Arkansas State Police Retirement System

Annual Comprehensive Financial Report

For the Fiscal Year Ended June 30, 2021

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Actuarial Section

Statistical Section

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A Brief History of ASPRS

With the passage of Act 311 on March 19, 1951, the Arkansas General Assembly created the State Police Retirement System (ASPRS or the System). This System provides for the retirement of police officer employees of the Department of Arkansas State Police.

In the beginning, all ASPRS members participated in a contributory plan whereby employers and employees made contributions to the System. However, in 1977, Act 793 was signed by then Governor David Pryor. This legislation offered a choice to employees who were currently under the contributory plan. They could remain under the contributory plan or change over to the new non-contributory plan in which only employers make contributions to the System. This choice was offered to employees who were ASPRS members at some previous time and returned to work for the System on or after January 1, 1978; however, anyone joining the System on or after, January 1, 1978 who was not previously an ASPRS member is automatically covered under the new non-contributory plan.

Act 1071 of 1997 created the Tier Two Benefit Plan for the State Police Retirement System (Tier II) for all officers hired on or after April 3, 1997. Members of the plan in effect before April 3, 1997 (Tier I) had one year from April 3, 1997 to elect participation in Tier II.

Act 1242 of 2009 merged the investable assets of ASPRS with those of the Arkansas Public Employees Retirement System (APERS). All authority over investment of the merged assets was granted to the Board of Trustees of the Arkansas Public Employees Retirement System (APERS Board). Investment schedules contained herein reflect the market values accruing to each system.

This annual financial report, which covers the period from July 1, 2020 through June 30, 2021, provides comprehensive information about the System including a description of the retirement plan; investment policies and objectives; financial statements; an actuarial report; and historical and statistical information on active members, annuitants, and benefit payments.

System Highlights

(for the fiscal year ended June 30, 2021)

Active Members *(excludes DROP participants)*

	Tier I	Tier II
Number	19	469
Average Age	50.7	38.7
Average Years' Service	24.9	10.2
Average Annual Salary	$ 84,341	$ 58,247

Inactive Vested Members

Number	108

Members Who Retired or Entered DROP in Fiscal 2021

	Age & Service	Disability
Retired Members	22	2
Average Age	55.30	34
Average Credited Years' Service	18.71	10
Average Monthly Benefit	$ 3,289	$1,327

Total Retirees & Beneficiaries *(includes DROP participants, disability recipients, and death-in-service beneficiaries)*

Retired Members and Beneficiaries	745
Average Monthly Benefit	$ 3,372

Troop Headquarters

Troop "A" 501-618-8282
1 State Police Plaza Drive, Little Rock, AR 72209
Captain Mike Hagar - Commander

Troop "B" 870-523-2701
3200 Highway 367 North, Newport, AR 72112
Captain Todd Shaw - Commander

Troop "C" 870-935-7302
2216 Browns Lane Access Rd, Jonesboro, AR 72403
Captain John Carter - Commander

Troop "D" 870-633-1454
3205 North Washington, Forrest City, AR 72335
Captain David Moore - Commander

Troop "E" 870-247-1483
6816 Princeton Pike, Pine Bluff, AR 71602
Captain David Williams - Commander

Troop "F" 870-226-3713
1237 North Myrtle, Warren, AR 71671
Captain Scott Woodward - Commander

Troop "G" 870-777-4641
2501 North Hazel, Hope, AR 71801
Captain Brady Gore - Commander

Troop "H" 479-783-5195
5728 Kelley Highway, Fort Smith, AR 72914
Captain Chris Goodman - Commander

Troop "I" 870-741-3455
5196 US 65 South, Harrison, AR 72601
Captain Wesley Smithee - Commander

Troop "J" 479-754-3096
2700 West Main, Clarksville, AR 72830
Captain Kyle Drown - Commander

Troop "K" 501-767-8550
200 Karen Street, Hot Springs, AR 71901
Captain Ron Casey - Commander

Troop "L" 479-751-6663
1120 W Monroe Ave, Lowell, AR 72745
Captain Scott Russell - Commander

Letter of Transmittal

Dear ASPRS Members:

The Arkansas State Police Retirement System (ASPRS or the System) is pleased to present the Annual Financial Report for the period ending June 30, 2021. The report is designed to provide a clear and concise picture of the financial conditions of the System. The report includes the following six sections:

- The Introduction contains the administrative organization, a letter of transmittal, and the chairman's report;
- The Financial Section contains the financial statements and required supplementary information;
- The Investments Section contains a report on investment activity, investment policies, investment results, and various investment schedules;
- The Actuarial Section contains the actuary's certification letter and the results of the annual actuarial valuation;
- The Statistical Section includes significant trend data pertaining to the System;
- The Appendix contains combined ASPRS and APERS financial statements.

Accounting System

The accrual basis of accounting is used to record the assets, liabilities, revenues, and expenses of the ASPRS trust fund. Revenues are recognized in the accounting period in which they are earned, without regard to date of collection, and expenses are recorded when incurred, regardless of when payment is made. Investments are reported at market values determined by the custodial agent. The agent's determination of market value includes, among other things, using pricing services or prices quoted by independent brokers at current exchange rates.

Revenues

The fiscal year 2021 revenue from employer contributions totaled $7.7 million. This amount is $501,227 more than the amount received in fiscal year 2020. Court fees and driver's license reinstatement fees for the fiscal year were $2.65 million, an increase of $531,752 from fiscal year 2020. In 2021, motor vehicle title fees totaling $5.3 million were collected in accordance with Act 718 of 2011.

In addition to the funding provided in previous years, Act 1071 of 1997 provided for a transfer from insurance premium taxes to the State Police Retirement Fund. This transfer is equal to the difference between the actuarially computed contribution rate minus other funding sources (employer contributions and driver's license reinstatement fees). The fund received $7.14 million from the insurance premium tax transfer during fiscal year 2021 and $7.71 million in fiscal year 2020.

The System earned net investment income of $101.4 million in fiscal year 2021 after expenses of just over $1.6 million, an increase of $94.7 million from fiscal year 2020. Overall, the System's revenues increased $95.62 million over fiscal year 2020 due primarily to much higher investment returns.

Expenses

Benefit payments for fiscal year 2021 were $27.29 million, which is $640,062 less than fiscal year 2020. Administrative expenses were $215,384, of which $69,800 was for professional fees, and $164,008 was transferred to APERS for indirect administrative costs.

Funding

The System is funded through contributions from the state and from investment income. The general financial objective of the System is to establish and receive contributions which, expressed as a percent of active member payroll, will remain approximately level from generation to generation.

Investments

Act 1242 of 2009 effectively merged the ASPRS investment program with that of APERS and granted the APERS Board all investment authority. In accordance with the Investment Code contained in the Arkansas Code Annotated, the APERS Board has established a policy which requires that the funds be invested in conformity with the "prudent investor rule." The Investment Code permits the fund to establish an investment policy based upon certain investment criteria and allows for delegation of investment authority to professional investment managers. The statement of investment policy outlines the responsibility for the investment of the fund and reflects the degree of risk that is deemed appropriate for the fund. Investment managers are to execute the investment policy in accordance with statutory authority and the policies and respective guidelines of the APERS Board, but they are free to use full discretion within those policies and guidelines. Compliance by the current investment managers is monitored on a continuing basis by the investment consulting firm Callan Associates Inc. and APERS staff. The investment managers retained by the APERS Board are listed on page 11 of this report.

Professional Services

Professional services are provided to ASPRS by firms selected by the APERS Board to aid in the efficient and effective management of the System. A list of firms retained during the year can be found on page 11 of this report.

Acknowledgments

This report is the result of the combined efforts of the APERS staff under the direction of the Board of Trustees of the State Police Retirement System. Its purpose is to provide complete and reliable information as a basis for making management decisions, as a means for determining compliance with legal provisions, and as a means for determining responsible stewardship over the assets contributed by the members and employers.

Respectfully,

Phillip Milligan

Phillip Milligan

Allison Woods

Board of Trustees

Senior Staff

Allison Woods
Interim Executive Secretary

Allison Woods
Deputy Director

Jason Willett
Chief Financial Officer

Carlos Borromeo
Chief Investment Officer

Laura Gilson
Chief Legal Counsel

Vacant
Director of Human Resources

Phillip Norton
Director of Information Technology

Jennifer Taylor
Director of Benefits Administration

Jacobia Bates
Manager, Educational Outreach

Jon Aucoin
Manager, Communications Section

Cheryl Wilburn
Manager, Member and Retiree Services Section

John Owens
Internal Auditor

Usha Doolabh
Accounting Operations Manager, Investments

Professional Service Providers

Custodian Bank
The Bank of New York Mellon
Pittsburgh, PA 15258

Actuary
Gabriel, Roeder, Smith & Co.
Southfield, MI 48076

Investment Consultant
Callan Associates, Inc.
Chicago, IL 60602

Investment Managers
Acadian Asset Management
Boston, MA 02110

AQR Capital Management
Greenwich, CT 06830

Artisan Partners
Milwaukee, WI 53202

Baillie Gifford Overseas Ltd.
Edinburgh, Scotland

Blackstone Alternative Asset Management, LP
New York, NY 10154

CastleArk Management, LLC
Chicago, IL 60606

DoubleLine Capital
Los Angeles, CA 90071

Franklin Templeton Institutional
Coral Gables, FL

Heitman America Real Estate
Chicago, IL 60606

Horrell Capital Management
Little Rock, AR 72211

INTECH
West Palm Beach, FL 33401

Invesco Real Estate
Dallas, TX 75240

LaSalle Investment Management
San Francisco, CA 94111

Lazard Asset Management
New York, NY 10020

LSV Asset Management
Chicago, IL

MacKay Shields
New York, NY 10105

Mellon Capital
Pittsburgh, PA 15258

Newton Capital Management
New York, NY 10166-0005

Pinnacle Forest Investments, LLC
Little Rock, AR 72211

PGIM, Inc.
Newark, NJ 07102

SSI Investment Management
Beverly Hills, CA 90210

Stephens Investment Management Group
Houston, TX 77046

TA Associates Realty
Boston, MA 02109

Wellington Management Company
Boston, MA 02210

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Independent Auditor's Report

Arkansas

Roger A. Norman, JD, CPA, CFE, CFF
Legislative Auditor

LEGISLATIVE JOINT AUDITING COMMITTEE
ARKANSAS LEGISLATIVE AUDIT

INDEPENDENT AUDITOR'S REPORT

Arkansas Public Employees Retirement System
Legislative Joint Auditing Committee

Report on the Financial Statements

We have audited the accompanying financial statements of the Arkansas Public Employees Retirement System, an office of Arkansas state government, as of and for the year ended June 30, 2021, and the related notes to the financial statements, which collectively comprise the Arkansas Public Employees Retirement System's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

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

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Arkansas Public Employees Retirement System as of June 30, 2021, and the changes in financial position thereof for the year then ended, in accordance with accounting principles generally accepted in the United States of America.

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www.arklegaudit.gov

Emphasis of Matter

As indicated above, the financial statements of the Arkansas Public Employees Retirement System are intended to present the financial position and the changes in financial position of only that portion of the State that is attributable to the transactions of the Arkansas Public Employees Retirement System. They do not purport to, and do not, present fairly the financial position of the State of Arkansas as of June 30, 2021, or the changes in its financial position for the year then ended, in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

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

The Governmental Accounting Standards Board requires that a Management's Discussion and Analysis be presented to supplement government-wide financial statements. However, as discussed in the "Emphasis of Matter" paragraph above, the financial statements of the Arkansas Public Employees Retirement System are only for the specific transactions and activity of the Agency and not for the State as a whole. Therefore, the Management's Discussion and Analysis is not required to be presented for the Arkansas Public Employees Retirement System individually. Our opinion on the basic financial statements is not affected by the omission of this information.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Arkansas Public Employees Retirement System's basic financial statements. The Schedule of Selected Information is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The Schedule of Selected Information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on this information.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated January 3, 2022, on our consideration of the Arkansas Public Employees Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing and not to provide an opinion on the effectiveness of the Arkansas Public Employees Retirement System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Arkansas Public Employees Retirement System's internal control over financial reporting and compliance.

ARKANSAS LEGISLATIVE AUDIT

Roger A. Norman

Roger A. Norman, JD, CPA, CFE, CFF
Legislative Auditor

Little Rock, Arkansas
January 3, 2022
SA1037021

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Management's Discussion and Analysis

This discussion and analysis of the Arkansas State Police Retirement System (ASPRS) provides an overview of the System's financial activities for the fiscal year ended June 30, 2021. It is intended to be used in conjunction with the transmittal letter and ASPRS financial statements and notes, which begin on page 16 of this report.

Using This Financial Report

This Annual Comprehensive Financial Report reflects the activities of the Arkansas State Police Retirement System as reported in the Statement of Fiduciary Net Position (page 16) and the Statement of Changes in Fiduciary Net Position (page 17). These statements are presented on an accrual basis and reflect all Trust Fund activities as incurred. The Notes to Financial Statements are an integral part of the financial statements and include additional information essential to understanding the basic financial statements. The Required Supplementary Information following the Notes to the Financial Statements provide historical information and additional details considered useful in evaluating the condition of the plan. Investment data in the Financial Section is presented at fair value. See the Actuarial Section of this report for a detailed discussion of the actuarial value of assets and liabilities and the funded ratio.

Financial Highlights

ASPRS net position restricted for pension benefits increased by $96.7 million during FY2021. On June 30, 2021 total plan assets were $468 million. These assets exceeded total liabilities of $33.1 million, resulting in a net position restricted for pension benefits of $434.9 million.

- Total additions for the system increased by $95.6 million in FY2021. The primary reason for this large increase in FY2021 additions was the increase in net investment income of $94.7 million. ASPRS had a tremendous year with an investment return of 31.49% in FY2021.
- Benefit payments decreased approximately $640,000 in FY2021 due to the number of retirees and beneficiaries decreasing slightly in FY2021.
- Administrative expenses increased slightly in FY2021 due primarily to an increase in professional fees pertaining to the annual actuarial valuation.

The Statement of Fiduciary Net Position

The Statement of Fiduciary Net Position (see page 16) reports the pension trust fund's assets, liabilities, and resulting net position at the end of the fiscal year such that

assets − liabilities = net position.

It is a snapshot of the financial position of the pension trust fund at that specific time.

The Statement of Changes in Fiduciary Net Position

The Statement of Changes in Fiduciary Net Position (see page 17) reports the pension trust fund's financial transactions that have occurred during the fiscal year such that

additions − deductions = net change in net position.

It supports the change that has occurred to the prior year's net position value on the Statement of Fiduciary Net Position.

Notes to the Financial Statements

The notes to the financial statements are provided as an integral component of the financial statements to help explain in narrative form some of the more complex or less obvious elements to the statements. Further, the notes provide additional information that is essential for a comprehensive understanding of the System's financial condition and the results of its operations.

- Note 1 provides a general description of the System, including information regarding membership and employers.
- Note 2 summarizes significant accounting policies, including the basis of accounting, management's use of estimates, and other accounting policies.
- Note 3 describes deposits and investment risk
- Note 4 provides information regarding legally required reserves.
- Note 5 provides information regarding the System's net pension liability
- Note 6 describes the System's Deferred Retirement Option Plan.

Basic Financial Statements

Statement of Fiduciary Net Position *(as of June 30, 2021 and 2020)*

ASSETS	2021	2020
Cash and Cash Equivalents	$17,440,903	$15,441,520
Receivables	3,098,957	2,633,873
Investments, At Fair Value		
Government Securities	10,562,922	11,326,048
Corporate Securities	197,260,494	146,017,108
International Securities	120,574,158	85,687,773
Core Plus Bond Fund	22,048,098	19,782,110
Real Estate	44,752,914	36,382,257
Diversified Strategies	19,148,880	16,164,722
Timberland	2,924,756	3,294,995
Global Energy Fund	0	3,667,885
Commercial Loans	322,563	372,766
Total Investments at Fair Value	417,594,785	322,695,665
Securities Lending Collateral Investments, At Fair Value	29,850,220	28,278,978
TOTAL ASSETS	467,984,865	369,050,036
LIABILITIES		
Accounts Payable and Accrued Expenses	599,978	522,066
Investment Purchases Payable	2,606,756	2,000,801
Securities Lending Liability	29,905,050	28,343,491
TOTAL LIABILITIES	33,111,784	30,866,358
NET POSITION RESTRICTED FOR PENSION BENEFITS	$434,873,081	$338,183,678

Statement of Changes in Fiduciary Net Position *(for years ended June 30, 2021 and 2020)*

ADDITIONS	**2021**	**2020**
Contributions		
Employer	$7,706,274	$7,205,047
Plan Member	40,919	93,792
Supplemental	7,139,013	7,705,096
Court	284,840	655,925
Drivers' License Reinstatement Fees	2,361,709	1,458,872
Motor Vehicle Title Fees	5,250,891	4,754,635
Total Contributions	22,783,645	21,873,368
Investment Income		
Interest	1,560,447	757,518
Dividends	3,467,318	3,526,068
Investment Gain/Loss	96,529,154	2,149,771
Security Lending Income	1,675,760	593,473
Real Estate Income	1,362,562	1,379,738
Other Investment Income	21,478	500
Total Investment Income	104,616,718	8,407,069
Less: Investment Expense	3,201,564	1,706,222
Net Investment Income	101,415,154	6,700,847
Other Additions	68	57
Total Additions	124,198,867	28,574,271
DEDUCTIONS		
Benefit Payments	27,294,080	27,934,142
Member Refunds	215,384	195,463
Total Deductions	27,509,464	28,129,605
NET INCREASE (DECREASE)	96,689,403	444,666
Net Position Restricted for Pension Benefits		
Beginning of Year	338,183,678	337,739,012
End of Year	$434,873,081	$338,183,678

Notes to the Financial Statements

Note 1: Plan Description

General Information

The Arkansas State Police Retirement System (ASPRS or the System) is a single-employer, defined benefit pension plan that was established on March 19, 1951 with the passage of Act 311 of 1951. The System provides for the retirement of police officers employed by the Department of Arkansas State Police. The laws governing the operations of ASPRS are set forth in Arkansas Code Annotated (A.C.A.), Title 24, Chapters 2 and 6. Act 1071 of 1997 created a Tier II benefit plan for all police officers hired on or after April 3, 1997.

