
Ohio Retirement Study Council

Proposal to Provide Investment Performance Evaluations

Prepared by:

Marty Dirks, Senior Investment Consultant

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July 23, 2014

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July 23, 2014

Ms. Bethany Rhodes
Director
Ohio Retirement Study Council
88 East Broad Street, Suite 1175
Columbus, Ohio 43215

Re: Proposal to Provide Investment Performance Evaluations

Dear Ms. Rhodes:

On behalf of Milliman, I am pleased to present this proposal to provide, twice annually, an investment performance evaluation of Ohio's Public Retirement Systems. As you review the proposal, you will find that Milliman is uniquely positioned to complete these services. We offer the following:

- Experience and knowledge of preparing investment performance evaluations for the Ohio Retirement Study Council (ORSC) since 2012;
- Experience and expertise providing a full range of investment consulting services to public sector plans;
- Registration as an investment advisor under the Investment Advisor Act of 1940;
- Consultants with strong technical backgrounds and many years of consulting experience; and
- Annual client education conferences

We have a strong team, many years of investment experience, and a dedication to excellence in our work. We feel that our experience would be an ongoing benefit to ORSC. We partner with our clients to assess their needs and work closely with them to develop custom investment consulting solutions. We propose to continue to bring this same level of service and quality to ORSC.

We appreciate this opportunity to present our qualifications. If you have any questions or would like more information regarding this response, please do not hesitate to contact me.

Sincerely,



Marty Dirks
Senior Investment Consultant

PROPOSAL SUMMARY

Milliman has been providing a full range of investment consulting services to public sector plans since 1982. The ORSC is seeking an investment consulting firm to provide, twice annually, a comparative evaluation of the investment performance of the funds of Ohio's five state retirement systems: PERS (this system includes two funds, a pension fund and a health care fund), OP&F, STRS, SERS, and SHPRS for the 6-month periods of January 1 to June 30 and July 1 to December 31 of each contract year.

Milliman will:

- Provide an overview analysis of the broad market environment of the preceding 6-month period and its general effect on investment performance.
 - Review the median performance of similarly situated public funds during the preceding 6-month, one-year, three-year, five-year, and ten-year periods compared to each fund's performance in the same period.
 - Review the asset allocation of the system's funds compared to other similarly situated funds.
 - Compare the total performance of each of the system's funds against each fund's own policy benchmark, as well as compare that total performance against their peer groups.
 - Compare each broad asset class of the system's funds against each fund's own policy benchmark, as well as compare that total performance against their peer groups.
 - Review the risk-return performance of each system's total fund and of each asset class.
 - Compare each fund's actual asset allocation to the allocations approved by the respective Board to determine adherence to those Board guidelines.
 - Compare each fund's total fund performance with its assumed rate of return for the 6-month, 1-year, 3-year, 5-year, and 10-year period.
 - Provide commentary on areas needing further review or that are of note (either positive or negative) that would assist the Council in its duties.
 - Review each fund's total return net of fees, as well as note the percentage of assets managed by external managers for each fund and the total fees associated with its management.
- Milliman would present our results in person to the ORSC and provide bound copies as well as a PDF document of the final performance evaluations to the ORSC. Our final performance evaluations will include the following summary statements:
- An overall opinion as to the validity, completeness, and appropriateness of the investment performance data provided by the retirement systems.

- Comments on the appropriateness of performance benchmarks used by the systems.
- Comments on each fund's performance versus the broad universe of other similarly situated public retirement systems.

Milliman will also prepare additional analysis on an as-requested basis. In the past Milliman has prepared and presented an analysis of Ohio and US unemployment trends and forecasts, as well as an educational session on actuarial discount rates and assumed rates of return.

CAPABILITIES AND EXPERIENCE

Milliman has been providing a full range of investment consulting services to public sector plans since 1982. We help our clients develop and enhance their investment programs according to the highest fiduciary standards, encompassing goals and considerations unique to each client. We offer the following services:

- Performance Measurement and Performance Reporting
- Investment Platform Review, Analysis, and Recommendations
- Investment Policy Statement Development and Review
- Manager Guideline Development and Review
- Investment Manager Research & Due Diligence
- Manager Searches
- Custodian and Record Keeper Searches
- Alternative Investment Selection Monitoring
- Special Research Projects
- Educational Seminars

Our goal is to offer sound and innovative advice on our clients' investment opportunities and to develop solid long-term investment guidance and planning. The primary strengths of our firm are the capabilities and experience of our consulting staff, a completely conflict-free environment, the knowledge of our staff, and an organizational structure that rewards hard work and innovative thinking. Fundamental to the firm's approach is the belief that clients are entitled to candid advice and unbiased recommendations addressing specific needs. To provide this higher level of service, the lead consultants of the firm do much of the analytical work, report preparation and consultation with clients.

Milliman utilizes InvestorForce, the most advanced performance management platform available to an institutional investment consultant.

A list of investment consulting clients for the Milliman San Francisco office is shown below:

Client Name	Year Acquired	Type of Client	Assets
City of Daytona Beach Police and Fire Pension Fund	1998	Public DB	\$ 163,715,590
City of Miami Beach Employees' Retirement System	1994	Public DB	509,847,389
City of Miami Fire Fighters' & Police Officers' Retirement Trust	1991	Public DB	135,150,690
City of Miami Fire Fighters' Relief & Pension Fund	1996	Public DB	1,570,471,671
City of New York Deferred Compensation Plan	2003	Public DC	14,626,993,054
City of San Diego's Defined Contribution & Savings Plans	1997	Public DC	918,710,232
Contra Costa County Employees' Retirement Association	1985	Public DB	6,547,235,900
Dade County Firefighters' Health Insurance Trust Fund	2005	Public DB	44,496,441
Doyon Foundation	2003	Foundation	19,024,614
East Bay Regional Park District	1999	Public	37,700,291
Glaziers, Architectural Metal & Glass Workers Resilient Floor & Decorative Workers Local Union 1399 Health and Welfare Fund	2010	Taft Hartley	4,081,916
Glazing Health & Welfare Fund	2008	Taft Hartley	2,457,548
Japanese American National Museum	2003	Foundation	9,264,095
Las Vegas Valley Water District	2013	Public DB	264,002,614
Ohio Retirement Study Council	2012	Public	186,974,122,280
Rabobank International Affiliates 401(k) Profit Sharing Plan	2011	Corporate DC	134,583,266
Salesian Society of San Francisco	2003	Religious/Trust	7,153,327
San Dominico School Endowment Fund	2010	Endowment	10,528,992
Southern California Glazier, Architectural Metal and Glassworkers Health & Welfare Fund	2011	Taft Hartley	15,819,171
Southern Nevada Glaziers' and Fabricators' Pension Trust Fund	2008	Taft Hartley	20,729,155
State of Connecticut Deferred Compensation Plan	2011	Public	2,500,000,000
Todd Shipyard Corporation	2006	Corporate DB	41,186,279
Total			\$214,557,274,515

Note: Milliman does not track the number of participants in client Plans.

REFERENCES

Contra Costa County Employees' Retirement Association
Timothy Price, CIO
1355 Willow Way, Suite 221
Concord, CA 94520
(925) 521-3960
Services began in 1985
Quarterly performance evaluation, investment policy review, manager search, asset allocation studies, general consulting

East Bay Regional Park District
Dave Collins
2950 Peralta Oak Court
Oakland, CA 94606
(510) 569-1417
December 1999 to present
Quarterly performance measurement and evaluation, investment policy review, manager search, general consulting.

San Dominico School Endowment Fund
David Wise, CFO
1500 Butterfield Road
San Anselmo, CA 94960
(415) 258-1971
June 2011 to present
Quarterly performance measurement and evaluation, investment policy review, manager search, general consulting.

City of New York Deferred Compensation Plans
Georgette Gestely, Director of Pre-Tax Benefits
40 Rector Street, 3rd Floor
New York, NY 10006
(212) 306-7320
January 2003 to present
Quarterly performance evaluation, commission recapture analysis, securities lending analysis, legislative analysis, investment policy review and general consulting.

STAFF QUALIFICATIONS

The staff assigned to ORSC include the individuals listed below. Marty Dirks has been the primary ORSC consultant since October 2012. Mr. Dirks is also the lead consultant for Contra Costa County Employees' Retirement Association, a \$6.5 billion defined benefit pension plan, and seven other institutional investment clients.

Bill Cottle is a Principal and Senior Investment Consultant and leads the Milliman San Francisco Investment Consulting practice. Bill has more than 38 years of investment consulting experience.

Biographies for Marty and Bill are included.

Marty Dirks

Senior Investment Consultant

- 8 years of investment consulting experience
- 2 years with the firm
- BS, Physics, Bemidji State University
- MBA, Harvard Business School
- Board Member, Federated Retirement System for the City of San José since 2010
- Adjunct Professor, Golden Gate University since 2006 (Teaches Portfolio Management in the MBA program)

Marty Dirks began his investment career after graduating from Harvard Business School in 1987 by joining the merger and acquisition group at Cooper Industries, a Fortune 100 industrial company. In 1989, he transitioned to public stock investing as a long/short equity analyst/portfolio manager at Feshbach Brothers, Odyssey Partners, and Harvard's endowment. At Harvard, he managed a long/short technology equity portfolio that grew to over \$800 million with audited annualized returns of 43% over 5 ½ years.

Marty has been fortunate to be affiliated with premier firms. Feshbach Brothers was one of the largest and most successful short selling firms. Odyssey Partners earned an average annual return for its investors of 22 percent over 14 years. Harvard Management, under the management of Jack Meyer, has one of the best investment records for any large institution, increasing assets from \$4.8 billion and to \$25.9 billion in 15 years.

From 2000 to 2004, Marty founded and managed a long/short equity hedge fund and from 2004 to 2010 he was a financial consultant and expert witness in complex financial litigation cases. From 2010-2012 Marty was the Director of Research at McCullough & Associates, a boutique value equity manager.

William R. Cottle, CFA

Principal and Senior Investment Consultant

- 38 years of Investment Experience
- 38 years of Consulting Experience
- BA, Economics, with a Business minor, Principia College
- MBA, Graduate School of Business, University of Colorado
- Member, CFA Institute
- Member, CFA Society of San Francisco

Bill started his investment career at Financial Research & Systems Associates (FRS) and was with the firm from mid-1976 through mid-1984. He assisted in the review of common stock analytical techniques and investment aspects of corporate pension funds. He also assisted leading academicians and investment practitioners in research on bond immunization, real estate analysis and performance evaluation, multiple valuation models, and homogeneous stock groups and stock sector performance.

From mid-1984 to 1990, Bill worked at a large US institutional investment consulting firm located in San Francisco. He began his career supervising the Consulting Support Department and Director of Research for the firm's Institute. Bill was also Supervisor of Investment Manager Evaluation for two years. He then became Vice President and was a Consultant to public and corporate funds in the Western US. He assisted clients in formulating strategic investment programs, implementing asset allocation studies, selecting investment managers, creating performance benchmarks, and analyzing performance results.

In 1990, Bill joined Dorn & Helleisen and became an owner of the firm in 1993. After more than 11 years as a consultant with Dorn, Helleisen & Cottle, this firm and its practice became the San Francisco-based investment consulting office of Milliman, Inc. Bill continues his investment consulting responsibilities in the San Francisco Office.

Bill assisted in the revision of the fifth edition of Security Analysis, which was published in October 1987. He was previously a member of the San Mateo County Employees' Retirement Association Board for four years, until mid-2003.

Jessica Romero, J.D.
Consultant

- 8 Years of investment consulting experience
- 8 Years investment Consulting experience with Florida public pension plans
- BA, Political Science, University of California at Berkeley
- J.D., University of California Hastings College of the Law

Jessica joined Milliman, through a predecessor firm, in 1995. During her long tenure with the firm, Jessica has taken on a number of increasingly responsible roles. She began as an associate working with firm founders to ensure compliance with SEC, city, state and federal regulatory requirements, and served as office manager, overseeing administrative personnel and managing accounts payable and accounts receivables.

In addition to reviewing RFP, legal documents and contracts, Jessica assists in the measurement and reporting of investment manager performance, portfolio characteristics and the calculation and analysis of total fund performance attribution. She also assists in the preparation of quarterly reports and domestic and international investment manager research projects

Travis Rego
Analyst

- 2 Years of investment consulting experience
- 1 > Years investment Consulting experience with Florida public pension plans
- BS, Management Economics, University of California, Davis
- BA, Communication, University of California, Davis

Travis joined Milliman in March 2014. Travis's responsibilities include the measurement of investment manager performance, portfolio characteristics and the calculation and analysis of total fund performance attribution and the preparation of quarterly investment reports for clients. He also assists in the preparation of domestic and international investment manager research projects.

Previously, Travis worked at Hall Capital Partners LLC in the Portfolio Management Group, where his responsibilities included conducting quarterly performance analysis, creating customized performance and reporting schedules, and facilitating all investment and account transactions.

CURRENT RESPONSIBILITY

Marty is a senior investment consultant with the San Francisco office of Milliman.

EXPERIENCE

Marty began his investment career after graduating from Harvard Business School in 1987 by joining the merger and acquisition group at Cooper Industries, a Fortune 100 industrial company. In 1989, he transitioned to public stock investing as a long/short equity analyst and portfolio manager at Feshbach Brothers, Odyssey Partners, and Harvard's endowment. At Harvard, he managed a long/short technology equity portfolio that grew to over \$800 million with audited annualized returns of 43% over five and a half years.

During his career, Marty has been fortunate to be affiliated with premier firms. Feshbach Brothers was one of the largest and most successful short-selling firms. Odyssey Partners earned an average annual return for its investors of 22% over 14 years. Harvard Management, under the management of Jack Meyer, has one of the best investment records for any large institution, increasing assets from \$4.8 billion and to \$25.9 billion in 15 years. From 2000 to 2004, Marty founded and managed a long/short equity hedge fund and from 2004 to 2010, he was a financial consultant and expert witness in complex financial litigation cases. From 2010 to 2012, Marty was the director of research at McCullough & Associates, a boutique value equity manager.

AFFILIATIONS

- Board member, Federated Retirement System for the City of San Jose since 2010
- Adjunct professor, teaches portfolio management in the MBA program at Golden Gate University since 2006

EDUCATION

- BS, Physics, Bemidji State University
- MBA, Harvard Business School



William R. Cottle CFA
Principal, Senior Investment Consultant



CURRENT RESPONSIBILITY

Bill is a principal with the San Francisco office of Milliman.

EXPERIENCE

Bill started his investment career at Financial Research & Systems Associates (FRS) and was with the firm from mid-1976 through mid-1984. He assisted in the review of common stock analytical techniques and investment aspects of corporate pension funds. He also assisted leading academicians and investment practitioners in research on bond immunization, real estate analysis and performance evaluation, multiple valuation models, and homogeneous stock groups and stock sector performance.

From mid-1984 to 1990, Bill worked at a large US institutional investment consulting firm located in San Francisco. He began his career supervising the Consulting Support Department and Director of Research for the firm's Institute. Bill was also Supervisor of Investment Manager Evaluation for two years. He then became Vice President and was a Consultant to public and corporate funds in the Western US. He assisted clients in formulating strategic investment programs, implementing asset allocation studies, selecting investment managers, creating performance benchmarks, and analyzing performance results.

In 1990, Bill joined Dorn & Helliesen and became an owner of the firm in 1993. After more than 11 years as a consultant with Dorn, Helliesen & Cottle, this firm and its practice became the San Francisco-based investment consulting office of Milliman, Inc.

Bill continues his investment consulting responsibilities in the San Francisco Office.

Bill assisted in the revision of the fifth edition of Security Analysis, which was published in October 1987. He was previously a member of the San Mateo County Employees' Retirement Association Board for four years, until mid-2003.

PROFESSIONAL DESIGNATIONS

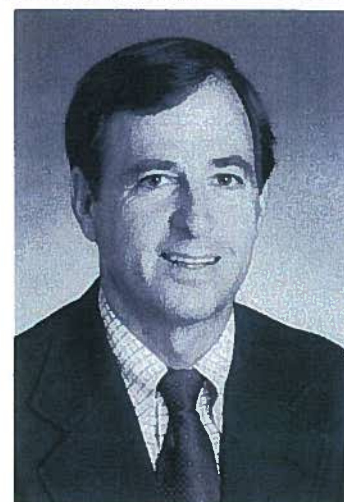
- Chartered Financial Analyst

AFFILIATIONS

- Member, CFA Institute
- Member, CFA Society of San Francisco

EDUCATION

- BA, Economics, with a Business minor, Principia College
- MBA, Graduate School of Business, University of Colorado



PROPOSED METHODOLOGY AND WORK PRODUCT

The San Francisco Investment Office of Milliman has been carefully assessing investment manager performance and analyzing investment organizations for over 25 years. Our abilities come from our knowledgeable and experienced staff of consultants and analysts, who work as a team on each account. Our "proposed methodology" is the same methodology as utilized in our most recent ORSC report, with the additional analysis noted in item ten below. We believe this methodology best meets the needs of the ORSC.

Our comparison databases and performance software are under subscription from InvestorForce. The InvestorForce Plan Universes are comprised of performance data provided by all InvestorForce performance measurement and reporting clients. The universes cover institutional portfolios including corporate defined benefit, public defined benefit, Taff-Hartley defined benefit, endowment, foundation, charity, educational, and religious organizations. As of March 31, 2014, the InvestorForce Plan Universes consisted of 2,065 gross of fee observation and \$2T in assets, net of fee observations consisted of 1,787 and \$1T in assets. The InvestorForce Plan Universes are used by consultant and institutional investor clients to compare plan performance relative to a universe of similar clients.

Our proposed methodology places a modest burden on the retirement systems, yet provides a comprehensive analysis, meeting the ORSC's objectives. However, Milliman is open to modifying the analysis and report as the ORSC may wish. In addition, Milliman is available to discuss other analysis possibilities to provide the very best service to the ORSC.

1. *An overview analysis of the broad market environment of the preceding 6-month period and its general effect on investment performance;*

We provide this in our market overview, which provides a quick recap of the major developments which influenced financial markets and how each of the major financial markets performed. This section should provide a broader context which frames how the various investments performed in the given environment. An example of our market overview is shown on page seven of the December 31, 2014 ORSC report we have provided as a sample report.

2. *A review of the median performance of similarly situated public funds during the preceding 6-month, one-year, three-year, five-year, and ten-year periods compared to each fund's performance in the same period;*

An example of our review of the ORSC funds compared to similarly situated public funds is shown on page 17 of the ORSC report example. A textual discussion of this material is shown on page four of the ORSC report.

3. *A review of the asset allocation of the system's funds compared to other similarly situated funds;*

An example of our review of the asset allocation of the system's funds compared to other similarly situated funds in table form is shown on page 16 of the ORSC report example. A textual discussion of this material is shown on page five of the ORSC report.

4. *A comparison of the total performance of each of the system's funds against each funds' own policy benchmark; additionally, compare that total performance against their peer groups;*

A comparison of the total performance of each of the system's funds against each funds' own policy benchmark in table form is shown on page 17 of the ORSC report example. A textual discussion of this material is shown on page four of the ORSC report.

5. *A comparison of each broad asset class in each of system's funds against the funds' own policy benchmark; additionally, compare that performance against their peer groups;*

A comparison of each broad asset class in each of system's funds against the funds' own policy benchmark in table form is shown beginning on page 19 of the ORSC report example.

There is a separate section for each asset class. (Domestic Equity begins on page 19, Fixed Income begins on page 21, etc.) A textual discussion of this material is shown at the bottom of the page for each asset class section in the ORSC report.

6. *A review of the risk-return performance of each system's total fund and of each asset class;*

A review of the risk-return performance of each system's total fund on page 18 and of each asset class in table form is shown beginning on page 20 of the ORSC report example. A textual discussion of this material is shown at the bottom of the page for each section in the ORSC report.

7. *A comparison of each fund's actual asset allocation to the allocations approved by the respective Board to determine adherence to those Board guidelines;*

An analysis of each ORSC pension plan begins with Public Employees Retirement System (DB) on page 32 of the ORSC report example. The section for each plan contains a comparison of each fund's actual asset allocation to the allocations approved by the respective Board. For PERS DB this comparison is on page 35 in the ORSC report.

8. *A comparison of each fund's total fund performance with its assumed rate of return for the 6-month, 1-year, 3-year, 5-year, and 10-year period;*

A comparison of each fund's total fund performance for the 6-month, 1-year, 3-year, 5-year, and 10-year period is shown on page 17 of the ORSC report example. Assumed rates of return are shown on page one of the report.

A textual discussion of each fund's total fund performance is also included on page one in the ORSC report.

9. *A brief commentary on areas needing further review or that are of note (either positive or negative) that would assist the Council in its duties;*

As we find areas needing further review, or that are of note, we include them in the textual comments where appropriate. If we find something especially noteworthy, we would include it as a separate item for discussion to highlight its importance.

Any noteworthy item would be included in our verbal remarks at the time of the report's presentation to bring it to the ORSC's attention.

10. A review of each fund's total return net of fees. Additionally, note the percentage of assets managed by external managers for each fund and the total fees associated with its management.

We show a Fee Comparison for Plan Segments on page 31 of the ORSC report example. This table was added at the request of ORSC for the June 30, 2013 report.

At this time we do not include each fund's total return net of fees or the percentage of assets managed by external managers for each fund. We would add this analysis to ORSC reports beginning with the June 30, 2014 report.

ADDITIONAL INFORMATION

We are including the following examples of our work product. Please see the corresponding Tab for each example.

Tab 1	December 31, 2013 Performance Report for Ohio Retirement Study Council
Tab 2	Terminology Discussion for Ohio Retirement Study Council
Tab 3	US and Ohio Unemployment memo for Ohio Retirement Study Council
Tab 4	Sample Quarterly Review & Performance Measurement Report
Tab 5	Small/Mid-Cap Private Equity Manager Search Finalist Report
Tab 6	PIMCO StocksPLUS and StocksPLUS Absolute Return Analysis Report

COST INFORMATION

We have used the actual average annual hours billed to ORSC since January 2012 and our standard hourly fees to create the table below.

Annual Fees			
Item	Hours	Rate/Hour	Total Cost
Senior Investment Consultant	164	425	\$ 69,842
Investment Consultant	103	250	25,833
Travel and lodging			3,500
Data services			3,000
Printing/Postage/Clerical support			<u>3,800</u>
Total			\$105,975

The actual hours required per year have varied approximately +/- 10% from the average used in the calculations above.

Integrating the travel, data, and printing cost into hourly rate leads us to propose the hourly rates shown below:

Senior Investment Consultant \$496
 Investment Consultant \$309

To account for normal variations in hours required from year-to-year leads us to propose a "guaranteed-not-to-exceed" cost quote of **\$115,000**.

The hourly fees and "guaranteed not to exceed fee" noted above will increase 3% annually, on January 1st of each year, to adjust for inflation.

SUPPLEMENTAL REQUIRED INFORMATION

1. *Has your firm, or any of its principals, officers, or any affiliate ever been a party to any litigation or allegations concerning fraud, negligence, criminal activity, violations of law or regulations, or fiduciary responsibility or other investment related matters?*

There has been no litigation or claim brought against the San Francisco Investment Consulting Practice of Milliman, Inc. With over 30 offices throughout the United States and more than 20 abroad, Milliman is subject to litigation from time to time in the normal course of its business activities. Such suits can arise in a variety of contexts. No litigation currently pending against Milliman will interfere with or jeopardize Milliman's ability to provide any of the services included in this RFP response.

2. *Has your firm, or any of its principals, officers, or any affiliate ever been the focus of a non-routine Securities and Exchange Commission (SEC) inquiry or investigation or a similar inquiry or investigation from federal, state, or self-regulatory body or organization?*

There has been no litigation or claims by the SEC or other regulatory action brought against the San Francisco Investment Consulting Practice of Milliman. With over 30 offices throughout the United States and more than 20 abroad, Milliman is subject to litigation from time to time in the normal course of its business activities. Such suits can arise in a variety of contexts. No litigation currently pending against Milliman will interfere with or jeopardize Milliman's ability to provide any of the services included in this RFP response.

No employee from the San Francisco Investment Consulting Practice has ever been investigated and/or charged by the Securities and Exchange Commission, the U.S. Department of Labor, or any other regulatory authority for violation of applicable laws.

3. *Will the firm contractually agree to disclose all conflicts of interest that exist or occur and disclose all sources of revenue, affiliations, and details of other relationships that may present conflicts of interest? Does the firm have any active contractual agreements with any of the five state retirement systems? If so, what methods would be used to ensure that no conflict of interest is present in your work with respect to your contract with the retirement system or the ORSC?*

Yes, Milliman will contractually agree to disclose all conflicts of interest that exist or occur and disclose all sources of revenue, affiliations, and details of other relationships that may present conflicts of interest.

It is Milliman's policy to issue a company-wide conflict check prior to responding to a request for proposal. One was issued relative to this RFP and based upon our company-wide review, we do not foresee any potential conflicts of interest which would arise from Milliman providing the investment consulting services as described in this request for proposal.

Milliman also has an Ethics Policy which is applicable to all employee activities. We are more than willing to share this with you. In addition, we maintain our business practices consistent with the Chartered Financial Analyst Code of Ethics, which applies to several of our staff members.

Milliman does not receive any direct or indirect compensation from investment managers. There are no charges for an investment manager to be in our database as our database is commercially available. Managers attend our investment conferences as speakers and are charged the same fee as our clients. No brokerage commissions or other fees are charged to investment managers. None of Milliman's clients utilize money managers, investment funds, brokerage service providers or other service providers from which Milliman receives a fee. Katherine Warren, an actuary in the Wayne, PA Milliman office, is at this time responding to an RFP from the State Employees Retirement System of Ohio (SERS) for actuarial services. We do not believe the SERS assignment presents a conflict of interest with the assignment contemplated in this proposal.

4. Does the firm intend to utilize any subcontractors in delivering any elements of investment performance evaluation services? If yes, explain.

Milliman provides all of our own investment consulting services and does not subcontract or outsource any parts of our investment consulting business.

5. Provide the following information about the firm:

- a) A brief description of the structure of the firm, including the legal form of organization, the parent company, and any affiliated companies, strategic partnerships, and joint ventures.
- b) Within the past three years, have there been any significant developments in your organization such as changes in ownership, restructuring, or personnel reorganizations? Do you anticipate any significant structural changes in your organization in the next 12 months?

Milliman was founded in 1947, and was officially incorporated on July 5, 1957. Milliman employs approximately 2,800 people, including a professional staff of over 1,400 qualified actuaries and consultants. We provide a full range of actuarial and other consulting services to our clients in the areas of Employee Benefits & Investment Consulting, Healthcare, Property & Casualty Insurance, as well as Life Insurance & Financial Services. Founded by Wendell Milliman and Stuart Robertson, Milliman has grown into a global firm of consultants and actuaries with more than 50 offices in the US and overseas.

The firm changed its name from Milliman & Robertson, Inc. to Milliman USA in 2001, and to Milliman, Inc. in 2004. These changes were of name only; no change in ownership or structure was involved.

Milliman is wholly owned and managed by approximately 400 Principals, who have been elected in recognition of their technical, professional and business achievements. Our sole business is providing independent consulting services. We are not affiliated with any public accounting or brokerage firms. The consultants of the firm are not permitted to own stock in any insurance or reinsurance company, nor are our consultants allowed to own stock in client organizations. In these ways, Milliman is able to provide analyses and opinions that are totally independent and objective.

Milliman is a corporation, with its Chief Executive Officer, Chief Financial Officer, and most corporate staff located in Seattle. Milliman’s Board of Directors includes the Chairman, CEO, Practice Directors from the four primary service areas and five at-large members who are also Principals of the firm. Milliman is entirely owned and managed by its Principals.

There are no planned changes to the ownership or organizational structure of the firm. In fact, significant changes in ownership structure are unlikely to occur.

With more than 65 years of successful performance, Milliman is an industry leader in providing consulting and actuarial services to our clients.

- 6. *Discuss rates of staff turnover for the past three calendar years, including the professional staff that left the firm in each period and reasons for departure.*

The table below reflects turnover for the last three years for the San Francisco Investment Consulting Practice.

Staff Turnover	Number of Staff
Hired (2 Sr. Consultants, 1 Analyst)	3
Terminated	
Resigned (1 Consultant, 1 Analyst)	2*
Retired (1 Sr. Consultant)	1

** The consultant accepted a position with one of our clients and this client relationship is ongoing. The analyst is now also working with this client. Also, the senior consultant retired after a full career of over 25 years with Milliman and a prior organization.*

- 7. *Describe your firm's philosophy as it pertains to investment consulting and investment performance evaluations. What role does the firm see itself playing for a client such as the ORSC? What do you see as the value your firm can provide to the ORSC?*

As the incumbent consultant for ORSC, we bring specific experience working with ORSC and producing the report and analysis. In addition, we have extensive experience in defined benefit investment consulting.

We believe our extensive experience allows us to place the Ohio system’s results in context compared to other plans. Also, we can provide special any special analysis requested by ORSC and, when appropriate, provide suggestions for additional analysis for consideration by ORSC.

- 8. *Describe your firm's philosophy and methodology in determining appropriate benchmarks and how performance is best evaluated. What is important in determining if a system is outperforming its peers? What are the most important standards of comparisons between funds?*

We believe Benchmark selection is best driven by the asset class recommendations resulting from an asset allocation study. Once investment managers are selected to provide exposure to these asset classes, the manager’s benchmark can be fined tuned, including some cases

where multiple benchmarks are employed. The objective in selecting a benchmark is to identify a benchmark that reasonably represents the underlying asset class and then a secondary benchmark that is investment management style oriented. In addition to market-oriented benchmarks, we compare managers of a similar investment style to a comparable universe, as well as provide a universe ranking.

Using a benchmark, it is possible to see how much value an active manager adds and from where, or through what investments, that value comes. Benchmark-relative investment returns will vary by asset class. When benchmark-relative investments are compared to tracking error (which measures the dispersion of benchmark-relative portfolio returns) the resulting ratio, the information ratio, demonstrates a risk-adjusted return for the manager.

Appropriate benchmarks are usually defined in the asset allocation process. Then, a manager who is believed to be able to outperform the benchmark with reasonable consistency is selected.

When an investment is chosen because it appears to be a good investment opportunity, not as part of the asset allocation study, choosing an appropriate benchmark is not simple. An investable benchmark should be chosen which has similar risk and reward characteristics to the chosen investment.

We evaluate performance with a multitude of metrics. First, we begin by assessing benchmark-relative performance for several trailing time periods, as well as across annual, quarterly, and at times, monthly time series. We also review rolling-period performance to assess consistency over market cycles. We further calculate risk statistics on these time periods, and evaluate risk-adjusted returns in the form of information ratios and, at times, Sharpe Ratios. Further, we evaluate performance within a style analysis framework to assess consistency of style versus manager-promised consistency. We also conduct performance attribution analyses to determine the drivers of a manager's outperformance or underperformance.

What is important in determining if a system is outperforming its peers? What are the most important standards of comparisons between funds?

Different pension plans will have different obligations (liabilities) and investment portfolios should be tailored to maximize the probability that the assets will allow satisfying the pension's obligations. To simply compare performance of investment returns for different pension plans may prove misleading, because progress toward meeting pension obligations is most important, not simply generating the highest returns – even the highest risk-adjusted returns. For example, liabilities for one pension plan may increase a great deal as inflation increases while another plan has liabilities that are less sensitive to inflation. It would be prudent for the pension plan with inflation-sensitive liabilities to invest some portion of assets into inflation-sensitive assets that will increase in value, along with the liabilities, during a period of high inflation.

In the case that the first pension plan in the example above does invest in inflation-sensitive assets, but inflation does not increase, then this plan's inflation-sensitive assets may lead to lower total returns than its peers. However, this does not mean that the pension plan's decision

to invest in inflation-sensitive assets was a mistake, rather it was good risk management. In fact, it would be similar to purchasing an insurance policy where no claims are made.

We favor comparing plans based on an in-depth analysis of their liabilities, assets and implementation strategy. At a minimum, metrics like Sharpe Ratio and Information Ratio should be used to alert an observer of higher performance being a result of simply taking higher risk.

9. *How do you define investment risk, and how does that apply to public pension funds?*

First and foremost, we believe investment risk is the risk that one's investments do not provide for the required future obligations. For a pension fund, investment risk is the risk that the fund's investments do not satisfy future liabilities.

We apply this belief in our asset allocation framework where risk is proxied as the standard deviation of total Plan returns, and we assess a probability likelihood of meeting or exceeding these future liabilities. Further, there are variations of risk based on more narrowly defined purposes. For example, there could be liquidity risk associated with certain asset classes that are not listed on publicly available markets. As a result, we would define risk as not meeting various aspects of a client's plan. We seek to appropriately identify all risk and manage them in a manner that is acceptable to our clients.

Performance Data

Period ending

December 31, 2013



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Investment Performance Summary

PERIOD ENDING December 31, 2013

Systems Performance Summary

All six of the Retirement Systems had positive results for the six months ending December 31, 2013, and performance of the Systems over the trailing six months was good relative to other public pension plans, and all but one of the Systems outperformed their index benchmarks. Over the trailing ten years, the performance of the retirement systems is close to their index benchmarks, and rank well versus peers.

One of the six Retirement Systems met their actuarial interest rates (the return target used by the System's actuaries to ensure all benefit payments can be made) over the trailing ten years. STRS had a 10-year return of 7.9% compared to 7.75% for their actuarial rate. The following plans trailed their actuarial rates, PERS DB returned 7.3% compared to 8.0%. SERS had a return of 7.0% compared to 7.75%. PERS HC had a 7-year return of 5.2% compared to 6.7% for their actuarial rate. HPRS had a return of 6.8% compared to 8.0%, and OP&F returned 8.1% compared to 8.25%. All of the Systems beat their actuarial interest rates over the trailing five-year and three-year period.

Below please see the actuarial rates of the various retirement systems:

Systems 10-Year Returns vs. Actuarial Rates		
Plan	Actuarial Rate	Return
PERS DB	8.00 %	7.3 %
PERS HC*	6.70	5.2
STRS	7.75	7.9
OP&F	8.25	8.1
SERS	7.75	7.0
HPRS	8.00	6.8

*Performance for PERS HC is a 7 year return, the plan does not have 10 years of return history

COMPARATIVE PERFORMANCE STUDY

PERIOD ENDING December 31, 2013

Introduction

Milliman, Inc. is pleased to present to the Council the most recent results of our ongoing, semi-annual comparative study of the performance of the six Ohio Statewide funds. The purpose of this comparative report is to provide the framework for dialogue with the retirement systems and to assist the Council in meeting its oversight responsibilities. As is our practice, this report reflects investment performance for all of the retirement systems over the ten-year period beginning July 1, 2003 and ending December 31, 2013.

An important value of this type of report is its ability to provide an “apples to apples” comparison of the systems’ investment results. Such a comparison is possible, since all of the systems are subject to the same investment standards and restrictions and have been so from their inception. In light of the fact that rate of return calculations are extremely sensitive to time period differences, it is critical that any comparative study be done with a consistent time frame, as was done in this report.

As is common practice when examining pension fund results, we make reference throughout the report to such things as quartile rankings and universe comparisons. The universes used for comparative purposes in the body of the report are those of the InvestorForce Performance Measurement Platform. The comparisons are formulated by pooling data from a wide range of investment consulting firms and they provide a statistically valid measure of results relative to a large sample. Milliman uses the InvestorForce Plan Universes, as compared to the BNY Mellon Plan Universes used by Evaluation Associates in previous reports. With over 3,000 plans and \$4 trillion in assets under advisement on the InvestorForce platform, the InvestorForce plan universes are the most robust and timely universes available in the industry.

While the entire measurement period for this report, as mentioned above, is ten years, certain exhibits contained within the report reference shorter periods. When a shorter period is used for comparison purposes it is because that particular exhibit refers to a standard comparative reference period such as the past three or five years.

In order to put performance in the proper context, it is important to understand the historical evolution of the investment restrictions imposed on the funds by statute. Prior to 1993 and the passage of S.B. 43, the investment authority of the funds was severely limited. Only 35% of each fund's assets could be invested in common stock and individual stock purchases were limited to domestic securities specified by a legal list. S.B. 43 expanded the legal list to include American Depository Receipts (ADRs), commingled stock investment funds, derivative instruments and real estate investment trusts (REITs). More importantly, the act permitted the funds to invest up to 50% of their total assets in U.S. stock and 10% in foreign stocks, bonds, and other obligations.

In March 1997, S.B. 82 abolished the legal list and adopted the “prudent person rule.” The funds’ investment authority under this act is expanded to allow any individual investment, so long as the overall portfolio is diversified. This allows for responses to changes in the economy and investment markets and reliance on professional investment managers and economic advisors to guide the decision-making process. Along with this expansion of investment authority, however, comes the requirement of prudence and diligence in the development of guidelines, benchmarks, and objectives, and importantly, mandates ongoing monitoring by those with fiduciary responsibility.

The majority of pension assets, in both the public and private sector, are managed with “prudent person” guidelines, which is to say largely without minimums or maximums placed on individual asset classes or securities. This approach, currently in place in the Ohio systems, is the optimal way to manage fund assets. It gives each fund the ability to develop an asset allocation strategy that is likely to maximize expected return while minimizing risk, all relative to the need to fund future obligations. Such an approach is fully consistent with the primary mandate of any pension fund – management that is in the best interest of plan participants.

Each of the Ohio systems has established separate investment policies and investment programs for its plan. The State Teachers Retirement System of Ohio (STRS) manages approximately 75% of total assets internally; Ohio Public Employees Retirement System (PERS) manages approximately 40% of total assets internally, while the OP&F, SERS, and HPRS investment programs employ external managers for 100% of their assets.

As of January 1, 2005, the Public Employees Retirement System (PERS) implemented a new structure for its assets. Approximately \$1 billion was segregated into a new fund (with a separate asset allocation policy) solely for the purpose of funding health care obligations.

The policy target (asset allocation) for the remaining pension assets was also modified, reflecting the different risk and return objectives of the newly segregated health care fund. Our report reflects these changes by separating the two PERS asset pools whenever appropriate. Additionally, the PERS DB and HC Plans now report their fixed income portfolios in aggregate. Where appropriate, the segments of each fixed income portfolio are shown separately.

Our findings may be summarized as follows:

- The second half of 2013 was a very strong period for the financial markets. As a gauge of the marketplace, the Russell 3000 returned 17.1% and the MSCI EAFE returned 18.0% for the two quarters ending December 31, 2013. Despite concerns about a potential reduction of stimulus by the Federal Reserve, the US stock market rose modestly on improving economic data and steady growth in corporate earnings.

