System's cash management goal shall be to preserve capital and maintain liquidity.

Arkansas-Related Investments

The System may initiate Arkansas-related mortgage loans, promissory notes, direct real estate investments, or purchase insured certificates of deposit or short term securities of Arkansas financial institutions to meet the goals of the mandated requirements. Arkansas-related investments are categorized according to the appropriate asset class for each investment. In addition, Arkansas related investments include, but are not limited to, investments managed by an Arkansas related manager, Arkansas related investments held by other fund managers, Arkansas timberland, partnerships based in Arkansas, and partnerships holding Arkansas properties.

Commingled or Mutual Funds

If a commingled fund or mutual fund is utilized, the portfolio will be governed by the prospectus or similar document for the fund. In those cases, the System will utilize the prudent investor rule and advice of the investment consultant in selecting and evaluating funds initially and in monitoring them on an on-going basis.

Derivatives

Derivatives may be used to reduce the risk in a portfolio and provide desired market and security level positions as an alternative to purchasing cash securities. Excessive leverage shall not be created through the use of derivatives in a manner that substantially increases the System's portfolio risk. Each investment manager's derivative usage shall be specified in the investment management agreement or specific guidelines.

The use of futures and options shall be matched by cash or cash equivalent securities, and all short futures positions shall be matched by equivalent long security positions, unless otherwise stated in the investment manager guidelines or authorizing fund documents.

Loaning of Securities

The lending agent will evaluate the credit-worthiness of potential borrowers of securities, and will loan securities only to financially sound borrowers. The lending agent will maintain a diversified list of such borrowers in order to mitigate the counterparty risk that is inherent in securities lending.

Collateral levels should be based on the nature of the loaned security and will generally be between 102% and 105% of the market value of the borrowed security. Marking to market will be performed every business day subject to de minimis rules of change in value, and borrowers will be required to deliver additional assets as necessary to maintain over-collateralization of securities loans.

Securities Lending Reinvestment Guidelines

The cash collateral portfolio will be managed on an amortized cost basis (maintain a $1 net asset value) and have investment guidelines that are 2a-7-like in nature (money market fund guidelines) to ensure that only a moderate amount of risk is taken on the reinvestment of the cash collateral. This will control the amount of credit and duration risk that can be taken by the short duration fixed income manager, which will help to mitigate losses due to insufficient collateral relative to the amount on loan. In addition, guidelines for the cash collateral portfolio will be created in conjunction with the lending strategy and with input from the securities lending agent.

The collateral pool should also maintain a reasonable level of overnight liquidity in order to allow for the smooth recall of securities over time.

Investment Manager Reporting

The System will require all investment managers, managing partners, and general partners to provide on at least a quarterly and an annual basis, reporting appropriate for the investment.

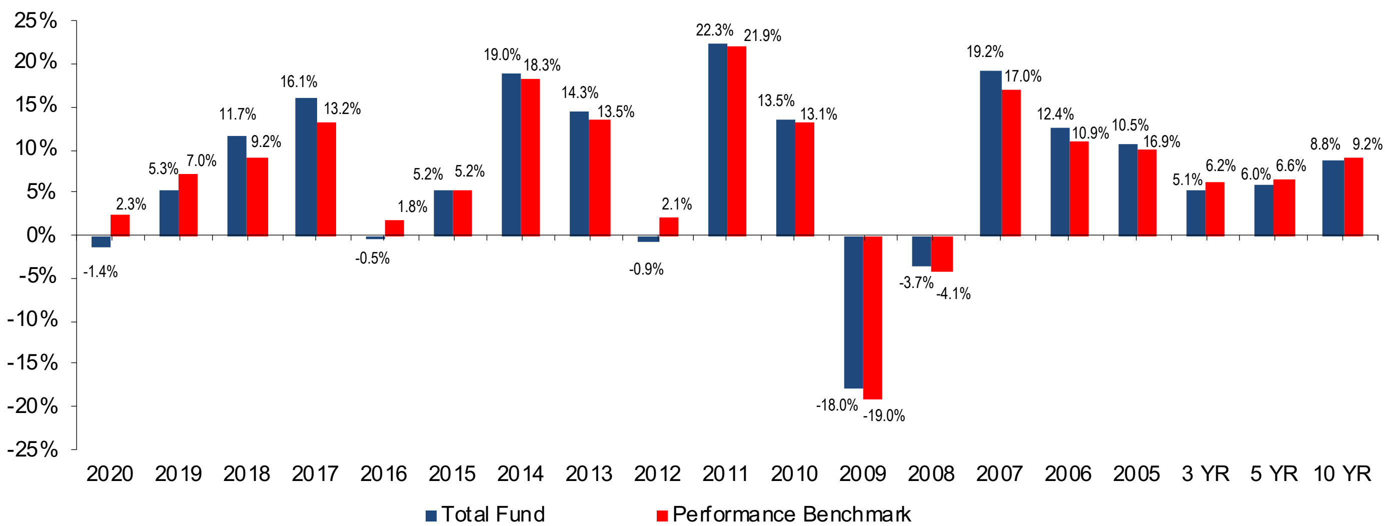
Roles

The Executive Director and investment consultant are jointly responsible for the initial selection of investment managers and any increase or decrease in an investment manager's funding. The Executive Director and investment consultant are jointly responsible for monitoring existing investment managers on performance, stability, and compliance. The Executive Director and investment consultant may also recommend termination of an investment manager when circumstances justify termination. Reasons for termination include, but are not limited to, relative performance, relative stability, costs, strategic allocation of assets, or other relevant factors that a prudent investor would use.

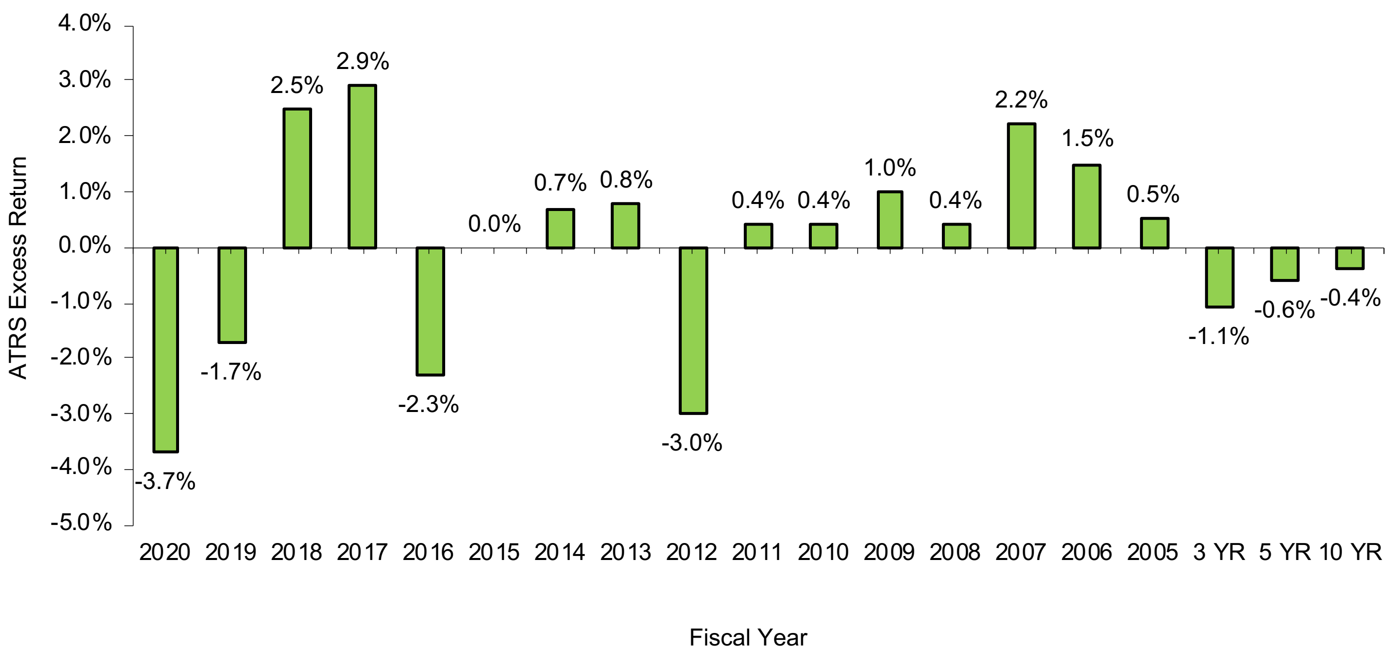
Proxies

The System authorizes the investment manager to vote all proxies related to stocks in which it invests the System's assets. The System expects the investment manager to cast votes solely in the best interest of plan beneficiaries.

ATRS Total Fund Fiscal Year Returns vs. Performance Benchmark: Periods Ending June 30th

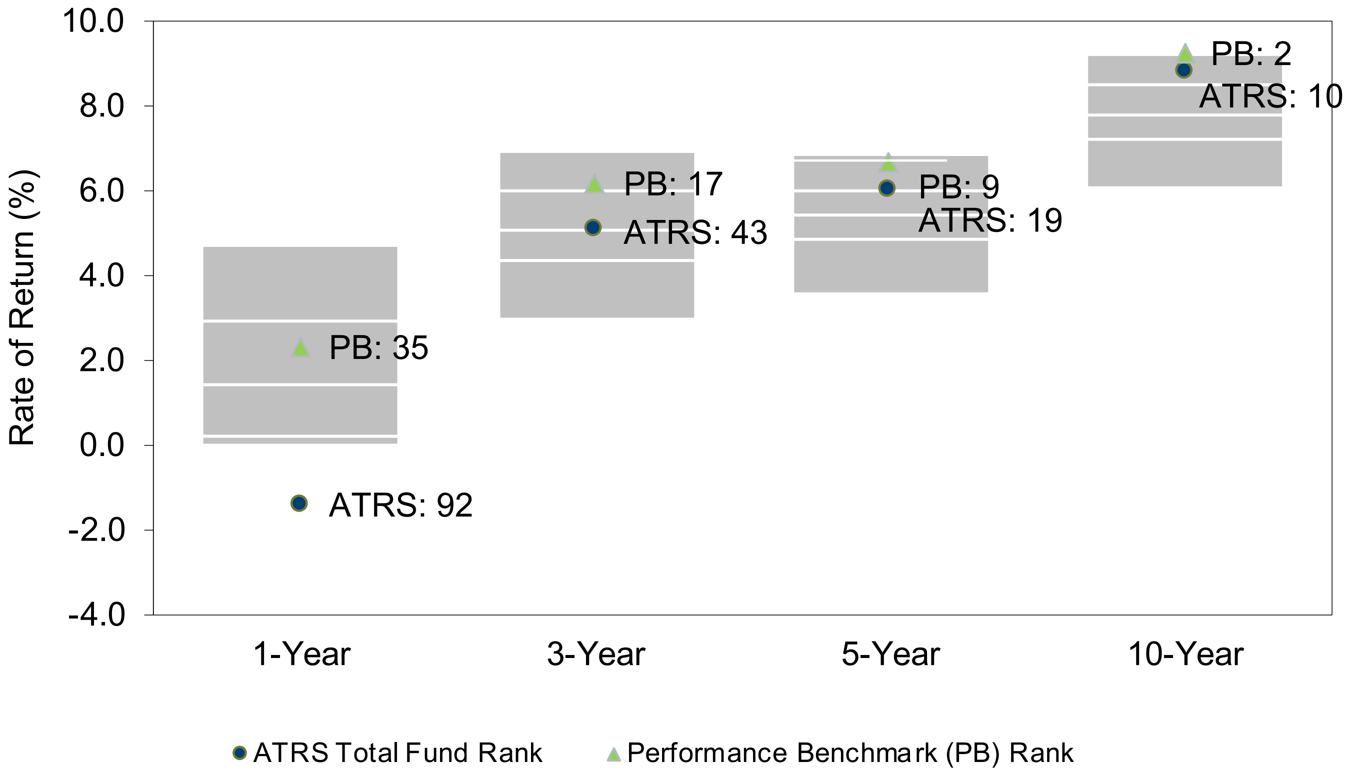


ATRS Total Fund Returns Relative to Performance Benchmark: Periods Ending June 30th