Effective July 1, 2009, Act 1242 of 2009 transferred the assets of ASPRS to the Arkansas Public Employees Retirement System (APERS) to hold in trust for ASPRS. Act 1242 of 2009 also states that the State Police Trust Fund shall not be treated as segregated funds but shall be commingled with the assets of APERS strictly for investment purposes and that the assets of ASPRS and APERS shall be invested as determined by the Board of Trustees of the Arkansas Public Employees Retirement System (APERS Board).

Act 1242 of 2009 also created the Arkansas State Police Officers' Tier II Deferred Retirement Option Plan (DROP), and it changed the composition of the Board of Trustees of the State Police Retirement System (ASPRS Board).

Arkansas Code Annotated § 24-6-204 states that the membership of the ASPRS Board shall be composed of seven members as follows:

- One active member enrolled in the Tier I benefits program,
- One active, vested member enrolled in the Tier II benefits program,
- The State Police Commissioner who shall be appointed by the Governor,
- The Chief Fiscal Officer of State or his or her designee, and
- Three citizens at large who shall be appointed by the Governor.

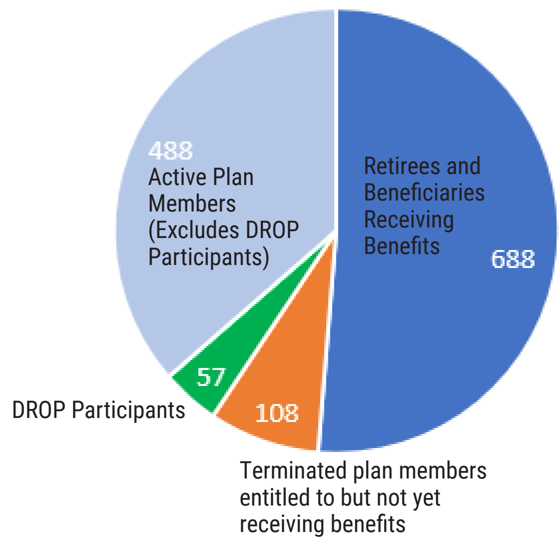
The members of the ASPRS Board are listed on page 10 of this report.

Membership

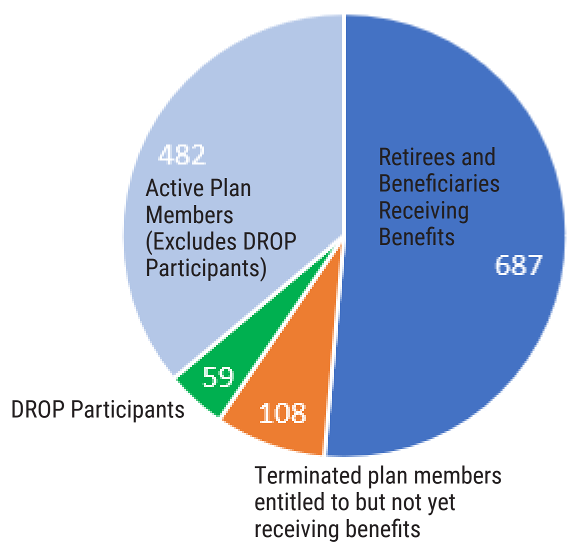
The membership as of the June 30 end of fiscal years 2020 and 2021 was as follows:

Members	2021	2020
Retirees and Beneficiaries Receiving Benefits	688	687
Terminated plan members entitled to but not yet receiving benefits	108	108
DROP Participants	57	59
Active Plan Members (Excludes DROP Participants)	488	482
	1,341	1,336

2021 Membership chart



2020 Membership chart



Contributions

As of June 30, 2020 and 2021, there were no contributory members of ASPRS. Plan member contributions presented in the financial statements are related to service purchase payments. For fiscal year 2021, the employer contribution rate was 22% of salaries paid (A.C.A. 24-6-209). Contribution provisions are established by state law and may be amended only by the Arkansas General Assembly.

Additional Revenue

Act 1071 of 1997 provides for a transfer from insurance premium taxes to the State Police Retirement Fund (the ASPRS fund). The ASPRS fund received $7.14 million of Act 1071 funds in fiscal year 2021 and $7.71 million in fiscal year 2020. Additional funds are collected from motor vehicle title fees in accordance with Act 718 of 2011. The ASPRS fund received $5.25 million of Act 718 funds in fiscal year 2021 and $4.75 million in fiscal year 2020.

Plan Administration

The costs of administering the System are paid out of investment earnings.

Benefits

Benefit provisions are established by state law and found at Arkansas Code Annotated Title 24, Subchapter 6. They may be amended only by the Arkansas General Assembly. Members are eligible for full retirement benefits after meeting minimum age and service requirements. The normal retirement benefit, paid on a monthly basis, is determined based on a formula that uses (a) the member's final average salary and (b) the number of years of credited service.

Increases after Retirement

Retirees will receive a 3% cost of living adjustment (COLA) increase in their benefit each July 1. Eligibility for the COLA requires being retired from July 1 for a full 12 months.

Note 2: Summary of Significant Accounting Policies

Basis of Accounting

The System's accounts and records are maintained using fund accounting principles, and its financial statements are prepared using the accrual basis of accounting. Expenses are recorded when the liability is incurred, revenues are recorded in the accounting period in which they are earned and become measurable, and investment purchases and sales are recorded as of their trade dates. Member and employer contributions are established by statute as a percentage of salaries and are recognized when due, pursuant to legal requirements. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

Use of Estimates

The preparation of the System's financial statements in conformity with accounting principles generally accepted in the U.S. requires the System administrator to make significant estimates and assumptions that affect various data in the report, including the following:

- The net position restricted for pensions at the date of the financial statements
- The net pension liability and other actuarial information presented in Note 5
- The required supplementary information as of the benefit information date
- The changes in fiduciary net position during the reporting period

Estimates may also be involved in formulating disclosures of contingent assets and liabilities at the date of the financial statements. Actual results could differ from these estimates.

Cash and Cash Equivalents

Cash and cash equivalents include demand accounts, imprest accounts, cash in the state treasury, and short-term investment funds (STIF). The STIF accounts are created through daily sweeps of excess cash by the System's custodian bank into bank-sponsored commingled funds that are invested in U.S. Government and agency securities and other short-term investments. The STIF accounts had an average weighted maturity of 90 days or less and are stated at fair value.

Note 3: Deposits and Investments

Deposits

Deposits are carried at cost and are included in "cash and cash equivalents". Cash and cash equivalents include demand accounts, cash in state treasury, short-term investment funds, and petty cash. As of June 30, 2021, these totals were $16,540, $503,452, and $16,920,911 respectively. State Treasury Management Law governs the management of funds held in the State Treasury (cash in state treasury), and it is the responsibility of the Treasurer of State to ensure the funds are adequately insured and collateralized.Custodial Credit Risk for Deposits

Custodial credit risk for deposits is the risk that, in the event of the failure of a depository financial institution, the System will not be able to recover deposits or collateral securities. The System's policy is to place deposits only in collateralized or insured accounts. As of June 30, 2021, the System's only deposits exposed to potential custodial credit risk were those holding its foreign currency balance of $862,808. The System holds foreign currency in banks outside the United States as a result of transactions by international investment managers.

Investments

Arkansas Code Annotated §§ 24-2-601 – 24-2-619 authorize the Board to have full power to invest and reinvest monies of the System and to hold, purchase, sell, assign, transfer or dispose of any of the investments or proceeds of the investments in accordance with the prudent investor rule. Security transactions and any resulting gains or losses are accounted for on a trade basis. Net investment income includes net appreciation in the fair value of investments, interest income, dividend income, and total investment expense, which includes investment management fees, custodial fees, and all other significant investment-related costs.

Arkansas Code Annotated § 24-2-608 also states that the System shall seek to invest not less than 5% nor more than 10% of the System's portfolio in Arkansas-related investments. APERS recognizes a legal responsibility to seek to invest in the Arkansas economy while realizing that its primary, legal, and fiduciary commitment is to beneficiaries of the retirement system. As stated in A.C.A. § 24-2-608 (d), "nothing in this section shall in any way limit or impair the responsibility of a fiduciary to invest in accordance with the prudent investor rule set forth in §§ 24-2-610 – 24-2-619."

Investments are reported at fair value as determined by the custodian bank. The custodian bank's determination of fair values includes, among other things, using pricing services or quotes by major independent brokers at current exchange rates as available. The schedule on the following page reflects the fair value of investments.

Statement of Invested Assets

(Assets by type at fair value in dollars as of June 30, 2021)

Investment Assets	**Combined**	**ASPRS**	**APERS**
Government Securities			
U.S. Government Securities	176,049,549	6,493,281	169,556,268
U.S. Fixed Futures	431,823	15,927	415,896
Agency Pooled	63,133,264	2,328,560	60,804,703
Municipal Bonds	2,077,571	76,628	2,000,944
Agency CMO	44,695,777	1,648,526	43,047,251
Corporate Securities:			
Collateralized Obligations	224,716,225	8,288,266	216,427,959
U.S. Corporate Bonds	312,896,858	11,540,655	301,356,203
Convertible Bonds	380,617,252	14,038,404	366,578,848
Convertible Preferred Stock	69,352,787	2,557,957	66,794,831
Common Stock	3,586,003,351	132,263,482	3,453,739,869
U.S. Equity Index Fund	675,883,556	24,928,787	650,954,770
Co-Mingled Funds	42,873,649	1,581,320	41,292,329
High Yield Income Bond Fund	49,874,371	1,839,529	48,034,842
Preferred Stock	6,021,538	222,094	5,799,444
International Securities:			
Global Gov't Fixed	2,208,380	81,452	2,126,928
Global Corporate Bonds	75,750,700	2,793,933	72,956,768
Equity Securities	2,234,404,609	82,412,119	2,151,992,490
Global Preferred Stock	41,514,078	1,531,174	39,982,904
Global Co-Mingled Funds	136,860,370	5,047,856	131,812,514
International Equity Index Fund	665,315,120	24,538,988	640,776,131
Global Collateralized Obligations	25,777,783	950,769	24,827,014
Global Convertible Bonds	51,984,569	1,917,360	50,067,209
Emerging Market	35,260,081	1,300,507	33,959,575
Core Plus Bond Fund	597,780,682	22,048,098	575,732,584
Real Estate	1,213,366,649	44,752,914	1,168,613,735
Diversified Strategies	519,175,424	19,148,880	500,026,543
Timberland	79,297,655	2,924,756	76,372,899
Commercial Loans	8,745,512	322,563	8,422,949
Total Investments at Fair Value	11,322,069,183	417,594,785	10,904,474,398
Securities Lending Collateral Investments at Fair Value			
Commercial Paper	208,682,050	7,696,820	200,985,230
Certificates of Deposit	5,200,203	191,799	5,008,404
Receivables/Payables	8,874	327	8,546
Repurchase Agreements	249,848,896	9,215,177	240,633,719
Floating Rate Notes	319,933,867	11,800,121	308,133,747
Asset Backed Securities	25,648,024	945,976	24,702,048
Total Securities Lending Collateral Investments	809,321,914	29,850,220	779,471,694
	12,131,391,097	447,445,005	11,683,946,092

Totals may not add due to rounding

Custodial Credit Risk for Investments

Custodial credit risk for investments is the risk that, in the event of failure of the counterparty to a transaction, the System 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 (a) uninsured, (b) not registered in the name of the government, and (c) held by either the counterparty or the counterparty's trust department or agent but not in the System's name. Arkansas Code Annotated § 24-2-606 does address the custodianship of assets, and the investment policy states that "the custodian bank shall, by nominee agreement, hold any and all securities for the beneficial interest of the APERS fund." As of June 30, 2021, there were no investments exposed to custodial credit risk.

Credit Risk for Investments

Credit risk of investments is the risk that the issuer or other counterparty will not fulfill its obligation to the holder of the investment. Credit risk exposure is dictated by each investment manager's agreement. This credit risk is measured by the credit quality of investment in debt securities as described by nationally recognized statistical rating organizations. Each portfolio is managed in accordance with investment guidelines that are specific as to permissible credit quality ranges, exposure levels within individual security quality rating tiers, and the average credit quality of the overall portfolio.

The schedule on the following page indicates the System's exposure to credit risk for investments.

The System's Exposure to Credit Risk

Moody's Quality Ratings *(in dollars as of June 30, 2021)*

Moody's Rating	Aaa	Aa	A	Baa	Ba	B	Caa or below	Not Rated	Base Market Value
Government Securities	267,540,052	0	0	0	0	0	0	4,600,305	272,140,357
Corporate Securities	22,314,336	18,001,296	58,845,636	197,041,907	51,618,099	46,289,032	23,032,466	574,478,006	991,620,777
International Securities	3,272,660	5,209,687	20,805,716	60,380,475	22,979,823	7,662,704	1,991,227	68,679,223	190,981,513
Floating Rate Fund	0	0	0	0	0	0	0	16,908,909	16,908,909
Core Plus Bond Fund	0	0	0	0	0	0	0	597,780,682	597,780,682
Commercial Loans	0	0	0	0	741,628	7,636,684	367,200	0	8,745,512
Municipal Bonds	0	2,077,571	0	0	0	0	0	0	2,077,571
Co-Mingled Funds	0	0	0	0	0	0	0	25,964,740	25,964,740
High Yield Income Fund	0	0	0	0	0	0	0	49,874,371	49,874,371
	293,127,047	25,288,554	79,651,351	257,422,381	75,339,550	61,588,420	25,390,893	1,338,286,236	2,156,094,433

S&P's Quality Ratings *(in dollars as of June 30, 2021)*

S&P Rating	AAA	AA	A	BBB	BB	B	CCC or below	Not Rated	Base Market Value
Government Securities	0	267,540,052	0	0	0	0	0	4,600,305	272,140,357
Corporate Securities	10,417,161	9,167,689	61,270,987	215,694,554	66,044,295	37,557,836	34,382,698	557,085,557	991,620,777
International Securities	1,207,080	3,503,911	19,622,678	51,869,832	31,193,075	6,292,533	1,185,470	76,106,934	190,981,513
Floating Rate Fund	0	0	0	0	0	0	0	16,908,909	16,908,909
Core Plus Bond Fund	0	0	0	0	0	0	0	597,780,682	597,780,682
Commercial Loans	0	0	0	338,590	403,038	7,636,684	367,200	0	8,745,512
Municipal Bonds	0	2,077,571	0	0	0	0	0	0	2,077,571
Co-Mingled Funds	0	0	0	0	0	0	0	25,964,740	25,964,740
High Yield Income Fund	0	0	0	0	0	0	0	49,874,371	49,874,371
	11,624,241	282,289,223	80,893,665	267,902,976	97,640,408	51,487,054	35,935,368	1,328,321,498	2,156,094,433
Securities Lending Collateral	13,026,620	211,862,649	305,876,523	0	0	0	908,540	277,638,708	809,313,040

All figures are APERS and ASPRS combined.

Concentration of Credit Risk for Investments

The concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer (not including investments issued or guaranteed by the U.S. government or investments in mutual funds or external investment pools). The System has a formal investment policy for concentration of credit risk. None of the System's investments in any one issuer (other than those issued or guaranteed by the U.S. government) represented more than 5% of total investments.

Interest Rate Risk for Investments

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of investments. Investments can be highly sensitive to changes in interest rates due to their terms or characteristics. Interest rate risk is the greatest risk faced by an investor in the debt securities market since the price of a debt security will often move in the opposite direction of the change in interest rates.

The System's external fixed income investment managers use the measurement of effective duration to mitigate the interest rate risk of the fixed income investments. Each fixed income investment manager monitors and reports the effective duration monthly. The effective duration of the investment portfolio is required to be +/- 10% of the benchmark's duration. The benchmark for the U.S. fixed income markets is the Barclays Capital U.S. Aggregate Bond Index.

As of June 30, 2021, the System had the following debt security investments and maturities:

Debt Security Investments and Maturities *(in dollars as of June 30, 2021)*

	Market Value	Less than 1	1 - 5	6 - 10	More than 10	Fund - No Maturities
Government Securities	272,140,357	431,823	65,277,096	52,394,917	154,036,521	0
Corporate Securities	991,620,777	73,364,411	365,401,257	268,031,933	284,823,177	0
International Securities	190,981,513	5,794,104	64,570,942	66,345,838	54,270,630	0
Floating Rate Fund	16,908,909	0	0	0	0	16,908,909
Core Plus Bond Fund	597,780,682	0	0	0	0	597,780,682
Commercial Loans	8,745,512	0	5,252,924	3,492,588	0	0
Municipal Bonds	2,077,571	0	151,558	0	1,926,013	0
Co-Mingled Funds	25,964,740	0	0	0	0	25,964,740
High Yield Income Fund	49,874,371	49,874,371	0	0	0	0
	2,156,094,433	129,464,709	500,653,776	390,265,276	495,056,341	640,654,331
Securities Lending Collateral	809,313,040	779,578,583	28,885,828	0	848,629	0
	2,965,407,473	909,043,293	529,539,604	390,265,276	495,904,970	640,654,331

All figures are APERS and ASPRS combined.

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The System's currency risk resides within the international equity investments as well as within the fixed income investments and the fixed income managers. The System's policy is to allow the external investment managers to decide what action to take regarding their respective portfolio's foreign currency exposure using currency forward contracts. The System has a formal investment policy for foreign currency risk which limits foreign currency exposure to 10% of the investment manager's respective portfolio.