- The Ohio Statewide fund returns for the six-month period ranged from 8.4% (PERS HC) to 11.5% (HPRS). Five of the six systems outperformed their respective policy index for the six-month period, and one system underperformed its policy. HPRS (11.5%) and SERS (11.0%) were the best absolute performers. The best relative performers were SERS (+1.5%) and OP&F (+1.3%). PERS DB returned 9.8% and beat its benchmark by 0.2%. PERS HC returned 8.4% and beat its benchmark by 0.3%. STRS returned 10.3%, however trailed its benchmark by 20 basis points.
- In comparison to a broad universe of other public retirement systems (the InvestorForce All Public Defined Benefit Universe), four of the plans ranked above the median for the six-month period ending December 31, 2013. HPRS ranked in the 15th percentile, SERS ranked in the 28th percentile, OP&F ranked in the 33rd percentile. The following plans ranked below the median; PERS DB ranked in the 53rd percentile and PERS HC ranked in the 84th percentile.
- For the one-year period ending December 31, 2013, HPRS (+19.1%) outperformed its benchmark by 230 basis points. SERS (+16.9%) outperformed its benchmark by 160 basis points. OP&F (+16.0%) outperformed its benchmark by 140 basis points, PERS DB (+14.7%) outperformed its benchmark by 50 basis points and PERS HC (+ 11.5%) outperformed its benchmark by 80 basis points. STRS (+17.6%) underperformed its benchmark by 50 basis points. Against their peers in the InvestorForce All Public Defined Benefit Universe, four of six plans placed above the median. HPRS ranked in the 15th percentile, STRS ranked in the 26th percentile, SERS ranked in the 34th percentile and OP&F placing in the 43rd percentile among its peers. PERS DB was below the median ranked in the 57th percentile amongst its peers and PERS HC also below the median ranked in the 85th percentile amongst its peers.
- On a three-year basis, SERS, OP&F, PERS DB and PERS HC were the best relative performers, with SERS leading its benchmark by 70 basis points, and OP&F, PERS DB and PERS HC beating their benchmarks by 50 basis points each. STRS beat its benchmark by 10 basis points. HPRS was 120 basis points behind its benchmark over the trailing three year period. Comparing the three-year returns of the systems to the InvestorForce All Public Defined Benefit Universe, two plans ranked below the median. OP&F ranked in the 8th percentile, STRS ranked in the 13th percentile, SERS ranked in the 26th percentile and PERS DB ranked in the 34th percentile. HPRS ranked in the 58th percentile and PERS HC plan ranked in the 80th percentile.
- For the five-year period, four of the six systems outpaced their respective policy benchmarks, with OP&F outperforming its benchmark by 90 basis points, and PERS HC outperforming its benchmark by 60 basis points, follow by SERS outperforming by 50 basis points and PERS DB outperforming by 30 basis points. In comparison to the InvestorForce All Public Defined Benefit Universe, OP&F (+13.8%) ranked in the 9th percentile, STRS (+13.1%) ranked in the 22nd percentile, HPRS (+12.6%) ranked in the 37th percentile, PERS DB and PERS HC both (+12.4%) ranked in the 45st percentile while SERS (+11.8%) ranked in the 54th percentile.
- Over the ten-year period, four of the five plans outperformed and one plan matched their policy benchmarks. OP&F (+8.1%) exceeded its policy benchmark by 70 basis points, STRS (+7.9%) was 40 basis points above its benchmark, and PERS DB (+7.3%) was above its benchmark by 30 basis points. SERS (+7.0%) beat its benchmark by 10 basis points, while HPRS (+6.8%) trailed its benchmark by 80 basis points. Relative to the peer group universe, OP&F ranked in the 3rd percentile, STRS ranked in the 6th

percentile, and PERS DB ranked in the 25th percentile over the trailing ten-year period. SERS ranked in the 39th percentile, and HPRS ranked in the 52nd percentile over the same period.

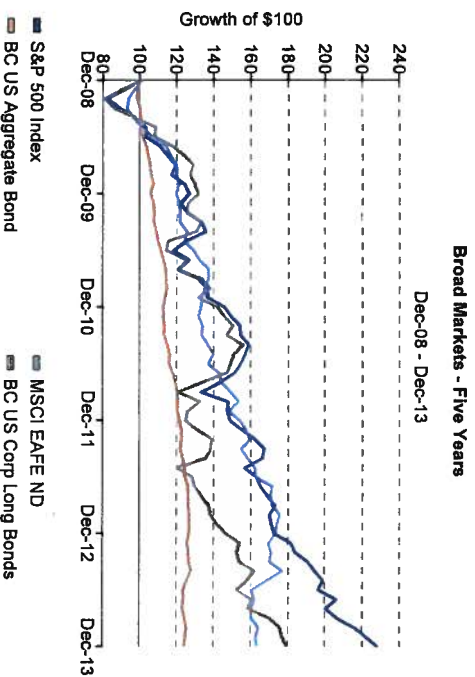
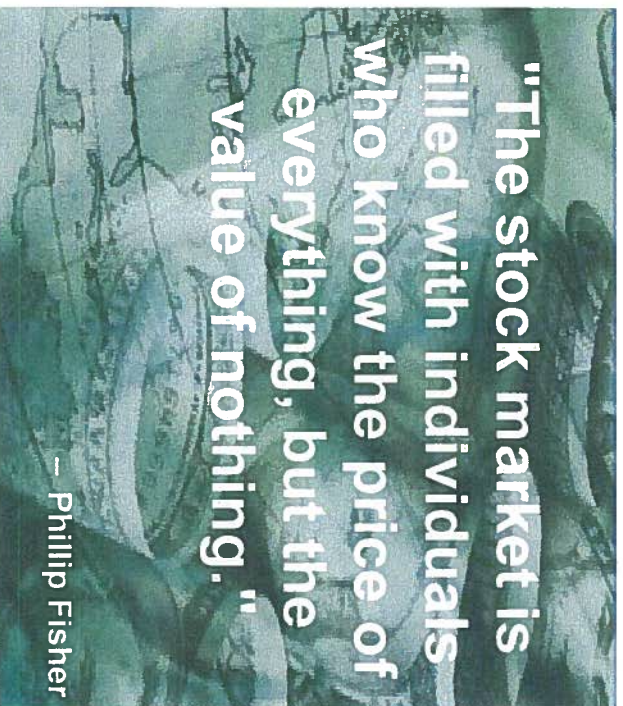
• Please note that comparing investment performance relative to the plans' actuarial interest rates and policy benchmarks are of primary importance, while peer group comparisons, although useful, should be of secondary importance in the performance evaluation process. Please also note that the asset allocation and size of the Plan play a significant role in performance. In addition, since the plans have long-term funding schedules and investment time horizons, more emphasis should be placed on evaluating performance over longer holding periods.

• The following observations are based on a review of the systems' asset allocation in comparison to the InvestorForce All Public Defined Benefit Universe:

1. The actual (37.8%) and target (35.0%) domestic equity allocation of HPRS was above the median plan's allocation to domestic equity (35.0%) in the InvestorForce All Public Defined Benefit Universe. For OP&F, the target allocation to domestic equities (31.6%) was below the median, as was the actual allocation (26.7%). STRS actual (31.3%) and target (33.0%) allocations were below the median for domestic equities. The actual (26.1%) and target (22.5%) allocation of SERS, the actual (21.3%) and target (22.0%) allocation of PERS DB, as well as the actual (23.8%) and target (23.5%) allocation of PERS HC domestic equity were all below that of the median plan.
2. Four of the six systems' actual asset allocations to fixed income were well below the median plan (27.0%) of the InvestorForce All Public Defined Benefit Universe. PERS HC has a target (33.5%) above the median and an actual allocation (30.4%) below target, but above the universe median. OP&F has a target (31.5%) above the median and an actual allocation (27.0%) below target, equal to the universe median
3. The median plan allocation of the InvestorForce All Public Defined Benefit Universe to non-U.S. equity as of December 31, 2013 was 15.0%. The target allocations for all plans were significantly above the median, with the actual allocations following suit.
4. The universe median allocation to real estate in the InvestorForce All Public Defined Benefit Universe was 8.6% as of December 31, 2013. The target allocation of each of the systems, with the exception of HPRS (5.0%) and PERS HC (6.0%), is above the median allocation.
5. The universe median allocation to alternatives in the InvestorForce All Public Defined Benefit Universe was 9.6% as of December 31, 2013. The target allocation of each of the systems, with the exception of OP&F (5.3%) and PERS HC (8.4%), is above the median allocation.

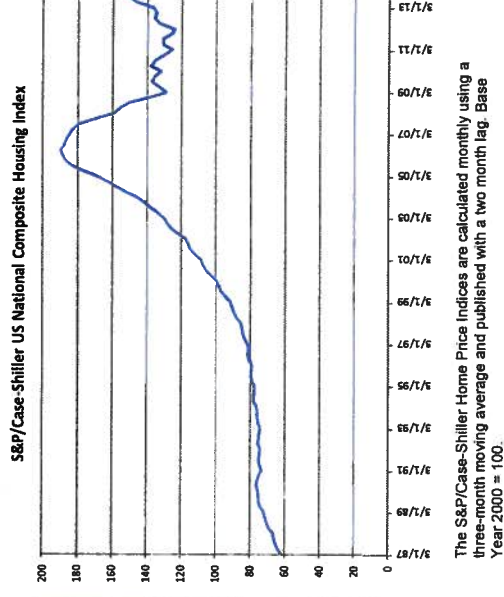
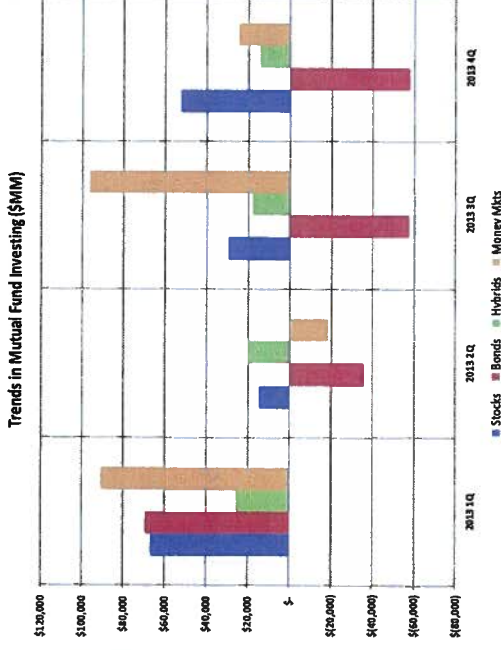
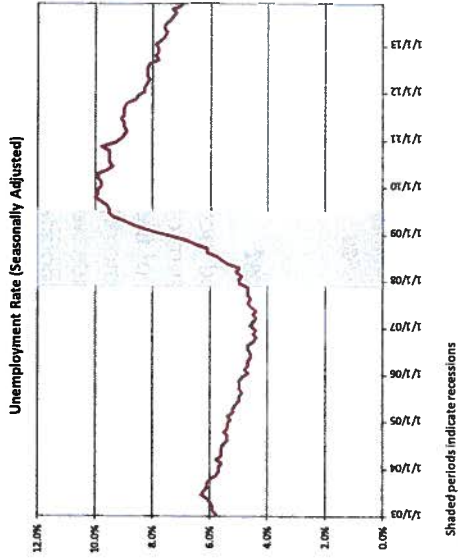
6. PERS DB and PERS HC added to two new asset classes, Risk Parity and GTAA, during the first half of 2013. The actual allocations for PERS DB are (1.8%) Risk Parity and (1.9%) GTAA. PERS HC actual allocations (1.9%) Risk Parity and (1.9%) GTAA. The target allocation is 2.0% for each asset class.
7. OP&F added a new asset class Master Limited Partnerships (MLPs) during the first half of 2013. The actual allocation is 5.4% and the target allocation is 5.0% as of December 31, 2013.
 - Overall, we believe this report provides the ORSC with a consolidated source of valuable information to assist in its oversight of the six Ohio Statewide funds and ensure that investment policies are effectively implemented. While the report does not provide very specific underlying portfolio detail, it does provide the necessary information to allow the ORSC to ask the right questions and act as an early indicator of potential issues that should be delved into in more detail. Any modifications to the report will only serve to enhance that ability.
 - For performance reporting purposes, the asset allocation benchmarks in this report are generally consistent with investment policy asset allocations for all plans. As we previously stated, one of the primary purposes of this report is to provide an accurate representation of plan performance of the Ohio Retirement Systems and to provide an “apples to apples” comparison of the Retirement Systems’ investment results. In order for this performance report to fulfill this purpose, it is necessary that each plan provide accurate information. In light of the increased complexity of the plans’ portfolios, we have divided the “alternative investment” performance table into separate and distinct categories including private equity, hedge funds, and “other.” We will continue to review current performance benchmarking practices and make recommendations to ensure consistent and transparent reporting for all plans in subsequent performance reports.
 - The Systems’ investment policies are changing and we will, of course, continue to review any changes and proposed changes to the Systems’ investment policies and report them to the ORSC in subsequent performance reports.

Market Commentary - 4th Quarter 2013



	Qtr	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
S&P 500 Index	10.51	32.39	32.39	16.18	17.94	7.41
Russell 1000 Index	10.23	33.11	33.11	16.30	18.59	7.78
Russell 1000 Value Index	10.01	32.53	32.53	16.06	16.67	7.58
Russell 1000 Growth Index	10.44	33.48	33.48	16.45	20.39	7.83
Russell 2000 Index	8.72	38.82	38.82	15.67	20.08	9.07
Russell 2000 Value Index	9.30	34.52	34.52	14.49	17.64	8.61
Russell 2000 Growth Index	8.17	43.30	43.30	16.82	22.58	9.41
MSCI EAFE ND	5.71	22.78	22.78	8.17	12.44	6.91
MSCI EAFE Small Cap ND	5.91	29.30	29.30	9.26	18.50	9.48
MSCI Europe ND	7.88	25.23	25.23	9.89	13.36	7.28
MSCI Japan ND	2.29	27.16	27.16	5.63	7.65	4.24
MSCI EM ND	1.83	-2.60	-2.60	-2.06	14.79	11.17
DJ World Real Estate	-0.77	2.85	2.85	7.00	15.68	8.04
DJ US Select REIT Index	-1.09	1.22	1.22	9.04	16.36	8.22
DJ-UBS US Commodity Index	-1.05	-9.52	-9.52	-8.11	1.51	0.87
ML 3-month T-Bill	0.02	0.07	0.07	0.10	0.12	1.68
BC US Gov 1-3Y Bonds	0.07	0.37	0.37	0.81	1.25	2.67
BC US Gov/Corp Bonds	-0.03	-2.35	-2.35	3.63	4.40	4.52
BC US Aggregate Bond	-0.14	-2.02	-2.02	3.26	4.44	4.55
BC US Gov Long Bonds	-2.97	-12.48	-12.48	5.47	2.42	5.94
BC US Corp Long Bonds	1.90	-5.68	-5.68	7.11	10.29	6.37
BC US High Yield Bonds	3.58	7.44	7.44	9.32	18.93	8.62
BC TIPS	-2.00	-8.60	-8.60	3.55	5.63	4.85

Market Commentary - 4th Quarter 2013

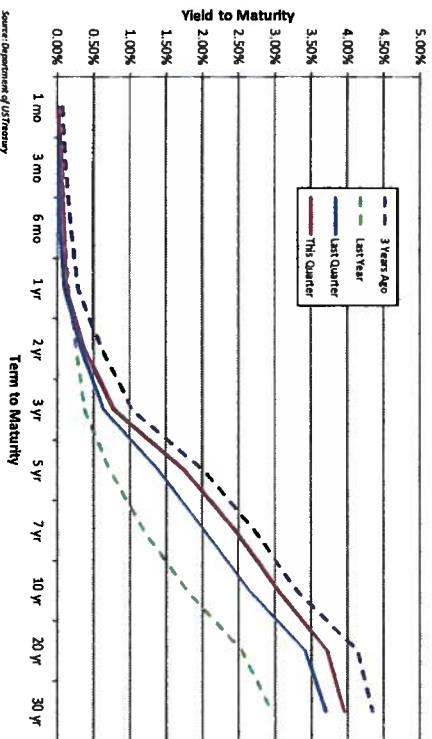


Market Commentary

- The U.S. stock market rose on improving U.S. economic data, steady growth in corporate earnings, and the Federal Reserve's decision to modestly reduce ("taper") its securities purchases from \$85 billion per month to \$75 billion.
- Developed international equity markets posted solid returns on central bank stimulus and a steady recovery in economic growth, while emerging markets struggled in the second half of the quarter as economic data disappointed.
- In addition to tapering its securities purchases, the Fed confirmed its commitment to keep short-term interest rates "exceptionally low" until either the unemployment rate falls to about 6.5% or the inflation rate exceeds 2.5% a year.
- As the quarter ended, mutual fund investors decreased their holdings in bonds and increased their holdings in stocks. For the third consecutive quarter, bond funds had net outflows (\$58.2 billion in the 4th Quarter), while stock funds had net inflows of \$52.7 billion. Total money market mutual fund assets increased by \$24.8 billion to \$2.719 trillion.
- The unemployment rate fell from 7.2% to 6.7%, as total employment increased by 515,000 jobs.
- The price of oil decreased from \$102 per barrel to \$98 during the quarter, a decrease of 3.9%.
- For the three months ending December 31, 2013, annualized seasonally adjusted CPI – U was 1.1%. Rising prices for rental housing drove the increase.

Market Commentary - 4th Quarter 2013

U.S. Treasury Yield Curve



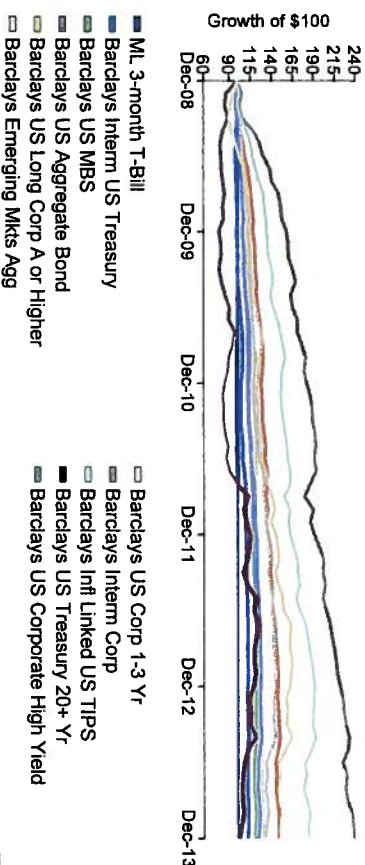
	Qtr	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs
ML 3-month T-Bill	0.02	0.07	0.07	0.10	0.12	1.68
Barclays US Corp 1-3 Yr	0.59	1.71	1.71	2.58	5.27	3.89
Barclays Intern US Treasury	-0.47	-1.34	-1.34	2.26	2.11	3.73
Barclays Intern Corp	0.82	0.08	0.08	4.75	8.09	5.01
Barclays US MBS	-0.42	-1.41	-1.41	2.42	3.69	4.61
Barclays Infl Linked US TIPS	-2.00	-8.61	-8.61	3.55	5.63	4.85
Barclays US Aggregate Bond	-0.14	-2.02	-2.02	3.26	4.44	4.55
Barclays US Treasury 20+ Yr	-3.23	-13.88	-13.88	6.01	0.48	6.07
Barclays US Long Corp A or Higher	1.10	-6.85	-6.85	6.45	8.48	5.92
Barclays US Corporate High Yield	3.58	7.44	7.44	9.32	18.93	8.62
Barclays Emerging Mkts Agg	1.17	-4.12	-4.12	6.55	12.87	8.54

US Bond Market

- The broad fixed income market fell 0.14% in the 4th quarter, as the negative impact from a 0.14% rise in interest rates more than offset the coupon return of 0.79%.
- The short end of the yield curve remained unchanged as the Fed maintained its near-zero interest rate policy.
- Interest rates moved decidedly higher for 5- to 30-year Treasury bonds.
- High-yield bonds were the best performing sector this quarter, up 3.58%, as investors favored bonds with higher yields.
- Long-term corporate bonds were up 1.10%, as tightening spreads slightly offset the negative impact from rising yields on the long end of the curve.
- Long-term government bonds were the worst performing sector this quarter, down 3.23%, as investors moved out of safe-haven assets.
- The 3-month T-Bill returned 0.02% in the fourth quarter, the same return as in the third quarter.

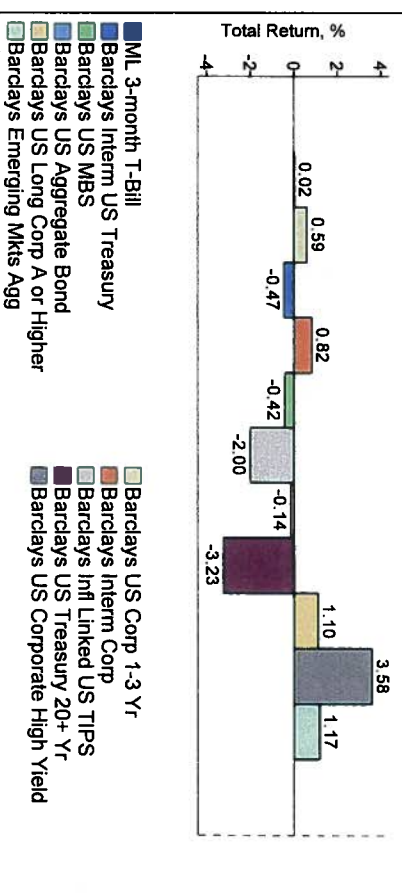
US Fixed Income - Five Years

Dec-08 - Dec-13



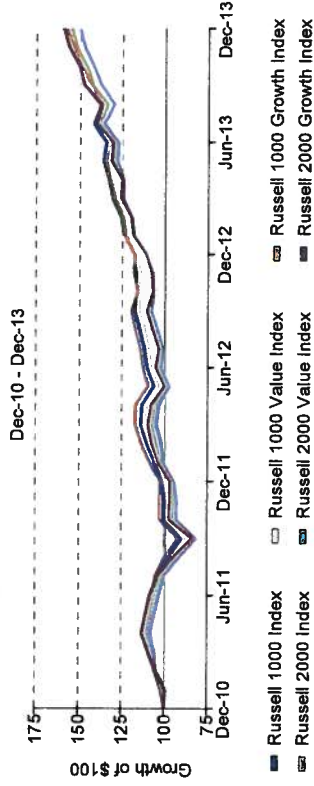
US Fixed Income - Quarter

Oct-13 - Dec-13

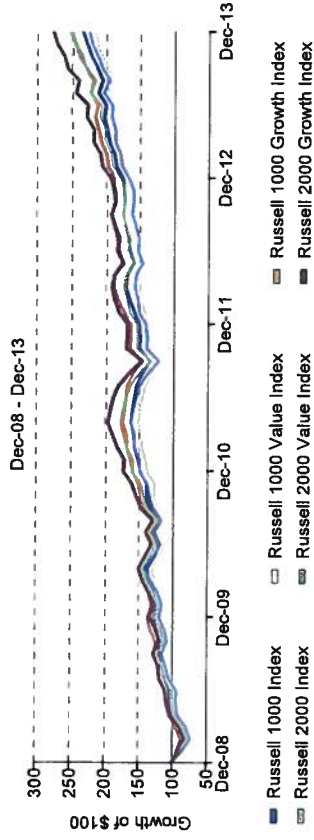


Market Commentary - 4th Quarter 2013

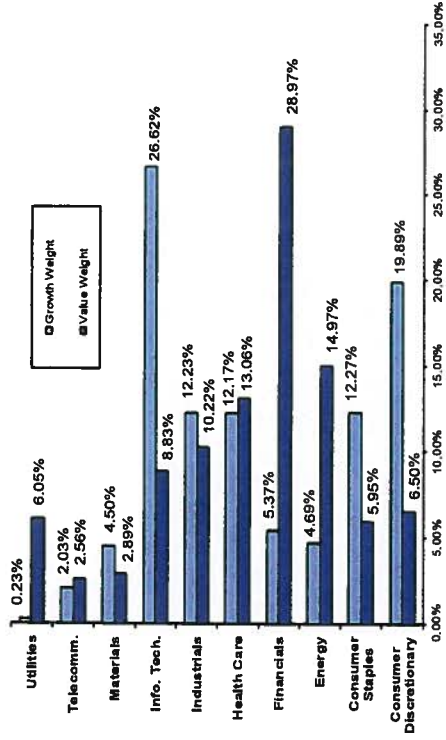
Russell Indices - Three Years



Russell Indices - Five Years

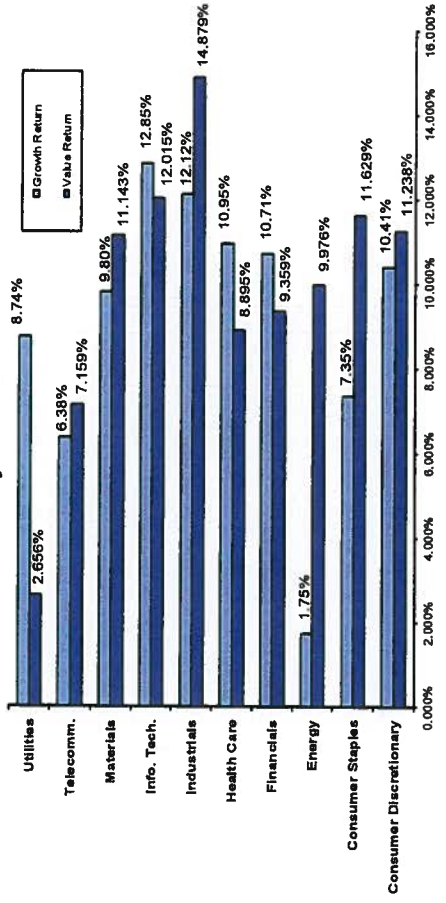


Russell 1000 Index Sector Weights



Source: Russell Investments

Russell 1000 Index Sector Quarterly Returns



US Stock Market

- Most major domestic equity indices posted a gain for the quarter. The large-cap Russell 1000 Growth Index had the best return, up 10.44%.
- In terms of capitalization, large-cap stocks outperformed small-cap stocks.
- In comparing styles, growth outperformed value in the large-cap area of the market, while value beat growth in the small-cap area.
- REITs fell 1.09%, as higher interest rates reduced demand for dividend-paying stocks. The worst performing sectors were health care and self-storage.
- Industrials were the best performing sector, up 13.34%, on optimism about U.S. economic growth.
- Utilities were the worst performing sector, up 2.88%, as investors generally moved out of lower-risk assets.

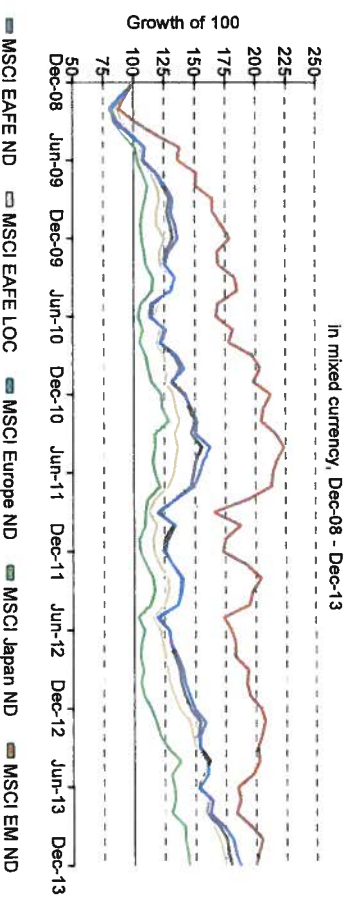
Market Commentary - 4th Quarter 2013

Currency Exchange Rates

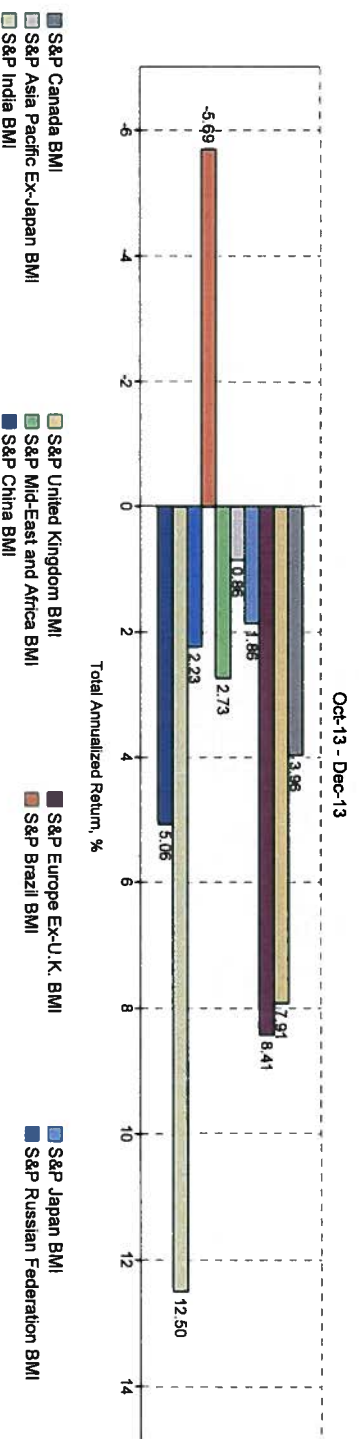
	Units per US Dollar		% Change
	This Quarter	Last Quarter	
Brazil Reals	2.36	2.22	6.23%
Canadian Dollar	1.06	1.03	3.38%
China Yuan Renminbi	6.05	6.12	-1.10%
Euro	0.73	0.74	-1.74%
India Rupees	61.86	62.65	-1.27%
Japan Yen	105.28	98.29	7.10%
Mexico Pesos	13.10	13.16	-0.44%
Russia Rubles	32.88	32.35	1.63%
United Kingdom Pounds	0.60	0.62	-2.37%

Source: www.xe.com

International - Five Years



Regional Performance - Quarter



International Markets

- The dollar was down against the euro and pound, but up strongly against the yen.
- For the quarter, the EAFE Index was up 5.71%, and Emerging Markets were up 1.83%. Local currency returns for the EAFE Index and Emerging Markets were 6.36% and 2.96%, respectively.
- Among the major international regions, Indian stocks had the highest return, up 12.50%, as the new central bank chief raised investor confidence with measures to control inflation and support growth.
- Stocks in Brazil had the lowest return, down 5.69%, as a result of weak economic growth, lower commodity prices, and deteriorating fiscal conditions.
- Small-cap stocks, up 5.9%, outperformed large-cap stocks.

Index Definitions and Modern Portfolio Theory Definitions

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INDEX DEFINITIONS

Russell 1000 – Made up of the 1000 largest companies within the Russell 3000 index. It is also known as the Market-Oriented Index because it represents the group of stocks from which most active money managers choose.

Russell 2000 – A small-cap index consisting of the smallest 2000 companies in the Russell 3000 index, representing approximately 8% of the Russell 3000 total market capitalization.

Russell 2500 – A small-cap index consisting of the smallest 2500 companies in the Russell 3000 index, representing approximately 20% of the Russell 3000 total market capitalization.

Russell 3000 – An index composed of 3000 large U.S. companies, as determined by market capitalization. This portfolio of securities represents approximately 98% of the investable U.S. equity market.

S&P 500 – The Standard & Poors 500 is a commonly used benchmark of the U.S. equities market. This market capitalization-weighted index includes 500 leading companies in leading industries of the U.S. economy.

S&P 500 Equal Weighted – An index of the same stocks as those in the S&P 500, but with equal dollar investments in each issue.

S&P 600 Small Cap – An index designed to measure the performance of the small capitalization sector of the U.S. equities market. This index consists of 600 domestic stocks chosen for market size, liquidity, (bid-asked spread, ownership, share turnover and number of no trade days) and industry group representation.

S&P MidCap 400 – An index designed to measure the performance of the middle capitalization sector of the U.S. equities market. This market capitalization weighted index was created in June of 1991 and consists of 400 domestic stocks from the NYSE, NASDAQ and AMEX chosen for market size, liquidity and industry group representation. Each stock added to the index must represent a viable enterprise and must be representative of the industry group to which it is assigned. The market price of each security in the index must be responsive to changes in industry affairs. Aggregate market value of the stock and its trading activity are important considerations in the selection process.

Wilshire 5000 – Measures the performance of all U.S. common equity securities, and so serves as an index of all stock trades in the United States.

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MSCI EAFE – The index is listed for foreign stock funds (EAFE refers to Europe, Australasia, and Far East). Widely accepted as a benchmark for international stock performance, the EAFE index is an aggregate of 21 individual country indexes that collectively represent many of the major markets of the world.

MSCI Emerging Markets – A capitalization-weighted index of stocks from 25 emerging markets that only includes issues that may be traded by foreign investors. Consists of equities from emerging markets in Argentina, Brazil, Chile, China, Colombia, Czech Republic, Egypt, Hungary, India, Indonesia, Israel, Jordan, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russia, South Africa, Taiwan, Turkey and Thailand.

MSCI World Ex-US – An index that measures the performance of the developed stock markets of the following developed countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Hong Kong, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland and the United Kingdom.

Citigroup Broad Investment Grade – An index that spans the “available” market for U.S. Treasury/agency securities, investment grade corporate bonds (BBB or better) and mortgage pass-through securities.

Barclays Capital U.S. Aggregate – An index that includes fixed rate debt issues rated investment grade or higher by Moody’s Investor’s Service, Standard and Poor’s Corporation, or Fitch Investor’s Service, in that order. (It also includes Commercial Mortgage Backed Securities.) Bonds or securities included must be fixed rate, although they can carry a coupon that steps up or changes according to a predetermined schedule; must be dollar-denominated and nonconvertible; and must be publicly issued.

Barclays Capital Mortgage-Backed – An index that includes 15 and 30 year fixed rate securities backed by mortgage pools of the Government National Mortgage Association (GNMA), Federal Home Loan Mortgage Corporation (FHLMC), and Federal National Mortgage Association (FNMA).

Barclays Capital 1-3 Yr US Government – An index that includes securities issued by the U.S. Government (i.e., Treasury and Agency Securities) with a maturity from one year up to but not including three years.

Barclays Capital U.S. Tips – An index that consists of Inflation-Protection securities issued by the U.S. Treasury.

NCREIF Property – An index that is also known as the NPI or Combined Index. It consists of both equity and leveraged properties, but the leveraged properties are reported on an unleveraged basis. So, the index is completely unleveraged. The universe of properties includes: existing properties only – no development projects; only investment-grade, non-agricultural, income-producing properties: apartment, industrial, office and retail; the database increases quarterly as participants execute transactions and as new members join NCREIF and submit data; sold properties are removed from the index in the quarter the sale takes place but the historical information remains in the database; each property’s market value is determined by real estate appraisal methodology, consistently applied.

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MODERN PORTFOLIO THEORY DEFINITIONS

Alpha – risk-adjusted measure of an investment manager's skill. It measures the difference between a portfolio's actual return and the results one would expect from an average portfolio with the same level of market risk, as measured by beta.

Beta – measures a portfolio's sensitivity to changes in the market. Here the market is the benchmark selected for the study. A portfolio's Beta is computed by regressing the portfolio excess returns over the excess returns of the benchmark.

Down-Market Capture Ratio – measures what portion of the market performance (benchmark) was captured by the manager over a period where the benchmark posted a negative return.

Information Ratio – measure of return per unit of risk. It measures a portfolio's risk-adjusted return by subtracting the *benchmark return* from the portfolio's return, divided by the standard deviation of the excess return (tracking error).

R-Squared – calculates how well the variability of returns of a portfolio is explained by movements in the benchmark.

Returns-Based Style Analysis – method used to examine the performance of a manager in relation to a number of benchmarks. Style analysis does not show the actual holdings of the portfolio. The return behavior of an account is measured and attributed to any number of style benchmarks.

Sharpe Ratio – measure of return per unit of risk. It measures a portfolio's risk-adjusted return by subtracting the *risk-free rate* of return from the portfolio's return, divided by the portfolio's standard deviation of returns.

Standard Deviation – measure of total risk. It measures the variability of a portfolio's returns around the portfolio's expected return.

Tracking Error – measures the standard deviation of the portfolio's excess return over the benchmark. It indicates the extent to which period-to-period returns vary about the average return of the entire period.

Up-Market Capture Ratio – measures what portion of the market performance (benchmark) was captured by the manager over a period where the benchmark posted a positive return.

Asset Class Comparison

Ending 12/31/13

Comparison of Actual Asset Allocation							
	Global ex-US			Public/Private			
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash	Others
PERS DB	21.3	22.2	20.5	10.3	18.1	3.9	3.8
PERS HC	23.8	24.9	30.4	5.8	8.6	2.7	3.8
STRS	31.3	24.5	19.5	9.3	10.8	4.8	0.0
OP&F	26.7	25.4	27.0	9.4	5.4	0.7	5.3
SERS	26.1	25.9	15.2	10.4	21.1	1.4	0.0
HPRS	37.8	19.7	19.4	4.3	17.9	0.9	0.0
IF Public DB Median	35.0	15.0	27.0	8.6	9.6	1.0	

Comparison of Target Asset Allocation							
	Global ex-US			Public/Private			
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash	Others
PERS DB	22.0	22.0	24.5	10.0	17.5	0.0	4.0
PERS HC	23.5	24.6	33.5	6.0	8.4	0.0	4.0
STRS	33.0	25.0	18.0	10.0	13.0	1.0	0.0
OP&F	31.6	21.7	31.5	10.0	5.3	0.0	0.0
SERS	22.5	22.5	19.0	10.0	25.0	1.0	0.0
HPRS	35.0	20.0	22.5	5.0	17.5	0.0	0.0
IF Public DB Median	35.0	15.0	27.0	8.6	9.6	1.0	

Investor Force All Public Defined Benefit Asset Allocation						
	Global ex-US			Public/Private		
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash
5th Percentile	56.4	27.0	66.0	20.1	26.4	8.4
25th Percentile	44.5	19.2	36.7	12.3	14.2	2.1
Median	35.0	15.0	27.0	8.6	9.6	1.0
75th Percentile	25.5	11.0	18.5	5.2	5.3	0.4
95th Percentile	13.3	6.3	7.4	2.7	1.5	0.0

Systems Total Fund Performance

		Ending December 31, 2013									
		6 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
Public Employees Retirement System (DB)		9.8%	53	14.7%	57	9.8%	34	12.4%	45	7.3%	25
PERS (DB) Total Fund Benchmark		9.6%	57	14.2%	62	9.3%	49	12.1%	49	7.0%	40
Over/Under		0.2%		0.5%		0.5%		0.3%		0.3%	
Public Employees Retirement System (HC)		8.4%	84	11.5%	85	8.2%	80	12.4%	45	-	-
PERS (HC) Total Fund Benchmark		8.1%	88	10.7%	89	7.7%	90	11.8%	54	-	-
Over/Under		0.3%		0.8%		0.5%		0.6%		-	-
State Teachers Retirement System		10.3%	43	17.6%	26	10.8%	13	13.1%	22	7.9%	6
STRS Total Fund Benchmark		10.5%	38	18.1%	20	10.7%	15	13.1%	21	7.5%	12
Over/Under		-0.2%		-0.5%		0.1%		0.0%		0.4%	
Ohio Police & Fire		10.8%	33	16.0%	43	11.0%	8	13.8%	9	8.1%	3
OPF Total Fund Benchmark		9.5%	59	14.6%	57	10.5%	18	12.9%	26	7.4%	20
Over/Under		1.3%		1.4%		0.5%		0.9%		0.7%	
School Employees Retirement System		11.0%	28	16.9%	34	10.1%	26	11.8%	54	7.0%	39
SERS Total Fund Benchmark		9.5%	59	15.3%	48	9.4%	48	11.3%	64	6.9%	48
Over/Under		1.5%		1.6%		0.7%		0.5%		0.1%	
Highway Patrol Retirement System		11.5%	15	19.1%	15	8.9%	58	12.6%	37	6.8%	52
HPRS Total Fund Benchmark		10.5%	37	16.8%	35	10.1%	26	12.9%	27	7.6%	10
Over/Under		1.0%		2.3%		-1.2%		-0.3%		-0.8%	

All total fund returns are reported gross of fees.