ATRS Total Fund Ranks: Periods Ending June 30, 2020

Universe of U.S. Public Defined Benefit Plan with over $1 billion in AUM



TRADITIONAL ASSETS
Schedule of Investment Results

Returns for Period Ending June 30, 2020

The table below details the rates of return for the System's investment managers over various time periods ending June 30, 2020. The Appendix at the end of this document provides a description of the benchmarks used for each manager as of the end of the fiscal year.

	1-Year	3-Years	5-Years
PUBLIC EQUITY			
Pershing Square International	28.0	19.8	4.4
Pershing Square Holdings	36.5	17.4	-2.3
Dow Jones U.S. Total Stock Market Index	*6.4*	*10.0*	*10.0*
Trian Partners	-2.3	4.4	--
Trian Co-Investments	-3.4	1.4	--
S&P 500 Index	*7.5*	*10.7*	--
Jacobs Levy 130/30	0.2	8.2	11.4
Russell 3000 Index	*6.5*	*10.0*	*10.0*
Kennedy Capital Management	-16.2	-4.7	0.5
Russell 2000 Value Index	*-17.5*	*-4.3*	*1.3*
Stephens	7.8	14.8	10.6
Russell 2000 Growth Index	*3.5*	*7.9*	*6.9*
Allianz Convertibles	20.1	16.3	11.1
Performance Benchmark	*15.3*	*11.7*	*9.2*
Voya Absolute Return	0.1	4.6	7.0
Performance Benchmark	*2.1*	*6.1*	*7.5*
SSgA Global Index	1.6	5.9	6.5
BlackRock MSCI ACWI IMI Fund	1.5	5.7	6.3
MSCI AC World IMI (Net)	*1.2*	*5.5*	*6.1*
GMO Global All Country Equity	-2.3	2.6	3.9
T. Rowe Price Global Equity	22.8	17.2	15.5
Lazard	1.6	4.7	5.3
MSCI ACWI Index (Net)	*2.1*	*6.1*	*6.5*
Harris Global Equity	-6.6	-1.3	3.1
D.E. Shaw	0.1	6.0	7.3
MSCI World Index (Net)	*2.8*	*6.7*	*6.9*
Wellington Global Perspectives	-11.7	-0.6	3.3
Performance Benchmark	*-5.5*	*1.4*	*3.7*

TRADITIONAL ASSETS
Schedule of Investment Results (Continued)

The table that follows details the rates of return for the System's investment managers over various time periods ending June 30, 2020.

	1-Year	3-Years	5-Years
FIXED INCOME			
BlackRock	9.0	5.5	4.5
Performance Benchmark	*7.9*	*5.2*	*4.4*
Reams Core Plus Bond Fund	15.3	7.8	5.8
SSgA Aggregate Bond Index	8.7	5.3	4.3
Barclays Aggregate Index	*8.7*	*5.3*	*4.3*
Loomis Sayles	7.6	5.6	5.3
Performance Benchmark	*6.6*	*5.1*	*4.8*
Putnam	0.1	2.6	2.4
LIBOR	*2.1*	*2.1*	*1.5*
Wellington Global Total Return	2.1	4.1	2.6
BofA Merrill Lynch 3 Month US T-Bill	*1.6*	*1.8*	*1.2*

ALTERNATIVES
Schedule of Investment Results

The table that follows details the rates of return for the System's investment managers over various time periods ending June 30, 2020.

	1-Year	3-Years	5-Years
OPPORTUNISTIC/ALTERNATIVES			
Anchorage	-5.4	0.6	0.7
York	-45.2	-16.7	-10.4
Credit Suisse Event Driven	*-6.9*	*-0.5*	*-0.7*
Capula	9.8	6.6	6.7
Graham	-5.6	0.9	-0.3
HFRI Macro (Total) Index	*0.8*	*1.5*	*0.7*
Circumference Group Core Value	5.0	7.7	--
Russell 2000 Index	*-6.6*	*2.0*	--
Aelous Keystone Fund	5.1	-6.7	--
Nephila Rubik Holdings	3.1	-4.0	--
FTSE 3 Month T-Bill	*1.6*	*1.7*	--
Parametric Global Defensive Equity	-4.2	1.7	--
Performance Benchmark	*2.4*	*4.3*	--
Man Alternative Risk Premia	-7.9	--	--
CFM ISD Fund 1.5x	-26.1	--	--
SG Multi Alternative Risk Premia Index	*-11.6*	--	--

REAL ASSETS
Schedule of Investment Results

The table that follows details the rates of return for the System's investment managers for the period ending June 30, 2020.

Real Estate Manager	Since-Inception IRR	Inception Date
Core & Open End Funds		
Arkansas Investments	8.3%	12/31/2007
JP Morgan Strategic Property Fund	6.5%	2/5/2007
MetLife Commercial Mortgage Income Fund, LP	2.7%	7/1/2019
Prudential PRISA	6.3%	6/30/2005
UBS Trumbull Property Fund	5.4%	3/31/2006
UBS Trumbull Property Income Fund	4.7%	7/3/2017
Closed End Funds		
Almanac Realty Securities V, LP	11.9%	5/12/2008
Almanac Realty Securities VI	9.8%	11/20/2012
Almanac Realty Securities VII	13.3%	4/24/2015
Almanac Realty Securities VIII	-25.4%	12/21/2018
Blackstone Real Estate Partners Europe VI (EURO Vehicle)	-16.2%	11/20/2019
Blackstone Real Estate Partners VII	14.9%	2/6/2012
Calmwater Real Estate Credit Fund III	7.2%	12/27/2017
Carlyle Realty Partners VII	14.5%	7/15/2014
Carlyle Realty Partners VIII	3.6%	6/29/2018
CBRE Strategic Partners U.S. Opportunity 5	5.2%	8/13/2008
CBRE Strategic Partners U.S. Value 8	9.4%	9/30/2016
Cerberus Institutional Real Estate Partners III	12.0%	10/3/2013
FPA Core Plus Fund IV	2.4%	9/10/2018
Harbert European Real Estate Fund IV	7.1%	6/30/2016
Heitman European Property Partners IV	-3.7%	12/15/2008
Kayne Anderson Real Estate Partners V	8.8%	6/15/2018
Landmark Real Estate Fund VI	19.0%	4/3/2017
Landmark Real Estate Fund VIII	10.6%	8/2/2017
LaSalle Asia Opportunity Fund IV	33.2%	7/22/2014
LaSalle Asia Opportunity V	11.6%	9/30/2017
LaSalle Income & Growth Fund VI	11.3%	7/16/2013
LaSalle Income & Growth Fund VII	7.7%	6/30/2017
LaSalle Income & Growth Fund VIII	-16.3%	2/26/2020
Lone Star Real Estate Fund IV	12.7%	10/1/2015
Long Wharf Real Estate Partners V	8.4%	11/20/2015
Long Wharf Real Estate Partners VI, L.P.	-18.2%	4/1/2020

ARTRS
Arkansas Teacher Retirement System

REAL ASSETS
Schedule of Investment Results (Continued)

Real Estate Manager (Continued)	Since-Inception IRR	Inception Date
Closed End Funds (Continued)		
Metropolitan Real Estate Partners Co-Investments Fund, L.P.	12.1%	12/30/2015
New Boston Real Estate Investment Fund VII	-2.8%	10/9/2008
O'Connor North American Property Partners II, L.P.	-2.7%	4/10/2008
Rockwood Capital Real Estate Partners Fund IX	10.7%	12/27/2012
Rockwood Capital Real Estate Partners Fund XI	0.0%	1/1/2020
Torchlight Debt Opportunity Fund IV	9.9%	7/19/2013
Torchlight Debt Opportunity Fund V	10.5%	6/29/2015
Torchlight Debt Opportunity Fund VI	-1.6%	2/12/2018
Walton Street Real Estate Debt Fund II, L.P.	8.6%	6/28/2019
Westbrook Real Estate Fund IX	8.6%	6/11/2013
Westbrook Real Estate Fund X	10.4%	7/18/2016
Total Real Estate	**7.7%**	**5/28/1997**

Timber & Agriculture	Since-Inception IRR	Inception Date
BTG Timber Separate Account	5.2%	2/18/1998
BTG Pactual Open Ended Core U.S. Timberland Fund	2.2%	1/1/2020
HFMS Farmland Separate Account	5.0%	4/22/2011
UBS Agrivest Core Farmland Fund	4.4%	4/1/2015

Infrastructure	Since-Inception IRR	Inception Date
Antin Infrastructure Partners II, L.P.	10.3%	7/3/2014
DIF Infrastructure Fund V, L.P.	6.1%	6/5/2018
Global Energy & Power Infrastructure Fund II	23.7%	12/23/2014
Global Infrastructure Partners III, L.P.	1.9%	5/18/2016
IFM Global Infrastructure Fund (US), L.P.	8.1%	10/1/2018
KKR Global Infrastructure Investors II, L.P.	16.3%	12/18/2014
Macquarie Infrastructure Partners III, L.P.	12.3%	2/13/2015

PRIVATE EQUITY
Schedule of Investment Results

The table that follows details the rates of return for the System's investment managers for the period ending June 30, 2020.