Foreign Currency Risk *(as of June 30, 2021)*

Currency	%	Equities	Cash	Forward Contracts	Fair Value
Australian Dollar	1.10 %	$20,747,289	$0	$0	$20,747,289
Brazilian Real	0.89	16,704,024	0	0	16,704,024
British Pound Sterling	14.53	273,116,309	9	1,435	273,117,753
Canadian Dollar	6.78	127,437,067	87,566	0	127,524,633
Chinese Yuan Renminbi	6.38	119,867,360		0	119,867,360
Danish Krone	0.97	18,293,573		1,877	18,295,450
Euro Currency	34.73	652,256,468	775,268	5,602	653,037,338
Hong Kong Dollar	2.44	45,956,919	0	(77)	45,956,842
Indian Ruphia	0.00	0	0	0	0
Israeli Shekel	1.75	32,823,802	0	0	32,823,802
Japanese Yen	10.66	200,234,857	0	150,592	200,385,449
Liberian Dollar	0.28	5,294,100	0	0	5,294,100
Malaysian Ringgit	0.00	0	0	0	0
Mauritian Rupee	0.27	5,002,462	0	0	5,002,462
Mexican New Peso	0.37	7,031,699	0	0	7,031,699
Norwegian Krone	0.00	8,896	0	0	8,896
New Zealand Dollar	0.58	10,959,605	0	0	10,959,605
Papua New Guinea Kina	0.00	0	0	0	0
Philippines Peso	0.00	0	0	0	0
Russian Ruble	0.00	0	0	0	0
Singapore Dollar	0.59	11,150,103	0	0	11,150,103
South African Rand	0.61	11,472,860	0	0	11,472,860
South Korean Won	3.70	69,502,477	0	0	69,502,477
Swedish Krone	2.73	51,329,160	(4)	0	51,329,156
Swiss Franc	8.80	165,436,526	(31)	0	165,436,494
Taiwan Dollar	1.64	30,840,213	0	0	30,840,213
Thailand Baht	0.19	3,636,826	0	0	3,636,826
	100.00%	$1,879,102,594	$862,808	$159,428	$1,880,124,830

All figures are APERS and ASPRS combined.

Asset-Backed Securities

Asset-backed securities (ABSs) are bonds or notes backed by loan paper or accounts receivable originated by banks, credit card companies, or other credit providers. The System'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

A mortgage-backed security (MBS) is a type of asset-backed security that is secured by a mortgage or collection of mortgages. MBSs depend on the underlying pool of mortgage loans to provide cash flow to make principal and interest payments on the security to its holders. The payments are usually periodic, similar to coupon payments. MBSs are subject to credit risk, prepayment risk, and extension risk.

A collateralized mortgage obligation (CMO) is an MBS that comprises classes of bonds created by prioritizing the cash flows of the underlying mortgage pool. CMOs may be collateralized by whole-loan mortgages, mortgage pass-through securities, or stripped mortgage-backed securities.

The System invests in MBSs and CMOs for diversification and to enhance fixed income returns. These instruments are reported at fair value in the Statement of Fiduciary Net Position.

Corporate Bonds

Corporate bonds are a debt security issued by a corporation. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.

Convertible Corporate Bonds

Convertible bonds convey an option to the bondholders to be exchanged for another asset, generally a fixed number of shares of common stock at a pre-stated price.

Pooled Funds

Pooled funds are funds from many individual investors that are aggregated for the purposes of investment and benefit from economies of scale. The System could be indirectly exposed to credit and market risks associated with forward currency contracts to the extent that these pooled funds hold forward currency contracts for purposes of managing exposure to fluctuations in foreign exchange rates. APERS and ASPRS have $136,860,369 invested in international pooled funds.

Securities Lending

Arkansas Code Annotated § 24-2-602 and the Board's investment policy permit the System to participate in a securities lending program to augment investment income. The System lends its securities to brokers-dealers and other entities with a simultaneous agreement to return the collateral for the same securities in the future.

U.S. securities are loaned versus collateral valued at 101.24% of the market value of the securities plus any accrued interest for domestic loans. Non-U.S. securities are loaned versus collateral valued at 101.40% of the market value of the securities plus any accrued interest. Collateral is marked-to-market daily if price movements exceed certain minimal thresholds.

As of June 30, 2021, the cash collateral investments had an average weighted maturity of 28 days, whereas the weighted average loan maturity was 2 days. Investments with cash collateral were approximately $809.3 million (market value).

Derivative Instruments

The System adheres to GASB Statement No. 53: Accounting and Financial Reporting for Derivative Instruments, which addresses the recognition, measurement, and disclosure of information regarding derivative instruments entered into by state and local governments.

Derivative instruments are financial contracts or agreements whose values depend on the values of one or more underlying assets, reference rates, or financial indexes. Derivative instruments include futures contracts, forward contracts, swap contracts, options contracts, and forward foreign currency exchange. APERS, through its external investment managers, could hold such instruments.

APERS does comply with GASB No. 53 and will disclose its exposure to derivative instruments if there is exposure. APERS had no exposure to any GASB No. 53 Derivative Instruments at June 30, 2021.

Foreign Currency Forward Contracts

A foreign currency forward is a contractual agreement between two parties to pay or receive specific amounts of foreign currency at a future date in exchange for another currency at an agreed upon exchange rate. Forward commitments are not standardized and carry credit risk due to the possible nonperformance by one of the counterparties. The maximum potential loss is the aggregate face value in U.S. dollars at the time the contract was opened. These transactions are entered in order to hedge risks from foreign currency rate fluctuation and to facilitate trade settlement of foreign security transactions. Forwards carry foreign currency risk resulting from adverse fluctuations in foreign exchange rates.

Foreign Currency Forwards *(in dollars as of June 30, 2021)*

	Pay	Receive	Notional Value	Market Value	Unrealized G/L
Danish Krone	DKK	USD	(850,165)	(848,288)	1,877
Euro Currency	EUR	USD	(1,790,261)	(1,763,073)	27,188
British Pound	GBP	USD	(911,340)	(909,913)	1,427
Japanese Yen	JPY	USD	(6,701,548)	(6,548,796)	152,752
U.S.Dollar	USD	JPY	724,431	722,270	(2,160)
U.S.Dollar	USD	GBP	375,317	375,325	8
U.S.Dollar	USD	HKD	479,065	478,988	(77)
U.S.Dollar	USD	EUR	767,995	746,409	(21,586)
			(7,906,506)	(7,747,079)	159,428

All figures are APERS and ASPRS combined.

Financial Futures

A financial future is an agreement to purchase or sell a specific amount of an asset at a specified delivery or maturity date for an agreed upon price. These derivative securities are used to improve yield, adjust duration of the portfolio, circumvent changes in interest rates, or to replicate an index. Futures contracts are standardized and traded on organized exchanges, thereby reducing credit risk.

Financial Futures *(in dollars as of June 30, 2021)*

Futures Contract	Expiration	Notional Value	Fair Value	Unrealized Gain/(Loss)
U.S. 2-year Treasury Note	Sept 2021	56,716,938	56,622,320	(94,617)
U.S. 5-year Treasury Note	Sept 2021	7,566,266	7,529,211	(37,055)
U.S. 10-year Treasury Note	Sept 2021	23,620,371	23,717,500	97,129
U.S. 10-year Ultra Treasury Note	Sept 2021	(43,840,335)	(44,455,344)	(615,009)
U.S. Long Bond Treasury	Sept 2021	13,180,125	13,503,000	322,875
U.S. Ultra Bond Treasury	Sept 2021	22,364,000	23,122,500	758,500
		79,607,364	80,039,187	431,823

All figures are APERS and ASPRS combined.

Fair Value Measurements

The Arkansas Public Employees Retirement System categorizes their fair value measurements within the fair value hierarchy by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and give the highest priority to unadjusted quoted prices in active markets for identical assets of liabilities (Level 1 measurements) and the lower priority to unobservable inputs (Level 3 measurements).

- 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.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The System assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The table(s) on the following pages shows the fair value leveling of the investments for the System.

Assets classified in Level 1 of the fair value hierarchy are valued directly from a predetermined primary external pricing vendor. Assets classified in Level 2 are subject to pricing by an alternative pricing source due to lack of information available by the primary vendor. Real estate, timberland, and partnership assets classified in Level 3, due to lack of an independent pricing source, are valued using an internal fair value as provided by the investment manager.

The categorization of investments within the hierarchy is based upon the pricing transparency of the instrument(s) and should not be perceived as the particular investment's risk.

Investments and Derivative Instruments Measured at Fair Value

(in dollars as of June 30, 2021)

	Fair Value	Level 1	Level 2	Level 3
Investments At Fair Value				
U.S Domestic Equities	130,081,605	130,081,605	0	0
Convertible Securities	16,198,194	2,021,293	14,176,902	0
Preferred Securities	186,165	0	186,165	0
International Equities	82,068,845	82,068,845	0	0
Lazard	0	0	0	0
Convertible Securities	2,316,904	332,330	1,984,574	0
Preferred Securities	1,531,174	1,531,174	0	0
Fixed Income	35,929	0	35,929	0
Loans/JV interest	5,051,711	0	5,051,711	0
Domestic Fixed Income				
Global Bond Fund	957,664	957,664	0	0
Infrastructure Fund	0	0	0	0
U.S. Government Securities	10,470,365	6,493,280	3,977,085	0
Futures	15,927	15,927	0	0
Fixed Income Fund	623,656	623,656	0	0
Corporate Bonds	19,905,545	0	19,905,545	0
Loans/JV interest	322,563	0	0	322,563
Total Investments	269,766,247	224,125,773	45,317,911	322,563
Securities Lending Collateral Investments, At Fair Value				
Repo	9,215,239	0	9,215,239	0
Commercial Paper	7,696,872	0	7,696,872	0
Floating Rate Notes	11,800,201	0	11,800,201	0
Certificate of Deposit	191,800	0	191,800	0
Asset Backed Floating Securities	945,982	0	945,982	0
Total Securities Lending Collateral	29,850,095	0	29,850,095	0
Total Investments Measured at Fair Value	299,616,342	224,125,773	75,168,006	322,563
Investments Measured at the Net Asset Value (NAV)				
High Yield Core Fund	108,858			
Defensive Bond Fund	1,701,671			
Domestic Equity Index Funds	24,535,790			
Core Plus Bond Fund	21,700,515			
Timberland	2,878,648			
Global Energy Plus Fund	0			
Global Equity Pooled Funds				
MCM REIT Index	6,955,308			
MCM ACWI ex-US Index	24,152,136			
Acadian	7,453,582			
Real Estate				
Invesco Core	18,297,279			
Heitman Core	11,467,654			
Heitman Value Add	1,842,306			
TA Fund X	103,926			
TA Fund XI	1,810,996			
TA Fund XII	1,975,672			
LaSalle Fund Fund VI	286,030			
LaSalle Fund Fund VII	1,308,223			
Diversified Strategies				
AQR Global Risk Premium	6,094,743			
Newton Global Real Return	5,278,988			
Blackstone	7,473,272			
Total Investments Measured at the NAV	145,425,596			

Investments classified as level 3 in the preceding table are unobservable, meaning that the assets lack an independent pricing source. Values are provided by the investment manager or an external pricing source such as an independent appraiser.

Investments Measured at the Net Asset Value

The fair value of investments that are organized as commingled funds or limited partnerships have no readily ascertainable fair value. The value is determined by using the net asset value per share or its equivalent. Commingled fund values are based on each investor's proportionate share of the total underlying assets in the fund less any liabilities for client withdrawals, investment purchases or other accrued expenses. Limited partnership values are based on the capital account balance 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 and published market prices for certain securities. Even though the limited partnerships and commingled funds issue annual financial statements audited by independent auditors, the year-end for the state and these entities do not always agree. 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. With certain exceptions, mainly the equity and the fixed income funds, these investments cannot be redeemed, or, have certain restrictions regarding redemption. The real estate investments distributions are through the liquidation of the underlying assets or net operating cash flows. Each investment has a different redemption frequency and notice period as noted in the following table:

Investments Measured at the Net Asset Value *(in dollars as of June 30, 2021)*

	Fair Value	Strategy Type	Fund Life of Non-redeem-able mandates	Unfunded Commitments	Redemption Frequency (if currently eligible)	Redemption Notice Period	Other Redemption Restrictions	Restriction Time Remaining
High Yield Core Fund	108,858	Active High Yield Fixed Income	N/A	none	monthly	T + 3	N/A	N/A
Defensive Bond Fund	1,701,671	Income Oriented	N/A	none	daily	T + 1	N/A	N/A
Domestic Equity Index Funds	24,535,790	S & P 500 Index	N/A	none	daily	T + 3	N/A	N/A
Core Plus Bond Fund	21,700,515	Active Global Fixed Income	N/A	none	daily	T + 3	N/A	N/A
Timberland	2,878,648	Timber	N/A	none	none	N/A	N/A	partnership terminates in December 2027
Global Energy Fund	0	Global Energy stocks	N/A	none	daily	T + 3	N/A	N/A
International Equity Pooled Funds								
MCM REIT Index	6,955,308	Global Real Estate securities	N/A	none	daily	T + 1	N/A	N/A
MCM ACWI ex-US Index	24,152,136	International Equities	N/A	none	daily	T + 1	N/A	N/A
Acadian	7,453,582	International Equities	N/A	none	daily	T + 1	N/A	N/A
Real Estate								
Invesco	18,297,279	Core Real Esate	N/A	none	quarterly	T + 45	N/A	N/A
Heitman	11,467,654	Core Real Esate	N/A	none	quarterly	T + 90	N/A	N/A
Heitman Value Partners IV	1,842,306	Value Add Real Estate	N/A	874,234	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
TA Fund X	103,926	Value Add Real Estate	N/A	none	7-year lock up	N/A	N/A	currently in capital redistribution phase
TA Fund XI	1,810,996	Value Add Real Estate	N/A	none	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
TA Fund XII	1,975,672	Value Add Real Estate	N/A	829,873	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
LaSalle Fund Fund VI	286,030	Value Add Real Estate	N/A	52,690	7-year lock up	N/A	N/A	currently in capital redistribution phase
LaSalle Fund Fund VII	1,308,223	Value Add Real Estate	N/A	71,578	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
Harrison Street Fund VIII	0	Value Add Real Estate	N/A	1,844,163	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
Starwood Distressed Opportunity Fund XII	0	Value Add Real Estate	N/A	2,766,244	7-year lock up	N/A	N/A	the lock up period starts on the day of the last capital call
Diversified Strategies:								
AQR Global Risk Premium	6,094,743	Risk Premia	N/A	none	weekly and monthly	T + 2	N/A	N/A
Newton Global Real Return	5,278,988	Global Real Return	N/A	none	daily	T + 3	N/A	N/A
Blackstone	7,473,272	Fund of Funds	N/A	none	last day of each quarter	1yr; 2yrs; 3yrs; >3yrs	55% liquidity; then 20%; then 15%; then 10%	N/A
Total	145,425,596			1,775,686				

High Yield Core Fund

The High Yield Active Core philosophy is centered on the belief that the best risk-adjusted returns and, ultimately, the best absolute returns are generated by a strategy of yield capture and error avoidance.

Defensive Bond Fund

The investment objective is to exploit different sources of return available in high yield corporate securities in a way that generates risk-adjusted returns superior to those available from conventional high yield securities. The investment strategy is based on the assumption and observation that numerous market inefficiencies exist throughout the capital markets (particularly in the high yield bond markets) and that the prudent, active and systematic exploitation of these inefficiencies can generate returns consistent with these objectives.

Domestic Equity Index Funds

This is an S&P 500 Index fund.

Core Plus Bond Fund

The Core Plus Fixed Income Strategy seeks excess return from multiple sources, including sector allocation and subsector and security selection. Duration, yield curve, and currency positioning is moderate. The largest component of the Core Plus Fixed Income risk budget is allocated to portfolio strategies that have consistently generated the highest return for the lowest unit of risk over time, such as sector allocation and subsector security selection. The Core Plus Fixed Income portfolios may emphasize spread product in the sector allocation process and therefore may hold larger-than-benchmark allocations to corporate bonds, structured product, high yield bonds, and emerging markets debt. As a result, the strategy would likely outperform in a 'risk on' environment where corporate bonds, for example, are outperforming. The reverse would also likely be true. The Core Plus Fixed Income portfolios take an actively-managed, relative-value driven approach. The Strategy is expected to perform best in markets with excess spread dislocations that it can capitalize on through relative value trading.

Timberland

An objective of a timber investment is to provide the fund with diversification from traditional asset classes. The goal of the timber investment is to get a stable core-type return with very low or little volatility.

Global Energy Fund

The fund seeks to invest globally in opportunities found in the energy industry. The fund invests, both long and short, in the equity securities, and related instruments, of energy and energy related businesses, including companies that are not in the Benchmark, which are expected to outperform the energy sector as a whole.

International Equity Pooled Funds

- The MCM EB DV Non-SL REIT Index Fund — This REIT Index Fund seeks to match the performance and the characteristics of the Dow Jones U.S. Select REIT Index which tracks the performance of publicly traded REITs and REIT-like securities and designed to serve as a proxy for direct real estate investments.
- MCM ACWI ex-US Index — The MSCI ACWI ex USA Index captures large and mid-cap representation across 22 of 23 Developed Markets (DM) countries (excluding the U.S.) and 24 Emerging Markets (EM) countries. With 2,166 constituents, the index covers approximately 85% of the global equity opportunity set outside the U.S.
- Acadian All Country World ex US Small Cap — The Acadian All Country World ex-US Small Cap strategy employs a combination of top-down and bottom-up multi-factor models to construct the strategy. The top-down consists of value, growth, momentum, volatility, and macro factors. The bottom up drives 80% of the process.