All returns are for periods ending 12/31/2013. Returns for periods longer than one year are annualized. Rankings are derived from placement in the InvestorForce All Public Defined Benefit Universe.

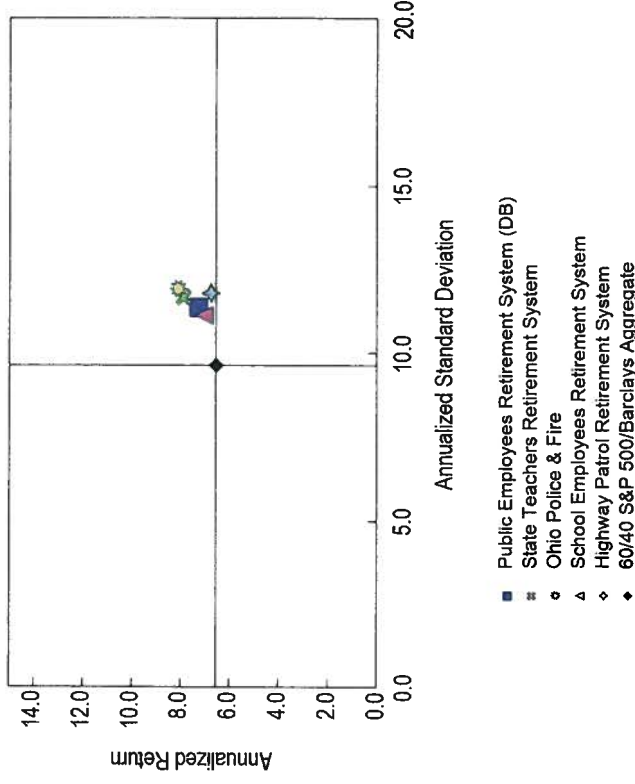
Systems Total Plans

Risk Analysis - Last 10 Years

Statistics Summary
10 Years Ending December 31, 2013

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio
Public Employees Retirement System (DB)	7.27%	11.37%	0.50	0.29
PERS (DB) Total Fund Benchmark	7.01%	11.41%	0.48	--
State Teachers Retirement System	7.90%	11.67%	0.54	0.53
STRS Total Fund Benchmark	7.51%	11.69%	0.51	--
Ohio Police & Fire	8.09%	11.93%	0.55	0.83
OPF Total Fund Benchmark	7.37%	11.68%	0.50	--
School Employees Retirement System	7.04%	11.13%	0.49	0.09
SERS Total Fund Benchmark	6.87%	10.16%	0.52	--
Highway Patrol Retirement System	6.75%	11.80%	0.44	-0.49
HPRS Total Fund Benchmark	7.59%	10.85%	0.56	--

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



On an absolute basis, the HPRS and SERS Plans outperformed all other Plans in the ORSC for the two quarters ending December 31, 2013. HPRS returned 11.5%, followed by SERS 11.0%. On a relative basis, the SERS Plan outperformed all other Plans in the ORSC, beating its benchmark of 9.5% by 1.5% for the two quarters ending December 31, 2013.

The tables above display the annualized ten-year risk statistics for the Plans. The Ohio Police and Fire Plan generated the highest risk-adjusted annualized returns over the ten-year period (as measured by the Sharpe Ratio), followed by STRS, PERS DB, SERS and HPRS. HPRS and OP&F exhibited marginally higher risk (volatility) while SERS had the lowest risk among all plans. While the Sharpe Ratio provides a good tool for analysis, the number alone is not particularly meaningful, but when comparing two or more funds as is the case in this study, the higher Sharpe Ratio is the better risk-adjusted return. Additionally, the Information Ratio measures risk relative to a Plan's benchmark. A higher information ratio indicates that a Plan is getting better returns than its respective benchmark at a similar level of risk. The OP&F Plan had the highest information ratio, followed by STRS, PERS DB, SERS and HPRS.

Systems Domestic Equity

	Ending December 31, 2013									
	6 Mo	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
ORSC Domestic Equity										
PERS(DB) Domestic Equity	17.6%	60	33.9%	57	16.4%	42	18.8%	64	7.8%	78
Russell 3000	<u>17.1%</u>	65	<u>33.6%</u>	59	<u>16.2%</u>	45	<u>18.7%</u>	66	<u>7.9%</u>	77
Over/Under	0.5%		0.3%		0.2%		0.1%		-0.1%	
PERS(HC) Domestic Equity	17.6%	60	33.9%	57	16.4%	42	18.8%	64	-	-
Russell 3000	<u>17.1%</u>	65	<u>33.6%</u>	59	<u>16.2%</u>	45	<u>18.7%</u>	66	<u>7.9%</u>	77
Over/Under	0.5%		0.3%		0.2%		0.1%		-	-
STRS Domestic Equity	16.7%	70	32.1%	72	15.7%	55	18.4%	69	7.6%	82
STRS Domestic Equity Benchmark	<u>17.1%</u>	65	<u>33.6%</u>	59	<u>16.2%</u>	45	<u>18.7%</u>	66	<u>7.9%</u>	77
Over/Under	-0.4%		-1.5%		-0.5%		-0.3%		-0.3%	
OP&F Domestic Equity	16.2%	78	30.7%	81	15.2%	64	20.0%	53	8.5%	65
Wilshire 5000	<u>16.7%</u>	69	<u>33.1%</u>	64	<u>16.0%</u>	52	<u>18.6%</u>	67	<u>8.0%</u>	75
Over/Under	-0.5%		-2.4%		-0.8%		1.4%		0.5%	
SERS Domestic Equity	19.0%	45	35.8%	45	16.8%	37	19.7%	56	7.9%	76
Russell 3000	<u>17.1%</u>	65	<u>33.6%</u>	59	<u>16.2%</u>	45	<u>18.7%</u>	66	<u>7.9%</u>	77
Over/Under	1.9%		2.2%		0.6%		1.0%		0.0%	
HPRS Domestic Equity	17.4%	62	35.6%	46	15.9%	53	20.2%	51	8.6%	63
HPRS Domestic Equity Benchmark	<u>17.1%</u>	65	<u>33.6%</u>	59	<u>16.4%</u>	43	<u>19.3%</u>	60	<u>8.3%</u>	69
Over/Under	0.3%		2.0%		-0.5%		0.9%		0.3%	

All domestic equity returns are reported gross of fees.

All returns are for periods ending 12/31/2013. Returns for periods longer than one year are annualized. Differences may exist due to rounding.

Domestic equity returns were positive for the two quarters ending December 31, 2013. SERS had the best absolute and relative domestic equity returns for the six month period, with a return of 19.0%. Over the trailing year, SERS led performance on an absolute basis and a relative basis. Over the five-year and ten-year periods, OP&F generated the highest relative return.

The domestic equity segments of the Plans are ranked in the InvestorForce US Equity Universe. This universe includes all actively managed domestic equity portfolios.

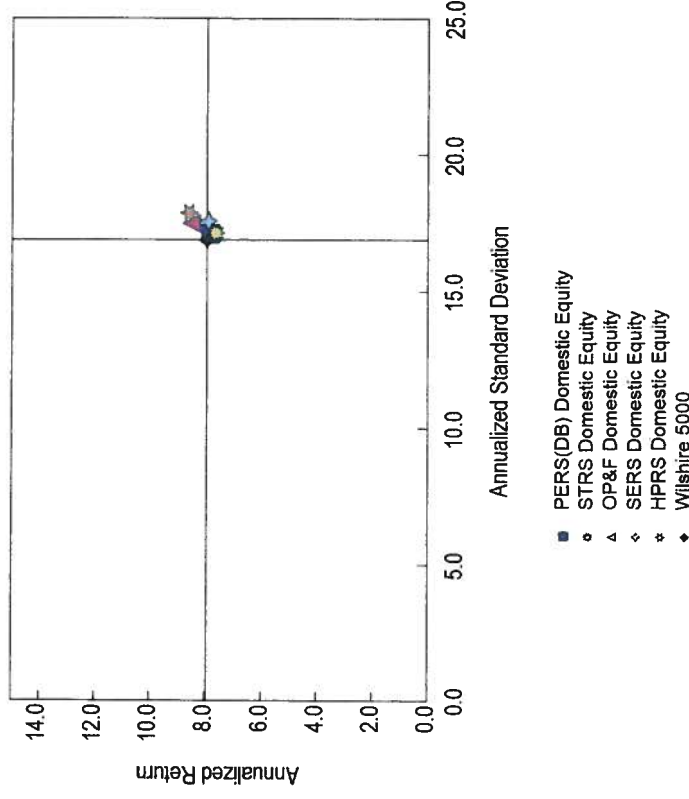
Systems Domestic Equity

Statistics Summary

10 Years Ending December 31, 2013

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio
PERS(DB) Domestic Equity	7.84%	17.13%	0.37	-0.09
Russell 3000	7.89%	17.00%	0.37	--
PERS(HC) Domestic Equity	--	--	--	--
Russell 3000	7.89%	17.00%	0.37	--
STRS Domestic Equity	7.64%	17.16%	0.35	-0.29
STRS Domestic Equity Benchmark	7.88%	17.00%	0.37	--
OP&F Domestic Equity	8.53%	17.50%	0.40	0.33
Wilshire 5000	7.97%	16.89%	0.38	--
SERS Domestic Equity	7.91%	17.59%	0.36	0.02
Russell 3000	7.89%	17.00%	0.37	--
HPRS Domestic Equity	8.61%	17.89%	0.39	0.21
HPRS Domestic Equity Benchmark	8.27%	17.30%	0.39	--

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



The analysis above represents a risk/return of the domestic equity portfolios for all of the plans. OP&F and HPRS experienced the highest risk-adjusted equity results over the annualized ten-year period (as measured by the Sharpe Ratio), followed by PERS DB, SERS and STRS. Please note that information ratios in the above tables are specific to the Plans' current policies, and indicate that OP&F, HPRS and SERS are adding value relative to the risk in their equity portfolios, while PERS DB and STRS have negative information ratios, indicating that these portfolios are not being rewarded for the risk taken in the portfolios, relative to the benchmarks.

*Benchmark shown in the above risk-reward chart may not be specific to the Plan's current policy.

Systems Fixed Income

	Ending December 31, 2013				
	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS Combined (DB+HC) Total Fixed Income	2.6%	1.2%	5.8%	7.3%	5.5%
<i>PERS Total Fixed Income Benchmark</i>	<u>-0.1%</u>	<u>-6.3%</u>	<u>1.7%</u>	<u>4.0%</u>	<u>4.3%</u>
Over/Under	2.7%	7.5%	4.1%	3.3%	1.0%
STRS Fixed Income	1.0%	-1.0%	4.1%	7.3%	5.4%
<i>Barclays U.S. Universal</i>	<u>1.0%</u>	<u>-1.3%</u>	<u>3.8%</u>	<u>5.4%</u>	<u>4.9%</u>
Over/Under	0.0%	0.3%	0.3%	1.9%	0.5%
OP&F Fixed Income	2.4%	-1.0%	7.5%	10.8%	7.2%
<i>Barclays Aggregate</i>	<u>0.4%</u>	<u>-2.0%</u>	<u>3.3%</u>	<u>4.4%</u>	<u>4.5%</u>
Over/Under	2.0%	1.0%	4.2%	6.4%	2.7%
SERS Global Fixed	1.4%	-0.4%	5.1%	8.9%	5.8%
<i>Barclays Aggregate</i>	<u>0.4%</u>	<u>-2.0%</u>	<u>3.3%</u>	<u>4.4%</u>	<u>4.5%</u>
Over/Under	1.0%	1.6%	1.8%	4.5%	1.3%
HPRS Global Fixed Income	1.2%	-0.8%	4.3%	6.8%	5.4%
<i>Barclays Aggregate</i>	<u>0.4%</u>	<u>-2.0%</u>	<u>3.3%</u>	<u>4.4%</u>	<u>4.5%</u>
Over/Under	0.8%	1.2%	1.0%	2.4%	0.9%

Systems Fixed

All fixed income returns are reported gross of fees.

All returns are for periods ending 12/31/2013. Returns for periods longer than one year are annualized.

Please note that PERS DB and PERS HC provide a fixed income return for their combined plans. For two quarters ending December 31, 2013, PERS DB and PERS HC had the highest absolute fixed income return, which was 2.6%, and was followed by the combined OP&F fixed income return of 2.4%. On a relative basis, PERS DB and PERS HC had the best fixed income return, outperforming its benchmark by 2.7%, followed by OP&F fixed income return, which outperformed its benchmark by 2.0%.

Systems Fixed Income

Statistics Summary

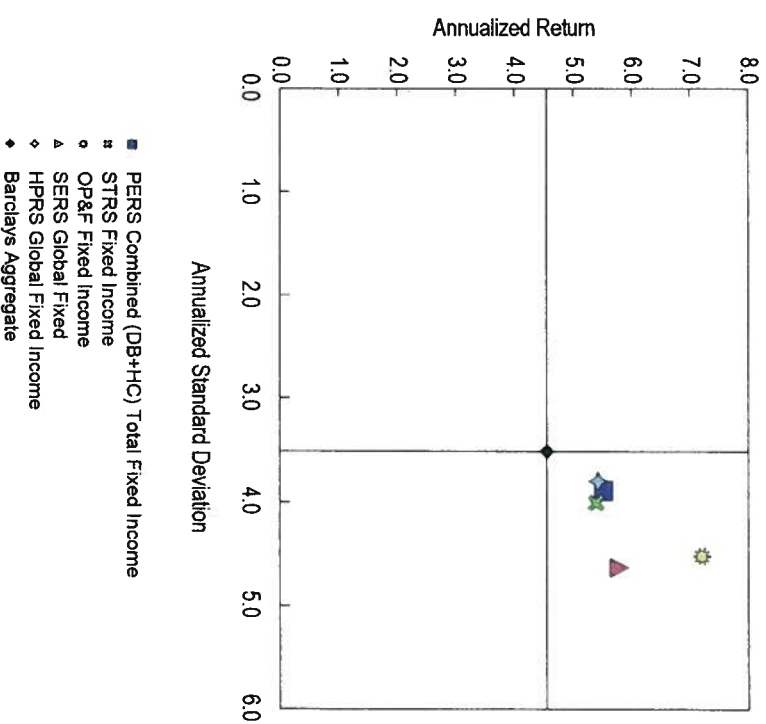
10 Years Ending December 31, 2013

	Ann'd Return	Ann'd Standard Deviation	Sharpe Ratio	Information Ratio
PERS Combined (DB+HC) Total Fixed Income	5.52%	3.89%	1.02	0.31
PERS Total Fixed Income Benchmark	4.47%	5.69%	0.51	-
STRS Fixed Income	5.39%	4.01%	0.96	0.27
Barclays U.S. Universal	4.85%	3.35%	0.98	-
OP&F Fixed Income	7.20%	4.52%	1.25	0.72
Barclays Aggregate	4.55%	3.51%	0.85	-
SERS Global Fixed	5.80%	4.63%	0.91	0.34
Barclays Aggregate	4.55%	3.51%	0.85	-
HPRS Global Fixed Income	5.42%	3.80%	1.02	0.37
Barclays Aggregate	4.55%	3.51%	0.85	-

*Please note PERS Total Fixed Income Benchmark is a composite of the current Custom Total Fixed Income Benchmark (2010-2013) and the prior Total DB Total Fixed Income Benchmark.

The analysis above represents the risk return comparison of the fixed income portfolios for all of the Plans. OP&F experienced the highest risk-adjusted fixed income results over the annualized ten-year period (as measured by the Sharpe Ratio), followed by PERS DB, HPRS, STRS and SERS. Please note that information ratios in the above tables are specific to the Plans' current policies, and indicate that all Plans are performing well on a risk adjusted basis compared to their benchmarks.

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



*Benchmark shown in chart above may not be specific to the Plan's current policy. Benchmarks shown in statistics summary are specific to the Plan's current policy.

Systems Real Estate

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS(DB) Real Estate					
PERS(DB) Private RE	7.7%	15.4%	13.8%	4.1%	7.9%
PERS Private Real Estate Benchmark Lag	<u>7.4%</u>	<u>12.8%</u>	<u>13.3%</u>	<u>3.7%</u>	<u>8.3%</u>
Over/Under	0.3%	2.6%	0.5%	0.4%	-0.4%
PERS(HC) Real Estate					
PERS (HC) REIT Benchmark	<u>-4.1%</u>	<u>1.4%</u>	<u>9.2%</u>	<u>16.9%</u>	<u>-</u>
Over/Under	-4.1%	1.3%	8.9%	16.4%	-
	0.0%	0.1%	0.3%	0.5%	
OP&F Real Estate					
OPF Real Estate Benchmark	<u>8.4%</u>	<u>15.1%</u>	<u>15.4%</u>	<u>0.2%</u>	<u>8.5%</u>
Over/Under	7.1%	12.0%	13.2%	-0.2%	6.1%
	1.3%	3.1%	2.2%	0.4%	2.4%
STRS Real Estate					
STRS RE Blended Benchmark	<u>5.4%</u>	<u>10.7%</u>	<u>15.3%</u>	<u>5.5%</u>	<u>12.3%</u>
Over/Under	3.8%	9.7%	11.7%	7.9%	9.0%
	1.6%	1.0%	3.6%	-2.4%	3.3%
SERS Real Estate					
SERS Total Real Estate Benchmark	<u>7.4%</u>	<u>12.0%</u>	<u>12.0%</u>	<u>0.3%</u>	<u>5.8%</u>
Over/Under	5.5%	11.0%	12.7%	6.1%	8.9%
	1.9%	1.0%	-0.7%	-5.8%	-3.1%
HPRS Real Estate					
NCREIF Property Index	<u>4.7%</u>	<u>12.4%</u>	<u>4.9%</u>	<u>1.2%</u>	<u>2.0%</u>
Over/Under	5.2%	11.0%	11.9%	5.7%	8.6%
	-0.5%	1.4%	-7.0%	-4.5%	-6.6%

Systems Real Estate

All real estate returns are reported gross of fees.

All returns are for periods ending 12/31/2013. Returns for periods longer than one year are annualized. Differences may exist due to rounding.

For the real estate returns for the two quarters ending December 31, 2013, OP&F had the highest returns, gaining 8.4% and PERS DB 7.7% had the second highest performance. PERS DB returned 15.4% over the trailing year, outperforming all other plans. PERS HC and STRS had the highest absolute performance over a five-year period, returning 16.9% and 5.5%, respectively. Please note that PERS HC real estate is composed entirely of REITs, which are equity securities.

International Equity

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs	Rank
PERS(DB) International Equity	14.5%	15.6%	5.8%	13.3%	7.9%	69
PERS Total International Equity Benchmark	14.3%	12.9%	4.5%	12.4%	7.4%	72
Over/Under	0.2%	2.7%	1.3%	0.9%	0.5%	
PERS(HC) International Equity	14.5%	15.6%	5.8%	13.3%	7.9%	69
PERS Total International Equity Benchmark	14.3%	12.9%	4.5%	12.4%	7.4%	72
Over/Under	0.2%	2.7%	1.3%	0.9%		
STRS International Equity	14.6%	19.2%	6.8%	13.8%	8.9%	66
STRS International Blended Benchmark	14.2%	17.6%	6.1%	12.8%	8.1%	68
Over/Under	0.4%	1.6%	0.7%	1.0%	0.8%	
OP&F International Equity	17.4%	21.0%	8.4%	15.4%	9.1%	65
OPF International Benchmark	15.6%	15.8%	5.3%	12.9%	7.8%	69
Over/Under	1.8%	5.2%	3.1%	2.5%	1.5%	
SERS International Equity	14.4%	17.3%	6.7%	14.4%	9.0%	68
SERS Int'l Equity Benchmark	14.1%	17.2%	6.1%	13.0%	8.0%	68
Over/Under	0.3%	0.1%	0.6%	1.4%	1.0%	
HPRS International Equity	16.5%	19.1%	6.3%	12.0%	7.2%	66
HPRS International Benchmark	15.5%	15.8%	5.6%	13.3%	7.5%	69
Over/Under	1.0%	3.3%	0.7%	-1.3%	-0.3%	

All international equity returns are reported gross of fees.

All returns are for periods ending 12/31/2013. Returns for periods longer than one year are annualized. Differences may exist due to rounding.

On an absolute basis, as of December 31, 2013, OP&F had the highest absolute return for the two quarters for international equity, OP&F also had the highest relative performance gaining 1.8% against its benchmark. Over the one-year period, OP&F's 21.0% led the group with the best absolute performance. HPRS had the highest relative performance exceeding their benchmark by 3.3% over the trailing year. Over the three-year period, OP&F at 8.4% had the highest absolute returns and the highest relative performance. Over the trailing ten-year period, OP&F also had the highest absolute returns of 9.1% and the highest relative returns of 1.5% for the period.

International Equity

Statistics Summary

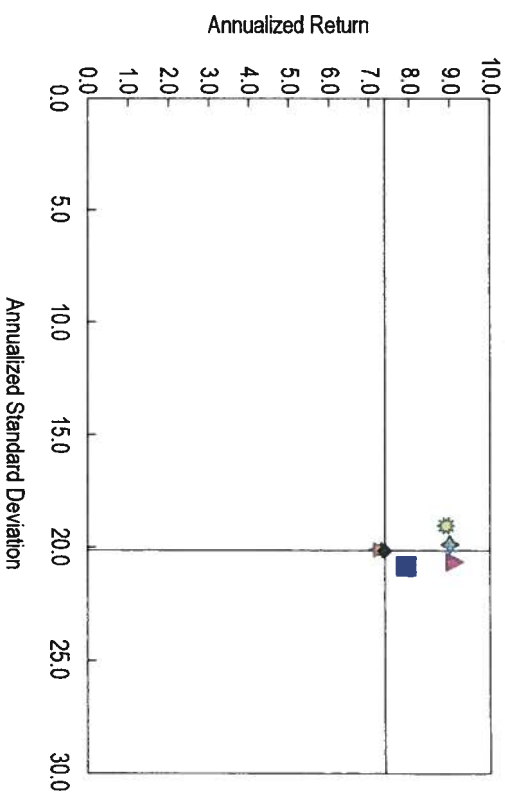
10 Years Ending December 31, 2013

	Annzd Return	Annzd Standard Deviation	Sharpe Ratio	Information Ratio
PERS(DB) International Equity	7.94%	20.80%	0.31	0.63
PERS Total International Equity Benchmark	7.39%	20.79%	0.28	-
STRS International Equity	8.91%	18.99%	0.39	0.81
STRS International Blended Benchmark	8.11%	18.99%	0.34	-
OP&F International Equity	9.13%	20.62%	0.37	0.82
OP&F International Benchmark	7.63%	20.72%	0.29	-
SERS International Equity	9.00%	19.84%	0.38	0.54
SERS Intl Equity Benchmark	7.98%	18.85%	0.34	-
HPRS International Equity	7.22%	20.09%	0.28	-0.12
HPRS International Benchmark	7.54%	20.64%	0.29	-

The analysis above represents a risk/return comparison of the international equity portfolios for all of the plans for the past ten year period. Over this period, STRS had the highest risk-adjusted returns, followed by SERS, OP&F, PERS DB and HPRS as measured by their Sharpe Ratios.

Additionally, the Information Ratio measures risk relative to a Plan's benchmark. A higher information ratio indicates that a Plan is getting better returns than its respective benchmark at a similar level of risk. The OP&F Plan had the highest information ratio, followed by STRS, PERS DB, SERS and HPRS. The negative information ratio of the HPRS Plan's international equities indicates underperformance versus its benchmark.

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



- PERS(DB) International Equity
- STRS International Equity
- ▲ OP&F International Equity
- ◆ SERS International Equity
- * HPRS International Equity
- ◆ MSCI EAFE Gross

*Benchmark shown in chart above may not be specific to the Plan's current policy.
Benchmarks shown in statistics summary are specific to the Plan's current policy.

Systems Alternatives

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS(DB) Alternatives					
PERS(DB) Private Equity	8.5%	16.3%	16.9%	12.0%	14.9%
PERS Private Equity Benchmark (QTR LAG)	9.3%	22.8%	19.2%	13.3%	11.1%
Over/Under	-0.8%	-6.5%	-2.3%	-1.3%	3.8%
PERS(DB) Hedge Funds					
PERS (DB) Hedge Fund Benchmark	5.4%	9.6%	4.3%	10.6%	-
Over/Under	3.5%	7.0%	7.0%	6.7%	-
PERS(DB) Opportunistic					
PERS Opportunistic Benchmark	1.0%	-3.1%	1.9%	-	-
Over/Under	1.2%	-1.3%	3.0%	-	-
PERS(HC) Alternatives					
PERS(HC) Private Equity					
PERS Private Equity Benchmark (QTR LAG)	7.8%	17.0%	12.0%	-2.2%	-
Over/Under	9.3%	22.8%	19.2%	13.3%	11.1%
PERS(HC) Hedge Funds					
PERS (HC) Hedge Benchmark	5.4%	9.6%	4.4%	13.2%	-
Over/Under	3.5%	7.0%	7.0%	12.3%	-
PERS(HC) Commodities					
Goldman Sachs GSCI Total	4.8%	-0.7%	0.3%	-	-
Over/Under	4.4%	-1.2%	-0.8%	3.9%	0.7%
PERS(HC) Opportunistic					
PERS Opportunistic Benchmark	1.0%	-3.1%	1.9%	-	-
Over/Under	1.2%	-1.3%	3.0%	-	-
STRS Alternatives					
STRS Private Equity					
STRS Private Equity Benchmark	9.6%	20.0%	15.9%	10.3%	12.6%
Over/Under	17.7%	34.9%	18.6%	21.6%	10.8%
STRS Hedge Funds					
HFRI Fund of Funds Composite Index	-0.6%	11.4%	5.0%	6.8%	9.1%
Over/Under	5.4%	9.0%	2.5%	4.9%	3.4%
STRS Opportunistic					
STRS Opportunistic Benchmark	2.3%	11.7%	9.1%	-	-
Over/Under	16.5%	32.3%	15.1%	-	-
	-14.2%	-20.6%	-6.0%		

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
OP&F Alternatives					
OP&F Private Equity	7.1%	11.5%	12.9%	7.4%	11.4%
OPF Private Equity Benchmark	<u>10.6%</u>	<u>24.6%</u>	<u>20.0%</u>	<u>13.8%</u>	<u>11.9%</u>
Over/Under	-3.5%	-13.1%	-7.1%	-6.4%	-0.5%
Timber	-0.9%	3.4%	-	-	-
OPF Timber Benchmark	<u>2.7%</u>	<u>7.0%</u>	-	-	-
Over/Under	-3.6%	-3.6%	-	-	-

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
SERS Alternatives					
SERS Private Equity	10.3%	17.3%	14.8%	8.2%	9.6%
SERS PE Benchmark	<u>10.7%</u>	<u>22.3%</u>	<u>19.3%</u>	<u>13.0%</u>	<u>10.6%</u>
Over/Under	-0.4%	-5.0%	-4.5%	-4.8%	-1.0%
SERS Hedge Funds	5.6%	9.8%	5.4%	8.7%	-
SERS Hedge Fund Benchmark	<u>5.9%</u>	<u>9.4%</u>	<u>2.7%</u>	<u>6.7%</u>	-
Over/Under	-0.3%	0.4%	2.7%	2.0%	-

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
HPRS Alternatives					
HPRS Private Equity	8.5%	12.9%	2.2%	4.3%	-
HPRS Private Equity Benchmark	<u>11.0%</u>	<u>25.6%</u>	<u>20.1%</u>	<u>14.2%</u>	-
Over/Under	-2.5%	-12.7%	-17.9%	-9.9%	-
HPRS Hedge Funds	4.5%	9.5%	3.5%	7.9%	-
HFRF Fund of Funds Composite Index	<u>5.4%</u>	<u>9.0%</u>	<u>2.5%</u>	<u>4.9%</u>	<u>3.4%</u>
Over/Under	-0.9%	0.5%	1.0%	3.0%	-

Returns for all alternatives portfolios are shown net of fees.

Private Equity
SERS (+10.3) had the highest private equity return for the six months ending December 31, 2013 on an absolute basis, followed by STRS (+9.6%). The PERS DB and HPRS private equity was third best with a six month absolute return of (+8.5%), followed by PERS HC (+7.8) and OP&F (+7.1).

Hedge Funds
SERS (+5.6%) had the highest hedge fund return for the six months ending December 31, 2013, followed by PERS (HC) and PERS (DB), which both returned (+5.4%), HPRS (+4.5%) and STRS (-0.6%).

Cash

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS(DB) Cash	0.1%	0.2%	0.2%	0.5%	2.0%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.1%	0.2%	0.1%	0.4%	0.4%
PERS(HC) Cash	0.1%	0.2%	0.2%	0.4%	-
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.1%	0.2%	0.1%	0.3%	
STRS Liquidity Reserves	0.1%	0.1%	0.1%	0.4%	1.9%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.1%	0.1%	0.0%	0.3%	0.3%
OP&F Cash	0.0%	0.1%	0.2%	0.3%	1.8%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.0%	0.1%	0.1%	0.2%	0.2%
SERS Cash	0.0%	0.1%	0.2%	0.3%	2.1%
SERS Short-Term Benchmark	0.0%	0.0%	0.0%	0.1%	1.5%
Over/Under	0.0%	0.1%	0.2%	0.2%	0.6%
HPRS Cash	0.0%	0.0%	0.0%	0.1%	2.1%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.0%	0.0%	-0.1%	0.0%	0.5%

Fee Comparison for Plan Segments

Asset Class Fee Comparison
(annualized fees shown in basis points)

	Domestic Equity	International Equity	Fixed Income	Real estate	Alternatives	Private Equity	Hedge Funds
PERS DB & HC	11.2	35.4	15.5	72.3	29.2	47.3	277.1
STRS	10.4	20.1	8.3	53.8	91		
OP&F	37	36	44	219	31		
SERS	45.2	44.5	23.5	104.3		88.6	162.2
HPRS	38	74	37	133	99	92	109

* Annualized basis point fees are estimates and are relative to asset allocation as of 12/31/2013.
 * Private Equity are based on actual \$/average committed capital.
 * SERS does not aggregate Net of Fees and Gross of fee performance of their "alternative" classes, therefore each is reported separately.
 * PERS Alternatives include Risk Parity & GTAA.
 * PERS management fees for Risk Parity and GTAA are less than 1 year.

Public Employees Retirement System (DB)
(PERS DB)

Public Employees Retirement System (DB)

Actuarial Rate: 8.0%

		Ending December 31, 2013				
		6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
Public Employees Retirement System (DB)						
PERS (DB) Total Fund Benchmark						
Over/Under		9.8%	14.7%	9.8%	12.4%	7.3%
		9.6%	14.2%	9.3%	12.1%	7.0%
		0.2%	0.5%	0.5%	0.3%	0.3%
PERS(DB) Domestic Equity						
Russell 3000		17.6%	33.9%	16.4%	18.8%	7.8%
Over/Under		17.1%	33.6%	16.2%	18.7%	7.9%
		0.5%	0.3%	0.2%	0.1%	-0.1%
PERS(DB) International Equity						
PERS Total International Equity Benchmark		14.5%	15.6%	5.8%	13.3%	7.9%
Over/Under		14.3%	12.9%	4.5%	12.4%	7.4%
		0.2%	2.7%	1.3%	0.9%	0.5%
PERS(DB) Fixed						
PERS(DB) Core Fixed						
PERS Custom Core Fixed Benchmark		0.9%	-1.0%	3.8%	6.0%	5.0%
Over/Under		0.6%	-1.9%	3.3%	--	--
		0.3%	0.9%	0.5%	--	--
PERS(DB) High Yield						
Barclays High Yield		5.8%	7.9%	9.5%	--	--
Over/Under		5.9%	7.4%	9.3%	18.9%	8.6%
		-0.1%	0.5%	0.2%	--	--
PERS(DB) EMD						
PERS Emerging Market Debt Benchmark		0.4%	-6.4%	--	--	--
Over/Under		-0.1%	-7.8%	3.9%	--	--
		0.5%	1.4%	--	--	--
PERS(DB) Floating Rate Debt						
PERS Floating Rate Debt Benchmark		3.6%	6.7%	--	--	--
Over/Under		3.2%	6.2%	--	--	--
		0.4%	0.5%	--	--	--
PERS(DB) TIPS						
Barclays US TIPS		-1.3%	--	--	--	--
Over/Under		-1.3%	-8.6%	3.5%	5.6%	4.9%
		0.0%	--	--	--	--
PERS(DB) Real Estate						
PERS(DB) Private RE						
PERS Private Real Estate Benchmark Lag		7.7%	15.4%	13.8%	4.1%	7.9%
Over/Under		7.4%	12.8%	13.3%	3.7%	8.3%
		0.3%	2.6%	0.5%	0.4%	-0.4%

Public Employees Retirement System (DB)

Actuarial Rate: 8.0%

	Ending December 31, 2013				
	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS(DB) Alternatives					
PERS(DB) Hedge Funds	5.4%	9.6%	4.3%	10.6%	--
PERS (DB) Hedge Fund Benchmark	3.5%	7.0%	7.0%	6.7%	--
Over/Under	1.9%	2.6%	-2.7%	3.9%	--
PERS(DB) Private Equity	8.5%	16.3%	16.9%	12.0%	14.9%
PERS Private Equity Benchmark (QTR LAG)	9.3%	22.8%	19.2%	13.3%	11.7%
Over/Under	-0.8%	-6.5%	-2.3%	-1.3%	3.8%
PERS(DB) Commodities	4.8%	--	--	--	--
Goldman Sachs GSCI Total	4.4%	-1.2%	-0.6%	3.9%	0.7%
Over/Under	0.4%				
PERS(DB) Opportunistic	1.0%	-3.1%	1.9%	--	--
PERS Opportunistic Benchmark	1.2%	-1.3%	3.0%	--	--
Over/Under	-0.2%	-1.8%	-1.1%		
PERS(DB) Risk Parity					
PERS(DB) Risk Parity	7.0%	--	--	--	--
PERS Risk Parity Benchmark	5.8%	--	--	--	--
Over/Under	1.2%				
PERS(DB) GTAA					
PERS(DB) GTAA	6.6%	--	--	--	--
PERS GTAA Benchmark	10.2%	--	--	--	--
Over/Under	-3.6%				
PERS(DB) Cash	0.1%	0.2%	0.2%	0.5%	2.0%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.1%	0.2%	0.1%	0.4%	0.4%
PERS(DB) Rebalancing	-2.2%	-0.5%	--	--	--
PERS Rebalancing Benchmark	0.0%	0.1%	--	--	--
Over/Under	-2.2%	-0.6%			

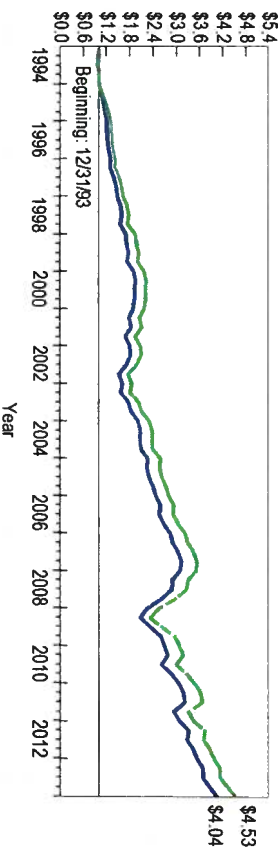
Public Employees Retirement System (DB)

Asset Allocation by Segment

As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash	Other
PERS(DB) Domestic Equity	\$15,905,654,619	21.3%	\$15,905,654,619							
PERS(DB) International Equity	\$16,595,514,708	22.2%		\$16,595,514,708						
PERS(DB) Fixed					\$6,554,047,974					
PERS(DB) Core Fixed	\$6,554,047,974	8.8%			\$6,554,047,974					
PERS(DB) High Yield	\$3,626,933,207	4.9%			\$3,626,933,207					
PERS(DB) EMD	\$1,984,881,645	2.7%			\$1,984,881,645					
PERS(DB) Securitized Debt	\$733,329,493	1.0%			\$733,329,493					
PERS(DB) Global High Yield	\$1,107,711,426	1.5%			\$1,107,711,426					
PERS(DB) Floating Rate Debt	\$591,263,304	0.8%			\$591,263,304					
PERS(DB) TIPS	\$703,479,665	0.9%			\$703,479,665					
PERS(DB) Real Estate								\$7,663,107,365		
PERS(DB) Private RE	\$7,663,107,365	10.3%						\$7,663,107,365		
PERS(DB) Alternatives							\$4,400,981,841			
PERS(DB) Hedge Funds	\$4,400,981,841	5.9%					\$4,400,981,841			
PERS(DB) Private Equity	\$8,157,918,661	10.9%					\$8,157,918,661			
PERS(DB) Commodities	\$712,381,077	1.0%					\$712,381,077			
PERS(DB) Opportunistic	\$213,773,480	0.3%					\$213,773,480			
PERS(DB) Risk Parity										\$1,324,475,631
PERS(DB) Risk Parity	\$1,324,475,631	1.8%								\$1,324,475,631
PERS(DB) GTAA										
PERS(DB) GTAA	\$1,511,189,106	2.0%								\$1,511,189,106
PERS(DB) Cash	\$2,134,989,478	2.9%						\$2,134,989,478		
PERS(DB) Rebalancing	\$766,924,892	1.0%						\$766,924,892		
Total	\$74,889,557,572	100.0%	\$15,905,654,619	\$16,595,514,708	\$3,092,593,071	\$13,485,055,059	\$7,663,107,365	\$2,901,914,370	\$2,835,664,737	\$1,511,189,106

GROWTH OF A DOLLAR



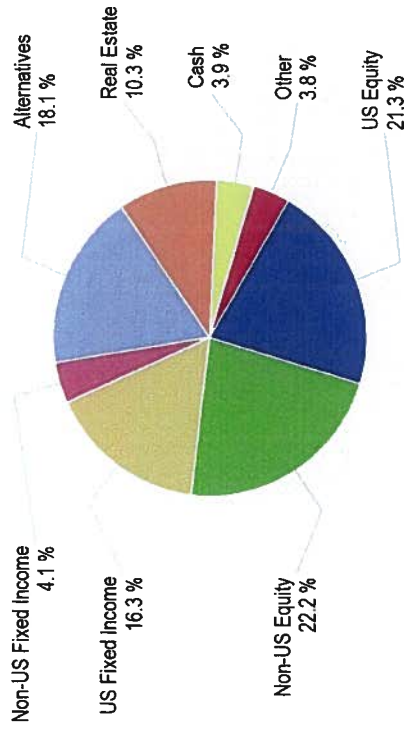
PERS(DB)	Actual	Target	Difference
US Equity	21.3	22.0	-0.7
Intl Equity	22.2	22.0	0.2
Alternatives	18.1	17.5	0.6
Risk Parity	1.8	2.0	-0.2
GTAA	2.0	2.0	0.0
Total Equity	65.4	65.5	-0.1
Fixed Income	20.5	24.5	-4.0
Real Estate	10.3	10.0	0.3
Short Term Investments	3.9	0.0	3.9
Total Debt	34.6	34.5	0.1
	100.0	100.0	-0.0

*Totals may not add up to 100% due to rounding.