	Inception Date	Annualized Internal Rate of Return*
INDIVIDUAL PARTNERSHIPS		
Audax Mezzanine III	5/10/2010	9.50%
Big River - Mezzanine	6/27/2014	17.30%
Blackstone Mezzanine I	12/22/1999	10.20%
DLJ Investment Partners II	11/10/1999	10.30%
Greyrock IV	12/30/2016	8.10%
Greyrock V	4/15/2020	NMF
Insight Mezzanine I	7/13/2009	6.60%
PRIVATE EQUITY		
21st Century Group I	4/6/2000	-3.8%
Advent GPE VI-A	3/12/2008	16.6%
Altaris Constellation	7/20/2016	22.1%
Altaris IV	6/30/2017	10.3%
Altus Capital II	6/3/2011	11.6%
American Industrial VI	9/30/2015	8.3%
American Industrial VII	3/29/2019	NMF
Arlington IV	7/29/2016	20.7%
Arlington V	5/3/2019	NMF
Atlas Capital II	12/13/2013	18.0%
ATRS-FP PE	4/1/2012	16.0%
Big River - Equity	6/27/2014	23.6%
Big River - Funding	1/31/2017	4.3%
Big River - Holdings Note	8/23/2017	11.0%
Big River - Holdings Note 2023	3/13/2018	3.1%
Big River - Holdings Note 2023-2	9/14/2018	3.3%
Big River - Preferred Equity	8/23/2017	12.5%
Big River - Sr Secured Debt	6/27/2014	14.7%
Bison V	6/30/2016	9.2%
Blue Oak Arkansas	3/26/2014	-50.5%
Boston Ventures VII	12/14/2007	2.8%
BV IX	4/7/2017	28.6%
BV VIII	8/15/2014	53.5%
BV X	2/28/2020	NMF

2019 through 2020 vintage year funds' performance is deemed not meaningful (NMF).

PRIVATE EQUITY
Schedule of Investment Results (Continued)

	Inception Date	Annualized Internal Rate of Return*
PRIVATE EQUITY (cont'd)		
Castlelake II	5/4/2012	5.7%
Castlelake III	2/28/2014	-23.9%
Clearlake V	1/12/2018	42.7%
Clearlake VI	12/10/2019	NMF
Court Square III	7/17/2012	17.7%
CSFB-ATRS 2005-1 Series	5/1/2005	7.3%
CSFB-ATRS 2006-1 Series	8/1/2006	9.7%
Cypress MBP II	6/18/1999	-0.5%
DH Tech I	1/12/2000	0.0%
Diamond State	4/15/2000	5.5%
Diamond State II	1/4/2007	9.4%
DLJ MBP III	7/19/2000	19.4%
Doughty Hanson III	10/20/1997	13.5%
DW Healthcare III	12/21/2011	18.2%
DW Healthcare IV	12/21/2015	27.0%
DW Healthcare V	7/22/2019	NMF
EnCap IX	12/19/2012	0.3%
EnCap VIII	1/31/2011	-10.5%
EnCap X	4/7/2015	-4.1%
EnCap XI	3/6/2017	-34.3%
FP CF Access	7/31/2019	NMF
FP Intnl 2011	2/16/2011	7.0%
FP Intnl 2012	1/31/2012	7.2%
FP Intnl 2013	2/7/2013	7.8%
FP Intnl 2014	1/23/2014	9.9%
FP Intnl 2015	1/23/2015	7.0%
FP Intnl 2016	1/21/2016	5.3%
FP Intnl 2017	3/1/2017	12.1%
FP Intnl 2018	2/15/2018	-0.5%
FP Intnl 2019	3/27/2019	NMF
FP Intnl X	3/27/2020	NMF
FP VC XIII	2/7/2020	NMF

**2019 through 2020 vintage year funds' performance is deemed not meaningful (NMF)*

PRIVATE EQUITY
Schedule of Investment Results (Continued)

	Inception Date	Annualized Internal Rate of Return*
PRIVATE EQUITY (cont'd)		
FP Venture 2008	1/18/2008	16.0%
FP Venture 2009	1/16/2009	18.0%
FP Venture 2010	1/29/2010	16.5%
FP Venture 2011	2/16/2011	39.1%
FP Venture 2012	1/31/2012	20.4%
FP Venture 2013	2/7/2013	24.3%
FP Venture 2014	1/23/2014	19.4%
FP Venture 2015	1/23/2015	14.9%
FP Venture 2016	1/21/2016	18.4%
FP Venture 2017	3/1/2017	29.9%
FP Venture 2018	3/23/2018	1.5%
FP Venture 2019	6/25/2019	NMF
GTLA Holdings	8/30/2018	0.0%
Highland Contingent Note	7/20/2018	0.0%
Highland Equity	7/28/2016	26.3%
HMTF III	3/4/1997	1.8%
HMTF IV	6/18/1998	-6.1%
HMTF V	11/28/2000	17.6%
Insight Equity II	7/13/2009	10.0%
JF Lehman III	8/8/2011	9.7%
JF Lehman IV	10/23/2015	31.3%
JF Lehman V	6/28/2019	NMF
KPS III Supplemental	8/14/2009	22.8%
KPS IV	4/12/2013	12.0%
KPS Mid-Market I	10/15/2019	NMF
KPS V	10/15/2019	NMF
Levine Leichtman V	4/30/2013	11.6%
Lime Rock Resources III	7/16/2013	-12.9%
LLR III	5/9/2008	15.0%
Mason Wells III	5/13/2010	19.3%

**2019 through 2020 vintage year funds' performance is deemed not meaningful (NMF).*

PRIVATE EQUITY
Schedule of Investment Results (Continued)

	Inception Date	Annualized Internal Rate of Return*
PRIVATE EQUITY (cont'd)		
NGP IX	2/27/2008	10.8%
NGP X	4/20/2012	-1.3%
NGP XI	9/30/2014	-1.1%
NGP XII	10/2/2017	-11.7%
Oak Hill I	4/1/1999	10.6%
One Rock II	3/31/2017	8.5%
PineBridge Structured III	12/31/2015	-10.7%
Riverside IV	12/4/2009	21.1%
Riverside V	5/11/2012	9.0%
Riverside VI	7/3/2018	NMF
Second Cinven	4/30/1998	9.3%
Siris III	12/11/2014	12.0%
Siris IV	12/22/2017	NMF
SK Capital V	7/5/2018	-16.7%
Sycamore Partners II	4/7/2014	1.7%
Sycamore Partners III	12/21/2017	-26.6%
TA XI	4/30/2009	26.1%
Tennenbaum VI	2/15/2011	6.2%
Thoma Bravo Discover	1/29/2016	33.9%
Thoma Bravo Discover II	12/20/2017	19.4%
Thoma Bravo Discover III	5/29/2020	NMF
Thoma Bravo Explore I	1/23/2020	NMF
Thoma Bravo XI	5/1/2014	32.0%
Thoma Bravo XII	4/27/2016	15.3%
Thoma Bravo XIII	9/24/2018	NMF
Thoma Bravo XIV	5/29/2020	NMF
Vista Equity III	7/11/2008	28.6%
Vista Foundation II	10/31/2013	14.4%
Vista Foundation III	5/19/2016	19.8%
Wellspring V	7/28/2010	15.0%
Wicks IV	4/29/2011	16.6%
WNG II	6/26/2018	NMF

**2019 through 2020 vintage year funds' performance is deemed not meaningful (NMF).*

DESCRIPTION OF BENCHMARKS

Total Fund - The Performance Benchmark for the Total Fund reflects a weighted average of the underlying asset class benchmarks, weighted as follows: Opportunistic/Alternatives and Real Assets at the weight of the previous month's ending market values, Fixed Income and Private Equity at their long-term Policy Targets of 15% and 12%, respectively, and Total Equity at its long-term Policy Target of 53% plus the balance of the unfunded or uncommitted assets of the Opportunistic/ Alternatives and Real Assets categories. From October 2007 to July 2013, the Performance Benchmark was the performance of the asset class benchmarks as a weighted average of the previous month's ending market values. The historical components of the benchmark are shown in the table below. Returns prior to September 30, 1996, consist of the actual allocations to the seven different asset classes included in the ATRS portfolio over time. The historical benchmarks used for each asset class are noted below.

Date	DJ U.S. Total Stock Market Index	Russell 3000 Index	MSCI ACW ex-US Index	MSCI ACWI	Bloomberg Barclays U.S. Universal Bond Index	Bloomberg Barclays Aggregate Bond Index	Alternative Policy[6]
03/31/2004 - 09/30/2007	40.0%	--	17.5%	--	25.0%	--	17.5%
07/31/2003 - 02/29/2004	40.0%	--	17.5%	--	--	25.0%	17.5%
10/31/2001 - 06/30/2003	--	40.0%	17.5%	--	--	25.0%	17.5%
08/31/1998 - 09/30/2001	--	40.0%	17.0%	--	--	28.0%	15.0%
10/31/1996 - 07/31/1998	--	40.0%	20.0%	--	--	28.0%	12.0%

[6] Currently, the benchmarks for Real Assets and Opportunistic/Alternatives are included in the Total Fund Performance Benchmark at their actual beginning quarter weights. Prior October 1, 2007, private equity, real estate, and other alternatives (timber) were grouped together in one "Alternatives Asset Class." The Alternative Policy for this asset class was comprised of the weighted average of the Real Estate, Private Equity, and Other Alternatives policy benchmarks. Prior to July 31, 2003 the alternative benchmark consisted of 57.0% of the Russell 3000 + a 2% Premium per year, 8.5% of the NCREIF South Timberland Index, 28.5% of the Real Estate Index, 6% of the EnnisKnupp STIF Index. After this date, real estate and private equity benchmarks started to report on a one-quarter lag to align with the returns of their asset classes.

Total Equity - A weighted average of the Dow Jones U.S. Total Stock Market Index and the MSCI All Country World IMI Index based on weights of the underlying investment manager allocations. As of June 1, 2020, the Total Equity Performance Benchmark was comprised of 29.9% DJ U.S. Total Stock Market Index and 70.1% MSCI ACWI IMI.

Total Fixed Income - The Bloomberg Barclays U.S. Universal Bond Index as of March 1, 2004.

Total Opportunistic/Alternatives – A custom benchmark consisting of 25% DJ/CS Event-Driven Index, 25% HFR Macro Index, and 50% South Timberland NCREIF Index until June 30, 2013; 60% HFRI Macro Index and 40% DJ/CS Event-Driven Index until July 31, 2015; 56% HFRI Macro Index, 38% DJ/CS Event-Driven Index, and 6% Russell 2000 Index until March 31, 2016; 45% HFRI Macro Index, 30% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 20% Citigroup 3 Month T-bill until May 31, 2016; 37% HFRI Macro Index, 25% DJ/CS Event-Driven Index, 5% Russell 2000 Index, and 33% Citigroup 3 Month T-bill until May 31, 2017; 28% HFRI Macro Index, 20% DJ/CS Event-Driven Index, 4% Russell 2000 Index, 25% Citigroup 3 Month T-bill, and 23% Parametric Performance Benchmark until May 31, 2018. 22% HFRI Macro Index, 18% DJ/CS Event-Driven Index, 3% Russell 2000 Index, 27% FTSE 3 Month T-bill, 18.50% Parametric Performance Benchmark, and 11.5% SG Multi-Alternative Risk Premia Until June 30, 2018. 20% HFRI Macro Index, 15% DJ/CS Event-Driven Index, 3.5% Russell 2000 Index, 25% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia Until August 31, 2018. 17% HFRI Macro Index, 15% DJ/CS Event -Driven Index, 3.5% Russell 2000 Index, 28% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia Until November 30, 2018. 15% HFRI Macro Index, 15% DJ/CS Event-Driven Index, 3.5% Russell 2000 Index, 30% FTSE 3 Month T-bill, 16.5% Parametric Performance Benchmark, and 20% SG Multi-Alternative Risk Premia thereafter.

