KPERS

INVEST GROW SERVE

2019 Comprehensive Annual Financial Report for the Fiscal Year Ended June 30, 2019

2019 COMPREHENSIVE ANNUAL FINANCIAL REPORT

Kansas Public Employees Retirement System
A component unit of the State of Kansas
Fiscal year ended June 30, 2019

Prepared by KPERS staff
611 S. Kansas Ave., Ste 100 | Topeka, KS 66603-3869

Alan D. Conroy, Executive Director
Judy McNeal, Chief Fiscal Officer

OUR **MISSION**

KPERS, in its fiduciary capacity, exists to deliver retirement, disability and survivor benefits to its members and their beneficiaries.

TABLE OF CONTENTS

STATISTICAL **SECTION**

INTRODUCTORY SECTION

TRANSMITTAL LETTER

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM

October 30, 2019

We are pleased to present the Kansas Public Employees Retirement System's (KPERS) Comprehensive Annual Financial Report (CAFR) for Fiscal Year 2019. In addition to informing the Board of Trustees, members and employers, our annual report fulfills KPERS' reporting responsibilities as defined in Kansas statute. Printed copies are readily available to the public and a full version is posted on our website, kpers.org.

As the first item in the CAFR, this transmittal letter provides a high-level overview of the Retirement System. The Management's Discussion and Analysis section provides a narrative introduction and analysis of our financial activities over the past fiscal year. This letter is intended to complement the Management's Discussion and Analysis, and they should be read together.

ENSURING ACCURACY

Responsibility for the preparation, accuracy and completeness of this report, including all disclosures, rests firmly with KPERS' management. Information is presented in accordance with generally accepted accounting principles. To the best of our knowledge, the included data is accurate in all material respects and fairly presents our financial position and operating results.

The Retirement System maintains a framework of internal controls to establish reasonable assurance that assets are safeguarded, transactions are completed accurately and financial statements are fair and reliable. We also have an internal audit program that reports to the Board of Trustees. There are inherent limitations to internal controls, and risk cannot always be foreseen or completely eliminated. KPERS' objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements, since the cost of internal control should not exceed the benefits obtained. In addition to internal controls, the independent certified public accounting firm CliftonLarsonAllen LLP conducted an independent audit of the Retirement System's financial statements for Fiscal Year 2019.

OUR PROFILE

The Kansas Legislature created the Kansas Public Employees Retirement System in 1962 to secure a financial foundation for those spending their careers in Kansas public service. The Retirement System provides disability and death benefits while employees are still working, and a dependable pension benefit when they retire.

We are a statewide, cost-sharing multiple employer defined benefit retirement plan containing three different groups:

- Public Employees
- Kansas Police and Firefighters
- Judges

Retirement System benefits are offered by slightly over 1,500 state and local employers. KPERS has about 318,000 members, including active, inactive and retired members. The Retirement System paid over $1.7 billion in retirement benefit payments for Fiscal Year 2019. Over 85 percent of those benefits remained in Kansas. Retirement System assets totaled $20.6 billion on June 30, 2019.

Along with the defined benefit plan, KPERS also oversees KPERS 457, a voluntary 457(b) deferred compensation plan for State of Kansas employees. In addition, 353 local public employers also participate. The plan has over 25,900 total and about 13,150 actively contributing participants. Total KPERS 457 plan assets equaled about $1.1 billion at the end of Fiscal Year 2019. The KPERS 457 plan's financial information is not included in this CAFR.

A nine-member Board of Trustees oversees the Retirement System: four are appointed by the Governor; one is appointed by the President of the Kansas Senate; one is appointed by the Speaker of the Kansas House of Representatives; two are elected by Retirement System members; and one is the statewide elected State Treasurer. The Board appoints an executive director who manages a staff to carry out daily operations. The Board approves the System's annual operating budget. As a component unit of the State of Kansas, the budget is also approved by the Kansas Legislature and Governor as part of the regular legislative budgetary process.

INVESTMENTS

KPERS' assets are invested according to the "prudent expert standard of care" for the sole purpose of providing benefits to members and beneficiaries. We have designed our investment portfolio to withstand short-term market volatility and economic downturns, as well as to benefit from strong economic and market environments.

Over time, solid investment performance is an important component to sound funding. Our actuarial projections assume an average, long-term net investment return of 7.75 percent. In 2017, the Board changed from an 8 percent assumption to 7.75 percent. For some years, returns will be below that rate and, in other years, returns will exceed it. As of June 30, 2019, KPERS' 25-year annualized total return average was 8.4 percent, exceeding the 7.75 percent target.

For Fiscal Year 2019, the Retirement System's broadly diversified investment portfolio produced a 6.7 percent total return, outperforming the Policy Index benchmark by 0.2 percent, but underperforming the actuarial return assumption of 7.75 percent. The private equity asset class produced the strongest return with a 13.8 percent total return, followed by domestic equity with a 9.0 percent total return.

The System's investment performance demonstrated the value of a well-diversified investment portfolio. Results were spread more evenly across all eight classes in Fiscal Year 2019, with strong returns from domestic equity and core fixed income, followed by returns from yield driven, real return, and real estate assets.

The Retirement System's investment portfolio ended the fiscal year at approximately $20.2 billion in assets. For more information about KPERS diversified and disciplined approach to executing our investment strategy, please refer to the investment section in this report, beginning on page 58. This section also provides details about our asset allocation and a general overview of each asset class and its performance.

KPERS contracts for the services of various independent consultants essential to the effective and professional operation of the System. A list of the consultants and advisors is included in the Introductory Section on page 14. In the Investments Section a schedule of entities to whom KPERS paid broker commissions is on page 70.

FINANCIAL POSITION AND FUNDING OUTLOOK

KPERS has been facing a long-term funding shortfall, significantly affected by two recessions and less than the required employer contributions for 25 years. For the first time in decades, the System received the full actuarial contribution amount for all plans and groups in Fiscal Year 2019. The same is expected for Fiscal Year 2020. Both are the result of additional payments from the Kansas Legislature for previously missed funding.

The Legislature has taken steps over the last ten years to address the funding shortfall, including pension bonds, increasing member contributions, creating a new cash balance plan for new members and commitments to increase employer contributions over time. Local employers reached the actuarially required contribution rate in calendar year 2015 and the State/School group is projected to be at the actuarially required rate in Fiscal Year 2021.

In 2015, the State of Kansas sold $1 billion in pension obligation bonds, and the proceeds were deposited in the KPERS Trust Fund. The State pays the debt service on the bonds.

On the heels of this large infusion of assets, the Legislature passed and the Governor approved State and School employer contribution reductions and delays over several years. Legislation also included provisions to pay for some of the shortfalls in annual payments with interest over the following 20 years. In contrast, the 2018 and 2019 Legislatures provided for additional payments beyond regular statutory employer contributions to make up for previously skipped payments. In Fiscal Year 2019, KPERS received $197 million in additional contributions, $82 million in July 2018, and $115 million in March 2019.

However, as result of earlier nonpayment and funding delays, the KPERS' Board of Trustees has continued to keep the increased target allocation for cash equivalents at 4 percent in order to be able to meet the System's liquidity needs without disrupting long-term investments.

At the date of this report, projections show the legacy unfunded actuarial liability will extinguish in 2033 as scheduled.

It is important to remember that to meet this projection, long-term investment returns are crucial. Continued funding improvement hinges on meeting our investment target over time and consistent funding with increasing employer contributions to match actuarial funding requirements.

For information on KPERS' funding projections by plan and group, please see the Actuarial Section beginning on page 74.

UNFUNDED ACTUARIAL LIABILITY

According to the December 31, 2018, actuarial valuation, the System's unfunded actuarial liability (UAL) increased by about $295 million to $9.2 billion due to negative investment returns at the end of last calendar year. This UAL amount is the gap between the actuarial value of assets and the actuarial liability for service already earned by public employees. The UAL was previously $8.9 billion as of December 31, 2017. The Retirement System's UAL is expected to increase somewhat over the next few years as the System recognizes negative investment experience in calendar year 2018.

FUNDED RATIO

The valuation showed the System's funded ratio remained steady at 68 percent with the help of the additional payments from the Kansas Legislature. The funded ratio is the ratio of assets to future liabilities. It is expected to increase steadily in the future assuming assumptions are met and scheduled contributions are made.

For public pension plans like KPERS, funding over 80 percent and rising is generally good. Funding below 60 percent is poor and needs prompt attention. While the System does not have an immediate crisis, long-term funding requires ongoing, careful oversight.

MAJOR INITIATIVES AND ACCOMPLISHMENTS

Audits for Accountability and Accuracy

KPERS completed its first SOC 1 Type 2 independent audit for the KPERS Disability program. The audit provides a report of the procedures and internal controls KPERS has in place relevant to the generation and maintenance of member records. It evaluates the design of controls and also the testing of controls for operational effectiveness over a period of time. While the audit focus was the KPERS Disability program, it provided an opportunity to review controls on the full membership census data. The audit was conducted by CliftonLarsonAllen LLP.

In addition to the financial and SOC 1 Type 2 independent audits by outside auditors, KPERS completed 16 internal audits and 88 external multiyear employer audits of its own. Audits provide an opportunity for KPERS and employers to learn from each other. We can uncover and fix any inaccuracies and help gain efficiencies. These, along with all of our auditing efforts, help KPERS honor our fiduciary responsibility to members.

Continuity of Operations Plan and Disaster Recovery Exercises

Using the State of Kansas Online Continuity of Operations Planning System, KPERS developed its own continuity plan to be sure business goes on, even in the face of a disaster or emergency. It outlines essential functions and actions based on how long we will need the alternate methods of operation, including who is responsible for what and where. Staff also conducted disaster recovery exercises twice during the fiscal year, putting the plan into practice, including system redundancies and paying benefits from our backup site.

Technology to Improve Service and Efficiency

In Fiscal Year 2019, we extended our "active workflow" strategy by designing and implementing management systems for our core function of processing applications for retirement benefits. We also implemented the process for beneficiary designations. The information system moves each application step by step through the process. This eliminates paper and increases efficiency. It also provides better application tracking. When members call with questions or status inquiries, our InfoLine representatives have up-to-date information.

KPERS staff also implemented a cloud-based contact center for our employer calls, replacing outdated technology. The new contact center provides improved flexibility and better customer service for our callers. It also provides analytics to help us look for areas to improve. Equally as important, moving to a cloud-based system aids with continuity of operations in the event of disaster.

BY THE NUMBERS—IN FISCAL YEAR 2019:

- About 1.2 million retirement benefit payments paid totaling over $1.7 billion
- 5,537 pension inceptions completed
- 42,650 beneficiary designations processed
- $17.5 million in life insurance benefits paid
- 29,800 member enrollments and transfers processed
- 10,675 withdrawals paid totaling $53.5 million
- $17 million in benefits paid to 2,100 disabled employees
- 103,247 incoming calls answered with an average wait time of 8 seconds
- 18,330 emails answered

AWARDS & ACKNOWLEDGMENTS

KPERS participated in a benchmarking survey conducted by CEM Benchmarking, Inc. When compared with other public pensions in the 2018 survey, KPERS earned an overall service score of 83, just shy of the peer median score of 84. In addition, we measured very favorably with regard to cost. KPERS' administrative cost per member is $47, which was significantly below the peer median cost of $79. Benchmarking results continue to show KPERS is delivering good customer service for a low, economical cost.

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the Retirement System for the 2018 CAFR. The Certificate of Achievement is a prestigious national award, recognizing conformance with the highest standards for preparation of state and local government financial reports.

To be awarded a Certificate of Achievement, a governmental unit must publish an easily readable and efficiently organized comprehensive annual financial report, the contents of which must conform to program standards. The comprehensive annual financial report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. The Retirement System has received the Certificate of Achievement for each of the last 25 fiscal years. We believe our current report again conforms to the program requirements, and we will submit it to the GFOA to determine its eligibility for another certificate.

In addition to the GFOA certificate, KPERS also earned the Public Pension Standards Award for Funding and Administration in 2019 from the Public Pension Coordinating Council (PPCC). The standards serve as a benchmark by which to measure public defined benefit plans in the areas of benefits, actuarial valuation, independent audit, investments, communications and long-term funding.

The CAFR continues to be the product of team effort, both KPERS staff and advisors. We thank the Board for its leadership and our entire dedicated staff whose work this report represents. The CAFR is an important asset to our organization, and we use the information in this report to make key decisions. It helps us honor our fiduciary commitment and provide members with the service they need to get the most from their benefits.

Sincerely,

Alan D. Conroy

Alan D. Conroy,
Executive Director

Judy McNeal

Judy McNeal
Chief Fiscal Officer

BOARD OF TRUSTEES

OUR ORGANIZATION

BOARD OF TRUSTEES

EXECUTIVE DIRECTOR
Alan D. Conroy

ADMINISTRATION
General Counsel, Laurie McKinnon
Internal Audit, Janette Martin
Planning and Research, Jarod Waltner
Human Resources, Julie Baker
KPERS 457, Arlen Zentner
Communications, Kristen Basso

INVESTMENTS
Chief Investment Officer, Elizabeth B.A. Miller
- Equity Investments
- Real Estate Investments
- Fixed Income Investments
- Alternative Investments

FISCAL SERVICES
Chief Fiscal Officer, Judy McNeal
- Corporate Accounting
- Employer Reporting
- Investment Accounting
- Employer Auditing

BENEFITS AND MEMBER SERVICES
Chief Benefits Officer, Mary Beth Green
- Post-Retirement
- Benefits
- Withdrawals

INFORMATION TECHNOLOGY
Chief Information Officer, Lane Wiley
- Application and Data Management
- Cyber-Security
- Operations

KPERS STAFF

Melvin Abbott
Crystie Amaro
Michael Arvidson Jr
Paige Ashley
Julie Baker
Yohonna Barraud
Kristen Basso
DuWayne Belles
Lydia Bergman
Dianna Berry
Julie Bevitt
A. Kathleen Billings
Candace Blythe
Anita Bradley
Terry Brookhouser
Tracy Brull
Annika Bush
Andryana Campbell
Russ Canaday
Will Clark
Amanda Cobler
Alan Conroy
Becky Dekat
Ardith Dunn
Amy Dunton
Tisha Eastman
Joyce Edington
Yarlenis Ensley
Allie Estanol
Daniel Fairbank
Melissa Findlay
Bruce Fink
Linda Fisher
Jared Flewelling
Renae Forque
Elaine Gaer
Sue Gamblian
Connie Gardner
Billie-Jo Gerisch
Brandon Gil
Michael Gilliland
Kaylie Gleason
Lisa Gonzales
Mary Beth Green
Susan Hancock
Joe Haverkamp
Alec Hawley
Lorie Hernandez
Candice Heth
John Hooker
Mirel Howard
Kaylie Hughes
Charla Jefferson
Marais Johnson-Herl
Teresa Jurgens
Casey Kidder
Charity King
Rohit Komaragiri
Shannon Kuehler
Lindsey Leslie
Debra Lewis
Melinda Locke
Joyce Mark
Janette Martin
DeAnna McColm
Heather McHardie
Laurie McKinnon
Jason McKinzie
Judy McNeal
Elizabeth Miller
Stephanie Moore
Noble Morrell
Kali Newell
Lisa Ngole
Dawn Nichols
Shawn Nix
Jennifer Osborn
Marcus Peavler
Diana Peters
Sammi Peterson
Alissa Powell
Jeeva Purushothaman
Sarah Putman
Sheila Putman
Teresa Quick
Justin Quick
Cathy Rafferty
Kim Raines
Curtis Rasmusson
Norm Remp
Elizabeth Rincon
Kim Robinett
Dean Roney
Jamie Rose
Rika Rowe
Laurie Rueschhoff
Teresa Ryan
MaryAnn Sachs
Crystal Schnacker
Alan Schuler
Annette Scott
Adam Sester
Aditi Sharma
Hallie Shermoen
Rhonda Shumway
Brecken Stadler
Marsha Stafford
Rachel Swartz
Raquel Talavera
Amber Tarrant
Carmen Torres
Dan Tritsch
Jessica Tufts
Jason Van Fleet
Jackie VandeVelde
Daniel Wadsworth
Jarod Waltner
Michaela Watson
Lisa Wehrly
Amy Whitmer
Eric Wigginton
Lane Wiley
Max Williams
Emily Wilson
Brandy Wilson
Deanna Winters
Susie Wires
Krystal Yegon
Arlen Zentner

CONSULTANTS AND ADVISORS

Auditors: CliftonLarsonAllen LLP, Greenwood Village, CO

Accounting: KPMG LLP, Chicago, IL

Actuary: Cavanaugh Macdonald, Bellevue, NE

INVESTMENT CONSULTANTS

Mercer Alternatives, LLC, El Dorado Hills, CA
Meketa Investment Group, Portland, OR
The Townsend Group, Cleveland, OH

INVESTMENT MANAGERS

Adrian Lee & Partners, Dublin, Ireland
Advisory Research Inc., St. Louis, MO
Baillie Gifford Overseas Limited, Edinburgh, Scotland
BlackRock Institutional Trust Company, San Francisco, CA
Brookfield Asset Management, Coral Gables, FL
CenterSquare Investment Management Inc., Plymouth Meeting, PA
Franklin Templeton Institutional, San Mateo, CA
Insight Investment Inc., New York, NY
JP Morgan Investment Management Inc., New York, NY
Lazard Asset Management, LLC, New York, NY
Loomis Sayles & Company, LP, Boston, MA
MacKay Shields LLC, New York, NY
Mellon Capital Management Corporation, San Francisco, CA
Molpus Timberlands Management, Jackson, MS
Payden & Rygel Investment Counsel, Los Angeles, CA
Russell Investment Group, Tacoma, WA
State Street Global Advisors, Boston, MA
T Rowe Price Associates, Inc., Baltimore, MD
Wellington Management Company, Boston, MA
Western Asset Management Company, Pasadena, CA

Investment Custodian: State Street Bank and Trust, Boston, MA

Life Insurance: Standard Insurance Company, Portland, OR

Long-Term Disability: Self Insured, Administered by Disability Management Services, Inc., Springfield, MA

Brokers: See the "Schedule of U.S. Equity Commissions" on page 70

GFOA CERTIFICATE OF ACHIEVEMENT

The Government Finance Officers Association of the United States and Canada (GFOA) awarded the Certificate of Achievement for Excellence in Financial Reporting to KPERS for the 2016 annual report. KPERS has received the award for each of the last 25 consecutive fiscal years.

Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Kansas Public Employees Retirement System

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2018

Christopher P. Morrill

Executive Director/CEO

PPCC PUBLIC PENSION STANDARDS AWARD

The Public Pension Coordinating Council (PPCC) awarded the Public Pension Standards Award for Funding and Administration to KPERS for 2019.

Public Pension Coordinating Council

Public Pension Standards Award For Funding and Administration 2019

Presented to

Kansas Public Employees Retirement System

In recognition of meeting professional standards for plan funding and administration as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

FINANCIAL SECTION

INDEPENDENT AUDITOR'S REPORT

CliftonLarsonAllen

Board of Trustees
Kansas Public Employees Retirement System
Topeka, Kansas

REPORT ON THE FINANCIAL STATEMENTS

We have audited the accompanying financial statements of the Kansas Public Employees Retirement System (the System), which comprise the statements of fiduciary net position and changes in fiduciary net position, as of and for the year ended June 30, 2019, and the related notes to the financial statements, which collectively comprise the 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.

AUDITORS' RESPONSIBILITY

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

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the System'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 System's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

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

OPINION

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

OTHER MATTERS

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, schedule of changes in the employers' net pension liability, schedule of the employers' net pension liability, schedule of employers' contributions and schedule of investment returns, as listed in the 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.

OTHER INFORMATION

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The other supplementary information listed in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The other supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The Introductory, Investment, Actuarial and Statistical sections, as listed in the table of contents, have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

OTHER REPORTING REQUIRED BY GOVERNMENT AUDITING STANDARDS

In accordance with Government Auditing Standards, we have also issued our report dated October 30, 2019, on our consideration of the 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 result of that testing, and not to provide an opinion on the effectiveness of the 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 System's internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

Denver, Colorado
October 30, 2019

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section presents management's discussion and analysis of the Kansas Public Employees Retirement System's financial performance for the fiscal year ended June 30, 2019. It is presented as a narrative overview and analysis in conjunction with the Executive Director's letter of transmittal.

The Kansas Public Employees Retirement System (KPERS, the Retirement System, or the System) is the administrator of a cost-sharing defined-benefit pension plan (Pension Plan) providing pension benefits to the following three statewide pension groups under one plan, as provided by chapter 74, article 49 of the Kansas Statutes:

- Public Employees
- Police and Firemen
- Judges

Substantially all public employees in Kansas are covered by the Pension Plan. The State of Kansas and Kansas schools are required to participate, while participation by local political subdivisions is optional but irrevocable once elected.

FINANCIAL HIGHLIGHTS

The System's net position increased almost $1.0 billion or approximately 4.8 percent to $20.6 billion as of June 30, 2019, compared to an increase of $1.1 billion or approximately 5.7 percent, from $18.6 billion to $19.7 billion as of June 30, 2018.

The System's June 30, 2019, financial actuarial valuation calculated a total pension liability at June 30, 2019, of $29.5 billion, compared to $28.6 billion as of June 30, 2018, an increase of $952 million or 3.3 percent. The net pension liability at June 30, 2019, was $8.9 billion, approximately the same as the prior year, with a net decrease of $126,981.

On a market value basis, this year's money-weighted rate of return on investments was 6.31 percent, compared to last year's return of 8.34 percent.

Monthly retirement benefits paid to retirees and beneficiaries increased 4.0 percent to approximately $1.8 billion for Fiscal Year 2019, compared to $1.7 billion in Fiscal Year 2018.

OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is an introduction to the System's financial status, which comprise the following components:

- Financial statements
- Notes to the financial statements
- Required supplementary information
- Other supplementary schedules

The information available in each of these sections is summarized as follows.

FINANCIAL STATEMENTS

A Statement of Fiduciary Net Position as of June 30, 2019, and a Statement of Changes in Fiduciary Net Position for the fiscal year ended June 30, 2019, are presented in this report. These financial statements reflect the resources available to pay benefits to retirees and other beneficiaries.

NOTES TO THE FINANCIAL STATEMENTS

The financial statement notes provide additional information that is essential to a full understanding of the data provided in the financial statements. The notes to the financial statements can be found immediately following the financial statements.

REQUIRED SUPPLEMENTARY INFORMATION

The required supplementary information consists of schedules and related notes concerning the financial status of the Retirement System (Pension Plan).

OTHER SUPPLEMENTARY SCHEDULES

Other schedules include detailed information on contributions by employer coverage groups, administrative expenses, an investment income summary, a schedule of investment fees and expenses, a statement of changes in assets and liabilities for agency funds and a schedule of expenses by type for the last ten years.

CONDENSED FINANCIAL INFORMATION OF THE RETIREMENT SYSTEM

The System provides benefits to State of Kansas and other local and school employees. Benefits are funded by member and employer contributions and by investment earnings. Net position at June 30, 2019, amounted to $20.6 billion. Following are two summary schedules, Fiduciary Net Position and Changes in Fiduciary Net Position, showing information for Fiscal Years 2019 and 2018.

SUMMARY STATEMENT OF FIDUCIARY POSITION

	As of June 30, 2019	As of June 30, 2018
Assets		
Cash and Deposits	$ 22,768,776	$ 56,405,395
Receivables	604,004,417	307,937,568
Investments at Fair Value	20,258,318,970	19,612,182,483
Capital Assets and Supplies Inventory	2,847,200	3,949,332
Total Assets	20,887,939,363	19,980,474,778
Liabilities		
Administrative Costs	1,149,385	1,298,338
Benefits Payable	3,267,515	12,795,209
Securities Purchased	154,573,540	213,169,905
Payables	80,895,036	57,002,091
Total Liabilities	239,885,476	284,265,543
Fiduciary Net Position Restricted for Pensions	$ 20,648,053,887	$19,696,209,235

SUMMARY STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

	Year Ended June 30, 2019	Year Ended June 30, 2018
Additions		
Contributions	$ 1,576,247,871	$ 1,308,019,741
Net Investment Income	1,216,685,443	1,516,929,281
Other Miscellaneous Income	5,488,299	5,733,655
Total Additions	2,798,421,613	2,830,682,677
Deductions		
Monthly Retirement Benefits	1,747,623,791	1,679,587,567
Refunds	74,316,322	64,966,962
Death Benefits	11,357,122	11,299,715
Administrative Expenses	13,279,726	12,459,619
Total Deductions	1,846,576,961	1,768,313,863
Net Increase	951,844,652	1,062,368,814
Fiduciary Net Position Beginning of Year	19,696,209,235	18,633,840,421
Fiduciary Net Position End of Year	$ 20,648,053,887	$ 19,696,209,235

FINANCIAL ANALYSIS OF THE RETIREMENT SYSTEM

Additions to the System's fiduciary net position restricted for pensions include employer and member contributions, as well as investment income. Total contributions to the Retirement System were approximately $1.6 billion in Fiscal Year 2019, compared to approximately $1.3 billion in Fiscal Year 2018.

The System recognized net investment income of $1.2 billion for Fiscal Year 2019. The total time-weighted return for the portfolio, net of fees, was 6.3 percent, compared to the benchmark return of 6.5 percent. System investments at fair value amounted to $20.3 billion at June 30, 2019. The Retirement System's time-weighted one- , three- , five- , ten- and 25-year investment performance returns, net of fees, are shown in the following table. The actuarial assumed rate of return is 7.75 percent.

2019

1 year	Last 3 Years	Last 5 Years	Last 10 Years	Last 25 Years
6.3%	8.9%	6.1%	9.8%	8.1%

The System recognized net investment income of $1.5 billion for the 2018 Fiscal Year. System investments at fair value amounted to $19.6 billion at June 30, 2018.

At June 30, 2019, the System held $10.4 billion in US equity and international equity securities. US equity and international equity securities earned net returns of approximately 9.0 percent and 0.7 percent, respectively, for Fiscal Year 2019.

At June 30, 2018, the System held $10.4 billion in US equity and international equity securities. US equity and international equity securities earned returns of approximately 14.9 percent and 8.0 percent, respectively, for Fiscal Year 2018.

The System held $5.5 billion in US debt and international debt securities at June 30, 2019. The net performance of the System's fixed income securities during Fiscal Year 2019 was 8.0 percent. Real estate investments amounted to $2.4 billion at June 30, 2019, and returned approximately 5.6 percent for the 2019 Fiscal Year. The System held $1.6 billion in alternative investments, which earned a return of approximately 12.2 percent for the 2019 Fiscal Year. At June 30, 2019, the System held $351.7 million in short-term investments. Cash and deposits include investment cash and foreign currencies held at the custodial bank as of June 30, 2019, totaling approximately $13.6 million.

The System held $5.3 billion in US debt and international debt securities at June 30, 2018. The net performance of the System's fixed income securities during Fiscal Year 2018 was negative 0.4 percent. Real estate investments amounted to $2.2 billion at June 30, 2018, and returned approximately 10.4 percent for the 2018 Fiscal Year. The System held $1.3 billion in alternative investments, which earned a return of approximately 14.8 percent for the 2018 Fiscal Year. At June 30, 2018, the System held $506.1 million in short-term investments. Cash and deposits include investment cash and foreign currencies held at the custodial bank as of June 30, 2018, totaling approximately $39.6 million.

Deductions from fiduciary net position restricted for pensions include retirement benefits, refunds, survivor benefits and administrative expenses. For the 2019 Fiscal Year, retirement benefits amounted to approximately $1.8 billion, an increase of $68.0 million or 4.0 percent from Fiscal Year 2018. For the 2019 Fiscal Year, System administrative expenses amounted to $13.3 million, an increase of $0.8 million from Fiscal Year 2018. The ratio of System administrative expenses to the number of members continues to be very cost-efficient compared to other statewide retirement plans.

NET PENSION LIABILITY

The annual financial actuarial valuation for the System, as of June 30, 2019, estimates the total pension liability in accordance with requirements established by GASB Statement No. 67, Financial Reporting Standards for Pension Plans, as amended. The total pension liability (TPL) is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of plan member service. The net pension liability (NPL) is the total pension liability, net of the pension plan's fiduciary net position. As of June 30, 2019, the pension plan's fiduciary net position as a percentage of the total pension liability was 69.88 percent.

PENSION PLAN

In response to KPERS' long-term funding shortfall, the 2012 Legislature made changes to future benefits and contributions, affecting both current members and employers, to improve KPERS long-term sustainability. The Governor signed Senate Substitute for HB 2333 into law on June 1, 2012. This legislation affects new hires, current members and employers. Beginning in 2014, the statutory cap on employer contributions was increased. For Fiscal Year 2017 and beyond, the statutory cap is 1.2 percent. The changes are expected to improve KPERS long-term funding and help all three groups reach full funding by 2033. The actual funding progress will be heavily dependent on the actual investment experience of the System in future years. The 2015 Legislature passed and the Governor approved Senate Bill 228 authorizing the issuance of $1.0 billion in pension obligation bonds. The bonds were successfully issued in August 2015 and the proceeds transferred to the Retirement System.

Senate Sub. for HB 2052 authorized the delay of $64.1 million in Fiscal Year 2017 contributions. These contributions were set up as a long-term receivable. Payment is scheduled to be made in a series of twenty annual payments of $6.4 million beginning in Fiscal Year 2018. Senate Sub. for HB 2002 authorized the delay of $194.0 million in Fiscal Year 2019 contributions. Payment is scheduled to be made in a series of twenty annual payments of $19.4 million starting in Fiscal Year 2020.

House Sub. For Senate Bill 109 from the 2018 Legislative session provided for additional funding for the KPERS School Group. A payment of $56 million was paid in Fiscal Year 2018. This Bill also authorized a payment of $82 million in Fiscal Year 2019. The 2019 legislative session authorized an additional fiscal year payment for the KPERS School Group. Senate Bill 9 authorized a payment of $115 million for the KPERS School Group. With these two payments, the System received the full actuarial contribution amount for the first time in decades.

The legislature and the Governor are ultimately responsible for benefits and funding. As a fiduciary devoted to the best financial interest of members, KPERS will continue to advocate for policies that promote the long-term financial health of the Retirement System.

This financial report is designed to provide a general overview of the Kansas Public Employees Retirement Systems' finances for all interested parties. An electronic copy of this report is available at the System's website kpers.org. Requests for a printed copy of this report should be directed to the System as follows:

Kansas Public Employees Retirement System
611 S. Kansas Ave., Suite 100
Topeka, KS 66603-3869
1-888-275-5737

STATEMENT OF FIDUCIARY NET POSITION

As of June 30, 2019

	Pension Plan	Agency Funds
Assets:		
Cash	$ 247,483	$ 8,747,382
Cash at Custodial Bank	13,599,770	—
Deposits with Insurance Carrier	—	174,141
Total Cash	13,847,253	8,921,523
Receivables:		
Contributions	429,194,042	11,101,314
Investment Income	61,158,964	81,611
Sale of Investment Securities	102,468,486	—
Total Receivables	592,821,492	11,182,925
Investments at Fair Value:		
Domestic Equities	6,129,375,737	—
International Equities	4,311,377,484	—
Short Term	290,957,821	60,790,588
Fixed Income	5,468,781,923	—
Alternative Investments	1,600,568,471	—
Real Estate	2,396,466,946	—
Total Investments	20,197,528,382	60,790,588
Capital Assets and Supplies Inventory	2,847,200	—
Total Assets	20,807,044,327	80,895,036
Liabilities:		
Administrative Costs	1,149,385	—
Benefits Payable	3,267,515	—
Securities Purchased	154,573,540	—
Due to Others	—	80,895,036
Total Liabilities	158,990,440	80,895,036
Fiduciary Net Position Restricted for Pensions	$20,648,053,887	$ —

The accompanying notes to financial statements are an integral part of this statement.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

Fiscal Year Ended June 30, 2019

	Pension Plan
Additions:	
Contributions:	
Member Contributions	$ 437,352,839
Employer Contributions	1,138,895,032
Total Contributions	1,576,247,871
Investments:	
Net Appreciation in Fair Value of Investments	798,206,290
Interest	162,200,077
Dividends	240,616,896
Real Estate Income, Net of Operating Expenses	106,326,053
Other Investment Income	16,525,693
	1,323,875,009
Less Investment Expense	107,189,566
Net Investment Income	1,216,685,443
Other Miscellaneous Income	5,488,299
Total Additions	2,798,421,613
Deductions:	
Monthly Retirement Benefits Paid	1,747,623,791
Refunds of Contributions	74,316,322
Death Benefits	11,357,122
Administrative Expenses	13,279,726
Total Deductions	1,846,576,961
Increase in Fiduciary Net Position	951,844,652
Fiduciary Net Position Restricted for Pensions	
Beginning of Year	19,696,209,235
End of Year	$ 20,648,053,887

The accompanying notes to financial statements are an integral part of this statement.

NOTE 1 – ORGANIZATION AND PLAN DESCRIPTION

The Kansas Public Employees Retirement System (KPERS, or the System) is a body corporate and an instrumentality of the State of Kansas. KPERS is governed by a nine-member board of trustees of which: four trustees are appointed by the Governor, one by the President of the Senate, one by the Speaker of the House of Representatives, two are elected by Retirement System members and one is the elected State Treasurer. The Board of Trustees appoints the executive director, who is the System's managing officer. KPERS is a component unit of the State of Kansas.

KPERS is the administrator of a cost-sharing defined-benefit pension plan (Pension Plan) for the State of Kansas providing pension benefits to the following three statewide pension groups under one plan, as provided by K.S.A. 74, article 49:

- Public Employees
- Police and Firemen
- Judges

Substantially all public employees in Kansas are covered by the plan. The State of Kansas and Kansas schools are required to participate, while participation by local political subdivisions is optional but irrevocable once elected.

KPERS pays Death and Disability Plan benefits to members on behalf of employers as provided by K.S.A. 74, article 4927. The benefits are not administered through a qualifying trust based on the criteria in Governmental Accounting Standards Board (GASB) Statement No. 74 and the assets and liabilities are presented in an agency fund.

KPERS also collects and pays premiums for the optional group life insurance plan, as authorized by K.S.A. 74, article 4927. This plan provides additional employee paid life insurance coverage for active members. The assets and liabilities are presented in an agency fund.

PLAN MEMBERSHIP BY EMPLOYEE GROUP

Participating membership by statewide pension group as of December 31, 2018, (most recent actuarial valuation date) is as follows:

MEMBERSHIP BY RETIREMENT SYSTEMS(1)

	KPERS	KP&F	Judges	Total
Retirees and beneficiaries currently receiving benefits(2)	97,353	5,579	284	103,216
Terminated employees entitled to benefits but not yet receiving them	22,808	197	5	23,010
Inactive members, deferred disabled	1,771	192	—	1,963
Inactive members not entitled to benefits	35,200	1,322	—	36,522
Current employees	146,104	7,695	256	154,055
Total	303,236	14,985	545	318,766

(1) Represents System membership at December 31, 2018.
(2) Number of retirement payees as of December 31, 2018.

NUMBER OF PARTICIPATING EMPLOYERS

	KPERS	KP&F	Judges
State of Kansas	1	1	1
Counties	105	37	—
Cities	365	67	—
Townships	60	—	—
School Districts	286	—	—
Libraries	122	—	—
Conservation Districts	83	—	—
Extension Councils	62	—	—
Community Colleges	19	—	—
Educational Cooperatives	23	—	—
Recreation Commissions	46	1	—
Hospitals	28	—	—
Cemetery Districts	13	—	—
Other	206	—	—
Total	1,419	106	1

PLAN BENEFITS

Benefits are established by statute and may only be changed by the Legislature. Members (except Police and Firemen) with ten or more years of credited service, may retire as early as age 55 (Police and Firemen may be age 50 with 20 years of credited service), with an actuarially reduced monthly benefit. Normal retirement is at age 65, age 62 with ten years of credited service or whenever a member's combined age and years of credited service equal 85 "points" (Police and Firemen' normal retirement ages are age 60 with 15 years of credited service, age 55 with 20 years, age 50 with 25 years or any age with 36 years of service). Monthly retirement benefits are based on a statutory formula that includes final average salary and years of service. When ending employment, members may withdraw their contributions from their individual accounts, including interest. Members who withdraw their accumulated contributions lose all rights and privileges of membership. For all pension coverage groups, the accumulated contributions and interest are deposited into and disbursed from the membership accumulated reserve fund as established by K.S.A. 74-4922.

Members choose one of seven payment options for their monthly retirement benefits. At retirement a member may receive a lump-sum payment of up to 50 percent of the actuarial present value of the member's lifetime benefit. His or her monthly retirement benefit is then permanently reduced based on the amount of the lump sum. Benefit increases, including ad hoc post-retirement benefit increases, must be passed into law by the Kansas Legislature. Benefit increases are under the authority of the Legislature and the Governor of the State of Kansas.

The 2012 Legislature made changes affecting new hires, current members and employers. A new KPERS 3 cash balance retirement plan for new hires starting January 1, 2015, was created. Normal retirement age for KPERS 3 is 65 with five years of service or 60 with 30 years of service. Early retirement is available at age 55 with ten years of service, with a reduced benefit. Monthly benefit options are an annuity benefit based on the account balance at retirement.

For all pension coverage groups, the retirement benefits are disbursed from the retirement benefit payment reserve fund as established by K.S.A. 74-4922.

For active members (except Police and Firemen) in cases of death as a result of an on-the-job accident for Public Employees, there is a $50,000 lump-sum benefit and a monthly benefit payable to a spouse, minor children or dependent parents (in this order). Service-connected accidental death benefits are in addition to any life insurance benefit. There is a $4,000 death benefit payable to the beneficiary(ies) when a retired member dies from any group.

CONTRIBUTIONS

Member contribution rates are established by state law and are paid by the employee according to the provisions of Section 414(h) of the Internal Revenue Code. State law provides that the employer contribution rates be determined based on the results of each annual actuarial valuation for each of the three statewide pension groups. The contributions and assets of all three groups are deposited in the Kansas Public Employees Retirement Fund established by K.S.A. 74-4921. All of the retirement groups are funded on an actuarial reserve basis.