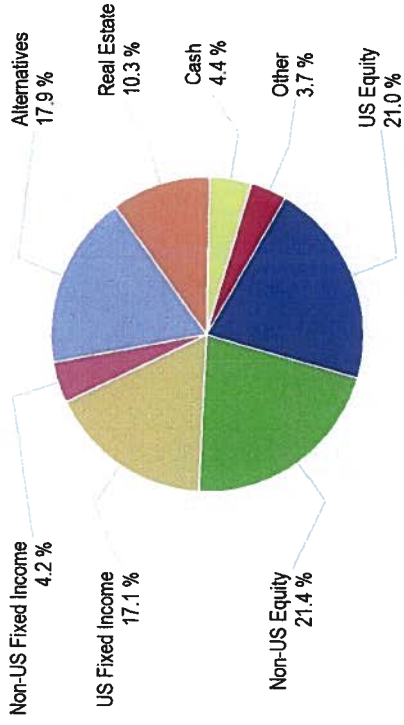
Public Employees Retirement System (DB)

Asset Allocation

Current Allocation
December 31, 2013

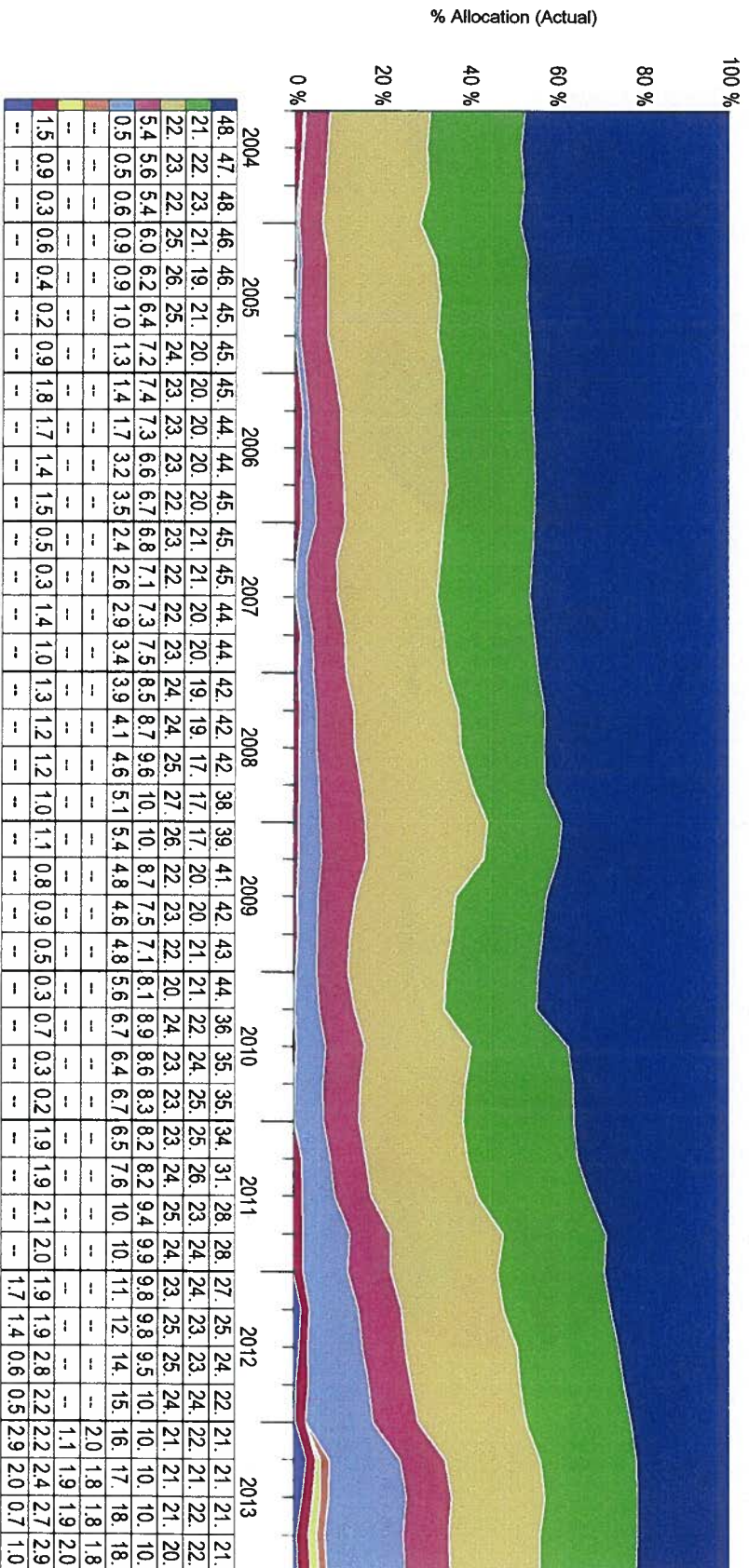


Previous Allocation
June 30, 2013



Public Employees Retirement System (DB) Asset Allocation

Asset Allocation History
9 Years 9 Months Ending December 31, 2013



- PERS(DB) Domestic Equity
- PERS(DB) International Equity
- PERS(DB) Fixed
- PERS(DB) Real Estate
- PERS(DB) Alternatives
- PERS(DB) Risk Parity
- PERS(DB) Cash
- PERS(DB) Rebalancing

Public Employees Retirement System (DB) 10 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2004 Through December 31, 2013

Public Employees Retirement System (DB)
PERS (DB) Total Fund Benchmark

RETURN SUMMARY STATISTICS

Number of Periods	40	40
Maximum Return	12.34	13.12
Minimum Return	-13.81	-13.86
Annualized Return	7.27	7.01
Total Return	101.70	96.93
Annualized Excess Return Over Risk Free	5.71	5.45
Annualized Excess Return	0.26	0.00

RISK SUMMARY STATISTICS

Beta	0.99	1.00
Upside Deviation	6.15	6.39
Downside Deviation	9.14	9.36

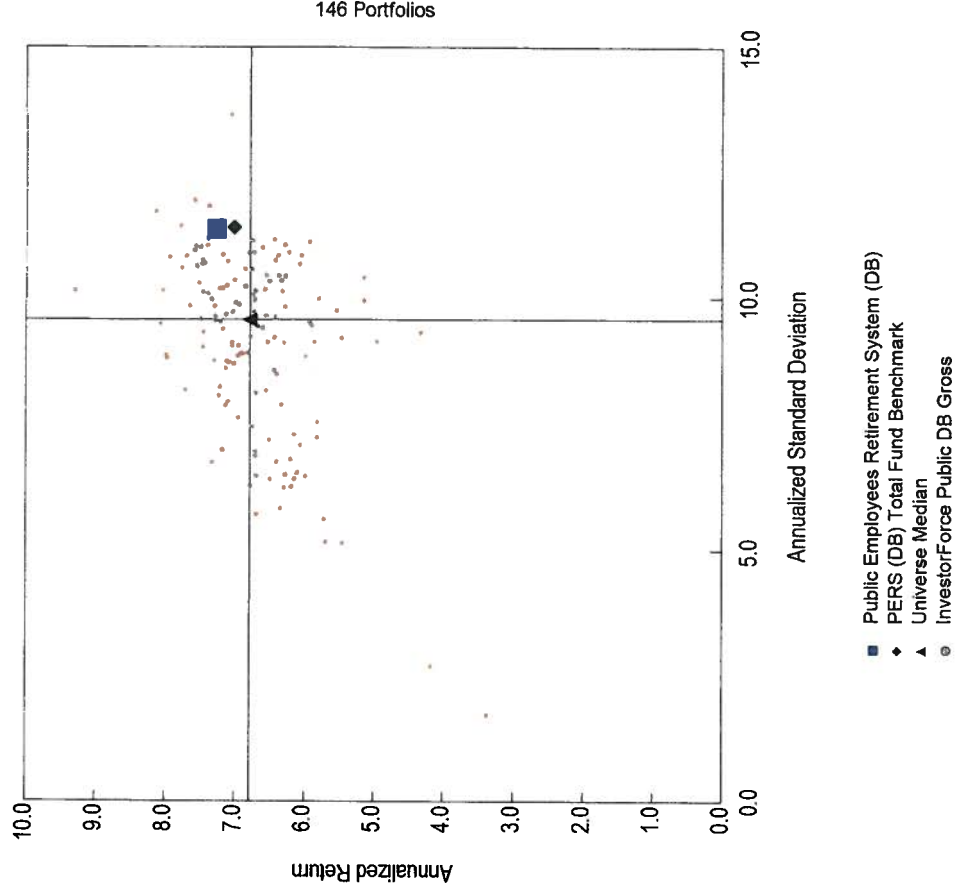
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	11.37	11.41
Alpha	0.07	0.00
Sharpe Ratio	0.50	0.48
Excess Return Over Market / Risk	0.02	0.00
Tracking Error	0.89	0.00
Information Ratio	0.29	--

CORRELATION STATISTICS

R-Squared	0.99	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



Custom Benchmark

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jul-13	Sep-13	22.3	Russell 3000
			10.0	Custom Core Fixed Income Benchmark
			3.0	Emerging Market Debt
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			21.7	Custom Non-US Equity Benchmark*
			10.0	Russell 3000 + 3% (1 Qtr arrears)
			10.0	Net NFI-ODCE +85 bps (Quarter lag)
			6.0	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Credit Suisse Leveraged Loan Index
			1.0	Barclays CMBS ERISA Eligible + 2%
			1.5	Barclays Global High Yield
			1.0	Barclays Capital U.S. Tips
			1.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark
			2.0	Custom GTAA Benchmark
	Oct-13	Dec-13	22.0	Russell 3000
			10.0	Custom Core Fixed Income Benchmark
			3.0	Emerging Market Debt
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			22.0	Custom Non-US Equity Benchmark*
			10.0	Russell 3000 + 3% (1 Qtr arrears)
			10.0	NCREIF Property (Quarter lag)
			6.0	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Credit Suisse Leveraged Loan Index
			1.0	Barclays CMBS ERISA Eligible + 2%
			1.5	Barclays Global High Yield
			1.0	Barclays Capital U.S. Tips
			1.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark
			2.0	Custom GTAA Benchmark

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)				

In February 2012 of 2012, the PERS Plans moved to monthly re-weighting the Policy Benchmarks. Shown above are the benchmarks at the end of each quarter: *56.5% MSCI World Index ex U.S., 31% MSCI Emerging Markets, 10% MSCI World Index ex U.S. Small Cap, and 2.5% MSCI Emerging Markets Small Cap.

Custom Benchmark

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Month of	Percent	Description
Policy Index (cont.)	Jan-13	22.9	Russell 3000
		13.0	Custom Core Fixed Income Benchmark
		3.0	Emerging Market Debt
		5.0	Barclays Capital High Yield
		2.0	91-Day Treasury Bill
		24.0	Custom Non-US Equity Benchmark*
		10.0	Russell 3000 + 3% (1 Qtr arrears)
		10.0	Net NFI-ODCE +85 bps (Quarter lag)
		5.3	3 mo. LIBOR + 4% bps (2 mo. lag)
		0.8	Opportunistic
	Feb-13	1.0	Credit Suisse Leveraged Loan Index
		1.0	Barclays CMBS ERISA Eligible + 2%
		1.5	Barclays Global High Yield
		0.5	Barclays Capital U.S. Investment Grade
		22.8	Russell 3000
		12.5	Custom Core Fixed Income Benchmark
		3.0	Emerging Market Debt
		5.0	Barclays Capital High Yield
		2.0	91-Day Treasury Bill
		24.0	Custom Non-US Equity Benchmark*
10.0	Russell 3000 + 3% (1 Qtr arrears)		
10.0	Net NFI-ODCE +85 bps (Quarter lag)		
5.3	3 mo. LIBOR + 4% bps (2 mo. lag)		
0.8	Opportunistic		
1.0	Credit Suisse Leveraged Loan Index		
1.0	Barclays CMBS ERISA Eligible + 2%		
1.5	Barclays Global High Yield		
0.5	Barclays Capital U.S. Tips		
0.1	S&P GS Commodity Total Return		
0.5	Barclays Capital U.S. Investment Grade		

Label	Month of	Percent	Description
Policy Index (cont.)	Mar-13	21.6	Russell 3000
		11.5	Custom Core Fixed Income Benchmark
		3.0	Emerging Market Debt
		5.0	Barclays Capital High Yield
		2.0	91-Day Treasury Bill
		24.0	Custom Non-US Equity Benchmark*
		10.0	Russell 3000 + 3% (1 Qtr arrears)
		10.0	Net NFI-ODCE +85 bps (Quarter lag)
		5.3	3 mo. LIBOR + 4% bps (2 mo. lag)
		0.5	Opportunistic
	Quarter Start Apr-13	1.0	Credit Suisse Leveraged Loan Index
		1.0	Barclays CMBS ERISA Eligible + 2%
		1.5	Barclays Global High Yield
		1.0	Barclays Capital U.S. Tips
		0.6	S&P GS Commodity Total Return
		2.0	Custom Risk Parity Benchmark
		21.8	Russell 3000
		10.0	Custom Core Fixed Income Benchmark
		3.0	Emerging Market Debt
		5.0	Barclays Capital High Yield
Quarter End Jun-13	2.0	91-Day Treasury Bill	
	22.2	Custom Non-US Equity Benchmark*	
	10.0	Russell 3000 + 3% (1 Qtr arrears)	
	10.0	Net NFI-ODCE +85 bps (Quarter lag)	
	6.0	3 mo. LIBOR + 4% bps (2 mo. lag)	
	0.5	Opportunistic	
	1.0	Credit Suisse Leveraged Loan Index	
	1.0	Barclays CMBS ERISA Eligible + 2%	
	1.5	Barclays Global High Yield	
	1.0	Barclays Capital U.S. Tips	
2.0	Custom Risk Parity Benchmark		
2.0	Custom GTAA Benchmark		

Custom Benchmark

Public Employees Retirement System
 Defined Benefit Plan
 Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Dec-11	Mar-12	28.6	Russell 3000
			16.9	Barclays Capital U.S. Aggregate
			1.0	Emerging Market Debt
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.5	MSCI AC World Ex-US (Net)
			8.9	Russell 3000 + 3% (1 Qtr arrears)
			10.0	NCREIF Property (Quarter lag)
			2.1	3 mo. LIBOR + 4% bps (2 mo. lag)
			1.0	Securitized Debt
	Mar-12	Jun-12	28.9	Russell 3000
			16.9	Barclays Capital U.S. Aggregate
			0.1	Emerging Market Debt
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.6	MSCI AC World Ex-US (Net)
			9.3	Russell 3000 + 3% (1 Qtr arrears)
			10.0	NCREIF Property (Quarter lag)
			2.2	3 mo. LIBOR + 4% bps (2 mo. lag)
			1.0	Securitized Debt

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jul-12	Sep-12	24.9	Russell 3000
			13.9	Barclays Capital U.S. Aggregate
			3.0	Emerging Market Debt
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.0	Custom Non-US Equity Benchmark*
			9.9	Russell 3000 + 3% (1 Qtr arrears)
			10.0	NCREIF Property (Quarter lag)
			3.5	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.7	Opportunistic
			0.5	Barclays US Corp Investment Grade
			0.1	Credit Suisse Leveraged Loan Index
			1.0	Barclays CMBS ERISA Eligible + 2%
			1.5	Barclays Global High Yield
	Oct-12	Dec-12	23.6	Russell 3000
			13.3	Barclays Capital U.S. Aggregate
			3.0	Emerging Market Debt
			3.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.0	Custom Non-US Equity Benchmark*
			10.0	Russell 3000 + 3% (1 Qtr arrears)
			10.0	NCREIF Property (Quarter lag)
			4.7	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.7	Opportunistic
			0.5	Barclays US Corp Investment Grade
			0.7	Credit Suisse Leveraged Loan Index
			1.0	Barclays CMBS ERISA Eligible + 2%
			1.5	Barclays Global High Yield

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-09	Dec-09	42.4	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			7.0	Real Estate
			1.0	Wilshire Resi Full Cap
			5.0	Russell 3000 + 3% (1 Qtr arrears)
	0.6	BC Bellweather 3Mth T-Bill		
	Jan-10	Mar-10	42.2	Russell 3000
			12.3	Barclays Capital U.S. Aggregate
			9.4	Barclays Capital Long Gov/Credit
			0.8	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			20.5	MSCI AC World Ex-US (Net)
	Apr-10	Jun-10	4.2	Russell 3000 + 3% (1 Qtr arrears)
8.0			NCREIF Property (Quarter Lag)	
Apr-10	Jun-10	0.6	3 mo. LIBOR + 4% bps (2 mo. lag)	
		39.6	Russell 3000	
		12.6	Barclays Capital U.S. Aggregate	
		9.0	Barclays Capital Long Gov/Credit	
		1.6	Barclays Capital High Yield	
		2.0	91-Day Treasury Bill	
		22.0	MSCI AC World Ex-US (Net)	
		4.3	Russell 3000 + 3% (1 Qtr arrears)	
7.9	NCREIF Property (Quarter lag)			
1.0	3 mo. LIBOR + 4% bps (2 mo. lag)			

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jul-10	Sep-10	36.3	Russell 3000
			11.5	Barclays Capital U.S. Aggregate
			9.0	Barclays Capital Long Gov/Credit
			2.5	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			23.5	MSCI AC World Ex-US (Net)
			5.1	Russell 3000 + 3% (1 Qtr arrears)
			9.0	NCREIF Property (Quarter lag)
			1.1	3 mo. LIBOR + 4% bps (2 mo. lag)
	Oct-10	Dec-11	29.5	Russell 3000
			12.4	Barclays Capital U.S. Aggregate
			5.6	Barclays Capital Long Gov/Credit
			5.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
Oct-10	Dec-11	24.6	MSCI AC World Ex-US (Net)	
		7.9	Russell 3000 + 3% (1 Qtr arrears)	
		9.6	NCREIF Property (Quarter lag)	
		3.4	3 mo. LIBOR + 4% bps (2 mo. lag)	

Public Employees Retirement System Defined Benefit Plan Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Dec-07	Mar-08	44.9	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			6.7	Real Estate
			1.0	Wilshire Resi Full Cap
			3.2	Russell 3000 + 3% (1 Qtr arrears)
			0.2	BC Bellweather 3Mth T-Bill
	Mar-08	Jun-08	44.9	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			6.7	Real Estate
			1.0	Wilshire Resi Full Cap
			3.2	Russell 3000 + 3% (1 Qtr arrears)
			0.2	BC Bellweather 3Mth T-Bill
	Jun-08	Sep-08	43.9	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			7.0	Real Estate
			1.0	Wilshire Resi Full Cap
			3.8	Russell 3000 + 3% (1 Qtr arrears)
			0.3	BC Bellweather 3Mth T-Bill

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-08	Dec-08	43.4	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			7.0	Real Estate
			1.0	Wilshire Resi Full Cap
			4.4	Russell 3000 + 3% (1 Qtr arrears)
			0.2	BC Bellweather 3Mth T-Bill
	Mar-09	Mar-09	42.4	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			7.0	Real Estate
			1.0	Wilshire Resi Full Cap
			5.0	Russell 3000 + 3% (1 Qtr arrears)
			0.6	BC Bellweather 3Mth T-Bill
	Jun-09	Jun-09	42.3	Russell 3000
			24.0	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			7.0	Real Estate
			1.0	Wilshire Resi Full Cap
			5.0	Russell 3000 + 3% (1 Qtr arrears)
			0.7	BC Bellweather 3Mth T-Bill

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jun-06	Sep-06	45.4	Russell 3000
			24.8	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			6.3	Real Estate
			1.0	Wilshire Resi Full Cap
			1.6	Russell 3000 + 3% (1 Qtr arrears)
	1.0	BC Bellweather 3Mth T-Bill		
	Sep-06	Dec-06	45.2	Russell 3000
			25.4	Barclays Universal
	Dec-06	Mar-07	25.3	BC Universal/BC Long G/C
20.0			MSCI AC World Ex-US (Net)	
5.7			Real Estate	
1.0			Wilshire Resi Full Cap	
0.1			Russell 3000 + 3% (1 Qtr arrears)	
2.0			BC Bellweather 3Mth T-Bill	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Mar-07	Jun-07	45.7	Russell 3000
			25.2	BC Universal/BC Long G/C
			20.0	MSCI AC World Ex-US (Net)
			5.8	Real Estate
			1.0	Wilshire Resi Full Cap
			0.1	Russell 3000 + 3% (1 Qtr arrears)
	2.3	BC Bellweather 3Mth T-Bill		
	Jun-07	Sep-07	45.6	Russell 3000
			25.2	BC Universal/BC Long G/C
	Sep-07	Dec-07	20.0	MSCI AC World Ex-US (Net)
6.8			Real Estate	
2.3			Wilshire Resi Full Cap	
0.1			Russell 3000 + 3% (1 Qtr arrears)	
0.0			BC Bellweather 3Mth T-Bill	
45.1			Russell 3000	
Dec-07		24.6	BC Universal/BC Long G/C	
		20.0	MSCI AC World Ex-US (Net)	
		7.4	Real Estate	
		2.8	Wilshire Resi Full Cap	
		0.2	Russell 3000 + 3% (1 Qtr arrears)	
		0.0	BC Bellweather 3Mth T-Bill	

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Dec-04	Mar-05	46.3	Russell 3000
			26.2	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			5.8	Custom Real Estate
			0.7	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill
	Mar-05	Jun-05	46.1	Russell 3000
			26.0	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			6.0	Custom Real Estate
			0.9	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill
	Jun-05	Sep-05	46.1	Russell 3000
			25.8	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			6.2	Custom Real Estate
			0.9	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-05	Dec-05	46.0	Russell 3000
			25.6	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			6.4	Custom Real Estate
			1.0	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill
	Dec-05	Mar-06	45.7	Russell 3000
			24.4	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			7.6	Custom Real Estate
			1.3	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill
	Mar-06	Jun-06	45.6	Russell 3000
			24.7	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			7.3	Custom Real Estate
			1.4	Russell 3000 + 3% (1 Qtr arrears)
			1.0	BC Bellweather 3Mth T-Bill

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-99	Mar-02	36.1	SB Broad Inv Grade
			35.0	Standard & Poors 500
			16.9	MSCI World Ex-US (Net)
	Mar-02	Mar-02	6.6	NCREIF
			2.2	NAREIT
			2.2	Gilberto-Levy Mortgage
	Mar-02	Mar-02	1.0	BC Bellweather 3Mth T-Bill
			34.3	S&P 1500
			31.8	SB Broad Inv Grade
	Jun-02	Sep-02	18.9	MSCI World Ex-US (Net)
			5.7	NCREIF
			3.0	Russell 3000
	Jun-02	Sep-02	2.3	BC Bellweather 3Mth T-Bill
1.9			NAREIT	
1.9			Gilberto-Levy Mortgage	
Jun-02	Sep-02	0.2	Standard & Poors 500	
		34.7	S&P 1500	
		29.2	SB Broad Inv Grade	
Jun-02	Sep-02	19.3	MSCI World Ex-US (Net)	
		5.8	Russell 3000	
		5.6	NCREIF	
Jun-02	Sep-02	1.9	NAREIT	
		1.9	Gilberto-Levy Mortgage	
		1.5	BC Bellweather 3Mth T-Bill	
Jun-02	Sep-02	0.2	Standard & Poors 500	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-02	Sep-02	44.7	Russell 3000
			25.6	SB Broad Inv Grade
			19.7	MSCI World Ex-US (Net)
	Sep-02	Sep-02	5.5	NCREIF
			1.8	NAREIT
			1.8	Gilberto-Levy Mortgage
	Sep-02	Sep-02	0.7	BC Bellweather 3Mth T-Bill
			0.2	Standard & Poors 500
			47.0	Russell 3000
	Dec-02	Dec-02	23.0	SB Broad Inv Grade
			20.0	MSCI World Ex-US (Net)
			5.4	NCREIF
	Dec-02	Dec-02	1.8	NAREIT
1.8			Gilberto-Levy Mortgage	
0.6			BC Bellweather 3Mth T-Bill	
Dec-02	Dec-02	0.4	Standard & Poors 500	
		46.0	Russell 3000	
		23.0	Barclays Universal	
Mar-03	Dec-04	20.0	MSCI AC World Ex-US (Net)	
		8.1	NCREIF	
		0.9	Wishire Real Estate Securities	
Mar-03	Dec-04	1.0	BC Bellweather 3Mth T-Bill	
		1.0	Russell 3000 + 3% (1 Qtr arrears)	

Public Employees Retirement System
Defined Benefit Plan
Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-94	Jun-95	68.0	SB Broad Inv Grade
			17.0	Standard & Poors 500
			8.0	91-Day Treasury Bill
			7.0	NCREIF
	Sep-95	Dec-95	59.0	SB Broad Inv Grade
			26.0	Standard & Poors 500
			8.0	NCREIF
			6.0	91-Day Treasury Bill
			1.0	MSCI EAFE (Net)
	Mar-96	Dec-96	62.5	SB Broad Inv Grade
			23.0	Standard & Poors 500
			8.0	NCREIF
			4.5	91-Day Treasury Bill
			2.0	MSCI EAFE (Net)
	Mar-97	Dec-97	56.5	SB Broad Inv Grade
			27.0	Standard & Poors 500
			8.0	NCREIF
			4.5	91-Day Treasury Bill
			4.0	MSCI EAFE (Net)
	Mar-98	Dec-98	51.0	SB Broad Inv Grade
			30.5	Standard & Poors 500
			8.0	NCREIF
			6.0	MSCI EAFE (Net)
			4.5	91-Day Treasury Bill

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Dec-98	Dec-98	51.0	SB Broad Inv Grade
			30.5	Russell 3000
			6.0	MSCI World Ex-US (Net)
			4.8	NCREIF
			4.5	91-Day Treasury Bill
			1.6	NAREIT
			1.6	Gilberto-Levy Mortgage
	Mar-99	Mar-99	45.4	SB Broad Inv Grade
			35.0	Standard & Poors 500
			7.6	MSCI World Ex-US (Net)
			6.6	NCREIF
			2.2	NAREIT
			2.2	Gilberto-Levy Mortgage
			1.0	91-Day Treasury Bill
	Jun-99	Jun-99	40.1	SB Broad Inv Grade
			35.0	Standard & Poors 500
			12.9	MSCI World Ex-US (Net)
			6.6	NCREIF
			2.2	NAREIT
			2.2	Gilberto-Levy Mortgage
			1.0	91-Day Treasury Bill

Public Employees Retirement System (HC)
(PERS HC)

Public Employees Retirement System (HC)

Actuarial Rate: 6.7%

	Ending December 31, 2013				
	6 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs
Public Employees Retirement System (HC)					
<i>PERS (HC) Total Fund Benchmark</i>	8.4%	11.5%	8.2%	12.4%	5.2%
Over/Under	8.1%	10.7%	7.7%	11.8%	5.2%
	0.3%	0.8%	0.5%	0.6%	0.0%
PERS(HC) Domestic Equity	17.6%	33.9%	16.4%	18.8%	6.5%
<i>Russell 3000</i>	17.1%	33.6%	16.2%	18.7%	6.5%
Over/Under	0.5%	0.3%	0.2%	0.1%	0.0%
PERS(HC) International Equity	14.5%	15.6%	5.8%	13.3%	2.4%
<i>PERS Total International Equity Benchmark</i>	14.3%	12.9%	--	--	--
Over/Under	0.2%	2.7%	--	--	--
PERS(HC) Fixed					
PERS(HC) Core Fixed	0.9%	-1.0%	3.8%	5.9%	4.6%
<i>Barclays Aggregate</i>	0.4%	-2.0%	3.3%	4.4%	4.9%
Over/Under	0.5%	1.0%	0.5%	1.5%	-0.3%
PERS(HC) TIPS	-1.3%	-8.5%	3.6%	--	--
<i>Barclays US TIPS</i>	-1.3%	-8.6%	3.5%	5.6%	5.3%
Over/Under	0.0%	0.1%	0.1%	--	--
PERS(HC) High Yield	5.8%	7.9%	9.5%	--	--
<i>Barclays High Yield</i>	5.9%	7.4%	9.3%	18.9%	8.7%
Over/Under	-0.1%	0.5%	0.2%	--	--
PERS(HC) EMD	0.4%	-6.4%	4.4%	--	--
<i>PERS Emerging Market Debt Benchmark</i>	-0.1%	-7.8%	3.9%	--	--
Over/Under	0.5%	1.4%	0.5%	--	--
PERS (HC) Floating Rate Debt	3.6%	6.7%	--	--	--
<i>PERS Floating Rate Debt Benchmark</i>	3.2%	6.2%	--	--	--
Over/Under	0.4%	0.5%	--	--	--
PERS(HC) Real Estate					
PERS(HC) REITs	-4.1%	1.4%	9.2%	16.9%	1.0%
<i>PERS (HC) REIT Benchmark</i>	-4.1%	1.3%	8.9%	16.4%	0.8%
Over/Under	0.0%	0.1%	0.3%	0.5%	0.2%

Public Employees Retirement System (HC)

Actuarial Rate: 6.7%

	Ending December 31, 2013						
	6 Mo	1 Yr	3 Yrs	5 Yrs	7 Yrs		
PERS(HC) Alternatives							
PERS(HC) Private Equity	7.8%	17.0%	12.0%	-2.2%	-		
PERS Private Equity Benchmark (QTR LAG)	9.3%	22.8%	19.2%	13.3%	8.9%		
Over/Under	-1.5%	-5.8%	-7.2%	-15.5%			
PERS(HC) Hedge Funds	5.4%	9.6%	4.4%	13.2%	-		
PERS (HC) Hedge Benchmark	3.5%	7.0%	7.0%	12.3%	-		
Over/Under	1.9%	2.6%	-2.6%	0.9%			
PERS(HC) Commodities	4.8%	-0.7%	0.3%	-	-		
Goldman Sachs GSCI Total	4.4%	-1.2%	-0.8%	3.9%	-2.2%		
Over/Under	0.4%	0.5%	1.1%				
PERS(HC) Opportunistic	1.0%	-3.1%	1.9%	-	-		
PERS Opportunistic Benchmark	1.2%	-1.3%	3.0%	-	-		
Over/Under	-0.2%	-1.8%	-1.1%				
PERS(HC) Risk Parity							
PERS (HC) Risk Parity	7.0%	-	-	-	-		
PERS Risk Parity Benchmark	5.8%	-	-	-	-		
Over/Under	1.2%						
PERS(HC) GTAA							
PERS (HC) GTAA	6.6%	-	-	-	-		
PERS GTAA Benchmark	10.2%	-	-	-	-		
Over/Under	-3.6%						
PERS(HC) Cash	0.1%	0.2%	0.2%	0.4%	1.4%		
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	0.9%		
Over/Under	0.1%	0.2%	0.1%	0.3%	0.5%		
PERS(HC) Rebalancing	1.6%	9.7%	-	-	-		
PERS Rebalancing Benchmark	0.0%	0.1%	-	-	-		
Over/Under	1.6%	9.6%					

Public Employees Retirement System (HC)

Asset Allocation by Segment

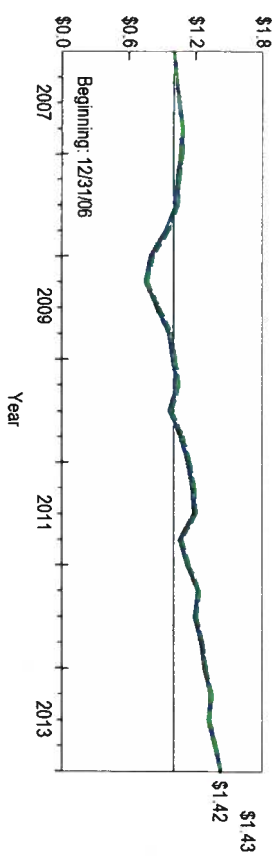
As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash	Other
PERS(HC) Domestic Equity	\$3,104,632,766	23.8%	\$3,104,632,766							
PERS(HC) International Equity	\$3,244,675,109	24.9%		\$3,244,675,109						
PERS(HC) Fixed					\$2,131,480,543					
PERS(HC) Core Fixed	\$2,131,480,543	16.4%			\$2,131,480,543					
PERS(HC) TIPS	\$430,938,558	3.3%			\$430,938,558					
PERS(HC) High Yield	\$261,587,710	2.0%			\$261,587,710					
PERS(HC) EMD	\$615,528,336	4.7%			\$615,528,336					
PERS(HC) Securitized Debt	\$130,912,093	1.0%			\$130,912,093					
PERS(HC) Global High Yield	\$262,059,278	2.0%			\$262,059,278					
PERS (HC) Floating Rate Debt	\$126,692,664	1.0%			\$126,692,664					
PERS(HC) Real Estate							\$758,085,684			
PERS(HC) REITs	\$758,085,684	5.8%					\$758,085,684			
PERS(HC) Alternatives										\$110,263,979
PERS(HC) Private Equity	\$110,263,979	0.8%								\$110,263,979
PERS(HC) Hedge Funds	\$706,619,437	5.4%								\$706,619,437
PERS(HC) Commodities	\$259,483,107	2.0%								\$259,483,107
PERS(HC) Opportunistic	\$39,094,793	0.3%								\$39,094,793
PERS(HC) Risk Parity										\$244,563,405
PERS (HC) Risk Parity	\$244,563,405	1.9%								\$244,563,405
PERS(HC) GTAA										\$247,528,881
PERS (HC) GTAA	\$247,528,881	1.9%								\$247,528,881
PERS(HC) Cash	\$299,542,310	2.3%						\$299,542,310		
PERS(HC) Rebalancing	\$50,602,377	0.4%						\$50,602,377		
Total	\$13,024,291,030	100.0%	\$3,104,632,766	\$3,244,675,109	\$3,081,611,568	\$877,587,614	\$1,115,461,316	\$758,085,684	\$350,144,687	\$492,092,286

PERS(HC)

	Actual	Target	Difference
US Equity	23.8	23.5	0.3
Intl Equity	24.9	24.6	0.3
REITS	5.8	6.0	-0.2
Alternatives	8.6	8.4	0.2
Risk Parity	1.9	2.0	-0.1
GTAA	1.9	2.0	-0.1
Total Equity	66.9	66.5	0.4
Fixed Income	30.4	33.5	-3.1
Short Term Investments	2.7	0.0	2.7
Total Debt	33.1	33.5	-0.4
	100.0	100.0	0.0

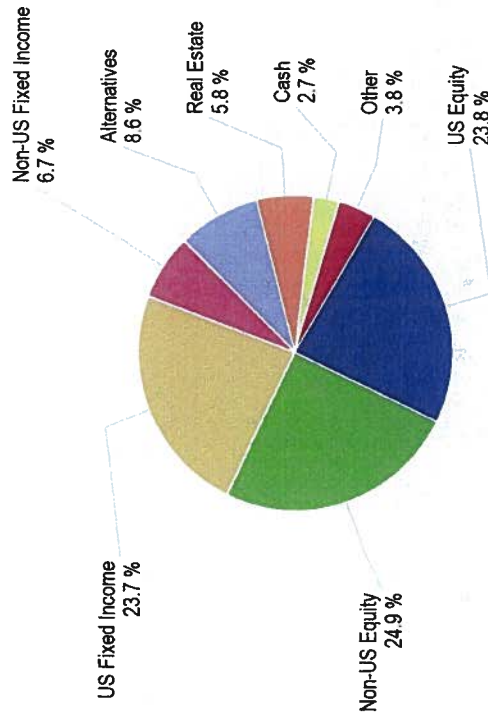
*Totals may not add up to 100% due to rounding