Total Real Assets - A custom benchmark consisting of a weighted average of the net asset values at previous month's end of the subcategories' benchmarks, defined as Real Estate Benchmark, Timber Benchmark, Agriculture Benchmark and Infrastructure Benchmark.

Real Estate - NFI-ODCE - NCREIF Fund Index Open-end Diversified Core Equity Index.

Timber Benchmark - NCREIF Timberland Property Index (NTPI) weighted according to ATRS' regional exposure based on net asset value.

Agriculture Benchmark - NCREIF Farmland Index (NFI) weighted according to ATRS' regional and crop type exposure based on net asset value.

Infrastructure Benchmark - Consumer Price Index (CPI) plus 500 basis points annually.

Total Private Equity - The Dow Jones U.S. Total Stock Market Index + a 2% premium per year.

Cash Equivalents - The Citigroup 90 day T-bill.

Allianz Performance Benchmark - On January 1, 2005, the benchmark for the portfolio was changed to the Merrill Lynch Convertible Bond (All Quality) Index. Prior to January 1, 2005, the performance benchmark for the Allianz (previously Nicholas Applegate) portfolio was the CSFB Convertible Securities Index. Prior to May 1, 2004, the performance benchmark consisted of 90% CSFB Convertible Securities Index and 10% Salomon High Yield Index.

BlackRock Performance Benchmark - The Bloomberg Barclays U.S. Universal Bond Index as of March 1, 2004. Previously it was the Bloomberg Barclays Aggregate Bond Index.

Jacobs Levy Performance Benchmark - On January 1, 2008, the benchmark for the portfolio was changed to the Russell 3000 Index. Prior to January 1, 2008, the portfolio benchmark was the Russell 1000 Growth Index.

Loomis Sayles Performance Benchmark - An Index that splices 65% of the Bloomberg Barclays Capital Government/Credit Index and 35% Bloomberg Barclays Capital High Yield Index.

PIMCO Performance Benchmark - The Bloomberg Barclays U.S. Universal Bond Index as of March 1, 2004. Previously it was the Bloomberg Barclays Capital Aggregate Bond Index.

Wellington Global Performance Benchmark - As of July 1, 2012 the benchmark was changed to MSCI All Country World Small Cap Index. Prior to July 1, 2012, the benchmark was MSCI All Country World Small/Mid Cap Index.

Bloomberg Barclays Aggregate Bond Index - A market-value weighted index consisting of the Bloomberg Barclays Corporate, Government and Mortgage-Backed Securities Indices. The Index also includes credit card-, auto- and home equity loan-backed securities, and is the broadest available measure of the aggregate U.S. fixed income market.

Bloomberg Barclays Government/Credit Index – The Bloomberg Barclays Government/Credit Index measures the investment return of all medium and larger public issues of U.S. Treasury, agency, investment-grade corporate, and investment-grade international dollar-denominated bonds.

Bloomberg Barclays High Yield Index - The Bloomberg Barclays High Yield Index covers the universe of fixed rate, non-investment grade debt. Pay-in-kind (PIK) bonds, Eurobonds, and debt issues from countries designated as emerging markets (e.g., Argentina, Brazil, Venezuela, etc.) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

Bloomberg Barclays U.S. Universal Bond Index - A market-value weighted index consisting of the components of the Bloomberg Barclays Aggregate Bond Index, plus EuroDollar bonds, emerging markets bonds, 144A fixed income securities, and U.S. corporate high yield securities.

Citigroup 90 day T-bill Index - Treasury bill rates of return, as reported by Citigroup (Salomon Smith Barney), for bills with a maximum time remaining to maturity of 90 days.

DJ/CS Event-Driven Index - Event driven funds typically invest in various asset classes and seek to profit from potential mispricing of securities related to a specific corporate or market event. Such events can include: mergers, bankruptcies, financial or operational stress, restructurings, asset sales, recapitalizations, spin-offs, litigation, regulatory and legislative changes as well as other types of corporate events. Event driven funds can invest in equities, fixed income instruments (investment grade, high yield, bank debt, convertible debt and distressed), options and various other derivatives. Many event driven fund managers use a combination of strategies and adjust exposures based on the opportunity sets in each subsector.

Dow Jones U.S. Total Stock Market Index - A capitalization-weighted stock index representing all U.S. common stocks traded regularly on the organized exchanges. The Index is the broadest measure of the aggregate U.S. stock market.

FTSE Europe - A tradable index, designed to represent the performance of the 100 most highly capitalized blue chip companies in Europe.

HFR Macro Index – An index representing investment managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets.

HFR Distressed/Restructuring Index – An index representing distressed restructuring strategies which employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

LIBOR Index - London Interbank Offered Rate. A filtered average of the world's most creditworthy banks' interbank deposit rates with maturities between overnight and one full year.

Merrill Lynch Convertible Bond (All Quality) Index – The Merrill Lynch All Convertibles All Qualities Index is a widely used index that measures convertible securities' performance. It measures the performance of U.S. dollar-denominated convertible securities not currently in bankruptcy with a total market value greater than $50 million at issuance.

MSCI All Country World Index - A capitalization-weighted index of stocks representing 46 developed and emerging country markets.

MSCI Europe, Australasia, Far East (EAFE) Non-U.S. Stock Index - A capitalization-weighted index of stocks representing 23 developed and emerging country markets in Europe, Australia, Asia and the Far East.

MSCI World Index - A capitalization-weighted index of stocks representing 23 developed stock markets in Europe, Asia and Canada.

NFI-ODCE Index- NCREIF Fund Index Open-end Diversified Core Equity Index is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy; underlying funds are leveraged with gross and net returns available.

Russell 3000 Index – An index that measures the performance of the 3000 stocks that make up the Russell 1000 and Russell 2000 Indices.

Russell 1000 Index – An index that measures the performance of the largest 1,000 stocks contained in the Russell 3000 Index.

Russell 1000 Value Index – An index that measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

Russell 2000 Index – An index that measures the performance of the smallest 2000 companies contained in the Russell 3000 Index.

Russell 2000 Growth Index – An index that measures the performance of those Russell 2000 companies with greater price-to-book ratios and greater I/B/E/S growth forecasts.

Russell 2000 Value Index – An index that measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower I/B/E/S growth forecasts.

S&P 500 Stock Index - A capitalization-weighted stock index consisting of the 500 largest publicly traded U.S. stocks.

SG Multi Alternative Risk Premia Index – An equally-weighted peer index representing risk premia managers who employ investment programs diversified across multiple asset classes while utilizing multiple risk premia factors.

South Timberland Index – The largest regional subindex of the NCREIF Timberland Index, consisting of timberland properties held in the U.S. South. This includes close to 300 properties with more than 10 million cumulative acres of timberland in the following states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. Calculations are based on quarterly returns at the individual property level. Performance is reported on an all-cash, unlevered basis, gross of investment management fees.

DESCRIPTION OF UNIVERSES

Total Fund - The Total Fund and its benchmark are ranked in our Public Fund Universe. The universe is calculated based on data provided by BNY Mellon Performance & Risk Analytics, LLC, and includes roughly 90 public pension plans each with assets greater than $1 billion.

Total Equity - The total equity component and its benchmark are ranked in our global equity component universe. The universe is calculated based on data provided by BNY Mellon Performance & Risk Analytics, LLC, and includes over 450 global equity portfolios.

Total Fixed Income - The total fixed income component and its benchmark are ranked in our fixed income component universe. The universe is calculated based on data provided by BNY Mellon Performance & Risk Analytics, LLC, and includes the fixed income asset class returns of approximately 50 public pension plans each with assets greater than $1 billion.

TOP TEN LARGEST HOLDINGS
Fixed Income

(By Market Value)
As of June 30, 2020

Security Name			Market Value
MICROCHIP TECH	1.625%	2/15/2027	$ 15,650,280.50
SPLUNK INC	1.125%	6/15/2027	12,667,130.40
DEXCOM INC	0.250%	11/15/2025	12,540,815.00
TESLA MOTORS INC	1.250%	3/1/2021	11,026,236.80
INSULET CORP	0.375%	9/1/2026	10,029,377.05
TESLA INC	2.000%	5/15/2024	9,929,536.10
SOUTHWEST AIR	1.250%	5/1/2025	9,884,476.90
COUPA SOFTWARE	0.375%	6/15/2026	9,399,746.40
BURLINGTON STORE	2.250%	4/15/2025	9,199,562.75
SNAP INC	0.750%	8/1/2026	9,042,054.90

TOP TEN LARGEST HOLDINGS
Domestic/Global Equities

(By Market Value)
As of June 30, 2020

Security Name	Market Value
PERSHING SQUARE	$ 211,654,771.00
NASPERS LTD	44,390,038.95
ALPHABET INC-A	42,802,421.20
ADAMS DIVERSIFIED EQUITY FUND	40,110,956.55
AMAZON.COM INC	39,166,967.54
MORGAN STANLEY	37,902,748.80
LONDON STOCK EXCHANGE GROUP PL	36,323,168.25
INVESTOR AB	34,286,240.76
HDFC BANK LTD	33,860,881.00
APPLE INC	33,415,680.00

TOP TEN LARGEST HOLDINGS
Arkansas Related

(By Market Value)
As of June 30, 2020

Security Name	Market Value
BIG RIVER STEEL	$ 480,098,022
TIMBERLAND I	292,958,655
HIGHLAND	282,749,215
THE VICTORY BUILDING	32,665,852
AMERICAN CENTER 1 & 2 (PARTNERSHIP)	28,276,070
ARKANSAS TEACHER RETIREMENT BUILDING	4,985,145
ROSE LAW FIRM	4,291,324
WEST MEMPHIS DHS BUILDING	2,345,085
ARKANSAS INSURANCE DEPARTMENT BUILDING	2,201,028
RETIREMENT VILLAGE PROPERTY	1,900,000

ACTUARIAL

ARTRS
Arkansas Teacher Retirement System

March 30, 2021

Board of Trustees
Arkansas Teacher Retirement System
1400 West Third Street
Little Rock, Arkansas 72201

Dear Board Members:

The basic funding objective of the Arkansas Teacher Retirement System (ATRS) is to establish and receive contributions which:

- When expressed in terms of the percentage of active member payroll, will remain approximately level from generation to generation; and

- When combined with present assets and future investment return, will be sufficient to meet the financial obligations of ATRS to present and future retirees and beneficiaries.