For fiscal years beginning in 1995, Kansas legislation established statutory limits on increases in contribution rates for KPERS employers, which includes the state, school and local employers. Annual increases in the employer contribution rates related to subsequent benefit enhancements are not subject to these limitations. The statutory cap increase over the prior year contribution rate is 1.2 percent of total payroll.

The actuarially determined employer contribution rate and the statutory contribution rates are as follows:

	Actuarial Employer Rate	Statutory Cap Rate
State Employee(1)	8.28%	13.21%
School Employee(1)	14.59	13.21
Judges(1)	14.68	14.68
Local Government Employee(2)	8.89	8.89
Police and Firemen(2)	22.13	22.13

(1) Rates shown for KPERS State, School and Judges represent the rates for fiscal year ending June 30.
(2) KPERS Local and KP&F rates are reported for the calendar year.

Of note, the State/School rate will be at the actuarially required contribution rate for Fiscal Year 2022, meaning the cap will not affect that rate. Employee contribution rates as a percentage of eligible compensation in Fiscal Year 2019 were 6.0 percent for Public Employees, 7.15 percent for Police and Firemen and 6.0 percent or 2.0 percent for Judges.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements have been prepared on the accrual basis of accounting in conformity with US generally accepted accounting principles (GAAP), as prescribed by the Governmental Accounting Standards Board (GASB). KPERS' financial statements include the pension fund and agency funds.

The pension fund is accounted for on the flow of economic resources measurement focus and the accrual basis of accounting. Contributions are recognized as revenues when due pursuant to statutory requirements. Benefits and refunds are recognized when due and payable and expenses are recorded when the corresponding liabilities are incurred, regardless of when contributions are received or payment is made. The agency funds are custodial in nature and account for the assets and liabilities held by KPERS as an agent. Death and disability benefits are paid on behalf of other governments and Optional Group Life Insurance premiums are paid on behalf of employees. These funds do not measure the results of operations.

SHORT TERM INVESTMENTS

The Retirement System considers Short Term Investments to include both Money Market Investments (MMI) and Short Term Investment Funds (STIF). MMI are highly liquid debt instruments purchased within one year of maturity, including US Treasury and Agency obligations. Asset-backed securities, derivatives and structured notes are not included in MMI.

STIF funds are an open-end mutual fund provided and operated by the custodian bank, that serves the daily cash needs of specific investment managers. The STIF funds are not a 2a-7 like investment pool. As such, the unit of account is each share held, and the value of the position is the fair value of the total fund's price multiplied by the number of shares held.

More information regarding the measurement of the fair value of the MMI and STIF Funds is available in Note 5 – Fair Value Measurement.

METHODS USED TO VALUE INVESTMENTS

Investments are reported at fair value. The fair value of active, publicly traded securities are quoted market prices. Securities traded on a national or international securities exchange are valued at the last reported sales price at current exchange rates. The fair value of real estate investments is based on independent annual appraisals. Fair value of other securities is determined by the mean of the most recent bid and asked prices as obtained from dealers that make markets in such securities. Fair values of the limited partnership investments are based on valuations of the partnerships as reported by the general partner. Dividends are recorded on the ex-dividend date.

More information regarding the measurement of the fair value of investments is available in Note 5 – Fair Value Measurements.

INVESTMENTS

Investments and the investment process are governed by K.S.A. 74-4921. The Board of Trustees maintains a formal Statement of Investment Policy, which addresses the governing provisions of the law, as well as specifying additional guidelines for the investment process.

Statutory authority for the Retirement System's investment program is provided in K.S.A. 74-4901 et seq., effective July 1, 1993. The Retirement Act addresses the following areas:

- Established the structure of the Board of Trustees, defines the Trustees' responsibilities, imposing the prudent expert standard upon their actions with respect to managing the assets of the Retirement System.
- Requires that the assets be invested to preserve capital and solely to provide benefits to members and the members' beneficiaries.
- Limits the possible allocations of common stock to 60.0 percent of the total book value of the fund.
- Limits the possible allocation of total alternative investments to 15.0 percent of the total investment assets of the fund.
- The annual allowance for new alternative (non-publicly traded) investments is limited to 5.0 percent of the market value of the total investment assets of the fund as measured from the end of the preceding calendar year.
- Establishes limits on the structure of future investments in real estate or alternative investments.
- Requires that the Board develop investment policies and objectives to invest fund assets.
- Authorizes the Board to hire qualified professionals/firms to assist in investing the fund and requires that such professionals/firms obtain errors and omissions insurance coverage and fidelity bond insurance coverage.
- Authorizes the Board to pay for the services of retained professionals/firms at the rates fixed by the Board, excluding any reimbursement for expenses and subject to the provisions of the appropriations act.
- Provides for an annual audit and requires that the Board annually examine the investment program, specific investments and its policies and practices.

In fulfilling its responsibilities, the Board of Trustees has contracted with 20 investment management firms and a master global custodian. The Retirement System has six permissible investment categories: 1) equities, 2) real estate, 3) fixed-income securities, 4) derivative products, 5) cash equivalents, 6) alternative investments.

The Pension Plan's policy in regard to the allocation of invested assets is established and may be amended by the Board of Trustees. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan. The following was the Board of Trustee's adopted asset allocation policy as of June 30, 2019:

Asset Class	Interim Target Allocations
Domestic Equities	23.5%
International Equities	23.5
Yield Driven [(1)]	8.0
Real Return [(2)]	11.0
Fixed	11.0
Short Term Investments	4.0
Real Estate	11.0
Alternatives	8.0
	100.0%

(1) The Yield Driven asset class above is reported in domestic equities and fixed income on the Statement of Fiduciary Position.
(2) The Real Return asset class above is reported in fixed income and real estate on the Statement of Fiduciary Position.

The System's asset allocation and investment policies include active and passive investments in international securities. The Systems target allocation is to have 23.5 percent of assets in dedicated international equities. At June 30, 2019, the System utilized two currency overlay managers to reduce risk by hedging up to 100 percent of the developed foreign currency market for international equity portfolios. At June 30, 2019, the System's total foreign currency exposure was 47.5 percent hedged.

Equities are considered to be common or preferred corporate stocks; warrants or rights; preferred stock that is convertible into common stock; investment trusts; or participation in commingled (equity) funds managed by a bank, insurance company or other professional equity investment manager. These stocks are listed on well-recognized or principal exchanges of the United States or foreign countries.

Fixed income securities are considered to be US and foreign treasury or government agency obligations; US or foreign corporate bonds; asset backed securities such as CMOs, mortgage-backed securities and segments of these types of vehicles; or participation in commingled (fixed income) funds, managed by a bank, insurance company or other professional fixed income investment manager. Core fixed managers invest in large, liquid sectors generally consistent with their benchmark. Strategic fixed managers seek investments from the complete range of global fixed income securities. Subject to the Board's limitations, these investments also include the debt of emerging markets. Emerging markets are considered to be those countries that are included in the JP Morgan Emerging Markets Index Global (EMBI Global).

Alternative investments are those investments that do not trade publicly on an organized exchange. Examples include, but are not limited to, partnership funds that focus on private equity, venture capital, buyout, mezzanine financing or special situations or natural resources. Prospective investment in any alternative investments are subject to the following requirements:

- There are at least two other sophisticated investors.
- The System's portion of an investment will not be more than 20.0 percent of the total investment.
- Any individual investment (standing alone or within a pool) must not be more than 2.5 percent of the Fund's total alternative investment commitments.
- A favorable recommendation has been received from an independent expert.
- The investment is consistent with the Investment Policy Statement.
- The Board has received and considered the due diligence findings regarding the investment.
- Criteria have been established that will be used as a guideline to determine when no additional investments will be made and when the investment will be liquidated.

A security's duration is determined by a third-party pricing agency. Real estate investments are investments in real property on a direct ownership basis, through a realty holding corporation, joint partnership, private real estate investment trusts (REITs) (contained within the real estate portfolio), participation in commingled real estate funds (managed by a bank, insurance company or other professional real estate investment manager) or through debt secured by real estate. Any real estate investment shall support the System's intent to hold a real estate portfolio that is diversified by geographic location, property type, stage of development and degree of leverage.

RECEIVABLES

In addition to statutorily determined contractually required contributions, certain agencies also make payments through an additional component of their required employer contribution rate or annual installment payments, both options include interest at 8.0 percent per year, for the cost of service credits granted retroactively when the agency initially joined the Retirement System. As of June 30, 2019, the outstanding balance was $4,196,871. These payments are due over various time periods up through December 31, 2032.

The 2016 Legislature passed Senate Bill 161 authorizing the delay of $64.1 million in Fiscal Year 2017 contributions. Payment was authorized to be made in a series of twenty annual payments of $6.4 million beginning in Fiscal Year 2018. Senate Sub. for HB 2002 authorized the delay of $194 million in Fiscal Year 2019 contributions. Payment was authorized to be made in a series of twenty annual payments of $19.4 million beginning in Fiscal Year 2020. These amounts have been set up as receivables, the balance as of June 30, 2019, was $255,304,367.

CAPITAL ASSETS

Furniture, fixtures and equipment are reported on the Statement of Fiduciary Net Position at historical cost, net of accumulated depreciation. These assets are depreciated on a straight-line basis over an average useful life of three to ten years with no salvage value. The book value of furniture, fixtures, equipment and land as of June 30, 2019, was $22,421,620, with accumulated depreciation of $19,625,012. In Fiscal Year 1999, the Retirement System purchased an office building and garage in Topeka, Kansas. Fifty percent of the floor space of the office building is used as the System's administrative headquarters and the remaining 50 percent is a real estate investment. The administrative portion of the building and garage are reported on the Statement of Fiduciary Net Position as a capital asset and are being depreciated. Accumulated depreciation on the administrative portion of the building and garage as of June 30, 2019, was $2,983,530. The office building and garage are being depreciated over a period of 33 years on an accelerated method. At June 30, 2019, the carrying value of the System's administrative headquarters was $634,626.

USE OF ESTIMATES

The preparation of financial statements in conformity with GAAP requires the System's management to make estimates and assumptions that affect the reported amounts of assets, liabilities and changes therein, disclosure of contingent assets and liabilities and the total pension liability at the date of the financial statements. Actual results could differ from those estimates.

RISKS AND UNCERTAINTIES

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

FEDERAL INCOME TAX

The System is a qualified pension plan under Section 401(a) of the Internal Revenue Code (IRC) and, as such, is required to withhold federal income tax from member and benefit recipient payments in accordance with IRC. As a public entity, the System is not required to file a federal income tax return with the Internal Revenue Service.

NEW ACCOUNTING PRONOUNCEMENTS

GASB Statement No. 84, Fiduciary Activities. This Statement establishes criteria for identifying fiduciary activities for state and local governments. The focus of the criteria generally is on (1) whether a government is controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. Separate criteria are included to identify fiduciary component units and postemployment benefit arrangements that are fiduciary activities. An activity meeting the criteria should be reported in a fiduciary fund in the basic financial statements. Retirement management is currently evaluating GASB Statement No. 84, which is expected to have an impact on the Retirement System's financial statements and will be implemented in Fiscal Year 2020.

GASB Statement No. 87, Leases. This Statement revises the definition of a lease, and establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. Under this Statement, a lessee is required to recognize a lease liability and an intangible right-to-use lease asset, and a lessor is required to recognize a lease receivable and a deferred inflow of resources. Retirement management is currently evaluating the impact of GASB Statement No. 87, which will be implemented in Fiscal Year 2021.

NOTE 3 – CASH AND INVESTMENTS

CASH

The System advances cash deposits to a disability administrator for monthly disability benefits and death benefits for members who are disabled. As of June 30, 2019, the System's deposits with its disability administrator were $174,141. The System does not have a deposit policy for custodial credit risk associated with these deposits.

INVESTMENTS

The following table presents a summary of the Retirement System's investments by type as of June 30, 2019, at fair value:

Investment Type	Fair Value
Domestic Equities	$ 6,129,375,737
International Equities	4,311,377,484
Fixed Income:	
US Government	2,122,280,305
US Agencies	527,799,340
US Corporate	2,341,254,733
Foreign Fixed Income	477,447,545
Short Term Investments	351,748,409
Real Estate:	
Partnerships	757,065,895
Commingled Funds	1,563,077,917
Separate Accounts	76,323,134
Alternatives	1,600,568,471
Total	$ 20,258,318,970

CUSTODIAL CREDIT RISK

The custodial credit risk for investments is the risk that, in the event of the failure of the custodial counterparty to a transaction, the System will not be able to recover the value of investments or collateral securities that are in the possession of the custodial bank. At June 30, 2019, the System had US Dollar and foreign currency balances at custodial banks with a net value of $13.6 million. This is primarily foreign currency deposits facilitating international investments in the respective local markets. The System's deposits of approximately $9.0 million held at the State Treasury were fully collateralized at fiscal year end by FDIC insurance or pledged collateral (government securities or FHLB letters of credit).

CONCENTRATION OF CREDIT RISK

No single issuer represents 1.0 percent or more of System assets other than US Government (10.0 percent) and Agencies (3.1 percent). KPERS' investment policy does not prohibit holdings above 5.0 percent in the debt securities of US government issuers. Government sponsored enterprises (GSEs, such as FNMA) are considered government issuers for the purpose of implementing KPERS investment policy.

FOREIGN CURRENCY RISK

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or a deposit. The System does not have a formal investment policy that limits its exposure to foreign currency risk. The following table presents the foreign currency risk by type of investment as of June 30, 2019:

FOREIGN CURRENCY RISK

USD Equivalent				
Equity	Fixed	Currency	Total	Percent
$ 25,660,738	$ 9,344,122	Australian Dollar	$ 35,004,860	0.95%
27,378,920	—	Brazilian Real	27,378,920	0.74
468,789,945	242,190,782	British Pound Sterling	710,980,727	19.21
207,627,647	16,775,612	Canadian Dollar	224,403,259	6.07
80,174,357	2,243,745	Danish Krone	82,418,102	2.23
1,127,222,170	169,078,022	Euro Currency Unit	1,296,300,192	35.03
250,590,049	—	Hong Kong Dollar	250,590,049	6.77
11,986,583	—	Indonesian Rupiah	11,986,583	0.33
10,428,334	—	Israeli New Shekel	10,428,334	0.28
490,857,753	26,390,252	Japanese Yen	517,248,005	13.98
5,582,603	—	Mexican New Peso	5,582,603	0.15
60,073,571	—	New Taiwan Dollar	60,073,571	1.62
110,429	4,109,531	New Zealand Dollar	4,219,960	0.11
21,068,349	—	Norwegian Krone	21,068,349	0.57
907,192	—	Philippine Peso	907,192	0.02
46,736,457	—	Singapore Dollar	46,736,457	1.26
45,551,274	—	S African Comm Rand	45,551,274	1.23
67,145,075	—	South Korean Won	67,145,075	1.82
70,823,511	7,315,479	Swedish Krona	78,138,990	2.11
191,915,204	—	Swiss Franc	191,915,204	5.19
10,376,008	—	Thailand Baht	10,376,008	0.28
1,687,707	—	Turkish New Lira	1,687,707	0.05
$ 3,222,693,876	$ 477,447,545		$ 3,700,141,421	100.00%

CREDIT RISK

Credit risk is the risk that an issuer or other counterparty to a debt investment will not fulfill its obligations. Each fixed portfolio manager is required to maintain a reasonable risk level relative to its benchmark.

In the following table, Short Term includes commercial paper, repurchase agreements and other short-term securities. Agency securities are those implicitly guaranteed by the US Government. US Government securities are treasury securities and agencies explicitly guaranteed. Securities with a "not rated" quality rating are primarily bank loans, certificates of deposit and preferred stock. System assets as of June 30, 2019, subject to credit risk are shown with current credit ratings.

CREDIT RISK

Quality Rating	Short Term Investments	Corporate(1)	US Government	Agency	Total
Not Rated	$ 130,305,311	$ 113,088,040	$ —	$ —	$ 243,393,351
AAA	62,488,131	622,172,295	2,019,796,660	2,330,266	2,706,787,352
AA	13,780,290	56,719,704	102,483,645	495,002,914	667,986,553
A	40,546,558	304,651,878	—	10,682,590	355,881,026
A-1/P-1	7,268,881	58,738,572	—	—	66,007,453
BBB	96,198,238	817,916,549	—	15,649,443	929,764,230
BB	—	423,508,889	—	1,836,711	425,345,600
B	1,161,000	344,822,244	—	2,297,416	348,280,660
CCC	—	101,745,357	—	—	101,745,357
CC	—	3,741,536	—	—	3,741,536
C	—	3,438,135	—	—	3,438,135
Total	$ 351,748,409	$2,850,543,199	$2,122,280,305	$ 527,799,340	$ 5,852,371,253

(1) Includes preferred equities subject to credit risk.

INTEREST RATE RISK

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Investment policy requires all fixed portfolios maintain a reasonable risk level relative to their benchmarks. The same System assets as above are also subject to interest rate risk. These are shown in the following grouped by effective duration ranges. The weighted effective durations shown in the following table are grouped by asset category.

INTEREST RATE RISK

Effective Duration	Short Term Investments	Corporate[1]	US Government	Agency	Total
0 – 1 Yr	$ 351,748,409	$ 653,004,672	$ 61,185,420	$ 77,881,961	$ 1,143,820,462
1 – 3 Yrs	—	531,595,902	488,303,870	300,751,897	1,320,651,669
3 – 5 Yrs	—	551,995,962	129,523,508	134,220,027	815,739,497
5 – 10 Yrs	—	719,294,882	1,187,084,590	11,231,880	1,917,611,352
> 10 Yrs	—	394,651,781	256,182,917	3,713,575	654,548,273
Grand Total	$ 351,748,409	$2,850,543,199	$2,122,280,305	$ 527,799,340	$ 5,852,371,253

(1) Includes preferred equities subject to interest rate risk.

ANNUAL MONEY-WEIGHTED RATE OF RETURN

For the year ended June 30, 2019, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 6.31 percent. This return was 8.34 percent for Fiscal Year 2018. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

NOTE 4 – INVESTMENT DERIVATIVES

Derivative instruments are tools for use by the System's investment managers for the purposes of:

- Risk Management: Mitigating or managing portfolio risks through hedging or otherwise modifying specific risk exposure.

- Substitution: In substitution for "cash market" securities/ positions, or for modifying portfolio positioning in lieu of cash market transactions.

- Derivative-based Strategies: As a structural part of an investment strategy.

- Efficiency/Cost Effectiveness: Efficiency and/or cost effectiveness in implementing: portfolio construction, trading, portfolio strategy or managing a portfolio's risk/ return profile.

The following table summarizes the derivatives held by the Retirement System as of June 30, 2019:

INVESTMENT DERIVATIVE SUMMARY

	Asset Class(1)	Notional Value	Fair Value
Domestic Equity Futures	Domestic Equities	$ 23,577,390	$ —
International Equity Futures	International Equities	82,499,118	—
Fixed Futures	Fixed	57,396,583	—
TBA Agency Bonds (2)	Fixed	3,554,055	3,554,055
Foreign Currency Forwards	Fixed	7,818,088,962	(19,414,207)

(1) The Asset Class that the Fair Values and Revenues are included in other schedules. Futures and Options reflect the summed absolute values of the exposures.
(2) TBA Agency Bond notional values are equal to their fair values. KPERS investment policy allows managers to carry short TBA values as long as they have offsetting long holdings in similar securities with similar characteristics.

The following table summarizes the activity of the derivatives held by the Retirement System during the year ended June 30, 2019, at fair value:

INVESTMENT DERIVATIVE FAIR VALUES

	June 30, 2018	Increases	Decreases	June 30, 2019
TBA Agency Bonds	$ 132,098,225	$ 546,532,313	$ (675,076,483)	$ 3,554,055
Foreign Currency Forwards	27,313,154	17,157,818	(63,885,179)	(19,414,207)
Options Purchased	75,000	296,135	(371,135)	—
	$ 159,486,379	$ 563,986,266	$ (739,332,797)	$ (15,860,152)

FUTURES

Futures contracts are commitments for delayed delivery (liability) or receipt (asset) of securities in which the seller agrees to make delivery and the buyer agrees to take delivery at a specified future date, of a specified instrument, at a specified price. Market risk arises due to market price and interest rate fluctuations that may result in a decrease in the fair value of futures contracts. Futures contracts are traded on organized exchanges and require initial margin in the form of cash or marketable securities. Holders of futures contracts look to the exchange for performance under the contract. Accordingly, the credit risk due to nonperformance of counterparties to futures contracts is minimal. Daily, the net change in the futures contract value is settled in cash with the exchanges, making the fair values always equal to zero after the daily margin flow. At the close of business June 30, 2019, the System had total net margins receivable the next day of $0. Short-term investments in amounts necessary to settle the economic value of the futures contracts were held in the portfolio so that no leverage was employed in accordance with the Statement of Investment Policy. The daily margin flows affect cash assets held at broker. Realized gains/losses are recognized at contract maturity and included with underlying security type returns. Total gains of $7.5 million were associated with futures for the year ending June 30, 2019.

OPTIONS

The Retirement System also participates in option contracts. These contractual agreements give the purchaser the right, but not the obligation, to purchase or sell a financial instrument at a specified price within a specified time. The option buyer has some counterparty risk in the event the seller cannot deliver when exercised. This involves opportunity cost and possible loss of option fees. The option seller holds the securities and has minimal counterparty risk. Options strategies used by the Retirement System are designed to provide exposures to positive market moves and limit exposures to interest rate and currency volatility.

SWAPS

Interest rate swaps are agreements between two counterparties to exchange future cash flows. These are generally fixed vs. variable flows, and can be either received or paid. These swaps are used to adjust interest rate and yield curve exposure and substitute for physical securities. Long swap positions (receive fixed) increase exposure to long-term interest rates; short positions (pay fixed) decrease exposure. Counterparty risk is limited to monthly exchanged or netted cash flows.

Credit default swaps are used to manage credit exposure without direct purchase or sale of securities. Written credit default swaps increase credit exposure (selling protection) obligating the seller to buy the bonds from the counterparty in the event of a default. This creates credit risk, but has very little counterparty risk. Purchased credit default swaps decrease exposure (buying protection), providing the right to "put" bonds to the counterparty in the event of a default. This decreases credit risk, and has counterparty risk in the event the seller of protection fails to cover the defaulting security. Controls are established by the investment managers to monitor the creditworthiness of the counterparties.

TBA AGENCY BONDS

A TBA is a contract for the purchase or sale of agency mortgage-backed securities to be delivered at a future agreed-upon date; however, the actual pool identities or the number of pools that will be delivered to fulfill the trade obligation or terms of the contract are unknown at the time of the trade. A common practice is to buy a TBA security thirty to sixty days in advance of the issue date with the issue date as the trade settle date, then selling the security four days before issue date, with the same settle date. This allows the trader to realize a gain or loss on the security based on changes in interest rates, without taking possession of, or paying for, the security. The only cash cost is the broker cost of the trades. These have minimal credit risk, while this scenario is designed specifically to increase interest rate exposure.

FOREIGN CURRENCY FORWARDS

The Retirement System's international investment managers use forward contracts to obtain currencies necessary for trade execution and manage the exposure of the international investments to fluctuations in foreign currency. Active international investment managers use forward contracts to enhance returns or to control volatility. Currency risk arises due to foreign exchange rate fluctuations. Forward foreign exchange contracts are negotiated between two counterparties. The Retirement System could incur a loss if its counterparties failed to perform pursuant to the terms of their contractual obligations. Since the System holds the offsetting currency in the contract, and controls are established by the investment managers to monitor the creditworthiness of the counterparties, risk of actual loss is minimized. Foreign currency forwards are reflected on the financial statements in offsetting notional receivable and payable amounts for the two sides of the contract. Fair value is reflected as unrealized gains or losses when currency rates fluctuate during the life of the contract.

The Retirement System utilizes two currency overlay managers to reduce, or partially hedge, the System's exposure to foreign currencies through the international equities portfolio. At June 30, 2019, the fair value of international equities was $4.3 billion. The overlay managers evaluate the System's international equities exposure to currencies, and buy/sell inverse currency forwards in relation to the overall currency exposures. The inverse relationship of these hedging investment forwards uses their exposure to currency risks to reduce overall System exposure. The Statement of Investment Policy stipulates that the overlay manager should: "Take forward currency exchange contract positions which will have the intent and effect of hedging the currency exposure of the underlying international equity assets." The Statement of Investment Policy further states the forward currency exchange contract positions be used to "Maintain an acceptable risk level by reducing the negative volatility of the currency component of return."

The forward contracts are purchased as needs are determined by the hedge manager, and mature quarterly. Gains/losses are realized during those periods and the contracts are rolled over to the next period as appropriate. Through these processes, hedging contracts can adapt to any changes to portfolio currency exposures. Since the hedging currency forwards track to the overall exposure, and they reference the same foreign exchange rates as the underlying portfolio, this hedge is known to be effective through consistent critical terms. An investment portfolio hedge such as this does not match the hedging forwards to any specific hedged security. The accessibility and liquidity of the currency forwards market allows these hedging forwards to roll forward and seamlessly hedge the ongoing foreign currency exposures.

Following is a summary of the foreign currency forwards exposure at the fiscal year ended June 30, 2019:

INVESTMENT CURRENCY FORWARDS

	Notional Cost (USD)	Pending Foreign Exchange Receivables (USD)	Pending Foreign Exchange Payables (USD)	Fair Value June 30, 2019 (USD)
Australian Dollar	$ 304,858,297	$ 304,293,081	$ (305,798,059)	$ (1,504,978)
Brazilian Real	311,034	310,251	(311,035)	(784)
British Pound Sterling	1,611,873,760	1,610,629,619	(1,609,422,839)	1,206,780
Canadian Dollar	326,838,581	328,221,331	(330,081,425)	(1,860,094)
Danish Krone	77,983,946	77,986,284	(78,109,475)	(123,191)
Euro Currency Unit	2,814,264,141	2,816,330,971	(2,823,373,953)	(7,042,982)
Hong Kong Dollar	297,481,864	297,488,494	(297,819,603)	(331,109)
Israeli New Shekel	14,103,744	14,149,258	(14,136,943)	12,315
Japanese Yen	1,246,231,729	1,244,923,316	(1,252,831,090)	(7,907,774)
New Zealand Dollar	99,935,192	100,656,548	(100,682,117)	(25,569)
Norwegian Krone	196,702,090	196,451,043	(196,569,085)	(118,042)
Philippine Peso	324,047	324,291	(324,047)	244
Singapore Dollar	155,490,610	155,580,743	(155,857,261)	(276,518)
Swedish Krona	141,981,548	142,601,581	(141,745,118)	856,463
Swiss Franc	529,708,379	530,607,885	(532,906,853)	(2,298,968)
	$ 7,818,088,962	$ 7,820,554,696	$ (7,839,968,903)	$ (19,414,207)

Investment forwards counterparty exposure at June 30, 2019, is as follows:

INVESTMENT FORWARDS COUNTERPARTY EXPOSURE

Counterparty Name	Notional $USD	Fair Value	Lowest Long-Term Rating
Australia & New Zealand Banking Group	$ 635,857,891	$ (1,141,778)	AA-
Bank of America N.A.	258,585,980	(1,271,100)	A+
Bank of New York	4,253,199	(921)	AA-
Barclays Bank PLC Wholesale	266,410,649	(1,230,698)	A
BNP Paribas SA	288,212,125	(1,256,335)	A+
Citibank N.A.	324,919,878	(622,691)	A+
Deutsche Bank AG	163,532,100	(3,740)	BBB
Goldman Sachs Bank USA	1,450,416	3,274	A+
Goldman Sachs International	311,369,634	(1,493,815)	A
HSBC Bank PLC	973,159,471	(1,822,260)	A
HSBC Bank USA	170,640,326	(1,476,736)	AA-
Income Repatriation Boston	1,239,493	(2,697)	NR
JP Morgan Chase Bank N.A. London	975,696,113	934,141	A+
Merrill Lynch International	124,765,430	(204,570)	A-
Morgan Stanley & Co. Inc.	471,248	(392)	BBB+
Morgan Stanley & Co. International PLC	272,281,355	(1,155,271)	BBB+
National Australia Bank Limited	414,478,528	(3,143,372)	AA-
Royal Bank of Canada (UK)	303,095,714	(1,297,089)	A
Standard Chartered Bank	4,830,965	162,729	A
State Street Bank & Trust Company	5,959,975	(16,800)	AA-
State Street Bank & Trust Company (HK)	324,047	245	AA-
State Street Bank London	1,167,110,306	(3,499,250)	A
Toronto Dominion Bank	840,587,020	(521,080)	AA-
UBS AG	2,466,424	5,439	A+
UBS AG London	123,697,147	(269,427)	A+
Westpac Banking Corporation	182,693,528	(90,013)	AA-
	$ 7,818,088,962	$ (19,414,207)	

NOTE 5 – FAIR VALUE MEASUREMENT

The Retirement System categorizes fair value measurements of investment assets and liabilities within the fair value hierarchy established by generally accepted accounting principles. As a pension fund, 100 percent of the System's custodied assets and liabilities are held primarily for income or profit for the purpose of paying current or future member benefits. These investments are valued through industry standard practices for the respective type of security at a price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The hierarchy is based on the transparency of inputs to the valuation of the assets as of the measurement date. The three levels are defined as follows:

Level 1 - Inputs to the valuation methodology are quoted prices for identical instruments in active markets.

Level 2 - Inputs other than quoted prices are observable, either directly or indirectly.

Level 3 - One or more significant inputs to the valuation methodology are unobservable.

The following table presents the Retirement System's recurring fair value measurements as of June 30, 2019:

INVESTMENTS AND DERIVATIVE INSTRUMENTS MEASURED AT FAIR VALUE

		Fair Value Measurements Using:		
	Total as of 6/30/2019	Quoted prices in active markets for identical assets Level 1	Significant other observable inputs Level 2	Significant unobservable inputs Level 3
Investments by Fair Value Level				
Debt Securities				
US Treasury	$ 1,104,087,043	$ 63,809,794	$ 1,040,277,249	$ —
US Treasury Commingled	915,709,617	—	915,709,617	—
GNMA	102,483,645	—	102,483,645	—
US Agency	524,245,285	—	524,245,285	—
US Corporate, Municipalities	1,829,252,951	—	1,826,227,713	3,025,238
US Bank Loans	160,879,902	—	158,455,414	2,424,488
Yankees	351,121,880	—	351,121,880	—
International	477,447,545	—	477,447,545	—
Total Debt Securities	5,465,227,868	63,809,794	5,395,968,348	5,449,726
Equity Securities				
Domestic Common Stock	6,129,009,454	6,127,908,325	—	1,101,129
Domestic Preferred	366,283	366,283	—	—
International Common	3,127,805,529	3,127,805,529	—	—
International Commingled and ETF	1,152,097,317	1,152,097,317	—	—
International Preferred Stock	31,474,638	31,474,638	—	—
Total Equity Securities	10,440,753,221	10,439,652,092	—	1,101,129
Real Estate and Alternatives				
Separate Properties	74,422,170	—	—	74,422,170
Home Office Property, Rentable	1,900,964	—	—	1,900,964
Alternatives Distribution	141,320	—	—	141,320
Total Real Estate and Alternatives	76,464,454	—	—	76,464,454
Investments by Fair Value Level	15,982,445,543	10,503,461,886	5,395,968,348	83,015,309
Derivatives by Fair Value				
To- Be- Announced Agencies	3,554,055	—	3,554,055	—
Total Derivatives by Fair Value Level	3,554,055	—	3,554,055	—
Total Investments and Derivatives by Fair Value Level	$ 15,985,999,598	$ 10,503,461,886	$ 5,399,522,403	$ 83,015,309

		Unfunded Commitment	Transfer or Redemption Frequency	Redemption Notice
Investments Measured at Net Asset Value (NAV)				
Private Equity Partnerships	1,600,427,151	1,371,979,533	Quarterly	30 days
Real Estate Partnerships	757,065,895	399,842,249	Quarterly	30 days
Real Estate Core Funds	1,487,518,437	32,500,000	Quarterly	30 days
Real Estate Other Funds	75,559,480	—	Biannual	30 days
Total Investments measured at NAV	3,920,570,963			
Short Term Investments measured at amortized cost				
STIF Funds	23,616,360			
Money Market Investments	328,132,049			
Total Short Term Investments	351,748,409			
Total Investment Value	$ 20,258,318,970			

DEBT SECURITIES

US Treasury Level 1 assets were actively traded "on the run" at June 30, 2019. GNMA are those agencies explicitly guaranteed by the US government. US Corporate and US Bank Loan debt in Level 3 are those securities in inactive markets where prices are provided by investment managers or other unobservable pricing inputs.

Except for the Treasury Level 1, US Corporate and US Bank Loan Level 3 securities noted above, debt securities use Level 2 inputs priced by recognized third-party vendors based on actual prices of similar securities and utilizing industry standard models that consider various assumptions including time value, yield curves, volatility factors, default rates, credit rating and treasury rates. Significant inputs are observable in the marketplace, can be derived from observable data or are supported by observable levels at which transactions are executed in the marketplace.

Yankee bonds are international corporate and government bonds that qualify to be sold on domestic exchanges in US dollars.

Bonds in the international category are traded in local currencies and are subject to currency risk. See Note 3.

EQUITY SECURITIES

Equity securities include both direct interest in equities and equity funds. The fair value for those equity securities in Level 1 are based on quoted market prices of identical securities or equity funds traded on an established exchange. Level 3 equity securities are valued based on prices provided by investment managers or other unobservable pricing inputs.

REAL ESTATE AND ALTERNATIVES MEASURED AT FAIR VALUE

The Retirement System wholly owns three separate properties including timberland and its home office. These are valued according to annual independent professional appraisals and can be sold at any time. Appraisals utilize comparable sales, inventory estimates and present values of cash flows to determine respective property valuations. There are no unfunded commitments for these properties. The home office property is 50 percent System occupied and 50 percent rentable space. This building was split into two units of account at purchase. The System's portion is included in capital assets. The alternatives distribution is valued based on general partner information that is unobservable.

FORWARDS

Currency forwards are included in payables and receivables on the Statement of Net Fiduciary Position. Fair value for these is reflected by adjusting those payable/receivable values for daily fluctuations in currency exchange rates. The System had $7.8 billion in outstanding currency forward contract payables and receivables at June 30, 2019. The net fluctuation in currency rates at that time decreased the unrealized fair value of those contracts by $19,414,207. See Note 4 of these financial statements for more information on KPERS derivative investments.

INVESTMENTS MEASURED AT NET ASSET VALUE (NAV)

For seventy-eight (78) private equity partnerships, thirty-one (31) real estate partnerships and four (4) infrastructure partnerships, the fair value of each investment has been determined using the NAV per share or its equivalent of the Retirement System's ownership interest in the partners' capital. All partnerships provided audited December 31, 2018, financial reports with unmodified opinions, along with unaudited quarterly reports. Net asset values one quarter in arrears plus current quarter cash flows are used when recent information is not available. These partnerships are diversified across types and vintage years. The expected term of each partnership is between seven to ten years. Any sales of these would be on an inefficient secondary market that could result in values above or below those listed. Transfers to buyers is restricted to quarter end dates. No sales are contemplated.

Seven real estate core funds holding domestic properties are owned proportionately by investors. All fund properties have annual independent external appraisals and the fair value of each fund has been determined using the NAV per share or its annual independent external appraisals and the fair value of each fund has been determined using the NAV per share or its equivalent of the Retirement System's ownership interest in the partners' capital. Shares may be redeemed quarterly, with notice to the respective funds, subject to cash availability. Real estate other funds are similar to the core funds except that there is a redemption lock-up period through February 2020, followed by biannual redemptions. No redemptions are contemplated.

SHORT TERM INVESTMENTS

STIF funds are an open-end mutual fund provided and operated by the custodian bank, that serves the daily cash needs of specific investment managers. The STIF funds are not a 2a-7 like investment pool and are reported at amortized cost. There are no redemption restrictions and shares were redeemable at $1 per share as of June 30, 2019.

Money Market Investments are highly liquid debt instruments purchased within one year of maturity, including US Treasury and Agency obligations. Asset-backed securities, derivatives and structured notes are not included in money market investments. The amortized cost of the Money Market Investments is materially equivalent to fair value.

NOTE 6 – RESERVES

K.S.A. 74-4922, K.S.A. 74-4927 and K.S.A. 74-49,110 define the title and use of the required Retirement System reserves. This law requires the actuary to:

- Make an annual valuation of the Retirement System's liabilities and reserves.
- Make a determination of the contributions required to discharge the Retirement System's liabilities.
- Recommend to the Board of Trustees employer contribution rates required to maintain the System on an actuarial reserve basis.

The Members Accumulated Contribution Reserve represents the accumulation of member contributions, plus interest, credited to individual member accounts of non-retired members. At the date of retirement, the individual member's account is transferred to the Retirement Benefit Payment Reserve. After ending employment and applying for withdrawal, employee contributions, plus accumulated interest, are charged to this reserve. Interest is credited to active member accounts on June 30 each year, based on the balance in the account as of the previous December 31. The interest-crediting rate, defined by statute as the actuarial interest assumption rate, is 7.75 percent for those who became members prior to July 1, 1993. For those who first became members after June 30, 1993, interest on employee contributions is credited at the rate of 4.0 percent per year.

The Retirement Benefit Accumulation Reserve represents the accumulation of employer contributions, net investment income not credited to any other reserve and the actuarially computed net pension liability not yet funded.

The Retirement Benefit Payment Reserve represents the actuarially computed present value of future benefits for retired members plus interest credited for the current fiscal year, based upon information as of the preceding January 1.

The Expense Reserve represents investment income, which is sufficient to maintain a year-end account balance at two times the most recent fiscal year's administrative expenses amount. The System's administrative expenses are financed from this reserve.