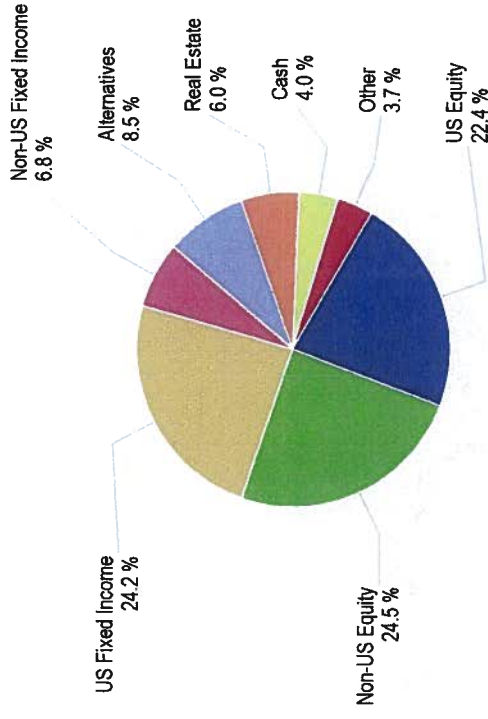
Public Employees Retirement System (HC)

Asset Allocation

Current Allocation
December 31, 2013

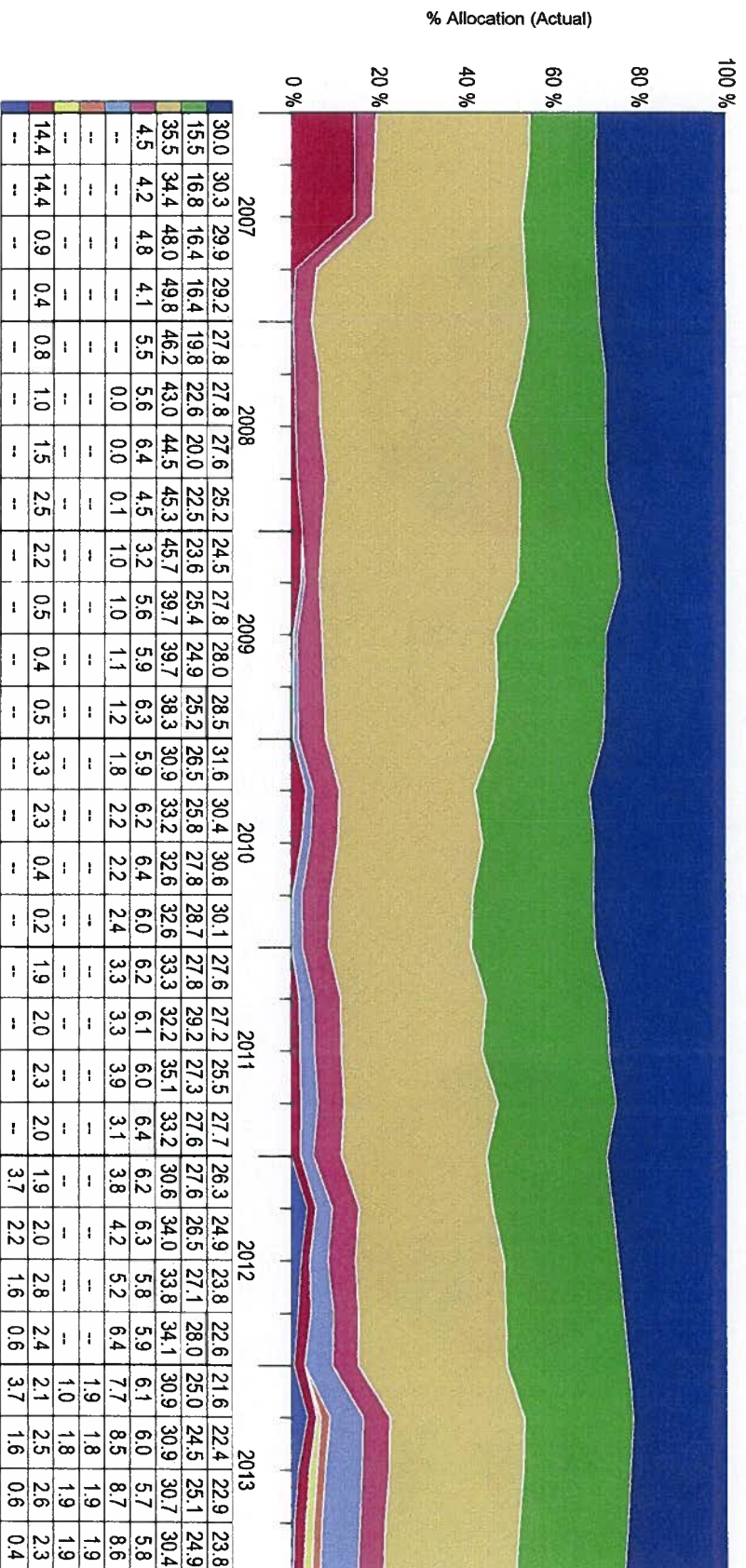


Previous Allocation
June 30, 2013



Public Employees Retirement System (HC) Asset Allocation

Asset Allocation History
7 Years Ending December 31, 2013



- PERS(HC) Domestic Equity
- PERS(HC) International Equity
- PERS(HC) Fixed
- PERS(HC) Real Estate
- PERS(HC) Alternatives
- PERS(HC) Risk Parity
- PERS(HC) Cash
- PERS(HC) Rebalancing

Public Employees Retirement System (HC) 7 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2007 Through December 31, 2013

Public Employees Retirement System (HC)
PERS (HC) Total Fund Benchmark

RETURN SUMMARY STATISTICS

Number of Periods	28	28
Maximum Return	12.96	13.93
Minimum Return	-14.68	-14.49
Annualized Return	5.16	5.19
Total Return	42.22	42.51
Annualized Excess Return Over Risk Free	4.28	4.31
Annualized Excess Return	-0.03	0.00

RISK SUMMARY STATISTICS

Beta	1.00	1.00
Upside Deviation	7.01	7.33
Downside Deviation	9.25	9.47

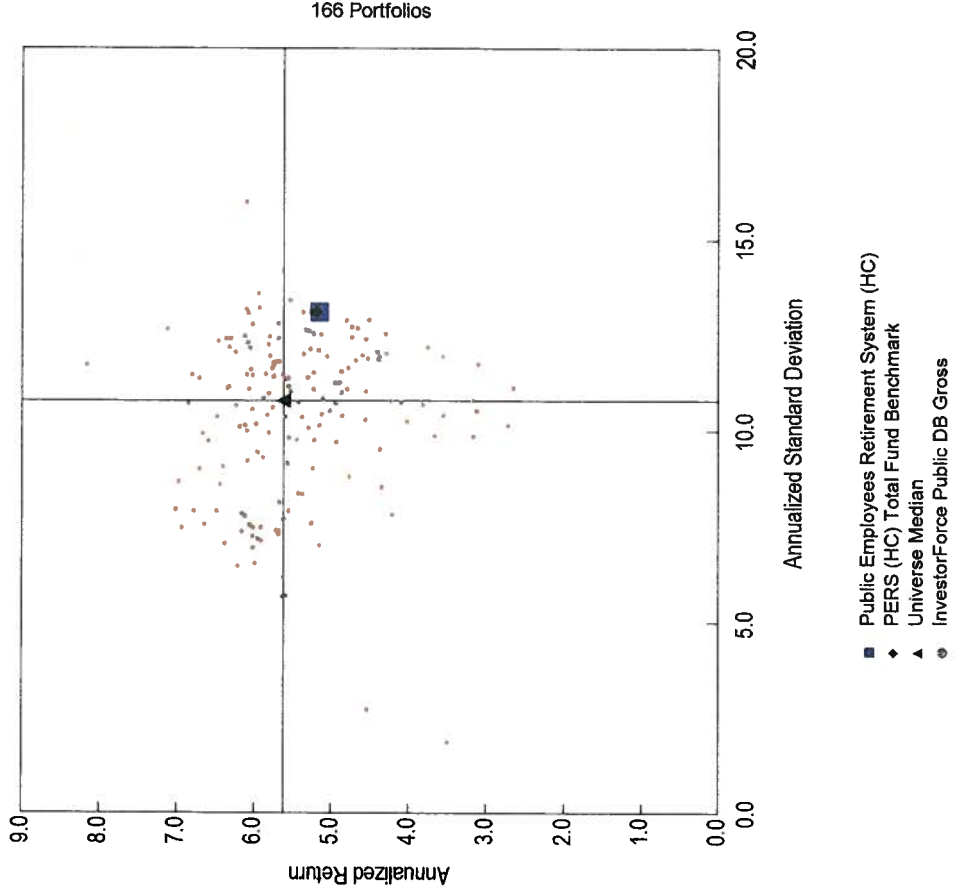
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	13.11	13.12
Alpha	0.00	0.00
Sharpe Ratio	0.33	0.33
Excess Return Over Market / Risk	0.00	0.00
Tracking Error	0.93	0.00
Information Ratio	-0.03	--

CORRELATION STATISTICS

R-Squared	0.99	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation
7 Years Ending December 31, 2013



Public Employees Retirement System

Health Care Plan

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Oct-13	Dec-13	23.5	Russell 3000
			17.0	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.6	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resl Full Cap
			5.4	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Barclays CMBS ERISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			2.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark
			2.0	Custom GTAA Benchmark

Label	Quarter Start	Quarter End	Percent	Description

In February 2012 of 2012, the PERS Plans moved to monthly re-weighting the Policy Benchmarks. Shown above are the benchmarks at the end of each quarter.
 *56.5% MSCI World Index ex U.S., 31% MSCI Emerging Markets, 10% MSCI World Index ex U.S. Small Cap, and 2.5% MSCI Emerging Markets Small Cap.

Public Employees Retirement System

Health Care Plan

Quarter Ending 12/31/2013

Label Policy Index	Quarter Start	Quarter End	Percent	Description
	Oct-12	Dec-12	24.6	Russell 3000
			18.8	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			27.0	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			4.2	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.7	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Credit Suisse Leveraged Loan Index
			0.7	Barclays CMBS ERISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			1.0	S&P GS Commodity Total Return
	Jan-13	Mar-13	23.3	Russell 3000
			17.5	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			27.0	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			4.7	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Barclays CMBS ERISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			2.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark

Label Policy Index	Quarter Start	Quarter End	Percent	Description
	Apr-13	Jun-13	23.2	Russell 3000
			17.0	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.9	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			5.4	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Barclays CMBS ERISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			2.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark
			2.0	Custom GTAA Benchmark
	Jul-13	Sep-13	23.9	Russell 3000
			17.0	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			24.2	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			5.4	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.5	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Barclays CMBS ERISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			2.0	S&P GS Commodity Total Return
			2.0	Custom Risk Parity Benchmark
			2.0	Custom GTAA Benchmark

In February 2012 of 2012, the PERS Plans moved to monthly re-weighting the Policy Benchmarks. Shown above are the benchmarks at the end of each quarter.
 *56.5% MSCI World Index ex U.S., 31% MSCI Emerging Markets, 10% MSCI World Index ex U.S. Small Cap, and 2.5% MSCI Emerging Markets Small Cap.

Custom Benchmark

Public Employees Retirement System

Health Care Plan

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	--	Dec-11	28.8	Russell 3000
			21.5	Barclays Capital U.S. Aggregate
			3.5	Barclays Capital U.S. TIPS
			2.0	Barclays High Yield
			2.0	91-Day Treasury Bill
			5.0	Custom Emerging Markets Debt
			27.3	MSCI ACWI Ex-US (Net)
			0.3	Custom Private Equity
			6.0	DJ Wilshire Resi Full Cap
			2.0	LIBOR + 400 bps (2 mo. lag)
			1.6	S&P GS Commodity Total Return
	Dec-12	Mar-12	29.5	Russell 3000
			20.5	Barclays Capital U.S. Aggregate
			3.5	Barclays Capital U.S. TIPS
			2.0	Barclays High Yield
			2.0	91-Day Treasury Bill
			5.0	Custom Emerging Markets Debt
			27.1	MSCI ACWI Ex-US (Net)
			0.5	Custom Private Equity
			6.0	DJ Wilshire Resi Full Cap
			1.9	LIBOR + 400 bps (2 mo. lag)
			1.0	S&P GS Commodity Total Return
			1.0	Securitized Debt

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-12	Jun-12	26.2	Russell 3000
			20.2	Barclays Capital U.S. Aggregate
			3.5	Barclays Capital U.S. TIPS
			2.0	Barclays High Yield
			2.0	91-Day Treasury Bill
			5.0	Custom Emerging Markets Debt
			27.1	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			3.2	LIBOR + 400 bps (2 mo. lag)
			1.0	S&P GS Commodity Total Return
			1.0	Securitized Debt
			1.0	Barclays US Corp Investment Grade
			1.3	Barclays Global High Yield
	Jul-12	Sep-12	25.6	Russell 3000
			19.4	Barclays Capital U.S. Aggregate
			5.0	Emerging Market Debt
			2.0	Barclays Capital High Yield
			2.0	91-Day Treasury Bill
			27.0	Custom Non-US Equity Benchmark*
			0.5	Russell 3000 + 3% (1 Qtr arrears)
			6.0	DJ Wilshire Resi Full Cap
			3.2	3 mo. LIBOR + 4% bps (2 mo. lag)
			0.7	Opportunistic
			1.0	Barclays US Corp Investment Grade
			1.0	Credit Suisse Leveraged Loan Index
			0.1	Barclays CMBS ERIISA Eligible + 2%
			2.0	Barclays Global High Yield
			3.5	Barclays Capital U.S. TIPS
			1.0	S&P GS Commodity Total Return

Public Employees Retirement System

Health Care Plan

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Dec-08	Mar-09	29.0	Russell 3000
			10.3	Barclays Universal
			20.2	Barclays U.S. TIPS
			11.5	Barclays 1-3 Yr Gov't
			23.0	MSCI ACWI Ex-US (Net)
			6.0	Wilshire Resi Full Cap
	Mar-09	Dec-09	28.4	Russell 3000
			10.0	Barclays Universal
			20.0	Barclays U.S. TIPS
			10.0	Barclays 1-3 Yr Gov't
			24.5	MSCI ACWI Ex-US (Net)
			6.0	Wilshire Resi Full Cap
			0.1	Russell 3000 + 3% (1 Qtr arrears)
Jan-10	Mar-10	1.0	BC Bellweather 3 Mth T-Bill	
		30.3	Russell 3000	
		17.6	Barclays Capital U.S. Aggregate	
		13.3	Barclays Capital U.S. TIPS	
		0.5	Barclays High Yield	
		2.0	91-Day Treasury Bill	
		3.1	Custom Emerging Markets Debt	
		25.0	MSCI ACWI Ex-US (Net)	
		0.1	Custom Private Equity	
		6.0	DJ Wilshire Resi Full Cap	
		1.1	LIBOR + 400 bps (2 mo. lag)	
		1.0	S&P GS Commodity Total Return	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Apr-10	Jun-10	31.9	Russell 3000
			18.2	Barclays Capital U.S. Aggregate
			8.2	Barclays Capital U.S. TIPS
			0.6	Barclays High Yield
			2.0	91-Day Treasury Bill
			5.0	Custom Emerging Markets Debt
	Jul-10	Sep-10	26.0	MSCI ACWI Ex-US (Net)
			0.1	Custom Private Equity
			6.0	DJ Wilshire Resi Full Cap
			1.0	LIBOR + 400 bps (2 mo. lag)
			1.0	S&P GS Commodity Total Return
			31.0	Russell 3000
			20.5	Barclays Capital U.S. Aggregate
		5.5	Barclays Capital U.S. TIPS	
		1.0	Barclays High Yield	
		2.0	91-Day Treasury Bill	
		5.0	Custom Emerging Markets Debt	
		26.7	MSCI ACWI Ex-US (Net)	
		0.2	Custom Private Equity	
		6.0	DJ Wilshire Resi Full Cap	
1.2	LIBOR + 400 bps (2 mo. lag)			
1.0	S&P GS Commodity Total Return			

Public Employees Retirement System

Health Care Plan

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Dec-04	Jun-05	47.5	Russell 3000
			22.0	Barclays Universal
			22.0	MSCI ACWI Ex-US (Net)
			4.0	Wilshire Resi Full Cap
			2.5	Barclays US Tips
			2.0	Barclays 1-3 Yr Gov't
	Jun-05	Dec-05	42.5	Russell 3000
			20.0	Barclays Universal
			20.0	MSCI ACWI Ex-US (Net)
			4.2	Wilshire Resi Full Cap
			7.5	Barclays US Tips
			5.8	Barclays 1-3 Yr Gov't
	Dec-05	Jun-06	37.5	Russell 3000
			18.0	Barclays Universal
			18.0	MSCI ACWI Ex-US (Net)
			4.5	Wilshire Resi Full Cap
			12.5	Barclays US Tips
			9.5	Barclays 1-3 Yr Gov't
	Jun-06	Dec-06	32.5	Russell 3000
			16.0	Barclays Universal
			16.0	MSCI ACWI Ex-US (Net)
			4.8	Wilshire Resi Full Cap
			17.5	Barclays US Tips
			13.2	Barclays 1-3 Yr Gov't

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Dec-06	Dec-07	30.0	Russell 3000
			15.0	Barclays Universal
			15.0	MSCI ACWI Ex-US (Net)
			5.0	Wilshire Resi Full Cap
			20.0	Barclays US Tips
			15.0	Barclays 1-3 Yr Gov't
	Dec-07	Jun-08	29.6	Russell 3000
			14.8	Barclays Universal
			16.4	MSCI ACWI Ex-US (Net)
			4.1	Wilshire Resi Full Cap
			20.8	Barclays US Tips
			14.3	Barclays 1-3 Yr Gov't
	Jun-08	Sep-08	28.8	Russell 3000
			9.7	Barclays Universal
			22.6	MSCI ACWI Ex-US (Net)
			5.6	Wilshire Resi Full Cap
			21.0	Barclays US Tips
			12.3	Barclays 1-3 Yr Gov't
	Sep-08	Dec-08	28.8	Russell 3000
			9.7	Barclays Universal
			22.6	MSCI ACWI Ex-US (Net)
			5.6	Wilshire Resi Full Cap
			21.0	Barclays US Tips
			12.3	Barclays 1-3 Yr Gov't

State Teachers Retirement System (STRS)

State Teachers Retirement System

Actuarial Rate: 7.75%

	Ending December 31, 2013				
	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
State Teachers Retirement System					
STRS Total Fund Benchmark	10.3%	17.6%	10.8%	13.1%	7.9%
Over/Under	10.5%	18.1%	10.7%	13.1%	7.5%
STRS Domestic Equity	-0.2%	-0.5%	0.1%	0.0%	0.4%
STRS Domestic Equity Benchmark	16.7%	32.1%	15.7%	18.4%	7.6%
Over/Under	17.1%	33.6%	16.2%	18.7%	7.9%
STRS Fixed Income	-0.4%	-1.5%	-0.5%	-0.3%	-0.3%
Barclays U.S. Universal	1.0%	-1.0%	4.1%	7.3%	5.4%
Over/Under	1.0%	-1.3%	3.8%	5.4%	4.9%
STRS International Equity	0.0%	0.3%	0.3%	1.9%	0.5%
STRS International Blended Benchmark	14.6%	19.2%	6.8%	13.8%	8.9%
Over/Under	14.2%	17.6%	6.1%	12.9%	8.1%
STRS Real Estate	0.4%	1.6%	0.7%	1.0%	0.8%
STRS RE Blended Benchmark	5.4%	10.7%	15.3%	5.5%	12.3%
Over/Under	3.8%	9.7%	11.7%	7.9%	9.0%
STRS Alternatives	1.6%	1.0%	3.6%	-2.4%	3.3%
STRS Private Equity	9.6%	20.0%	15.9%	10.3%	12.8%
STRS Private Equity Benchmark	17.2%	34.9%	18.6%	21.6%	10.8%
Over/Under	-8.1%	-14.9%	-2.7%	-11.3%	1.8%
STRS Hedge Funds	-0.6%	11.4%	5.0%	6.8%	9.1%
HFRI Fund of Funds Composite Index	5.4%	9.0%	2.5%	4.9%	3.4%
Over/Under	-6.0%	2.4%	2.5%	1.9%	5.7%
STRS Opportunistic	2.3%	11.7%	9.1%	-	-
STRS Opportunistic Benchmark	16.5%	32.3%	15.1%	-	-
Over/Under	-14.2%	-20.6%	-6.0%	-	-
STRS Liquidity Reserves	0.1%	0.1%	0.1%	0.4%	1.9%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.1%	0.1%	0.0%	0.3%	0.3%

State Teachers Retirement System

Asset Allocation by Segment

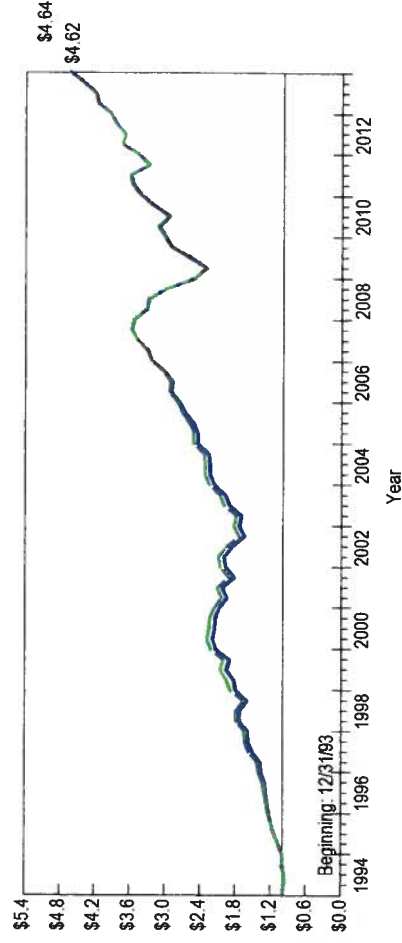
As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
STRS Domestic Equity	\$22,620,005,593	31.3%	\$22,620,005,593					
STRS Fixed Income	\$14,084,026,201	19.5%			\$14,084,026,201			
STRS International Equity	\$17,703,525,430	24.5%		\$17,703,525,430				
STRS Real Estate								
STRS Real Estate	\$6,699,396,574	9.3%				\$6,699,396,574		
STRS Alternatives								
STRS Private Equity	\$4,403,049,367	6.1%				\$4,403,049,367		
STRS Hedge Funds								
STRS Opportunistic	\$3,388,950,692	4.7%				\$3,388,950,692		
STRS Liquidity Reserves	\$3,446,307,278	4.8%					\$3,446,307,278	
Total	\$72,345,261,134	100.0%	\$22,620,005,593	\$17,703,525,430	\$14,084,026,201	\$7,792,000,059	\$6,699,396,574	\$3,446,307,278

STRS

	Actual	Target	Difference
US Equity	31.3	33.0	-1.7
Intl Equity	24.5	25.0	-0.5
Alternatives	10.8	13.0	-2.2
Total Equity	66.5	71.0	-4.5
Fixed Income	19.5	18.0	1.5
Real Estate	9.3	10.0	-0.7
Short Term Investments	4.8	1.0	3.8
Total Debt	33.5	29.0	4.5
	100.0	100.0	0.0

GROWTH OF A DOLLAR

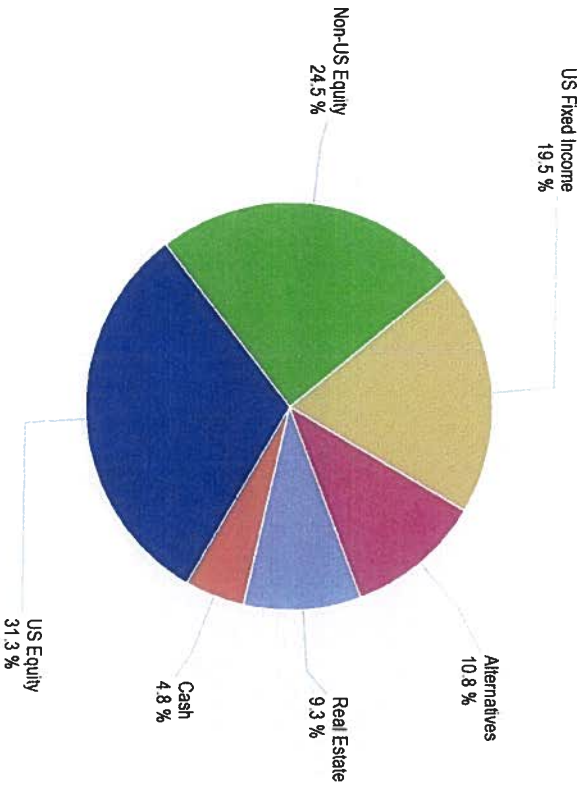


State Teachers Retirement System
STRS Total Fund Benchmark

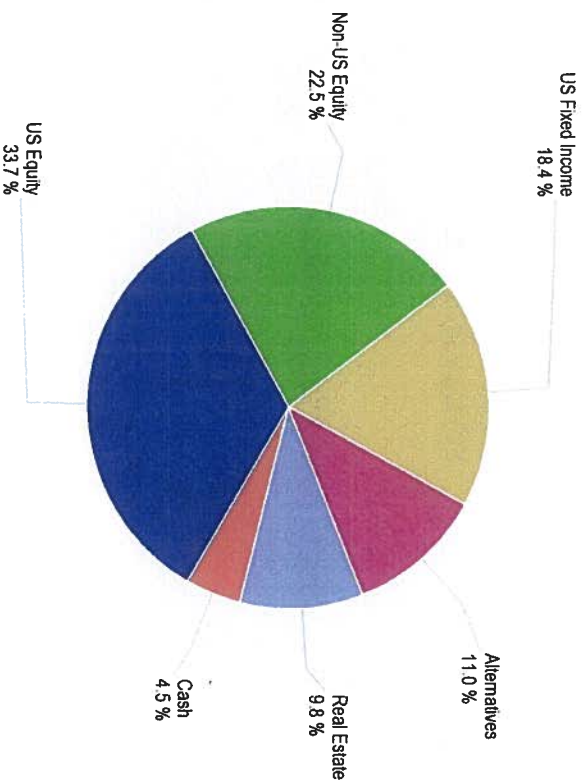
*Totals may not add up to 100% due to rounding.

State Teachers Retirement System Asset Allocation

Current Allocation
December 31, 2013

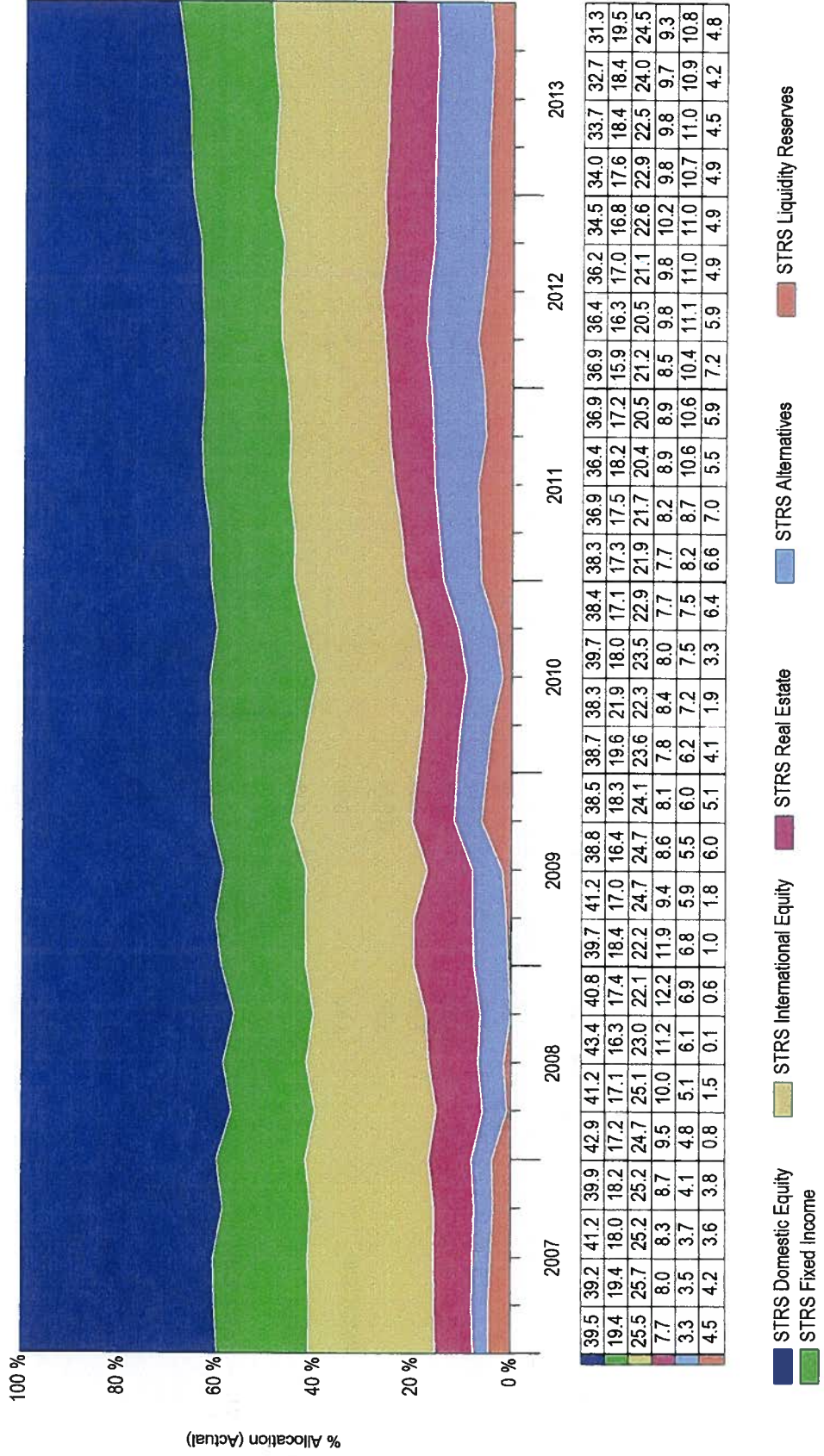


Previous Allocation
June 30, 2013



State Teachers Retirement System Asset Allocation

Asset Allocation History
7 Years Ending December 31, 2013



State Teachers Retirement System 10 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2004 Through December 31, 2013

State Teachers Retirement System **STRS Total Fund Benchmark**

RETURN SUMMARY STATISTICS	
Number of Periods	40
Maximum Return	12.29
Minimum Return	-15.96
Annualized Return	7.90
Total Return	113.88
Annualized Excess Return Over Risk Free	6.34
Annualized Excess Return	0.39

RISK SUMMARY STATISTICS

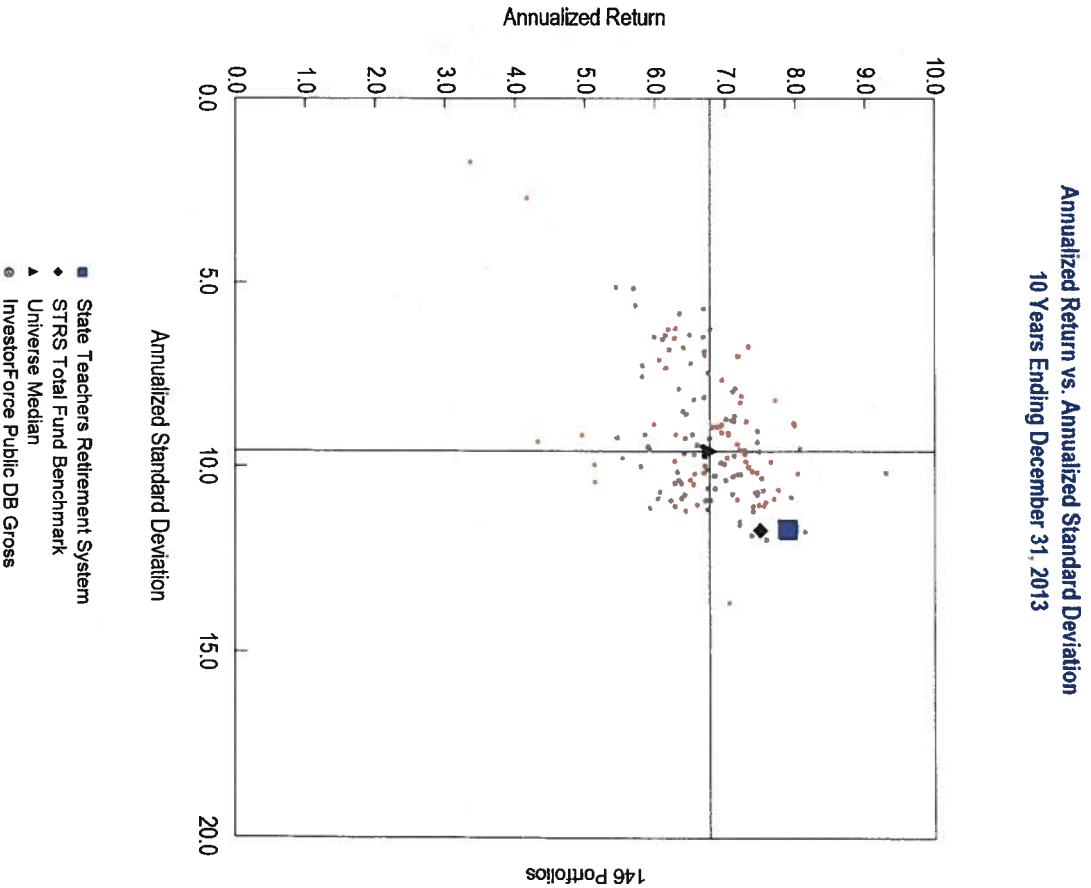
Beta	1.00	1.00
Upside Deviation	5.90	5.86
Downside Deviation	9.94	9.96

RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	11.67	11.69
Alpha	0.10	0.00
Sharpe Ratio	0.54	0.51
Excess Return Over Market / Risk	0.03	0.00
Tracking Error	0.73	0.00
Information Ratio	0.53	--

CORRELATION STATISTICS

R-Squared	1.00	1.00
Correlation	1.00	1.00



State Teachers Retirement System

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jun-09	Jun-10	39.0	Russell 3000
			20.0	Barclays Universal
			18.4	MSCI World Ex-US 50% hedged (net)
	Jul-10	Jun-11	10.0	Real Estate Blended Benchmark
			4.6	MSCI Em Mkts Free (Gross)
			7.0	Alt. Investment Actual Return
	Sep-11	Jun-12	1.0	91-Day Treasury Bill
			39.0	Russell 3000
			19.0	Barclays Universal
	Sep-12	Dec-12	18.4	MSCI World Ex-US 50% hedged (net)
			10.0	Real Estate Blended Benchmark
			4.6	MSCI Em Mkts Free (Gross)
	Sep-11	Jun-12	8.0	Alt. Investment Actual Return*
			1.0	91-Day Treasury Bill
			39.0	Russell 3000
Sep-12	Dec-12	18.0	Barclays Universal	
		18.4	MSCI World Ex-US 50% hedged (net)	
		10.0	Real Estate Blended Benchmark	
Sep-11	Jun-12	4.6	MSCI Em Mkts Free (Gross)	
		9.0	Alt. Investment Actual Return*	
		1.0	91-Day Treasury Bill	
Sep-12	Dec-12	38.0	Russell 3000	
		18.0	Barclays Universal	
		18.4	MSCI World Ex-US 50% hedged (net)	
Sep-11	Jun-12	10.0	Real Estate Blended Benchmark	
		4.6	MSCI Em Mkts Free (Gross)	
		7.0	Alt. Investment Actual Return*	
Sep-12	Dec-12	10.0	Real Estate Blended Benchmark	
		4.6	MSCI Em Mkts Free (Gross)	
		10.0	Alt. Investment Actual Return*	
Sep-11	Jun-12	1.0	91-Day Treasury Bill	
		39.0	Russell 3000	
		19.0	Barclays Universal	
Sep-12	Dec-12	18.4	MSCI World Ex-US 50% hedged (net)	
		10.0	Real Estate Blended Benchmark	
		4.6	MSCI Em Mkts Free (Gross)	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Jan-13	Jun-13	36.0	Russell 3000
			18.0	Barclays Universal
			19.2	MSCI World Ex-US 50% hedged (net)
	Jul-13	Dec-13	10.0	Real Estate Blended Benchmark
			4.8	MSCI Em Mkts Free (Gross)
			11.0	Alt. Investment Actual Return*
	Jul-13	Dec-13	1.0	91-Day Treasury Bill
			33.0	Russell 3000
			18.0	Barclays Universal
	Jul-13	Dec-13	20.0	MSCI World Ex-US 50% hedged (net)
			10.0	Real Estate Blended Benchmark
			5.0	MSCI Em Mkts Free (Gross)
	Jul-13	Dec-13	13.0	Alt. Investment Actual Return*
			1.0	91-Day Treasury Bill
			33.0	Russell 3000
Jul-13	Dec-13	18.0	Barclays Universal	
		20.0	MSCI World Ex-US 50% hedged (net)	
		10.0	Real Estate Blended Benchmark	
Jul-13	Dec-13	5.0	MSCI Em Mkts Free (Gross)	
		13.0	Alt. Investment Actual Return*	
		1.0	91-Day Treasury Bill	

*For calculating the Total Fund Blended Benchmark, the actual Alternative Investment asset class return is used. The Alternative Investment Blended Benchmark is used for the asset class relative performance and is in two parts by policy: Private Equity is currently the Russell 3000 Index plus 100 bps and Opportunistic/Diversified is the Russell 3000 Index minus 100 bps. The Alternative Investment Blended Benchmark is based on the policy weights of Private Equity and Opportunistic/Diversified during the respective periods.