The progress being made toward the realization of the financing objectives of the System through June 30, 2020 is illustrated in the attached Exhibits 1 and 2. Actuarial funding valuations are performed each year and the most recent funding valuations were completed based upon census data, asset data, and plan provisions as of June 30, 2020. In addition to the funding valuation reports, the actuary produces separate financial reporting information in accordance with Governmental Accounting Standards Board (GASB) Statements No. 67 and No. 68.

The System's administrative staff provides the actuary with data for the actuarial valuations. The actuary relies on the census data after reviewing it for internal and year-to-year consistency. The actuary does not audit census data. The actuary summarizes and tabulates population data in order to analyze longer term trends. Asset information was also accepted without audit. The actuary is not responsible for the accuracy or completeness of any information provided by ATRS.

The figures disclosed in the Supplementary Schedules to the Financial Section were provided by Gabriel, Roeder, Smith & Company, as were the Notes to Trend Data. In addition, Gabriel, Roeder, Smith & Company was responsible for the following schedules found in the Actuarial Section:

Computed Actuarial Liabilities
Determination of Amortization Period as of June 30, 2020
Active Members in Valuation Data
Retirees and Beneficiaries Added to and Removed from Rolls
Short Condition Test
Actuarial Gain (Loss) by Risk Area During the Period July 1, 2019 to June 30, 2020
Summary of Actuarial Assumptions and Methods
Single Life Retirement Values
Probabilities of Retirement for Members
Assumed Duration in T-DROP for Members
Teachers Separations and Individual Pay Increases
Support Employees Separations and Individual Pay Increases
Comments
Schedule of Retired Members by Benefit Type
Schedule of Average Benefit Payments

Assets are valued on a market related basis that recognizes each year's difference between actual and assumed investment return over a closed four-year period.

Actuarial valuations are based upon assumptions regarding future activity in specific risk areas including the rates of investment return and payroll growth, eligibility for the various classes of benefits, and longevity among retired lives. The Board adopts these assumptions after considering the advice of the actuary and other professionals. The assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area. The June 30, 2020 valuations were based upon assumptions that were recommended in connection with a study of experience covering the 2010-2015 period.

The Arkansas Teacher Retirement System remains stable with an 80.6% funded position (based on the actuarial value of assets) and an 75.6% funded position based upon the market value of assets as of June 30, 2020. The amortization period as of June 30, 2020 is 27 years.

Based upon the results of the June 30, 2020 valuations, we are pleased to report to the Board of Trustees that the Arkansas Teacher Retirement System is meeting its basic financial objective of level percent-of-payroll financing.

Readers desiring a more complete understanding of the actuarial condition of ATRS are encouraged to obtain and read the complete actuarial valuation reports. The complete reports also contain certain very important disclosures mandated by Actuarial Standards of Practice. The material in the Actuarial Section and Financial Sections of this Annual Report contains some, but not all of the information in the actuarial reports.

Future actuarial measurements may differ significantly from the current measurements presented in this information due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. This information does not contain an analysis of the potential range of such future measurements.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This information has been prepared by actuaries who have substantial experience valuing public employee retirement systems. Judith A. Kermans, Brian B. Murphy, and Heidi G. Barry are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,

Judith A. Kermans
Brian B. Murphy
Heidi G. Barry

Judith A. Kermans, EA, FCA, MAAA	Brian B. Murphy, FSA, EA, FCA, MAAA, PhD	Heidi G. Barry, ASA, FCA, MAAA

EXHIBIT 1

Computed Actuarial Liabilities as of June 30, 2020

Actuarial Present Value of	(1) Total Present Value	Entry Age Actuarial Cost Method	
		(2) Portion Covered by Future Normal Cost Contributions	(3) Actuarial Accrued Liabilities (1)-(2)
Age and service retirement allowances based on total service likely to be rendered by present active members.	$8,809,878,956	$2,366,508,382	$6,443,370,574
Age and service retirement allowances based on total service likely to be rendered by present T-DROP members.	2,094,965,082	37,463,553	2,057,501,529
Vested deferred benefits likely to be paid present active and inactive members.	1,200,745,155	363,293,400	837,451,755
Survivor benefits expected to be paid on behalf of present active members.	227,351,121	83,651,519	143,699,602
Disability benefits expected to be paid on behalf of present active members.	223,891,916	110,542,993	113,348,923
Refunds of Member contributions expected to be paid on behalf of present active members.	20,994,586	154,718,473	(133,723,887)
Benefits payable to present retirees and beneficiaries.	12,890,407,230	0	12,890,407,230
Total	$25,468,234,046	$3,116,178,320	$22,352,055,726
Funding Value of Assets	18,007,255,143	0	18,007,255,143
Liabilities to be Covered by Future Contributions	$7,460,978,903	$3,116,178,320	$4,344,800,583

EXHIBIT 2

Determination of Amortization Period as of June 30, 2020 and June 30, 2019

Computed Contributions for	Percents of Active Member Payroll			
	June 30, 2020			June 30, 2019
	Teachers	Support	Combined	Combined
Normal Cost				
Age & Service Annuities	10.47%	7.01%	**9.52%**	9.40%
Deferred Annuities	1.19%	2.10%	**1.44%**	1.44%
Survivor Benefits	0.36%	0.27%	**0.34%**	0.33%
Disability Benefits	0.48%	0.38%	**0.45%**	0.45%
Refunds of Member Contributions	0.47%	1.15%	**0.66%**	0.65%
Total	12.97%	10.91%	**12.41%**	12.27%
Average Member Contributions	6.54%	5.08%	**6.14%**	6.01%
Net Employer Normal Cost	6.43%	5.83%	**6.27%**	6.26%
Unfunded Actuarial Accrued Liabilities			**8.73%**	8.74%
Employer Contribution Rate (FY 2023 and later)			**15.00%**	15.00%
Amortization Years			**27**	**28**

The calculated amortization period of 27 years is based on anticipated increases in the employer and member contribution rates. The FY 2020 employer and member contribution rates were 14.25% and 6.25%, respectively. The employer and member rates are scheduled to increase by 0.25% increments ending in FY 2023. The ultimate employer and member contribution rates will be 15% and 7%, respectively, which are reflected in the above schedule.

The amortization period is the number of years it will take to pay off the unfunded liability of $4.3 billion, assuming that the employer contribution rate increases to 15% according to the schedule described above. Since 2000, the period has varied from a low of 19 years to a high of over 100 years. Unless there is a large investment gain in FY 2021, the amortization period is likely to increase in the next valuation.

SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Valuation Date June 30	Active Members in Valuation		Average Annual Pay	
	Number	Annual Payroll (Millions)	Amount	% Change
2020	**70,539**	**$2,954**	**$41,884**	**4.0%**
2019	72,164	2,907	40,285	1.5%
2018	72,341	2,872	39,702	1.8%
2017	72,148	2,814	38,997	1.1%
2016	72,232	2,785	38,557	1.2%
2015	72,919	2,777	38,088	2.7%
2014	74,352	2,758	37,092	1.9%
2013	74,925	2,727	36,400	0.0%
2012	75,627	2,714	35,891	1.0%
2011	76,780	2,728	35,534	7.7%

Beginning with the June 30, 2011 valuation, active member information includes T-DROP participation. The schedule does not include retirees who return to work.

SCHEDULE OF RETIREES AND BENEFICIARIES ADDED TO AND REMOVED FROM ROLLS

Year	Estimated Number		Total Retirees	Annual Allowances (Millions)	% Increase in Annual Allowances	Average Annual Allowances
	Added	Removed				
2020	**2,811**	**1,355**	**50,133**	**$1,194.82**	**4.2%**	**$23,833**
2019	2,849	996	48,677	1,146.74	4.3%	23,558
2018	2,927	1,195	46,824	1,099.35	5.2%	23,478
2017	2,996	999	45,092	1,044.74	6.2%	23,169
2016	3,272	925	43,095	983.87	7.3%	22,830
2015	3,326	1,056	40,748	916.62	11.5% @	22,495
2014	3,156	932	38,478	822.19	7.7%	21,368
2013	3,039	945	36,254	763.76	7.7%	21,067
2012	2,932	871	34,160	709.17	7.9%	20,760
2011	2,394	882	32,099	657.08	7.2%	20,470

@ Increased percent due to T-DROP annuities included in 2015.

SHORT CONDITION TEST

ATRS' funding objective is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percent of member payroll. If the contributions to the System are level in concept and soundly executed, the System will ***pay all promised benefits when due -- the ultimate test of financial soundness***. Testing for level contribution rates is the long-term test.

A short condition test is one means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with: 1) Member contributions on deposit; 2) The liabilities for future benefits to present retired lives; and 3) The liabilities for service already rendered by members. In a system that has been following the discipline of level percent-of-payroll financing, the liabilities for member contributions on deposit (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by members (liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of liability 3, the stronger the condition of the system. Liability 3 being fully funded is unusual.

The schedule below illustrates the history of liability 3 of the System and is indicative of the ATRS objective of following the discipline of level percent-of-payroll financing.

Valuation Date June 30	(1) Member Contribution	(2) Retirees and Beneficiaries	(3) Active and Inactive Members Employer Financed Portion)	Present Valuation Assets	Portion of Present Values Covered by Present Assets			
					(1)	(2)	(3)	Total
	$ Millions							
2020	**$1,455**	**$12,890**	**$8,007**	**$18,007**	**100%**	**100%**	**46%**	**81%**
2019	1,377	12,460	7,872	17,413	100%	100%	45%	80%
2018	1,312	11,851	7,772	16,756	100%	100%	46%	80%
2017*#	1,254	11,337	7,707	16,131	100%	100%	46%	79%
2016	1,184	10,430	7,198	15,239	100%	100%	50%	81%
2015	1,128	9,778	7,230	14,434	100%	100%	49%	80%
2014	1,077	8,777	7,456	13,375	100%	100%	47%	77%
2013#	1,027	8,181	7,514	12,247	100%	100%	40%	73%
2012	981	7,649	7,509	11,484	100%	100%	38%	71%
2011*#	929	7,132	7,460	11,146	100%	100%	41%	72%

** Revised actuarial assumptions or methods.*

 # Legislated benefit or contribution rate change.

ACTUARIAL GAIN (LOSS) BY RISK AREA

During the Period July 1, 2019 to June 30, 2020

Type of Risk Area	Gain (Loss) in Period: $ Millions	Gain (Loss) in Period: Percent of Liabilities
ECONOMIC RISK AREAS		
Pay Increases If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	$3.5	0.02%
Gross Investment Return If there is greater investment return recognition than assumed, there is a gain. If less return recognition, a loss.	(20.9)	(0.10)%
NON-ECONOMIC RISK AREAS		
Retirements If members retire at older ages, there is a gain. If younger ages, a loss.	7.3	0.03%
Disability Retirements If there are fewer disabilities than assumed, there is a gain. If more, a loss.	0.5	0.00%
Death-in-Service Benefits If there are fewer than assumed, there is a gain. If more, a loss.	1.0	0.00%
Withdrawal If more liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	12.6	0.06%
Death After Retirement If there are more deaths than assumed, there is a gain. If fewer, a loss.	9.3	0.04%
ACTUARIAL GAIN (LOSS) DURING PERIOD	13.3	0.05%
BEGINNING OF YEAR ACCRUED LIABILITIES*	$21,708.9	100.0%

**Adjusted for change in Assumptions.*

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

An actuarial valuation is based upon an actuarial cost method, an asset valuation method, and actuarial assumptions. These methods and assumptions are chosen by the Board of Trustees after consultation with the Actuary and other advisors.