The balance of the System's pension reserves and the net pension liability at June 30, 2019, were as follows:

Reserves	**Balance**	**Net Pension Liability**
Members Accumulated Contribution Reserve	$ 6,327,573,292	$ —
Retirement Benefit Accumulations Reserve	8,113,380,315	(8,900,634,092)
Retirement Benefit Payment Reserve	15,081,174,920	—
Expense Reserve	26,559,452	—
	$ 29,548,687,979	$ (8,900,634,092)
Total Pension Reserves		$ 20,648,053,887

NOTE 7 – NET PENSION LIABILITY OF PARTICIPATING EMPLOYERS

The components of the net pension liability of the participating employers at June 30, 2019, were as follows:

State	$ 4,562,171,085
School	15,679,860,164
Local	5,594,808,302
KP&F	3,516,513,497
Judges	195,334,931
Total Pension Liability	29,548,687,979
Fiduciary Net Position	20,648,053,887
Employers' Net Pension Liability	$ 8,900,634,092
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	69.88%

ACTUARIAL ASSUMPTIONS

The total pension liability was determined by an actuarial valuation as of December 31, 2018, which was rolled forward to June 30, 2019, using the following actuarial assumptions, applied to all periods included in the measurement:

Actuarial Cost Method	Entry age normal
Price Inflation	2.75 percent
Salary Increase	3.50 to 12.00 percent, including price inflation
Investment Rate of Return	7.75 percent compounded annually, net of investment expense, and including price inflation

Mortality rates were based on the RP-2014 Mortality Tables, with age setbacks and age set forwards as well as other adjustments based on different membership groups. Future mortality improvements are anticipated using Scale MP-2016.

The actuarial assumptions used in the December 31, 2018, valuation were based on the results of an actuarial experience study conducted for the period January 1, 2013, through December 31, 2015. The experience study is dated November 18, 2016.

The actuarial assumption changes adopted by the System for all groups based on the experience study:

- Price inflation assumption lowered from 3.00 percent to 2.75 percent
- Investment return assumption was lowered from 8.00 percent to 7.75 percent
- General wage growth assumption was lowered from 4.00 percent to 3.50 percent
- Payroll growth assumption was lowered from 4.00 percent to 3.00 percent

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage. Best estimates of arithmetic real rates of return for each major asset class as of the most recent experience study, dated November 18, 2016, as provided by KPERS' investment consultant, are summarized in the following table:

Asset Class	Long-Term Target Allocation	Long-Term Expected Real Rate of Return
Global Equities	47.0%	6.85%
Fixed Income	13.0	1.25
Yield Driven	8.0	6.55
Real Return	11.0	1.71
Real Estate	11.0	5.05
Alternatives	8.0	9.85
Short Term Investments	2.0	(0.25)

DISCOUNT RATE

The discount rate used to measure the total pension liability was 7.75 percent. The projection of cash flows used to determine the discount rate was based on member and employer contributions as outlined below.

In KPERS, the State/School and Local groups do not necessarily contribute the full actuarial contribution rate. Based on legislation first passed in 1993, the employer contribution rates certified by the Board may not increase by more than the statutory cap. Subsequent legislation in 2012 set the statutory cap at 0.90 percent for Fiscal Year 2014, 1.0 percent for Fiscal Year 2015, 1.1 percent for Fiscal Year 2016 and 1.2 percent for Fiscal Years 2017 and beyond.

In recent years, the Legislature has made several changes to statutory rates that deviate from the scheduled contribution increases set under the caps established in 2012 for the State/School group. Under 2015 SB 4, the previously certified State/School statutory rate for Fiscal Year 2015 of 11.27 percent was reduced to 8.65 percent for the last half of Fiscal Year 2015 as part of the Governor's allotment. That same session, SB 228 recertified statutory rates for the State/School group to 10.91 percent for Fiscal Year 2016 and 10.81 percent for Fiscal Year 2017 in anticipation of the issuance of $1 billion in pension obligation bonds. Legislation in the 2016 session (SB 161) provided for the delay of up to $100 million in State and School contributions to the Retirement System for Fiscal Year 2016. Concurrently, 2016 House Sub for SB 249 provided that the delayed contributions would be paid in full, with interest at 8 percent, by June 30, 2018. However, legislation passed by the 2017 Legislature removed the repayment provision. In addition, 2017 Senate Sub for Sub HB 2052 delayed $64 million in Fiscal Year 2017 contributions, to be paid over 20 years in level dollar installments. The first year payment of $6.4 million was paid in full at the beginning of Fiscal Year 2018, and appropriations for Fiscal Year 2018 were made for the State/ School group at the statutory contribution rate of 12.01 percent for that year. Additional legislation in the 2017 Session (S Sub for HB 2002) provided for a reduction of $194 million from the previously certified contribution rate of 13.21 percent in the State/School contributions for Fiscal Year 2019. Like the Fiscal Year 2017 reduction, it is to be paid back over a 20-year period, beginning in Fiscal Year 2020.

Therefore, both reductions will be accounted for as receivables by the System. The 2018 Legislature passed House Substitute for Senate Bill 109 that provided additional contributions to the school group of $56 million in Fiscal Year 2018 and $82 million in Fiscal Year 2019. The 2019 Legislature passed Senate Bill 9 that provided additional contributions to the school group of $115 million in Fiscal Year 2019. Consequently, the System received the full actuarial contribution amount in Fiscal Year 2019.

Based on the employer contribution history as described above, it is a reasonable estimate that the State/School group's contribution rate may not be certified at the statutory rate. It has been assumed that contribution rates will be made within the same range as have been seen in the past few years, between 11 to 12 percent. Using this assumption actuarial modeling indicates that employer contribution rates for the State/School group are sufficient to avoid a depletion date.

The Local, Kansas Police and Firemen and Judges groups are contributing at the full actuarial contribution rate.

SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE

The following presents the net pension liability calculated using the discount rate of 7.75 percent, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75 percent) or 1-percentage-point higher (8.75 percent) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Net Pension Liability	$12,417,493,931	$8,900,634,092	$5,951,573,502

NOTE 8 – PENSION OBLIGATION BONDS

In February 2004, the State of Kansas issued $500 million in pension obligation bonds, and KPERS received net proceeds of $440.2 million in March 2004. The proceeds have been invested to assist with financing the State and School group's unfunded actuarial liability. The debt service on the bonds will be paid by the State of Kansas in addition to the State's regular employer contributions to KPERS.

In August 2015, the State of Kansas issued $1 billion in pension obligation bonds and KPERS received the full proceeds. The proceeds have been invested to assist with financing the State and School group's unfunded actuarial liability. The debt service on the bonds will be paid by the State of Kansas in addition to the State's regular employer contributions to KPERS.

NOTE 9 – CONTINGENCIES

As of June 30, 2019, the Retirement System was committed to additional funding of capital expenditures on separate account real estate holdings, commitments on private equity, and capital calls on core and noncore real estate property trust investments, as disclosed in Note 5 – Fair Value Measurement.

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

NOTE 10 – SUBSEQUENT EVENTS

Subsequent events have been evaluated through October 30, 2019, which is the date the financial statements were available to be issued.

REQUIRED SUPPLEMENTARY INFORMATION – RETIREMENT PLAN

SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY

Last Six Fiscal Years ($ in Thousands)[1]

	2019	2018	2017	2016	2015	2014
Total Pension Liability:						
Service Cost	$ 563,297	$ 552,423	$ 570,703	$ 571,263	$ 571,944	$ 572,291
Interest	2,146,531	2,084,822	2,046,674	1,985,329	1,926,405	1,866,797
Changes of Benefit Terms	—	—	713	—	1,467	—
Differences Between Expected and Actual Experience	75,441	(47,143)	(154,326)	(133,493)	(135,542)	(216,248)
Changes of Assumptions	—	—	574,844	—	(53,014)	—
Benefit Payments, Including Refunds of Member Contributions	(1,833,297)	(1,755,854)	(1,686,676)	(1,627,032)	(1,524,380)	(1,432,846)
Net Change in Total Pension Liability	951,972	834,248	1,351,932	796,067	786,880	789,994
Total Pension Liability – Beginning	28,596,716	27,762,469	26,410,538	25,614,471	24,827,591	24,037,597
Total Pension Liability – Ending (a)	29,548,688	28,596,716	27,762,469	26,410,538	25,614,471	24,827,591
Plan Fiduciary Net Position:						
Contributions – Employer	925,352	831,735	761,610	739,184	690,564	701,818
Contributions – Member	437,353	420,285	414,538	404,856	382,058	332,163
Contributions – Non- Employer[2]	213,543	56,000	—	1,000,000	—	—
Total Net Investment Income	1,216,685	1,516,929	2,060,925	49,171	561,174	2,553,843
Other Miscellaneous Income	5,488	5,734	(97,873)	2,904	1,076	242
Benefit Payments, Including Refunds of Member Contributions	(1,833,297)	(1,755,854)	(1,686,676)	(1,627,032)	(1,524,380)	(1,432,846)
Administrative Expenses	(13,280)	(12,460)	(11,116)	(12,172)	(10,768)	(9,636)
Net Change in Plan Fiduciary Net Position	951,845	1,062,369	1,441,408	556,911	99,724	2,145,584
Plan Fiduciary Net Position – Beginning	19,696,209	18,633,840	17,192,432	16,635,521	16,535,797	14,390,213
Plan Fiduciary Net Position – Ending (b)	20,648,054	19,696,209	18,633,840	17,192,432	16,635,521	16,535,797
Employers' Net Pension Liability (a) - (b)	$ 8,900,634	$ 8,900,507	$ 9,128,629	$ 9,218,106	$ 8,978,950	$ 8,291,794

See accompanying independent auditors' report.

(1) Schedule is intended to show information for 10 years. Additional years will be displayed as they are available. Numbers may not add due to rounding.
(2) Pension obligation bond proceeds 2015H received in Fiscal Year 2016, additional contributions for the School group in 2018 and 2019.

SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY

Last Six Fiscal Years ($ in Thousands)[1]

	2019	2018	2017	2016	2015	2014
Total Pension Liability	$ 29,548,688	$ 28,596,716	$27,762,469	$ 26,410,538	$25,614,471	$ 24,827,591
Plan Fiduciary Net Position	20,648,054	19,696,209	18,633,840	17,192,432	16,635,521	16,535,797
Employers' Net Pension Liability	$ 8,900,634	$ 8,900,507	$ 9,128,629	$ 9,218,106	$ 8,978,950	$ 8,291,794
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	69.88%	68.88%	67.12%	65.10%	64.95%	66.60%
Covered Payroll	$ 7,168,557	$ 6,824,710	$ 6,715,593	$ 6,388,450	$ 6,635,196	$ 6,424,739
Net Pension Liability as a Percentage of Covered Payroll	124.16%	130.42%	135.93%	144.29%	135.32%	129.06%

See accompanying independent auditors' report.

(1) Schedule is intended to show information for 10 years. Additonal years will be displayed as they are available.

SCHEDULE OF EMPLOYER'S CONTRIBUTIONS

Last 10 Fiscal Years ($ in Thousands)

	2019	2018	2017	2016	2015
Actuarially Determined Contribution	$ 921,045	$ 937,808	$ 920,789	$ 891,638	$ 908,019
Contribution In Relation to the Actuarially Determined Contribution	908,931	817,653	745,021	721,313	676,173
Contribution Deficiency (Excess)	12,114	120,155	175,768	170,325	231,846
Covered-Employee Payroll	$ 7,168,557	$ 6,824,710	$ 6,715,593	$ 6,388,450	$ 6,635,196
Contributions as a Percentage of Covered Employee Payroll	12.70%	11.98%	11.09%	11.29%	10.19%

	2014	2013	2012	2011	2010
Actuarially Determined Contribution	$ 842,286	$ 825,197	$ 843,362	$ 709,964	$ 682,062
Contribution In Relation to the Actuarially Determined Contribution	668,811	617,925	568,015	525,727	492,006
Contribution Deficiency (Excess)	173,475	207,272	275,347	184,237	190,056
Covered-Employee Payroll	$ 6,424,739	$ 6,523,850	$ 6,541,464	$ 6,483,143	$ 6,527,400
Contributions as a Percentage of Covered Employee Payroll	10.41%	9.47%	8.68%	8.11%	7.54%

See accompanying independent auditors' report.

SCHEDULE OF IVESTMENT RETURNS

Last 10 Fiscal Years

	2019	2018	2017	2016	2015
Annual Money-Weighted Rate of Return, Net of Investment Expense	6.31%	8.34%	12.35%	0.33%	3.58%

	2014	2013	2012	2011	2010
Annual Money-Weighted Rate of Return, Net of Investment Expense	18.10%	13.87%	0.67%	22.56%	14.96%

See accompanying independent auditors' report.

NOTES TO REQUIRED SUPPLEMENTARY INFORMATION

The actuarially determined contribution rates in the schedule of the Retirement System's contributions are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule.

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 actuarial valuation follows:

	KPERS	KP&F	Judges
Valuation Date	12/31/2018	12/31/2018	12/31/2018
Actuarial Cost Method	Entry Age Normal	Entry Age Normal	Entry Age Normal
Age Normal Amortization Method	Level Percent Closed	Level Percent Closed	Level Dollar Closed
Remaining Amortization Period	Layered bases 14-25 years	Layered bases 14-25 years	Layered bases 14-25 years
Asset Valuation Method	Difference between actual return and expected return on market value recognized evenly over five-year period.		
Actuarial Assumptions:			
Investment Rate of Return[1]	7.75%	7.75%	7.75%
Projected Salary Increases[1]	3.50% - 11.50%	3.50% - 12.00%	4.00%
Cost of Living Adjustment	None	None	None

(1) Salary increases and investment rate of return include an inflation component of 2.75 percent.

OTHER SUPPLEMENTARY INFORMATION

SCHEDULE OF CONTRIBUTIONS

Fiscal Year Ended June 30, 2019

Kansas Public Employees Retirement System			
State / School Contributions			
Members	$ 285,477,989		
Employers	859,137,095		
Total State / School Contributions		$1,144,615,084	
Local Contributions			
Members	110,702,236		
Employers	160,127,313		
Total Local Contributions		270,829,549	
Total Contributions KPERS			**$ 1,415,444,633**
Kansas Police and Firemen's System			
State Contributions			
Members	3,824,941		
Employers	10,518,937		
Total State Contributions		14,343,878	
Local Contributions			
Members	35,784,337		
Employers	104,793,799		
Total Local Contributions		140,578,136	
Total Contributions KP&F			**154,922,014**
Kansas Retirement System for Judges			
State Contributions			
Members	1,563,336		
Employers	4,317,888		
Total State Contributions		5,881,224	
Total Contributions Judges			**5,881,224**
Grand Total All Contributions			**$ 1,576,247,871**

SCHEDULE OF ADMINISTRATIVE EXPENSES

Fiscal Year Ended June 30, 2019

Salaries and Wages		$ 7,830,948
Professional Services		
Actuarial	$ 208,169	
Audit	191,211	
Data Processing	956,476	
Legal	261,549	
Other Professional Services	1,178,749	
Total Professional Services		2,796,154
Communication		
Postage	314,896	
Printing	192,190	
Telephone	157,092	
Total Communication		664,178
Building Administration		
Building Management	157,357	
Janitorial Service	34,410	
Utilities	60,470	
Total Building Administration		252,237
Miscellaneous		
Dues and Subscriptions	22,626	
Office and Equipment Rent	26,189	
Other Miscellaneous	164,923	
Repair and Maintenance	28,060	
Supplies	98,464	
Temporary Services	52,686	
Travel	89,946	
Depreciation	1,253,315	
Total Miscellaneous		1,736,209
Total Administrative Expenses		**$13,279,726**

SCHEDULE OF INVESTMENT INCOME BY ASSET CLASS

Fiscal Year Ended June 30, 2019

Asset Classification	Interest Dividends and Other Transactions	Gains and Losses	Total
Marketable Equity Securities			
Domestic Equities	$147,630,374	$356,586,285	$ 504,216,659
International Equities	92,986,522	18,945,510	111,932,032
Subtotal Marketable Equities	240,616,896	375,531,795	616,148,691
Marketable Fixed Income Securities			
Government	46,126,255	112,022,105	158,148,360
Corporate	111,210,322	55,698,820	166,909,142
Subtotal Marketable Fixed	157,336,577	167,720,925	325,057,502
Temporary Investments	4,863,500	5,083,797	9,947,297
Total Marketable Securities	402,816,973	548,336,517	951,153,490
Real Estate	106,326,053	57,483,998	163,810,051
Alternative Investments	16,525,693	192,385,775	208,911,468
Total Real Estate and Alternative Investments	122,851,746	249,869,773	372,721,519
	$525,668,719	$798,206,290	$1,323,875,009

Manager and Custodian Fees and Expenses	
Investment Manager Fees	(27,356,351)
Custodian Fees & Expenses	(1,199,631)
Investment Legal & Consulting Expenses	(2,224,315)
Partnership Management Fees & Expenses	(73,819,511)
Investment Operations Expenses	(2,589,758)
Total Investment Fees and Expenses	(107,189,566)
Net Investment Income	$1,216,685,443

SCHEDULE OF INVESTMENT MANAGEMENT FEES AND EXPENSES

Fiscal Year Ended June 30, 2019

Domestic Equity Managers	
Advisory Research	$ 1,432,072
BlackRock	254,928
Mellon Capital Management	213,834
Subtotal Domestic Equity Managers	**1,900,834**
International Equity Managers	
Baillie Gifford International	2,966,750
JP Morgan International	3,004,211
Lazard Asset Management	2,151,462
State Street International	377,554
Templeton International	2,474,096
Wellington International	2,771,567
Subtotal International Equity Managers	**13,745,640**
Fixed Income Managers	
BlackRock	468,147
Loomis, Sayles & Co	1,517,699
MacKay Shields	1,314,023
Templeton	724,460
T Rowe Price	1,064,050
Western Asset Management Co	1,263,514
Subtotal Fixed Income Managers	**6,351,893**
Currency Overlay and Securitization Managers	
Adrian Lee & Partners	1,316,306
Insight Investment	1,611,423
Russell Overlay	125,334
Subtotal Currency Overlay and Securitization Managers	**3,053,063**
REIT Investment Managers	
Brookfield Redding	799,562
CenterSquare	739,514
Subtotal REIT Managers	**1,539,076**
Cash Equivalent Manager	
Payden & Rygel Investment Counsel	765,845
Subtotal Cash Management	**765,845**
Total Investment Management Fees	**27,356,351**

Other Fees and Expenses	
State Street Bank–Custodian Fees and Other Expenses	1,199,631
Consultant Fees	2,052,088
Legal Expenses	172,227
Investment Operations	2,589,758
Partnership Management Expenses	73,819,511
Subtotal Other Fees and Expenses	**79,833,215**
Total	**$ 107,189,566**

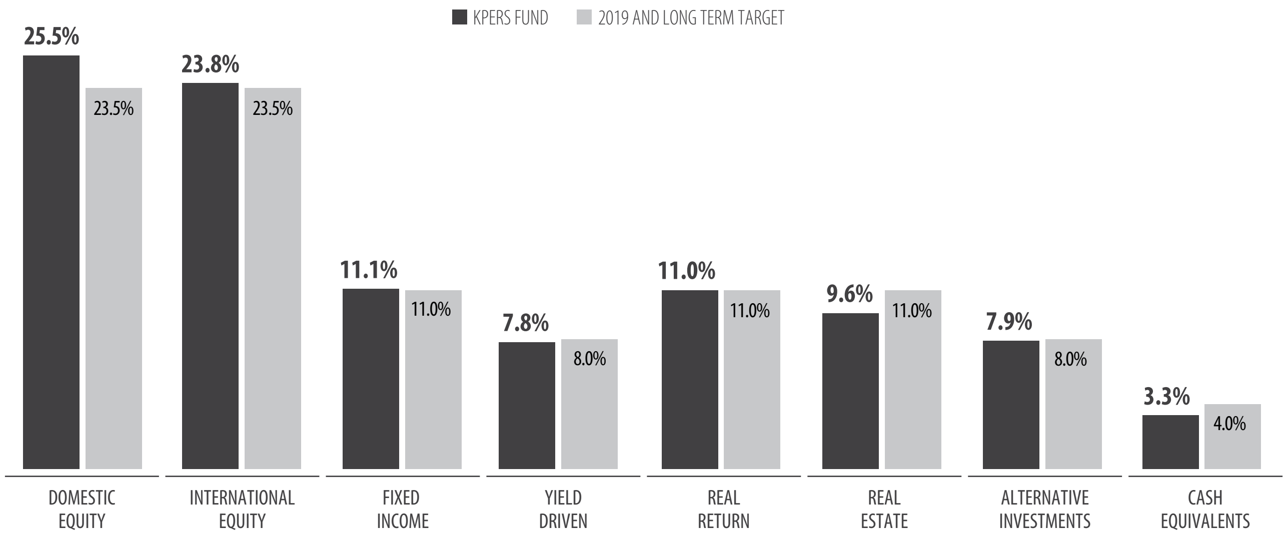
COMBINING STATEMENT OF CHANGES IN ASSETS AND LIABILITIES–AGENCY FUND

	Balance as of June 30, 2018	Additions	Deletions	Balance as of June 30, 2019
Optional Group Life Insurance				
Assets:				
Cash	$ 1,558,760	$ 7,386,304	$ 7,907,169	$ 1,037,895
Receivables:				
Due from Local/State Governments	60,088	299,237	282,939	76,386
Total Assets	1,618,848	7,685,541	8,190,108	1,114,281
Liabilities:				
Accounts Payable	1,287,072	7,685,541	7,873,315	1,099,298
Funds Held for Others	331,776	—	316,793	14,983
Total Liabilities	$ 1,618,848	$ 7,685,541	$ 8,190,108	$ 1,114,281
Group Death & Disability Benefits				
Assets:				
Cash and Cash Equivalents	$ 5,506,682	$ 61,932,902	$ 59,730,097	$ 7,709,487
Deposits with Insurance Carrier	104,807	69,334	—	174,141
Total Cash and Cash Equivalents	5,611,489	62,002,236	59,730,097	7,883,628
Receivables:				
Due from Local/State Government	10,417,331	22,237,875	21,630,278	11,024,928
Sale of Investment Securities	46,227	63,444	28,060	81,611
Total Receivables	10,463,558	22,301,319	21,658,338	11,106,539
Investments at Fair Value:				
Short Term	39,308,196	21,641,041	158,649	60,790,588
Total Investments	39,308,196	21,641,041	158,649	60,790,588
Total Assets	55,383,243	105,944,596	81,547,084	79,780,755
Liabilities:				
Accounts Payable	4,484,101	38,641,487	38,545,676	4,579,912
Funds Held for Others	50,899,142	67,303,109	43,001,408	75,200,843
Total Liabilities	$ 55,383,243	$ 105,944,596	$ 81,547,084	$ 79,780,755
Total-Agency Fund				
Assets:				
Cash and Cash Equivalents	$ 7,065,442	$ 69,319,206	$ 67,637,266	$ 8,747,382
Deposits with Insurance Carrier	104,807	69,334	—	174,141
Total Cash and Cash Equivalents	7,170,249	69,388,540	67,637,266	8,921,523
Receivables:				
Due from Others	10,477,419	22,537,112	21,913,217	11,101,314
Investment income	46,227	63,444	28,060	81,611
Total Receivables	10,523,646	22,600,556	21,941,277	11,182,925
Investments at Fair Value:				
Short Term	39,308,196	21,641,041	158,649	60,790,588
Total Investments	39,308,196	21,641,041	158,649	60,790,588
Total Assets	57,002,091	113,630,137	89,737,192	80,895,036
Liabilities:				
Accounts Payable	5,771,172	46,327,028	46,418,991	5,679,209
Funds Held for Others	51,230,919	67,303,109	43,318,201	75,215,827
Total Liabilities	**$ 57,002,091**	**$ 113,630,137**	**$ 89,737,192**	**$80,895,036**

INVESTMENT SECTION

CHIEF INVESTMENT OFFICER'S REVIEW

The Kansas Public Employees Retirement System investment portfolio represents all contributions to the plan, from both members and their employers, as well as net earnings on these assets. Total assets at the end of Fiscal Year 2019 were $20.2 billion. The System's investment portfolio is managed for the long term, in order to generate adequate returns to pay the benefits promised to members. In order to achieve that goal, the assets receive the benefit of a broadly diversified investment portfolio which includes domestic and non-U.S. stocks, bonds, real estate, timber, infrastructure, alternative investments, and cash equivalents.



BASIS OF PRESENTATION

The investment performance data is calculated by the Retirement System's custodial bank and prepared by the Retirement System's Investment Division staff. In Fiscal Year 2019, the System's custodial bank was State Street Bank and Trust. Performance calculations were prepared using time-weighted rates of return, gross of fees, unless otherwise indicated.

ASSET ALLOCATION

Portfolio investments are diversified among eight different asset classes for asset allocation and investment performance purposes, including: domestic equity, international (non-U.S.) equity, fixed income, "yield driven" assets, "real return" assets, real estate, alternative investments and cash equivalents. (NOTE: For financial reporting purposes, as reported in the Financial Section and the Investment Summary in the Investment Section, investments are categorized by the underlying security.)

The Board of Trustees, working with the System's general investment consultant, Meketa Investment Group (MIG) and investment staff, last completed an asset/liability study in January 2016. The Board reviewed several investment policy options during the asset/liability study, all of which contained an emphasis on improving funding progress over time. At the conclusion of the asset/liability study, the Board readopted the System's existing long-term asset allocation targets. The risk philosophy implied by the asset allocation policy targets places significant emphasis on managing and improving the funded status of the Retirement System over time. Subsequent to the completion of the asset/liability study, the Board has increased the cash equivalents target to 4 percent and reduced the fixed income target to 11 percent. This adjustment was necessitated by reductions in State of Kansas employer contributions to the Retirement System for Fiscal Years 2016 through 2019. The Retirement System's Board of Trustees began another asset/liability study in early 2019, and expects to complete the study and adopt a target asset mix in early 2020.

The allocation to equity investments (primarily publicly-traded stocks) continues to comprise the largest portion of the Retirement System's investment portfolio. This allocation reflects the System's long-term investment orientation and the expectation that equities will provide attractive real returns over time. Equity investments allow the investment portfolio to participate in the investment returns produced by companies seeking to grow and profit from their business activities. Equity investments are made globally, sourcing investment return from both domestic and foreign companies, and diversifying the accompanying investment risk across a broad spectrum of economies, currencies, economic sectors, and industries. Fixed income investments are also an important component of the System's asset mix. Due to its relatively low correlation with equities, the fixed income portfolio serves to diversify the risk of equity investing, and also provides a source of current income.

The yield driven asset class is designed to house those assets which derive a significant part of their expected return from income and have moderate exposure to growth risk, but also provide a degree of diversification. The yield driven asset class consists of the System's strategic fixed income portfolios, a portion which is invested in bank loan securities, and investments in domestic Real Estate Investment Trusts (REITs) and Master Limited Partnerships (MLPs).

The majority of the real return asset category is made up of Treasury Inflation Protected Securities (TIPS) and global inflation linked bonds (GILBs). These two portfolios are both managed passively. The real return asset class also houses the System's investments in infrastructure and timber assets.

Real estate investments generate returns in a different manner than equities or fixed income investments, since real estate follows a different (and typically longer) market cycle. Because it moves in a different market cycle than publicly-traded stocks and bonds, real estate provides diversification advantages to the investment portfolio, as well as some inflation protection. The System's real estate portfolio is heavily weighted to "core" real estate, which means that it also produces an attractive current income.

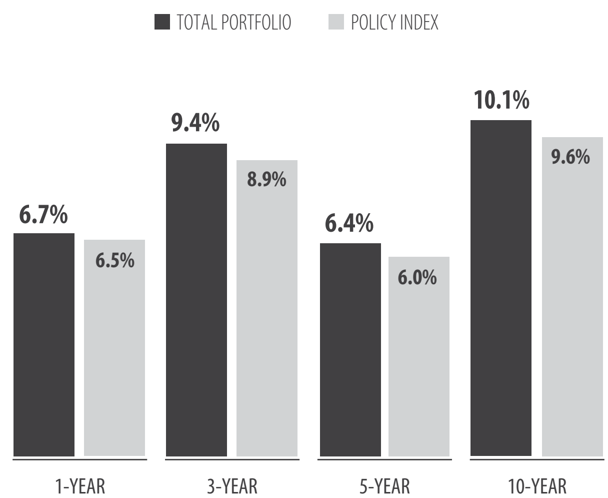
The System's alternative investments consist primarily of investments in private partnerships that make venture capital investments, pursue leveraged buyout strategies or own private debt. These investments represent the higher end of the investment risk/return spectrum. Private equity managers seek higher growth opportunities in pursuit of higher returns, with commensurate investment risk.

The System also holds cash equivalents investments, primarily to facilitate investment transactions and the cash flows needed to pay benefits. The cash equivalents portfolio is bifurcated, with a portion of the portfolio invested in a slightly longer duration strategy with daily liquidity, while the majority of the portfolio is invested as a STIF (Short-term Investment Fund).

INVESTMENT POLICY

The Board of Trustees has adopted a Statement of Investment Policy, Objectives and Guidelines (the Statement), which serves as a guide to implement the System's broad investment objectives. The Statement complements state statutes and documents the principles and standards that guide the management of the System's assets. It is binding upon all persons with authority over the assets, including investment managers, custodians, consultants, staff and the members of the Board of Trustees. The Statement is the product of the Board's careful and prudent study, and is reviewed annually and updated as needed. It sets forth the investment policies, objectives and guidelines which the Board of Trustees judges to be appropriate and prudent, in consideration of the needs of the System, and to comply with K.S.A. 74-4901 et seq., to direct the System's assets. Although the System is not subject to the provisions of the Employee Retirement Income Security Act of 1974, as amended (ERISA), the Board intends to abide by the provisions of ERISA to the greatest extent practicable. As such, this Statement is written to be consistent with ERISA. Among other things, the Statement establishes the criteria against which the System's investment managers are to be measured. In addition, it serves as a review document to guide ongoing oversight of the investment of the Fund as a yardstick of compliance with K.S.A 74-4901 et seq.

TIME WEIGHTED TOTAL RETURN
Total Portfolio

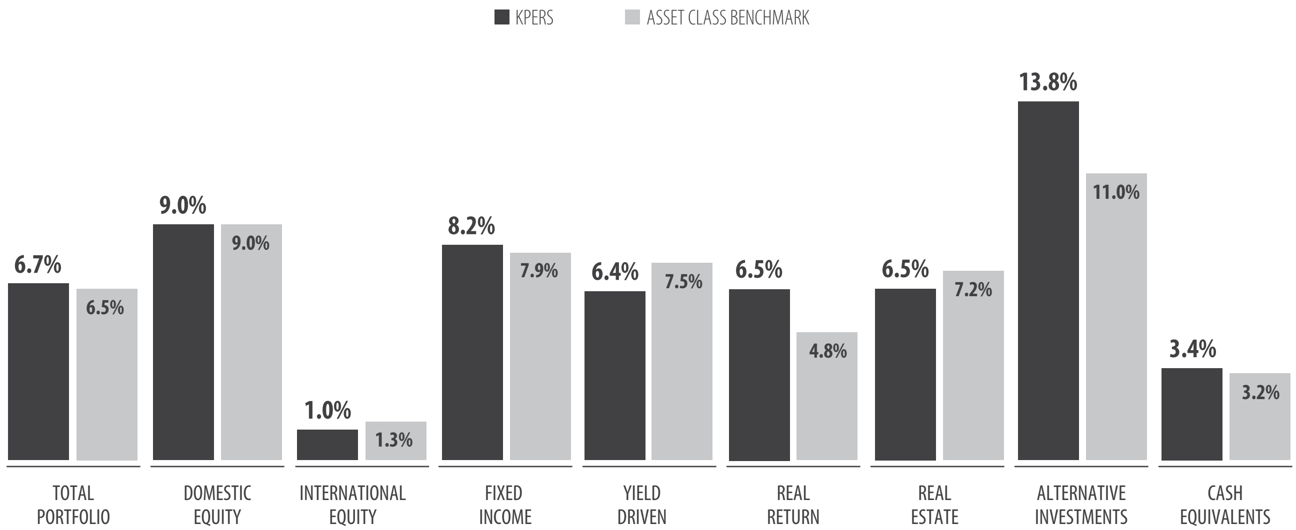


FISCAL YEAR 2019 INVESTMENT PERFORMANCE

The Retirement System's total investment portfolio experienced a 6.7 percent total return for the one year ending June 30, 2019. The 6.7 percent return outperformed the KPERS Policy Index by 0.2 percent for the fiscal year. For the three years ending June 30, 2019, the System's total investment portfolio has produced an average annualized return of 9.4 percent, which outperformed the Policy Index by 0.5 percent. The System's investment portfolio generated a more moderate 6.4 percent total return during the five years ending June 30, 2019, exceeding the Policy Index benchmark by 0.4 percent. For the ten-year time period, total return has been a more robust 10.1 percent, and has exceeded the Policy Index by 0.5 percent. As of June 30, 2019, the System's total return on total assets ranked above the median of the Wilshire TUCS universe for all pension plans for all time periods of one year and longer. The System's total return ranking was in the top quartile for the seven and ten year trailing time periods.

TIME WEIGHTED TOTAL RETURN BY ASSET CLASS

Fiscal Year 2019



For the 25-year period ending June 30, 2019, the System's assets have produced an average annualized total return of 8.4 percent, exceeding the historical 8 percent actuarial return assumption. (The System's Board of Trustees took action to reduce the actuarially assumed rate of return from 8 percent to 7.75 percent in November 2016).

FINANCIAL MARKET AND PERFORMANCE OVERVIEW

The Retirement System's investment portfolio experienced several different market environments during Fiscal Year 2019. The first and last quarters of the fiscal year produced positive total returns of 2.6 percent and 3.3 percent, respectively, for the System's entire investment portfolio. However, the second and third quarters of the fiscal year were more volatile, with a negative 6.6 percent total return in the second quarter, followed by a 7.9 percent total return in the third quarter, as global risk assets first sold off dramatically on fears of a global economic slowdown, then rebounded strongly. For the full Fiscal Year 2019, the System's investment portfolio produced a 6.7 percent total return, outperforming the Policy Index return of 6.5 percent, but underperforming the actuarial return assumption of 7.75 percent. The private equity asset class provided the best return in Fiscal Year 2019, with a 13.8 percent result, followed by the domestic equity asset class, with a 9.0 percent total return. The 1.0 percent total return from international equities was disappointing, due to both weakness in non-U.S. stocks, and a strong U.S. dollar. The System's core fixed income portfolio benefited from a decline in interest rates and the Federal Reserve's shift to a more dovish stance on monetary policy, and produced an 8.2 percent total return for the fiscal year. Returns from the real estate, real return, and yield driven asset classes were more moderate and comparable (6.5 percent, 6.5 percent, and 6.4 percent, respectively).

Trade tensions between the U.S. and China dominated geopolitical risks throughout Fiscal Year 2019. Slowing rates of global economic growth were also a consistent concern for investors during the fiscal year. The fiscal year began with the Federal Reserve in tightening mode on monetary policy. However, after the second quarter's "growth scare," the Federal Reserve pivoted to a more dovish tone in its guidance, and moved toward lowering the Fed Funds rate in late August. Other global central banks also became more accommodative in the latter half of the fiscal year. The U.S. Treasury yield curve moved to an inverted position, and was widely cited as an indicator of an impending recession in the U.S. economy. Other investor concerns included high U.S. equity valuation levels, the sustainability of corporate earnings growth, the partial shutdown of the U.S. government in the fall of 2018, Brexit, and slowing economic growth in China, Europe and Japan. However, the Retirement System is an institutional investor with an extremely long-term time horizon and a widely-diversified investment portfolio. Long-term results continue to be positive, with an 8.4 percent average annualized total return for the trailing 25-year time period, outperforming the Policy Index return of 7.8 percent for the same time period, and exceeding the current actuarial return assumption of 7.75 percent, as well as the historical 8 percent assumption (1986-2016).

INVESTMENT STAFF

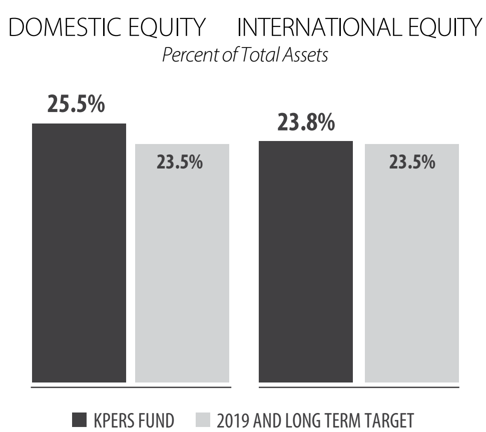
The System employs a staff of nine investment professionals to provide oversight and management of the assets and external investment managers. Under the oversight of the Chief Investment Officer (CIO), responsibility for the portfolio is assigned to the respective investment teams. The Deputy CIO for Public Markets has oversight responsibility for the publicly-traded asset classes, and oversees the System's active international equity investment portfolios. The Investment Officer for Public Markets oversees the yield driven investment portfolios, and the passive domestic and international equity portfolios. The Assistant Investment Officer has oversight responsibility for the core fixed income, the TIPS/GILB portfolios in the real return asset class, and the cash equivalents portfolios. The Deputy CIO for Private Markets manages the System's real estate and private equity investments, as well as the allocations to infrastructure and timber. The Chief Investment Officer and the four Investment Officers are supported by a team of four Investment Analysts who provide research support and assistance in managing the portfolios. Investment staff are focused on bringing a consistent, disciplined management process to all aspects of oversight of investment managers, compliance monitoring and risk management.

PUBLIC EQUITY INVESTMENTS

Public equity investments represent the largest strategy allocation within the System's portfolio. As of June 30, 2019, the market value of the System's global equity portfolio was $10.0 billion. The strategy is executed through external managers investing domestically and internationally. Active strategies are utilized for approximately 38.6 percent of the public equity portfolio, focusing entirely on international equities. The balance of the global equity portfolio is passively managed to replicate the return of broad market indices.

PORTFOLIO STRUCTURE

The following graphs describe the current and target allocations at June 30, 2019:



DOMESTIC EQUITY

Domestic equities represent 51.7 percent of the total public equity portfolio and 25.5 percent of total assets. Domestic equity investments are benchmarked against the Russell 3000 index. It is the System's view that consistent outperformance over time through active management is extremely difficult when investing in U.S. equities. Therefore, 100 percent of the domestic equity portfolio is passively managed in an index strategy. This passive exposure is designed to replicate the return on the Russell 3000 index and is implemented through two investment managers.