Real Estate

This asset class provides diversification to the total portfolio and strives to reduce total fund volatility while also enhancing the total return of the portfolio. Real estate has a low, and in some cases, negative, correlation with other major investment asset classes. The following are the strategies that comprise the Real Estate asset class and are explained in greater detail:

- Invesco Core Real Estate (ICRE) — The ICRE strategy is a portfolio of U.S. properties diversified by property type and geographic location, with an emphasis on attractive current income returns and the opportunity for both income and capital growth. It is based on top-down economic fundamentals combined with bottom-up local market intelligence.

- Heitman America Real Estate Trust (HART) — The HART strategy creates a high-quality, low-risk portfolio of stabilized, income-producing assets diversified by property type and economic exposure through acquiring assets in infill locations within major metropolitan areas, focusing on strong site attributes such as proximity to amenities and transportation networks, and ensuring that assets are well constructed with features that will appeal to tenants over long periods of time.
- Heitman Value Partners IV ("HPV IV") is the fourth offering in Heitman's North American value-add series. It is a closed-end, commingled fund that will pursue a diverse set of real estate opportunities with value-added business plans. The objective is to provide investors with attractive risk-adjusted returns. The strategy seeks to benefit from Heitman's extensive research, real estate, and capital markets expertise to identify emerging investment opportunities and trends before they are fully appreciated by the broader market. The Fund will execute investment strategies that capitalize on those opportunities.
- TA Realty Funds X, XI, and XII — TA Realty has managed value-add, commingled real estate funds for approximately 30 years. They have investments in 35 markets, and 4 property types (office, industrial, multifamily, and retail). The firm has developed and refined a consistent approach focused on creating diversified real estate portfolios that can generate strong cash flow, benefit from an intensive asset management approach and result in the long-term creating of value of the life of the fund(s).
- LaSalle Funds VI and VII — The Funds pursue non-core properties that exhibit strong fundamentals and are expected to generate both income and appreciation. The sectors that are focused on are office, multifamily, retail, industrial, and specialty.
- Harrison Street Fund VIII — The Fund acquires, develops, and/or redevelops assets in the education, healthcare, life science, and storage sectors. The majority of the return is anticipated to be generated through appreciation.
- Starwood Distressed Opportunity Fund XII —The strategy pursues distressed investment opportunities which are expected to arise from economic disruptions. Investments will be made across multiple sectors, including multifamily, affordable housing, hotels, office, and industrial. The Fund will invest primarily in the United States and Europe. The fund will pursue both debt and equity investments, including the acquisition of distressed or non-performing loans.

Diversified Strategies

This asset class provides diversification to the total portfolio and strives to reduce total fund volatility while also enhancing the total return of the portfolio. The following are the strategies that comprise the Diversified Strategies asset class and are explained in greater detail:

- Global Risk Premium Tactical Fund (GRPT) — The AQR Global Risk Premium Tactical Fund seeks to efficiently deliver exposure to a broadly diversified set of global risk premia. In many institutional portfolios, equity risk is the predominant risk, a concentration driven by the need for high expected return that cannot be satisfied in a traditionally constrained, well-diversified portfolio. Rather than diversifying by capital, this strategy seeks to diversify based on risk across global equities, global nominal bonds, inflation sensitive assets, and credit/default related assets. Starting from this strategic risk-parity base, GRPT then employs modest tactical tilts across sub-sectors and across individual exposures, attempting to exploit temporary opportunities which may arise within markets. Following basic financial theory, AQR designed its Risk Parity strategies based on what they believe to be the most optimal liquid portfolio of global market betas, and AQR offers that same portfolio at various levels of leverage to target a desired amount of risk as approximated by ex-ante volatility. AQR's approach employs modest leverage to scale up a lower-risk, broadly-diversified portfolio.
- Newton Global Real Return (US$) — Newton's global real return US$ strategy is an actively managed, unconstrained, multi-asset strategy, which aims to achieve a return of one-month USD LIBOR +4 % p.a. over rolling five-year

periods. The strategy seeks to add value through security selection and asset type flexibility and it also has an emphasis on capital preservation. The strategy is long only, does not use leverage or short securities and is daily valued.

- Blackstone (Fund of Funds) — The System hired Blackstone to manage a fund-of-funds strategy. As the name suggests Blackstone invests APERS funds in other hedge funds. The number of funds that APERS invests in varies on market conditions. The types of strategies that are contained within the APERS portfolio also vary. For full disclosure purposes on June 30 there were fundamental equity strategies, event driven strategies, fundamental credit strategies, credit trading strategies, distressed credit strategies, RMBS strategies, structured ABS strategies, multi-strat strategies, commodity strategies, macro rates strategies, thematic macro strategies, quantitative strategies, CTA strategies, and special situation strategies in the portfolio.

Note 4: Legally Required Reserves

A description of reserve accounts and their balances for the year ended June 30, 2021, are as follows:

- The Member Deposit Account (MDA) represents members' contributions held in trust until their retirement, at which time contributions are transferred to the Retirement Reserve Account.
- The MDA Interest Reserve represents the accumulated interest paid on the MDAs held in trust. As members retire, the interest on their contributions is transferred to the Retirement Reserve Account.
- The Employers' Accumulation Account accumulates employers' contributions to be used in providing the reserves required for transfer to the Retirement Reserve Account as members retire or become eligible for disability benefits.
- The Retirement Reserve Account is the account to which member contributions, interest on those contributions, and employer contributions are transferred upon member retirement.
- The DROP Reserve Account is the account established for the accumulation of balances paid to members who have been approved by the ASPRS Board to participate in the DROP. When a member retires, these amounts can be paid to the member as a lump sum, transferred to an authorized account, or be received as an annuity.
- The Deferred Annuity Account is the account established to cover estimated retirement benefits to inactive vested members who are not currently receiving benefit payments.
- The Outlawed Warrants Reserve is a cumulative total of warrants not cashed in prior years that have been outlawed. These amounts will be paid if members request payment from the Arkansas State Claims Commission and the commission approves payment.

Reserve Balances *(as of June 30, 2021)*

Member Deposit Account Reserve	$612,261
MDA Interest Reserve	7,450
Employer Accumulation Account	122,510,637
Retirement Reserve Account	297,090,312
DROP Reserve Account	10,230,828
Deferred Annuity Reserve	4,420,500
Outlawed Warrants Reserve	1,095
TOTAL	$434,873,081

Note 5: Net Pension Liability

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

Total Pension Liability	$495,913,550
Fiduciary Net Position	$434,873,081
Net Pension Liability	$61,040,469
Fiduciary Net Position as a Percentage of Total Pension Liability	87.69%

Long-Term Expected Return on Plan Assets

The System's policy in regard to the allocation of its invested assets was established by the APERS Board and is reviewed at least annually to determine if the asset allocation is consistent with an acceptable level of risk and volatility.

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 are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the current asset allocation percentage and by adding expected price inflation. Best estimates of arithmetic real rates of return for the 10-year period from 2020 to 2029 were based upon capital market assumptions provided by the plan's investment consultant(s). For each major asset class that is included in the pension plan's asset allocation as of June 30, 2020, these best estimates are summarized in the following table:

Asset Class	Current Allocation	Long-Term Expected Real Rate of Return
Broad Domestic Equity	37%	6.22%
International Equity	24%	6.69%
Real Estate	16%	4.81%
Absolute Return	5%	3.05%
Domestic Fixed	18%	0.57%
Total	100%	
Total Real Rate of Return		4.93%
Plus: Price Inflation - Actuary's Assumption		2.50%
Less: Investment Expenses (Passive)		0.00%
Net Expected Return		7.43%

For the year ended June 30, 2021, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 30.59%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Discount Rate

A single discount rate of 7.15% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.15%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. 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 onpension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability

The following presents the net pension liability of the System, calculated using the discount rate of 7.15%, as well as what the System's net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.15%) or one percentage point higher (8.15%) than the current rate:

1% Decrease	Current Discount Rate	1% Increase
6.15%	7.15%	8.15%
$121,821,007	$61,040,469	$12,464,072

Note 6: Deferred Retirement Option Plan

A Deferred Retirement Option Plan (DROP) is available to members of the System as authorized by A.C.A. 24-4-801 – 24-4-806. In lieu of terminating employment and accepting a retirement benefit under the System, any member who has at least 30 years of credited service, which incudes reciprocal from another system, can elect to participate in the DROP. The DROP allows a member to defer the receipt of retirement benefits for a maximum of seven years. During that time, a percentage of a member's chosen benefit is deposited into an account that accrues interest at a rate of 3.25% annually. The System had a balance of $10,230,828 in the DROP reserve as of June 30, 2021.

Required Supplementary Information

Schedule of Employer Contributions *(dollars in millions)*

Years Ended June 30	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll	Actual Contributions as a % of Covered Payroll
2012	$14.1	$19.7	$ (5.6)	$ 29.5	66.78%
2013	13.6	19.5	(5.9)	28.1	69.40
2014	14.0	19.5	(5.5)	29.1	67.01
2015	14.2	19.8	(5.6)	29.9	66.22
2016	14.3	19.7	(5.4)	29.4	67.01
2017	14.1	20.0	(5.9)	29.1	68.73
2018	15.2	21.0	(5.8)	30.0	70.00
2019	15.6	21.3	(5.7)	30.3	70.30
2020	16.9	21.9	(5.0)	33.3	65.77
2021	$16.7	$22.8	$(6.1)	$33.6	67.86%

Schedule of the Net Pension Liability

FY Ending June 30	Total Pension Pension Liability	Fiduciary Net Position	Net Pension Liability	Fiduciary Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2014	$385,645,392	$277,201,968	$108,443,424	71.88%	$28,548,873	379.85%
2015	403,202,550	279,657,570	123,544,980	69.36	29,929,358	412.79
2016	413,882,894	272,920,012	140,962,882	65.94	29,448,593	478.67
2017	437,870,023	299,525,117	138,344,906	68.41	29,076,764	475.79
2018	446,878,220	324,938,251	121,939,969	72.71	29,593,145	412.05
2019	458,133,785	337,739,012	120,394,773	73.72	30,287,691	397.5
2020	476,569,897	338,183,678	138,386,219	70.96	33,311,093	415.44
2021	$495,913,550	$434,873,081	$61,040,469	87.69%	$33,585,266	181.75%

Schedule of Investment Returns

(annual money-weighted rate of return, net of investment expense, for years ended June 30)

2014	18.75%
2015	2.26%
2016	(0.08)%
2017	11.82%
2018	9.82%
2019	5.36%
2020	2.03%
2021	30.59%

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Schedule of Changes in the Net Pension Liability and Related Ratios

(for years ended June 30)

	2021	2020
TOTAL PENSION LIABILITY		
Service Cost	6,536,818	5,861,499
Interest	33,332,676	31,967,469
Benefit Changes	9,589,716	997,533
Differences Between Expected and Actual Experience	(2,821,477)	7,543,752
Assumption Changes	0	0
Benefit Payments	(27,294,080)	(27,934,141)
NET CHANGE IN TOTAL PENSION LIABILITY	19,343,653	18,436,112
TOTAL PENSION LIABILITY, BEGINNING OF YEAR	476,569,897	458,133,785
TOTAL PENSION LIABILITY, END OF YEAR (a)	495,913,550	476,569,897
FIDUCIARY NET POSITION		
Contributions - Employer	22,783,661	21,873,425
Contributions - Member	0	0
Net Investment Income	101,415,206	6,700,845
Benefit Payments	(27,294,080)	(27,934,141)
Administrative Expense	(215,384)	(195,463)
Other	0	0
NET CHANGE IN FIDUCIARY NET POSITION	96,689,403	444,666
FIDUCIARY NET POSITION, BEGINNING OF YEAR	338,183,678	337,739,012
FIDUCIARY NET POSITION, END OF YEAR (b)	434,873,081	338,183,678
NET PENSION LIABILITY, END OF YEAR (a) - (b)	61,040,469	138,386,219
FIDUCIARY NET POSITION AS A PERCENTAGE OF THE TOTAL PENSION LIABILITY	87.69%	70.96%
COVERED - EMPLOYEE PAYROLL	$33,585,266	$33,311,093
NET PENSION LIABILITY AS A PERCENTAGE OF COVERED - EMPLOYEE PAYROLL	181.75%	415.44%

2019	2018	2017	2016	2015	2014
6,691,528	6,577,148	5,473,626	5,488,445	6,101,608	4,866,199
31,299,758	30,678,211	30,322,786	29,469,678	29,218,802	28,558,511
0	0	0	0	0	0
(1,805,446)	467,389	(3,052,763)	1,757,687	(3,107,531)	(454,349)
0	(4,529,133)	15,875,267	0	8,703,080	8,970,858
(24,930,275)	(24,185,418)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
11,255,565	9,008,197	23,987,129	10,680,344	17,557,158	20,252,980
446,878,220	437,870,023	413,882,894	403,202,550	385,645,392	365,392,412
458,133,785	446,878,220	437,870,023	413,882,894	403,202,550	385,645,392
21,254,010	21,003,650	19,961,066	19,713,295	19,784,130	19,501,684
0	0	0	0	94,814	0
17,031,467	28,823,333	31,484,250	(210,045)	6,131,684	43,307,746
(24,930,275)	(24,185,419)	(24,631,787)	(26,035,466)	(23,358,801)	(21,688,239)
(554,441)	(228,430)	(208,424)	(205,342)	(196,231)	(189,658)
0	0	0	0	6	0
12,800,761	25,413,134	26,605,105	(6,737,558)	2,455,602	40,931,533
324,938,251	299,525,117	272,920,012	279,657,570	277,201,968	236,270,435
337,739,012	324,938,251	299,525,117	272,920,012	279,657,570	277,201,968
120,394,773	121,939,969	138,344,906	140,962,882	123,544,980	108,443,424
73.72%	72.71%	68.41%	65.94%	69.36%	71.88%
$30,287,691	$29,593,145	$29,076,764	$29,448,593	$29,929,358	$28,548,873
397.50%	412.05%	475.79%	478.67%	412.79%	379.85%

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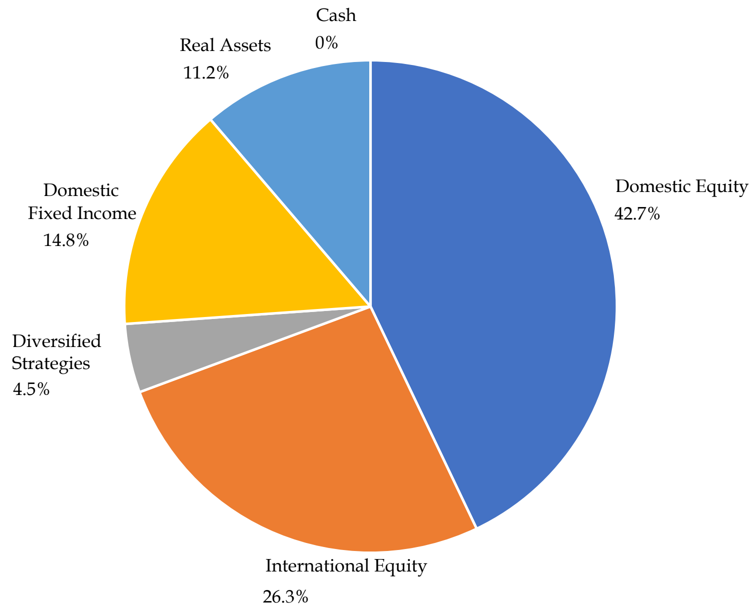
Investment Overview

Investment returns play an important role in the funded ratio of the APERS Trust Fund. The APERS Board of Trustees have adopted an Investment Policy Statement with the purpose being the exclusive benefit of the participants and beneficiaries of the System, and the objective being to maximize the total rate of return on investments within prudent risk parameters. The overall goal is to achieve an annualized rate of return which, when combined with employee and employer contributions, will meet or exceed the benefit and administrative requirements of the System.

The System's investments are managed by professional investment management firms based upon statutory investment authority, as well as the investment policies adopted by the Board of Trustees. The investment staff coordinates and monitors the investment of the Trust Fund's assets and is involved in the formulation and implementation of investment policies and long-term investment strategy.

The net investment portfolio fair values shown in this section, and used for the basis of calculating investment returns, may differ from those shown in other sections of this report. The values shown in this section are the appropriate industry standard basis for investment return calculation.

Summary of Investments by Asset Class



Due to rounding, chart may not equal 100%

Asset Allocation and Diversification

Asset allocation is a process which is designed to construct an optimal long-term asset mix which achieves a specific set of investment objectives. The Investment Policy Statement establishes the System's asset allocation policy as designed to meet those objectives.

The System's asset allocation policy has been adopted to provide diversification. The goal is to maximize the investment return as well as to be consistent with prudent levels of market and economic risks. The most important decision is the determination of asset allocation targets.

The pie chart illustrates the actual asset allocation to each type of investment as of June 30, 2021.

Risk is further diversified by utilizing active and passive management, as well as by retaining multiple investment management firms with varying investment styles.

The System also places restrictions on the investment managers. APERS has investment guidelines that manages the risk of high concentrations in a particular sector, industry, or security.

Capital Markets Commentary

Calendar year 2020 could be summarized by: Bull, Bear, Bull. 2020 had two different book-end bull markets, with a short-lived bear market in the middle.

As fiscal year 2020 ended the markets were beginning to see signs of the recovery from the COVID-19 collapse. FY 2020 was able to eek out a positive return of 2.41%.

September 30, 2020

The Q1 of FY 2021 (Sept 30, 2021) saw the financial markets showing signs of recovery but still being extremely cautious as the Delta variant fueled a pandemic surge and both spending end employment data disappointed the markets.

U.S. Q3 GDP slipped down to 2%, after a 6.7% gain in Q2. Unemployment dropped to 4.8% in Sept 2021, and the economy added 194k jobs, which was down from a monthly average of 560k.

Despite all of this, Q3 2021 may still be remembered as one of the most impressive turnarounds ever recorded, following the worst economic contraction ever recorded.