The actuarial cost method is called the Entry Age Actuarial Cost Method. This method is consistent with the Board's level percent-of-payroll funding objective. With this method, the level percent-of-payroll is determined that will fund a member's retirement benefit over the member's entire working lifetime, from date of hire (Entry Age) to date of exit from the active member population. Differences in the past between assumed and actual experience become part of unfunded actuarial accrued liabilities and are amortized with level percent-of-payroll contributions. This cost method was first used in the **June 30, 1986** valuation.

The asset valuation method is a four-year smoothed market value method in which assumed investment return is recognized immediately each year and differences between actual and assumed investment return are phased-in over a closed four-year period. This asset valuation method is intended to give recognition to the long-term accuracy of market values while filtering out and dampening short-term market swings. This method was first used in the **June 30, 1995** valuation. It was modified in conjunction with the 2002 valuation to include a corridor. Assets were set to market value in 2012 to reduce volatility.

The actuarial assumptions used in producing the valuation fall into two broad classes: economic assumptions and demographic assumptions. Economic assumptions refer to long-term rates of investment return, wage growth, covered population growth, and inflation. Demographic assumptions refer to retirement rates, turnover rates, disability rates and mortality rates. The current assumptions are based upon a 2010-2015 study of experience of the Arkansas Teacher Retirement System. The assumptions are reviewed from time to time to keep them reasonably current with expected experience.

Economic Assumptions

The **price inflation** assumption is 2.50% although no specific Price Inflation is needed for this valuation. It is assumed that the 3% COLA will always be paid.

The **wage inflation** assumption is 2.75%. This consists of 2.50% related to pure price inflation and 0.25% related to general economic improvements.

The **investment return rate** used in the valuation was 7.50% per year, compounded annually (net after administrative expenses). This rate of return is not the assumed real rate of return. The real rate of return over wage inflation in this valuation is defined to be the portion of investment return which is more than the wage inflation rate. Considering wage inflation recognition of 2.75%, the 7.50% rate translates to an assumed real rate of return over wage inflation of 4.75%. This rate was first used for the **June 30, 2017** valuation. The assumed real rate of return over price inflation is 5%.

Pay increase assumptions for individual active members are shown in Tables IV and V. Part of the assumption for each age is for a merit and/or seniority increase, and the other 2.75% recognizes wage inflation. These rates were first used for the **June 30, 2017** valuation.

The Active Member Group size is assumed to remain at its present level.

Total active member payroll is assumed to increase 2.75% a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. This rate was first used for the **June 30, 2017** valuation.

Non-Economic Assumptions

The **mortality tables** used were the RP-2014 Healthy Annuitant, Disabled Annuitant and Employee Mortality headcount weighted tables for males and females. Mortality rates were adjusted for future mortality improvements using projection scale MP-2017 from 2006. Related values are shown in Table I. These tables were first used for the **June 30, 2017** valuation.

A limited fluctuation credibility procedure was used to determine the appropriate scaling factor of each gender and each member classification (see the 2010-2015 Experience Study), and are shown below:

	Scaling Factor
Healthy Male Retirees	101%
Healthy Female Retirees	91%
Disabled Male Retirees	99%
Disabled Female Retirees	107%
Male Active Members	94%
Female Active Members	84%

The **probabilities of retirement** for members eligible to retire are shown in Tables II and III. The rates for full retirement and reduced retirement were first used in the **June 30, 2017** valuation.

The **probabilities of withdrawal** from service, **death-in-service** and **disability** are shown for sample ages in Tables IV and V. These rates were first used in the **June 30, 2017** valuation.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. Members whose dates of birth were not supplied were assumed to be 40 years old on the valuation date.

TABLE I
SINGLE LIFE RETIREMENT VALUES

Sample Attained Ages in 2020	Present Value of $1 Monthly for Life		Present Value of $1 Monthly for Life Increasing 3.0% Annually		Future Life Expectancy (Years)		Percent Dying within Next Year	
	Male	Female	Male	Female	Male	Female	Male	Female
40	$150.86	$154.28	$198.83	$205.26	42.75	47.01	0.33%	0.29%
45	146.93	151.53	191.45	199.63	37.96	42.19	0.41%	0.32%
50	141.81	147.68	182.25	192.21	33.25	37.38	0.53%	0.36%
55	135.20	142.30	170.95	182.48	28.67	32.58	0.70%	0.44%
60	126.90	135.25	157.44	170.40	24.25	27.89	0.97%	0.60%
65	116.81	126.22	141.80	155.77	20.07	23.36	1.36%	0.82%
70	104.59	114.70	123.92	138.24	16.15	19.02	1.96%	1.23%
75	90.13	100.68	103.98	118.20	12.52	14.95	3.05%	2.03%
80	74.03	84.67	83.07	96.67	9.29	11.30	5.05%	3.45%
85	57.74	67.75	63.07	75.22	6.61	8.19	8.67%	6.07%
Base	2635 x 1.01	2636 x 0.91	2635 x 1.01	2636 x 0.91				
Projection	939	940	939	940				

**Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.*

Sample Attained Ages in 2020	Benefit Increasing 3.0% Yearly	Portion of Age 60 Lives Still Alive	
		Male	Female
60	$100.00	100%	100%
65	115.00	95%	97%
70	130.00	88%	92%
75	145.00	79%	86%
80	160.00	67%	77%
Ref		2635 x 1.01	2636 x 0.91

TABLE II
PROBABILITIES OF RETIREMENT FOR MEMBERS

Retirement Ages	% of Active Participants Retiring with Unreduced Benefits			
	Education		Support	
	Male	Female	Male	Female
48	8%	7%	8%	6%
49	8%	7%	8%	6%
50	8%	7%	8%	6%
51	8%	7%	8%	6%
52	8%	7%	8%	6%
53	8%	7%	8%	6%
54	8%	7%	8%	6%
55	8%	9%	8%	6%
56	8%	9%	8%	6%
57	8%	11%	8%	11%
58	8%	11%	8%	11%
59	17%	14%	8%	15%
60	17%	17%	13%	13%
61	24%	17%	13%	15%
62	24%	29%	28%	23%
63	27%	26%	25%	19%
64	27%	24%	25%	23%
65	54%	50%	47%	50%
66	54%	53%	47%	44%
67	54%	39%	47%	38%
68	54%	39%	47%	38%
69	54%	39%	47%	38%
70	54%	39%	47%	38%
71	54%	39%	47%	38%
72	54%	39%	47%	38%
73	54%	39%	47%	38%
74	54%	39%	47%	38%
75	100%	100%	100%	100%
Ref	2634	2635	2636	2637

TABLE III
PROBABILITIES OF REDUCED RETIREMENT FOR MEMBERS

Retirement Ages	% of Active Participants Retiring with Reduced Benefits			
	Education		Support	
	Male	Female	Male	Female
50	1.5%	1.0%	0.5%	1.5%
51	1.5%	1.0%	1.0%	1.5%
52	1.5%	1.5%	1.5%	2.0%
53	1.5%	2.0%	2.0%	2.0%
54	2.0%	2.0%	2.5%	2.0%
55	2.5%	2.5%	3.0%	2.0%
56	3.0%	2.5%	3.5%	2.0%
57	5.0%	2.5%	4.5%	2.5%
58	5.0%	2.5%	4.5%	2.5%
59	3.5%	2.5%	4.5%	2.5%
Ref	2640	2638	2641	2639

DURATION OF T-DROP FOR MEMBERS

Present T-DROP members are assumed to remain in T-DROP according to the following table:

Entry Age	Assumed Duration Years
50-56	7
57	6
58	5
59+	4

TABLE IV
TEACHERS
Separations from Active Employment Before Age and Service Retirement and Individual Pay Increases

Sample Ages in 2020	Years of Service	Percent of Active Members Separating within the Next Year					
		Death*		Disability		Other	
		Male	Female	Male	Female	Male	Female
	0					17.80%	12.60%
	1					13.10%	11.10%
	2					12.10%	10.10%
	3					8.60%	8.70%
	4					5.70%	6.50%
25	5 & Up	0.06%	0.02%	0.03%	0.03%	4.50%	5.40%
30		0.06%	0.02%	0.03%	0.03%	3.60%	4.30%
35		0.07%	0.03%	0.03%	0.04%	2.70%	2.90%
40		0.08%	0.05%	0.05%	0.09%	2.00%	2.00%
45		0.12%	0.07%	0.16%	0.19%	1.60%	1.60%
50		0.19%	0.11%	0.40%	0.43%	1.30%	1.40%
55		0.32%	0.18%	0.86%	0.73%	1.10%	1.20%
60		0.55%	0.28%	1.15%	1.00%	0.90%	1.00%
65		0.97%	0.39%	1.15%	1.00%	0.70%	0.80%
Ref:		2633 x 0.94	2634 x 0.84	747 x 1	748 x 1	1029	1030
						1381	1382

Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.

Age	Pay Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
20	5.00%	2.75%	7.75%
25	2.90%	2.75%	5.65%
30	2.40%	2.75%	5.15%
35	1.90%	2.75%	4.65%
40	1.40%	2.75%	4.15%
45	0.70%	2.75%	3.45%
50	0.30%	2.75%	3.05%
55	0.00%	2.75%	2.75%
60	0.00%	2.75%	2.75%
65	0.00%	2.75%	2.75%
Ref:	472		

TABLE V
SUPPORT EMPLOYEES
Separations from Active Employment Before Age and Service Retirement and Individual Pay Increases

Sample Ages in 2020	Percent of Active Members Separating within the Next Year						
	Years of Service	Death*		Disability		Other	
		Male	Female	Male	Female	Male	Female
	0					49.90%	47.50%
	1					30.10%	28.30%
	2					19.40%	19.10%
	3					15.30%	14.90%
	4					11.80%	12.10%
25	5 & Up	0.06%	0.02%	0.03%	0.02%	9.20%	9.70%
30		0.06%	0.02%	0.09%	0.04%	7.30%	6.90%
35		0.07%	0.03%	0.09%	0.05%	5.60%	5.00%
40		0.08%	0.05%	0.10%	0.07%	4.50%	4.40%
45		0.12%	0.07%	0.22%	0.16%	3.70%	4.00%
50		0.19%	0.11%	0.51%	0.34%	3.30%	3.60%
55		0.32%	0.18%	0.86%	0.59%	3.30%	3.30%
60		0.55%	0.28%	1.11%	0.76%	3.30%	2.80%
65		0.97%	0.39%	1.11%	0.80%	2.80%	2.10%
Ref:		2633 x 0.94	2634 x 0.84	749 x 1	750 x 1	1031 1383	1032 1384

Applicable to calendar year 2020. Rates and life expectancies in future years are determined by the MP-2017 projection scale.