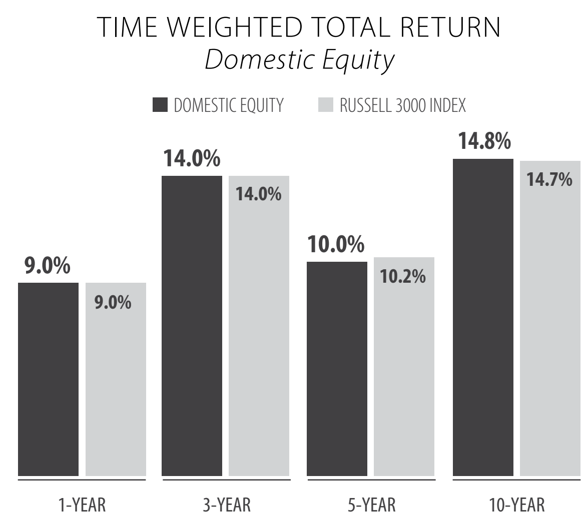
INTERNATIONAL EQUITY

International equities represent 48.3 percent of the total public equity portfolio and 23.8 percent of total assets. International equity investments are benchmarked against the MSCI All Country World – Ex U.S. Net Index. Equity investments in companies domiciled outside of the United States offer the potential to add value through prudent active management. Therefore, 80 percent of this portfolio is actively managed. The System has retained five active managers to invest across the non-U.S. developed markets and emerging markets. The balance of the international equity portfolio is invested to replicate the return on the MSCI All Country World – Ex U.S. Net Index.

PERFORMANCE

The System's domestic equity portfolio return was in line with the portfolio's benchmark during Fiscal Year 2019. The domestic equity portfolio produced a 9.0 percent total return during the fiscal year. Over longer time periods, the return on the domestic equity portfolio was also in line with its benchmark, as expected, given its purely passive approach.

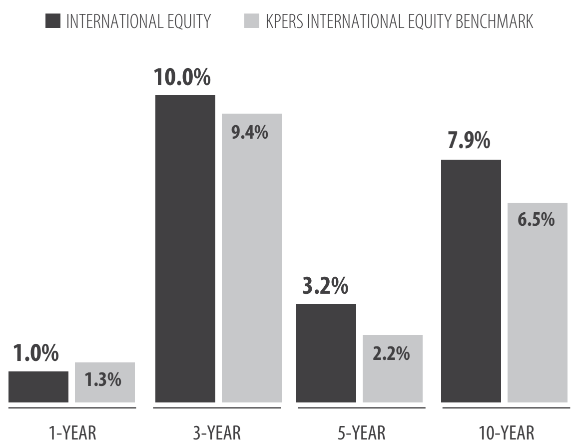
The following chart reports the domestic equity portfolio performance:



During Fiscal Year 2019 the international equity portfolio return was positive, though below the benchmark return. The international equity portfolio produced a total return of 1.0 percent for the fiscal year, relative to the 1.3 percent return for the benchmark. Over longer time periods, the international equity portfolio has produced strong relative returns, as active management has added value relative to the benchmark.

The following chart reports the international equity portfolio performance:

TIME WEIGHTED TOTAL RETURN
International Equity



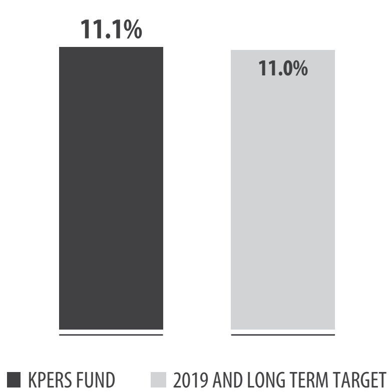
FIXED INCOME INVESTMENTS

As of June 30, 2019, the Retirement System's fixed income portfolio had a market value of $2.2 billion, representing 11.1 percent of the total assets of the System. The portfolio is structured with external managers investing through an active core fixed income U.S. mandate. The strategy is managed by two investment managers.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2019:

FIXED INCOME
Percent of Total Assets



CORE U.S. FIXED INCOME

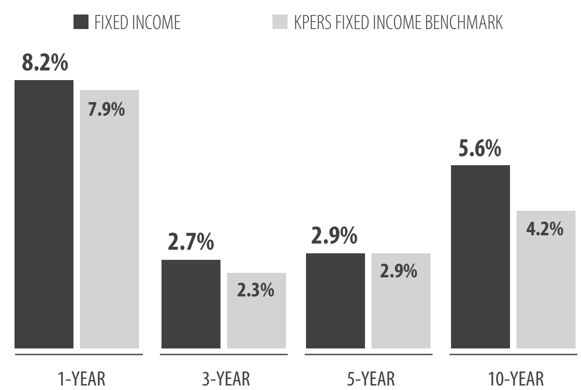
The fixed income portfolio is invested in core U.S. strategies through two active investment managers. The portfolio's objective is to provide diversification to other assets in the System's portfolio and to preserve capital while providing current income. The core fixed income U.S. strategies are primarily invested in traditional investment grade securities. The fixed income portfolio utilizes the Barclays Capital U.S. Aggregate Index as the benchmark.

PERFORMANCE

The core U.S. fixed income portfolio produced a total return of 8.2 percent during Fiscal Year 2019, outperforming the benchmark return of 7.9 percent. Both investment managers contributed positively to outperformance during the period. Over longer time periods the portfolio has provided positive absolute returns which have either met or exceeded the benchmark return.

The following chart reports the fixed income portfolio performance:

TIME WEIGHTED TOTAL RETURN
Fixed Income

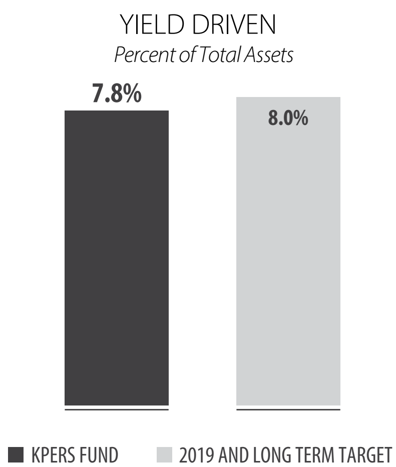


YIELD DRIVEN INVESTMENTS

Yield driven investments represent one of the newer strategy allocations within the System's investment portfolio. As of June 30, 2019, the System's yield driven portfolio had a market value of $1.6 billion representing 7.8 percent of total assets. The strategy is actively managed by two strategic fixed income managers, one bank loan manager, two REIT managers and one MLP manager. The yield driven asset class is designed to produce current income and an element of diversification away from equity risk, while also maintaining some degree of correlation with equities.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2019:



STRATEGIC FIXED INCOME

The strategic fixed income strategy represents approximately 49.8 percent of the total yield driven portfolio and 3.9 percent of total assets. The strategy is currently measured against the Barclays U.S. High Yield 2% Issuer Cap Index. The strategic fixed income portfolio maintains a minimum investment of 70 percent in high yield corporate debt securities. The System's two strategic fixed income managers produced positive returns for Fiscal Year 2019.

REAL ESTATE INVESTMENT TRUSTS (REITS)

REITs represent 21.2 percent of the yield driven asset class and 1.6 percent of the System's total assets. This strategy is benchmarked against the MSCI U.S. REIT Index. The publicly-traded real estate securities portfolio is implemented by managers which actively invest in domestic REITs, real estate operating companies (REOCs) and related investment vehicles. The domestic REIT strategy is actively managed by two investment managers. REIT fundamentals continued to improve, producing positive total returns for Fiscal Year 2019, and the manager performance met or exceeded the benchmark.

MASTER LIMITED PARTNERSHIPS (MLPS)

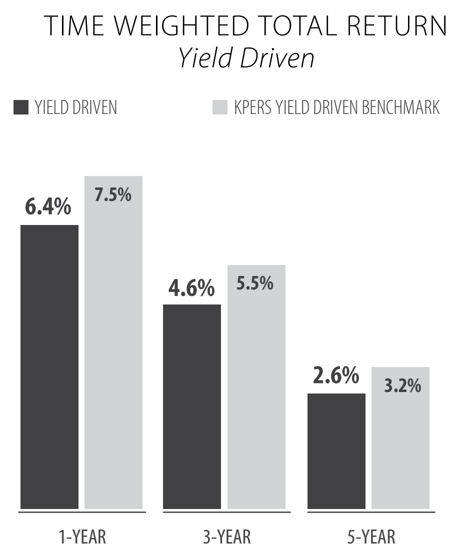
MLPs represent 18.4 percent of the yield driven asset class and 1.4 percent of the System's total assets. The strategy is benchmarked against the Alerian MLP Index. The MLP sector offers attractive current yields and long-term growth prospects. The MLP portfolio is comprised of diversified energy sectors including companies focused on "midstream," gathering and processing, infrastructure, and natural gas pipelines and storage. The System currently has one active MLP investment manager. The MLP portfolio produced a negative return for Fiscal Year 2019, underperforming its benchmark. MLP investments were adversely affected by rising interest rates, slowing global growth and geopolitics during the fiscal year.

BANK LOANS

The bank loan allocation represents 10.5 percent of the yield driven asset class and 0.8 percent of the System's total assets. The strategy is managed by one manager and is measured against the Credit Suisse Leveraged Loan Index. The strategy is intended to generate current yield through credit exposure to senior-secured, U.S. dollar denominated bank loans. The bank loan strategy is an effective hedge against rising interest rates. The bank loan portfolio produced a positive total return, while underperforming its benchmark, during Fiscal Year 2019.

PERFORMANCE

The yield driven portfolio produced a total return of 6.4 percent in Fiscal Year 2019, underperforming the asset class benchmark return of 7.5 percent, due primarily to underperformance in the MLP and bank loans portfolios. The yield driven portfolio has delivered positive returns over longer time periods, although it has underperformed the asset class benchmark.

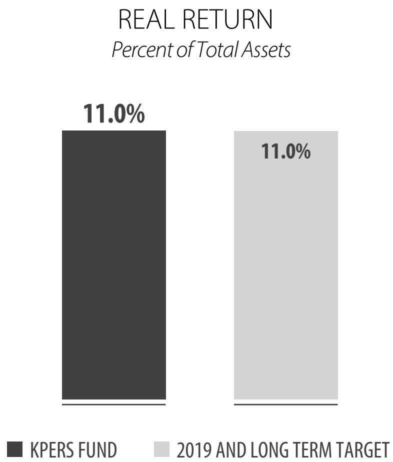


REAL RETURN INVESTMENTS

The real return portfolio is designed to provide the System with a hedge against future inflationary episodes. This strategy utilizes both public and private market investments. Public market exposure is global and achieved primarily through inflation linked fixed income securities issued by governments and their agencies in the U.S. as well as in developed countries around the world. Exposure in the private markets is currently achieved through investments in timber and infrastructure. The real return portfolio represents 11.0 percent of the System's total assets, and had a market value of $2.2 billion as of June 30, 2019.

PORTFOLIO STRUCTURE

The following graph describes the current and target allocations at June 30, 2019:



U.S. TREASURY INFLATION LINKED BONDS (TIPS)

The TIPS portfolio represents 41.1 percent of the real return portfolio and is benchmarked against the Barclays U.S. TIPS Index. This passively managed exposure is designed to replicate the return on domestic inflation linked bonds. It is the System's view that the minimal excess return available through active management of TIPS is not sufficient to compensate for the incremental costs of active management fees. The TIPS portfolio performed in line with its benchmark during Fiscal Year 2019, as expected.

GLOBAL INFLATION LINKED BONDS (GILBS)

The GILB portfolio represents 38.3 percent of the real return portfolio and is benchmarked against the Barclays World ILB Index (USD Hedged). The GILB portfolio provides global diversification by broadening the opportunity set to capture unexpected inflation within investment grade sovereign bonds. This portfolio was transitioned from active management to passive management during Fiscal Year 2019. Since the transition, performance of the GILB portfolio has been in line with the benchmark, as expected.

TIMBER

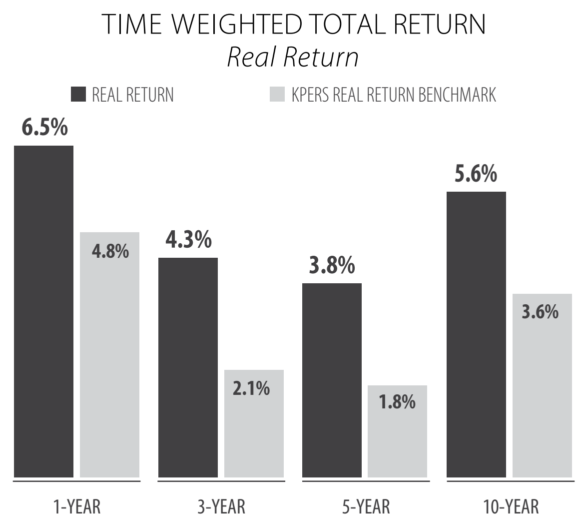
Timber investments are a component of the System's real return asset allocation due to their historically high correlation to inflation. The System is diversified within timber markets located in Idaho and throughout eight states in the southern U.S. Over time, timber investments are expected to provide the System with current cash yields and modest capital appreciation. For Fiscal Year 2019, the System's timber investments produced a 4.8 percent total return, underperforming the strategy benchmark and meeting the real return asset class benchmark.

INFRASTRUCTURE

The System's infrastructure portfolio is well diversified, with investments in Australia, the United Kingdom and throughout North and South America. It is invested across multiple sectors, including renewable power, toll roads, electric utilities, seaports and energy. The System's three infrastructure managers have been successful in operating their infrastructure investments. The infrastructure portfolio produced a total return of 11.4 percent for the fiscal year, outperforming the strategy benchmark by 3.6 percent.

PERFORMANCE

The System's real return portfolio outperformed its benchmark in Fiscal Year 2019, producing a 6.5 percent total return against a benchmark return of 4.8 percent. Infrastructure was the strongest performing investment strategy in the asset class. The real return portfolio has also outperformed its benchmark over the three-, five- and ten- year time periods ending June 30, 2019.



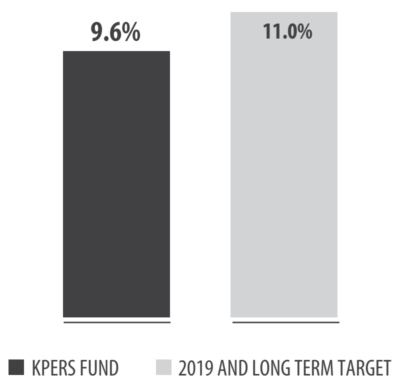
REAL ESTATE INVESTMENTS

As of June 30, 2019, the real estate portfolio had a market value of $1.9 billion, representing 9.6 percent of the total fund. The real estate portfolio is primarily designed to provide diversification to the broader portfolio, while also providing a meaningful current income. Capital appreciation is a tertiary objective of current real estate investment activities.

PORTFOLIO STRUCTURE

The System's real estate portfolio is classified into two categories: "core" and "noncore." The "core" portion of the portfolio is targeted at a 75 percent allocation, while the "noncore" segment is targeted at a 25 percent allocation.

REAL ESTATE
Percent of Total Assets



CORE REAL ESTATE

The largest segment of the real estate portfolio is "core" real estate. This portion of the portfolio is expected to produce steady current income in the form of investment yield while also providing portfolio diversification, and serving as an inflation hedge. The Retirement System's core portfolio primarily consists of partial and full commitments to seven commingled funds.

The System continued to invest in pooled real estate investment funds during Fiscal Year 2019. This strategy is expected to result in improved liquidity, enhanced portfolio diversification, lower management fees and a reduction in the single event risk associated with owning individual real estate assets.

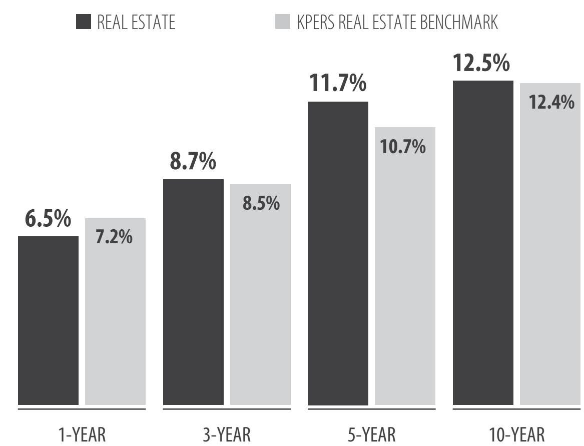
NON-CORE REAL ESTATE

The "non-core" segment consists of investments that generally involve some element of property lifecycle risk (such as positioning, leasing and development) while also utilizing greater leverage (debt) than core strategies. While providing elements of inflation protection and a diversification benefit to the broader portfolio, the System expects non-core real estate investments to produce meaningful capital appreciation and higher overall long-term returns than core investments. The non-core portfolio consists of investment funds employing a diversity of strategies and property types, both domestically and internationally.

REAL ESTATE PERFORMANCE

The System's real estate portfolio underperformed its benchmark in Fiscal Year 2019. The core real estate portfolio produced a total return of 5.4 percent, underperforming the strategy benchmark by 1.0 percent, while the non-core real estate portfolio outperformed its benchmark by a 0.8 percent, with a total return of 10.2 percent. In total, the System's real estate portfolio produced a total return of 6.5 percent, which underperformed the benchmark return by 0.7 percent. Overall, most of the System's real estate fund investments continued to benefit from the stable economic landscape, with the majority generating positive returns. Longer term results from the real estate asset class have been more robust, with an 11.7 percent total return for the trailing five years, outperforming the asset class benchmark by 1.0 percent.

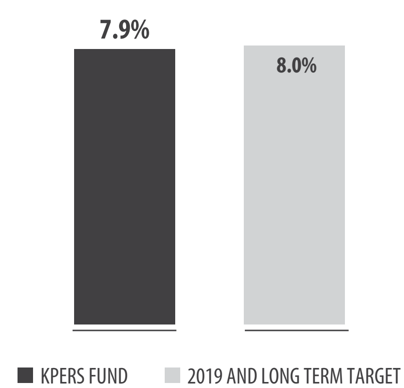
TIME WEIGHTED TOTAL RETURN
Real Estate



ALTERNATIVE INVESTMENTS

At June 30, 2019, the System's alternative investment portfolio had a fair market value of $1.6 billion, representing 7.9 percent of the total portfolio. Since the inception of the alternative investment program in 1997 through June 30, 2019, the System has committed $4.1 billion to 119 funds with 60 general partners.

ALTERNATIVE INVESTMENTS
Percent of Total Assets



PORTFOLIO STRUCTURE

The alternative investment portfolio consists primarily of interests in private partnerships that provide equity and debt to companies. The portfolio contains two primary sub-portfolios based on investment period. Each portfolio has its own set of directives, guidelines, external fund managers and consultants who provide advice on investment strategy and investment selection during its investment period. The largest portfolio is the Private Equity Program (PEP), representing 99.5 percent of the market value of the asset class. The PEP portfolio actively seeks new commitments to private equity funds in three styles: buyout, venture capital/growth equity and special situations. Since the inception of PEP in 2007, the System has committed $3.1 billion to 65 funds with 28 general partners.

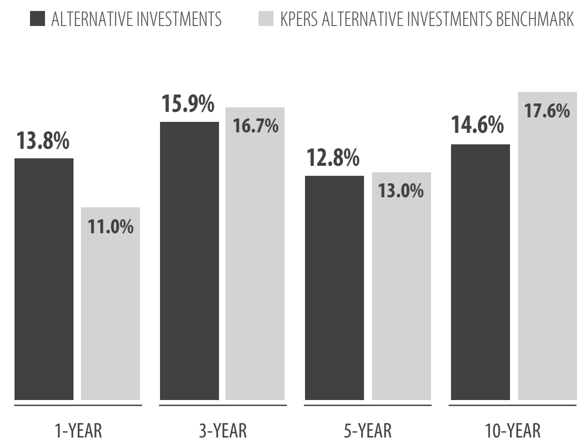
The second portfolio is the Alternative Investment Portfolio (AIP) which represents 0.6 percent of the market value of the asset class. From 1997 to 2001, AIP made commitments to 54 funds with 35 general partners across five styles: buyout, venture capital, mezzanine, distressed debt and natural resources. As this is a mature portfolio, the remaining funds in the AIP portfolio are currently pursuing exit strategies for their existing holdings.

ALTERNATIVE INVESTMENTS PERFORMANCE

The System's alternative investments portfolio outperformed its benchmark in Fiscal Year 2019, producing a 13.8 percent total return against a benchmark return of 11.0 percent.

Private equity investments typically span ten years or longer. Therefore, the longer-term returns from this asset class are more relevant in assessing its success in adding value to the overall portfolio. The System's current long-term performance objective for alternative investments is to exceed the return of the Russell 3000 plus 2 percent. As the chart below shows, the alternative investments portfolio is underperforming this objective over the ten-year time period, with a total return of 14.6 percent, due to exceptionally strong performance from the publicly-traded domestic equity benchmark in recent years.

TIME WEIGHTED TOTAL RETURN
Alternative Investments



As required by K.S.A 74-4904, a schedule of alternative investments initiated on or after July 1, 1991, is listed on the following two pages.

ALTERNATIVE INVESTMENTS INITIATED ON OR AFTER JULY 1, 1991[1]

As of June 30, 2019

Description	Cost	Market Value
Advanced Technology Ventures VI, L.P.	$8,269,289	$18,738
Apax Europe IX, L.P.	31,772,038	46,722,021
Apollo Investment Fund VII, L.P.	6,760,302	4,372,083
Apollo Investment Fund VIII, L.P.	42,827,215	51,821,059
Apollo Investment Fund IX, L.P.	4,252,087	5,082,979
Ares Corporate Opportunities Fund III, L.P.	7,024,686	13,214,424
Ares Corporate Opportunities Fund IV, L.P.	16,953,918	23,204,472
Ares Corporate Opportunities Fund V, L.P.	45,583,424	50,045,221
Ares Special Situations Fund IV, L.P.	47,686,469	42,322,647
Audax Mezzanine Fund III, L.P.	4,573,861	3,205,060
Beacon Group Energy Fund II, L.P.	1,841,499	468,139
Capital Resource Partners IV, L.P.	4,520,636	24,384
CCMP Capital Investors III, L.P.	41,589,818	52,540,126
Centerbridge Capital Partners II, L.P.	16,226,912	8,462,124
Centerbridge Capital Partners III, L.P.	13,099,246	18,378,203
Clayton Dublier & Rice VI, L.P.	2,998,282	9,999
Crestview Partners III, L.P.	27,335,487	39,011,923
Cypress Merchant Banking II, L.P.	6,889,672	10,465
El Dorado Ventures VI, L.P.	4,537,915	347,858
Encap Energy Capital VIII, L.P.	16,192,444	7,640,761
Encap Energy Capital IX, L.P.	32,001,118	25,495,130
Encap Energy Capital X, L.P.	36,591,052	43,250,441
First Reserve Fund XII, L.P.	17,878,556	4,882,598
FS Equity Partners VII, L.P.	41,013,585	52,360,157
FS Equity Partners VIII, L.P.	6,947,382	6,947,382
Green Equity Investors VII, L.P.	43,710,083	47,927,975
GSO Capital Solutions Fund, L.P.	6,354,528	1,634,918
GSO Capital Solutions Fund II, L.P.	14,657,996	10,330,135
GSO Capital Solutions Fund III, L.P.	9,800,978	10,204,641
Halpern Denny Fund III, L.P.	1	—
HD Access, Inc.	186,674	141,320
Hellman & Friedman VII, L.P.	4,143,769	19,450,371
Hellman & Friedman VIII, L.P.	37,716,784	46,656,416
JMI Equity Fund VII, L.P.	6,251,920	12,040,098
Montagu IV, L.P.	3,129,400	5,096,154
Montagu V, L.P.	35,180,676	47,903,031
New Enterprise Associates 13, L.P.	5,887,383	6,964,209
New Enterprise Associates 16, L.P.	25,875,000	28,753,024
New Mountain Partners V, L.P.	18,516,524	23,141,711
OCM Opportunities Fund VIIb, L.P.	—	558,935
OneLiberty Fund IV, L.P.	1,155,056	813,923
OneLiberty Ventures 2000, L.P.	12,493,019	3,158,897

ALTERNATIVE INVESTMENTS INITIATED ON OR AFTER JULY 1, 1991(1) (CONTINUED)

As of June 30, 2019

Description	Cost	Market Value
Pine Brook Capital Partners, L.P.	8,976,303	3,661,021
Pine Brook Capital Partners II, L.P.	43,257,562	58,185,357
Platinum Equity Capital Partners III, L.P.	15,017,597	16,590,615
Platinum Equity Capital Partners IV, L.P.	50,702,932	62,299,859
Quad-C Partners IX, L.P.	14,191,573	16,202,136
Snow Phipps II, L.P.	15,275,223	16,551,468
Snow Phipps III, L.P.	23,850,083	29,172,515
TA XII, L.P.	53,946,415	71,900,105
TowerBrook Investors III, L.P.	5,306,629	2,723,182
TowerBrook Investors IV, L.P.	17,850,297	28,460,531
TPG Growth II, L.P.	16,044,445	33,519,509
TPG Growth III, L.P.	32,185,497	38,112,971
TPG Growth IV, L.P.	18,983,141	19,921,421
TPG Partners VI, L.P.	9,277,976	6,177,601
TPG Partners VII, L.P.	53,231,523	72,412,331
VantagePoint Venture Partners III, L.P.	7,072,782	—
VantagePoint Venture Partners IV, L.P.	9,862,169	2,024,970
Vestar Capital Partners IV, L.P.	1,382,220	338,420
Vista Equity Partners Fund IV, L.P.	9,300,598	21,857,382
Vista Equity Partners Fund V, L.P.	56,859,777	86,425,042
Vista Equity Partners Fund VI, L.P.	70,217,684	87,710,384
Vista Equity Partners Fund VII L.P.	9,808,867	10,169,088
Warburg Pincus Equity Partners, L.P.	—	77,306
Warburg Pincus Global Growth, L.P.	418,706	658,744
Warburg Pincus Private Equity X, L.P.	8,894,710	18,989,814
Warburg Pincus Private Equity XI, L.P.	23,378,470	44,603,759
Warburg Pincus Private Equity XII, L.P.	44,367,908	56,516,462
Wellspring Capital Partners V, L.P.	7,834,250	11,105,645
Wellspring Capital Partners VI, L.P.	20,837,066	19,563,463
Windjammer Mezzanine & Equity Fund II, L.P.	—	23,218
	$1,358,759,087	$ 1,600,568,471

(1) Investment values quoted without spin-offs or distributions.

LIST OF LARGEST HOLDINGS[1]

As of June 30, 2019

EQUITIES			FIXED INCOME			
Shares	Security	Fair Value ($)	Par Value	Security	Description	Fair Value ($)
1,317,709	Microsoft Corp	$176,520,298	89,015,000	US Treasury N/B	2.25% 30 Apr 2021	$89,762,726
803,064	Apple Inc	158,942,427	68,145,000	US Treasury N/B	3% 15 Feb 2049	74,842,291
72,018	Amazon.Com Inc	136,375,445	57,445,000	US Treasury N/B	2.125% 15 May 2022	58,091,256
416,045	Facebook Inc Cl A	80,296,685	45,500,000	US Treasury N/B	2.25% 15 Apr 2022	46,141,550
340,238	Berkshire Hathaway Inc Cl B	72,528,534	45,715,000	US Treasury N/B	2.125% 31 May 2021	46,025,862
463,719	Johnson & Johnson	64,586,782	41,395,000	US Treasury N/B	1.75% 15 Nov 2020	41,333,735
565,004	JP Morgan Chase & Co	63,167,447	35,205,000	US Treasury N/B	2.375% 30 Apr 2026	36,354,795
5,619,228	AIA Group Ltd	60,597,755	35,000,000	US Treasury N/B	1.5% 15 Apr 2020	34,855,100
52,991	Alphabet Inc Cl C	57,278,502	34,503,083	Tsy Infl IX N/B	0.125% 15 Apr 2022	34,232,579
737,299	Exxon Mobil Corp	56,499,222	31,805,000	US Treasury N/B	2.375% 15 May 2029	32,867,287

(1) A complete listing of the System's holdings is available at the Retirement System office.

CHANGES IN FAIR VALUE OF INVESTMENTS[1]

(In Thousands)

For the Fiscal Year Ended June 30, 2019

	June 30, 2018 Fair Value	Purchases and Other Increases	Sales and Other Decreases	June 30, 2019 Fair Value	Asset Mix Fair Value
Marketable Securities					
Domestic Equities	$ 6,049,135	$ 1,338,329	$ (1,258,088)	$ 6,129,376	30.26%
International Equities	4,306,647	2,458,192	(2,453,461)	4,311,378	21.28
Total Fixed	5,281,962	7,433,742	(7,246,922)	5,468,782	26.99
Temporary[2] Investments	506,080	24,984,248	(25,138,580)	351,748	1.74
Total Marketable Securities	16,143,824	36,214,511	(36,097,051)	16,261,284	80.27
Real Estate and Alternative Investments					
Real Estate	2,177,717	293,712	(74,962)	2,396,467	11.83
Alternatives	1,290,641	383,397	(73,470)	1,600,568	7.90
Total Real Estate and Alternative Investments	3,468,358	677,109	(148,432)	3,997,035	19.73
Total	$19,612,182	$ 36,891,620	$ (36,245,483)	$ 20,258,319	100.00%

(1) Amounts include changes in unrealized appreciation and exclude interest and dividend accruals.
(2) Temporary Investments include currencies, short term pools and securities maturing within one year of purchase.

U.S. EQUITY COMMISSIONS

For the Fiscal Year Ending June 30, 2019

Broker Name	Comissions Paid	Shares	Comissions per Share	Percent of Total Comissions
Liquidnet Inc	$54,122	2,555,448	0.02	13.4%
J.P. Morgan Securities LLC	33,191	1,513,705	0.02	8.2
Citigroup Global Markets Inc	31,475	1,047,640	0.03	7.8
Morgan Stanley Co Inc	23,264	817,760	0.03	5.8
BofA Securities Inc	20,841	3,100,403	0.01	5.2
Merrill Lynch Pierce Fenner & Smith Inc	20,349	811,080	0.03	5.1
Wells Fargo Securities LLC	19,905	649,206	0.03	4.9
Green Street Trading LLC	19,304	643,790	0.03	4.8
Barclays Capital	18,816	615,738	0.03	4.7
Raymond James & Associates	17,878	555,072	0.03	4.4
Jefferies & Company Inc	17,300	535,964	0.03	4.3
Stifel Nicolaus & Co Inc	11,582	446,184	0.03	2.9
Other	114,998	11,159,446	0.01	28.5
Total Broker Comissions	**$ 403,025**	**24,451,436**		**100.0%**

ACTUARIAL SECTION

ACTUARIAL CERTIFICATION LETTER

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

October 17, 2019

Board of Trustees
Kansas Public Employees Retirement System
611 S. Kansas Ave., Suite 100
Topeka, KS 66603

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Kansas Public Employees Retirement System (KPERS) as of December 31, 2018, for the purpose of determining contribution rates for Fiscal Year 2022 for the State and 2021 for Local employers. Actuarial valuations are prepared annually for the System. The Board of Trustees is responsible for establishing and maintaining the funding policy, which includes the actuarial cost method, the asset valuation method and the amortization methodology and period. However, the funding policy must comply with the statutory requirement that the employer statutory contribution rate for KPERS cannot increase by more than the statutory cap each year. The major findings of the valuation are contained in this section, which reflects the plan provisions in place on December 31, 2018, and any legislative changes from the 2019 session. There have been no changes to the plan provisions or actuarial assumptions since the prior valuation.

In preparing our report, we relied, without audit, on information (some oral and some in writing) supplied by the System's staff. This information includes, but is not limited to, statutory provisions, member data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete, our results may be different and our calculations may need to be revised.

We further certify that all costs, liabilities, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); meet applicable Actuarial Standards of Practice; and which, in combination, offer our best estimate of anticipated experience affecting the System. Nevertheless, the emerging costs of the System will vary from those presented herein to the extent actual experience differs from that projected by the actuarial assumptions. The Board of Trustees has the final decision regarding the appropriateness of the assumptions and adopted them, as indicated in Appendix C of our valuation report.

Future actuarial measurements may differ significantly from the current measurements presented in the December 31, 2018, valuation report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements.

Actuarial computations presented in this section are for purposes of determining the actuarial recommended and statutory funding amounts for the System and have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results shown in the December 31, 2018, valuation report. Accordingly, additional determinations may be needed for other purposes.

Based upon the December 31, 2018, valuation results, annual projection forecasting and the presumption that future contributions will be made at the full actuarial contribution rate, it is our opinion that the current funding policy will systematically accumulate assets sufficient to fund all future benefits, if all actuarial assumptions are met.

The actuary prepared the following supporting schedules for the Comprehensive Annual Financial Report:

ACTUARIAL SECTION

Schedule of Funding Progress
Summary of Change in Unfunded Actuarial Liability
Summary of Changes in Actuarial Contribution Rate
Summary of Historical Changes to Total System UAL
Summary of Principal Results
Summary of Actuarial Assumptions and Methods
Summary of Membership Data

Actuarial computations, based on the actuarial valuation performed as of December 31, 2018, were also prepared as of June 30, 2019, for purposes of fulfilling financial accounting requirements for the System under Governmental Accounting Standard Number 67 (GASB 67). KPERS' State/School, Local and Kansas Police and Fire plans are cost-sharing multiple employer plans while the Judges plan is a single employer plan The assumptions used in the funding valuation were also used for GASB 67 reporting, including the use of a 7.75 percent discount rate for GASB 67 calculations (7.75 percent is the assumed rate of return used in the funding valuation). In addition, the entry age normal actuarial cost method, which is required to be used under GASB 67, is also used in the funding valuation. The actuarial assumptions and methods meet the parameters set by Actuarial Standards of Practice (ASOPs), as issued by the Actuarial Standards Board, and generally accepted accounting principles (GAAP) applicable in the United States of America as promulgated by the Governmental Accounting Standards Board (GASB). The Total Pension Liability was rolled forward to June 30, 2019, based on standard actuarial formulae. Additional information related to GASB 67 can be found in the Financial Section of this report.

Cavanaugh Macdonald Consulting, LLC provided the following supporting schedules:

FINANCIAL SECTION

Calculation of the Total Pension Liability and Net Pension Liability
Schedule of the Net Pension Liability
Sensitivity Analysis of the Net Pension Liability
Schedule of Changes in the Net Pension Liability

In addition, the Schedule of Employer Contributions which compares the actuarially determined employer contribution amounts and the actual contribution amounts is included in the Required Supplementary Information (RSI). Amounts in that schedule were provided by the System.

The consultants who worked on this assignment are pension actuaries. Cavanaugh Macdonald Consulting, LLC's advice is not intended to be a substitute for qualified legal or accounting counsel.

We certify that, to the best of our knowledge and belief, the December 31, 2018, actuarial valuation report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

Sincerely,

Patrice Beckham

Patrice A. Beckham, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

Brent A. Banister, Ph.D., FSA, EA, FCA, MAAA
Chief Pension Actuary

SECTION I BOARD SUMMARY OVERVIEW

The Kansas Public Employees Retirement System is an umbrella organization which administers the following three statewide pension groups: the Kansas Public Employees Retirement System (KPERS), the Kansas Police and Firemen's Retirement System (KP&F) and the Kansas Retirement System for Judges (Judges). This report presents the results of the December 31, 2018, actuarial valuations for each of the groups.

The primary purposes of performing actuarial valuations are to:
- Determine the employer contribution rates required to fund each group on an actuarial basis.
- Determine the statutory employer contribution rates for each group.
- Disclose asset and liability measures as of the valuation date.
- Compare the actual experience since the last valuation date to that expected.
- Analyze and report on trends in contributions, assets, and liabilities over the past several years.

The 2019 Legislature passed two pieces of legislation that impacted the contributions to KPERS. Senate Bill 9 provided for a transfer of $115 million from the State General Fund to KPERS in March 2019. This payment covers the $97 million in missed KPERS School contributions for Fiscal Year 2016 plus interest to June 30, 2018. The additional contribution lowered the State/School actuarial employer contribution rate by 0.29 percent. The 2019 Legislature also passed House Substitute for Senate Bill 25. This legislation repealed the actions of the 2018 Legislature which provided for a contingent payment of up to $56 million in Fiscal Year 2019, if actual Fiscal Year 2019 receipts exceeded the consensus revenue estimates. Instead, this legislation directly transferred $51 million to the KPERS Trust Fund in Fiscal Year 2020 (received by KPERS on July 1, 2019). The net reduction of $5 million did not have a material impact on the valuation results.

There were also additional contributions to the State/School group during calendar year 2018 of $56 million in June 2018 and $82 million in July 2018 as a result of the actions of the 2018 Legislature. Due to the timing of the valuation report, these payments were reflected in the actuarial contribution rate developed in the December 31, 2017, actuarial valuation.

KPERS 3 (cash balance members) refers to non-corrections members who either began their participation or were rehired on or after January 1, 2015. Of the 146,104 active KPERS members, 48,621 (about 33 percent) were KPERS 3 members as of the valuation date. KPERS 3 members receive guaranteed interest credits of 4.0 percent on their account balances. There is also the possibility of additional interest credits that are dependent on KPERS' actual investment returns. The additional interest credits, referred to as "dividends", are equal to 75 percent of the five-year average net compound rate of return, as determined by the Board, for the preceding calendar year and the prior four calendar years on the market value of assets that is above 6.0 percent. If applicable, the dividend is granted as soon as administratively feasible after March 31 and is credited on the account balance as of the previous December 31. Transition rules apply for the initial years until the Cash balance plan has been effective for five full calendar years (January 1, 2020). The dividend for 2018 was dependent on the net rate of return on the market value of assets for calendar years 2015 through 2018. The average annualized net return for the four-year period, as calculated by KPERS, was 4.7 percent. Using the statutory formula, there is no additional interest credit (dividend) for 2018.