State Teachers Retirement System

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-02	Dec-02	45.0	S&P 1500
			23.0	Barclays Universal
			15.0	MSCI EAFE 50% Hedged
			9.0	Real Estate Blended Benchmark
			5.0	MSCI Em Mkts Free (Gross)
			2.0	Alt. Investment Actual Return
			1.0	91-Day Treasury Bill
	Mar-03	Jun-03	45.0	S&P/Russell Hybrd
			23.0	Barclays Universal
		15.0	MSCI EAFE 50% Hedged	
		9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		2.0	Alt. Investment Actual Return	
		1.0	91-Day Treasury Bill	
Sep-03	Dec-05	45.0	Russell 3000	
		23.0	Barclays Universal	
		15.0	MSCI World Ex-US 50% hedged (net)	
		9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		2.0	Alt. Investment Actual Return	
		1.0	91-Day Treasury Bill	
Mar-06	Jun-06	42.0	Russell 3000	
		21.0	Barclays Universal	
		20.0	MSCI World Ex-US 50% hedged (net)	
		9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		3.0	Alt. Investment Actual Return	
		0.0	91-Day Treasury Bill	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-06	Jun-07	42.0	Russell 3000
			20.5	Barclays Universal
			20.0	MSCI World Ex-US 50% hedged (net)
			9.5	Real Estate Blended Benchmark
			5.0	MSCI Em Mkts Free (Gross)
			3.0	Alt. Investment Actual Return
			0.0	91-Day Treasury Bill
	Sep-07	Sep-07	42.0	Russell 3000
			20.0	Barclays Universal
		20.0	MSCI World Ex-US 50% hedged (net)	
		10.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		3.0	Alt. Investment Actual Return	
		0.0	91-Day Treasury Bill	
Dec-07	Mar-09	42.0	Russell 3000	
		20.0	Barclays Universal	
		20.0	MSCI World Ex-US 50% hedged (net)	
		9.5	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		3.5	Alt. Investment Actual Return	
		0.0	91-Day Treasury Bill	
Apr-09	Jun-09	40.0	Russell 3000	
		20.0	Barclays Universal	
		19.2	MSCI World Ex-US 50% hedged (net)	
		10.0	Real Estate Blended Benchmark	
		4.8	MSCI Em Mkts Free (Gross)	
		6.0	Alt. Investment Actual Return	
		0.0	91-Day Treasury Bill	

State Teachers Retirement System

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-94	Dec-94	40.0	Standard & Poors 500
			45.0	Barclays Govt./Corp.
			9.0	Real Estate Blended Benchmark
			3.0	MSCI EAFE (Net)
			3.0	91-Day Treasury Bill
	Mar-95	Dec-95	46.0	Standard & Poors 500
			35.0	BC Aggregate
			9.0	Real Estate Blended Benchmark
			6.0	MSCI EAFE (Net)
			2.0	MSCI Em Mkts Free (Gross)
			2.0	91-Day Treasury Bill
	Mar-96	Dec-96	45.0	Standard & Poors 500
35.0			BC Aggregate	
9.0			Real Estate Blended Benchmark	
6.8			MSCI EAFE (Net)	
		2.3	MSCI Em Mkts Free (Gross)	
		2.0	91-Day Treasury Bill	
Mar-97	Jun-97	45.0	Standard & Poors 500	
		34.0	BC Aggregate	
		9.0	Real Estate Blended Benchmark	
		6.0	MSCI EAFE (Net)	
		4.0	MSCI Em Mkts Free (Gross)	
		2.0	91-Day Treasury Bill	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (Cont.)	Sep-97	Dec-97	45.0	Standard & Poors 500
			24.0	BC Aggregate
			12.0	MSCI EAFE (Net)
			9.0	Real Estate Blended Benchmark
			8.0	MSCI Em Mkts Free (Gross)
			2.0	91-Day Treasury Bill
	Mar-98	Sep-98	45.0	S&P 1500
			24.0	BC Aggregate
			12.0	MSCI EAFE 50% Hedged
			9.0	Real Estate Blended Benchmark
			8.0	MSCI Em Mkts Free (Gross)
			2.0	91-Day Treasury Bill
Dec-98	Sep-00	45.0	S&P 1500	
		24.0	BC Aggregate	
		14.0	MSCI EAFE 50% Hedged	
		9.0	Real Estate Blended Benchmark	
		6.0	MSCI Em Mkts Free (Gross)	
		2.0	91-Day Treasury Bill	
Dec-00	Jun-02	45.0	S&P 1500	
		25.0	Barclays Universal	
		15.0	MSCI EAFE 50% Hedged	
		9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		1.0	91-Day Treasury Bill	

**Ohio Police & Fire
(OP&F)**

Ohio Police & Fire

Actuarial Rate: 8.25%

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
Ohio Police & Fire	10.8%	16.0%	11.0%	13.8%	8.1%
OPF Total Fund Benchmark	9.5%	14.6%	10.5%	12.9%	7.4%
Over/Under	1.3%	1.4%	0.5%	0.9%	0.7%
OP&F Domestic Equity	16.2%	30.7%	15.2%	20.0%	8.5%
Wishire 5000	16.7%	33.1%	16.0%	18.6%	8.0%
Over/Under	-0.5%	-2.4%	-0.8%	1.4%	0.5%
OP&F International Equity	17.4%	21.0%	8.4%	15.4%	9.1%
OPF International Benchmark	15.6%	15.8%	5.3%	12.9%	7.6%
Over/Under	1.8%	5.2%	3.1%	2.5%	1.5%
OP&F Fixed Income	2.4%	-1.0%	7.5%	10.8%	7.2%
Barclays Aggregate	0.4%	-2.0%	3.3%	4.4%	4.5%
Over/Under	2.0%	1.0%	4.2%	6.4%	2.7%
OP&F Core Fixed	0.7%	-1.0%	3.8%	6.5%	5.1%
Barclays Aggregate	0.4%	-2.0%	3.3%	4.4%	4.5%
Over/Under	0.3%	1.0%	0.5%	2.1%	0.6%
OP&F Mortgages	6.2%	6.7%	5.7%	6.5%	5.5%
OP&F High Yield	5.2%	6.1%	9.2%	17.1%	8.5%
OPF High Yield Benchmark	5.9%	7.5%	9.2%	18.1%	8.3%
Over/Under	-0.7%	-1.4%	0.0%	-1.0%	0.2%
Global Inflation Protected Securities	0.4%	-10.6%	11.7%	12.0%	8.6%
OPF GPS Benchmark	-2.3%	-13.1%	7.1%	7.2%	5.9%
Over/Under	2.7%	2.5%	4.6%	4.8%	2.7%

Ohio Police & Fire

Actuarial Rate: 8.25%

	Ending December 31, 2013				
	6 MO	1 Yr	3 Yrs	5 Yrs	10 Yrs
OP&F Real Estate	8.4%	15.1%	15.4%	0.2%	8.5%
OPF Real Estate Benchmark	<u>7.1%</u>	<u>12.0%</u>	<u>13.2%</u>	<u>-0.2%</u>	<u>6.1%</u>
Over/Under	1.3%	3.1%	2.2%	0.4%	2.4%
OP&F Alternatives					
OP&F Private Equity	7.1%	11.5%	12.9%	7.4%	11.4%
OPF Private Equity Benchmark	<u>10.6%</u>	<u>24.6%</u>	<u>20.0%</u>	<u>13.8%</u>	<u>11.9%</u>
Over/Under	-3.5%	-13.1%	-7.1%	-6.4%	-0.5%
Timber	-0.9%	3.4%	-	-	-
OPF Timber Benchmark	<u>2.7%</u>	<u>7.0%</u>	-	-	-
Over/Under	-3.6%	-3.6%			
OP&F Cash	0.0%	0.1%	0.2%	0.3%	1.8%
91 Day T-Bills	<u>0.0%</u>	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>1.6%</u>
Over/Under	0.0%	0.1%	0.1%	0.2%	0.2%

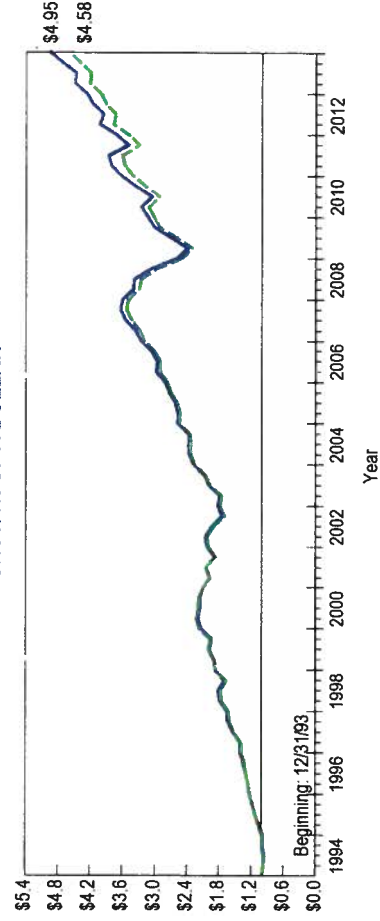
Ohio Police & Fire

Asset Allocation by Segment

As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash	Other
OP&F Domestic Equity	\$3,723,633,194	26.7%	\$3,723,633,194		\$1,145,971,913					
OP&F International Equity	\$3,543,525,195	25.4%		\$3,543,525,195	\$36,981,557					
OP&F Fixed Income					\$1,708,421,204	\$873,474,567				
OP&F Core Fixed	\$1,145,971,913	8.2%								
OP&F Mortgages	\$36,981,557	0.3%								
OP&F High Yield	\$1,708,421,204	12.3%								
Global Inflation Protected Securities	\$873,474,567	6.3%								
OP&F Real Estate							\$1,314,680,899			
OP&F Real Estate Alternatives		9.4%								
OP&F Private Equity	\$598,897,550	4.3%				\$598,897,550				
Timber	\$129,032,007	0.9%				\$129,032,007				
MLPs	\$755,203,546	5.4%							\$755,203,546	
OP&F Cash	\$97,083,280	0.7%						\$97,083,280		
Total	\$13,926,704,912	100.0%	\$3,723,633,194	\$3,543,525,195	\$2,891,374,674	\$873,474,567	\$727,729,557	\$1,314,680,899	\$97,083,280	\$755,203,546

GROWTH OF A DOLLAR



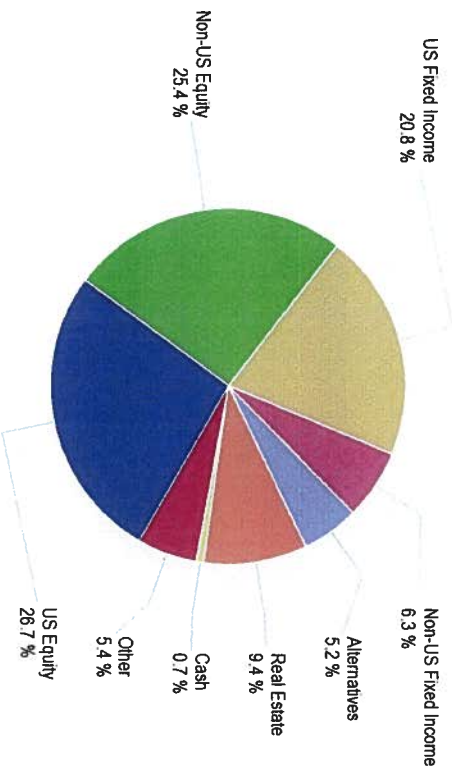
OP&F

	Actual	Target	Difference
US Equity	26.7	31.6	-4.9
Intl Equity	25.4	21.7	3.7
Alternatives	5.2	5.3	-0.0
Total Equity	57.4	58.6	-1.1
Fixed Income	27.0	31.5	-4.4
Real Estate	9.4	10.0	-0.6
Short Term Investments	6.1	0.0	6.1
Total Debt	42.6	41.5	1.1
	100.0	100.0	0.0

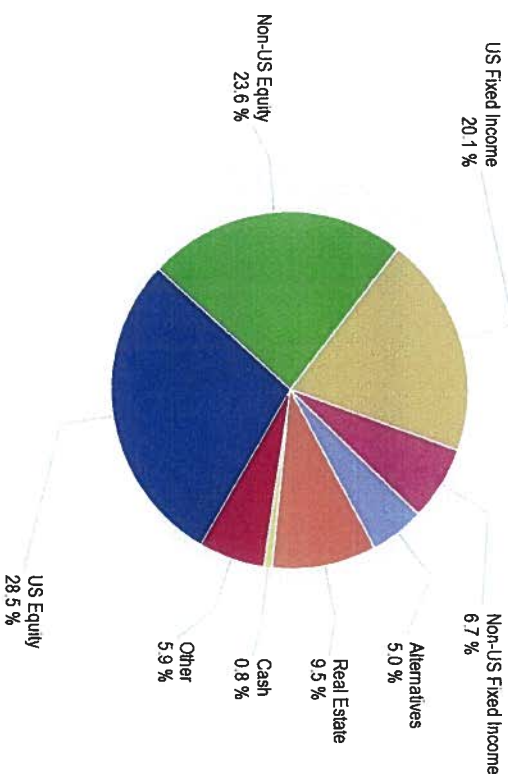
*Totals may not add up to 100% due to rounding.

Ohio Police & Fire Asset Allocation

Current Allocation
December 31, 2013

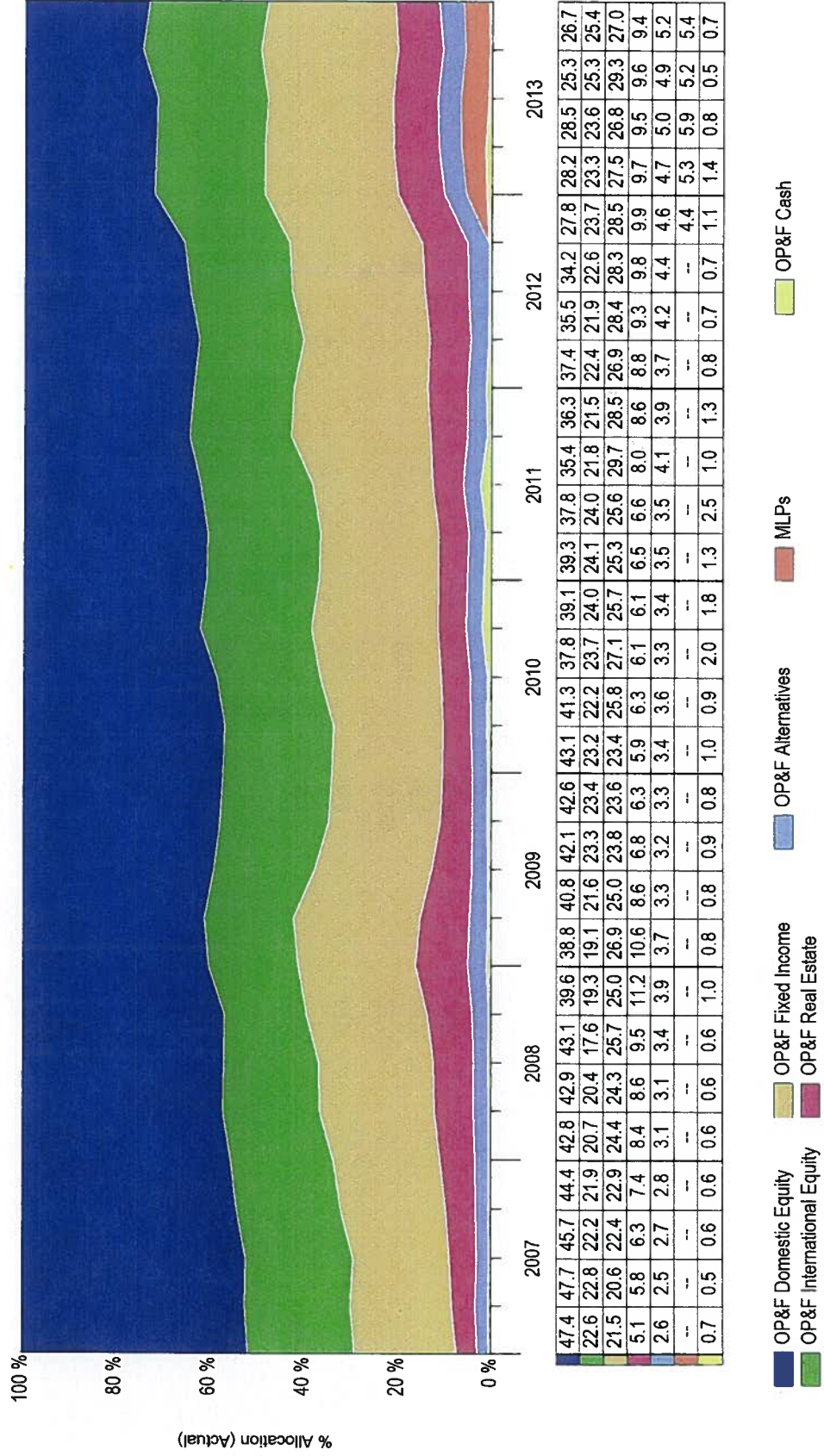


Previous Allocation
June 30, 2013



Ohio Police & Fire Asset Allocation

Asset Allocation History
7 Years Ending December 31, 2013



Ohio Police & Fire 10 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2004 Through December 31, 2013

Ohio Police & Fire **OPF Total Fund Benchmark**

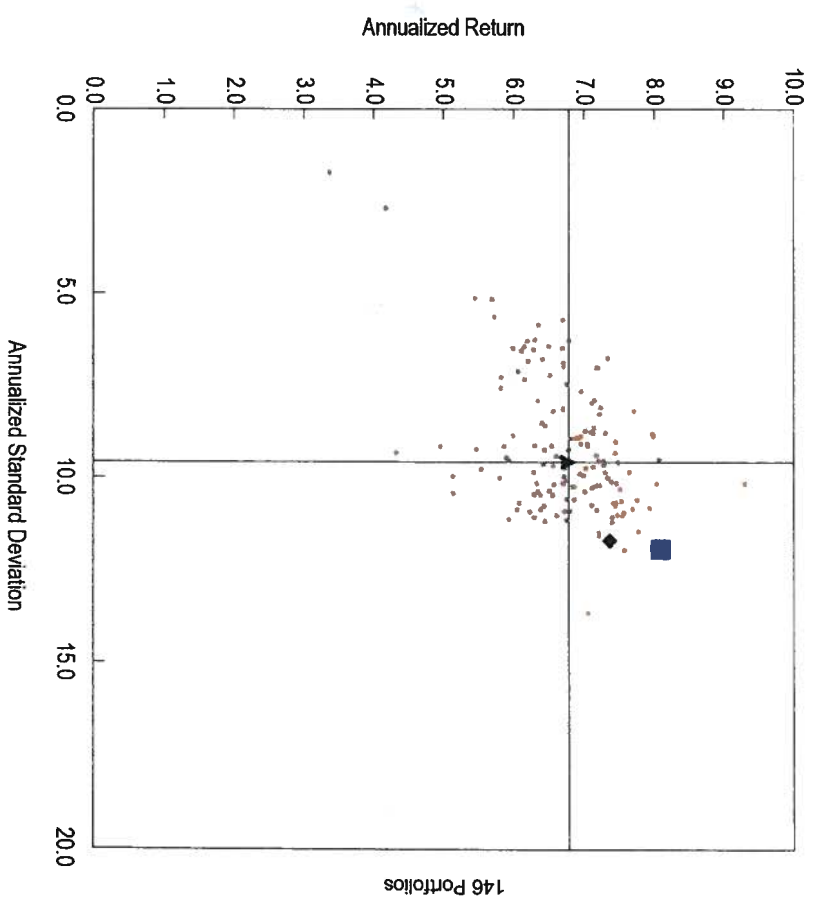
RETURN SUMMARY STATISTICS	
Number of Periods	40
Maximum Return	13.00
Minimum Return	-15.45
Annualized Return	8.09
Total Return	117.72
Annualized Excess Return Over Risk Free	6.53
Annualized Excess Return	0.73

RISK SUMMARY STATISTICS	
Beta	1.02
Upside Deviation	6.27
Downside Deviation	10.00

RISK/RETURN SUMMARY STATISTICS	
Annualized Standard Deviation	11.93
Alpha	0.14
Sharpe Ratio	0.55
Excess Return Over Market / Risk	0.06
Tracking Error	0.87
Information Ratio	0.84

CORRELATION STATISTICS	
R-Squared	1.00
Correlation	1.00

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



- Ohio Police & Fire
- ◆ OPF Total Fund Benchmark
- ▲ Universe Median
- InvestorForce Public DB Gross

Police & Fire Pension Fund

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (Cont)	Jan-12	Jun-12	15.0	CS Developed Countries HY
			6.5	Bridgewater Custom GIPS
			10.0	NCREIF ODCE NOF 1 Mo Lag
			4.0	Wilshire 5000+3% Qtr. Lagged
			1.0	CPI + 5%
			21.7	OP&F MSCI ex-US I/S Free IMI
			10.0	Barclays Aggregate
			31.9	Wilshire 5000
			Jul-12	Sep-12
	10.0	NCREIF ODCE NOF 1 Mo Lag		
	21.7	OP&F MSCI ex-US I/S Free IMI		
	Oct-12	Dec-13	1.3	CPI + 5%
			6.5	Bridgewater Custom GIPS
			31.6	Wilshire 5000
			4.0	Wilshire 5000+3% Qtr. Lagged
10.0			Barclays Aggregate	
21.7			OP&F MSCI ex-US I/S Free IMI	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (Cont)				

OP&F's custom policy index is shown above.

Police & Fire Pension Fund

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description	
Policy Index	Jan-09	Mar-09	3.0	Wilshire 5000+3% Qtr. Lagged	
			6.0	CS Developed Countries HY	
			11.0	BC Aggregate	
				22.0	MSCI ACWI X US (N)
				43.0	Wilshire 5000
				6.0	Bridgewater Custom GIPS
	Apr-09	Jun-09	9.0	NCREIF ODCE NOF 1 Mo Lag	
			6.0	Bridgewater Custom GIPS	
			42.0	Wilshire 5000	
	Jul-09	Sep-09	22.0	MSCI ACWI X US (N)	
11.0			BC Aggregate		
6.0			CS Developed Countries HY		
4.0			Wilshire 5000+3% Qtr. Lagged		
9.0			NCREIF ODCE NOF 1 Mo Lag		
40.0			Wilshire 5000		
23.0			MSCI ACWI X US (N)		
Oct-09	Jun-10	10.0	BC Aggregate		
		7.0	CS Developed Countries HY		
		6.0	Bridgewater Custom GIPS		
		4.0	Wilshire 5000+3% Qtr. Lagged		
		10.0	NCREIF ODCE NOF 1 Mo Lag		
		39.0	Wilshire 5000		
		24.0	MSCI ACWI X US (N)		
			10.0	BC Aggregate	
			7.0	CS Developed Countries HY	
			6.0	Bridgewater Custom GIPS	
			4.0	Wilshire 5000+3% Qtr. Lagged	
			10.0	NCREIF ODCE NOF 1 Mo Lag	

Label	Quarter Start	Quarter End	Percent	Description	
Policy Index (cont.)	Jul-10	Dec-10	4.0	Wilshire 5000+3% Qtr. Lagged	
			6.5	Bridgewater Custom GIPS	
				9.7	CS Developed Countries HY
				10.0	BC Aggregate
				23.0	MSCI ACWI X US (N)
				36.9	Wilshire 5000
	Jan-11	Jun-11	10.0	NCREIF ODCE NOF 1 Mo Lag	
			4.0	Wilshire 5000+3% Qtr. Lagged	
				6.5	Bridgewater Custom GIPS
				11.4	CS Developed Countries HY
			9.8	BC Aggregate	
			22.3	MSCI ACWI X US (N)	
Jul-11	Dec-11	36.0	Wilshire 5000		
		10.0	NCREIF ODCE NOF 1 Mo Lag		
			36.0	Wilshire 5000	
			9.5	BC Aggregate	
			12.0	CS Developed Countries HY	
			6.5	Bridgewater Custom GIPS	
			4.0	Wilshire 5000+3% Qtr. Lagged	
			10.0	NCREIF ODCE NOF 1 Mo Lag	
			22.0	OP&F MSCI ex-US I/S Free IMI	

Police & Fire Pension Fund

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Apr-88	Sep-97	41.0	Wilshire 5000
			39.0	BC Aggregate
			10.0	MSCI EAFE Index (Net)
			9.0	Wilshire Real Estate Fund
			1.0	S&P 500 + 5%
	Oct-97	Mar-01	41.0	Wilshire 5000
			35.0	BC Aggregate
			10.0	MSCI EAFE Index (Net)
			8.0	Wilshire Real Estate Fund
			5.0	MSCI Em Mkts Index (Gross)
			1.0	S&P 500 + 5%
	Apr-01	Jun-01	41.0	Wilshire 5000
			35.0	BC Aggregate
		10.0	MSCI EAFE Index (Net)	
		8.0	Wilshire Real Estate Fund	
		5.0	MSCI Em Mkts Index (Gross)	
		1.0	S&P 500 (lagged) + 5%	
Jul-01	Mar-02	46.0	Wilshire 5000	
		18.0	BC Aggregate	
		17.0	MSCI EAFE Index (Net)	
		8.0	Wilshire Real Estate Fund	
		5.0	CS Developed Countries HY	
		3.0	MSCI Em Mkts Index (Gross)	
		3.0	Wilshire 5000+3% Qtr. Lagged	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Apr-02	Sep-04	17.0	MSCI EAFE Index (N)
			5.0	CS Developed Countries HY
			3.0	MSCI EM Index (G)
			1.0	Wilshire 5000+5% Lagged
			18.0	BC Aggregate
			48.0	Wilshire 5000
			8.0	NCREIF ODCE NOF 1 Mo Lag
	Oct-04	Dec-04	100.0	OPF TF Policy
	Jan-05	Dec-06	46.0	Wilshire 5000
			5.0	CS Developed Countries HY
			20.0	MSCI ACWI X US (N)
			3.0	Wilshire 5000+5% Lagged
			18.0	BC Aggregate
		8.0	NCREIF ODCE NOF 1 Mo Lag	
Jan-07	Sep-08	46.0	Wilshire 5000	
		5.0	CS Developed Countries HY	
		20.0	MSCI ACWI X US (N)	
		3.0	Wilshire 5000+3% Qtr. Lagged	
		18.0	BC Aggregate	
		8.0	NCREIF ODCE NOF 1 Mo Lag	
Oct-08	Dec-08	12.0	BC Aggregate	
		21.0	MSCI ACWI X US (N)	
		45.0	Wilshire 5000	
		3.0	Wilshire 5000+3% Qtr. Lagged	
		6.0	Bridgewater Custom GIPS	
		5.0	CS Developed Countries HY	
		8.0	NCREIF ODCE NOF 1 Mo Lag	

School Employees Retirement System (SERS)

School Employees Retirement System

Actuarial Rate: 7.75%

Ending December 31, 2013

	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
School Employees Retirement System					
SERS Total Fund Benchmark	11.0%	16.9%	10.1%	11.8%	7.0%
Over/Under	9.5%	15.3%	9.4%	11.3%	6.2%
	1.5%	1.6%	0.7%	0.5%	0.1%
SERS Domestic Equity	19.0%	35.8%	16.8%	19.7%	7.9%
Russell 3000	17.1%	33.6%	16.2%	18.7%	7.9%
Over/Under	1.9%	2.2%	0.6%	1.0%	0.0%
SERS International Equity	14.4%	17.3%	6.7%	14.4%	9.0%
SERS Intl Equity Benchmark	14.1%	17.2%	6.7%	13.0%	9.0%
Over/Under	0.3%	0.1%	0.6%	1.4%	1.0%
SERS Global Fixed	1.4%	-0.4%	5.1%	8.9%	5.8%
Barclays Aggregate	0.4%	-2.0%	3.3%	4.4%	4.5%
Over/Under	1.0%	1.6%	1.8%	4.5%	1.3%
SERS Real Estate					
SERS Real Estate	7.4%	12.0%	12.0%	0.3%	5.8%
SERS Total Real Estate Benchmark	5.5%	11.0%	12.7%	6.1%	9.9%
Over/Under	1.9%	1.0%	-0.7%	-5.8%	-3.1%
SERS Alternatives					
SERS Private Equity	10.3%	17.3%	14.8%	8.2%	9.6%
SERS PE Benchmark	10.7%	22.3%	19.3%	13.0%	10.6%
Over/Under	-0.4%	-5.0%	-4.5%	-4.8%	-1.0%
SERS Hedge Funds	5.6%	9.8%	5.4%	8.7%	-
SERS Hedge Fund Benchmark	5.9%	9.4%	2.7%	6.7%	-
Over/Under	-0.3%	0.4%	2.7%	2.0%	-
SERS Opportunistic	6.8%	-	-	-	-
SERS Opportunistic Benchmark	9.5%	15.3%	-	-	-
Over/Under	-2.7%				
SERS Cash	0.0%	0.1%	0.2%	0.3%	2.1%
SERS Short-Term Benchmark	0.0%	0.0%	0.0%	0.1%	1.5%
Over/Under	0.0%	0.1%	0.2%	0.2%	0.6%

School Employees Retirement System

Asset Allocation by Segment

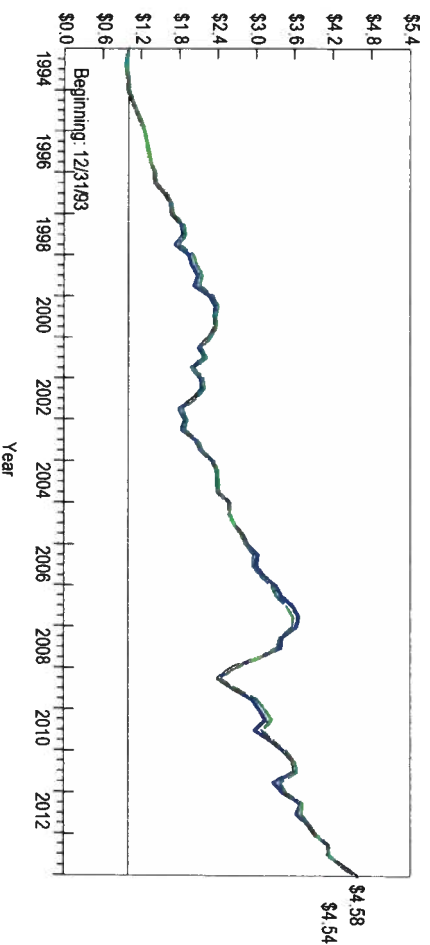
As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
SERS Domestic Equity	\$3,180,306,785	26.1%	\$3,180,306,785					
SERS International Equity	\$3,147,714,276	25.8%		\$3,147,714,276				
SERS Global Fixed	\$1,852,365,205	15.2%			\$1,852,365,205			
SERS Real Estate							\$1,268,407,417	
SERS Alternatives						\$1,086,105,682		\$166,882,855
SERS Private Equity	\$1,086,105,682	8.9%				\$1,086,105,682		
SERS Hedge Funds	\$1,453,139,614	11.9%				\$1,453,139,614		
SERS Opportunistic	\$24,149,287	0.2%				\$24,149,287		
SERS Cash	\$166,882,855	1.4%						\$166,882,855
Total	\$12,179,071,121	100.0%	\$3,180,306,785	\$3,147,714,276	\$1,852,365,205	\$2,563,394,583	\$1,268,407,417	\$166,882,855

SERS	Actual	Target	Difference
US Equity	26.1	22.5	3.6
Intl Equity	25.9	22.5	3.4
Alternatives	21.1	25.0	-4.0
Total Equity	73.0	70.0	3.0
Fixed Income	15.2	19.0	-3.8
Real Estate	10.4	10.0	0.4
Short Term Investments	1.4	1.0	0.4
Total Debt	27.0	30.0	-3.0
	100.0	100.0	0.0

*Totals may not add up to 100% due to rounding.

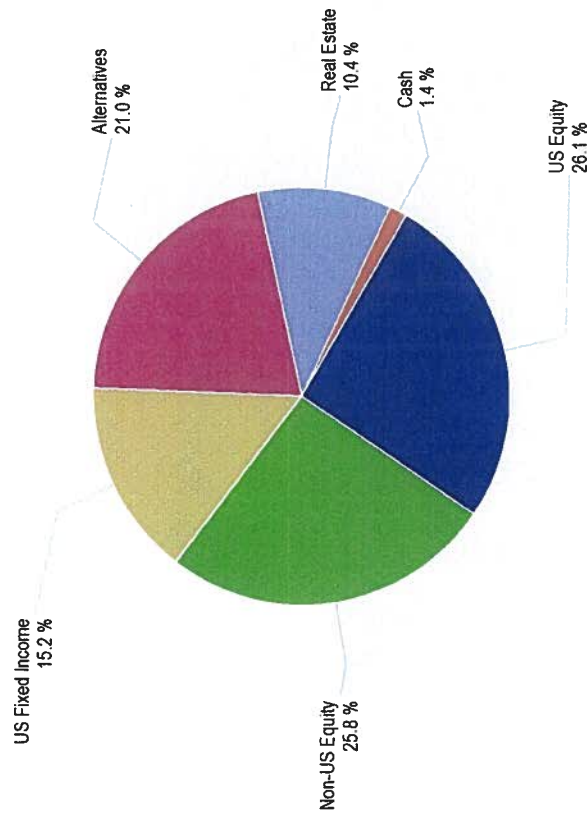
GROWTH OF A DOLLAR



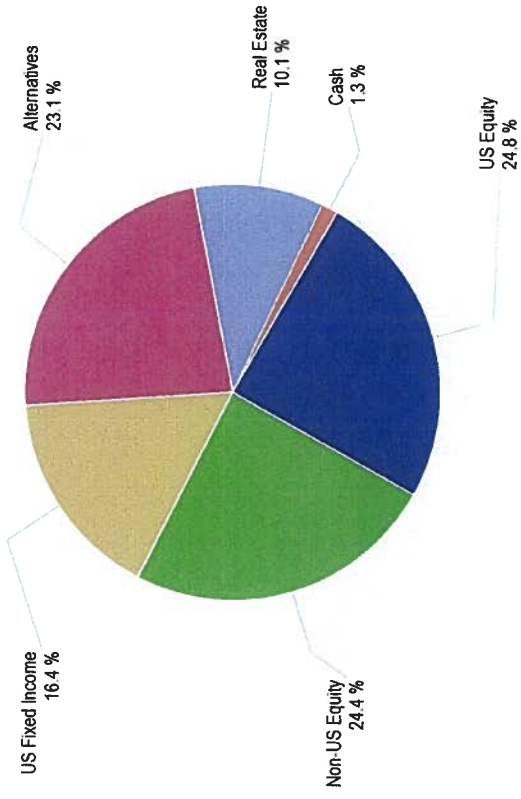
School Employees Retirement System

Asset Allocation

Current Allocation
December 31, 2013

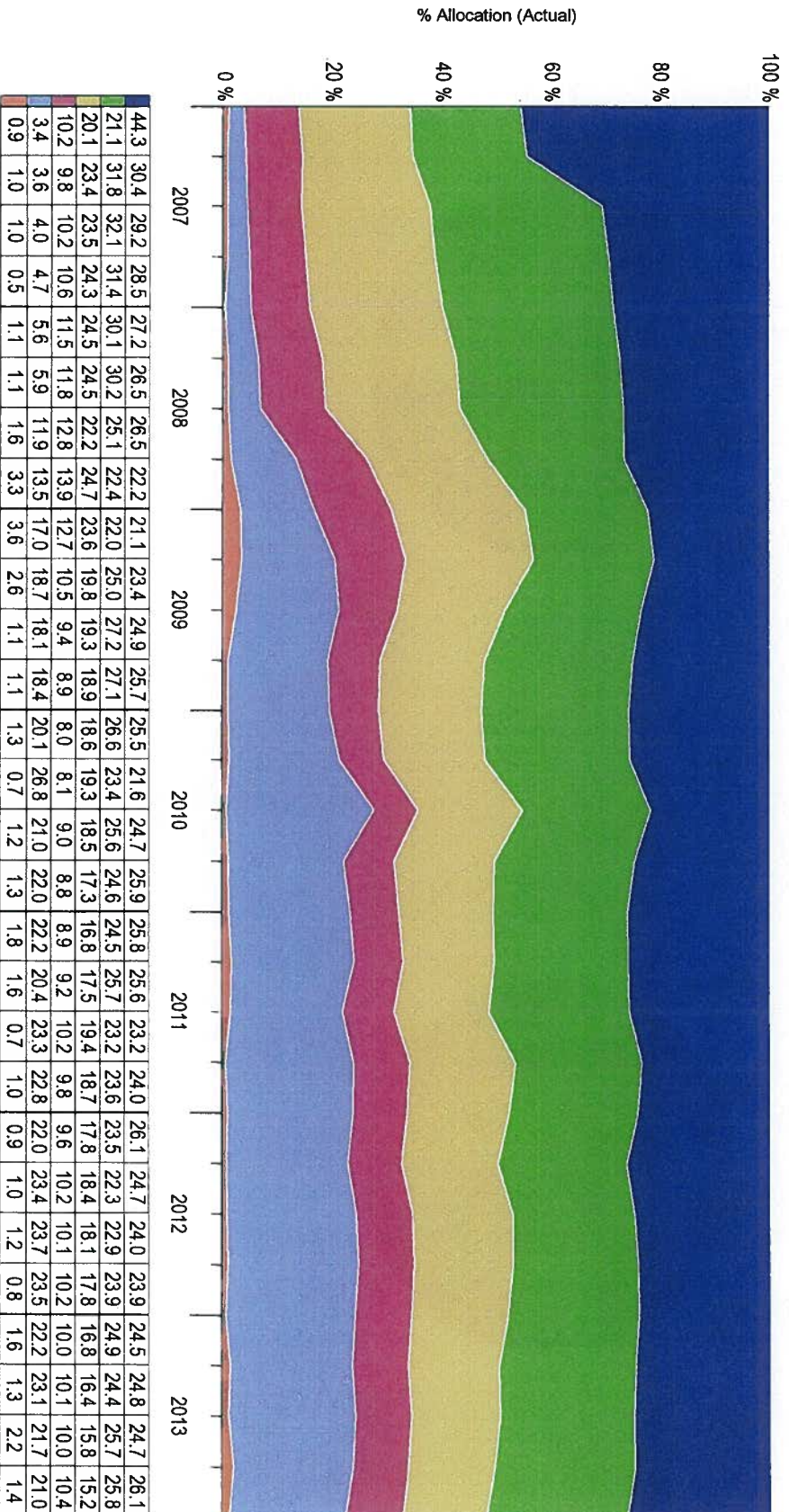


Previous Allocation
June 30, 2013



School Employees Retirement System Asset Allocation

Asset Allocation History
7 Years Ending December 31, 2013



School Employees Retirement System 10 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2004 Through December 31, 2013

School Employees Retirement System	SERS Total Fund Benchmark
---	----------------------------------

RETURN SUMMARY STATISTICS

Number of Periods	40	40
Maximum Return	11.01	11.81
Minimum Return	-13.65	-12.85
Annualized Return	7.04	6.87
Total Return	97.47	94.41
Annualized Excess Return Over Risk Free	5.48	5.31
Annualized Excess Return	0.17	0.00

RISK SUMMARY STATISTICS

Beta	1.08	1.00
Upside Deviation	5.36	5.29
Downside Deviation	9.36	8.76

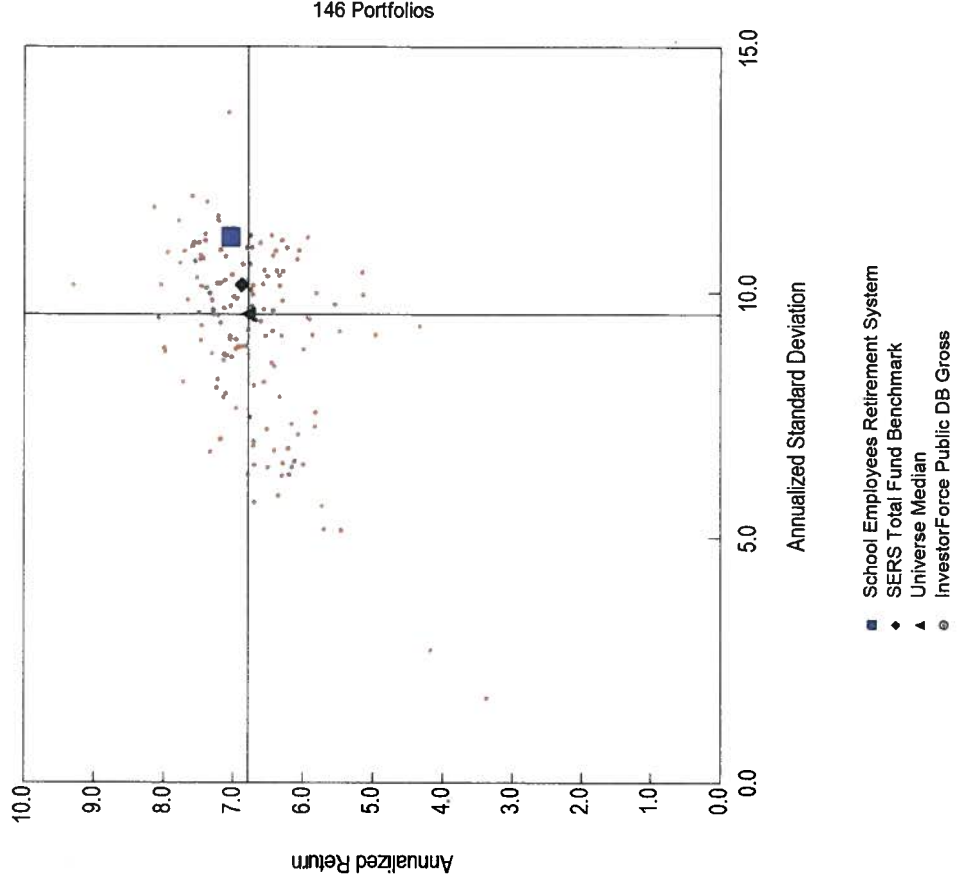
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	11.13	10.16
Alpha	-0.09	0.00
Sharpe Ratio	0.49	0.52
Excess Return Over Market / Risk	0.01	0.00
Tracking Error	1.82	0.00
Information Ratio	0.09	--

CORRELATION STATISTICS

R-Squared	0.98	1.00
Correlation	0.99	1.00

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



School Employees Retirement System

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Mar-07*	Dec-07	30.0	Russell 3000
			24.0	BC Aggregate
			30.0	MSCI ACWI ex US (Developed - 50% Hdg)
			10.0	80% NCREIF (arrears), 20% NAREIT
			5.0	S&P 500 (1Qtr arrears) + 3%
			1.0	Citigroup 30 Day T-Bill
	Dec-07	Jan-09	29.8	Russell 3000
			24.0	BC Aggregate
			29.8	MSCI ACWI ex US (Developed - 50% Hdg)
			10.0	80% NCREIF (arrears), 20% NAREIT
			5.4	S&P 500 (1Qtr arrears) + 3%
			1.0	Citigroup 30 Day T-Bill
Feb-09	Jun-10	27.5	Russell 3000	
		24.0	BC Aggregate	
		27.5	MSCI ACWI ex US (Developed - 50% Hdg)	
		10.0	80% NCREIF (arrears), 20% NAREIT	
		10.0	S&P 500 (1Qtr arrears) + 3%	
		1.0	Citigroup 30 Day T-Bill	
Jul-10	Jun-13	22.5	Russell 3000	
		22.5	MSCI ACWI ex US (Developed - 50% Hdg)	
		19.0	Barclays Capital U.S. Aggregate Bond	
		10.0	NCREIF Property Index (one quarter in arrears)	
		10.0	S&P 500 (1Qtr arrears) + 3%	
		15.0	HFRI Fund-of-Funds Composite	
		1.0	Citigroup 30 Day T-Bill	
Jul-13	Dec-13	22.5	Russell 3000	
		22.5	MSCI ACWI ex US 50% hedged-NET	
		19.0	Barclays Capital U.S. Aggregate Bond	
		10.0	NCREIF Property Index (one quarter in arrears)	
		10.0	S&P 500 (1Qtr arrears) + 3%	
		15.0	HFRI Fund-of-Funds Composite + 1%	
		1.0	Citigroup 30 Day T-Bill	

*The SERS custom policy index calculation was implemented on May 31, 2007.