Age	Pay Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
20	5.00%	2.75%	7.75%
25	3.75%	2.75%	6.50%
30	2.60%	2.75%	5.35%
35	2.40%	2.75%	5.15%
40	2.10%	2.75%	4.85%
45	1.00%	2.75%	3.75%
50	0.50%	2.75%	3.25%
55	0.00%	2.75%	2.75%
60	0.00%	2.75%	2.75%
65	0.00%	2.75%	2.75%
Ref:	473		

COMMENTS

General Financial Objective. Section 24-7-401(a) of the Arkansas Code provides as follows (emphasis added):

> "6.01. (1) The general financial objective of each Arkansas public employee retirement plan shall be to **establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Arkansas citizens**. More specifically, contributions received each year shall be sufficient both to (i) fully cover the costs of benefit commitments being made to members for their service being rendered in such year and (ii) make a level payment which if paid annually over a reasonable period of future years will fully cover the unfunded costs of benefit commitments for service previously rendered."

Arkansas Teacher Retirement System Status: Based upon the results of June 30, 2020 actuarial valuations, **ATRS is satisfying the financial objective of level-contribution-percent financing**.

The amortization period this year is 27 years, a decrease from last year's period of 28 years. This result is heavily dependent upon member and employer rates increasing in accordance with the following schedule:

	Contribution Rate	
Fiscal Year	Member	Employer
2021	6.50%	14.50%
2022	6.75%	14.75%
2023 and Later	7.00%	15.00%

While 27 years is a reasonable period that meets statutory requirements, use of such a period will result in unfunded liabilities that are projected to increase in dollar amount for approximately the next 10 years. This condition is called "negative amortization" and is falling out of favor. The ATRS has targeted 18 years in recent legislation as the amortization period that would eliminate negative amortization. The contribution rate based upon the target amortization period (18 years) would be approximately 17.6% of payroll. On a market value basis, the amortization period is 47 years and the contribution rate based upon the market value and the target amortization period (18 years) would be approximately 20.7% of payroll.

The Arkansas Teacher Retirement System remains stable with an 80.6% funded position as of June 30, 2020. However, unless there is a large investment gain in Fiscal Year 2021, the amortization period is likely to increase in the next valuation due to the scheduled phase-in of net investment losses.

The rate of investment return was (1.00)%# this year. As of June 30, 2020, the actuarial value of assets exceeded the market value of assets by approximately $1,105 million. Investment gains and losses that occur each year are smoothed in over a four-year period. After considering smoothing, the recognized return this year was 7.38%, compared to an assumed 7.5% return for Fiscal 2020.

 # This investment return figure was calculated by the actuary and may not exactly match your investment consultant's figure.

SCHEDULE OF RETIRED MEMBERS BY TYPE OF BENEFIT

Monthly Benefit	No. of Retirees	Type of Retirement*					Option Selected#			
		1	2	3	4	5	Life	Opt. A	Opt. B	Opt. C
$1-250	5,138	4,657	160	101	205	15	4,333	672	47	86
251-500	6,105	5,301	134	139	497	34	5,104	800	99	102
501-750	4,286	3,688	80	102	382	34	3,513	575	127	71
751-1,000	3,093	2,629	72	102	259	31	2,496	427	126	44
1,001-1,250	2,555	2,158	93	47	233	24	1,957	391	167	40
1,251-1,500	2,204	1,831	83	37	230	23	1,683	339	144	38
1,501-1,750	2,034	1,698	85	34	196	21	1,481	336	178	39
1,751-2,000	2,105	1,825	75	30	157	18	1,551	340	181	33
Over $2,000	22,416	21,093	480	176	597	70	16,719	3,365	2,072	260
Total	49,936	44,880	1,262	768	2,756	270	38,837	7,245	3,141	713

Excludes Act 793 and Act 808 retirees.

** Type of Retirement*
1. Normal retirement for age and service
2. Survivor payment - normal or early retirement
3. Survivor payment - death-in-service
4. Disability retirement
5. Survivor payment - disability retirement

 # Option Selected at Retirement
Life - Straight life annuity
Opt. A - 100% survivor annuity
Opt. B - 50% survivor annuity
Opt. C - annuity for 10 years certain and life thereafter

SCHEDULE OF AVERAGE BENEFIT PAYMENTS

Retirement Effective Dates		Service at Retirement						
		0-4#	5-9	10-14	15-19	20-24	25-29	30+
07/01/10 - 06/30/11	Average Monthly Benefit	$157	$274	$568	$1,019	$1,584	$2,543	$3,031
	Average Final Salary	$29,025	$25,410	$28,010	$37,744	$45,054	$49,358	$50,203
	Number of Active Retirees	47	471	295	246	248	764	135
07/01/11 - 06/30/12	Average Monthly Benefit	$160	$262	$588	$994	$1,537	$2,529	$3,122
	Average Final Salary	$31,339	$24,705	$29,042	$37,456	$44,664	$50,784	$51,737
	Number of Active Retirees	47	558	423	295	350	879	150
07/01/12 - 06/30/13	Average Monthly Benefit	$168	$272	$634	$980	$1,482	$2,453	$3,053
	Average Final Salary	$40,573	$24,799	$30,499	$36,168	$42,688	$49,266	$51,813
	Number of Active Retirees	50	551	429	301	377	1,038	120
07/01/13 - 06/30/14	Average Monthly Benefit	$144	$294	$626	$1,034	$1,481	$2,553	$3,195
	Average Final Salary	$41,396	$26,223	$30,235	$37,996	$42,612	$50,577	$54,193
	Number of Active Retirees	42	497	472	336	358	1,060	122
07/01/14 - 06/30/15	Average Monthly Benefit	$144	$306	$684	$1,069	$1,518	$2,540	$3,270
	Average Final Salary	$40,803	$27,540	$32,878	$38,857	$44,433	$52,059	$56,908
	Number of Active Retirees	64	564	529	375	375	1,106	138
07/01/15 - 06/30/16	Average Monthly Benefit	$112	$293	$669	$1,064	$1,466	$2,522	$3,490
	Average Final Salary	$38,048	$25,892	$31,763	$37,947	$43,044	$51,671	$60,041
	Number of Active Retirees	48	494	600	389	387	1,122	109
07/01/16 - 06/30/17	Average Monthly Benefit	$133	$282	$682	$1,011	$1,448	$2,530	$3,289
	Average Final Salary	$38,412	$25,606	$31,940	$36,516	$42,814	$52,510	$57,847
	Number of Active Retirees	53	468	499	393	368	1,012	107
07/01/17 - 06/30/18	Average Monthly Benefit	$150	$284	$681	$1,099	$1,587	$2,548	$3,105
	Average Final Salary	$38,321	$26,581	$31,995	$39,389	$46,070	$53,642	$52,835
	Number of Active Retirees	62	496	486	375	346	965	113
07/01/18 - 06/30/19	Average Monthly Benefit	$145	$310	$690	$1,172	$1,564	$2,571	$3,372
	Average Final Salary	$38,105	$29,390	$32,619	$40,560	$45,151	$53,701	$60,369
	Number of Active Retirees	53	482	501	379	366	900	114
07/01/19 - 06/30/20	Average Monthly Benefit	$120	$284	$637	$1,104	$1,533	$2,577	$3,108
	Average Final Salary	$33,918	$27,032	$31,591	$39,704	$44,837	$55,241	$59,056
	Number of Active Retirees	47	464	496	365	320	882	139

 # May include cases where the service was not reported.

The figures in this chart are as of the year of retirement. They have not been updated for changes that occurred after retirement.

STATISTICAL

ARTRS
Arkansas Teacher Retirement System

ARTRS
Arkansas Teacher Retirement System

SCHEDULE OF REVENUE BY SOURCE

Year Ending June 30	Employer Contributions	% of Annual Covered Payroll	Member Contributions	Investment and Miscellaneous Income	Total
2011	$ 400,330,902	14.7%	$ 139,460,601	$ 2,219,833,337	$ 2,759,624,840
2012	398,822,946	16.3%	117,662,465	(118,654,190)	397,831,221
2013	400,933,872	14.3%	113,900,872	1,695,899,517	2,210,734,261
2014	404,920,441	14.2%	125,225,906	2,429,334,098	2,959,480,445
2015	408,230,472	14.2%	128,555,684	632,166,951	1,168,953,107
2016	410,358,229	14.2%	131,100,983	35,579,657	577,038,869
2017	414,954,939	14.2%	133,109,939	2,289,818,591	2,837,883,469
2018	424,488,126	14.2%	138,766,747	1,824,094,695	2,387,349,568
2019	430,864,656	14.2%	141,885,632	898,384,866	1,471,135,154
2020	446,228,128	14.5%	153,105,134	(165,763,064)	433,570,198

SCHEDULE OF EXPENSE BY TYPE

Year Ending June 30	Benefit Payments	Refunds	Administrative and Other Expenses	Total
2011	$ 731,866,100	$ 8,906,441	$ 7,548,959	$ 748,321,500
2012	791,844,923	9,225,151	7,752,975	808,823,049
2013	846,210,946	11,087,596	7,755,004	865,053,546
2014	914,250,015	10,485,103	8,034,235	932,769,353
2015	970,719,484	10,774,122	8,034,857	989,528,463
2016	1,035,958,950	10,145,471	8,059,030	1,054,163,451
2017	1,092,952,357	10,874,003	7,825,595	1,111,651,955
2018	1,160,738,237	9,455,405	9,336,430	1,179,530,072
2019	1,205,326,555	9,679,783	7,134,783	1,222,141,121
2020	1,255,065,794	9,592,091	8,457,862	1,273,115,747