The valuation results provide a "snapshot" view of the System's financial condition on December 31, 2018. The unfunded actuarial liability (UAL), for the System as a whole, increased by $295 million due to multiple factors, the most significant of which was the unfavorable investment experience during 2018. The total UAL is composed of various pieces, or layers, of UAL. However, the initial UAL base, referred to as the 2015 legacy UAL base, represents the majority of the current UAL. The remaining amortization period for the 2015 legacy UAL base is 14 years as of the valuation date. As the remaining amortization period for that base shortens over time, the portion of the amortization payment that is applied to the principal of the outstanding balance, instead of interest, will increase. As a result, the remaining balance of the 2015 legacy UAL base to expected to decline more rapidly over time and have a significantly positive impact on the System's total UAL, if the full statutory contributions are made. A detailed analysis of the change in the unfunded actuarial liability from December 31, 2017, to December 31, 2018, can be found on page 80.

In KPERS, the State, School and Local employers do not necessarily contribute the full actuarial contribution rate. Based on legislation passed in 1993, the employer contribution rates certified by the Board may not increase by more than the statutory cap. The statutory cap has changed over time, and the current cap is 1.20% for fiscal year 2022 (the rate is set based on the December 31, 2018 actuarial valuation). However, the State/School rate is at the actuarially required level for Fiscal Year 2022, meaning the cap does not affect that rate. Although separate valuations are performed for the State and School groups, the statutory contribution rate for the two groups is determined using the combined valuation results. Due to the cap, the statutory contribution rate was below the actuarial contribution for many years. However, the statutory employer contribution rate was equal to the actuarial required contribution rate in the December 31, 2017, valuation (for Fiscal Year 2021 contribution rates) and continues to be in the December 31, 2018, valuation. By statute, if the actuarial required contribution (ARC) for the State alone is less than the statutory contribution rate when the two groups are combined (as it is in this valuation), the excess of the statutory contribution rate over the actuarial required contribution rate for the State alone is allocated to the School to improve the funding of that group.

A summary of actuarial and statutory employer contribution rates for the Retirement System (excluding the statutory contribution for the Death and Disability Program) for this valuation and the prior valuation follows:

DECEMBER 31, 2018 VALUATION

System	Actuarial	Statutory	Difference
State(1)	9.97%	14.09%	(4.12%)
School(1)	15.15%	14.09%	1.06%
State/School(1)	14.09%	14.09%	0.00%
Local(1)	8.87%	8.87%	0.00%
Police & Fire - Uniform Rates(2)	22.80%	22.80%	0.00%
Judges	18.40%	18.40%	0.00%

DECEMBER 31, 2017 VALUATION

System	Actuarial	Statutory	Difference
State(1)	9.22%	14.23%	(5.01%)
School(1)	15.59%	14.23%	1.36%
State/School(1)	14.23%	14.23%	0.00%
Local(1)	8.61%	8.61%	0.00%
Police & Fire - Uniform Rates(2)	21.93%	21.93%	0.00%
Judges	17.26%	17.26%	0.00%

(1) By statute, rates are allowed to increase by a maximum of 1.2 percent, plus the cost of any benefit enhancements. The December 31, 2018, valuation sets the employer contribution rate for Fiscal Year 2022 for the State and School group and calendar year 2021 for the Local group. An additional contribution of 0.64 percent applies to the School group in Fiscal Year 2022 due to contribution reductions in Fiscal Year 2017 and Fiscal Year 2019 (see following table).

(2) For KP&F, the statutory contribution rate is equal to the "Uniform" rate. The rate shown is for both State and Local employers. The uniform rate does not include the payment required to amortize the unfunded past service liability determined separately for each employer.

Due to the statutory cap for the KPERS group, the statutory contribution rate for the State/School group has been less than the actuarial required contribution rate (ARC) for more than twenty years. In the December 31, 2017, actuarial valuation (which sets the Fiscal Year 2021 contribution rates), the State/School group reached the ARC date (statutory contribution rate equal to the actuarial contribution rate) at a contribution rate of 14.23 percent. The two contribution rates continue to be equal in the December 31, 2018, valuation. This is an important milestone for the State/School group which will serve to reduce the unfunded actuarial liability and improve the funded ratio of the State/School group.

Legislation passed in the 2017 session provided for the payment of the delayed contributions for the School group from Fiscal Year 2017 and Fiscal Year 2019 in level annual installments of $6.4 million and $19.4 million over 20-year periods commencing in Fiscal Year 2018 and Fiscal Year 2020, respectively. These installment payments are determined as an additional contribution rate for the School group and are added to the regular statutory contribution rate determined for the State/School group. The additional contribution rate for the $64 million delayed School contributions for Fiscal Year 2017 is 0.17 percent for Fiscal Year 2020 and Fiscal Year 2021, and 0.16 percent for Fiscal Year 2022. The additional contribution rate for the scheduled $194 million delayed School contributions for Fiscal Year 2019 is 0.52 percent for Fiscal Year 2020, 0.51 percent for Fiscal Year 2021 and 0.48 percent for Fiscal Year 2022. The total statutory contribution rates for the School group for Fiscal Year 2020 through Fiscal Year 2022 are shown in the following table:

	Fiscal Year 2020	Fiscal Year 2021	Fiscal Year 2022
Regular Statutory State/School Contribution Rate	14.41%	14.23%	14.09%
Contribution for Fiscal Year 2017 Contribution Reduction	0.17%	0.17%	0.16%
Contribution for Fiscal Year 2019 Contribution Reduction	0.52%	0.51%	0.48%
Total School Contribution Rate	15.10%	14.91%	14.73%

The net rate of return on the market value of assets in 2018 was negative 2.9 percent, as reported by KPERS, which was significantly below the 2018 assumed return of 7.75 percent. Due to the reflection of past investment experience through the asset smoothing method, the net rate of return on the actuarial value of assets for calendar year 2018 was 5.3 percent. The combined impact of recognizing the scheduled portion of deferred asset experience and the unfavorable investment experience during 2018 changed the net deferred asset gain of $338 million in the prior valuation to a net deferred asset loss of $1.2 billion in the current valuation. Based on the results of the December 31, 2018, valuation, the statutory contribution rates for the State, State/School and Local groups continue to be at the actuarial required contribution rate.

EXPERIENCE – ALL SYSTEMS COMBINED

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is December 31, 2018. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of assets. The actuarial process leads to a method of determining the contributions needed by members and employers in the future to balance the System assets and liabilities.

Changes in both the System's membership, assets and liabilities impacted the change in the actuarial contribution rates between the December 31, 2017, and December 31, 2018, actuarial valuations. On the following pages, each component is examined.

MEMBERSHIP

The following table contains a summary of the changes in the active membership between the December 31, 2017, and December 31, 2018, actuarial valuations.

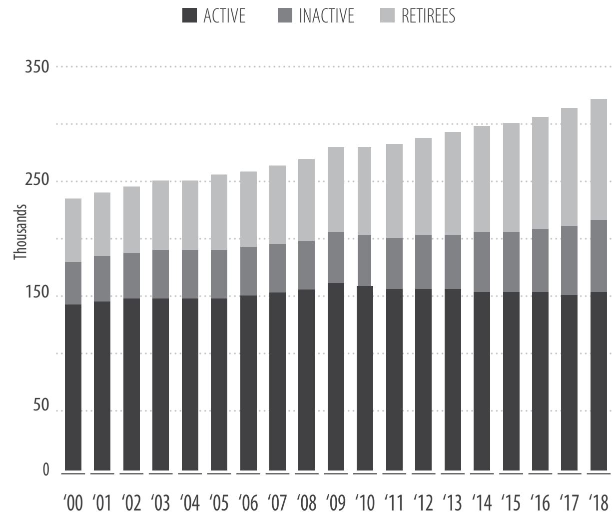
	State	School	Local
12/31/2017 (Starting count)	21,427	84,239	38,281
New actives	2,671	12,806	5,429
Non-vested Terminations	(963)	(4,039)	(2,178)
Elected Refund	(690)	(1,220)	(1,183)
Vested Terminations	(541)	(2,123)	(1,212)
Total Withdrawals	(2,194)	(7,382)	(4,573)
Deaths	(30)	(64)	(52)
Disabilities	(35)	(50)	(45)
Retirements	(915)	(2,266)	(1,146)
Other/Transfer	(31)	(38)	72
12/31/2018 (Ending count)	20,893	87,245	37,966

	KP&F	Judges	Total
12/31/2017 (Starting count)	7,481	259	151,687
New actives	868	10	21,784
Non-vested Terminations	(273)	0	(7,453)
Elected Refund	(89)	(1)	(3,183)
Vested Terminations	(37)	0	(3,913)
Total Withdrawals	(399)	(1)	(14,549)
Deaths	(8)	0	(154)
Disabilities	(20)	0	(150)
Retirements	(223)	(13)	(4,563)
Other/Transfer	(4)	1	0
12/31/2018 (Ending count)	7,695	256	154,055

As can be seen from the table, KPERS, in total, experienced a net increase in the number of active members with the largest increase occurring in the School group. However, active membership growth has been relatively stagnant overall for the past decade, with the active membership peaking in the December 31, 2009, valuation. While this pattern of low (or at times negative) employee growth has not been unusual in recent years, the general decline in active membership has an adverse impact on the valuation results. As a result of fewer active members, coupled with low salary increases, the total active member payroll has not grown as expected, so there have been fewer contribution dollars to help fund the System's unfunded actuarial liability.

SYSTEM MEMBERSHIP

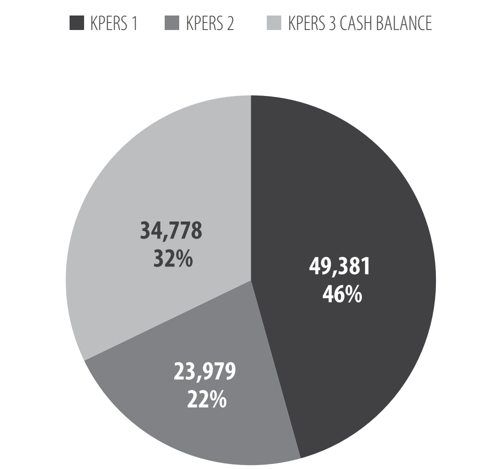
By Calendar Year



There are currently three different benefit structures in KPERS. The most recent tier, KPERS 3 (Cash balance members), refers to non-corrections members who either began their participation or were rehired on or after January 1, 2015. KPERS 2 refers to members who either began their participation or were rehired on or after July 1, 2009, but before January 1, 2015. Of the 146,104 active KPERS members, 31,775 (about 22 percent) are KPERS 2 members and 48,621 (about 33 percent) are KPERS 3 members as of the valuation date. The split of KPERS members in the State/School group and Local group by benefit tier is shown below:

STATE/SCHOOL ACTIVE MEMBERSHIP

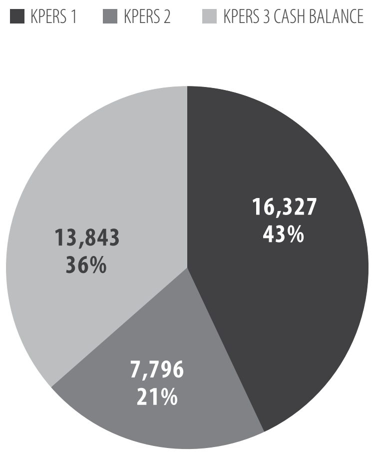
Calendar Year 2018



Total: 108,138

LOCAL ACTIVE MEMBERSHIP

Calendar Year 2018



Total: 37,966

Because KPERS 3 is a relatively new group, its members have relatively low liability, and so the valuation results are more significantly affected by KPERS 1 and KPERS 2. As time passes, the benefit structure of KPERS 3 will have an increasing impact on the overall valuation results. One aspect of this influence will be that since KPERS 3 has some risk sharing features built into the interest crediting rates on account balances, the total valuation results will eventually have less volatility.

ASSETS

As of December 31, 2018, the System had total funds of $18.7 billion on a market value basis, excluding assets held for the Group Insurance and Optional Life reserves. This was a decrease of $0.9 billion from the December 31, 2017, value of $19.6 billion.

The market value of assets is not used directly in the calculation of contribution rates. An asset valuation method is used to smooth the effect of market fluctuations. The smoothing method calculates the difference between the actual return and the expected return (assumed net rate of return) on the market value of assets each year. The difference is recognized equally over a five-year period.

The components of the change in the total market value and actuarial value of assets for the Retirement System (in millions) are set forth in the following table:

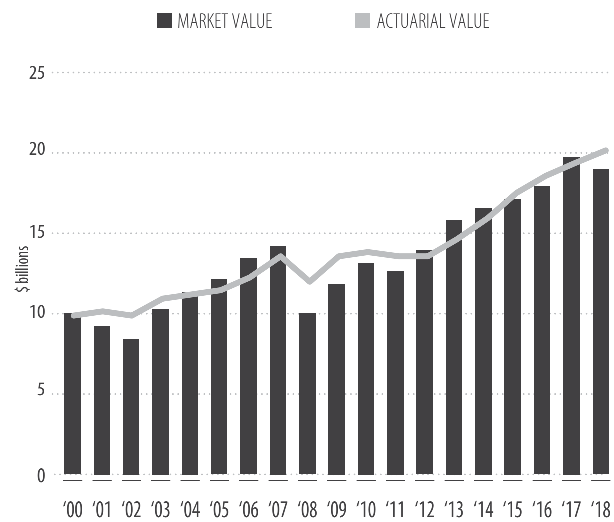
	Market Value $(millions)	Actuarial Value $(millions)
Assets, December 31, 2017	$19,585	$19,247
• Employer and Member Contributions	1,442	1,442
• Benefit Payments	(1,793)	(1,793)
• Investment Income, Net of Expenses	(564)	1,002
Assets, December 31, 2018	$18,670	$19,898
Net Rate of Return	(2.9%)	5.3%

The actuarial value of assets as of December 31, 2018, was $19.9 billion. The annualized dollar-weighted net rate of return for 2018 was 5.3 percent, measured on the actuarial value of assets, and negative 2.9 percent, measured on the market value of assets, as reported by KPERS.

Due to the use of an asset smoothing method, there is $1.2 billion of net deferred investment loss experience that has not yet been recognized, i.e. the actuarial value of assets is greater than the market value. This deferred investment loss will be recognized in the actuarial value of assets over the next four years, but may be offset by actual investment experience if it is more favorable than assumed.

TOTAL SYSTEM ASSETS

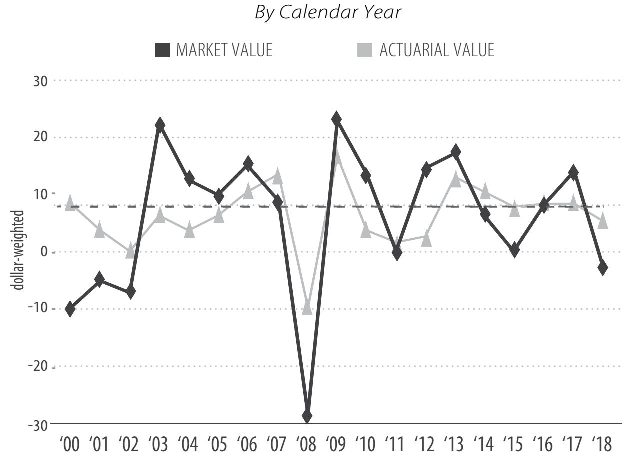
By Calendar Year



The actuarial value of assets has been both above and below the market value during the period, which is to be expected when using an asset smoothing method.

ASSETS RATE OF RETURN

By Calendar Year



The net rate of return on the actuarial (smoothed) value of assets has been less volatile than the market value return. The deferred investment loss in this valuation will be reflected in the actuarial value of assets in the next few years, absent favorable investment experience.

LIABILITIES

The actuarial liability is that portion of the present value of future benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and asset values at the same date is referred to as the unfunded actuarial liability (UAL). The UAL will be reduced if the employer contributions exceed the employer normal cost for the year, after allowing for interest on the previous balance of the UAL. Benefit improvements, experience gains and losses, and changes in actuarial assumptions and methods will also impact the total actuarial liability and the unfunded portion thereof.

The UAL by group is summarized below (in millions):

	State	School	Local
Actuarial Liability	$4,527	$15,431	$ 5,493
Actuarial Value of Assets	3,593	9,610	3,991
Unfunded Actuarial Liability*	$ 935	$ 5,822	$ 1,502
Funded Ratio	79.4%	62.3%	72.7%

	KP&F	Judges	Total*
Actuarial Liability	$3,457	$ 192	$29,100
Actuarial Value of Assets	2,524	181	19,898
Unfunded Actuarial Liability*	$ 933	$ 11	$ 9,202
Funded Ratio	73.0%	94.4%	68.4%

** May not add due to rounding.*

The calculation of the UAL by group is shown on page 89.

The UAL is amortized using a "layered" approach. The legacy UAL is the amount of UAL from the December 31, 2015, valuation which was projected to June 30, 2018, for State/School and Judges and December 31, 2017, for Local and KP&F to reflect the lag between the valuation date and the fiscal year to which the contribution rates set in the valuation apply. This initial or legacy UAL amortization base continues to be amortized over the original amortization period, which was set at 40 years beginning July 1, 1993, (14 years remaining as of December 31, 2018). The increase in the UAL, resulting from the assumption changes reflected in the 2016 valuation, was amortized over a closed 25-year period. Changes in the UAL that result from actuarial experience each year (gains and losses) are amortized over a closed 20-year period that begins with the fiscal year in which the contribution rates will apply.

For the State/School group, the statutory contribution rate has been less than the actuarial contribution rate since 1994 which resulted in an increase in the UAL for that group. Other factors influencing the UAL from year to year include actual experience versus that expected, based on the actuarial assumptions (on both assets and liabilities), changes in actuarial assumptions, procedures or methods, and changes in benefit provisions.

The actual experience measured in this valuation is that which occurred during the prior plan year (calendar year 2018). For School and KP&F, the valuation results reflect a net liability loss for the year (which increases the UAL), largely due to salary increases that were higher than expected. In contrast, there was a small net liability gain for State, Local and Judges during 2018 due to termination and salary experience. Combining these, the total net liability loss for the System was $71 million, about 0.25 percent of the actuarial liability. In addition, the System experienced a return of 5.3 percent on the actuarial value of assets, which is lower than the assumed return of 7.75 percent, resulting in an experience loss of $476 million. Therefore, the aggregate result of all experience (asset and liability) in 2018 for all groups was an experience loss for the System of $547 million.

Between December 31, 2017, and December 31, 2018, the change in the unfunded actuarial liability for the System, as a whole, was as follows (in millions):

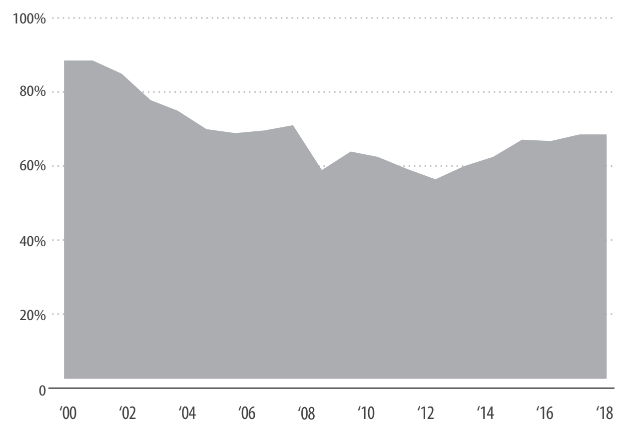
	$ millions
Unfunded Actuarial Liability, December 31, 2017	$ 8,907
• effect of contribution cap/time lag	64
• expected decrease due to amortization	(171)
• (gain)/loss from investment return on actuarial assets	476
• demographic experience(1)	71
• additional contributions	(143)
• all other experience	(2)
• assumption changes	0
• benefit provision changes	0
Unfunded Actuarial Liability, December 31, 2018(2)	**$ 9,202**

(1) Liability loss is about 0.25 percent of total actuarial liability.
(2) May not add due to rounding.

An evaluation of the UAL on a pure dollar basis may not provide a complete analysis since only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the UAL and the progress made in its funding is to track the funded status, the ratio of the actuarial value of assets to the actuarial liability. The funded ratio does not necessarily indicate whether or not additional funding is needed, nor does it indicate whether or not the plan could settle all liabilities with current assets. The funded status information for the total System is shown in the following table (in millions).

	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18
Using Actuarial Value of Assets:							
Funded Ratio (AVA/AL)	56%	60%	62%	67%	67%	68%	68%
Unfunded Actuarial							
Liability (AL-AVA)	$10,253	$9,766	$9,468	$8,539	$9,061	$8,907	$9,202
Using Market Value of Assets:							
Funded Ratio (MVA/AL)	59%	65%	65%	65%	65%	70%	64%
Unfunded Actuarial							
Liability (AL-MVA)	$9,714	$8,584	$8,808	$9,055	$9,627	$8,569	$10,430

FUNDED RATIO – ACTUARIAL VALUE



Changes in actuarial assumptions and methods, coupled with investment returns below the assumed rate and contributions below the actuarial rate significantly reduced the funded ratio over much of this period. The funded ratio is expected to increase steadily in the future assuming assumptions are met and scheduled contributions are made.

Given the current funded status of the System, the deferred investment experience, the amortization method and the amortization periods, and the scheduled employer contribution rates, the dollar amount of the UAL for the entire System is expected to increase over the next few years as the unrecognized investment experience flows through the asset smoothing method. Over the longer term, the funded ratio is expected to eventually improve, but will continue to be heavily dependent on the actual investment returns in the future.

CONTRIBUTION RATES

The funding objective of the System is to establish contribution rates that over time will remain relatively level, as a percentage of payroll, and to pay off the unfunded actuarial liability in a reasonable timeframe.

Generally, the actuarial contribution rates to the various Systems consist of:

- a "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date and an expense load for administrative expenses for the year,

- a "UAL contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

There is also a statutory contribution rate that is used to finance the Death and Disability Program. Contributions for the Death and Disability Program are deposited in a separate trust fund from which benefits are paid. A separate actuarial analysis and report is prepared for the Death and Disability Program on June 30 of each year, so the death and disability contribution rate is not reflected in this report.

The 2019 Legislature passed two pieces of legislation that impacted the contributions to KPERS. Senate Bill 9 provided for a transfer of $115 million from the State General Fund to KPERS in March, 2019. This payment covers the $97 million in missed KPERS School contributions for Fiscal Year 2016 plus interest. The additional contribution lowered the State/School actuarial contribution rate by 0.29 percent. The 2019 Legislature also passed House Substitute for Senate Bill 25. This legislation repealed the actions of the 2018 Legislature which provided for a contingent payment of up to $56 million in Fiscal Year 2019, if actual Fiscal Year 2019 receipts exceeded the consensus revenue estimates. Instead, this legislation directly transferred $51 million to the KPERS Trust Fund in Fiscal Year 2020 (received by KPERS on July 1, 2019). The net reduction of $5 million did not have a significant impact on the valuation results.

In KPERS, State, School and Local employers do not necessarily contribute the full actuarial contribution rate. Based on legislation passed in 1993, the employer contribution rates certified by the Board may not increase by more than the statutory cap. The statutory cap, which has been changed periodically, is 1.2 percent for all three groups (0.9 percent in Fiscal Year 2014, 1.0 percent in 2015, and 1.1 percent in 2016, and 1.2 percent in 2017 and beyond). In 2015, SB 4 reset the previously certified employer contribution rate for the State/School group for the last half of Fiscal Year 2015 from 11.27 percent to 8.65 percent. In addition, 2015 Senate Bill 228 authorized the sale of $1.0 billion in bonds to deposit in the trust fund, but also lowered the statutory rates for the State/School group from 12.37 percent to 10.91 percent for Fiscal Year 2016 and 13.57 percent to 10.81 percent for Fiscal Year 2017. The December 31, 2015 valuation set the statutory contribution rates for Fiscal Year 2019, based on the 1.2 percent statutory cap.

The results of the December 31, 2018, valuation are used to set employer contribution rates for Fiscal Year 2022 for the State and School (July 1, 2021 to June 30, 2022) and Fiscal Year 2021 for Local employers (calendar year 2021). Given the lag between the valuation date in which the employer contribution rates are determined and the effective date of those contribution rates, i.e., a two year lag for Local employers and a two and one-half year lag for the State/School and Judges groups, the UAL is projected from the valuation date to the first day of the fiscal year in which the contribution rate will apply, based on the statutory contribution rates and expected payroll in the intervening years. The UAL is amortized as a level-percentage of payroll for all groups except the Judges where a level-dollar payment is used. The payroll growth assumption is 3.0 percent, so the annual amortization payments will increase 3.0 percent each year. As a result, if total payroll grows 3.0 percent per year, as assumed, the amortization payment will remain level as a percentage of total current payroll. However, if actual payroll growth is less than 3.0 percent, then the UAL contribution rate will increase.

A summary of the actuarial and statutory employer contribution rates for the System is shown below:

DECEMBER 31, 2018 VALUATION

System	Actuarial	Statutory	Difference
State[1]	9.97%	14.09%	(4.12%)
School[1]	15.15%	14.09%	1.06%
State/School[1]	14.09%	14.09%	0.00%
Local[1]	8.87%	8.87%	0.00%
Police & Firemen - Uniform Rates[2]	22.80%	22.80%	0.00%
Judges	18.40%	18.40%	0.00%

(1) By statute, rates are allowed to increase by a maximum of 1.2 percent, plus the cost of any benefit enhancements. The December 31, 2018, valuation sets the employer contribution rate for Fiscal Year 2022 for the State and School group and calendar year 2021 for the Local group. An additional contribution of 0.64 percent applies to the School group in Fiscal Year 2022 due to contribution reductions in Fiscal Year 2017 and Fiscal Year 2019.

(2) For KP&F, the statutory contribution rate is equal to the "Uniform" rate. The rate shown is for both State and Local employers. The uniform rate does not include the payment required to amortize the unfunded past service liability determined separately for each employer.

Due to statutory caps, the full actuarial contribution rate is not necessarily contributed for all KPERS groups. The State and Local groups reached the actuarial required contribution (ARC) date (the year in which the statutory contribution rate is equal to or greater than the ARC rate) in the 2010 and 2012 valuations, respectively, and remain at the ARC rate in this valuation. Based on the current valuation, there is a difference (shortfall) between the actuarial and statutory contribution rates of 1.06 percent for the School group. However, the statutory contribution rate is set for the combined State/School group. The ARC date occurs in Fiscal Year 2021 at a rate of 14.23 percent of pay, based on the December 31, 2017, valuation, and the statutory contribution rate continues to be equal to the actuarial required contribution rate in the December 31, 2018, valuation.

Separate employer contribution rates are calculated for two subgroups of the State: Correctional Employee Groups with a normal retirement age of 55 (C55) and a normal retirement age of 60 (C60). The contribution rates are to be calculated by increasing the state statutory contribution rate by the difference in the normal cost rate for the C55 and C60 groups over the normal cost rate for regular state members, but not to exceed the statutory cap on contribution increases. The higher contribution rates are intended to finance the earlier normal retirement age. However, 2015 SB 228 reset the statutory employer contribution rates for Fiscal Year 2016 and Fiscal Year 2017 for the Correctional Employee groups to be the same as the employer contribution rate for the State/School group (10.91 percent and 10.81 percent respectively), eliminating the intended rate differential. The resulting contribution rates for the Correctional Employee Groups for Fiscal Year 2022 are shown in the following table:

Corrections Group	Statutory Rate
Retirement Age 55:	14.43%
Retirement Age 60:	15.14%

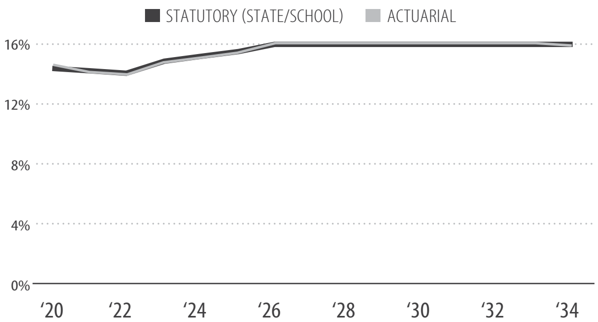
The change in the employer actuarial contribution rate from December 31, 2017, to December 31, 2018, and the primary components thereof are shown in the table on page 89. The employer contribution rates increased from those in the December 31, 2017, valuation for all groups with the exception of the School group, primarily due to unfavorable investment experience during 2018. For the School group (and by extension the State/School group), the decrease in the contribution rate was the result of the impact of the additional contribution of $115 million, as provided by Senate Bill 9. Furthermore, covered payroll for the School group grew by 6.9 percent, which is higher than the assumed payroll growth rate of 3.0 percent. When the same contribution amount required to amortize the UAL is spread over a larger payroll, the UAL contribution rate is reduced.

The following graphs show the preliminary projected employer contribution rates, assuming all actuarial assumptions are met in the future, including a 7.75 percent net rate of return on the market value of assets in all years, and that the current statutory funding policy for the State/School group (including the amortization policy) continues and contributions are made as scheduled, including the repayment of the reduced contributions for Fiscal Year 2017 and Fiscal Year 2019.

Note that although separate valuations are performed for the State and School groups, the statutory contribution rate for the two is determined using the combined valuation results for the two groups. Contributions which result from the excess of the statutory contribution rate over the actuarial required contribution rate for the State are allocated to the School to improve the funding of that group.

PROJECTED EMPLOYER CONTRIBUTION RATES – STATE/SCHOOL

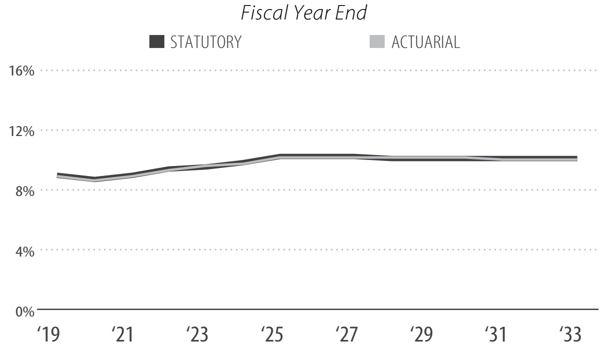
Fiscal Year End



Based on the December 31, 2017, valuation results, the actuarial required contribution (ARC) date for the State/School group occurs in Fiscal Year 2021 at an ARC rate of 14.23 percent. Given the deferred investment experience, it increases to around 16 percent. During the projection period, the statutory rate is expected to be equal to the ARC rate. Actual experience in future years, particularly investment returns, will significantly impact future actuarial and statutory rates.

PROJECTED EMPLOYER CONTRIBUTION RATES – LOCAL

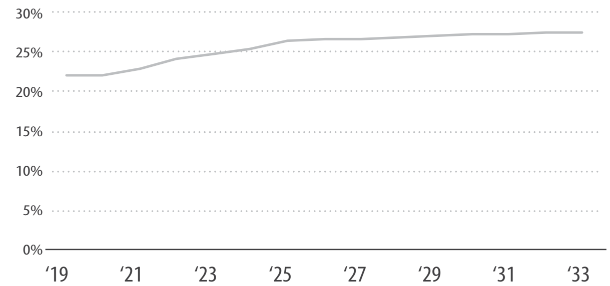
Fiscal Year End



The Local group reached the ARC date in the 2012 valuation at an ARC rate of 9.48 percent, which has decreased and is now 8.87 percent in the 2018 valuation. The projected contribution rate is expected to increase to around 10.15 percent as the deferred investment experience is realized, assuming all actuarial assumptions are met in future years. Actual experience in future years, particularly investment returns, will significantly impact future actuarial and statutory rates.

PROJECTED EMPLOYER CONTRIBUTION RATES – KP&F

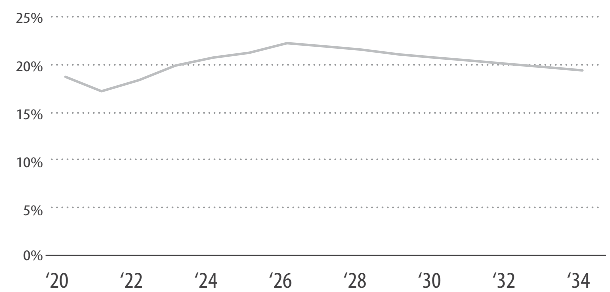
Fiscal Year End



Given the magnitude of the deferred investment loss, the projected employer contribution rate for KP&F is expected to increase to more than 27 percent as the deferred investment experience is recognized through the asset smoothing method. However, actual experience in future years, particularly investment returns, will significantly impact future contribution rates.

PROJECTED EMPLOYER CONTRIBUTION RATES – JUDGES

Fiscal Year End



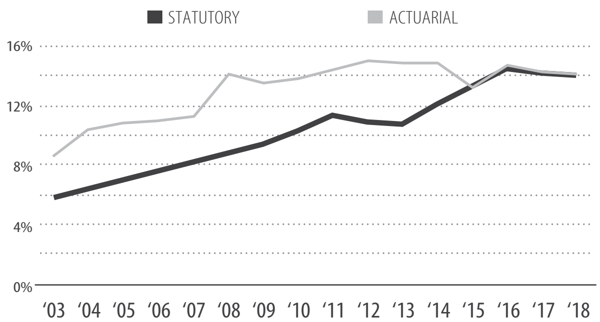
Given the magnitude of the deferred investment loss, the projected employer contribution rate for Judges is expected to increase to more than 22 percent as the deferred investment experience is recognized through the asset smoothing method and then decline. Actual experience in future years, particularly investment returns, will significantly impact future employer contribution rates.

Historical contribution rates for each group are shown on the following pages. Please note that prior to the December 31, 2003, valuation, one contribution rate was developed for the State and School together as one group. Legislation passed in 2004 split the actuarial valuations into two separate groups, although the statutory contribution rate has still been determined on a combined basis. By statute, any excess of the statutory contribution over the actuarial required contribution for the State is allocated to the School group.

Significant changes in funding methods occurred in 2003, and the System received bond proceeds in 2004 and 2015. Actuarial assumptions were changed in the 2004, 2007, 2011, 2014 and 2016 valuations. These changes impact the comparability of contribution rates between various valuation dates.

STATE/SCHOOL CONTRIBUTION RATES

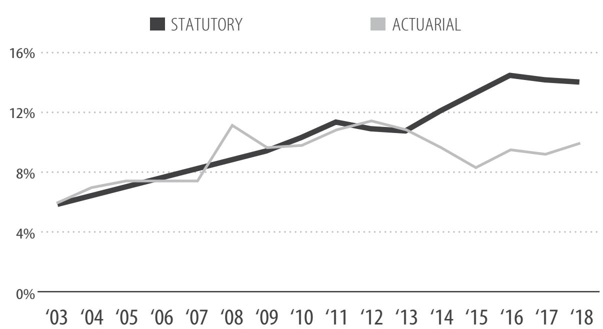
Fiscal Year End



Numerous factors have contributed to the increase in the ARC rate for the State/School group over much of this period including investment experience, changes in actuarial assumptions, and contributions significantly below the actuarial rate. Due to additional contributions and higher payroll growth than expected during 2018, the ARC rate decreased to 14.09 percent.

STATE CONTRIBUTION RATES

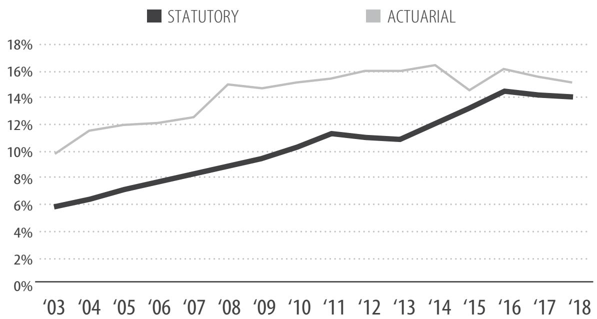
Fiscal Year End



The split of the State group into a separate group with the 2003 valuation, coupled with the bond issue, lowered the State ARC rate. The State reached the full ARC rate in the 2010 valuation and has remained at ARC except for the recertification of the statutory contribution rate for Fiscal Year 2017 from 12.37 percent to 10.91 percent. In this valuation, the State's ARC rate increased to 9.97 percent, due to unfavorable investment experience in 2018.

SCHOOL CONTRIBUTION RATES

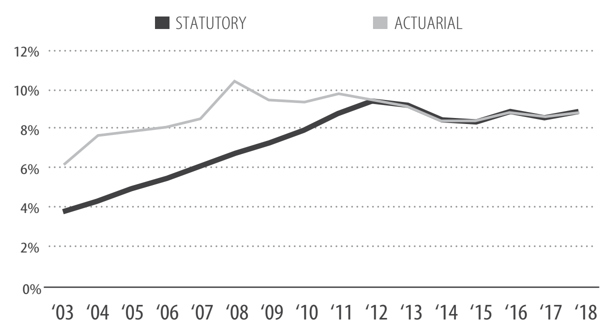
Fiscal Year End



Due to investment experience, changes in actuarial assumptions, and the magnitude of the difference between the actuarial and statutory contribution rates, the funded status of the School group has declined and the ARC rate has increased during the early part of this period. Increases to the statutory contribution rate and contribution sharing from the State group helped to stabilize ARC rate and improve the funded ratio.

LOCAL CONTRIBUTION RATES

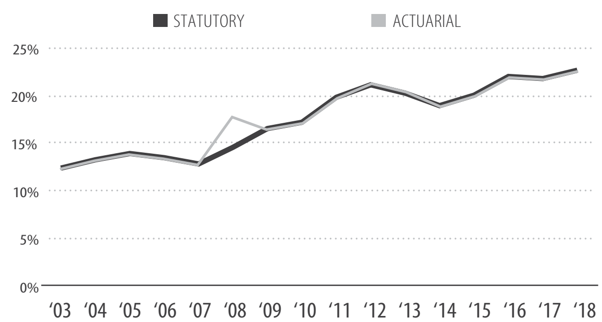
Fiscal Year End



The Local contribution rate has also been impacted by changes in actuarial assumptions and methods as well as investment performance. With the significant changes in 2012 Sub House Bill 2333 and favorable investment returns, the statutory contribution rate was equal to the ARC rate in the 2012 valuation. In this valuation, the Local group's ARC rate increased to 8.87 percent, due to unfavorable investment experience in 2018.