Massive fiscal and monetary stimulus, combined with a sharp acceleration in the health care industries' ability to fight and somewhat control the pandemic helped to create an environment for many parts of the global economy to heal.

The markets witnessed amazing response to the pandemic by numerous companies. Businesses changed the nature of their business process with urgency and speed. Companies and consumers changed. Technology helped corporations adapt to a virtual demand environment. Some corporations had to redefine how they do business almost instantaneously. Whether it was shifting call center operations to a "work from home" environment, or collaborating through video meetings, physicians operating in a telehealth environment, industrial supply chain companies rapidly adopting to shortages of parts, or retailers rapidly having to adopt and accelerate omnichannel sales models, the adaptations to the pandemic took place at an unprecedented velocity.

The most impressive though, was witnessing the health care system analyze the COVID virus and have numerous vaccine candidates that may be able to be mass produced by the end-of-year 2020.

December 31, 2020

2020, Good riddance - The year ended on a strong note and the markets saw reasons for optimism heading into 2021.

Q3 GDP rose 33.4%, a record quarterly increase. The unemployment rate, which peaked at 14.7%, fell to 6.7% in November 2020.

The S&P 500 index hit a record high in Q4 2020. The Index was up +12.1% for the quarter, and up +18.4% for 2020. Since the March 2020 market low, the Index was up over 70%, with all sectors posting increases greater than 40%.

International equity markets rallied alongside the U.S. markets. The MSCI EM index was up +19.7%. the MSCI ACWI ex US was up +17%.

The reasons for optimism heading into 2021: a roll-out vaccine, additional fiscal stimulus on top of the previous stimulus package, and pent-up demand from consumers.

March 30, 2021

Equity markets around the world continued to surge in Q1 2021. Year-over-year returns from the bottom of the pandemic market crash were astounding. S&P 500 +56%, MSCI ex US +46%, Emerging Markets +58%, and US Small Caps were up an amazing +95%.

The initial recovery was concentrated in a few stocks, FAANG (Facebook, Amazon, Alphabet, Netflix, and Google) and the U.S. mega cap names. The market saw a rotation to small cap and value with the flip from a "COVID trade" to a "GDP growth trade" with the announcement of vaccines. Economic recovery was looking strong in 2021, going into 2022 as the Fed projected GDP growth of 6.5% in 2021.

COVID-19 infections surged going into the new year, and re-openings were reversed in many states as vaccine distribution challenges kept widespread inoculation from being achieved until mid-year in the U.S., and probably even later in other countries around the globe.

June 30, 2021

The APERS investment portfolio carried a strong tailwind into the fiscal year end. The U.S. equity markets continued to perform strongly. The S&P 500 ended the Q2 strong, returning 8.55% which made its year-over-year return +40.79%.

The markets continued to get impressive data. The U.S. labor markets added 850k nonfarm payrolls in Q2 and ended the quarter with the unemployment rate at 5.9%.

Global manufacturing activity rose to 55.5 to end the second quarter. However, output, new orders, and employment all rose which stressed the global supply chains and disrupted production. It didn't matter. The fiscal year returns were impressive.

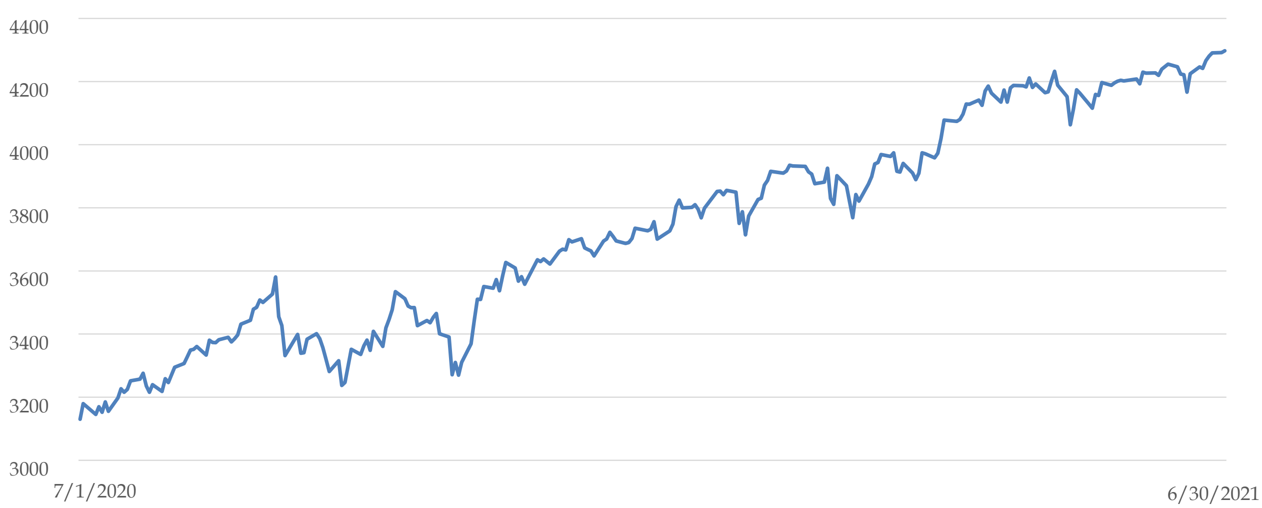
The fiscal year-end performance for all investment categories were unprecedented.

Investment Portfolio Assets

At the close of FY2021the APERS' investment portfolio had a fair value of $11.603 billion which is an increase of $2.577 billion from the $9.025 billion investment fair value as of June 30, 2020.

Dow Jones Industrial Average

S&P 500 INDEX



Investment Results

APERS realized a total portfolio investment return of 31.49% for the fiscal year ended June 30, 2021. The return outperformed the 25.82% return of the APERS' policy benchmark, a set of market indexes and weightings to those indexes that reflect APERS asset class targets. Outperformance was aided by active investment management, especially in the international equity allocation.

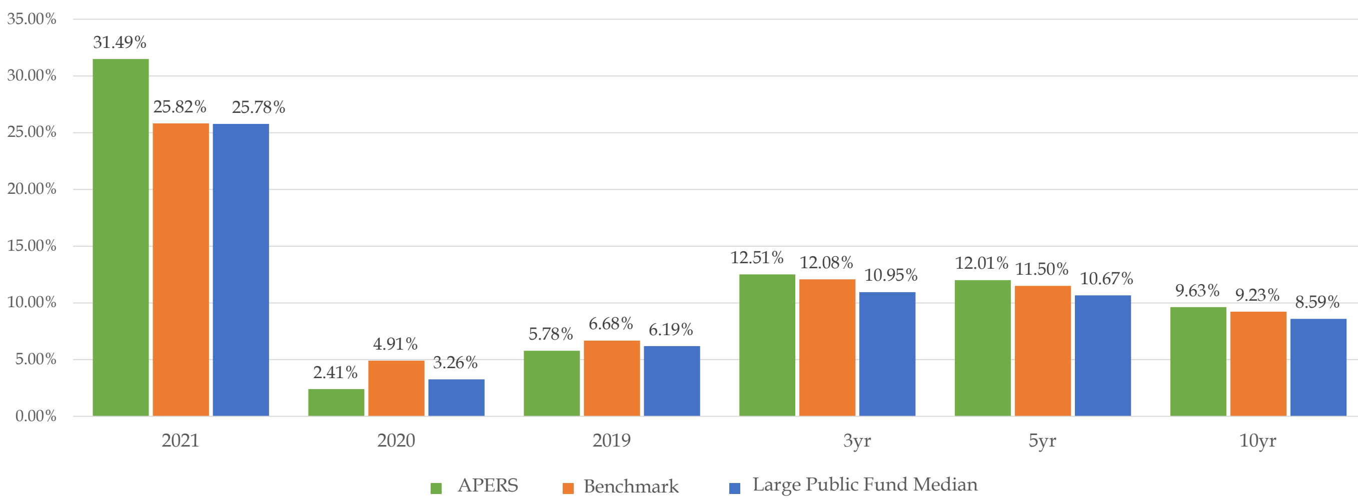
APERS 31.49% return easily exceeded the actuarial assumed rate of return of 7.15%.

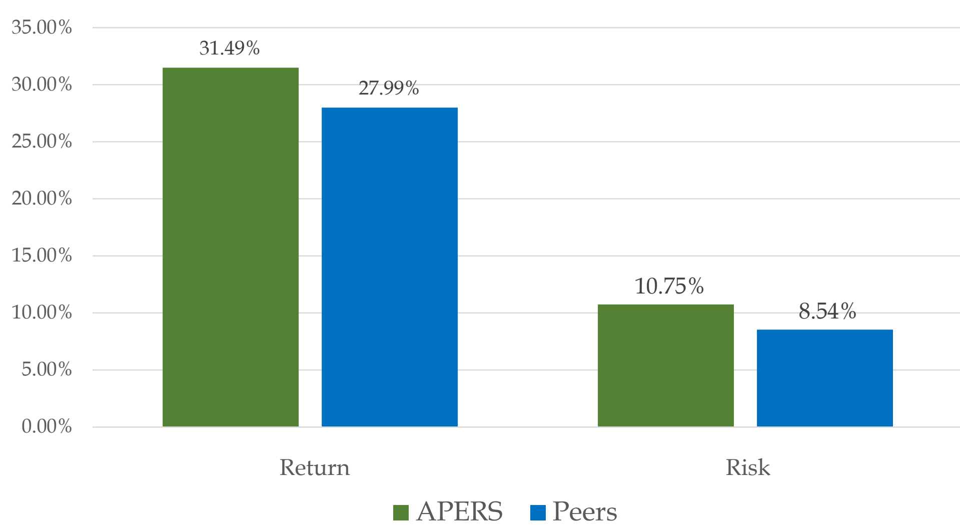
The following graphs and tables provide a historical perspective of APERS' investment returns and performance over the past few years. APERS investment returns are shown for the total portfolio as well as for each asset class over various time periods. The benchmark or target for each asset class is also shown.

At the November 2020 Board meeting, the Board hired two additional active managers for international small cap.

At the February 2021 Board meeting the Board chose to change the structure composition of Real Assets. The Board changed the allocation of Real Assets to be 70% Core Real Estate, 20% Non-Core Real Estate, Public REITs would have a target of 0% to 5%, and both Timber and Farmland would have a 5% target.

Investment Performance Summary



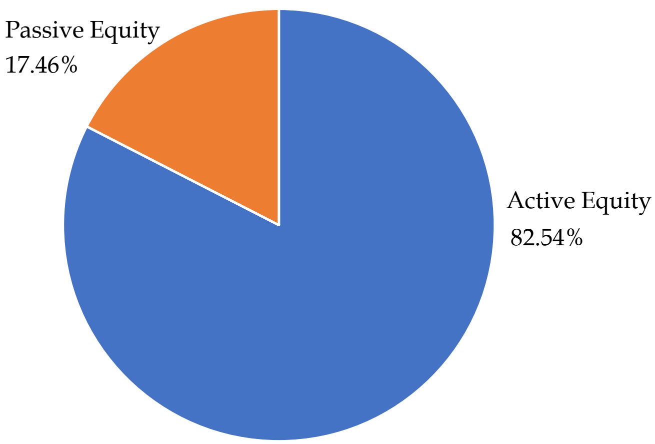


Domestic Equity

As of June 30, 2021, 42.66% of the APERS portfolio was invested in domestic equities (U.S. stocks). The fair value of the domestic equity portfolio was $4.949 billion.

The portfolio takes an active management approach to the U.S. stock markets with 82.5% invested with active investment managers.

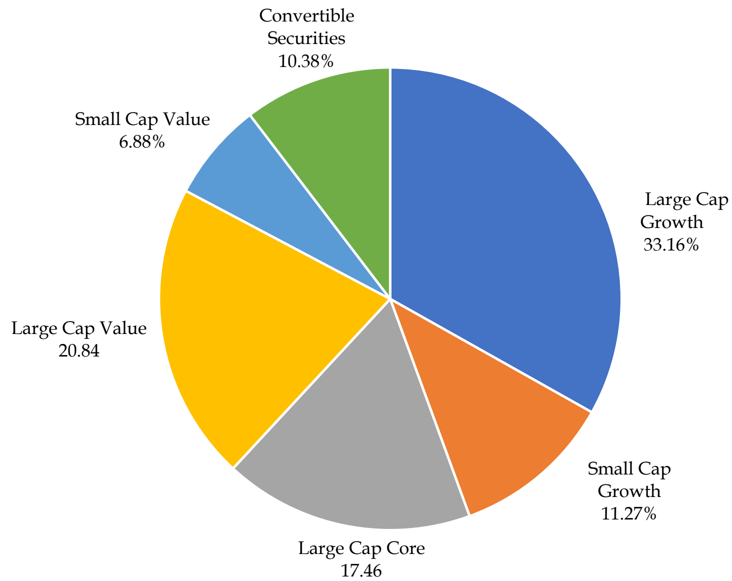
Active vs. Passive Potfolio Assets



The passive component is primarily an S&P 500 Index fund. It constitutes an efficient, low-cost means of obtaining market exposure and provides liquidity should it be needed for benefit payments.

APERS utilizes active management in small, mid, and large capitalization stock strategies. The portfolio is also invested in strategies that focus on different investment styles: a value portfolio which focuses on companies undervalued relative to their prospective dividend and earnings growth; a growth portfolio which focuses on companies whose earnings are expected to grow at rates which exceed the general economy; and a core portfolio which seeks to add value across all sectors through stock selection.

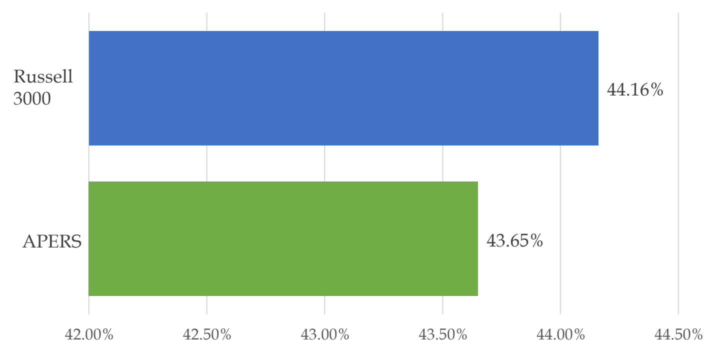
APERS Portfolio Strategies



The portfolio is widely diversified across various equity market sectors and industries.

Results

The domestic equity portfolio returned 43.65% for the fiscal year. APERS' benchmark, the Russell 3000 Index returned 44.16%.



International Equity

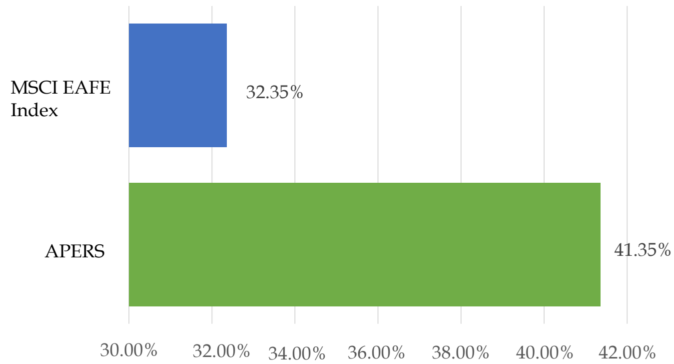
As of June 30, 2021, 26.28% of the APERS portfolio was invested in international equities (Non-U.S. stocks). The fair value of the international equity portfolio was $3.049 billion.

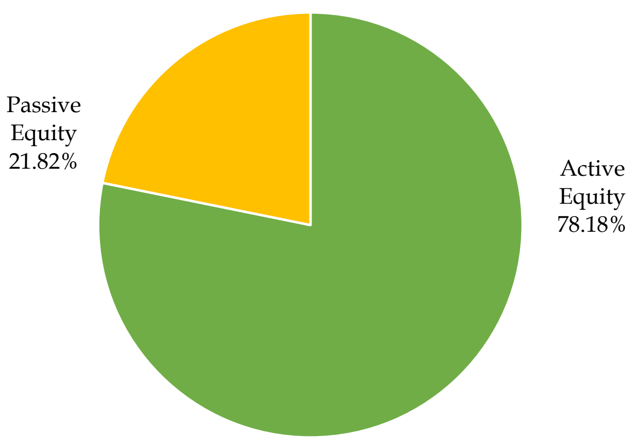
The portfolio takes an active management approach to the U.S. stock markets with approximately 78% invested with active investment managers. The international portfolio assets are allocated across developed and emerging markets. APERS utilizes the MSCI EAFE (Europe, Asian, and Far East) Index as its benchmark for the international equity index.

In November 2020, two new active international equity managers were hired to provide the APERS portfolio with exposure to the international small cap space.

Results

The international equity portfolio returned 41.35% for the fiscal year. APERS' benchmark, the MSCI EAFE Index returned 32.35%.





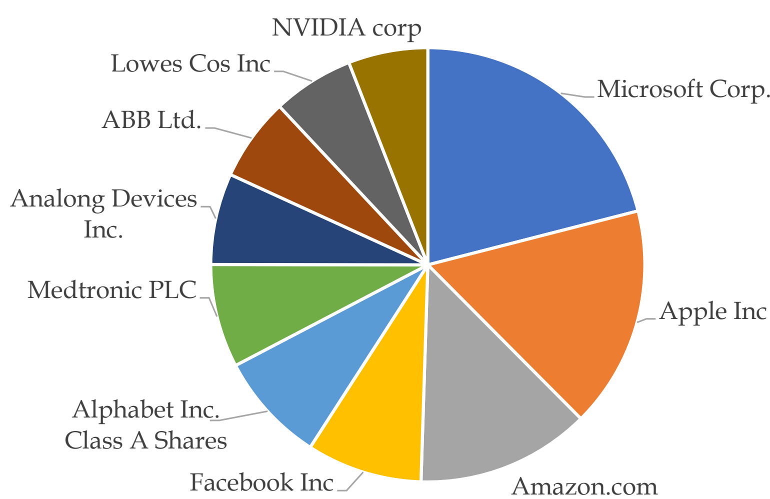
The passive component is an ACWI ex-US Index Fund. Similar to the S&P 500 Index Fund, it constitutes an efficient, low-cost means of obtaining market exposure and provides liquidity should it be needed for benefit payments.