SERS custom policy index is shown above.

School Employees Retirement System

Quarter Ending 12/31/2013

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-94	Sep-94	45.0	Standard & Poors 500
			28.0	ML Domestic Master Bond Idx
			10.0	MSCI EAFE (Net)
			10.0	NCREIF Classic Ppty Idx (1 Qtr arrear)
			5.0	Citigroup 30 Day T-Bill
	2.0	S&P 500 + 5%		
	Dec-94	Dec-94	45.0	Standard & Poors 500
			28.0	ML Domestic Master Bond Idx
			10.0	MSCI EAFE 50% Hedged
			10.0	NCREIF Classic Ppty Idx (1 Qtr arrear)
			5.0	Citigroup 30 Day T-Bill
	2.0	S&P 500 + 5%		
	Mar-95	Jun-95	45.0	Russell 3000
			28.0	ML Domestic Master Bond Idx
			10.0	MSCI EAFE 50% Hedged
10.0			NCREIF Classic Ppty Idx (1 Qtr arrear)	
5.0			Citigroup 30 Day T-Bill	
2.0	S&P 500 + 5%			
Sep-95	Mar-97	45.0	Russell 3000	
		28.0	BC Aggregate	
		10.0	MSCI EAFE 50% Hedged	
		10.0	NCREIF Classic Ppty Idx (1 Qtr arrear)	
		5.0	Citigroup 30 Day T-Bill	
2.0	S&P 500 + 5%			
Jun-97	Jun-97	45.0	Russell 3000	
		28.0	BC Aggregate	
		15.0	MSCI EAFE 50% Hedged	
		10.0	NCREIF Classic Ppty Idx (1 Qtr arrear)	
		1.0	Citigroup 30 Day T-Bill	
1.0	S&P 500 + 5%			

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (cont.)	Sep-97	Jun-99	45.0	Russell 3000
			28.0	BC Aggregate
			14.5	MSCI EAFE 50% Hedged
			0.5	MSCI Em Mkts Free
			10.0	NCREIF
	1.0	Citigroup 30 Day T-Bill		
	1.0	S&P 500 +5%		
	Sep-99	Dec-99	45.0	Russell 3000
			28.0	BC Aggregate
			14.0	MSCI EAFE 50% Hedged
			1.0	MSCI Em Mkts Free
			10.0	NCREIF
	1.0	Citigroup 30 Day T-Bill		
	1.0	S&P 500 +5%		
	Mar-00	Jun-01	48.0	Russell 3000
23.0			BC Aggregate	
16.0			MSCI ACWI ex US (Developed - 50% Hdg)	
10.0			NCREIF	
1.0			S&P 500 +5%	
2.0	Citigroup 30 Day T-Bill			
Sep-01	Jun-02	47.0	Russell 3000	
		23.0	BC Aggregate	
		16.0	MSCI ACWI ex US (Developed - 50% Hdg)	
		10.0	NCREIF	
		2.0	Private Equity (0% return arrears switch)	
2.0	Citigroup 30 Day T-Bill			
Sep-02	Mar-07	46.0	Russell 3000	
		23.0	BC Aggregate	
		16.0	MSCI ACWI ex US (Developed - 50% Hdg)	
		10.0	80% NCREIF (arrears), 20% NAREIT	
		3.0	S&P 500 (1Qtr arrears) + 3%	
2.0	Citigroup 30 Day T-Bill			

Highway Patrol Retirement System (HPRS)

Highway Patrol Retirement System

Actuarial Rate: 8.0%

	Ending December 31, 2013				
	6 Mo	1 Yr	3 Yrs	5 Yrs	10 Yrs
Highway Patrol Retirement System	11.5%	19.1%	8.9%	12.6%	6.8%
HPRS Total Fund Benchmark	10.5%	16.8%	10.1%	12.9%	7.6%
Over/Under	1.0%	2.3%	-1.2%	-0.3%	-0.8%
HPRS Domestic Equity	17.4%	35.6%	15.9%	20.2%	8.6%
HPRS Domestic Equity Benchmark	17.1%	33.6%	16.4%	19.3%	8.3%
Over/Under	0.3%	2.0%	-0.5%	0.9%	0.3%
HPRS International Equity	16.5%	19.1%	6.3%	12.0%	7.2%
HPRS International Benchmark	15.5%	15.8%	5.6%	13.3%	7.5%
Over/Under	1.0%	3.3%	0.7%	-1.3%	-0.3%
HPRS Global Fixed Income	1.2%	-0.8%	4.3%	6.8%	5.4%
Barclays Aggregate	0.4%	-2.0%	3.3%	4.4%	4.5%
Over/Under	0.8%	1.2%	1.0%	2.4%	0.9%
HPRS Real Estate	4.7%	12.4%	4.9%	1.2%	2.0%
NCREIF Property Index	5.2%	11.0%	11.9%	5.7%	8.6%
Over/Under	-0.5%	1.4%	-7.0%	-4.5%	-6.6%
HPRS Alternatives					
HPRS Private Equity	8.5%	12.9%	2.2%	4.3%	--
HPRS Private Equity Benchmark	11.0%	25.6%	20.1%	14.2%	--
Over/Under	-2.5%	-12.7%	-17.9%	-9.9%	
HPRS Hedge Funds	4.5%	9.5%	3.5%	7.9%	--
HFRF Fund of Funds Composite Index	5.4%	9.0%	2.5%	4.9%	3.4%
Over/Under	-0.9%	0.5%	1.0%	3.0%	
HPRS Cash	0.0%	0.0%	0.0%	0.1%	2.1%
91 Day T-Bills	0.0%	0.0%	0.1%	0.1%	1.6%
Over/Under	0.0%	0.0%	-0.1%	0.0%	0.5%

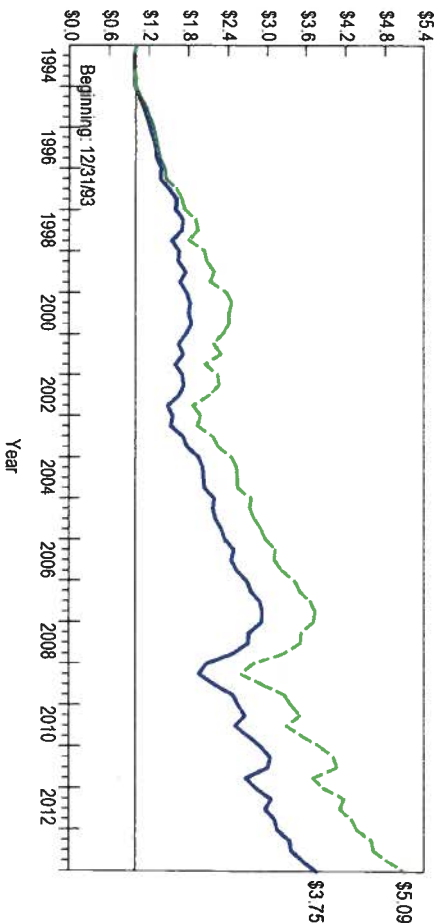
Highway Patrol Retirement System

Asset Allocation by Segment As Of December 31, 2013

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
HPRS Domestic Equity	\$306,099,454	37.8%	\$306,099,454					
HPRS International Equity	\$159,229,370	19.7%		\$159,229,370				
HPRS Global Fixed Income	\$157,287,686	19.4%			\$157,287,686			
HPRS Real Estate								
HPRS Real Estate	\$34,887,147	4.3%					\$34,887,147	
HPRS Alternatives								
HPRS Private Equity	\$79,226,800	9.8%				\$79,226,800		
HPRS Hedge Funds	\$66,165,561	8.2%				\$66,165,561		
HPRS Cash	\$7,340,493	0.9%						\$7,340,493
Total	\$810,236,511	100.0%	\$306,099,454	\$159,229,370	\$157,287,686	\$145,392,361	\$34,887,147	\$7,340,493

HPRS	Actual	Target	Difference
US Equity	37.8	35.0	2.8
Intl Equity	19.7	20.0	-0.4
Alternatives	17.9	17.5	0.4
Total Equity	75.4	72.5	2.9
Fixed Income	19.4	22.5	-3.1
Real Estate	4.3	5.0	-0.7
Short Term Investments	0.9	0.0	0.9
Total Debt	24.6	27.5	-2.9
	100.0	100.0	0.0

*Totals may not add up to 100% due to rounding.

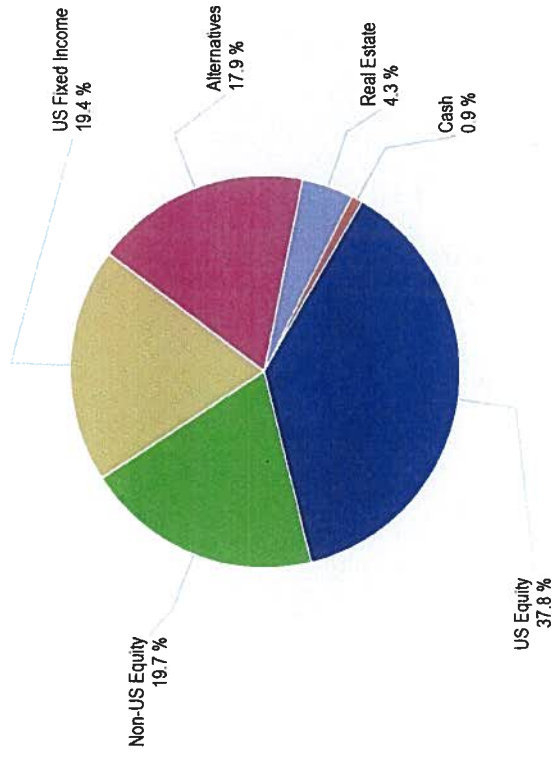


Highway Patrol Retirement System
HPRS Total Fund Benchmark

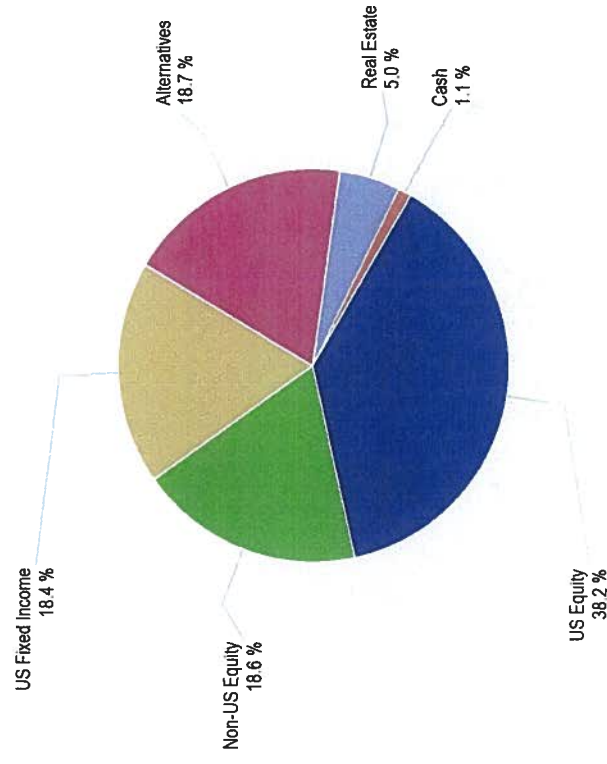
Highway Patrol Retirement System

Asset Allocation

Current Allocation
December 31, 2013

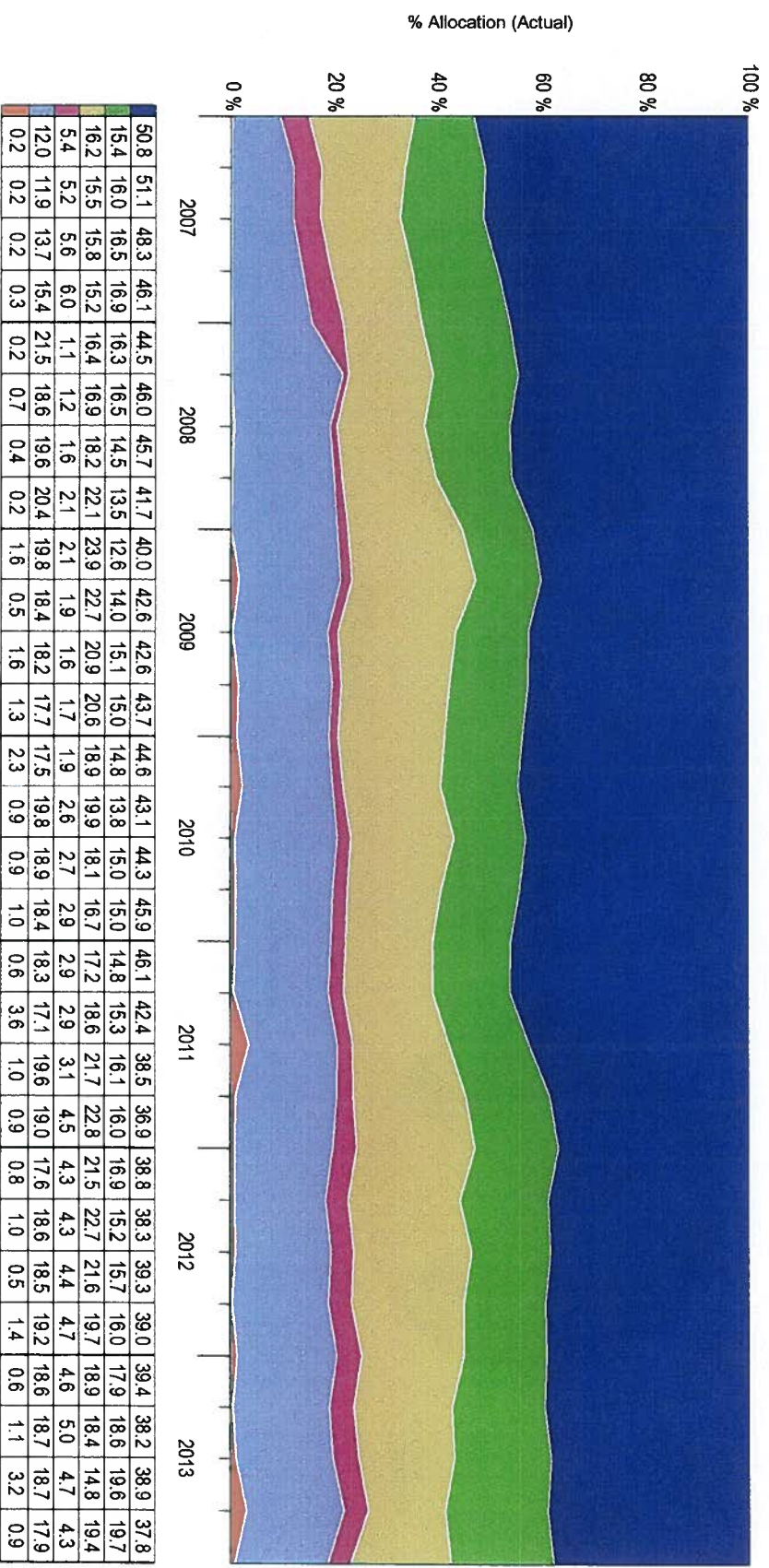


Previous Allocation
June 30, 2013



Highway Patrol Retirement System Asset Allocation

Asset Allocation History
7 Years Ending December 31, 2013



- HPRS Domestic Equity
- HPRS International Equity
- HPRS Global Fixed Income
- HPRS Real Estate
- HPRS Alternatives
- HPRS Cash

Highway Patrol Retirement System 10 Year Risk Statistics

RISK RETURN STATISTICS

January 01, 2004 Through December 31, 2013

Highway Patrol Retirement System
HPRS Total Fund Benchmark

RETURN SUMMARY STATISTICS	Highway Patrol Retirement System	HPRS Total Fund Benchmark
Number of Periods	40	40
Maximum Return	12.56	12.45
Minimum Return	-16.16	-14.32
Annualized Return	6.75	7.59
Total Return	92.21	107.81
Annualized Excess Return Over Risk Free	5.19	6.03
Annualized Excess Return	-0.84	0.00

RISK SUMMARY STATISTICS

Beta	1.08	1.00
Upside Deviation	6.25	6.02
Downside Deviation	9.94	8.99

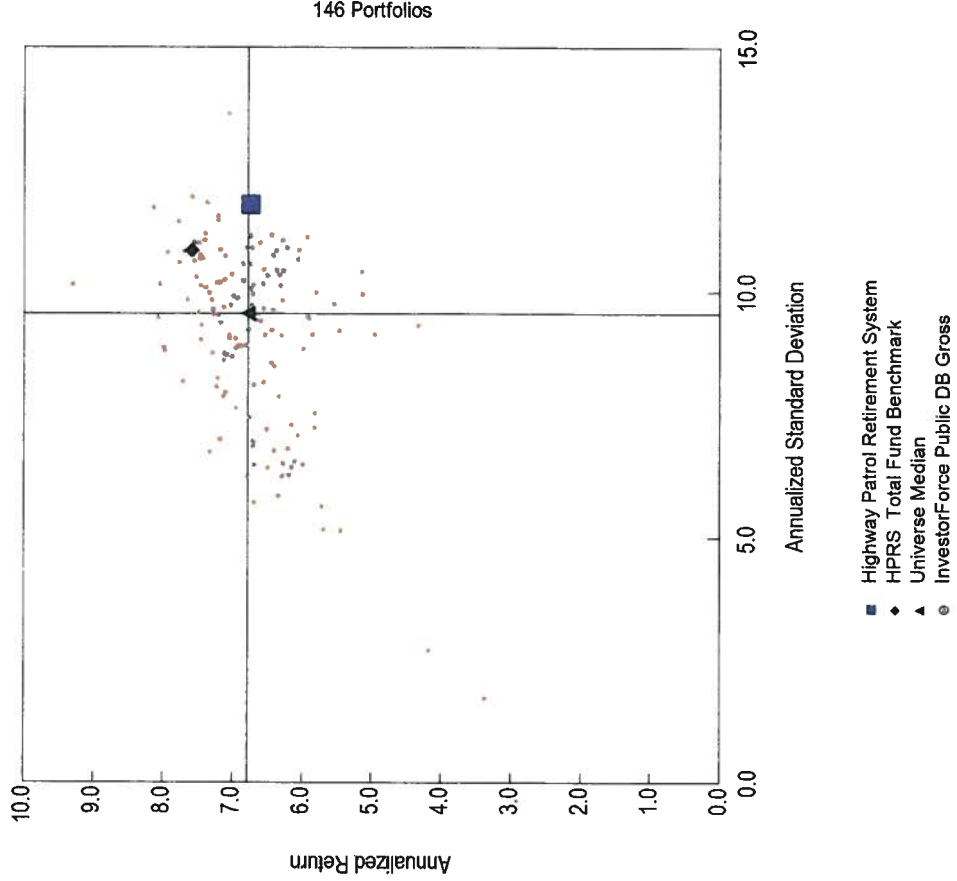
RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	11.80	10.85
Alpha	-0.33	0.00
Sharpe Ratio	0.44	0.56
Excess Return Over Market / Risk	-0.07	0.00
Tracking Error	1.71	0.00
Information Ratio	-0.49	--

CORRELATION STATISTICS

R-Squared	0.98	1.00
Correlation	0.99	1.00

Annualized Return vs. Annualized Standard Deviation
10 Years Ending December 31, 2013



Highway Patrol Retirement System

Quarter Ending 12/31/2013

Policy Index	Label	Quarter Start	Quarter End	Percent	Description
		Mar-94	Dec-95	50.0	BC Aggregate
		Mar-96	Dec-97	50.0	Standard & Poors 500
		Mar-98	Sep-99	40.0	BC Aggregate
		Dec-99	Dec-01	25.0	Russell 2000
				15.0	BC Aggregate
				10.0	MSCI EAFE (Net)
				10.0	NCREIF
		Mar-02	Dec-02	40.0	Standard & Poors 500
				20.0	Russell 2500
				20.0	BC Aggregate
				10.0	MSCI EAFE (Net)
				10.0	NCREIF
		Mar-03	Dec-06	32.0	Standard & Poors 500
				16.0	Russell 2500
				25.0	BC Aggregate
				15.0	MSCI EAFE (Net)
				12.0	NCREIF

HPRS' custom policy index is shown above.

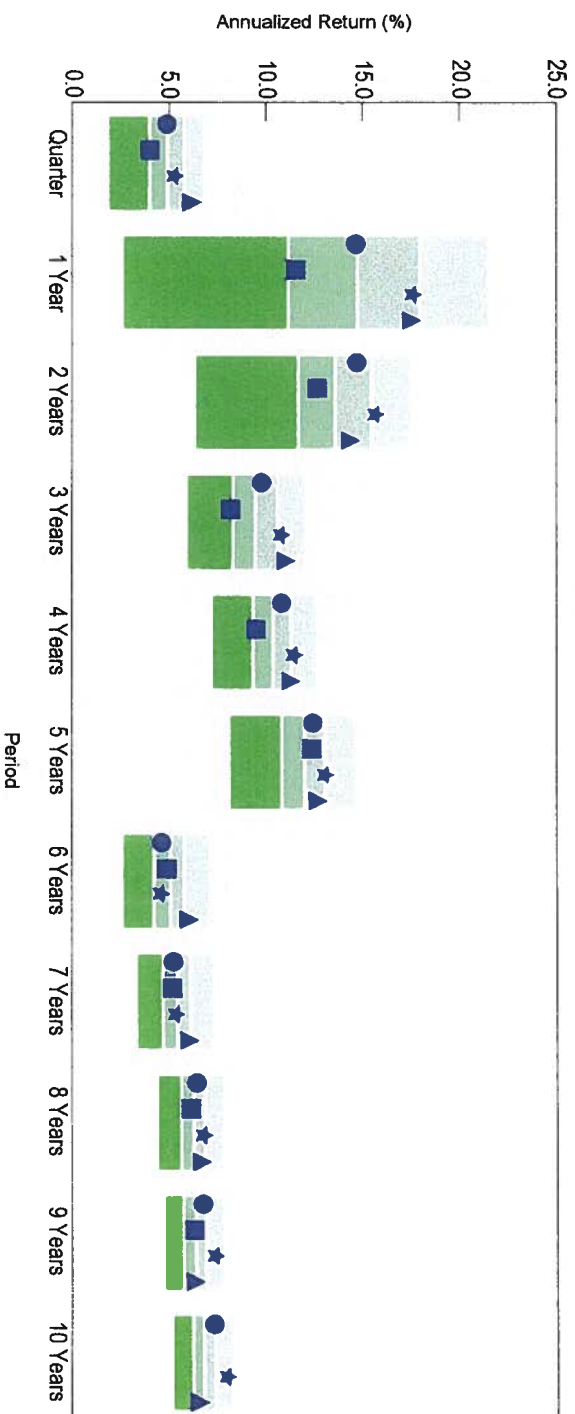
Policy Index	Label	Quarter Start	Quarter End	Percent	Description
		Mar-07	Jun-07	32.0	Standard & Poors 500
				18.0	Russell 2500
				15.0	MSCI ACWI ex US
				5.0	NCREIF
				10.0	CPI + 5%
				5.0	HFRI Fund of Funds
		Sep-07	Jun-10	15.0	BC Aggregate
				30.0	Standard & Poors 500
				15.0	Russell 2500
				20.0	BC Aggregate
				15.0	MSCI ACWI ex US
				5.0	NCREIF
				10.0	CPI + 5%
				5.0	HFRI Fund of Funds
		Sep-10	Jun-11	30.0	Standard & Poors 500
				15.0	Russell 2500
				20.0	BC Aggregate
				15.0	MSCI ACWI ex US
				5.0	NCREIF
				10.0	Wilshire 5000 +3% (one qtr. In arrears)
				5.0	HFRI Fund of Funds
		Jul-11	Dec-13	35.0	Russell 3000
				22.5	BC Aggregate
				20.0	MSCI ACWI ex US
				5.0	NCREIF
				5.0	Wilshire 5000 +3% (one qtr. In arrears)
				12.5	HFRI Fund of Funds

Performance Comparisons

Total Plans

InvestorForce All Defined Benefit Fund Universe

InvestorForce All DB Gross Accounts
Ending December 31, 2013

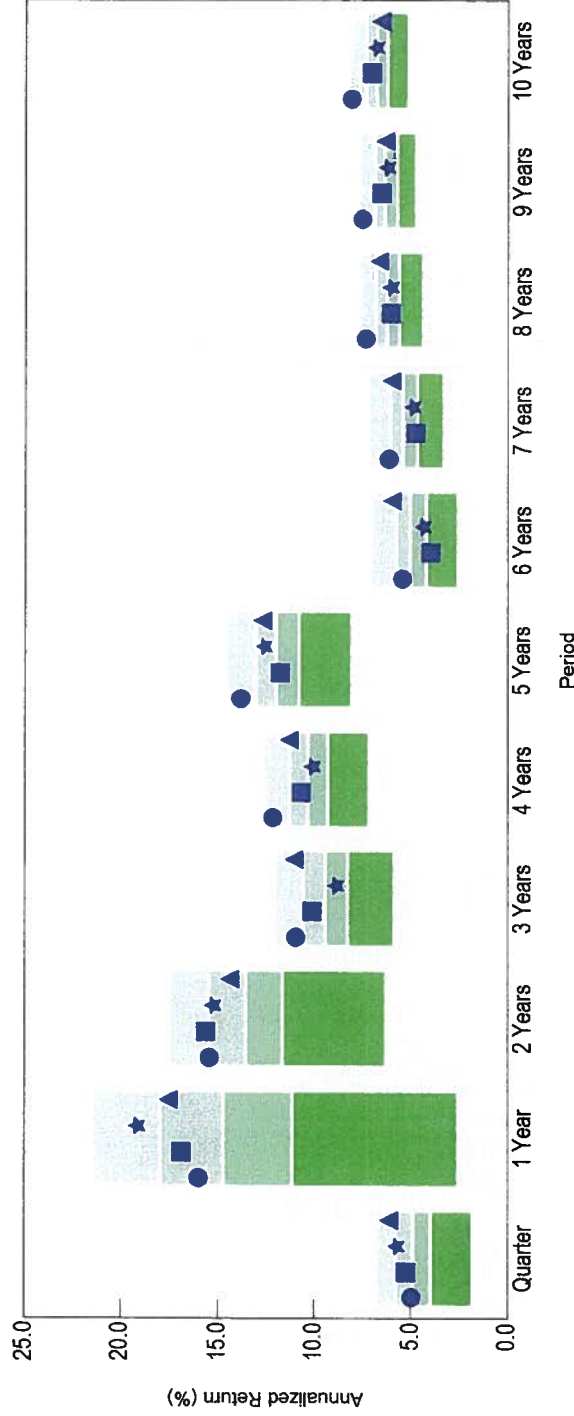


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	6.8	21.5	17.5	12.0	12.6	14.7	7.1	7.3	7.8	7.8	8.3
25th Percentile	5.8	18.0	15.5	10.6	11.3	13.1	5.8	6.1	6.8	6.9	7.3
Median	4.9	14.7	13.6	9.4	10.3	12.0	5.1	5.4	6.3	6.4	6.8
75th Percentile	4.0	11.2	11.7	8.3	9.3	10.8	4.2	4.7	5.6	5.7	6.2
95th Percentile	1.8	2.6	6.3	5.9	7.2	8.1	2.6	3.3	4.4	4.7	5.1
# of Portfolios	865	848	817	783	761	740	723	688	655	619	583

Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
Public Employees Retirement System (DB)	4.9 (51)	14.7 (51)	14.7 (34)	9.8 (43)	10.8 (37)	12.4 (41)	4.6 (65)	5.2 (60)	6.4 (45)	6.7 (35)	7.3 (28)
Public Employees Retirement System (HC)	4.0 (76)	11.5 (73)	12.7 (63)	8.2 (78)	9.5 (72)	12.4 (43)	4.9 (56)	5.2 (62)	6.1 (58)	6.3 (54)	-- (--)
State Teachers Retirement System	5.3 (38)	17.6 (29)	15.7 (22)	10.8 (20)	11.5 (22)	13.1 (26)	4.6 (65)	5.3 (55)	6.7 (32)	7.3 (12)	7.9 (10)
60/40 S&P 500/Barclays Aggregate	6.2 (15)	17.6 (29)	14.4 (39)	11.1 (14)	11.3 (25)	12.7 (35)	6.0 (19)	6.0 (29)	6.6 (35)	6.3 (52)	6.5 (61)

Total Plans
InvestorForce All Defined Benefit Fund Universe

InvestorForce All DB Gross Accounts
 Ending December 31, 2013

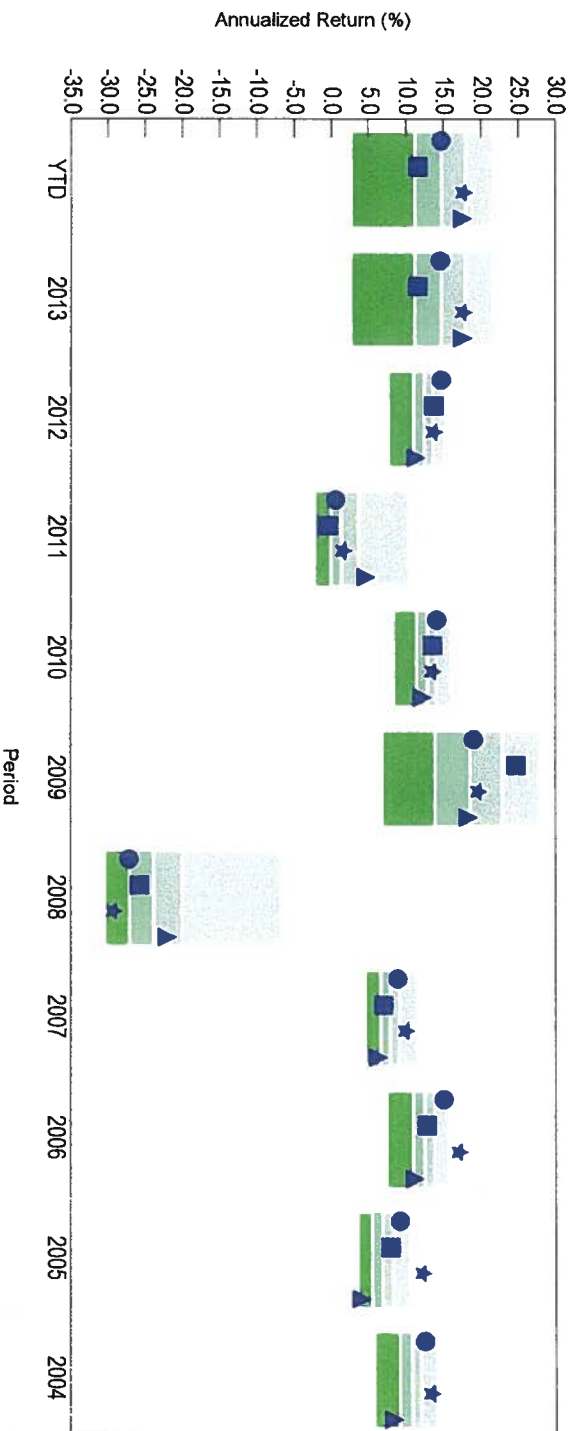


Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	6.8	21.5	17.5	12.0	12.6	14.7	7.1	7.3	7.8	7.8	8.3
25th Percentile	5.8	18.0	15.5	10.6	11.3	13.1	5.8	6.1	6.8	6.9	7.3
Median	4.9	14.7	13.6	9.4	10.3	12.0	5.1	5.4	6.3	6.4	6.8
75th Percentile	4.0	11.2	11.7	8.3	9.3	10.8	4.2	4.7	5.6	5.7	6.2
95th Percentile	1.8	2.6	6.3	5.9	7.2	8.1	2.6	3.3	4.4	4.7	5.1
# of Portfolios	865	848	817	783	761	740	723	688	655	619	583
Ohio Police & Fire	5.0 (48)	16.0 (41)	15.4 (26)	11.0 (15)	12.2 (10)	13.8 (13)	5.5 (38)	6.2 (23)	7.4 (11)	7.5 (9)	8.1 (7)
School Employees Retirement System	5.3 (38)	16.9 (35)	15.6 (23)	10.1 (36)	10.7 (41)	11.8 (55)	4.0 (81)	4.7 (73)	6.0 (61)	6.5 (43)	7.0 (38)
Highway Patrol Retirement System	5.7 (26)	19.1 (18)	15.2 (28)	8.9 (64)	10.1 (59)	12.6 (37)	4.3 (73)	4.9 (69)	6.0 (61)	6.2 (58)	6.8 (53)
60/40 S&P 500/Barclays Aggregate	6.2 (15)	17.6 (29)	14.4 (39)	11.1 (14)	11.3 (25)	12.7 (35)	6.0 (19)	6.0 (29)	6.6 (35)	6.3 (52)	6.5 (61)