KP&F CONTRIBUTION RATES (LOCAL)

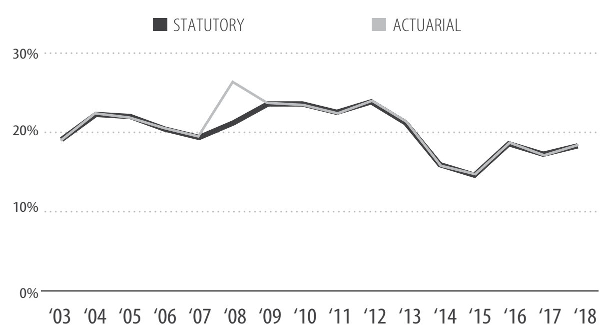
Fiscal Year End



Investment experience in 2008 and 2011 resulted in higher contribution rates in the latter part of the period. The assumption changes reflected in the 2016 valuation increased the contribution rate. Unfavorable investment experience during 2018 resulted in an increase in the ARC rate for the KP&F System.

JUDGES CONTRIBUTION RATES

Fiscal Year End



Investment experience in 2008 and 2011 resulted in higher contribution rates in the middle of the period. The assumption changes reflected in the 2016 valuation increased the contribution rate. Unfavorable investment experience during 2018 resulted in an increase in the ARC rate for the Judges System.

Over the last 10 to 15 years, the development of a comprehensive plan to address the long-term funding of KPERS has been a high priority and significant changes have been made. HB 2014, which was passed by the 2003 Legislature, increased the statutory cap on the State/School employer contribution rate from 0.20 percent to 0.40 percent in Fiscal Year 2006, 0.50 percent in Fiscal Year 2007 and 0.60 percent in Fiscal Year 2008 and beyond. It also authorized the issuance of up to $500 million in pension obligation bonds (POBs). The POBs were sold and proceeds of $440.2 million were received on March 10, 2004. The debt service payments on the bonds are paid by the State in addition to the regular KPERS employer contribution rate.

The 2004 Legislature passed SB 520, which continued to address issues related to the long term funding of the System. It gave the KPERS Board of Trustees the authority to establish the actuarial cost method and amortization method/period. With this authority, the Board changed both the actuarial cost method and the asset valuation method with the December 31, 2003 actuarial valuation. SB 520 also increased the statutory cap for Local employers from 0.15 percent to 0.40 percent in Fiscal Year 2006, 0.50 percent in Fiscal Year 2007 and 0.60 percent in Fiscal Year 2008 and beyond.

The 2007 Legislature passed SB 362 which created a new benefit structure for members first employed on or after July 1, 2009 (KPERS 2). The change was made partially due to long term funding considerations, but also in response to demographic changes in the membership.

The 2011 Legislature passed Senate Substitute for House Bill 2194 (Sub HB 2194). The intent of this law was to strengthen KPERS' long term funding and improve the sustainability of the system. The bill contained significant changes for both KPERS employers and current and future members. In addition, Sub HB 2194 established a 13 member KPERS Study Commission to study alternative plan designs during the last half of 2011 and make a recommendation for KPERS plan design that would provide for the long term sustainability of the System. The Commission report was due to the Legislature by January 6, 2012. Sub HB 2194 required that the report recommendations be voted on by the 2012 Legislature for the other provisions of Senate Substitute for HB 2194 to become effective. The 2012 Legislature did not move the Study Commission recommendation forward, but some of the other provisions were included in the bill that was ultimately passed in 2012, Senate Sub for House Bill 2333.

The 2012 Legislature passed Sub House Bill 2333, affecting new hires, current members and employers. The changes were made to improve KPERS' long term sustainability. The basic provisions of Sub House Bill 2333, as amended by House Bill 2213 in 2013, included:

- Increased the statutory cap on employer contribution rates to 0.9 percent in Fiscal Year 2014, 1.0 percent in Fiscal Year 2015, 1.1 percent in Fiscal Year 2016 and 1.2 percent in Fiscal Year 2017 and beyond.

- Contingent upon IRS approval, established an election by KPERS 1 members between different contribution rate and benefit levels. The legislation provided that, if the IRS rejected or did not take action to approve the election, KPERS 1 members would default to an increase in their employee contributions to 5 percent of compensation effective January 1, 2014, and 6 percent effective January 1, 2015, with an increase in the benefit multiplier to 1.85 percent beginning January 1, 2014, for future years of service only. Subsequently, the IRS issued a private letter ruling stating that the election granted to KPERS 1 members under 2012 HB 2333 was impermissible.

- For KPERS 2 members retiring after July 1, 2012, the cost of living adjustment (COLA) was eliminated, but members received a 1.85 percent multiplier for all years of service.

- Created a cash balance plan for new hires beginning January 1, 2015. A cash balance plan is a type of defined benefit plan that includes some elements of a defined contribution plan and shares risk between the employer and employee. Each member has a hypothetical account that is credited with employee contributions, employer pay credits and interest credits. At retirement, the account balance is annuitized to create a guaranteed monthly benefit payable for the member's lifetime. Up to 30 percent of the account value at retirement may be paid as a lump sum.

- Beginning in Fiscal Year 2014, Sub House Bill 2333 provided for the state to make additional contributions to help pay down KPERS' unfunded actuarial liability until the State/School group reaches a funded ratio of at least 80 percent. The revenue was to come from the Expanded Lottery Act Revenues Fund (ELARF). However, for Fiscal Year 2014 through 2017, the ELARF funds were appropriated as a partial funding source to meet the statutory contribution requirements for the School group rather than contributed in addition to the statutory contributions. Therefore, no additional funding of the unfunded actuarial liability has occurred. As a result, projections assume there will not be any additional payments to the unfunded actuarial liability from the ELARF funds.

- If the State of Kansas sells surplus real estate, 80 percent of the proceeds is to be used to pay down KPERS' unfunded actuarial liability until the System reaches an 80 percent funded ratio. However, 2016 SB 249 suspended this provision with respect to any sales of surplus real estate during Fiscal Year 2017.

The 2014 Legislature passed HB 2533 which made changes to the KPERS 3 benefit structure, generally decreasing the portion of the benefit that is guaranteed, thereby increasing the risk-sharing portion of the benefit. The changes in House Bill 2533 were designed to further improve KPERS long term funding and to better manage the investment risk.

The 2015 Legislature passed SB 4 which revised the State/School employer contribution rate from 11.27 percent to 8.65 percent for the last half of Fiscal Year 2015 to correspond with the Governor's allotment. In addition, 2015 SB 228 provided for bonds to be issued to improve the funded status of the State/School group and also reduced the previously certified employer contribution rates for Fiscal Year 2016 and 2017. The following provisions were included in SB 228:

- Net proceeds of up to $1.0 billion from bonds issued by the state of Kansas were to be deposited into the KPERS trust fund for the State/School group, subject to certain criteria. The bonds had to be issued at an interest rate no greater than 5.0 percent and approved by the State Finance Council (approval received July 2, 2015).

- Revised the previously certified State/School employer contribution rate from 12.37 percent to 10.91 percent for Fiscal Year 2016 and from 13.57 percent to 10.81 percent for Fiscal Year 2017. The statutory cap of 1.2 percent per year was still applicable to employer contribution rates in Fiscal Year 2018 and beyond.

The 2015 Legislature also passed House Bill 2095 that contained changes to the working after retirement provisions and implemented a pilot program in KP&F for a Deferred Option Retirement Plan for the Kansas Highway Patrol. Neither of these provisions had a significant impact on the long term funding of the System.

The 2016 Legislature passed House Sub for SB 168 which revised the rules pertaining to working after retirement. The bill also made technical and clarifying amendments to statutes related to death and disability contributions, KPERS 3 members, and the Deferred Retirement Option Program (DROP) for certain members of KP&F. None of these provisions had an impact on the December 31, 2015, valuation results. The 2016 Legislature also passed House Sub for SB 161 which provided for the delay of up to $100 million in State and School contributions for Fiscal Year 2016. House Sub for SB 249 provided that the delayed contributions would be repaid in full, with interest at 8 percent, by June 30, 2018. The Governor used this allotment authority to delay payments of $97.4 million in State/School group and KP&F State contributions during the final quarter of Fiscal Year 2016. However, S Sub for Sub HB 2052, passed in the 2017 session, provided that the repayment of these contributions will not be paid (subsequent legislation passed by the 2019 Legislature repaid these delayed contributions).

The 2017 Legislature passed several bills that impacted the provisions and funding of KPERS:

- Senate Substitute for Substitute HB 2052 (S Sub for Sub HB 2052) provided that a portion of the contributions for the School group for Fiscal Year 2017 will be delayed so the total State/School contribution will be $64.13 million less than the scheduled statutory contributions. The delayed employer contributions for Fiscal Year 2017 will be paid in level-dollar annual installments of $6.4 million over twenty years beginning in Fiscal Year 2018. These payments are determined as a contribution rate for School employers to be paid in addition to the statutory State/School contribution rate. Further, S Sub for Sub HB 2052 provided that the repayment of the contribution reduction from Fiscal Year 2016 with interest ($115 million), scheduled in Fiscal Year 2018, would not be paid (subsequent legislation passed by the 2019 Legislature repaid these delayed contributions).

- Senate Substitute for HB 2002 contained KPERS funding provisions for Fiscal Year 2018 and Fiscal Year 2019, including the following:

  - **Fiscal Year 2018:** The contributions for the State/School group for Fiscal Year 2018 was made at the scheduled statutory rate of 12.01 percent. In addition, the first installment of $6.4 million on the 20-year amortization of the delayed contributions for Fiscal Year 2017 was included.

  - **Fiscal Year 2019:** A portion of the employer contributions for School employers within the State/School group for Fiscal Year 2019 were delayed so the total employer contribution was $420 million, including the second installment of $6.4 million on the delayed contribution for Fiscal Year 2017. This results in an expected delay of $194 million that will be repaid, as a level dollar amount over 20 years beginning in Fiscal Year 2020.

  - **Fiscal Year 2020:** The current statutory cap of 1.2 percent per year will apply in determining the statutory contribution rate for the State/School group for Fiscal Year 2020. The certified statutory rate from Fiscal Year 2019 of 13.21 percent, without inclusion of the $6.4 million amortization of the delayed contributions in Fiscal Year 2017 and $19.4 million amortization of the delayed contributions in Fiscal Year 2019, will be increased by 1.2 percent, resulting in a statutory contribution rate for Fiscal Year 2020 of 14.41 percent. The current statutory cap of 1.2 percent per year applies for all subsequent years.

- SB 205 changed the duty-related death benefit for KP&F members to the greater of 50 percent of Final Average Salary and the member's accrued retirement benefit under the 100 percent joint and survivor option, payable to the member's spouse. Including any benefits that may be due to child beneficiaries, the total monthly benefits may not exceed 90 percent of the member's Final Average Salary. Prior to this this bill, the duty-related death benefit for a KP&F member was 50 percent of Final Average Salary, and the maximum available to the family was 75 percent of the member's Final Average Salary.

- House Substitute for SB 21 included changes to the working after retirement rules for members who retire on or after January 1, 2018. The key provisions of the bill were to lengthen the waiting period for KPERS members to return to work from 60 days to 180 days for members who retire before attaining age 62, remove the earnings limitation for all retirees, and establish a single employer contribution schedule for all retirees.

The 2018 Legislature passed House Substitute for Senate Bill 109 that provided for the following additional funding to the KPERS School group:

- An additional payment of $82 million in July 2018 (received by KPERS).

- A contingent additional payment of up to $56 million to be paid in Fiscal Year 2018, if actual Fiscal Year 2018 receipts exceed the consensus revenue estimates (full amount received in June, 2018).

- A contingent additional payment of up to $56 million to be paid in Fiscal Year 2019, if actual Fiscal Year 2019 receipts exceed the consensus revenue estimates (this payment was changed by the 2019 Legislature to a transfer of $51 million in Fiscal Year 2020 which was received by KPERS on July 1, 2019).

COMMENTS

The 2019 Legislature passed two pieces of legislation that impacted the contributions to KPERS. Senate Bill 9 provided for a transfer of $115 million from the State General Fund to KPERS in March 2019. This payment covers the $97 million in missed KPERS School contributions for Fiscal Year 2016 plus interest. The contribution lowered the State/School actuarial contribution rate by 0.29 percent. The 2019 Legislature also passed House Substitute for Senate Bill 25. This legislation repealed the actions of the 2018 Legislature that provided for a contingent payment of up to $56 million in Fiscal Year 2019, if actual Fiscal Year 2019 receipts exceeded the consensus revenue estimates. Instead, this legislation directly transferred $51 million to the KPERS Trust Fund in Fiscal Year 2020 (received by KPERS on July 1, 2019). The net reduction of $5 million did not have a significant impact on the valuation results.

Like most public retirement systems, KPERS uses an asset smoothing method to average investment experience above and below the assumed net rate of return (7.75 percent). Under the asset smoothing method, the difference between the dollar amount of the actual and assumed investment experience is recognized equally over a five-year period. Due to the recognition of the experience in the prior four years using the asset smoothing method, the return on the actuarial value of assets in 2018 was 5.3 percent. As of the valuation date, the actuarial value of assets exceeds the market value of assets by about 6.6 percent or $1.2 billion. This deferred experience will flow through the asset smoothing method in the next four years and be recognized in the valuation process, unless offset by investment experience above the 7.75 percent assumed net rate of return. As the deferred investment experience is recognized, the funded ratio can be expected to decrease and the actuarial contribution rate to increase.

While the use of an asset smoothing method is a common procedure used by public retirement systems, it is important to identify the potential impact of the deferred (unrecognized) investment experience. This is particularly important when there are significant deferred investment losses, but it is also useful to consider the impact on the key actuarial measurements if the deferred investment gains are recognized. To illustrate the impact of the deferred investment experience, the key valuation results are shown in the following table for the State/School and KPF groups using both the actuarial value of assets and the pure market value. The impact would be similar for the other groups.

	State/School		KP&F	
	Actuarial	Market	Actuarial	Market
Actuarial Liability	$19,959	$19,959	$3,457	$3,457
Asset Value	13,202	12,387	2,524	2,362
Unfunded Actuarial Liability*	6,756	7,572	933	1,095
Funded Ratio	66%	62%	73%	68%
Contribution Rate:				
Normal Cost Rate	7.95%	7.95%	14.86%	14.86%
UAL Payment	12.14%	13.64%	15.09%	17.66%
Actuarial Contribution Rate	20.09%	21.59%	29.95%	32.52%
Employee Rate	6.00%	6.00%	7.15%	7.15%
Employer Rate	14.09%	15.59%	22.80%	25.37%

** May not add due to rounding*

Future investment experience will impact the extent to which the deferred investment experience (which is currently a net loss) will be recognized. The ultimate impact of the deferred experience on the employer contribution rate would be similar to the column shown above based on the market value of assets, if all actuarial assumptions are met including the 7.75 percent return in future years. Also, please refer to the graphs later in this section that show the projected contribution rates assuming a 7.75 percent net rate of return in all future years.

The legacy unfunded actuarial liability is amortized over a closed period ending in 2033 (14 years remaining as of this valuation date). Increases in the unfunded actuarial liability resulting from the assumption changes adopted in the December 31, 2016, valuation are amortized over a closed 25 year period, while other actuarial experience (gains/losses) is amortized over closed 20 year periods. While all of the groups (State/School, Local, KP&F, and Judges) are projected to reach a funded ratio of 100 percent, the actual funding progress will be heavily dependent on the actual investment experience of the System in future years, the continuation of the current statutory funding policy for the State/School group, and actual contributions at the statutory rate. Any material extension of the amortization periods will delay funding progress by reducing contributions in the short term and increasing them over the long term.

SUMMARY OF CHANGE IN UNFUNDED ACTUARIAL LIABILITY BY SYSTEM

December 31, 2018 Valuation ($ Millions)

	State	School	State/ School	Local	KP&F	Judges	Total
UAL in 12/31/2017 Valuation Report	**$868.8**	**$5,712.5**	**$6,581.3**	**$1,458.3**	**$859.9**	**$7.7**	**$8,907.2**
· Effect of contribution cap/time lag	(2.6)	57.5	54.9	1.0	8.0	0.2	64.1
· Expected decrease due to UAL amortization	(16.6)	(109.4)	(126.0)	(27.9)	(16.5)	(0.3)	(170.7)
· Actual vs. expected experience							
Investment return	88.6	228.0	316.6	90.7	63.7	4.8	475.8
Demographic experience	(4.4)	70.5	66.1	(13.7)	20.6	(1.5)	71.4
All other experience	0.9	5.8	6.6	(6.8)	(2.5)	(0.2)	(2.9)
· Additional contributions	0.0	(143.2)	(143.2)	0.0	0.0	0.0	(143.2)
· Change in actuarial assumptions/methods	0.0	0.0	0.0	0.0	0.0	0.0	0.0
· Change in benefit provisions	0.0	0.0	0.0	0.0	0.0	0.0	0.0
UAL in 12/31/2018 Valuation Report	**$934.7**	**$5,821.7**	**$6,756.3**	**$1,501.6**	**$933.2**	**$10.7**	**$9,201.8**

Note: Numbers may not add due to rounding.

SUMMARY OF CHANGES IN EMPLOYER ACTUARIAL CONTRIBUTION RATE BY SYSTEM

As Of December 31, 2018

Percentage of Payroll	State	School	State/ School	Local	KP&F(1)	Judges
Actuarial Contribution Rate in 12/31/2017 Valuation	**9.22%**	**15.59%**	**14.23%**	**8.61%**	**21.93%**	**17.26%**
Change Due to Amortization of UAL						
· Effect of Contribution Cap/Time Lag	(0.02)	0.11	0.08	0.00	0.11	0.06
· UAl Amortization	0.00	0.00	0.00	0.00	0.00	(0.08)
· Investment Experience	0.66	0.44	0.48	0.36	0.86	1.50
· Liability Experience	(0.03)	0.13	0.10	(0.05)	0.28	(0.47)
· All Other Experience	0.03	(0.14)	(0.10)	(0.05)	(0.12)	0.03
· Additional Contributions in Fiscal Year 2019	0.00	(0.37)	(0.29)	0.00	0.00	0.00
· Payroll Growth	0.18	(0.50)	(0.31)	0.09	(0.27)	0.00
· Change in Assumptions/Methods	0.00	0.00	0.00	0.00	0.00	0.00
· Change in Benefit Provisions	0.00	0.00	0.00	0.00	0.00	0.00
Change in Employer Normal Cost Rate						
· Change in Benefit Provisions	0.00	0.00	0.00	0.00	0.00	0.00
· Change in Assumptions/Methods	0.00	0.00	0.00	0.00	0.00	0.00
· All Other Experience	(0.07)	(0.11)	(0.10)	(0.09)	0.01	0.10
Actuarial Contribution Rate in 12/31/2018 Valuation	**9.97%**	**15.15%**	**14.09%**	**8.87%**	**22.80%**	**18.40%**

(1) Contribution rate for Local employers only.
Note: Numbers may not add due to rounding.

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UAL

As of December 31, 2018 Valuation

	As Reported on Valuation Date							
%(millions)	6/30/94	6/30/95	6/30/96	6/30/97	6/30/98	6/30/99	6/30/00	12/31/00
Actual Experience vs. Assumed								
• Investment	$(102)	$(143)	$(280)	$(323)	$(413)	$(369)	$(441)	$(23)
• Other	320	72	136	157	104	46	99	84
Assumption Changes	0	(96)	0	0	350	0	0	(206)
Changes in Data/Procedures	244	0	0	0	0	21	71	145**
Change in Cost Method	0	0	0	0	0	0	0	0
Effect of Contribution Cap/Lag	*	95	70	63	54	78	66	60
Amortization Method	*	47	38	35	32	30	22	12
Change in Benefit Provisions	75	0	0	0	88	0	19	0
Change in Actuarial Firm/Software	0	0	0	0	0	0	0	0
Bond Issue	0	0	0	0	0	0	0	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	0
Additional Contributions	0	0	0	0	0	0	0	0
Total	$537	$(25)	$(36)	$(68)	$215	$(194)	$(164)	$72

%(millions)	12/31/01	12/31/02	12/31/03	12/31/04	12/31/05	12/31/06	12/31/07	12/31/08
Actual Experience vs. Assumed								
• Investment	$350	$644	$140	$456	$167	$(293)	$(626)	$2,332
• Other	(9)	68	(32)	16	(84)	140	99	78
Assumption Changes	0	0	0	437	(5)	0	384	0
Changes in Data/Procedures	5	177**	(286)***	0	0	0	0	0
Change in Cost Method	0	0	1,147	0	0	0	0	0
Effect of Contribution Cap/Lag	115	143	178	179	247	258	251	246
Amortization Method	14	21	47	68	84	83	78	71
Change in Benefit Provisions	0	37	3	1	0	24	2	0
Change in Actuarial Firm/Software	0	0	0	0	0	0	0	0
Bond Issue	0	(41)	(440)	0	0	0	0	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	0
Additional Contributions	0	0	0	0	0	0	0	0
Total	$475	$1,049	$757	$1,157	$409	$212	$188	$2,727

$(millions)	12/31/09	12/31/10	12/31/11	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16
Actual Experience vs. Assumed								
• Investment	$(1,011)	$560	$852	$732	$(653)	$(368)	$52	$(59)
• Other	(70)	(334)	(190)	(78)	(125)	(78)	(130)	(144)
Assumption Changes	0	0	(64)	0	0	(50)	0	593
Changes in Data/Procedures	0	0	0	0	0	0	0	0
Change in Cost Method	0	0	0	0	0	0	0	0
Effect of Contribution Cap/Lag	383	320	289	303	246	178	160	70
Amortization Method	96	68	62	49	46	18	(11)	(38)
Change in Benefit Provisions	0	0	15	19	0	1	0	1
Change in Actuarial Firm/Software	0	(27)	0	0	0	0	0	0
Bond Issue	0	0	0	0	0	0	(1,000)	0
Non-Collectible Pension Contributions	0	0	0	0	0	0	0	99
Additional Contribution	0	0	0	0	0	0	0	0
Total	$(602)	$587	$964	$1,025	$(487)	$(298)	$(929)	$522

Unfunded actuarial liability 6/30/93: $968 million

Unfunded actuarial liability 12/31/18: $9,202 million

** Not calculated for this year.*

***Reflects the impact of re-establishing the KP&F Supplemental Actuarial Liability at December 31, 2002. The additional unfunded actuarial liability as of December 31, 2000, for the State/School and Local groups not recognized in the prior valuation due to the phase-in of the change in actuarial procedures is included.*

****Change in asset valuation method.*

SUMMARY OF HISTORICAL CHANGES IN TOTAL SYSTEM UAL

As of December 31, 2018 Valuation (continued)

	As Reported on Valuation Date		
$(millions)	12/31/17	12/31/18	Total
Actual Experience vs. Assumed			
• Investment	$(117)	$476	$1,540
• Other	(50)	69	164
Assumption Changes	0	0	1,343
Changes in Data/Procedures	0	0	377
Change in Cost Method	0	0	1,147
Effect of Contribution Cap/Lag	149	64	4,265
Amortization Method	(136)	(171)	665
Change in Benefit Provisions	0	0	285
Change in Actuarial Firm/Software	0	0	(27)
Bond Issue	0	0	(1,481)
Non-Collectible Pension Contributions	0	0	99
Additional Contributions	0	(143)	(143)
Total	$(154)	$295	$8,234

Unfunded actuarial liability 6/30/93: $968 million

Unfunded actuarial liability 12/31/18: $9,202 million

** Not calculated for this year.*

***Reflects the impact of re-establishing the KP&F Supplemental Actuarial Liability at December 31, 2002. The additional unfunded actuarial liability as of December 31, 2000, for the State/School and Local groups not recognized in the prior valuation due to the phase-in of the change in actuarial procedures is included.*

****Change in asset valuation method.*

SUMMARY OF PRINCIPAL RESULTS – KPERS (STATE)

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	20,893	21,427	(2.5%)
Retired Members and Beneficiaries	20,522	20,075	2.2%
Inactive Members	9,346	8,901	5.0%
Total Members	50,761	50,403	0.7%
Projected Annual Salaries of Active Members	$ 954,158,850	$ 946,342,010	0.8%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 297,580,405	$ 286,058,578	4.0%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 4,527,410,069	$ 4,457,117,349	1.6%
b. Assets for Valuation Purposes	$ 3,592,747,329	$ 3,588,341,301	0.1%
c. Unfunded Actuarial Liability (a) - (b)	$ 934,662,740	$ 868,776,048	7.6%
d. Funded Ratio (b) / (a)	79.4%	80.5%	(1.4%)
e. Market Value of Assets	$ 3,371,313,965	$ 3,653,660,034	(7.7%)
f. Funded Ratio on Market Value (e) / (a)	74.5%	82.0%	(9.1%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	7.59%	7.66%	
Member	6.00	6.00	
Employer	1.59	1.66	
Amortization of Unfunded Actuarial Liability	8.38	7.56	
Actuarial Contribution Rate	9.97	9.22	
Statutory Employer Contribution Rate*	14.09%	14.23%	

**The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20 percent for Fiscal Year 2017 and later. This rate excludes the contribution rate for the Death and Disability Program. Any excess of the statutory over actuarial contribution rates applied to actual State payroll is deposited to the School assets.*

SUMMARY OF PRINCIPAL RESULTS – KPERS (SCHOOL)

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	87,245	84,239	3.6%
Retired Members and Beneficiaries	55,027	53,521	2.8%
Inactive Members	31,409	31,307	0.3%
Total Members	173,681	169,067	2.7%
Projected Annual Salaries of Active Members	$ 3,740,759,271	$ 3,497,953,735	6.9%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 861,574,541	$ 825,729,117	4.3%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 15,431,399,978	$ 14,890,672,923	3.6%
b. Assets for Valuation Purposes	$ 9,609,729,576	$ 9,178,189,403	4.7%
c. Unfunded Actuarial Liability (a) - (b)	$ 5,821,670,402	$ 5,712,483,520	1.9%
d. Funded Ratio (b) / (a)	62.3%	61.6%	1.1%
e. Market Value of Assets	$ 9,015,296,513	$ 9,335,940,612	(3.4%)
f. Funded Ratio on Market Value (e) / (a)	58.4%	62.7%	(6.9%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	8.05%	8.16%	
Member	6.00	6.00	
Employer	2.05	2.16	
Amortization of Unfunded Actuarial Liability	13.10	13.43	
Actuarial Contribution Rate	15.15	15.59	
Statutory Employer Contribution Rate*	14.09%	14.23%	

**The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20 percent for Fiscal Year 2017 and later. This rate excludes the contribution rate for the Death and Disability Program. An additional contribution rate of 0.69 percent applies for Fiscal Year 2020, 0.68 percent for Fiscal Year 2021 and 0.64 percent for Fiscal Year 2022.*

SUMMARY OF PRINCIPAL RESULTS – KPERS (STATE/SCHOOL)

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	108,138	105,666	2.3%
Retired Members and Beneficiaries	75,549	73,596	2.7%
Inactive Members	40,755	40,208	1.4%
Total Members	224,442	219,470	2.3%
Projected Annual Salaries of Active Members	$ 4,694,918,121	$ 4,444,295,745	5.6%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 1,159,154,946	$ 1,111,787,695	4.3%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 19,958,810,047	$ 19,347,790,272	3.2%
b. Assets for Valuation Purposes	$ 13,202,476,905	$ 12,766,530,704	3.4%
c. Unfunded Actuarial Liability (a) - (b)	$ 6,756,333,142	$ 6,581,259,568	2.7%
d. Funded Ratio (b) / (a)	66.1%	66.0%	0.2%
e. Market Value of Assets	$ 12,386,610,478	$ 12,989,600,646	(4.6%)
f. Funded Ratio on Market Value (e) / (a)	62.1%	67.1%	(7.5%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	7.95%	8.05%	
Member	6.00	6.00	
Employer	1.95	2.05	
Amortization of Unfunded Actuarial Liability	12.14	12.18	
Actuarial Contribution Rate	14.09	14.23	
Statutory Employer Contribution Rate*	14.09%	14.23%	

**The rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20 percent for Fiscal Year 2017 and later. This rate excludes the contribution rate for the Death and Disability Program. For the School group only, an additional contribution rate of 0.69 percent applies for Fiscal Year 2020, 0.68 percent for Fiscal Year 2021 and 0.64 percent for Fiscal Year 2022.*

SUMMARY OF PRINCIPAL RESULTS – KPERS (LOCAL)

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	37,966	38,281	(0.8%)
Retired Members and Beneficiaries	21,303	20,534	3.7%
Inactive Members	19,024	18,098	5.1%
Total Members	78,293	76,913	1.8%
Projected Annual Salaries of Active Members	$ 1,792,796,339	$ 1,763,898,722	1.6%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 266,840,648	$ 249,049,467	7.1%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 5,492,551,998	$ 5,299,548,013	3.6%
b. Assets for Valuation Purposes	$ 3,990,999,061	$ 3,841,214,560	3.9%
c. Unfunded Actuarial Liability (a) - (b)	$ 1,501,552,937	$ 1,458,333,453	3.0%
d. Funded Ratio (b) / (a)	72.7%	72.5%	0.3%
e. Market Value of Assets	$ 3,752,043,860	$ 3,920,141,884	(4.3%)
f. Funded Ratio on Market Value (e) / (a)	68.3%	74.0%	(7.7%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	7.50%	7.59%	
Member	6.00	6.00	
Employer	1.50	1.59	
Amortization of Unfunded Actuarial Liability	7.37	7.02	
Actuarial Contribution Rate	8.87	8.61	
Statutory Employer Contribution Rate*	8.87%	8.61%	

**The Statutory Employer Contribution Rate in this valuation may not exceed last year's rate by more than the statutory rate increase limit of 1.20 percent for Fiscal Year 2017 and later. This rate excludes the contribution rate for the Death and Disability Program.*

SUMMARY OF PRINCIPAL RESULTS – KPERS (TOTAL KPERS)

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	146,104	143,947	1.5%
Retired Members and Beneficiaries	96,852	94,130	2.9%
Inactive Members	59,779	58,306	2.5%
Total Members	302,735	296,383	2.1%
Projected Annual Salaries of Active Members	$ 6,487,714,460	$ 6,208,194,467	4.5%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 1,425,995,594	$ 1,360,837,162	4.8%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 25,451,362,045	$ 24,647,338,285	3.3%
b. Assets for Valuation Purposes	$ 17,193,475,966	$ 16,607,745,264	3.5%
c. Unfunded Actuarial Liability (a) - (b)	$ 8,257,886,079	$ 8,039,593,021	2.7%
d. Funded Ratio (b) / (a)	67.6%	67.4%	0.3%
e. Market Value of Assets	$ 16,138,654,338	$ 16,909,742,530	(4.6%)
f. Funded Ratio on Market Value (e) / (a)	63.4%	68.6%	(7.6%)

SUMMARY OF PRINCIPAL RESULTS – KANSAS POLICE AND FIREMEN'S RETIREMENT SYSTEM

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	7,695	7,481	2.9%
Retired Members and Beneficiaries	5,595	5,398	3.6%
Inactive Members	1,711	1,654	3.4%
Total Members	15,001	14,533	3.2%
Projected Annual Salaries of Active Members	$ 532,371,865	$ 507,774,486	4.8%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 191,441,617	$ 179,970,191	6.4%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 3,456,777,628	$ 3,320,247,686	4.1%
b. Assets for Valuation Purposes	$ 2,523,573,517	$ 2,460,340,659	2.6%
c. Unfunded Actuarial Liability (a) - (b)	$ 933,204,111	$ 859,907,027	8.5%
d. Funded Ratio (b) / (a)	73.0%	74.1%	(1.5%)
e. Market Value of Assets	$ 2,361,673,707	$ 2,495,082,288	(5.3%)
f. Funded Ratio on Market Value (e) / (a)	68.3%	75.1%	(9.1%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	14.86%	14.85%	
Member	7.15	7.15	
Employer	7.71	7.70	
Amortization of Unfunded Actuarial and Supplemental Liability	15.09	14.23	
Actuarial Contribution Rate (Local Employers)	22.80	21.93	
Statutory Employer Contribution Rate*	22.80%	21.93%	

**The Statutory Employer Contribution Rate is equal to the Actuarial Rate. This is referred to as the "Uniform" rate, and varies for State and Local employers. The total contribution is equal to the appropriate uniform rate plus the payment required to amortize any unfunded past service liability, determined separately for each employer.*

SUMMARY OF PRINCIPAL RESULTS – KANSAS RETIREMENT SYSTEM FOR JUDGES

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	256	259	(1.2%)
Retired Members and Beneficiaries	286	279	2.5%
Inactive Members	5	6	(16.7%)
Total Members	547	544	0.6%
Projected Annual Salaries of Active Members	$ 28,535,137	$ 28,332,177	0.7%
Annual Retirement Payments for Retired Members and Beneficiaries	$ 12,216,738	$ 11,707,915	4.3%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$ 191,996,752	$ 186,241,018	3.1%
b. Assets for Valuation Purposes	$ 181,280,044	$ 178,527,349	1.5%
c. Unfunded Actuarial Liability (a) - (b)	$ 10,716,708	$ 7,713,669	38.9%
d. Funded Ratio (b) / (a)	94.4%	95.9%	(1.6%)
e. Market Value of Assets	$ 169,210,144	$ 180,462,402	(6.2%)
f. Funded Ratio on Market Value (e) / (a)	88.1%	96.9%	(9.1%)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost			
Total	20.48%	20.38%	
Member	5.65	5.65	
Employer	14.83	14.73	
Amortization of Unfunded Actuarial and Supplemental Liability	3.57	2.53	
Actuarial Contribution Rate	18.40	17.26	
Statutory Employer Contribution Rate*	18.40%	17.26%	

**Statutory Employer Contribution Rate is equal to the Actuarial Rate. This rate excludes the contribution for the Death and Disability Program.*

SUMMARY OF PRINCIPAL RESULTS – ALL SYSTEMS COMBINED

	12/31/2018 Valuation	12/31/2017 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	154,055	151,687	1.6%
Retired Members and Beneficiaries	102,733	99,807	2.9%
Inactive Members	61,495	59,966	2.5%
Total Members	318,283	311,460	2.2%
Projected Annual Salaries of Active Members	$7,048,621,462	$6,744,301,130	4.5%
Annual Retirement Payments for Retired Members and Beneficiaries	$1,629,653,949	$1,552,515,268	5.0%
2. ASSETS AND LIABILITIES			
a. Total Actuarial Liability	$29,100,136,425	$28,153,826,989	3.4%
b. Assets for Valuation Purposes	$19,898,329,527	$19,246,613,272	3.4%
c. Unfunded Actuarial Liability (a) - (b)	$ 9,201,806,898	$ 8,907,213,717	3.3%
d. Funded Ratio (b) / (a)	68.4%	68.4%	0.0%
e. Market Value of Assets	$18,669,538,189	$19,585,287,220	(4.7%)
f. Funded Ratio on Market Value (e) / (a)	64.2%	69.6%	(7.8%)

SUMMARY OF PLAN PROVISIONS

PLAN MEMBERSHIP

The Kansas Public Employees Retirement System (the Retirement System or the System), is an umbrella organization administering three statewide retirement systems: the Kansas Public Employees Retirement System (KPERS), the Kansas Police and Firemen's Retirement System (KP&F), and the Kansas Retirement System for Judges. All three systems are defined benefit, contributory plans that cover nearly all public employees in Kansas. The Kansas Retirement System for Judges is a single employer plan, while the other two are cost-sharing, multiple employer plans. Participation by the State of Kansas is mandatory, whereas participation by local political subdivisions is optional, but irrevocable once elected. Benefit payments are also provided for a certain group of legislative employees.

KANSAS PUBLIC EMPLOYEES RETIREMENT SYSTEM

SUMMARY OF PLAN PROVISIONS

KPERS 1 refers to members before July 1, 2009. KPERS 2 refers to members who either began their participation or rehired on or after July 1, 2009, but before January 1, 2015. KPERS 3 refers to non-corrections members who either began their participation or rehired on or after January 1, 2015. Corrections members do not participate in KPERS 3.

This valuation reflects the benefit structure in place as of December 31, 2018.

EMPLOYEE MEMBERSHIP

Membership is mandatory for all employees in covered positions, except elected officials. A covered position for non-school employees is one that is covered by Social Security, is not seasonal or temporary, and requires at least 1,000 hours of work per year. School employees who work at least 630 hours per year or 3.5 hours per day for at least 180 days are eligible for membership. Effective July 1, 2009, all employees become KPERS members on their date of employment. Prior to July 1, 2009, only School employees were covered immediately, but there was a one-year service requirement for the State and Local groups. Members who retire under the provisions of the Retirement System may not become contributing members again.

NORMAL RETIREMENT

Eligibility – KPERS 1: (a) Age 65, or (b) age 62 with ten years of credited service or (c) any age when combined age and years of credited service equal 85 "points". Age is determined by the member's last birthday and is not rounded up.

KPERS 2 & 3: (a) Age 65 with 5 years of credited service or (b) age 60 with 30 years of credited service.

Benefit – KPERS 1 & 2: Benefits are based on the member's years of credited service, final average salary (FAS), and a statutory multiplier. For those who were hired prior to July 1, 1993, final average salary equals the greater of either: a four-year final average salary, including add-ons, such as sick and annual leave; or a three-year final average salary, excluding add-ons, such as sick and annual leave. For those who are hired on or after July 1, 1993 and before July 1, 2009, final average salary equals the average of the three highest years of salary, excluding add-ons, such as sick and annual leave. Effective July 1, 2009, (KPERS 2), final average salary equals the average of the five highest years of salary, excluding additional compensation.