Top 10 Holdings

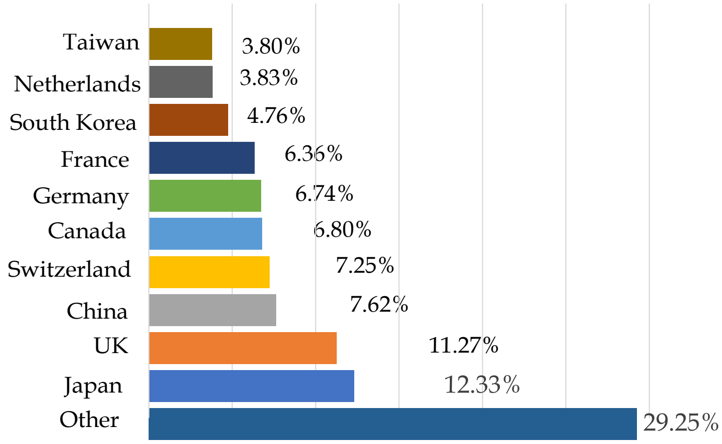
The top 10 holdings within the public equity portfolio (domestic and international combined) as of June 30, 2021.

	Holding	Market Value*
1	Microsoft Corp.	$47,504,211
2	Apple Inc	37,387,660
3	Amazon.com	29,305,576
4	Facebook Inc	19,492,507
5	Alphabet Inc. Class A Shares	18,554,348
6	Medtronic PLC	17,411,963
7	Analong Devices Inc.	15,372,396
8	ABB Ltd.	14,024,002
9	Lowes Cos Inc	13,697,321
10	NVIDIA corp	$13,394,474

*Figures are APERS and ASPRS combined



Public Equity Distribution by Country



Top 10 Holdings

The top 10 holdings within the fixed income portfolio as of June 30, 2021.

	Holdings	Market Value*
1	US Treasury 2.375% 05/15/2051	$29,087,946
2	US Treasury 0.25% 06/15/2024	11,441,294
3	US Treasury 1.125% 05/15/2050	10,100,253
4	US Treasury 0.75% 04/30/2026	9,638,833
5	US Treasury 2.250 % 05/15/2041	8,481,725
6	US Treasury 4.375% 11/15/2039	7,075,972
7	US Treasury CPI 0.875% 01/15/2029	6,799,276
8	US Treasury 0.125% 12/31/2022	6,757,236
9	US Treasury 0.875% 06/30/2026	6,044,132
10	US Treasury 0.125% 10/31/2022	6,030,789
		$101,457,455

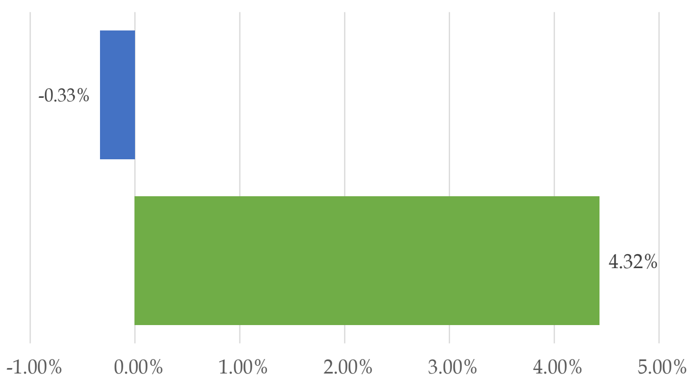
*Figures are APERS and ASPRS combined

Fixed Income

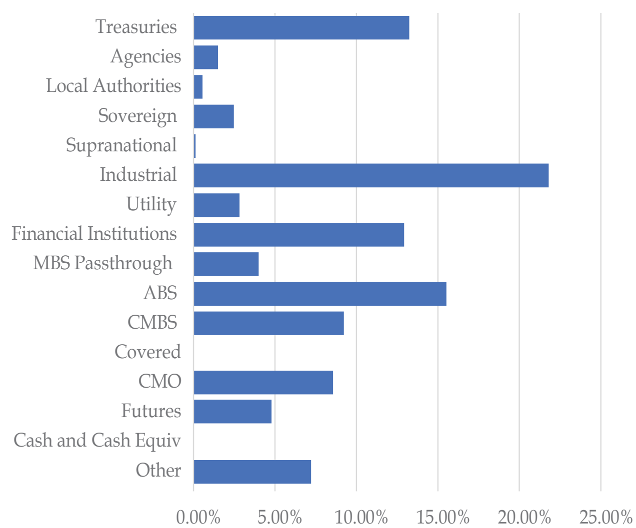
As of June 30, 2021, 14.88% of the APERS portfolio was invested in fixed income securities which was slightly under the asset allocation target of 18%. The fair value of the fixed income portfolio was $1.717 billion.

Results

The fixed income portfolio returned 4.32% for the fiscal year. APERS' benchmark, the Bloomberg Aggregate Index, returned (0.33%).



Fixed Income Distribution



Diversified Strategies

As of June 30, 2021, 4.50% of the APERS portfolio was invested in diversified strategies. This asset class has the smallest allocation target. The fair value of the portfolio was $519.17 million.

The Diversified Strategies allocation provides diversification to the total portfolio and strives to reduce total fund volatility while also enhancing the total return of the portfolio.

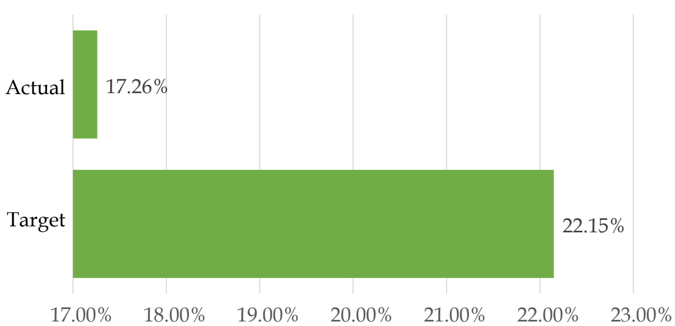
One of the strategies is a Risk Premium Tactical Fund. It seeks to efficiently deliver exposure to a broadly diversified set of global risk premia. Rather than diversifying by capital, this strategy seeks to diversify based on risk across global equities, global nominal bonds, inflation sensitive assets, and credit/default related assets.

The Global Real Return strategy is an actively managed, unconstrained, multi-asset strategy, which aims to achieve a return of one-month USD LIBOR +4% over rolling five-year periods.

The Fund-of-Funds strategy invests in hedge funds. The total number of funds varies as do the types of strategies. On June 30, 2021, there were fundamental equity strategies, event driven strategies, fundamental credit strategies, credit trading strategies, distressed credit strategies, RMBS strategies, structured ABS strategies, "multi-strat" strategies, commodity strategies, macro rates strategies, thematic macro strategies, quantitative strategies, CTA strategies, and special situation strategies in the portfolio.

Results

The Diversified Strategies portfolio returned 17.26% for the fiscal year. The APERS target returned 22.15% which is not a benchmark, because a benchmark does not exist. The target is comprised of 60% of the MSCI World Index and 40% of the Bloomberg Aggregate Index.

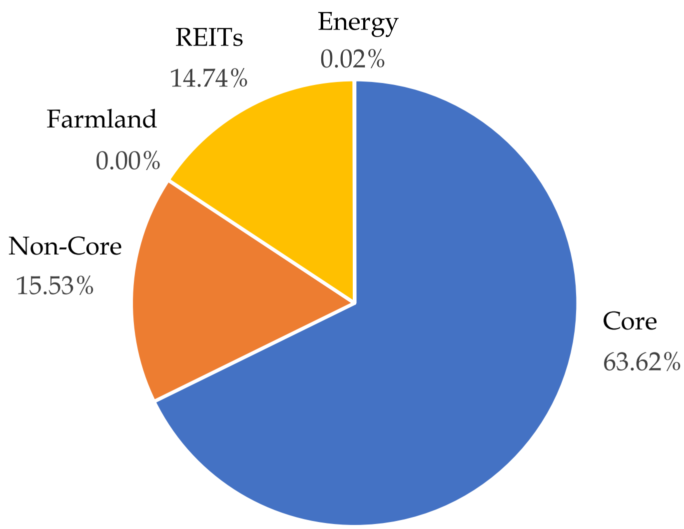


Real Assets

As of June 30, 2021, 11.27% of the APERS portfolio was invested in Real Assets. The fair value of the portfolio was $1.300 billion.

The asset allocation comprises of four sub-categories: Core Real Estate, Value Add Real Estate, Timber, and a passive REIT Index.

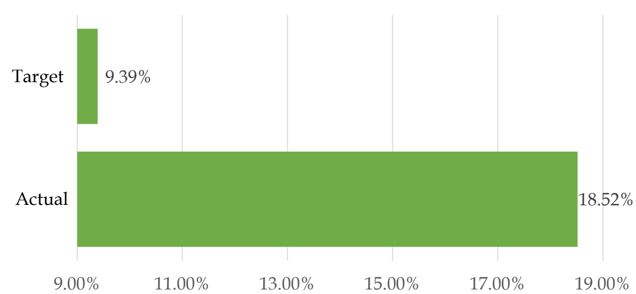
In February 2021, the Board chose to minimize the volatility of the Real Asset portfolio. APERS exited the Energy investments and the Board voted to change the allocation target of the portfolio to look as follows: 70% Core Real Estate, 20% Non-Core Real Estate, 5% Farmland, 5% Timber, and Public REITs is allowed to float between 0% and 5%.



Results

The Real Assets portfolio returned 18.52% for the fiscal year. The APERS target returned 9.39% which is not a benchmark, because a benchmark does not exist. The target is comprised CPI-U +4%

Core Real estate returned 8.77% for the fiscal year, Non-Core Real Estate returned 24.03%, Timber returned 0.37%, and REITs returned 39.85%



Schedule of Comparative Investment Results by Year

(for years ended June 30)

	2021	2020	2019	2018	2017	2016
Total Fund						
APERS	31.49%	2.41%	5.78%	10.25%	12.30%	0.30%
APERS Benchmark	25.82%	4.91%	6.68%	8.40%	12.90%	0.27%
Actuarial Assumed Investment Return	7.15%	7.15%	7.15%	7.15%	7.15%	7.50%
Domestic Equities						
APERS	43.65%	6.06%	8.12%	16.27%	17.52%	(0.38)%
Russell 3000 Index	44.16%	6.53%	8.98%	14.78%	18.51%	2.14%
International Equities						
APERS	41.35%	(1.45)%	1.98%	7.22%	18.39%	(6.88)%
MSCI - EAFE Index	32.35%	(5.13)%	1.08%	6.84%	20.27%	(10.16)%
Fixed Income						
APERS	4.32%	6.81%	8.57%	0.79%	3.04%	5.06%
Bloomberg Aggregate Index	(0.33)%	8.74%	7.87%	(0.40)%	(0.31)%	6.00%
Diversified Strategies						
APERS	17.26%	(1.17)%	10.20%	6.43%	5.51%	2.86%
Diversified Strategy Target	22.15%	6.45%	7.41%	6.40%	10.51%	0.82%
Real Assets						
APERS	18.52%	(4.37)%	1.72%	11.34%	3.27%	8.29%
Consumer Price Index - U + 4%	9.39%	4.65%	5.65%	6.87%	5.63%	5.01%

Schedule of Comparative Annualized Investment Results

(for years ended June 30)

	3-year	5-year	7-year	10-year
Total Fund				
APERS	12.51%	12.01%	8.90%	9.63%
APERS Benchmark	12.08%	11.50%	8.55%	9.23%
Actuarial Assumed Investment Return	7.15%	7.15%	7.25%	7.45%
Domestic Equities				
APERS	18.10%	17.62%	13.36%	13.99%
Russell 3000 Index	18.73%	17.89%	13.95%	14.70%
International Equities				
APERS	12.41%	12.51%	7.31%	7.96%
MSCI - EAFE Index	8.27%	10.28%	4.96%	5.89%
Fixed Income				
APERS	6.55%	4.67%	4.24%	4.82%
Bloomberg Aggregate Index	5.34%	3.03%	3.28%	3.39%
Diversified Strategies				
APERS	8.49%	7.47%	6.00%	N/A
Diversified Strategy Target	11.78%	10.43%	7.71%	8.06%
Real Assets				
APERS	4.86%	5.80%	5.33%	N/A
Consumer Price Index - U + 4%	6.54%	6.43%	5.89%	5.87%

Schedule of Manager Distribution

(for the year ended June 30, 2021)

Asset Allocation	($ dollars)	ASPRS	APERS
Domestic Equity			
MCM S&P 500 Index Fund	$675,883,593	$24,928,784	$650,954,809
LSV Asset Mgmt	340,532,499	12,559,945	327,972,554
CastleArk Management	873,083,519	32,202,158	840,881,362
Golden Capitl Mgmt.	600,263	22,140	578,123
INTECH	767,898,400	28,322,589	739,575,811
Wellington Mgmt. Co.	527,832,537	19,468,179	508,364,357
Lazard Asset Mgmt.	503,735,120	18,579,388	485,155,731
SSI Investment Mgmt	513,567,497	18,942,038	494,625,459
Horrell Capital Mgmt.	188,453,303	6,950,770	181,502,532
Stephens Inv. Mgmt. Group	557,712,653	20,570,255	537,142,398
International Equity			
Mellon ACWI ex-US Fund	665,315,180	24,538,986	640,776,194
Lazard Asset Mgmt.	616,809,361	22,749,934	594,059,427
Artisan Partners	633,052,442	23,349,031	609,703,411
Baillie Gifford	742,846,690	27,398,600	715,448,090
Manning & Napier	302,996	11,175	291,821
Acadian	205,322,660	7,572,967	197,749,693
Franklin Templeton	186,105,526	6,864,177	179,241,349
Fixed Income			
Doubleline Capital	530,177,975	19,554,687	510,623,289
MacKay Shields	589,048,960	21,726,040	567,322,920
Prudential Investments	597,780,691	22,048,095	575,732,596
Real Assets			
INVESCO Real Estate	508,000,919	18,736,725	489,264,194
MCM REIT Index Fund	191,596,774	7,066,712	184,530,063
TA Associates Realty Fund X	2,862,837	105,591	2,757,246
TA Associates Realty Fund XI	49,887,233	1,840,003	48,047,230
TA Associates Realty Fund XII	54,423,527	2,007,317	52,416,210
CastleArk Mgmt. Global Energy Fnd	225,657	8,323	217,334
Pinnacle Forest Investments	79,297,655	2,924,755	76,372,900
Heitman Real Estate Trust LP	319,060,445	11,767,986	307,292,459
Heitman Value Partners	50,749,715	1,871,814	48,877,901
LaSalle Inc & Growth VI LP	7,879,210	290,611	7,588,599
LaSalle Inc & Growth VII LP	36,037,405	1,329,177	34,708,228
Diversified Strategies			
AQR Capital	167,890,925	6,192,363	161,698,562
Blackstone Hedge	205,865,044	7,592,972	198,272,072
Newton Capital	145,419,455	5,363,542	140,055,913
Short-term Investment Fund	67,436,518	9,254,754	58,181,764
TOTAL FUND	$11,602,695,185	$434,712,583	$11,167,982,602

Schedule of Brokerage Commissions

(for the year ended June 30, 2021)

Brokerage firm	Total Commission	ASPRS	APERS
J.P. Morgan Securities	122,773	4,528	118,245
Credit Suisse	105,975	3,909	102,066
Goldman Sachs International	98,709	3,641	95,068
Merrill Lynch	90,836	3,350	87,485
Morgan Stanley & Company International	88,658	3,270	85,388
Jefferies	74,270	2,739	71,531
Citigroup Global Markets, Inc., New York	61,979	2,286	59,693
Liquidnet Inc.	55,261	2,038	53,222
UBS	52,415	1,933	50,481
Piper Jaffray	50,318	1,856	48,462
ALL Others	718,348	26,495	691,853
	1,519,542	56,046	1,463,496

Schedule of Investment Fees

(for the year ended June 30, 2021)

	Combined Maket Value	Fee	ASPRS Market Value	Fee	APERS Market Value	Fee
Domestic Equity	$4,949,299,384	$15,443,297	$182,546,246	$569,599	$4,766,753,137	$14,873,698
International Equity	3,049,754,856	10,869,300	112,484,871	400,895	2,937,269,986	10,468,405
Fixed Income	1,717,007,627	3,153,400	63,328,822	116,308	1,653,678,805	3,037,092
Real Assets	1,300,021,377	10,399,803	47,949,013	383,579	1,252,072,364	10,016,225
Diversified Strategies	519,175,424	3,745,984	19,148,877	138,164	500,026,547	3,607,820
The Bank of New York Mellon*		512,853		18,916		493,937
Callan Associates†		325,654		12,011		313,642
Total Investment Service Fees	$11,535,258,668	$44,450,290	$425,457,829	$1,639,471	$11,109,800,838	$42,810,819

*Custodian bank

† Investment consultant

Actuary's Certification Letter

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

March 4, 2022

Board of Trustees
Arkansas State Police Retirement System
Little Rock, Arkansas

Dear Board Members:

The basic financial objective of the Arkansas State Police Retirement System (ASPRS) as provided in the Arkansas Code is to establish and receive contributions which, expressed as percents of active member payroll, will remain approximately level from generation to generation of Arkansas citizens and when combined with present assets and future investment return will be sufficient to meet the financial obligations of ASPRS to present and future benefit recipients. The progress towards meeting this financial objective is illustrated in the Schedule of Funding Progress and the Schedule of Employer Contributions.