SCHEDULE OF BENEFIT EXPENSES BY TYPE

	For The Year Ended June 30,						
Type of Benefit	2020	2019	2018	2017	2016	2015	2014
Age and Service	1,046,397,991	1,008,092,044	958,281,765	907,314,702	852,695,640	795,518,171	739,571,020
Disability	40,420,225	40,330,710	39,770,821	38,833,696	37,812,689	36,188,748	34,639,050
Option	31,767,042	30,013,681	28,756,398	26,843,481	24,637,113	23,056,130	21,341,913
Survivor	11,555,653	11,267,137	10,848,118	10,470,562	9,946,290	9,626,726	9,025,326
Reciprocity	58,429,113	55,891,519	52,914,304	49,175,662	45,746,432	41,958,663	38,031,351
Active Members Death Benefits	338,189	278,972	304,927	474,719	357,921	404,248	493,957
T-DROP	47,978,202	41,550,591	44,827,681	42,969,143	52,760,622	50,656,897	54,408,232
Act 808	2,215,262	2,439,111	2,725,690	2,874,444	3,000,785	3,139,880	3,249,162
Cash Balance Disburse-ments	13,241,312	13,318,361	11,297,546	9,735,670	8,600,786	8,923,390	7,271,797
Cash and Savings Help Program	2,722,804	2,144,429	11,010,987	4,260,278	400,673	1,246,632	6,218,208
Total	**$1,255,065,793**	**$1,205,326,555**	**$1,160,738,237**	**$1,092,952,357**	**$1,035,958,951**	**$970,719,485**	**$914,250,016**

Arkansas Teacher Retirement System

SCHEDULE OF PARTICIPATING EMPLOYERS

Academics Plus Charter School
Alma School District
Alpena School District
Arch Ford Education Service Co-Op
Arkadelphia Public Schools
Arkansas Department of Higher Education
Arkansas Activities Association
Arkansas Arts Academy Charter
Arkansas Association Educational Administrators
Arkansas Connections Academy Charter
Arkansas Correctional School
Arkansas Department of Career Education (Rehab)
Arkansas Department of Career Education (Workforce)
Arkansas Department of Commerce
Arkansas Department of Education
Arkansas Department of Health
Arkansas Department of Public Safety
Arkansas Department of Workforce Services
Arkansas Easter Seals
Arkansas Economic Development Commission
Arkansas Educational TV Network
Arkansas Northeastern College
Arkansas River Education Service Co-Op
Arkansas School Boards Association
Arkansas School for Math, Sciences & Arts
Arkansas School for the Blind
Arkansas School for the Deaf
Arkansas State University
Arkansas State University - Beebe
Arkansas State University - Mid-South CC
Arkansas State University - Mt. Home
Arkansas State University - Newport
Arkansas Teacher Retirement System
Arkansas Tech University
Arkansas Virtual Academy Charter
Armorel School District
Ashdown School District
Atkins Public Schools
Augusta Public Schools
Bald Knob Public Schools
Barton-Lexa School District
Batesville School District
Bauxite School District
Bay School District
Bearden School District
Beebe Public School District
Benton School District
Bentonville Public Schools
Bergman Public Schools
Berryville Public Schools
Bismarck School District
Black River Technical College
Blevins School District
Blytheville Public Schools
Booneville School District
Boston Mountain Educational Co-Op
Bradford School District
Brinkley Public Schools
Brookland Public Schools
Bryant Public Schools
Buffalo Island Central School District
Cabot Public Schools
Caddo Hills School District
Calico Rock School District
Camden-Fairview School District
Capital City Lighthouse Charter School
Carlisle School District
Cave City School District
Cedar Ridge School District
Cedarville Public School District
Centerpoint School District
Charleston Public Schools
Clarendon School District
Clarksville School District
Cleveland County School District
Clinton Public Schools
College of the Ouachitas
Concord School District
Conway Public Schools
Conway Vocational Center
Corning School District
Cossatot Community College - U of A
Cossatot River School District
Cotter Public Schools
County Line Public Schools
Covenant Keepers Charter School
Cross County School District
Crossett School District
Crowley's Ridge Educational Service Co-Op
Crowley's Ridge Technical Institute
Cutter Morning Star Public Schools
Danville Public Schools
Dardanelle Public Schools
Dawson Education Service Co-Op
Decatur Public Schools
Deer/ Mt. Judea School District
DeQueen Public Schools
DeQueen-Mena Education Service
Dermott School District
Des Arc School District
DeWitt School District
DHS-Division of Youth Services
Dierks Public Schools
Dollarway School District
Dover School District
Drew Central School District
Dumas Public Schools
Earle School District
East Arkansas Community College
East End School District
East Poinsett County School District
El Dorado Public Schools
Elkins School District
Emerson-Taylor-Bradley School
England Public School District
E-Stem Public Charter School
Eureka Springs Public Schools
Exalt Academy Charter School
Farmington Public Schools
Fayetteville Public Schools
First Student
Flippin School District
Fordyce Public Schools
Foreman Public Schools
Forrest City School District
Fort Smith Public Schools
Fouke School District
Fountain Lake School District
Friendship Aspire Academy - Little Rock
Friendship Aspire Academy - Pine Bluff
Future School of Fort Smith Charter
Genoa Central School District
Gentry Public Schools
Glen Rose School District
Gosnell Public Schools
Gravette School District
Great Rivers Education Service Co-Op
Green Forest Public Schools
Greenbrier Public Schools
Greene County Tech School District
Greenland School District
Greenwood School District
Gurdon Public Schools
Guy Fenter Education Service Co-Op
Guy-Perkins School District
Haas Hall Academy - Bentonville Charter
Haas Hall Academy Charter - Fayetteville
Hackett School District
Hamburg School District
Hampton School District
Harmony Grove School District (Ouachita)
Harmony Grove School District (Saline)
Harrisburg School District
Harrison School District
Hazen School District
Heber Springs School District
Hector School District
Helena-West Helena Schools
Henderson State University
Hermitage Public School District
Highland Public School District
Hillcrest School District
Hope Public Schools
Horatio School District
Hot Springs School District
Hoxie Public Schools
Huntsville School District
Imboden Area Charter School
Izard County Consolidated School District
Jackson County School District
Jacksonville Lighthouse Charter School
Jacksonville North Pulaski School District
Jasper School District
Jessieville Public School District
Jonesboro Public Schools
Jonesboro Vocational Center

SCHEDULE OF PARTICIPATING EMPLOYERS (Continued)

Junction City School District
Kipp Delta College Preparatory Charter
Kirby School District
Lafayette County School District
Lake Hamilton School District
Lakeside School District (Chicot)
Lakeside School District (Garland)
Lamar School District
Lavaca Public Schools
Lawrence County School District
Lead Hill School District
Lee County School District
Lincoln Consolidated School District
Lisa Academy Charter
Little Rock Preparatory Academy
Little Rock School District
Lonoke School District
Magazine School District
Magnet Cove School District
Magnolia School District
Malvern School District
Mammoth Spring School District
Manila Public Schools
Mansfield School District
Marion School District
Marked Tree School District
Marmaduke School District
Marvell - Elaine School District
Mayflower School District
Maynard School District
McCrory School District
McGehee Public Schools
Melbourne Public School District
Mena Public Schools
Metropolitan Vocational Center
Midland School District
Mineral Springs School District
Monticello School District
Monticello Vocational Center
Mount Ida Public Schools
Mountain Home Public Schools
Mountain Pine School District
Mountain View School District
Mountainburg Public Schools
Mt. Vernon-Enola School District
Mulberry-Pleasant View Bi-County Public Schools
Nashville School District
National Park Community College
Nemo Vista School District
Nettleton Public Schools
Nevada School District
Newport Special School District
Norfork School District
North Arkansas College
North Central Career Center
North Little Rock School District
Northcentral Arkansas Education Service Co-Op
Northeast Arkansas Education Co-Op
Northwest Arkansas Classical Academy Charter
Northwest Arkansas Community College
Northwest Arkansas Education Service Co-Op
Northwest Technical Institute
Omaha School District
Osceola School District
Ouachita Public Schools
Ouachita River School District
Ozark Montessori Academy Charter - Springdale
Ozark Mountain School District
Ozark Public Schools
Ozarka College
Ozarks Unlimited Resource Educational Service Co-Op
Palestine-Wheatley School District
Pangburn School District
Paragould School District
Paris School District
Parkers Chapel School District
Pea Ridge School District
Perryville School District
Phillips Community College - Dewitt
Phillips Community College - U of A
Piggott School District
Pine Bluff Lighthouse Charter School
Pine Bluff School District
Pocahontas Public Schools
Pottsville School District
Poyen School District
Prairie Grove School District
Premier High School of Little Rock Charter
Premier High School of North Little Rock Charter
Prescott Public Schools
Pulaski County Special School District
Pulaski Technical College
Quest Middle Charter School - West Little Rock
Quitman Public Schools
Rector School District
Rich Mountain Community College
River Valley Career Academy
Rivercrest School District
Riverside School District
Riverside Vocational Technical School
Riverview School District
Rockbridge Montessori Charter School
Rogers Public Schools
Rose Bud School District
Russellville School District
Salem School District
Scholarmade Achievement Place
Scranton School District
Searcy County School District
Searcy School District
Sheridan School District
Shirley School District
SIATech Little Rock Charter
Siloam Springs School District
Sloan-Hendrix School District
Smackover-Norphlet School District
South Arkansas Community College
South Arkansas Developmental Center
South Central Service Co-Op
South Conway County School District
South Pike County School District
Southeast Arkansas College
Southeast Arkansas Education Service Co-Op
Southeast Arkansas Prepartory High School
Southern Arkansas University
Southern Arkansas University Tech
Southside Bee Branch School District
Southside School District
Southwest Arkansas Education Co-Op
Spring Hill School District
Springdale Public Schools
Star City School District
Strong-Huttig School District
Stuttgart School District
Texarkana Career and Technological Center
Texarkana School District
The Excel Center Charter at Goodwill
Trumann School District
Two Rivers School District
U of A Community College - Batesville
U of A Community College - Hope
U of A Community College - Morrilton
University of Arkansas - Fayetteville
University of Arkansas - Fort Smith
University of Arkansas - Little Rock
University of Arkansas - Monticello
University of Arkansas - Pine Bluff
University of Arkansas Cooperative Extension
University of Arkansas for Medical Sciences
University of Central Arkansas
Valley Springs Public Schools
Valley View Public Schools
Van Buren School District
Vilonia School District
Viola School District
Waldron Public Schools
Warren School District
Warren Vocational Center
Watson Chapel School District
West Fork School District
West Memphis School District
West Side School District
Western Yell County School District
Westside Consolidated School District
Westside School District
White County Central Schools
White Hall School District
Wilbur D Mills Education Service Co-Op
Wonderview School District
Woodlawn School District
Wynne Public Schools
Yellville-Summit Public School

Prepared by the Staff of

ARKANSAS TEACHER RETIREMENT SYSTEM

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ARTRS
Arkansas Teacher Retirement System

2020 COMPREHENSIVE ANNUAL FINANCIAL REPORT

Arkansas Teacher Retirement System

A PENSION TRUST FUND OF THE STATE OF ARKANSAS

CLINT RHODEN, EXECUTIVE DIRECTOR