KPERS 3: KPERS 3 members participate in a cash balance plan with benefits based on the Annuity Savings Account balance, the Retirement Annuity Account balance, and an annuity factor. The member's annuity factor at retirement is based on the member's age and benefit payment form. The current annuity factors were adopted by the Board upon recommendation of the actuary. They are expected to be updated periodically. The interest rate used to calculate the current annuity factors is 5.75 percent (7.75 percent assumed investment return, minus 2.00 percent), and the mortality table used is a set of blended mortality rates from the current post-retirement mortality assumptions for KPERS members. The blended mortality rates are projected to 2030 using improvement scale MP-2016. The weighting used to blend the mortality rates is shown in the following table:

	Members	Beneficiaries
State – Males	17.5%	42.5%
State – Females	42.5%	17.5%
School – Males	7.5%	8.5%
School – Females	8.5%	7.5%
Local – Males	12.5%	11.5%
Local– Females	11.5%	12.5%

A member's Annuity Savings Account balance is the sum of mandatory member contributions plus the interest credits and dividends on those contributions. A member's Retirement Annuity Account is the sum of all employer retirement credits to the account plus the interest credits and dividends on those credits.

Mandatory member contributions are 6 percent of compensation. The employer retirement credits schedule follows:

Years of Service	Retirement Credit Rate
Less than 5	3%
5 – 11	4%
12 – 23	5%
24 or more	6%

Interest credits are 4 percent per annum, paid quarterly. The interest credits are based on the account balances as of the last day of the preceding quarter. There is also a possibility of additional interest credits, depending on KPERS' investment return. These additional interest credits are called "dividends" and are equal to 75 percent of the five-year average net compound rate of return, as determined by the Board, for the preceding calendar year and the previous four calendar years on the market value of assets that is above 6.0 percent. A schedule of historical dividend rates is contained in the following table:

Year	Applicable Rate of Return	Compound Average	Dividend
2015	0.2%	0.2%	0.0%
2016	8.5%	4.3%	0.0%
2017	14.0%	7.4%	1.1%
2018	(2.9%)	4.7%	0.0%

Prior Service Credit – Prior service credit is 0.75 percent or 1.00 percent of final average salary per year [School employees receive 0.75 percent of final average salary for each year of prior service that is not credited under the former Kansas School Retirement System (KSRS)].

PARTICIPATING SERVICE CREDIT

KPERS 1: Participating service credit is 1.75 percent of final average salary for years of service prior to January 1, 2014. Participating service credit is 1.85 percent of final average salary for years of service after December 31, 2013.

KPERS 2: For those retiring on or after January 1, 2012, participating service credit is 1.85 percent for all years of service.

KPERS 3: Not applicable for the Cash Balance Plan.

EARLY RETIREMENT

Eligibility – Eligibility is age 55 and 10 years of credited service.

Benefit – KPERS 1: The normal retirement benefit is reduced 0.2 percent per month for each month between the ages of 60 and 62, and 0.6 percent for each month between the ages of 55 and 60.

KPERS 2: The normal retirement benefit is reduced actuarially for early commencement. The reduction factor is 35.0 percent at age 60 and 57.5 percent at age 55. If the member has 30 years of credited service, the early retirement reduction is less (50 percent of regular reduction).

KPERS 3: The early retirement benefit is determined in the same manner as a normal retirement benefit, but is based on the account balances and annuity factor at the member's retirement age.

VESTING REQUIREMENTS

Eligibility – Effective July 1, 2009, a member must have five years of credited service (ten years prior to July 1, 2009). Should the vested member terminate employment, the member must leave accumulated contributions on deposit with the Retirement System to be eligible for future benefits. If a vested member terminates employment and withdraws accumulated contributions, the member forfeits all rights and privileges under the Retirement System.

Benefit – KPERS 1 & 2: Retirement benefits are payable when the vested member reaches normal retirement age, or reduced benefits are payable when the vested member reaches a specified early retirement age.

KPERS 3: Retirement benefits are payable when the vested member meets the retirement eligibility requirements and is based on the member's account balances at retirement. The member's vested account will be granted interest credits and dividends during the deferral period between termination of employment and retirement.

OTHER BENEFITS

Withdrawal Benefit – Members who terminate employment may withdraw contributions with interest after the last day on the employer's payroll. Withdrawing member contributions forfeits all membership rights and benefits, which a member may have accrued prior to withdrawing their contributions from the Retirement System. Inactive, non-vested members who return to covered employment within five years after terminating employment, will not have lost any membership rights or privileges if they haven't withdrawn contributions. The Retirement Act provides for withdrawal of contributions 31 days after employment terminates, but it does not allow members to borrow from contributions.

Disability Benefit – KPERS 1 & 2: Members receiving disability benefits under the KPERS Death and Disability Benefits Program continue to receive service credit under KPERS. If a disabled member retires after receiving disability benefits for at least five years immediately preceding retirement, the member's final average salary is adjusted by the actuarial salary increase assumption rates in existence during the member's period of disability prior to July 1, 1993, 5 percent per year to July 1998 and the change in CPI-U less 1 percent, not to exceed 4 percent after July 1998.

KPERS 3: For any KPERS 3 member who becomes disabled, such member's Annuity Savings Account and Retirement Annuity Account will be credited with employee contributions, employer retirement credits, interest credits and dividends for the entire period of disability, but no later than the member's normal retirement age. The salary upon which credits are based shall be the employee's salary at the time of disability. After five years of disability, the underlying salary shall be increased by the lesser of

(a) the percentage increase in CPI-U, minus 1 percent, and (b) 4 percent per annum.

Death Benefits – Pre-retirement death (non-service connected).

KPERS 1 & 2: The member's accumulated contributions plus interest are paid in a lump sum to the designated beneficiary. In lieu of receiving the member's accumulated contributions, the surviving spouse of a member who is eligible to retire at death may elect to receive benefits under any survivor option. The spouse must be the member's sole designated beneficiary to exercise this option. If the member had at least 10 years of credited service, but had not reached retirement age, the spouse may elect to leave the member's contributions on deposit with the System and receive a monthly benefit to begin on the date the member would have been eligible to retire.

KPERS 3: If a vested member dies before attaining normal retirement age, the member's surviving spouse shall receive an annuity on the date the member would have attained normal retirement age had such member not died. The benefit is based upon the member's Annuity Savings Account and Retirement Annuity Account, and is payable as a single life annuity with 10-year certain.

Service-Connected Accidental Death – The member's accumulated contributions plus interest, plus lump sum amount of $50,000, plus annual benefit based on 50 percent of final average salary; reduced by Workers' Compensation benefits and subject to a minimum benefit of $100 a month; are payable to a spouse, minor children or dependent parents, for life, or until the youngest child reaches age 18 (or up to age 23 if they are full-time students), in this order of preference. The monthly accidental death benefit is in lieu of any joint/survivor benefit for which the surviving spouse would have been eligible. For KPERS 3 members, final average salary equals the average of the three final years of salary.

Post-Retirement Death – A lump sum amount of $4,000 is payable to the member's beneficiary. If the member has selected a retirement option, benefits are paid to the joint annuitant or the designated beneficiary. Under joint and survivor retirement options, if the joint annuitant predeceases the retired member, the reduced option benefit is increased to the amount the retired member would have received if no retirement option had been elected. Benefits payable to a joint annuitant cease at the joint annuitant's death. If a member does not select an option, the designated beneficiary receives the excess, if any, of the member's accumulated contributions plus interest over total benefits paid to date of death.

MEMBER CONTRIBUTIONS

KPERS 1: Prior to January 1, 2014, member contributions were 4 percent of compensation for KPERS 1. 2012 HB 2333 established an election by KPERS 1 members, contingent upon IRS approval, between different contribution rate and benefit levels. The legislation provided that, if the IRS rejected or did not take action to approve the election, KPERS 1 members would default to an increase in their employee contributions to 5 percent of compensation effective January 1, 2014, and 6 percent effective January 1, 2015, with an increase in the benefit multiplier to 1.85 percent beginning January 1, 2014, for future years of service only. Subsequently, the IRS issued a private letter ruling stating that the election granted to KPERS 1 members under 2012 HB 2333 was impermissible.

KPERS 2: The member contribution rate for KPERS 2 is 6 percent of compensation.

KPERS 3: The member contribution rate for KPERS 3 is 6 percent of compensation.

INTEREST ON MEMBER CONTRIBUTIONS

KPERS 1: Interest is credited to members' contribution accounts on June 30 each year, based on the account balance as of the preceding December 31. Those who became members prior to July 1, 1993, have interest credited to their accounts at the rate of 7.75 percent per year. Those who become members on and after July 1, 1993, have interest credited to their accounts at the rate of 4 percent per year.

KPERS 2: Interest is credited to members' contribution accounts on June 30 each year, based on the account balance as of the preceding December 31, at the rate of 4 percent per year.

KPERS 3: Interest credited varies by years of service. Please refer to the KPERS 3 Benefit section under Normal Retirement in these Plan Provisions.

EMPLOYER CONTRIBUTIONS

Rates are certified by the Board of Trustees, based on the results of annual actuarial valuations and statutory provisions.

BOARD OF REGENTS PLAN MEMBERS (TIAA AND EQUIVALENTS)

Board of Regents plan members (TIAA and equivalents) do not make contributions to KPERS. They receive prior service benefits for service before 1962; the benefit is 1 percent of final average salary for each year of credited prior service. Service after 1961 is counted for purposes of determining eligibility for vesting.

CORRECTIONAL MEMBERS

Correctional employees, as certified to the Board of Trustees by the Secretary of Corrections, are defined in K.S.A. 74-4914a: (a) correctional officers, (b) certain directors and deputy directors of correctional institutions, (c) correctional power plant operators, (d) correctional industries employees, (e) correctional food service employees and (f) correctional maintenance employees.

KPERS 1: For groups (a) and (b) with at least 3 consecutive years of credited service in such positions immediately preceding retirement, normal retirement age is 55 or Rule of 85; and early retirement requirements are age 50 with 10 years of credited service. For groups (c), (d), (e) and (f) with at least 3 consecutive years of service in such positions immediately preceding retirement, normal retirement age is 60 or Rule of 85, and early retirement requirements are 55 with 10 years of credited service.

KPERS 2: For groups (a) and (b) with at least 3 consecutive years of credited service in such positions immediately preceding retirement, normal retirement age is 55 with 10 years of credited service, and early retirement requirements are age 50 with 10 years of credited service. For groups (c), (d), (e) and (f) with at least 3 consecutive years of service in such positions immediately preceding retirement, normal retirement age is 60 with 10 years of credited service, and early retirement requirements are 55 with 10 years of credited service.

COST-OF-LIVING ADJUSTMENTS (COLAS)

KPERS 2: Members Who Retired Prior to July 1, 2012: 2 percent cost-of-living adjustment (COLA) each year beginning at age 65 or the second July 1 after the retirement date, whichever is later. Other KPERS 2 members will not receive a COLA.

KPERS 3: Upon retirement, the benefit option selected by the member may include a self-funded cost of living adjustment feature, in which the account value is converted to a benefit amount that increases by a fixed percentage over time.

KANSAS POLICE & FIREMEN'S RETIREMENT SYSTEM

NORMAL RETIREMENT

Tier I – age 55 and 20 years of service or 32 years of service (regardless of age).

Tier II – age 50 and 25 years of service, or age 55 and 20 years of service or age 60 and 15 years of service.

Benefits – Benefits are based on the member's final average salary. For those who were hired prior to July 1, 1993, final average salary equals the average of the highest three of the last five years of credited participating service, including add-ons, such as sick and annual leave. For those who are hired on or after July 1, 1993, final average salary equals the average of the highest three of the last five years of participating service, excluding add-ons, such as sick and annual leave. Benefits are based on a member's years of credited service and a multiplier of 2.5 percent of final average salary for each year of credited service, to a maximum of 90 percent of final average salary (first effective July 1, 2013).

Local Plan – For members covered by local plan provisions on the employer's entry date, normal retirement is at age 50 with 22 years of credited service.

EARLY RETIREMENT

Eligibility – Members must be at least age 50 and have 20 years of credited service.

Benefit – Normal retirement benefits are reduced 0.4 percent per month under age 55.

VESTING REQUIREMENTS

Eligibility – Tier I: The member must have 20 years of credited service; if terminating employment, the member must leave contributions on deposit with the Retirement System to be eligible for future benefits. Unreduced benefits are payable at age 55 or reduced benefits are payable as early as age 50.

Eligibility – Tier II: The member must have 15 years of credited service to be considered vested. If terminating employment, the member must leave contributions on deposit with the Retirement System to be eligible for future benefits. A vested member may draw unreduced benefits as early as age 50 with 25 years of credited service, age 55 with 20 years of credited service or age 60 with 15 years of credited service. A reduced benefit is available at age 50 with 20 years of credited service.

OTHER BENEFITS

Withdrawal Benefits – Members who terminate employment before retirement may withdraw contributions with interest after the last day on the employer's payroll. Withdrawal of contributions forfeits all membership rights and benefits, which a member may have accrued prior to withdrawing accumulated contributions from the Retirement System. Inactive, nonvested members, who return to covered employment within five years after terminating employment, will not have lost any membership rights or privileges if they haven't withdrawn contributions.

DISABILITY BENEFITS

Tier I: Service-connected disability – There are no age or service requirements to be eligible for this benefit. There is an annual benefit of 50 percent of final average salary, plus 10 percent of final average salary for each dependent child under age 18 (or up to age 23 for full-time students), to a maximum of 75 percent of final average salary. If dependent child benefits aren't payable, the benefit is 50 percent of final average salary or 2.5 percent for each year of credited service up to a maximum of 90 percent of final average salary. Upon the death of a member after two years from the proximate cause of death which is the original service-connected disability, the same benefits are payable. Upon the death of a member after two years from a cause different than the disability for which the member is receiving service-connected disability benefits, the surviving spouse receives a lump sum payment of 50 percent of final average salary. Additionally, a pension benefit of one-half the member's benefit is payable to either the spouse or to the dependent children.

Tier I: Non-Service-connected disability – An annual benefit of 2.5 percent times years of credited service times final average salary with a minimum of 25 percent of final average salary and a maximum of 90 percent of final average salary.

Tier II: There is no distinction between service-connected and non-service-connected disability benefits. The annual benefit is 50 percent of final average salary. Service Credit is granted during the period of disability. Disability benefits convert to age and service retirement at the earliest date the member is eligible for full retirement benefits. If the member is disabled for at least five years immediately preceding retirement, the member's final average salary is adjusted during the period of disability.

DEATH BENEFITS (TIER I AND TIER II)

Active Member Service Connected Death – There is no age or service requirement. An annual benefit equal to the greater of the accrued retirement benefit under the 100 percent joint and survivor option and 50 percent of final average salary is payable to the spouse, plus 10 percent of final average salary for each dependent child under age 18 (or up to age 23 for full-time students), to a maximum of 90 percent of final average salary Active Member.

Active Member Non-Service Connected Death – A lump sum of 100 percent of final average salary and a pension of 2.5 percent of final average salary per year of credited service (to a maximum of 50 percent) is payable to the spouse. If there is no spouse, the monthly benefit is paid to the dependent children (age 18, or 23 if a full time student). If there is no surviving spouse or eligible children, the beneficiary will receive a lump sum payment of 100 percent of the member's current annual pay, inclusive of the member's accumulated contributions.

Inactive Member Death – If an inactive member is eligible for retirement when death occurs, and the inactive member's spouse is the sole beneficiary, the spouse may elect to receive benefits as a joint annuitant under any option in lieu of a refund of the member's accumulated contributions.

Post-Retirement Death – There is a lump sum amount of $4,000 payable, less any death benefit payable under local plan provisions. If the member has selected a retirement option, benefits are paid to the joint annuitant or the designated beneficiary. Under joint and survivor options, if the joint annuitant predeceases the retired member, the benefit is increased to the amount the retired member would have received if no option had been selected. Benefits payable to the joint annuitant cease when the joint annuitant dies. If no option is selected, the designated beneficiary receives the excess, if any, of the member's accumulated contributions over total benefits paid to the date of death. The surviving spouse of a transfer member (who was covered by local plan on the employer's entry date, who dies after retirement, and who has not elected a retirement benefit option) receives a lump sum payment of 50 percent of final average salary. Additionally, a pension benefit of three-fourths of the member's benefit is payable either to the spouse or dependent children.

CLASSIFICATIONS

Tier I – Members have Tier I coverage if they were employed prior to July 1, 1989, and they did not elect coverage under Tier II.

Tier II – Members have Tier II coverage if they were employed July 1, 1989, or later. This also includes members employed before July 1, 1989, who elected Tier II coverage.

Some KP&F members are considered either Tier I or Tier II Transfer or Brazelton members.

Transfer Member – A member who is a former member of a local plan who elected to participate in KP&F. Former Kansas Highway Patrol and former Kansas Bureau of Investigation members are included in this group.

Brazelton Member – A member who participated in a class action lawsuit, whose contribution is lower, and whose benefits are offset by Social Security.

MEMBER CONTRIBUTIONS

Member contributions are 7.15 percent of compensation, effective July 1, 2013.

Brazelton members contribute 0.008 percent with a Social Security offset. Benefits payable to these members are reduced by one-half of original Social Security benefits accruing from employment with the participating employer.

EMPLOYER CONTRIBUTIONS

Individual rates are certified by the Board of Trustees for each participating employer based on the results of annual actuarial valuations.

DEFERRED RETIREMENT OPTION PROGRAM (DROP) FOR KANSAS HIGHWAY PATROL (KHP)

Upon attaining normal retirement age, members of the KHP have the option of participating in the DROP plan for a minimum of three years and no more than five years. This is a one-time, irrevocable election. After electing to participate, a member's monthly retirement benefit is deposited into the member's DROP account for the duration of the DROP period. The DROP account accrues interest on an annual basis, equaling either 0.0 percent or 3.0 percent. Employer and employee contributions continue to be made to the System, but the member does not earn any additional service credit after the effective date of the DROP election. At the end of the DROP period, a member is entitled to a distribution from the DROP account.

KANSAS JUDGES RETIREMENT SYSTEM

NORMAL RETIREMENT

Eligibility – (a) Age 65, or (b) age 62 with ten years of credited service or (c) any age when combined age and years of credited service equals 85 "points". Age is determined by the member's last birthday and is not rounded up.

Benefit – The benefit is based on the member's final average salary, which is the average of the three highest years of service under any retirement system administered by KPERS. The basic formula for those who were members prior to July 1, 1987, is 5 percent of final average salary for each year of service up to ten years, plus 3.5 percent for each year of service greater than ten, to a maximum of 70 percent of final average salary. For those who became members on or after July 1, 1987, the formula is 3.5 percent for each year, to a maximum benefit of 70 percent of final average salary.

EARLY RETIREMENT

Eligibility – A member must be age 55 and have ten years of credited service to take early retirement.

Benefit – The retirement benefit is reduced 0.2 percent per month for each month between the ages of 60 and 62, and 0.6 percent per month for each month between the ages of 55 and 60.

VESTING REQUIREMENTS

Eligibility – There is no minimum service requirement; however, after terminating employment, the member must leave contributions on deposit with the Retirement System in order to be eligible for future benefits. Eligible judges who have service credited under KPERS have vested benefits under both KPERS and the Retirement System for Judges when the combined total credited service equals ten years.

Benefit – Normal benefit accrued at termination is payable at age 62 or in reduced amount at age 55, provided the member has 10 years of credited service. Otherwise, benefits are not payable until age 65.

OTHER BENEFITS

Disability Benefits – These benefits are payable if a member is defined as totally and permanently disabled as certified by the Supreme Court. The disability benefit, payable until age 65, is 3.5 percent of final average salary for each year of service (minimum of 50 percent and maximum of 70 percent of final average salary). Benefits are recalculated when the member reaches retirement age based on participating service credit for the period of disability. If a judge is disabled for at least five years immediately preceding retirement, the judge's final average salary is adjusted.

Withdrawal Benefit – Members who terminate employment may withdraw contributions with interest, but they will forfeit any right to a future benefit if they do.

Pre-Retirement Death – A refund of the member's accumulated contributions is payable. In lieu of receiving the member's accumulated contributions, the surviving spouse of a member who is eligible to retire at death may elect to receive benefits under any survivor benefit option. If the member had at least ten years of credited service, but hadn't reached retirement age at the time of death, the spouse may elect a monthly benefit to begin on the date the member first would have been eligible to retire as long as the member's contributions aren't withdrawn.

Post-Retirement Death – A lump sum death benefit of $4,000 is payable to the member's beneficiary. If the member had selected an option with survivor benefits, those benefits are paid to the joint annuitant or to the member's designated beneficiary. Under retirement options with survivor benefits, if the joint annuitant predeceases the retired member, the retirement benefit is increased to the amount the retired member would have received if no survivor benefits had been elected. Benefits payable to a joint annuitant cease when the joint annuitant dies. If no option was chosen by the retired member, the member's designated beneficiary receives the excess, if any, of the member's accumulated contributions over the total benefits paid to the date of the retired member's death.

MEMBER CONTRIBUTIONS

Judges contributions are 6 percent of compensation. Upon reaching the maximum retirement benefit level of 70 percent of final average salary, the contribution rate is reduced to 2 percent.

EMPLOYER CONTRIBUTIONS

Rates are certified by the Board of Trustees, based on the results of annual actuarial valuations.

ASSUMPTIONS AND METHODS – KPERS

Rate of Investment Return 7.75 percent

Price Inflation 2.75 percent

Payroll Growth: 3.00 percent

KPERS 3 Interest Crediting Rate, Including Dividends 6.25 percent per annum

Administrative Expenses: 0.16 percent of covered payroll

Rates of Mortality: Post-retirement

The RP-2014 Healthy Annuitant table was first adjusted by an age setback or set forward. Rates were further adjusted to fit actual experience. Rates are projected into the future using Scale MP-2016.

Starting Table

School Males:	RP-2014 M White Collar Healthy	+0
School Females:	RP-2014 F White Collar Healthy	+0
State Males:	RP-2014 M Healthy	+2
State Females:	RP-2014 F Healthy	+1
Local Males:	RP-2014 M Healthy	+2
Local Females:	RP-2014 F Healthy	+1

Sample Rates (2014)

	School		State		Local	
Age	Male	Female	Male	Female	Male	Female
50	0.310%	0.172%	0.462%	0.332%	0.532%	0.276%
55	0.438%	0.225%	0.635%	0.397%	0.732%	0.367%
60	0.585%	0.323%	0.868%	0.582%	1.001%	0.536%
65	0.849%	0.544%	1.267%	0.909%	1.461%	0.838%
70	1.389%	0.876%	1.974%	1.460%	2.276%	1.346%
75	2.383%	1.459%	3.208%	2.381%	3.699%	2.196%
80	4.520%	3.192%	5.255%	4.249%	6.163%	3.939%
85	8.618%	6.444%	9.025%	7.662%	10.674%	7.119%
90	15.900%	11.824%	15.570%	13.531%	18.416%	12.573%
95	26.671%	20.501%	23.721%	22.137%	28.057%	20.570%
100	39.563%	31.961%	32.978%	32.888%	39.006%	30.559%

Pre-retirement

School Males:	80% of RP-2014 M White Collar	+0
School Females:	80% of RP-2014 F White Collar	+0
State Males:	90% of RP-2014 M Total Dataset	+2
State Females:	90% of RP-2014 F Total Dataset	+1
Local Males:	90% of RP-2014 M Total Dataset	+2
Local Females:	90% of RP-2014 F Total Dataset	+1

Disabled Life Mortality RP-2014 Disabled Life Table with same age adjustments as used for pre-retirement mortality tables.

Rates of Salary Increase

Years of	Rate of Increase*		
Service	School	State	Local
1	11.50%	10.00%	10.00%
5	6.05%	5.10%	5.70%
10	4.60%	4.40%	4.70%
15	4.10%	3.90%	4.30%
20	3.60%	3.60%	4.10%
25	3.50%	3.50%	3.60%
30	3.50%	3.50%	3.50%

**Includes general wage increase assumption of 3.50 percent (composed of 2.75 percent inflation and 0.75 percent productivity)*

Load for Pre-1993 Hires

State: 2.2 percent
School: 0.5 percent
Local: 2.0 percent
KPF: 7.0 percent
C55/C60: 2.2 percent

Rates of Termination

	School		State		Local	
Duration	Male	Female	Male	Female	Male	Female
0	21.00%	23.00%	21.00%	21.00%	21.00%	24.00%
1	18.00%	18.00%	18.00%	18.00%	17.00%	21.00%
2	14.50%	14.50%	15.25%	15.25%	14.25%	18.00%
3	11.00%	11.00%	13.50%	12.75%	12.50%	14.75%
4	8.50%	9.00%	12.00%	10.75%	11.00%	12.75%
5	7.00%	7.75%	10.75%	9.75%	9.75%	11.00%
6	6.25%	7.00%	9.50%	8.75%	8.75%	10.00%
7	5.75%	6.25%	8.50%	7.75%	7.75%	9.00%
8	5.25%	5.50%	7.50%	7.00%	6.50%	8.00%
9	4.75%	5.00%	6.50%	6.25%	5.75%	7.00%
10	4.25%	4.50%	5.50%	5.50%	5.25%	6.25%
11	4.00%	4.00%	5.00%	5.00%	4.75%	5.50%
12	3.75%	3.50%	4.50%	4.50%	4.50%	5.00%
13	3.50%	3.25%	4.25%	4.25%	4.25%	4.75%
14	3.25%	3.00%	4.00%	4.00%	4.00%	4.50%
15	3.00%	2.75%	3.80%	3.80%	3.80%	4.25%
16	2.75%	2.50%	3.60%	3.60%	3.60%	4.00%
17	2.50%	2.25%	3.40%	3.40%	3.40%	3.80%
18	2.25%	2.00%	3.20%	3.20%	3.20%	3.60%
19	2.00%	1.75%	3.00%	3.00%	3.00%	3.40%
20	1.75%	1.50%	2.80%	2.80%	2.80%	3.20%
21	1.50%	1.40%	2.60%	2.60%	2.60%	3.00%
22	1.40%	1.30%	2.40%	2.40%	2.40%	2.75%
23	1.30%	1.20%	2.20%	2.20%	2.20%	2.50%
24	1.20%	1.00%	2.00%	2.00%	2.00%	2.25%
25	1.00%	1.10%	1.80%	1.80%	1.80%	2.00%
26	1.10%	1.00%	1.60%	1.60%	1.60%	1.75%
27	1.00%	0.75%	1.40%	1.40%	1.40%	1.50%
28	0.75%	0.50%	1.20%	1.20%	1.20%	1.25%
29	0.50%	0.50%	1.00%	1.00%	1.00%	1.00%
30	0.50%	0.50%	0.80%	0.80%	0.80%	0.80%
30+	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Retirement Rates

School

Rule of 85

Age	1st Year With 85 Points	After 1st Year With 85 Points	Early Retirement Age	Early Retirement Rate	Normal Retirement Age	Normal Retirement Rate
53	20%	15%	55	3%	62	25%
55	20%	15%	56	3%	63	25%
57	24%	15%	57	3%	64	30%
59	28%	22%	58	5%	65	35%
61	25%	25%	59	10%	66-74	30%
			60	12%	75	100%
			61	16%		

State

Rule of 85

Age	1st Year With 85 Points	After 1st Year With 85 Points	Early Retirement Age	Early Retirement Rate	Normal Retirement Age	Normal Retirement Rate
53	16%	12%	55	4%	62	20%
55	16%	12%	56	4%	63	20%
57	16%	10%	57	4%	64	20%
59	16%	10%	58	6%	65	35%
61	25%	20%	59	6%	66-74	27%
			60	8%	75	100%
			61	15%		

Local

Rule of 85

Age	1st Year With 85 Points	After 1st Year With 85 Points	Early Retirement Age	Early Retirement Rate	Normal Retirement Age	Normal Retirement Rate
53	15%	7%	55	3%	62	22%
55	15%	10%	56	3%	63	22%
57	15%	10%	57	3%	64	22%
59	15%	12%	58	3%	65	35%
61	25%	20%	59	6%	66-69	27%
			60	6%	70-74	25%
			61	15%	75	100%

• Inactive vested members – Earliest unreduced retirement age.

• For correctional employees with an age 55 normal retirement date -

Age	Rate
55	10%
58	10%
60	15%
62	20%
65	100%

• For correctional employees with an age 60 normal retirement date -

Age	Rate
60	20%
61	20%
62	35%
63	20%
64	20%
65	60%
66	60%
67	60%
68	100%

• For TIAA employees – Age 66.

Rates of Disability

Age	School	State	Local
25	.020%	.023%	.022%
30	.022%	.065%	.047%
35	.027%	.103%	.070%
40	.046%	.200%	.103%
45	.088%	.300%	.180%
50	.145%	.400%	.260%
55	.195%	.500%	.310%
60	.280%	.550%	.380%

Indexation of Final Average Salary for Disabled Members: 1.75 percent per year

Probability of Vested Members Leaving Contributions With System

KPERS 1:

Age	School	State	Local
25	80%	65%	60%
30	80%	65%	70%
35	80%	65%	70%
40	80%	65%	70%
45	82%	75%	70%
50	87%	85%	74%
55	100%	100%	100%

KPERS 2: Members are assumed to elect to take a refund if it is more valuable than the deferred annuity. The comparison is based on 7.75 percent interest and a 50 percent Male/50 percent Female blend of the RP-2014 Mortality Table, projected to 2045 (static).

KPERS 3: 100 percent of vested members are assumed to leave their contributions with the System.

Marriage Assumption: 70 percent of all members are assumed married with male spouse assumed 3 years older than the female.

Partial Lump Sum Option (PLSO): 40 percent of KPERS 1 and KPERS 2 members are assumed to take a PLSO equal to 30 percent of the value of their benefit upon retirement. 100 percent of KPERS 3 members are assumed to take a PLSO equal to 30 percent of the value of their benefit upon retirement.

ASSUMPTIONS AND METHODS – KP&F

Rate of Investment Return 7.75 percent

Price Inflation 2.75 percent

Payroll Growth: 3.00 percent

Administrative Expenses: 0.16 percent of covered payroll

Rates of Mortality: Mortality rates are projected into the future using Scale MP-2016

Post-retirement RP-2014 Total Dataset Table, set forward one year

Pre-retirement 90 percent of the RP-2014 Total Dataset Table, set forward one year*

**70 percent of preretirement deaths assumed to be service related.*

Disabled Life Mortality RP-2014 Disabled Life Table, set forward one year

Rates of Salary Increase

Years of Service	Rate of Increase*
1	12.0%
5	6.5%
10	4.4%
15	3.8%
20	3.5%
25	3.5%

**Includes general wage increase assumption of 3.50 percent (composed of 2.75 percent inflation and 0.75 percent productivity)*

Rates of Termination

Years of Service	Rate
1	11.0%
5	6.0%
10	2.8%
15	1.8%
20	1.1%
25	0.0%

Retirement Rates

Tier 1:

Early Retirement		Normal Retirement	
Age	Rate	Age	Rate
50	5%	55	30%
51	7%	56	30%
52	7%	57	30%
53	15%	58	30%
54	30%	59	30%
		60	30%
		61	30%
		62	100%

Tier 2:

Early Retirement		Normal Retirement	
Age	Rate	Age	Rate
50	10%	50	25%
51	10%	51	25%
52	10%	52	25%
53	10%	53	25%
54	20%	54	25%
		55	25%
		56	35%
		57	35%
		58	20%
		59	30%
		60	25%
		61	25%
		62	30%
		63	30%
		64	30%
		65	100%

Inactive Vested: Earliest unreduced retirement age.

Rates of Disability

Age	Rate*
22	.06%
27	.07%
32	.15%
37	.35%
42	.56%
47	.76%
52	.96%
57	1.00%

**90 percent assumed to be service-connected under KP & F Tier 1.*

Marriage Assumption: 80 percent of all members assumed married with male spouse assumed to be three years older than female. When an active member dies, they have no child beneficiaries.

DROP Election 75 percent of Kansas Highway Patrol members are assumed to enter DROP for the maximum DROP period.

It is assumed that no members enter DROP with less than 25 years of service.

Interest Credited on DROP Accounts: 3 percent, compounded annually.

ASSUMPTIONS AND METHODS – JUDGES

Rate of Investment Return 7.75 percent

Price Inflation 2.75 percent

Administrative Expenses: 0.16 percent of covered payroll

Rates of Mortality: Mortality rates are projected into the future using Scale MP-2016.

Post-retirement RP-2014 Total Dataset Table, set back two years

Pre-retirement 80 percent of RP-2014 Total Dataset Table, set back two years

Rates of Salary Increase	4.00 percent	
Rates of Termination	None assumed	
Disabled Life Mortality	RP-2014 Disabled Retiree Table, set back two years	
Rates of Disability	None assumed	
Retirement Rates	Age	Rate
	62	20%
	63-64	10%
	65-66	25%
	67-69	10%
	70+	100%
Marriage Assumption:	70 percent of all members are assumed married with male spouse assumed 3 years old than female.	

TECHNICAL VALUATION PROCEDURES

DATA PROCEDURES

In-pay members: If a birth date is not available, the member is assumed to have retired at 62. If a retirement date is also not available, the member is assumed to be 75.

If a beneficiary birth date is needed but not supplied, males are assumed to be 3 years older than females.

Not in-pay members: If a birth date is not available, it is assigned according to the following schedule:

System	Active member age at hire	Inactive member age at valuation
KPERS	34.7	50
KPF	27.5	49
Judges	43.4	54

If gender is not provided, it is assigned randomly with a 40 percent probability of being male and 60 percent probability of being female.

If salary information is not available for an active record, it is assigned according to the following schedule:

System	Salary
KPERS	$24,700
KPF	$36,100
Judges	$79,100

Salaries for first year members are annualized.

OTHER VALUATION PROCEDURES

No actuarial accrued liability in excess of the unclaimed member contribution balance is held for nonvested, inactive members.

A reserve is also held for accounts that have been forfeited but could be reclaimed in the future.

Benefits above the projected IRC Section 415 limit for active participants are assumed to be immaterial for the valuation. The compensation limitation under IRC Section 401(a) (17) is considered in this valuation. On a projected basis, the impact of this limitation is insignificant.

Salary increases are assumed to apply to annual amounts.

Decrements are assumed to occur mid-year, except that immediate retirement is assumed for those who are at or above the age at which retirement rates are 100 percent. Standard adjustments are made for multiple decrements. Withdrawal does not operate once early or unreduced retirement eligibility is met.

KPERS 3 employees who transfer employment to a non-KPERS covered position are treated as actives who are not accruing benefits.

ACTUARIAL METHODS

1. **Funding Method**

   Under the entry age normal cost method, the actuarial present value of each member's projected benefits is allocated on a level basis over the member's compensation between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial liability. The unfunded actuarial liability represents the difference between the actuarial liability and the actuarial value of assets as of the valuation date. The unfunded actuarial liability is calculated each year and reflects experience gains/losses.

   There is currently a lag between the valuation date in which the employer contribution rates are determined and the effective date of those contribution rates, i.e., a two year lag f or Local employers and a two and one-half year lag for the State/School group. The unfunded actuarial liability (UAL) is projected from the valuation date to the first day of the fiscal year in which the contribution rate will apply based on the scheduled statutory contribution rates and expected payroll in the intervening years.

For valuations beginning with December 31, 2016, and following, the unfunded actuarial liability is amortized using a "layered" approach. The unfunded actuarial liability in the December 31, 2015, valuation, which was projected to June 30, 2018, for the State/School and Judges groups and to December 31, 2017, for the Local and KP&F groups, serves as the initial or "legacy" amortization base and continues to be amortized over the original period, set at 40 years beginning July 1, 1993 (14 years in the December 31, 2018, valuation). The change in the unfunded actuarial liability in the December 31, 2016, valuation as a result of the assumption changes, which is projected to June 30, 2019, for State/School and Judges and to December 31, 2018, for Local and KP&F, is amortized over a closed 25-year period, and changes in the unfunded actuarial liability that result from actuarial experience are amortized over a closed 20-year period beginning with the fiscal year in which the contribution rates will apply.

The UAL is amortized as a level percentage of payroll for all groups except Judges, who use a level dollar payment. The payroll growth assumption is 3 percent so the annual amortization payments will increase 3 percent each year. As a result, if total payroll grows 3 percent per year, as assumed, the amortization payment will remain level as a percentage of total current payroll.

2. Asset Valuation Method

For actuarial purposes, assets are valued using an asset smoothing method. The difference between the actual return and the expected return (based on the actuarial assumed net rate of return) on the market value of assets is calculated each year and recognized equally over a five-year period.

SCHEDULE OF FUNDING PROGRESS

Last Ten Years as of December 31 (In Thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a)/c)
12/31/09	$13,461,221	$21,138,206	$7,676,985	64%	$6,532,496	118%
12/31/10	13,589,658	21,853,783	8,264,125	62	6,494,048	127
12/31/11	13,379,020	22,607,170	9,228,150	59	6,401,462	144
12/31/12	13,278,490	23,531,423	10,252,933	56	6,498,962	158
12/31/13	14,562,765	24,328,670	9,765,905	60	6,509,809	150
12/31/14	15,662,010	25,130,467	9,468,457	62	6,560,105	144
12/31/15	17,408,577	25,947,781	8,539,204	67	6,603,613	129
12/31/16	18,256,373	27,317,754	9,061,381	67	6,650,451	136
12/31/17	19,246,613	28,153,827	8,907,214	68	6,744,301	132
12/31/18	19,898,330	29,100,136	9,201,806	68	7,048,621	131

SHORT TERM SOLVENCY TEST

Last Ten Years as of December 31

Valuation Date	Member Contributions (A)	Retirants and Beneficiaries (B)	Active Member Employer Financed Portion (C)	Actuarial Value of Assets	Portions of Accrued Liabilities Covered by Assets (A)	(B)	(C)
12/31/09	$5,132,772,778	$8,459,191,163	$7,546,242,173	$13,461,220,705	100%	99%	—%
12/31/10	5,017,361,438	9,090,575,924	7,745,845,940	13,589,658,118	100	96	—
12/31/11	5,334,463,714	9,923,555,011	7,349,151,307	13,379,020,161	100	81	—
12/31/12	5,448,296,911	10,585,891,383	7,497,235,156	13,278,490,294	100	74	—
12/31/13	5,636,937,795	11,298,180,557	7,393,551,786	14,562,764,625	100	79	—
12/31/14	5,791,313,287	12,361,327,805	6,977,825,595	15,662,009,783	100	80	—
12/31/15	5,942,762,790	13,095,276,871	6,909,740,897	17,407,577,508	100	88	—
12/31/16	6,008,633,568	14,095,278,126	7,213,842,679	18,256,373,273	100	87	—
12/31/17	6,008,405,879	14,751,711,502	7,393,709,608	19,246,613,272	100	90	—
12/31/18	6,132,527,315	15,401,874,720	7,565,734,390	19,898,329,527	100	89	—

SCHEDULE OF ACTIVE MEMBER VALUATION DATA[1]

Last Ten Years as of December 31

Valuation Date	Number of Active Members	Percentage Change in Membership	Number of Participating Employers	Percentage Increase in Number of Participating Employers	Total Annual Payroll (in millions)	Average Payroll	Percentage Increase in Average Payroll
12/31/09	160,831	3.0%	1,499	0.5%	$6,532	$39,821	1.8%
12/31/10	157,919	(1.8)	1,511	0.8	6,494	41,123	3.2
12/31/11	155,054	(1.9)	1,504	(0.5)	6,401	41,285	0.4
12/31/12	156,053	0.6	1,506	0.1	6,499	41,646	0.9
12/31/13	155,446	(0.4)	1,508	0.1	6,510	41,878	0.6
12/31/14	154,203	(0.8)	1,518	0.7	6,560	42,542	1.6
12/31/15	152,175	(1.3)	1,517	(0.1)	6,603	43,395	2.0
12/31/16	152,119	(0.04)	1,515	(0.1)	6,650	43,719	0.8
12/31/17	151,687	(0.3)	1,523	0.5	6,744	44,462	1.7
12/31/18	154,055	1.6	1,526	0.2	7,048	45,754	2.9

(1) Data provided to actuary reflects active membership information as of January 1.