We performed an actuarial valuation and issued an actuarial valuation report for ASPRS as of June 30, 2021. The purpose of the June 30, 2021 annual actuarial valuation was to determine the contribution requirement for the fiscal year ending June 30, 2022 and to measure the System's funding progress. The actuarial valuation report should not be relied upon for any other purpose. The valuation process develops contribution rates that are sufficient to fund the plan's normal cost (i.e., the cost assigned by the valuation method to the year of service about to be rendered) as well as to fund unfunded actuarial accrued liabilities as a level percent of active member payroll over a period of up to 30 years. The most recent valuations were completed based upon population data, asset data, and plan provisions as of June 30, 2021. In addition, a separate report was issued (dated November 4, 2021) to provide actuarial information for GASB Statement No. 67 and GASB Statement No. 68.

The ASPRS administrative staff provides the actuary with data for the actuarial valuation. The actuary relies on the data after reviewing it for internal and year-to-year consistency. The actuary summarizes and tabulates population data in order to analyze longer term trends. We are not responsible for the accuracy or completeness of the data provided by staff.

The actuarial valuation report and GASB Statement Nos. 67 and 68 report contain the following supporting schedules for use in the Actuarial and Financial Sections of the Comprehensive Annual Financial Report:

Actuarial Section

Summary of Assumptions Used
Summary of Actuarial Methods and Assumptions
Active Member Valuation Data
Short Condition Test
Analysis of Financial Experience
Analysis of Financial Experience – Gains and Losses by Risk Area

Board of Trustees
March 4, 2022
Page 2

Financial Section

- Schedule of Funding Progress
- Schedule of Changes in Net Pension Liability and Related Ratios
- Schedule of the Net Pension Liability
- Schedule of Contributions
- Notes to Schedule of Contributions

For actuarial valuation purposes, 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. These assumptions are adopted by the Board after considering the advice of the actuary and other professionals. The assumptions and the methods comply with the requirements of the Actuarial Standards of Practice. Each actuarial valuation takes into account all prior differences between actual and assumed experience in each risk area and adjusts the contribution rates as needed. The June 30, 2021 valuations were based upon assumptions that were recommended in connection with a study of experience covering the period 2012-2017. The investment return assumption was changed for the June 30, 2017 valuation and the demographic assumptions were changed for the June 30, 2018 valuation.

The computed employer contribution rate to satisfy the statutory funding requirements set forth in Section 24-6-209 of the Arkansas Code is 48.55% of covered payroll for the year beginning July 1, 2021. Actual revenues were greater than the statutory requirement for the last 10 years. ***ASPRS' on-going ability to satisfy statutory funding requirements is dependent upon its access to sufficient annual transfers from the remainder of insurance premium taxes enumerated in A.C.A.19-6-301(27) to finance unfunded actuarial accrued liabilities over a closed period of 18 years.***

Future actuarial measurements may differ significantly from those presented in the annual valuations due to such factors as experience differing from that anticipated by actuarial assumptions, or changes in plan provisions, actuarial assumption/methods or applicable law. Due to the limited scope of the assignment, we did not perform an analysis of the potential range of future measurements.

The reports were 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.

Board of Trustees
March 4, 2022
Page 3

The signing individuals are independent of the plan sponsor.

Mita D. Drazilov 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,
Gabriel, Roeder, Smith & Company

Mita D. Drazilov
Mita D. Drazilov, ASA, FCA, MAAA

Heidi G. Barry
Heidi G. Barry, ASA, FCA, MAAA

David L. Hoffman
David L. Hoffman

MDD/HGB/DLH:rmn

GRS

Summary of Actuarial Assumptions*

Economic Assumptions

The investment return assumption used in making the valuation was 7.15% per year, compounded annually (net after investment expenses). The assumed real rate of return is the portion of investment return which is more than the wage inflation rate. Considering assumed wage inflation of 3.25%, the 7.15% investment return rate translates to an effective assumed real rate of return of 3.90%. The wage inflation assumption was revised for the June 30, 2015 valuation and the investment return assumption was revised for the June 30, 2017 valuation.

Pay increase assumptions for individual active members are shown on page D-5. Part of the assumption for each age is for a merit and/or seniority increase, and the other 3.25% recognizes wage inflation. The wage inflation assumption consists of 2.5% for price inflation and 0.75% for real wage growth. The pay increase assumption for individual active members was revised for the June 30, 2018 valuation.

Total active member payroll is assumed to increase 3.25% a year, which is the portion of the individual pay increase assumptions recognizing wage inflation.

The number of active members is assumed to continue at the present number.

Non-Economic Assumptions

The mortality tables used to measure retired life mortality were the RP-2006 Healthy Annuitant benefit weighted generational mortality tables for males and females. The disability post-retirement mortality tables used were the RP-2006 Disabled Retiree benefit weighted generational mortality tables for males and females. The death-in-service mortality tables used were the RP-2006 Employee benefit weighted generational mortality tables for males and females. Mortality rates are multiplied by 135% for males and 125% for females and are adjusted for fully generational mortality improvements using Scale MP-2017. This assumption was first used for the June 30, 2018 valuation.

The probabilities of retirement for members eligible to retire are shown on page D-4. The assumption was revised for the June 30, 2021 valuation.

The probabilities of death-in-service, disability and withdrawal from service are shown for sample ages on page D-5. The assumption for death-in-service was revised for the June 30, 2018 valuation.

The individual entry-age normal actuarial cost method of the valuation was used in determining liabilities and normal cost.

Differences in the past between assumed experience and actual experience ("actuarial gains and losses") become part of actuarial accrued liabilities.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (principal & interest) which are level percent-of-payroll contributions.

Present assets (cash & investments) were valued on a market related basis in which differences between actual and assumed returns are phased-in over a four-year period.

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.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

*The data referenced in this section is taken from the actuary's report, Arkansas Public Employees Retirement System Actuarial Valuation and Experience Gain/(Loss) Analysis June 30, 2021, prepared by Gabriel Roeder Smith & Co. A PDF copy of the report is available for download at www.apers.org.

Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest valuation date follows:

Valuation Date	June 30, 2021
Actuarial Cost Method	Entry Age Normal Cost
Amortization Method	Level Percent-of-Payroll
Remaining Amortization Period	18-Year Closed
Asset Valuation Method	4-Year Smoothed Market
Actuarial Assumptions:	
Investment Rate of Return	7.15%
Projected Salary Increases	3.55% - 7.75%
Including Wage Inflation at	3.25%
Cost-of-Living Adjustments	3.0% Annual Compound Increases
Retirees and Beneficiaries Receiving Benefits	688
Terminated Plan Members Entitled to But Not Yet Receiving Benefits	108
DROP Members	57
Active Plan Members	488
Total	1,341

Actuarial Data

Single Life Retirement Values

Sample Attained Ages	Present Value of $1.00 Monthly for Life		Present Value of $1.00 Monthly for Life Increasing 3% Annually		Future Life Expectancy (Years) 2021 *	
	Men	Women	Men	Women	Men	Women
40	$ 156.14	$ 159.98	$ 229.59	$ 239.26	41.16	44.84
45	151.04	156.00	216.64	227.89	36.25	39.87
50	144.59	150.65	201.76	214.31	31.49	34.94
55	136.61	143.54	184.97	198.27	26.91	30.10
60	126.83	134.60	166.21	180.05	22.54	25.44
65	115.12	123.73	145.72	159.88	18.43	21.03
70	101.32	110.49	123.69	137.63	14.61	16.87
75	85.44	94.80	100.50	113.70	11.12	13.01
80	68.16	77.27	77.31	89.24	8.05	9.57
85	51.04	59.38	55.98	66.20	5.52	6.70

*Applicable to calendar year 2021 Life expectancies and rates in future years are determined by the fully generational MP-2017 projection scale.

Sample Attained Ages	$100 Benefit Increasing 3% Yearly
55	$100.00
60	115.93
65	134.39
70	155.79
75	180.60
80	209.36

Separations from Active Employment Before Retirement *(as of June 30, 2021)*

Sample Ages	Percent of Active Members Separating Within the Next Year: Death – Male	Death – Female	Disability	Other	Pay Increase Assumptions for Active Members: Merit & Seniority	Base (Economic)	Increase Next Year
20	0.05%	0.02%	0.06%	5.50%	4.50%	3.25%	7.75%
25	0.07%	0.02%	0.09%	5.50%	3.90%	3.25%	7.15%
30	0.07%	0.03%	0.19%	5.50%	2.90%	3.25%	6.15%
35	0.08%	0.04%	0.31%	4.18%	1.90%	3.25%	5.15%
40	0.09%	0.06%	0.43%	2.64%	1.38%	3.25%	4.63%
45	0.13%	0.08%	0.55%	1.43%	1.10%	3.25%	4.35%
50	0.22%	0.13%	0.67%	0.55%	0.80%	3.25%	4.05%
55	0.37%	0.22%	0.79%	0.00%	0.60%	3.25%	3.85%

Probabilities of death are for calendar year 2021.

Probabilities of Retirement for Members Eligible to Retire *(as of June 30, 2021)*

Retirement Ages	Percent of Eligible Active Members Retiring Within Next Year: Tier One	Tier Two	Years of Service	Percent of Eligible Active Members Retiring Within Next Year: Tier Two
47	1%	-		
48	1%	-	28	20%
49	1%	-	29	10%
50	8%	1%	30	10%
51	8%	1%	31	10%
52	8%	1%	32	10%
53	8%	6%	33	20%
54	8%	6%	34	35%
55	10%	25%	35	40%
56	10%	20%	36 & Over	100%
57	10%	18%		
58	25%	18%		
59	40%	20%		
60	50%	25%		
61	60%	30%		
62	80%	100%		
63	80%	100%		
64	100%	100%		
65	100%	100%		

A member is assumed to be eligible to retire at age 52 (55 for Tier Two) with 17 years of service, or at any age with 30 years of service (Tier Two). A member is assumed to be eligible to retire early at age 47 (50 for Tier 2) with 17 years of service. For a Tier 2 member with 30 or more years of service at the beginning of a year, the percentages shown for service based retirement (30 or more years) take precedence over the percentages associated with age based retirement. It was assumed that members eligible to enter the DROP will do so to maximize the value of their benefits.

Active Members in Actuarial Valuation

(for fiscal years ended June 30)

June 30	No. #	Group Averages Age	Service	Pay
2012	534	41.6	13.9	53,236
2013	525	41.6	13.9	53,344
2014	530	41.6	13.9	53,866
2015	558	41.0	13.0	53,637
2016	554	40.9	13.1	53,156
2017	528	41.7	13.8	55,070
2018	528	41.4	12.7	56,048
2019	529	41.0	12.5	57,255
2020	541	40.9	12.5	61,573
2021	545	41.1	12.6	61,624

 # Includes DROP participants.

Tier One and Tier Two Participants

(as of June 30, 2021)

	No.	Group Averages Age		Vesting Service		Pay
Tier One	19	50.7	yrs.	24.9	yrs.	$84,341
Tier Two	469	38.7		10.2		58,247
Tier One - DROP	56	57.3		29.0		81,966
Tier Two - DROP	1	56.6		32.3		74,742
Total	**545**	**41.1**		**12.6**		**$61,624**

Short Condition Test

The ASPRS 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 system's present assets (cash and investments) are compared with

1. Member accumulated contributions;
2. The liabilities for future benefits to present retired lives; and
3. The employer financed portion of liabilities for service already rendered by non-retired members.

In a system that has been following the discipline of level percent-of-payroll financing, active member contributions (liability 1) and the liabilities for future benefits to present retired lives (liability 2) will be fully covered by valuation assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (liability 3) will be partially covered by the remainder of valuation assets. The larger the funded portion of liability 3, the stronger the condition of the system.

Ten-Year Comparative Statement

Valuation Date June 30	Entry Age Accrued Liability: (1) Active Members Contr.	(2) Retirees and Benef.	(3) Active Member (Employer Financed Portion)	Valuation Assets	Portion of Present Values Covered By Valuation Assets: (1)	(2)	(3)	Total
		($ in Millions)						
2012	$0.31	$217.64	$137.35	$215.01	100%	99%	0%	61%
2013@	0.53	227.80	133.13	233.15	100%	100%	4%	65%
2014@	0.50	237.17	144.19	259.46	100%	100%	15%	68%
2015*	0.37	252.79	145.80	274.83	100%	100%	15%	69%
2016	0.57	260.49	147.68	297.91	100%	100%	19%	71%
2017@	0.57	273.86	154.62	305.85	100%	100%	20%	71%
2018	0.62	284.61	157.70	319.79	100%	100%	22%	72%
2019	0.57	296.12	157.93	335.97	100%	100%	25%	74%
2020#	0.65	301.96	170.31	352.08	100%	100%	29%	74%
2021	**0.61**	**305.18**	**177.38**	**387.54**	**100%**	**100%**	**46%**	**80%**
2021#	**0.61**	**305.18**	**185.72**	**387.54**	**100%**	**100%**	**44%**	**79%**

@ After changes in actuarial assumptions and/or methods.
# After legislated changes in benefit provisions.
* (1) was estimated based on reported member contribution balances on data received by the actuary from ASPRS.

Derivation of Experience (Gain/Loss)

Actual experience will not (except by coincidence) coincide exactly with assumed experience. Gains and losses often cancel each other over a period of years, but sizable year-to-year fluctuations are common.

Detail on the derivation of the experience gain/loss is shown below.

During the Fiscal Year Ended June 30, 2021	
1. UAAL* at Beginning of Year	$ 120,837
2. Normal Cost from Last Valuation	7,602
3. Employer Contributions	22,784
4. Interest Accrual: (1) x 0.0715 + ((2) - (3)) x 0.03575	8,097
5. Expected UAAL Before Changes: (1) + (2) - (3) + (4)	113,752
6. Changes for Revised Actuarial Assumptions and/or Valuation Methods	0
7. Change from Benefit Changes	8,339
8. Expected UAAL After Changes: (5) + (6) + (7) + (8)	122,091
9. Actual UAAL at End of Year	103,972
10. Gain/loss: (8) - (9)	$ 18,119
11. Gain/loss as Percentage of Actuarial Accrued (1.8%) Liabilities at Start of Year	3.8%

* Unfunded actuarial accrued liability

Gains/Losses by Risk Area

(for the fiscal year ended June 30, 2021)

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.	$ 2.1	0.4 %
Investment Return. If there is greater recognized investment return than assumed, there is a gain. If less return, a loss.	15.2	3.2 %
NON-ECONOMIC RISK AREAS ...		
Age & Service Retirements. If members retire at older ages or with lower final average pays than assumed, there is a gain. If younger ages or higher average pays, a loss.	(0.1)	(0.0)%
Disability Retirements. If there are fewer disabilities than assumed, there is a gain. If more, a loss.	(0.1)	0.0 %
Death-in-Service Benefits. If more liabilities are released by deaths-in-service, there is a gain. If smaller releases, a loss.	(0.3)	(0.1)%
Withdrawal. If more liabilities are released by other separations than assumed, there is a gain. If smaller releases, a loss.	(0.1)	0.0 %
Actuarial Gain/Loss	$16.7	3.5 %
Other. Gains and losses resulting from group size change, data adjustments, timing of financial transactions, and retiree mortality.	1.4	0.3 %
TOTAL GAIN (OR LOSS) DURING PERIOD	**$18.1**	**3.8 %**

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The System

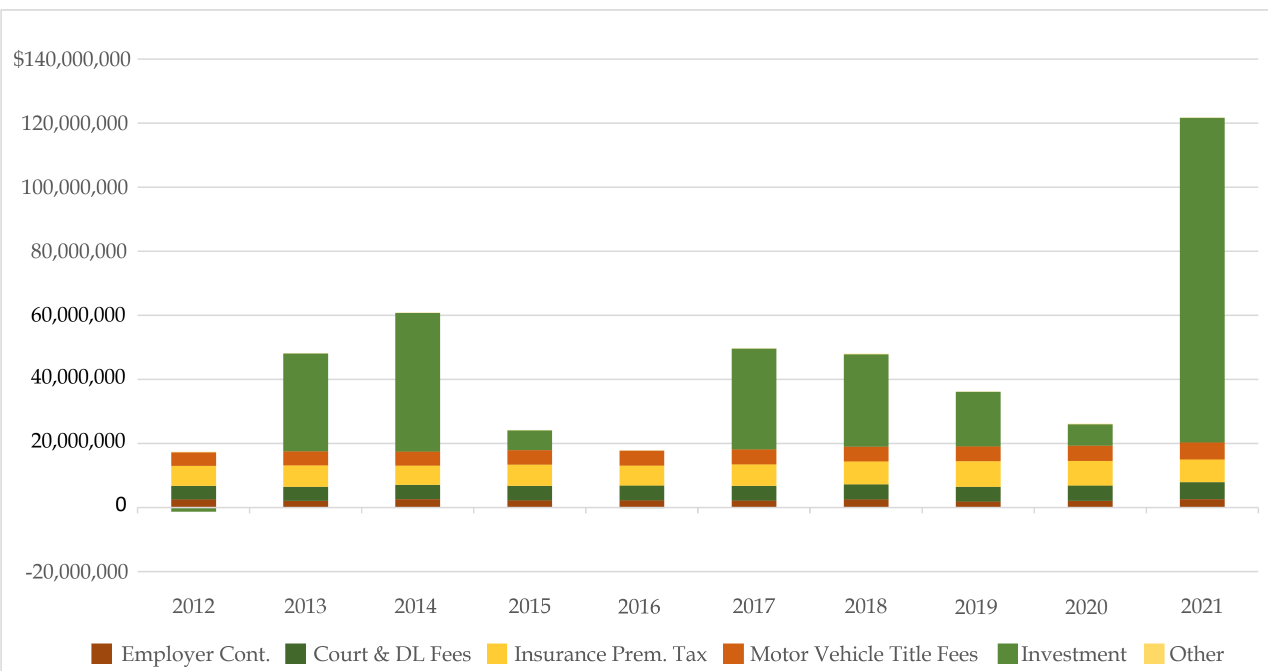
Schedule of Revenues by Source

(in dollars, for fiscal years ended June 30)

	Employer Contributions	Court & Driver's License Reinst. Fees	Insurance Premium Tax	Motor Vehicle Title Fees	Investment Income	Other Income	Total
2012	$6,525,196	$2,525,594	$6,250,117	$4,246,637	$(1,302,063)	$118,334	$18,363,815
2013	6,183,721	2,111,570	6,697,200	4,356,659	30,531,555	124,067	50,004,772
2014	6,405,887	2,657,952	5,957,541	4,442,806	43,307,745	37,499	62,809,430
2015	6,409,752	2,234,350	6,574,376	4,565,652	6,131,684	94,820	26,010,634
2016	6,581,580	2,206,082	6,233,769	4,661,683	(210,045)	30,181	19,503,250
2017	6,416,736	2,139,475	6,693,915	4,667,895	31,484,250	43,045	51,445,316
2018	6,515,063	2,580,695	7,109,703	4,664,315	28,823,333	133,871	49,826,982
2019	6,727,409	1,864,132	8,035,962	4,598,976	17,031,466	27,532	38,285,476
2020	7,205,047	2,114,797	7,705,096	4,754,635	6,700,847	93,849	28,574,271
2021	$7,706,274	$2,646,549	$7,139,013	$5,250,891	$101,415,154	$40,986	$124,198,867

Chart of Revenues by Source

(for fiscal years ended June 30)



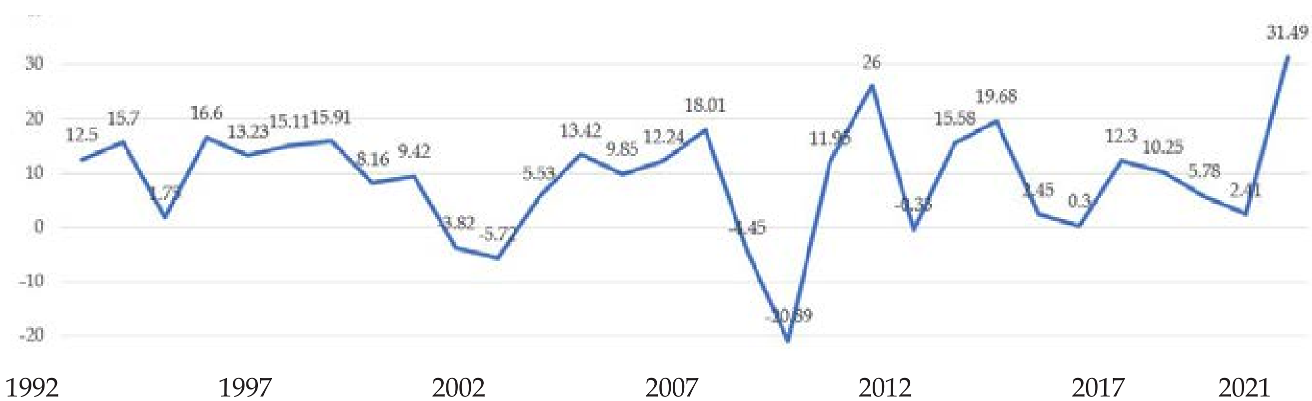
Schedule of Investment Return Rate

(for fiscal years ended June 30)

Year	Rate	Year	Rate
1992	12.50%	2007	18.01%
1993	15.70	2008	(4.45)
1994	1.75	2009	(20.89)
1995	16.60	2010	11.95
1996	13.23	2011	26.00
1997	15.11	2012	(0.33)
1998	15.91	2013	15.58
1999	8.16	2014	19.68
2000	9.42	2015	2.45
2001	(3.82)	2016	0.30
2002	(5.72)	2017	12.30
2003	5.53	2018	10.25
2004	13.42	2019	5.78
2005	9.85	2020	2.41
2006	12.24%	2021	31.49%

Chart of Investment Return Percentage Rate

(for fiscal years ended June 30)



Schedule of Expenses by Type

(for fiscal years ended June 30)

Year Ended June 30		Benefit Payments*		Administrative Expenses	Total
2012	$	21,649,158	$	80,842	$ 21,730,000
2013		23,717,503		97,181	23,814,684
2014		21,688,239		189,658	21,877,896
2015		23,358,801		196,231	23,555,032
2016		26,035,466		205,342	26,240,808
2017		24,631,787		208,424	24,840,211
2018		24,185,419		228,430	24,413,849
2019		24,930,274		554,441	25,484,715
2020		27,934,142		195,463	28,129,605
2021	$	27,294,080	$	215,384	$ 27,509,464

*Includes DROP and PAW distribution.

Schedule of Benefit Expenses by Type *

(for fiscal years ended June 30)

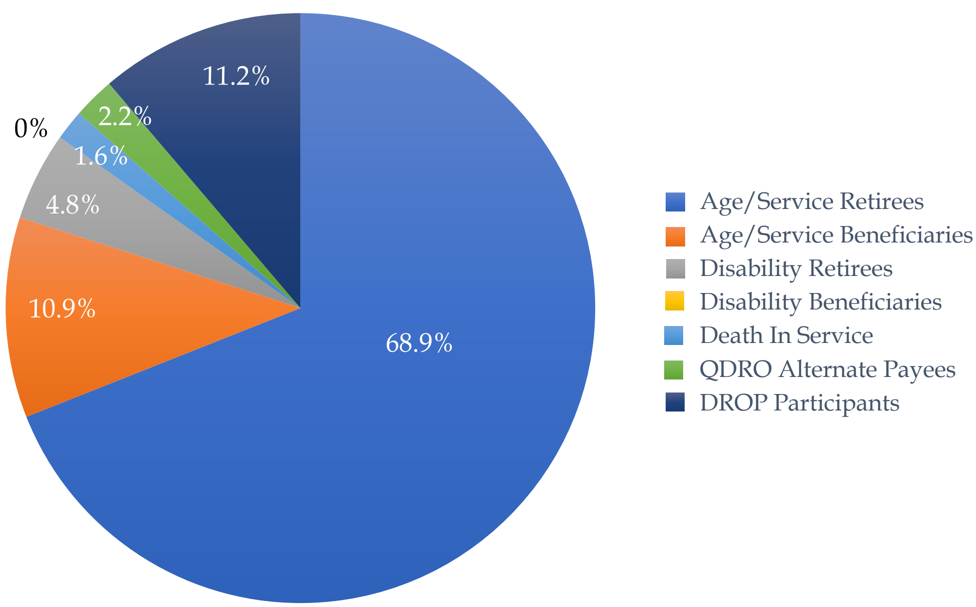
	Age & Service Retirees	Age & Service Beneficiaries	Disability Reirees	Disability Beneficiaries**	Death in Service**	QDRO Alternative Payees	DROP Participants
2012	$16,106,010	$1,803,169	$ 21,950,568		$91,092		
2013	16,901,590	1,950,945	26,158,872		93,828		
2014	17,368,858	2,034,215	27,648,624		74,640		
2015	17,963,207	2,325,900	1,016,556	13,944	76,872	471,880	3,126,156
2016	18,805,319	2,355,686	1,064,772	14,364	79,188	532,792	3,434,940
2017	18,769,461	2,320,702	1,350,504	7,140	491,004	607,318	3,281,616
2018	19,037,338	2,702,300	1,400,784	7,368	508,092	634,167	3,630,132
2019	19,922,625	2,942,626	1,413,720	0	510,120	637,202	3,334,908
2020	20,318,260	3,229,236	1,442,208	0	527,664	687,097	3,477,012
2021	$20,799,930	$3,312,885	$1,461,060	$0	$500,460	$687,593	$3,387,900

*Expenses are based on annualized June 30 benefits amounts.

**Prior to 2015, disability beneficiaries were reported in the same category as death-in-service beneficiaries.

Chart of Benefit Expenses by Type (Percentages)

(for the fiscal year ended June 30, 2021)



* Figures in chart are rounded thus do not equal 100 percent.

Membership

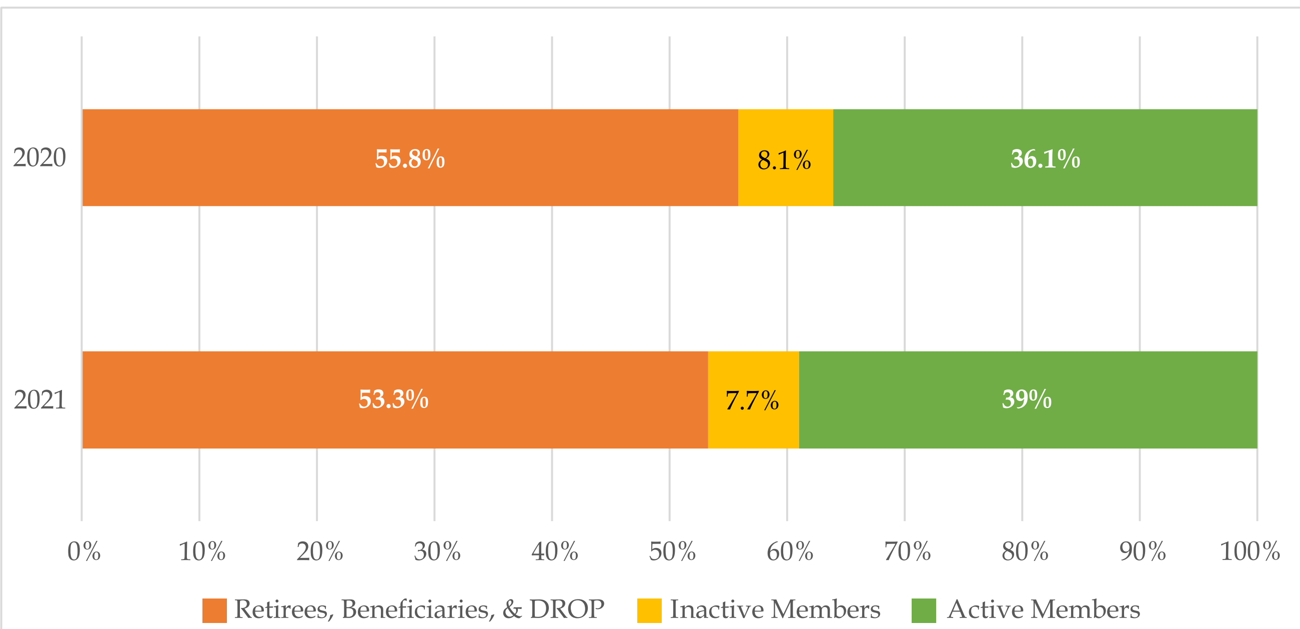
The Arkansas State Police Retirement System includes active members in a two tier program, retired members, beneficiaries, participants in the Deferred Retirement Option Plan (DROP), and deferred members.

Members

(for fiscal years ended June 30)	2021	2020
Retirees and Beneficiaries Receiving Benefits (includes DROP participants)	745	746
Terminated Plan Members Entitled to But Not Yet Receiving Benefits	108	108
Active Plan Members	545	482

Chart of Memberships by Type (Percentages)

(for fiscal years ended June 30)



Schedule of Retired Members by Type of Benefit

(for the fiscal year ended June 30, 2021)

Type of Benefit Being Paid	Number	Annual Pensions	Actuarial Acquired Liability
Age & Service Retirees			
Life	33	$893,700	$12,191,697
B-50	406	19,906,230	233,032,101
Totals	439	20,799,930	245,223,798
Beneficiaries of Age & Service Retirees			
B-50	130	3,312,885	28,998,188
Total Age & Service Retirees	569	24,112,815	274,221,986
Disability Retirees			
Life	20	403,080	4,884,051
B-50	35	1,057,980	12,157,523
Total Disability Retirees	55	1,461,060	17,041,574
Beneficiaries of Disability Retirees	0	0	0
Total Disability Retirees & Beneficiaries	55	1,461,060	17,041,574
Death-in-Service Beneficiaries	24	500,460	5,307,318
QDRO Alternate Payees	40	687,593	8,604,157
Total Retirees & Beneficiaries	688	26,761,928	305,175,035
DROP Participants (excluding DROP reserve)	57	3,387,900	56,238,496
Total Retirees, Beneficiaries, and DROP Participants	745	$30,149,828	$361,413,531

Chart of Retired Members and Beneficiaries by Type of Benefit (Percentages)

(for the fiscal year ended June 30, 2021)

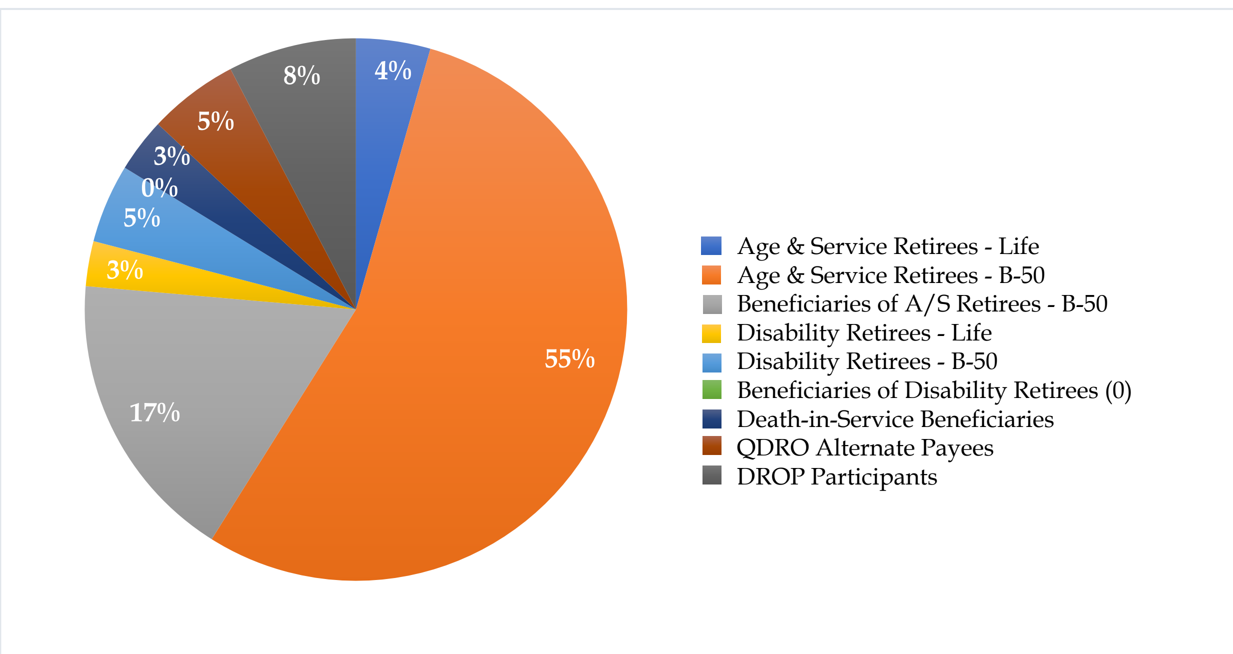
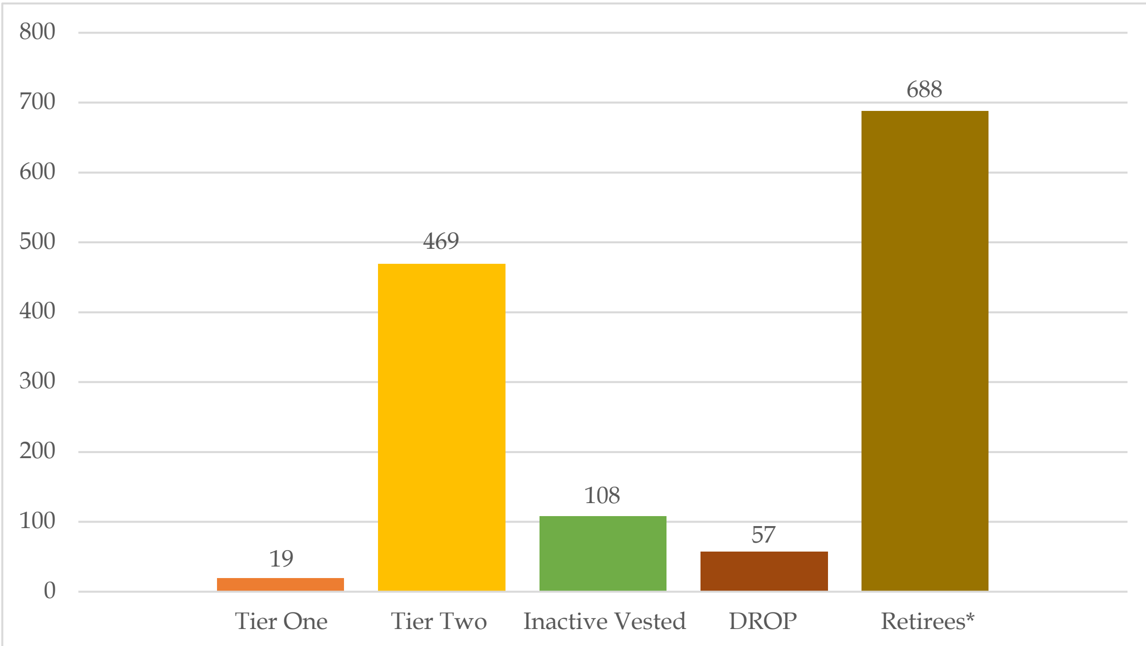


Chart of Members by Status in System

(for the fiscal year ended June 30, 2021)



* Includes Death-in-Service Beneficiaries and Disability Recipients