MEMBERSHIP PROFILE

Last Ten Years as of December 31

Valuation Date	Active	Inactive	Retirees & Beneficiaries	Total Membership
12/31/09	160,831	43,324	73,339	277,494
12/31/10	157,919	44,231	76,744	278,894
12/31/11	155,054	45,678	81,025	281,757
12/31/12	156,053	45,969	84,318	286,340
12/31/13	155,446	47,484	87,670	290,600
12/31/14	154,203	50,255	90,907	295,365
12/31/15	152,175	53,159	94,333	299,667
12/31/16	152,119	55,755	97,547	305,421
12/31/17	151,687	59,966	100,575	312,228
12/31/18	154,055	61,495	103,216	318,766

RETIRANTS, BENEFICIARIES - CHANGES IN ROLLS – ALL SYSTEMS

Last Ten Fiscal Years

		Additions		Deletions						
Year	Number at Beginning of Year	Number Added	Annual Allowances	Number Removed	Annual Allowances	Number at End of Year	Percentage Change in Number of Retirants	Percentage Change in Additions Allowances	Average Annual Allowance	Year-End Annual Allowances
6/30/10	71,606	5,593	$88,709,733	2,332	$20,528,013	74,867	4.60%	8.40%	$14,182	$1,060,205,818
6/30/11	74,867	6,245	99,091,348	2,698	23,230,288	78,414	4.70	11.70	14,630	1,147,209,272
6/30/12	78,414	6,941	112,628,928	2,644	23,775,195	82,711	5.50	13.70	14,962	1,237,559,898
6/30/13	82,711	6,071	97,203,958	2,707	24,577,721	86,075	4.10	(15.90)	14,975	1,288,986,517
6/30/14	86,075	6,022	99,401,460	2,793	26,057,706	89,304	3.80	2.50	15,298	1,366,173,782
6/30/15	89,304	6,419	108,490,198	2,981	29,617,203	92,742	3.80	9.10	15,634	1,449,898,078
6/30/16	92,742	6,494	110,741,918	3,055	30,319,950	96,150	3.70	2.10	16,104	1,548,362,854
6/30/17	96,150	6,252	108,364,288	3,203	32,500,089	99,199	3.20	3.70	16,179	1,604,984,334
6/30/18	99,199	6,164	108,928,173	4,788	36,466,045	100,575	1.42	3.20	16,700	1,679,587,567
6/30/19	100,575	6,180	112,564,089	3,371	37,385,700	103,384	2.82	1.42	16,904	1,747,623,791

SUMMARY OF MEMBERSHIP DATA

Retiree and Beneficiary Member Valuation Data[1]	12/31/18	12/31/17
KPERS		
Number	96,852	94,130
Average Benefit	$14,723	$14,457
Average Age	72.60	72.41
Police & Fire		
Number	5,595	5,398
Average Benefit	$34,217	$33,340
Average Age	65.92	65.66
Judges		
Number	286	279
Average Benefit	$42,716	$41,964
Average Age	75.37	75.11
System Total		
Number	102,733	99,807
Average Benefit	$15,863	$15,555
Average Age	72.24	72.05

Active Member Valuation Data[1]	12/31/18	12/31/17
KPERS		
Number	146,104	143,947
Average Current Age	45.14	45.34
Average Service	10.96	11.11
Average Pay	$44,404	$43,128
Police & Fire		
Number	7,695	7,481
Tier I	73	111
Tier II	7,622	7,370
Average Current Age	38.82	39.06
Average Service	10.99	11.33
Average Pay	$69,184	$67,875
Judges		
Number	256	259
Average Current Age	58.48	58.03
Average Service	11.74	11.42
Average Pay	$111,465	$109,391
System Total		
Number	154,055	151,687
Average Current Age	44.85	45.05
Average Service	10.96	11.12
Average Pay	$45,754	$44,462

(1) Data provided to actuary reflects membership information as of January 1.

SCHEDULE OF EMPLOYER CONTRIBUTION RATES

Last Ten Fiscal Years[1]

	KPERS State/School	
Fiscal Year	Actuarial Rate	Actual Rate
2010	10.98%	7.57%
2011	11.30	8.17
2012	14.09	8.77
2013	13.46	9.37
2014	13.83	10.27
2015[2]	14.34	11.27/8.65
2016	14.95	10.91
2017	14.85	10.81
2018	14.89	12.01
2019	13.23	13.21

	KPERS Local	
Fiscal Year	Actuarial Rate	Actual Rate
2010	8.52%	6.14%
2011	10.42	6.74
2012	9.44	7.34
2013	9.43	7.94
2014	9.77	8.84
2015	9.48	9.48
2016	9.18	9.18
2017	8.46	8.46
2018	8.39	8.39
2019	8.89	8.89

	KP&F Uniform Rate	
Fiscal Year	Actuarial Rate	Actual Rate
2010	12.86%	12.86%
2011	17.88	14.57
2012	16.54	16.54
2013	17.26	17.26
2014	19.92	19.92
2015	21.36	21.36
2016	20.42	20.42
2017	19.03	19.03
2018	20.09	20.09
2019	22.13	22.13

	Judges	
Fiscal Year	Actuarial Rate	Actual Rate
2010	20.50%	20.50%
2011	19.49	19.49
2012	21.28	21.28
2013	23.75	23.75
2014	23.62	23.62
2015	22.59	22.59
2016	23.98	23.98
2017	21.36	21.36
2018	15.89	15.89
2019	14.68	14.68

(1) Rates shown for KPERS State/School, and Judges represent the rates for the fiscal years ending June 30. KPERS Local and KP&F rates are reported for the calendar years. Rates have been restated to exclude Group Life and Disability insurance premiums.

(2) Due to budget constraints, the Governor used the allotment procedure and reduced the State/School KPERS employer combined contribution rate to 8.65% for the second half of the 2015 fiscal year.

STATISTICAL SECTION

STATISTICAL HIGHLIGHTS OF THE SYSTEM'S FINANCIAL TRENDS

The Statistical Section presents several schedules that provide financial trend analysis of the Retirement System's overall financial health and additional analytical information on employers' membership data and retirement benefits. The schedules beginning on this page through page 124 provide revenues, expenses and funding status information for the past ten years for the pension plan. On page 125, a schedule shows the total benefits and type of refunds that were paid.

On pages 126 through 129, various schedules are presented to depict the level of monthly benefits by number of retirees, retirement type and options and years of service. On pages 130 through 132, information is provided showing the top ten participating employers determined by number of covered active employees. The source of the information in these schedules is derived from the comprehensive annual financial reports, unless otherwise indicated.

REVENUES BY SOURCE

Last Ten Fiscal Years

Fiscal Year	Contributions: Member	Contributions: Employer	Miscellaneous	Net Investment Income	Total
2010	$282,505,891	$492,005,566	$101,899	$1,485,935,124	$2,260,548,480
2011	287,600,902	525,726,734	190,770	2,499,472,278	3,312,990,684
2012	291,894,311	568,015,364	129,622	89,045,782	949,085,079
2013	300,471,480	617,925,370	537,741	1,747,230,627	2,666,165,218
2014	332,163,439	701,818,160	241,743	2,553,842,632	3,588,065,974
2015	382,057,886	690,564,482	1,076,946	561,194,353	1,634,893,667
2016(1)	404,856,265	1,739,183,965	2,906,188	49,169,897	2,196,116,315
2017	414,537,657	761,610,061	1,071,115	2,060,925,477	3,238,144,310
2018	420,284,941	887,734,800	5,733,655	1,516,929,281	2,830,682,677
2019	437,352,839	1,138,895,032	5,488,299	1,216,685,443	2,798,421,613

(1) The State of Kansas issued $1 billion in pension obligation bonds, Series 2015H, in August 2015.

BENEFITS BY TYPE

Last Ten Fiscal Years

Fiscal Year	Monthly Retirement Benefits	Retirement Dividend	Death Benefits	Refund of Contributions Separations	Refund of Contributions Deaths
2010	$1,056,190,915	$4,014,903	$8,959,388	$37,214,954	$6,147,736
2011	1,143,594,256	3,615,016	9,614,688	43,579,892	5,984,123
2012	1,234,350,781	3,209,118	9,414,234	49,665,542	6,231,284
2013	1,286,133,859	2,852,658	9,458,321	48,265,870	5,633,961
2014	1,363,636,798	2,536,984	9,702,485	49,947,483	7,023,286
2015	1,447,659,817	2,238,261	10,019,588	57,187,901	7,274,097
2016	1,546,424,413	1,938,441	10,545,850	62,141,534	5,981,201
2017	1,603,302,992	1,681,412	11,210,914	63,915,235	6,565,825
2018	1,678,136,889	1,450,678	11,299,715	58,339,135	6,627,827
2019	1,746,382,699	1,241,092	11,357,122	68,199,860	6,116,462

EXPENSES BY TYPE

Last Ten Fiscal Years

Fiscal Year	Benefits	Refund of Contributions Separations	Refund of Contributions Death	Administration	Uncollectable Pension Contributions (1)	Total
2010	$1,069,165,206	$37,214,954	$6,147,736	$10,158,398	$ —	$1,122,686,294
2011	1,156,823,960	43,579,892	5,984,123	9,261,260	—	1,215,649,235
2012	1,246,974,132	49,665,542	6,231,284	9,620,933	—	1,312,491,891
2013	1,298,444,838	48,265,870	5,633,961	10,426,813	—	1,362,771,482
2014	1,375,876,267	49,947,483	7,023,286	9,703,808	—	1,442,550,844
2015	1,459,917,666	57,187,901	7,274,097	10,789,271	—	1,535,168,935
2016	1,558,908,704	62,141,534	5,981,201	12,171,633	—	1,639,203,072
2017	1,616,195,248	63,915,235	6,565,825	11,116,172	98,943,780	1,796,736,260
2018	1,690,887,282	58,339,135	6,627,827	12,459,619	—	1,768,313,863
2019	1,758,980,913	68,199,860	6,116,462	13,279,726	—	1,846,576,961

(1) In the 2017 Legislative session, Sub for HB 2052 eliminated the repayment of delayed Fiscal Year 2016 contributions. The receivable was written off in Fiscal Year 2017. In the 2019 Legislative session, legislation was passed to pay the Fiscal Year 2016 contributions with interest, $115 million was received.

CHANGES IN NET POSITION

Last Ten Fiscal Years

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Additions										
Contributions										
Member Contributions	$ 437,352,839	$ 420,284,941	$ 414,537,657	$ 404,856,265	$ 382,057,886	$ 332,163,439	$ 300,501,667	$ 291,901,525	$ 287,600,902	$ 282,505,891
Employer Contributions	1,138,895,032	887,734,800	761,610,061	1,739,183,965	690,564,482	701,818,160	617,925,370	568,015,364	525,726,734	492,005,566
Total Contributions	1,576,247,871	1,308,019,741	1,176,147,718	2,144,040,230	1,072,622,368	1,033,981,599	918,427,037	859,916,889	813,327,636	774,511,457
Investments										
Net Appreciation (Depreciation) in Fair Value of Investments	798,206,290	1,145,750,895	1,708,585,923	(267,355,951)	263,094,676	2,267,287,461	1,490,141,704	(132,729,256)	2,211,302,374	1,221,425,633
Interest	162,200,077	143,874,114	125,024,597	137,732,569	132,688,575	104,382,643	100,530,311	103,584,321	158,120,734	160,050,212
Dividends	240,616,896	219,737,719	196,065,374	160,160,990	140,607,740	165,226,153	153,201,135	110,902,858	123,098,602	105,808,081
Real Estate Income, Net of Operating Expenses	106,326,053	94,853,455	91,728,610	79,977,708	75,353,304	62,989,928	39,973,754	44,259,544	48,997,734	37,551,411
Other Investment Income	16,525,693	14,706,420	13,394,069	9,562,040	10,573,421	—	—	436,311	388,174	216,499
	1,323,875,009	1,618,922,603	2,134,798,573	120,077,356	622,317,716	2,599,886,185	1,783,846,904	126,453,778	2,541,907,618	1,525,051,836
Less Investment Expense	(107,189,566)	(101,993,321)	(73,873,096)	(70,907,459)	(65,240,875)	(51,653,134)	(42,584,786)	(42,225,663)	(47,586,288)	(43,748,173)
Net Investment Income	1,216,685,443	1,516,929,282	2,060,925,477	49,169,897	557,076,841	2,548,233,051	1,741,262,118	84,228,115	2,494,321,330	1,481,303,663
From Securities Lending Activities										
Securities Lending Income	—	—	—	—	3,932,462	5,255,071	4,827,054	4,353,102	5,431,118	5,372,538
Securities Lending Expenses										
Borrower Rebates	—	—	—	—	648,826	1,501,910	2,450,894	1,769,773	739,912	(48,804)
Management Fees	—	—	—	—	(463,776)	(1,147,400)	(1,309,439)	(1,305,208)	(1,020,082)	(692,273)
Total Securities Lending Activities Expense	—	—	—	—	185,050	354,510	1,141,455	464,565	(280,170)	(741,077)
Net Income from Security Lending Activities	—	—	—	—	4,117,512	5,609,581	5,968,509	4,817,667	5,150,948	4,631,461
Total Net Investment Income	1,216,685,443	1,516,929,282	2,060,925,477	49,169,897	561,194,353	2,553,842,632	1,747,230,627	89,045,782	2,499,472,278	1,485,935,124
Other Miscellaneous Income	5,488,299	5,733,655	1,071,115	2,904,581	1,076,391	241,438	533,842	127,412	170,862	67,266
Total Additions Plan Net Position	2,798,421,613	2,830,682,678	3,238,144,310	2,196,114,708	1,634,893,112	3,588,065,668	2,666,191,505	949,090,083	3,312,970,776	2,260,513,847
Deductions										
Monthly Retirement Benefits	(1,747,623,791)	(1,679,587,567)	(1,604,984,334)	(1,548,362,854)	(1,449,898,078)	(1,366,173,782)	(1,288,986,517)	(1,237,559,898)	(1,147,209,272)	(1,060,205,818)
Refunds of Contributions	(74,316,322)	(64,966,962)	(70,481,060)	(68,122,735)	(64,461,998)	(56,970,769)	(53,899,831)	(55,896,826)	(49,564,015)	(43,362,690)
Death Benefits	(11,357,122)	(11,299,715)	(11,210,914)	(10,545,850)	(10,019,588)	(9,702,485)	(9,458,321)	(9,414,234)	(9,614,688)	(8,959,388)
Administrative Expenses	(13,279,726)	(12,459,620)	(11,116,172)	(12,171,633)	(10,789,271)	(9,634,863)	(10,426,813)	(9,620,933)	(9,261,260)	(10,158,398)
Uncollectable Pension Contributions	—	—	(98,943,780)	—	—	—	—	—	—	—
Total Deductions to Plan Net Position	(1,846,576,961)	(1,768,313,864)	(1,796,736,260)	(1,639,203,072)	(1,535,168,935)	(1,442,481,899)	(1,362,771,482)	(1,312,491,891)	(1,215,649,235)	(1,122,686,295)
Change in Net Position	$ 951,844,652	$ 1,062,368,814	$ 1,441,408,050	$ 556,911,636	$ 99,724,177	$ 2,145,583,769	$ 1,303,420,023	$ (363,401,808)	$ 2,097,321,542	$ 1,137,827,553

BENEFIT AND REFUND DEDUCTIONS FROM NET POSITION BY TYPE

Last Ten Fiscal Years

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Type of Benefit										
Age and Service Benefits:										
Retirees	$1,667,501,420	$1,602,718,657	$1,531,384,982	$1,478,101,413	$1,383,140,272	$1,302,838,465	$1,228,537,001	$1,180,214,270	$1,092,518,45	$ 1,008,271,726
Survivors	80,122,371	76,868,910	73,599,352	70,261,441	66,757,806	63,335,317	60,449,516	57,345,628	54,690,816	51,934,092
Death in Service Benefits	11,357,122	11,299,715	11,210,914	10,545,850	10,019,588	9,702,485	9,458,321	9,414,234	9,614,688	8,959,388
Total Benefits	$1,758,980,913	$1,690,887,282	$1,616,195,248	$1,558,908,704	$1,459,917,666	$1,375,876,267	$1,298,444,838	$1,246,974,132	$1,156,823,960	$ 1,069,165,206
Type of Refund										
Death	$ 6,116,462	$ 6,627,827	$ 6,643,401	$ 5,981,201	$ 7,274,097	$ 7,023,286	$ 5,633,961	$ 6,231,284	$ 5,984,123	$ 6,147,736
Separation	68,199,860	58,339,135	63,837,659	62,141,534	57,187,901	49,947,483	48,265,870	49,665,542	43,579,892	37,214,954
Total Refunds	$ 74,316,322	$ 64,966,962	$ 70,481,060	$ 68,122,735	$ 64,461,998	$ 56,970,769	$ 53,899,831	$ 55,896,826	$ 49,564,015	$ 43,362,690

HIGHLIGHT OF OPERATIONS

Last Ten Fiscal Years

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Membership Composition										
Number of Retirants	94,869	92,101	89,284	87,103	83,911	80,900	77,727	74,665	70,349	67,219
Number of Survivors(1)	7,864	7,706	7,490	7,230	6,996	6,770	6,591	6,360	6,149	5,945
New Retirants During the Fiscal Year	5,548	5,534	4,277	6,494	6,419	6,022	6,071	6,941	6,245	5,188
Active and Inactive Members(2)	215,550	211,653	207,874	205,334	204,458	202,930	202,022	200,732	202,150	204,155
Participating Employers	1,526	1,523	1,515	1,517	1,518	1,508	1,506	1,504	1,511	1,499
Financial Results (in millions)										
Member Contributions	$437	$420	$415	$405	$382	$332	$301	$292	$289	$282
Employer Contributions(3)	1,139	888	762	1,781	691	702	617	568	575	492
Retirement/Death Benefits	1,759	1,691	1,616	1,559	1,460	1,376	1,298	1,247	1,157	1,069
Investment Income	1,217	1,517	2,061	49	561	2,554	1,747	89	2,499	1,486
Employer Contribution Rate										
KPERS--State/School	13.21%	12.01%	10.81%	10.91%	11.27%/8.65%	10.27%	9.37%	8.77%	8.17%	7.57%
KPERS--Local(4)	8.89	8.39	8.46	9.18	9.48	8.84	7.94	7.34	6.74	6.14
KP&F (Uniform Participating)(4)	22.13	20.09	19.03	20.42	21.36	19.92	17.26	16.54	14.57	12.86
Judges	14.68	15.89	21.36	23.98	22.59	23.62	23.75	21.28	19.49	20.50
Unfunded Actuarial Liability (in millions)										
KPERS--State/School	$6,756	$6,581	$6,690	$6,276	$7,244	$7,351	$7,658	$6,920	$6,244	$5,805
KPERS--Local	1,502	1,458	1,515	1,486	1,488	1,590	1,699	1,542	1,395	1,315
KP&F	933	860	846	772	726	803	866	739	598	530
Judges	11	8	11	6	11	21	29	27	27	26
Funding Ratios(5)										
KPERS--State/School	66.10%	66.00%	64.50%	65.20%	58.80%	57.00%	53.90%	56.80%	59.90%	61.60%
KPERS--Local	72.70	72.50	70.30	69.10	67.40	63.70	59.50	61.20	63.20	63.70
KP&F	73.00	74.10	73.40	74.00	74.10	70.30	66.50	69.80	74.20	76.20
Judges	94.40	95.90	93.90	96.40	93.50	86.90	81.40	82.50	82.50	82.30

(1) This is the number of joint annuiants as of December 31st, per the System's records.
(2) Membership information taken from System's actuarial valuation.
(3) The State of Kansas issued pension obligation bonds, Series 2015H, in August 2015.
(4) KPERS Local and KP&F contribution rates are reported on a calendar year basis.
(5) The funding percentage indicates the actuarial soundess of the System. Generally, the greater the percentage, the stronger the System.

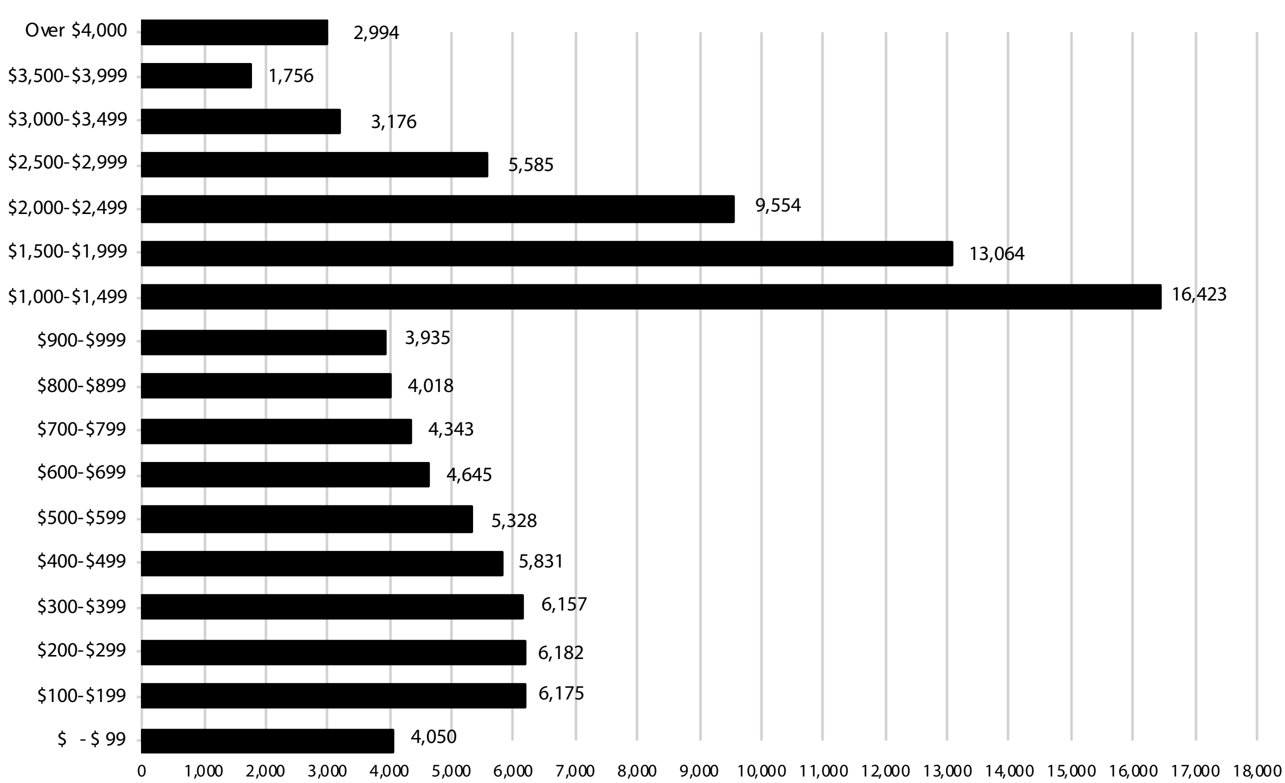
NUMBER OF RETIRED MEMBERS AND SURVIVORS BY TYPE OF BENEFIT

as of December 31, 2018

Monthly Benefit	Number of Retirees	Normal Retirement	Early Retirement	Service-Connected Death or Disability	Nonservice-Connected Death or Disability
$ - 99	4,050	3,648	397	2	3
$100-199	6,175	4,332	1,816	17	10
$200-299	6,182	3,975	2,186	14	7
$300-399	6,157	3,874	2,252	18	13
$400-499	5,831	3,854	1,936	28	13
$500-599	5,328	3,576	1,713	28	11
$600-699	4,645	3,223	1,383	23	16
$700-799	4,343	3,109	1,199	26	9
$800-899	4,018	2,968	996	44	10
$900-999	3,935	3,050	833	34	18
$1,000-1,499	16,423	13,993	2,202	168	60
$1,500-1,999	13,064	12,240	625	111	88
$2,000-2,499	9,554	9,265	205	45	39
$2,500-2,999	5,585	5,455	78	21	31
$3,000-3,499	3,176	3,100	49	18	9
$3,500-3,999	1,756	1,711	24	15	6
$4,000 or More	2,994	2,936	45	10	3
Totals	103,216	84,309	17,939	622	346

NUMBER OF RETIRED MEMBERS AND SURVIVORS BY MONTHLY BENEFIT AMOUNT

As of December 31, 2018



NUMBER OF RETIRED MEMBERS AND SURVIVORS BY TYPE OF PAYMENT OPTION

as of December 31, 2018

Monthly Benefit	Maximum No Survivor	Joint 1/2 to Survivor	Joint Same to Survivor	Life Certain w/10 Yrs	Joint 3/4 to Survivor	Widowed Children Survivor	Life Certain w /5 Yrs	Life Certain w /15 Yrs	Lump Sum Acc Contr
$ - 99	3,074	265	479	57	39	3	31	102	0
$100-199	4,360	569	839	100	125	21	35	125	1
$200-299	4,266	628	922	91	131	12	30	102	0
$300-399	4,220	656	879	73	163	29	28	109	0
$400-499	3,938	681	843	95	152	35	25	62	0
$500-599	3,582	657	746	48	178	25	30	62	0
$600-699	3,094	563	690	54	146	30	15	53	0
$700-799	2,856	570	613	45	165	27	18	49	0
$800-899	2,575	602	555	41	165	35	15	30	0
$900-999	2,493	616	537	43	172	30	16	28	0
$1,000-1,499	10,156	2,623	2,266	170	864	178	50	116	0
$1,500-1,999	8,249	2,188	1,554	86	743	154	29	61	0
$2,000-2,499	6,228	1,643	966	61	540	69	20	27	0
$2,500-2,999	3,616	1,011	527	38	331	36	14	12	0
$3,000-3,499	2,066	549	310	17	205	13	6	10	0
$3,500-3,999	1,098	308	189	10	128	17	2	4	0
$4,000 or More	1,578	723	405	13	267	1	2	5	0
Totals	67,449	14,852	13,320	1,042	4,514	715	366	957	1

AVERAGE BENEFIT BY YEARS OF SERVICE - FIVE YEAR SUMMARY

New Retirees by Calendar Year

Service Credit		2014	2015	2016	2017	2018
Less Than 5	Retired Members	172	211	270	365	408
	Average FAS*	$33,225.92	$32,163.67	$30,267.75	$33,846.93	$34,306.65
	Average Benefit	$213.67	$226.67	$223.01	$283.62	$322.15
	Average Years	3.46	3.46	3.33	2.85	2.70
5-9.99	Retired Members	586	698	731	828	822
	Average FAS*	$34,679.01	$33,764.28	$35,021.46	$37,992.46	$37,193.02
	Average Benefit	$349.62	$372.98	$428.48	$497.32	$507.31
	Average Years	7.58	7.77	7.63	7.29	7.33
10-14.99	Retired Members	929	941	943	832	847
	Average FAS*	$37,012.47	$36,877.93	$37,846.67	$39,212.18	$41,189.43
	Average Benefit	$570.48	$629.08	$634.00	$761.52	$820.14
	Average Years	12.41	12.37	12.30	12.43	12.41
15-19.99	Retired Members	822	899	803	882	926
	Average FAS*	$41,291.91	$41,886.24	$42,730.81	$46,143.88	$46,008.60
	Average Benefit	$901.18	$949.16	$1,052.23	$1,228.16	$1,244.67
	Average Years	17.30	17.33	17.34	17.38	17.34
20-24.99	Retired Members	930	1,015	1,023	1,084	1,049
	Average FAS*	$44,664.92	$49,276.16	$49,807.58	$53,412.30	$54,313.03
	Average Benefit	$1,311.24	$1,504.25	$1,607.37	$1,856.53	$1,939.82
	Average Years	22.50	22.40	22.42	22.45	22.46
25-29.99	Retired Members	967	1,048	1,014	928	905
	Average FAS*	$54,795.55	$57,442.35	$59,197.60	$61,798.08	$62,292.51
	Average Benefit	$2,007.73	$2,199.23	$2,369.66	$2,546.49	$2,642.76
	Average Years	27.40	27.44	27.40	27.18	27.10
30-34.99	Retired Members	752	750	601	411	387
	Average FAS*	$59,822.27	$62,314.41	$62,791.89	$64,043.08	$63,627.78
	Average Benefit	$2,542.62	$2,698.51	$2,848.18	$3,021.72	$3,059.22
	Average Years	32.15	32.12	32.12	32.18	32.21
35-39.99	Retired Members	359	313	260	167	166
	Average FAS*	$64,093.82	$64,900.76	$62,497.86	$64,763.50	$65,925.81
	Average Benefit	$3,036.30	$3,080.16	$3,030.92	$3,253.21	$3,333.23
	Average Years	37.11	36.94	36.88	36.91	36.82
40-44.99	Retired Members	113	89	59	40	31
	Average FAS*	$62,560.20	$63,507.91	$60,403.31	$68,167.31	$65,221.88
	Average Benefit	$3,353.11	$3,326.81	$3,224.57	$3,810.83	$3,513.57
	Average Years	42.06	41.65	41.59	41.41	41.02
45-49.99	Retired Members	15	12	8	7	6
	Average FAS*	$51,048.89	$64,115.21	$62,219.46	$71,886.65	$70,200.30
	Average Benefit	$2,917.43	$3,643.02	$3,666.62	$4,424.05	$4,111.87
	Average Years	47.17	46.13	46.69	46.46	46.54
50 and Over	Retired Members	1	4	—	3	1
	Average FAS*	$49,358.02	$66,836.27	—	$50,134.77	$61,330.24
	Average Benefit	$8,337.12	$4,228.92	—	$3,517.13	$5,182.41
	Average Years	51.00	52.56	—	54.00	55.00
Total Number	Retired Members	5,646	5,980	5,712	5,547	5,548
	Average FAS*	$46,895.04	$47,937.36	$47,759.75	$49,197.83	$49,293.86
	Average Benefit	$1,435.77	$1,493.26	$1,502.21	$1,548.03	$1,567.82
	Average Years	21.47	20.90	20.04	18.72	18.38

**Average "Final Average Salary"*

Source: Data provided by KPERS Information Technology and Benefits and Member Services divisions.

PRINCIPAL PARTICIPATING EMPLOYERS

Last Ten Calendar Years

Participating Government	2018 Covered Employees	2018 Rank	2018 % of Total System	2017 Covered Employees	2017 Rank	2017 % of Total System
State of Kansas	22,872	1	14.70%	23,215	1	15.19%
USD 259 Wichita	7,051	2	4.53	6,903	2	4.52
USD 233 Olathe	4,611	3	2.96	4,441	3	2.91
USD 500 Kansas City	3,678	4	2.36	3,558	4	2.33
USD 512 Shawnee Mission	3,424	5	2.20	3,385	5	2.22
USD 229 Blue Valley	3,295	6	2.12	3,200	6	2.09
Johnson County	3,202	7	2.06	3,162	7	2.07
Sedgwick County	2,521	8	1.62	2,514	8	1.65
USD 501 Topeka Public Schools	2,403	9	1.54	2,373	9	1.55
Unified Government of Wyandotte Co	2,009	10	1.29	2,048	10	1.34
All Other(1)	98,989		64.60	96,888		64.14
Total (1,526 employers)	154,055		100.00%	151,687		100.00%

Participating Government	2016 Covered Employees	2016 Rank	2016 % of Total System	2015 Covered Employees	2015 Rank	2015 % of Total System
State of Kansas	23,577	1	15.50%	23,748	1	15.49%
USD 259 Wichita	6,820	2	4.48	6,926	2	4.52
USD 233 Olathe	4,233	3	2.78	4,225	3	2.76
USD 500 Kansas City	3,488	4	2.29	3,493	4	2.28
USD 512 Shawnee Mission	3,315	5	2.18	3,337	5	2.18
USD 229 Blue Valley	3,118	6	2.05	3,100	6	2.02
Johnson County	3,065	7	2.01	3,067	7	2.00
Sedgwick County	2,488	8	1.64	2,490	8	1.62
USD 501 Topeka Public Schools	2,374	9	1.56	2,351	9	1.53
Unified Government of Wyandotte Co	2,029	10	1.33	1,757	10	1.15
All Other(1)	97,612		64.17	98,843		64.46
Total (1,526 employers)	152,119		100.00%	153,337		100.00%

(1) In 2018, "All Other" consisted of:

Type	*Number*	*Covered Employees*
School Districts	*280*	*50,543*
Cities and Counties	*467*	*26,317*
Post Secondary Education(2)	*50*	*12,236*
Other	*719*	*9,893*
	1,516	*98,989*

(2) Not Including State Board of Regents institutions

Source: Data provided by KPERS Information Technology and Benefit and Member Services divisions.

PRINCIPAL PARTICIPATING EMPLOYERS

Last Ten Calendar Years

	2014			2013		
Participating Government	Covered Employees	Rank	% of Total System	Covered Employees	Rank	% of Total System
State of Kansas	24,389	1	15.82%	24,631	1	15.78%
USD 259 Wichita	6,921	2	4.49	6,861	2	4.40
USD 233 Olathe	4,310	3	2.80	4,293	3	2.75
USD 500 Kansas City	3,544	4	2.30	3,392	5	2.17
USD 512 Shawnee Mission	3,428	5	2.22	3,621	4	2.32
USD 229 Blue Valley	3,106	6	2.01	3,130	6	2.01
Johnson County	3,052	7	1.98	3,099	7	1.99
Sedgwick County	2,536	8	1.64	2,535	8	1.62
USD 501 Topeka Public Schools	2,408	9	1.56	2,387	9	1.53
Unified Government of Wyandotte Co	1,784	10	1.16	1,733	10	1.11
All Other[1]	98,725		64.02	100,375		64.32
Total (1,526 employers)	154,203		100.00%	155,446		100.00%

	2012			2011		
Participating Government	Covered Employees	Rank	% of Total System	Covered Employees	Rank	% of Total System
State of Kansas	25,293	1	16.21%	25,382	1	16.37%
USD 259 Wichita	6,709	2	4.30	6,542	2	4.22
USD 233 Olathe	4,274	3	2.74	4,185	3	2.70
USD 500 Kansas City	3,287	5	2.11	3,191	5	2.06
USD 512 Shawnee Mission	3,678	4	2.36	3,705	4	2.39
USD 229 Blue Valley	3,088	6	1.98	3,098	6	2.00
Johnson County	3,065	7	1.96	3,014	7	1.94
Sedgwick County	2,549	8	1.63	2,336	8	1.51
USD 501 Topeka Public Schools	2,339	9	1.50	2,605	9	1.68
Unified Government of Wyandotte Co	1,697	10	1.09	1,627	10	1.05
All Other[1]	100,074		64.13	99,369		64.09
Total (1,526 employers)	156,053		100.00%	155,054		100.00%

(1) In 2018, "All Other" consisted of:

Type	*Number*	*Covered Employees*
School Districts	*280*	*50,543*
Cities and Counties	*467*	*26,317*
Post Secondary Education[2]	*50*	*12,236*
Other	*719*	*9,893*
	1,516	*98,989*

(2) Not Including State Board of Regents institutions

Source: Data provided by KPERS Information Technology and Benefit and Member Services divisions.

PRINCIPAL PARTICIPATING EMPLOYERS

Last Ten Calendar Years

	2010			2009		
Participating Government	Covered Employees	Rank	% of Total System	Covered Employees	Rank	% of Total System
State of Kansas	27,066	1	17.05%	26,735	1	16.55%
USD 259 Wichita	6,749	2	4.25	6,861	2	4.25
USD 233 Olathe	4,082	3	2.57	4,339	3	2.69
USD 500 Kansas City	3,165	5	1.99	3,178	5	1.97
USD 512 Shawnee Mission	3,837	4	2.42	4,005	4	2.48
USD 229 Blue Valley	2,633	7	1.66	2,706	7	1.68
Johnson County	2,977	6	1.88	2,957	6	1.83
Sedgwick County	2,341	8	1.48	2,466	8	1.53
USD 501 Topeka Public Schools	2,256	9	1.42	2,298	9	1.42
Unified Government of Wyandotte Co	1,595	10	1.01	1,715	10	1.06
All Other[1]	102,004		64.27	104,291		64.56
Total (1,526 employers)	158,705		100.00%	161,551		100.00%

(1) In 2018, "All Other" consisted of:

Type	*Number*	*Covered Employees*
School Districts	*280*	*50,543*
Cities and Counties	*467*	*26,317*
Post Secondary Education[2]	*50*	*12,236*
Other	*719*	*9,893*
	1,516	*98,989*

(2) Not Including State Board of Regents institutions

Source: Data provided by KPERS Information Technology and Benefit and Member Services divisions.