Total Plans

InvestorForce All Defined Benefit Fund Universe - Calendar Year Performance

InvestorForce All DB Gross Accounts
Ending December 31, 2013

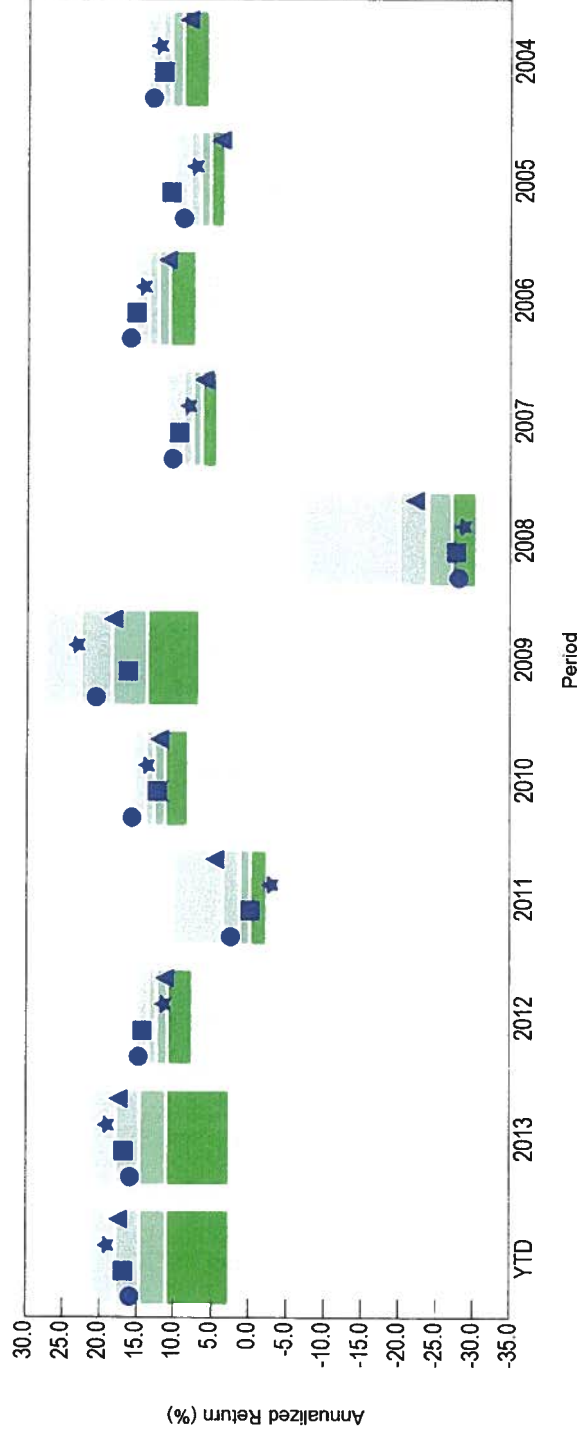


	YTD	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	21.5	21.5	15.1	10.3	16.0	27.7	-6.9	11.4	15.7	10.4	14.1
25th Percentile	18.0	18.0	13.6	3.7	14.0	22.9	-19.9	9.1	13.7	8.2	12.0
Median	14.7	14.7	12.4	1.4	12.8	18.6	-23.8	7.8	12.5	6.9	10.7
75th Percentile	11.2	11.2	11.0	0.0	11.4	13.9	-27.1	6.6	10.9	5.5	9.1
95th Percentile	2.6	2.6	7.6	-2.3	8.2	6.7	-30.4	4.4	7.3	3.5	5.6
# of Portfolios	848	848	814	758	730	718	702	679	617	593	551
Public Employees Retirement System (DB)	14.7 (51)	14.7 (51)	14.8 (8)	0.6 (65)	14.0 (25)	19.1 (48)	-27.1 (76)	8.9 (29)	15.0 (9)	9.2 (12)	12.5 (16)
Public Employees Retirement System (HC)	11.5 (73)	11.5 (73)	13.8 (21)	-0.4 (81)	13.5 (38)	24.8 (15)	-25.8 (67)	6.9 (71)	12.7 (46)	8.0 (28)	-- (--)
State Teachers Retirement System	17.6 (29)	17.6 (29)	13.8 (22)	1.6 (48)	13.5 (38)	19.7 (44)	-29.2 (90)	10.0 (15)	17.0 (1)	12.2 (2)	13.4 (10)
60/40 S&P 500/Barclays Aggregate	17.6 (29)	17.6 (29)	11.3 (71)	4.7 (20)	12.1 (65)	18.4 (52)	-22.1 (37)	6.2 (80)	11.1 (73)	4.0 (92)	8.3 (81)

Total Plans

InvestorForce All Defined Benefit Fund Universe - Calendar Year Performance

InvestorForce All DB Gross Accounts
Ending December 31, 2013

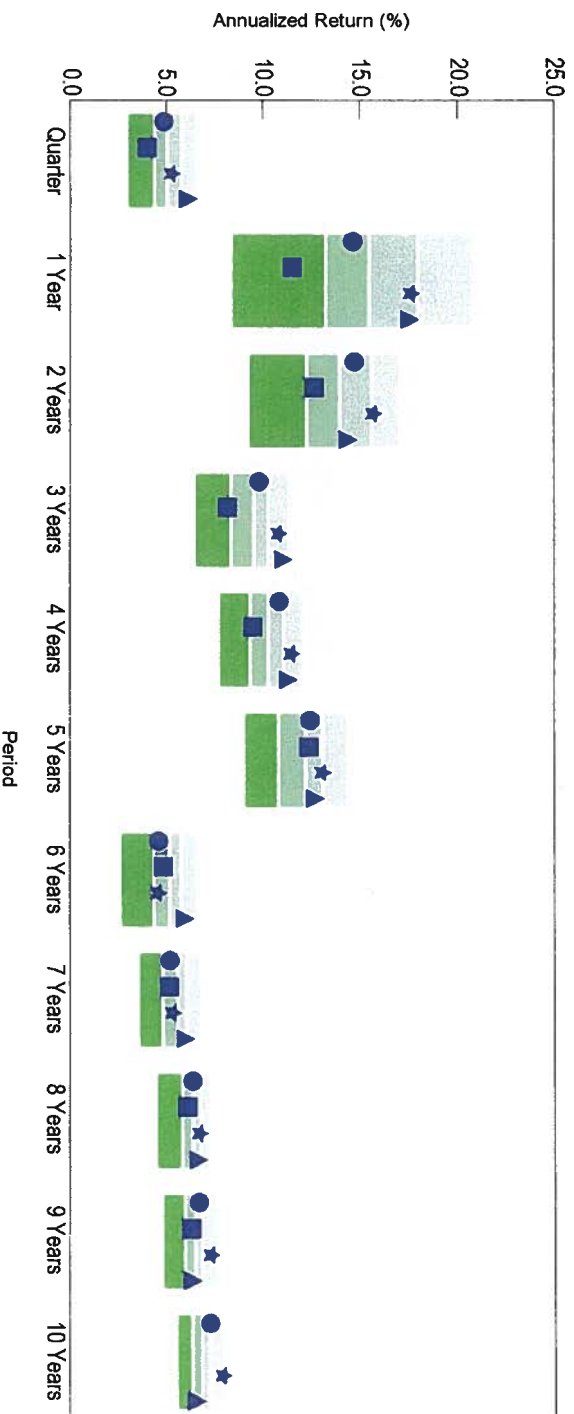


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	15.1	10.3	16.0	27.7	-6.9	11.4	15.7	10.4	14.1	14.1
25th Percentile	13.6	3.7	14.0	22.9	-19.9	9.1	13.7	8.2	12.0	12.0
Median	12.4	1.4	12.8	18.6	-23.8	7.8	12.5	6.9	10.7	10.7
75th Percentile	11.0	0.0	11.4	13.9	-27.1	6.6	10.9	5.5	9.1	9.1
95th Percentile	7.6	-2.3	8.2	6.7	-30.4	4.4	7.3	3.5	5.6	5.6
# of Portfolios	814	758	730	718	702	679	617	593	551	551
Ohio Police & Fire	16.0 (41)	2.5 (34)	15.9 (6)	20.7 (39)	-28.1 (83)	10.5 (11)	16.1 (3)	9.1 (14)	13.1 (11)	13.1 (11)
School Employees Retirement System	16.9 (35)	-0.1 (76)	12.4 (59)	16.4 (64)	-27.7 (81)	9.6 (19)	15.4 (8)	10.8 (4)	11.7 (31)	11.7 (31)
Highway Patrol Retirement System	19.1 (18)	-2.9 (98)	13.8 (29)	23.2 (23)	-28.8 (87)	8.3 (40)	14.3 (17)	7.4 (41)	12.2 (21)	12.2 (21)
60/40 S&P 500/Barclays Aggregate	17.6 (29)	11.3 (71)	4.7 (20)	18.4 (52)	-22.1 (37)	6.2 (80)	11.1 (73)	4.0 (92)	8.3 (81)	8.3 (81)

Total Plans

InvestorForce All Public Defined Benefit Fund Universe

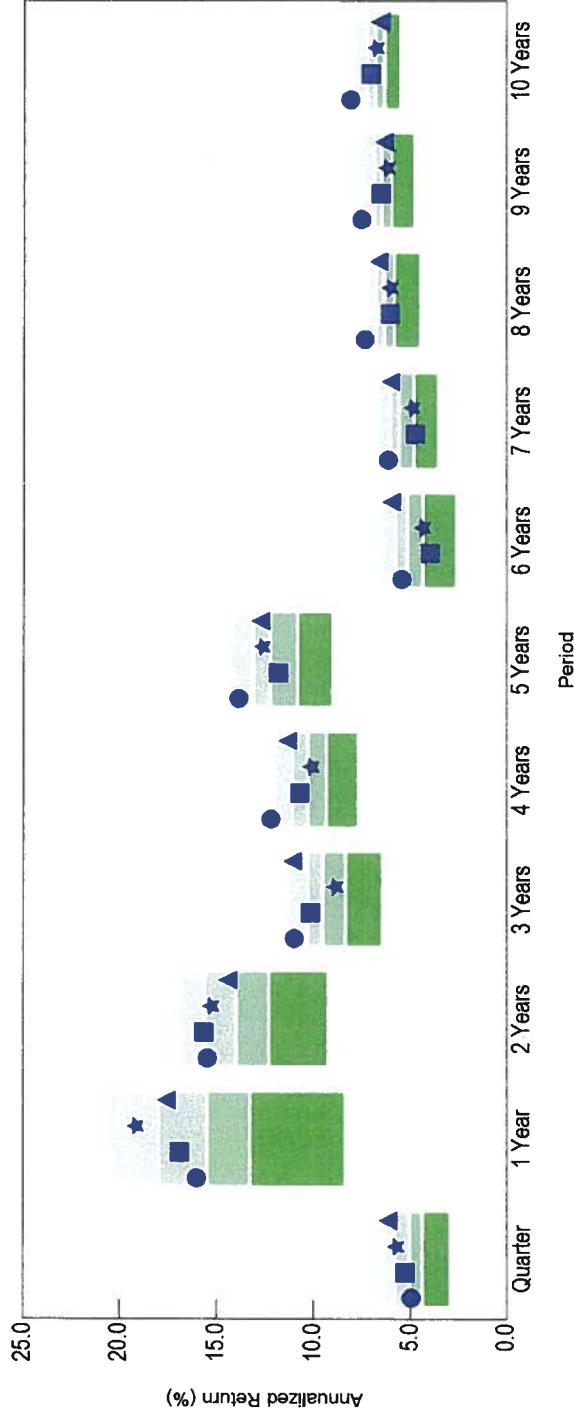
InvestorForce Public DB Gross Accounts
Ending December 31, 2013



	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	6.6	20.8	17.0	11.4	12.1	14.4	6.5	6.8	7.3	7.6	8.0
25th Percentile	5.8	18.0	15.6	10.3	11.1	13.1	5.8	6.1	6.8	6.9	7.2
Median	5.0	15.5	14.0	9.5	10.3	12.2	5.2	5.6	6.4	6.5	6.8
75th Percentile	4.4	13.3	12.3	8.4	9.4	10.8	4.4	4.8	5.8	6.0	6.3
95th Percentile	3.0	8.4	9.2	6.4	7.7	9.0	2.6	3.5	4.4	4.8	5.5
# of Portfolios	212	212	205	185	178	174	170	160	156	148	144
Public Employees Retirement System (DB)	4.9 (57)	14.7 (60)	14.7 (37)	9.8 (40)	10.8 (32)	12.4 (49)	4.6 (70)	5.2 (65)	6.4 (50)	6.7 (35)	7.3 (24)
Public Employees Retirement System (HC)	4.0 (85)	11.5 (86)	12.7 (66)	8.2 (82)	9.5 (72)	12.4 (49)	4.9 (61)	5.2 (67)	6.1 (67)	6.3 (59)	-- (--)
State Teachers Retirement System	5.3 (42)	17.6 (30)	15.7 (25)	10.8 (14)	11.5 (15)	13.1 (27)	4.6 (71)	5.3 (60)	6.7 (32)	7.3 (9)	7.9 (7)
60/40 S&P 500/Barclays Aggregate	6.2 (15)	17.6 (31)	14.4 (43)	11.1 (8)	11.3 (19)	12.7 (39)	6.0 (15)	6.0 (28)	6.6 (35)	6.3 (55)	6.5 (64)

Total Plans
InvestorForce All Public Defined Benefit Fund Universe

InvestorForce Public DB Gross Accounts
 Ending December 31, 2013

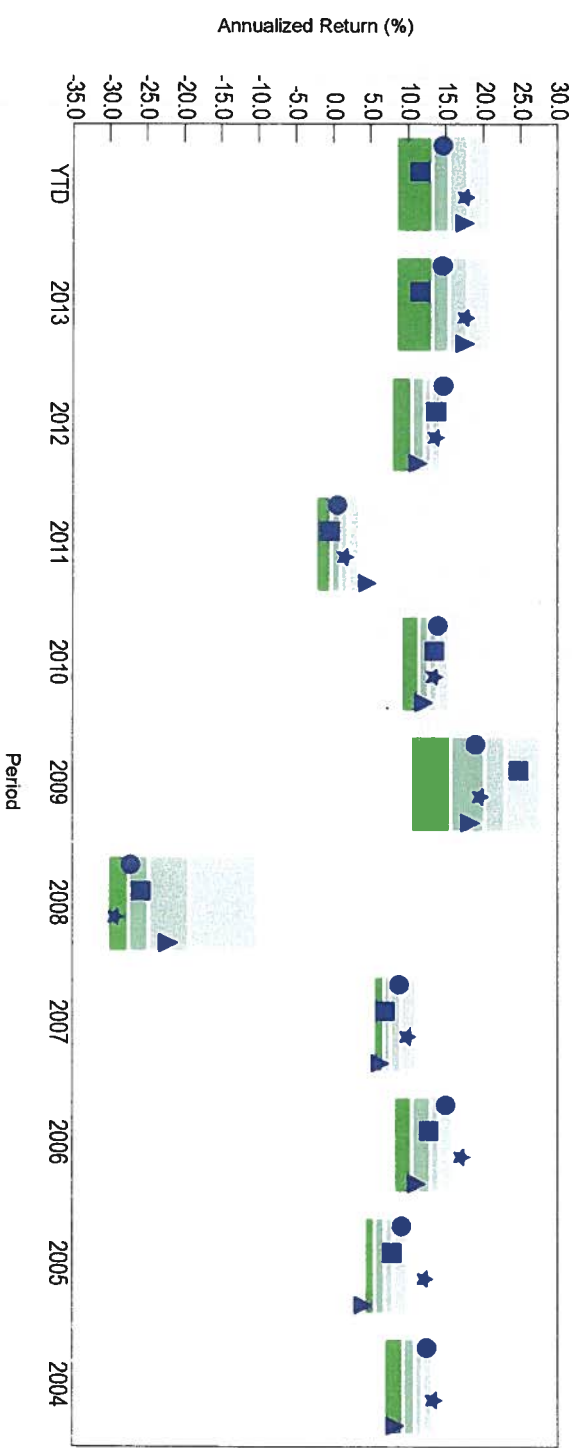


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	6.6	20.8	17.0	11.4	12.1	14.4	6.5	6.8	7.3	7.6	8.0
25th Percentile	5.8	18.0	15.6	10.3	11.1	13.1	5.8	6.1	6.8	6.9	7.2
Median	5.0	15.5	14.0	9.5	10.3	12.2	5.2	5.6	6.4	6.5	6.8
75th Percentile	4.4	13.3	12.3	8.4	9.4	10.8	4.4	4.8	5.8	6.0	6.3
95th Percentile	3.0	8.4	9.2	6.4	7.7	9.0	2.6	3.5	4.4	4.8	5.5
# of Portfolios	212	212	205	185	178	174	170	160	156	148	144
● Ohio Police & Fire	5.0 (53)	16.0 (47)	15.4 (28)	11.0 (8)	12.2 (5)	13.8 (12)	5.5 (43)	6.2 (18)	7.4 (5)	7.5 (6)	8.1 (3)
■ School Employees Retirement System	5.3 (42)	16.9 (39)	15.6 (25)	10.1 (31)	10.7 (39)	11.8 (58)	4.0 (84)	4.7 (80)	6.0 (69)	6.5 (47)	7.0 (41)
★ Highway Patrol Retirement System	5.7 (28)	19.1 (17)	15.2 (31)	8.9 (63)	10.1 (56)	12.6 (41)	4.3 (77)	4.9 (75)	6.0 (69)	6.2 (63)	6.8 (54)
▲ 60/40 S&P 500/Barclays Aggregate	6.2 (15)	17.6 (31)	14.4 (43)	11.1 (8)	11.3 (19)	12.7 (39)	6.0 (15)	6.0 (28)	6.6 (35)	6.3 (55)	6.5 (64)

Total Plans

InvestorForce All Public Defined Benefit Fund Universe - Calendar Year Performance

InvestorForce Public DB Gross Accounts
Ending December 31, 2013

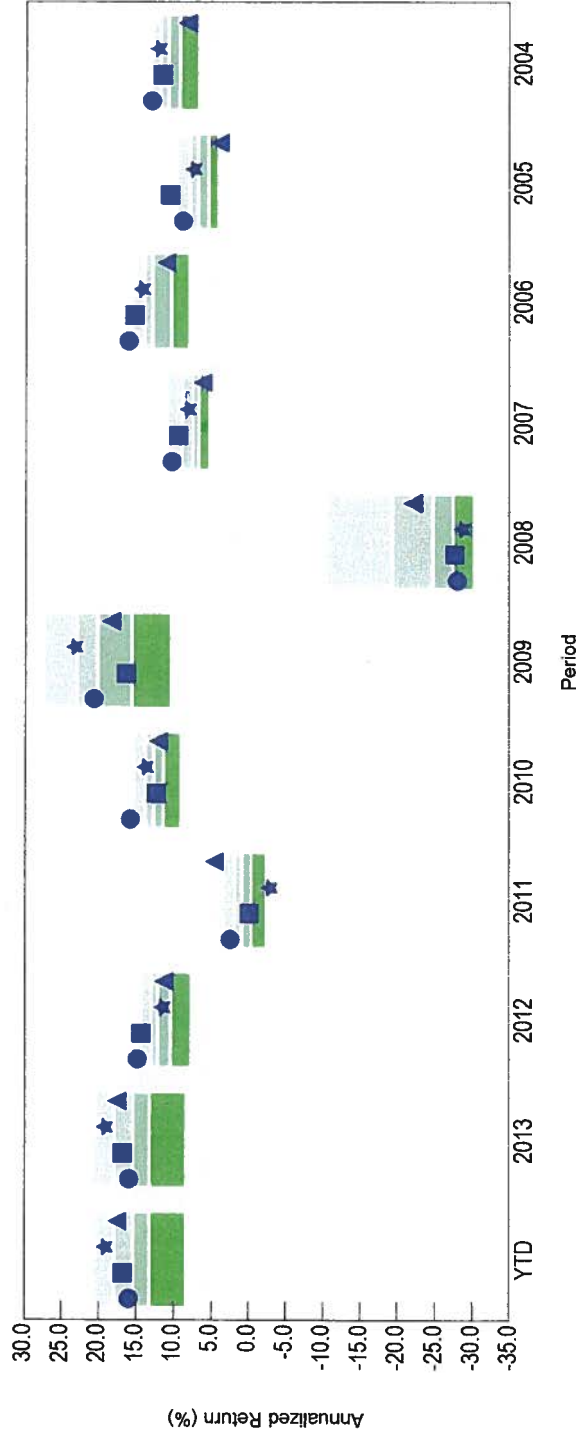


	YTD	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	20.8	20.8	14.3	3.4	15.5	27.6	-10.2	11.1	15.8	9.9	13.2
25th Percentile	18.0	18.0	13.1	1.9	13.9	23.0	-19.2	9.1	14.2	8.1	12.0
Median	15.5	15.5	12.2	0.9	12.8	20.3	-24.7	7.7	13.0	6.9	10.9
75th Percentile	13.3	13.3	10.5	-0.3	11.5	15.7	-27.4	6.8	10.5	5.5	9.4
95th Percentile	8.4	8.4	7.7	-2.4	9.2	10.4	-30.2	5.4	8.0	4.2	6.8
# of Portfolios	212	212	192	162	154	152	149	146	136	131	125
Public Employees Retirement System (DB)	14.7 (60)	14.7 (60)	14.8 (2)	0.6 (62)	14.0 (24)	19.1 (56)	-27.1 (70)	8.9 (27)	15.0 (15)	9.2 (8)	12.5 (12)
Public Employees Retirement System (HC)	11.5 (86)	11.5 (86)	13.8 (13)	-0.4 (80)	13.5 (38)	24.8 (18)	-25.8 (62)	6.9 (73)	12.7 (53)	8.0 (26)	-- (-)
State Teachers Retirement System	17.6 (30)	17.6 (30)	13.8 (14)	1.6 (32)	13.5 (38)	19.7 (53)	-29.2 (88)	10.0 (17)	17.0 (1)	12.2 (1)	13.4 (4)
60/40 S&P 500/Barclays Aggregate	17.6 (31)	17.6 (31)	11.3 (69)	4.7 (2)	12.1 (64)	18.4 (62)	-22.1 (36)	6.2 (86)	11.1 (72)	4.0 (97)	8.3 (83)

Total Plans

InvestorForce All Public Defined Benefit Fund Universe - Calendar Year Performance

InvestorForce Public DB Gross Accounts
Ending December 31, 2013

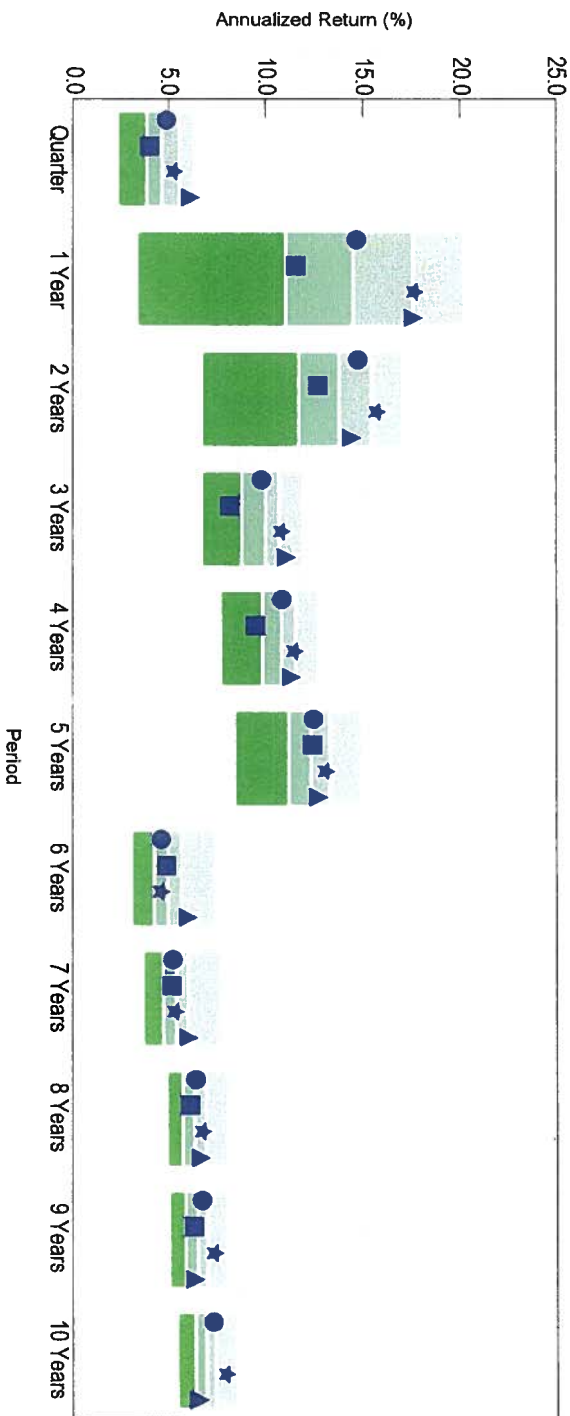


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	20.8	14.3	3.4	15.5	27.6	-10.2	11.1	15.8	9.9	13.2
25th Percentile	18.0	13.1	1.9	13.9	23.0	-19.2	9.1	14.2	8.1	12.0
Median	15.5	12.2	0.9	12.8	20.3	-24.7	7.7	13.0	6.9	10.9
75th Percentile	13.3	10.5	-0.3	11.5	15.7	-27.4	6.8	10.5	5.5	9.4
95th Percentile	8.4	7.7	-2.4	9.2	10.4	-30.2	5.4	8.0	4.2	6.8
# of Portfolios	212	192	162	154	152	149	146	136	131	125
Ohio Police & Fire	16.0 (47)	14.9 (2)	2.5 (11)	15.9 (5)	20.7 (42)	-28.1 (82)	10.5 (11)	16.1 (3)	9.1 (8)	13.1 (6)
School Employees Retirement System	16.9 (39)	14.4 (5)	-0.1 (72)	12.4 (57)	16.4 (72)	-27.7 (78)	9.6 (19)	15.4 (11)	10.8 (3)	11.7 (34)
Highway Patrol Retirement System	19.1 (17)	11.5 (67)	-2.9 (99)	13.8 (28)	23.2 (25)	-28.8 (87)	8.3 (37)	14.3 (22)	7.4 (42)	12.2 (22)
60/40 S&P 500/Barclays Aggregate	17.6 (31)	11.3 (69)	4.7 (2)	12.1 (64)	18.4 (62)	-22.1 (36)	6.2 (86)	11.1 (72)	4.0 (97)	8.3 (83)

Total Plans

InvestorForce All Defined Benefit Fund > \$1 Billion Universe

InvestorForce All DB > \$1B Gross Accounts
Ending December 31, 2013

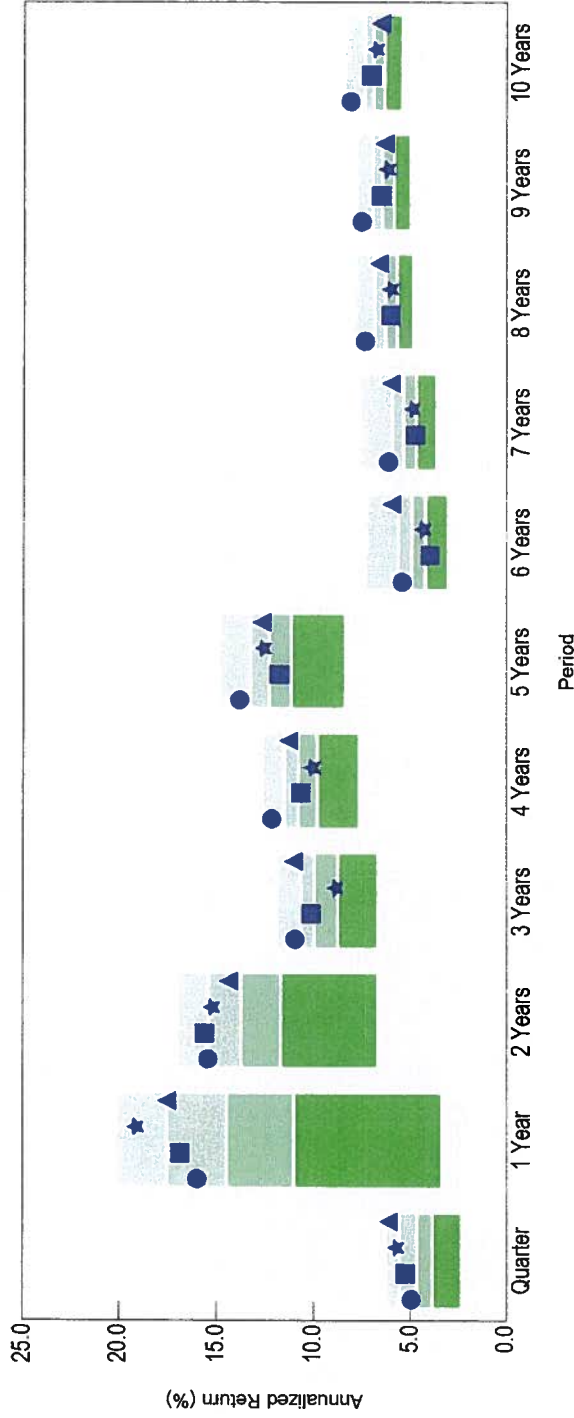


Return (Rank)	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	20.2	17.0	11.9	12.7	14.9	7.4	7.7	8.1	8.0	8.5
25th Percentile	17.6	15.4	10.7	11.5	13.3	5.7	6.0	6.9	7.0	7.4
Median	14.5	13.8	10.0	10.8	12.3	5.0	5.4	6.3	6.5	6.9
75th Percentile	11.0	11.7	8.8	9.8	11.2	4.2	4.7	5.7	5.9	6.4
95th Percentile	3.3	6.7	6.7	7.7	8.4	3.0	3.6	4.9	5.0	5.4
# of Portfolios	154	151	150	148	148	146	139	138	134	130

Total Plans

InvestorForce All Defined Benefit Fund > \$1 Billion Universe

InvestorForce All DB > \$1B Gross Accounts
Ending December 31, 2013

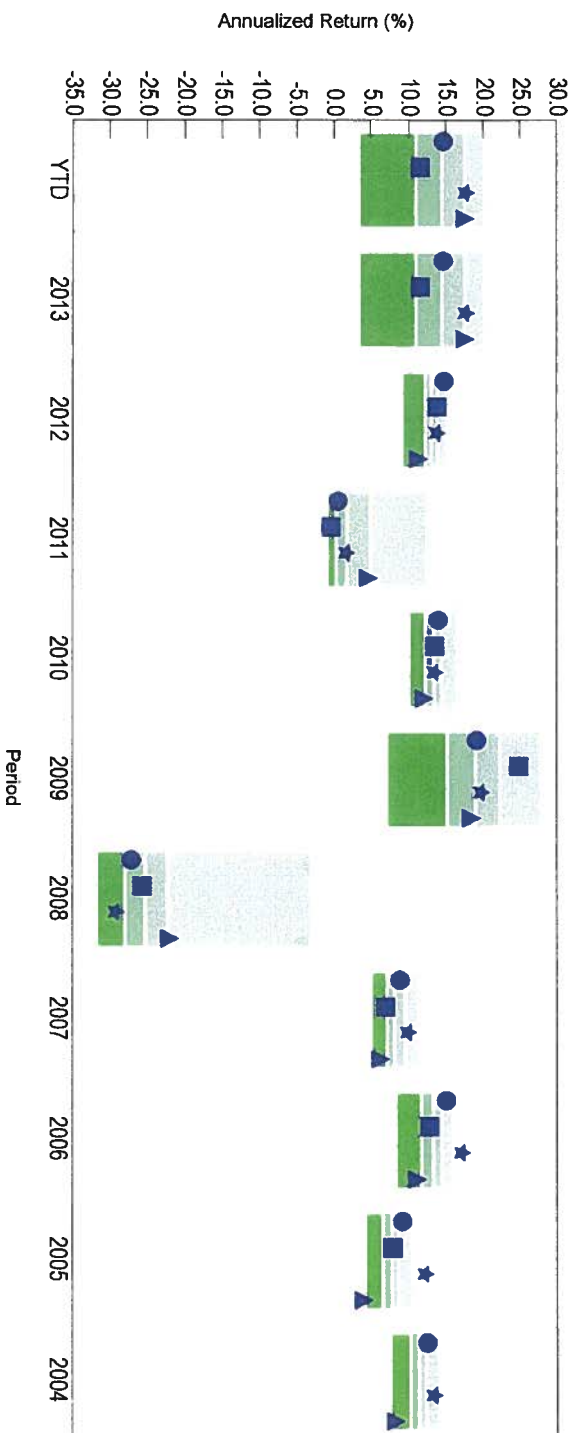


Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios	Ohio Police & Fire	School Employees Retirement System	Highway Patrol Retirement System	60/40 S&P 500/Barclays Aggregate
Quarter	6.3	5.6	4.7	3.9	2.3	154	5.0 (43)	5.3 (32)	5.7 (21)	6.2 (8)
1 Year	20.2	17.6	14.5	11.0	3.3	154	16.0 (37)	16.9 (30)	19.1 (12)	17.6 (26)
2 Years	17.0	15.4	13.8	11.7	6.7	151	15.4 (25)	15.6 (24)	15.2 (28)	14.4 (41)
3 Years	11.9	10.7	10.0	8.8	6.7	150	11.0 (14)	10.1 (48)	8.9 (74)	11.1 (13)
4 Years	12.7	11.5	10.8	9.8	7.7	148	12.2 (10)	10.7 (55)	10.1 (70)	11.3 (35)
5 Years	14.9	13.3	12.3	11.2	8.4	148	13.8 (19)	11.8 (63)	12.6 (46)	12.7 (43)
6 Years	7.4	5.7	5.0	4.2	3.0	146	5.5 (32)	4.0 (82)	4.3 (74)	6.0 (17)
7 Years	7.7	6.0	5.4	4.7	3.6	139	6.2 (20)	4.7 (75)	4.9 (72)	6.0 (25)
8 Years	8.1	6.9	6.3	5.7	4.9	138	7.4 (14)	6.0 (63)	6.0 (65)	6.6 (33)
9 Years	8.0	7.0	6.5	5.9	5.0	134	7.5 (14)	6.5 (49)	6.2 (61)	6.3 (56)
10 Years	8.5	7.4	6.9	6.4	5.4	130	8.1 (11)	7.0 (47)	6.8 (57)	6.5 (66)

Total Plans

InvestorForce All Defined Benefit Fund > \$1 Billion Universe - Calendar Year Returns

InvestorForce All DB > \$1B Gross Accounts
Ending December 31, 2013

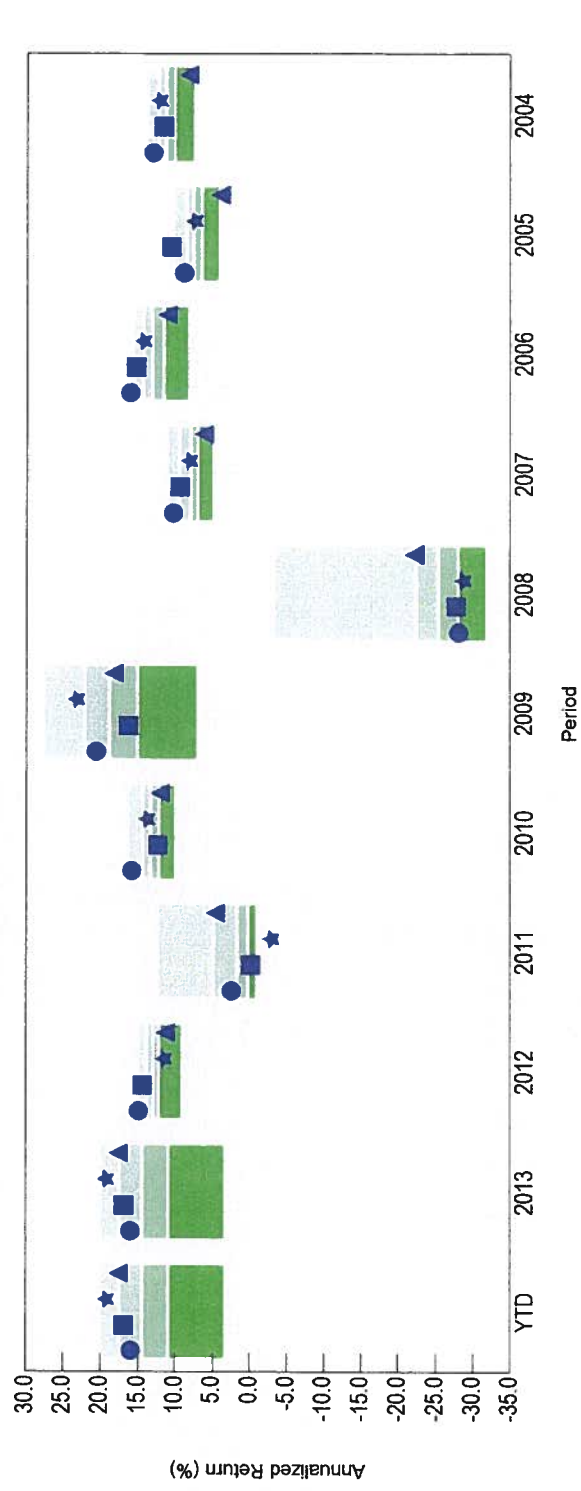


	YTD	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	20.2	20.2	15.1	12.4	16.4	27.8	-3.1	11.2	15.9	10.5	14.2
25th Percentile	17.6	17.6	14.0	4.9	14.5	22.3	-22.3	9.6	14.5	8.6	12.4
Median	14.5	14.5	13.0	1.7	13.5	19.0	-25.3	8.1	13.3	7.7	11.4
75th Percentile	11.0	11.0	12.3	0.3	12.3	15.3	-28.0	7.1	11.7	6.6	10.3
95th Percentile	3.3	3.3	9.1	-0.9	10.0	7.1	-31.8	5.0	8.2	4.1	7.5
# of Portfolios	154	154	137	136	133	135	130	127	101	100	94
Public Employees Retirement System (DB)	14.7 (47)	14.7 (47)	14.8 (9)	0.6 (69)	14.0 (33)	19.1 (49)	-27.1 (67)	8.9 (36)	15.0 (17)	9.2 (12)	12.5 (18)
Public Employees Retirement System (HC)	11.5 (72)	11.5 (72)	13.8 (29)	-0.4 (87)	13.5 (48)	24.8 (14)	-25.8 (58)	6.9 (82)	12.7 (63)	8.0 (43)	-- (--)
State Teachers Retirement System	17.6 (25)	17.6 (25)	13.8 (31)	1.6 (51)	13.5 (50)	19.7 (43)	-29.2 (85)	10.0 (19)	17.0 (1)	12.2 (2)	13.4 (12)
60/40 S&P 500/Barclays Aggregate	17.6 (26)	17.6 (26)	11.3 (86)	4.7 (27)	12.1 (78)	18.4 (55)	-22.1 (25)	6.2 (89)	11.1 (85)	4.0 (96)	8.3 (93)

Total Plans

InvestorForce All Defined Benefit Fund > \$1 Billion Universe - Calendar Year Returns

InvestorForce All DB > \$1B Gross Accounts
Ending December 31, 2013

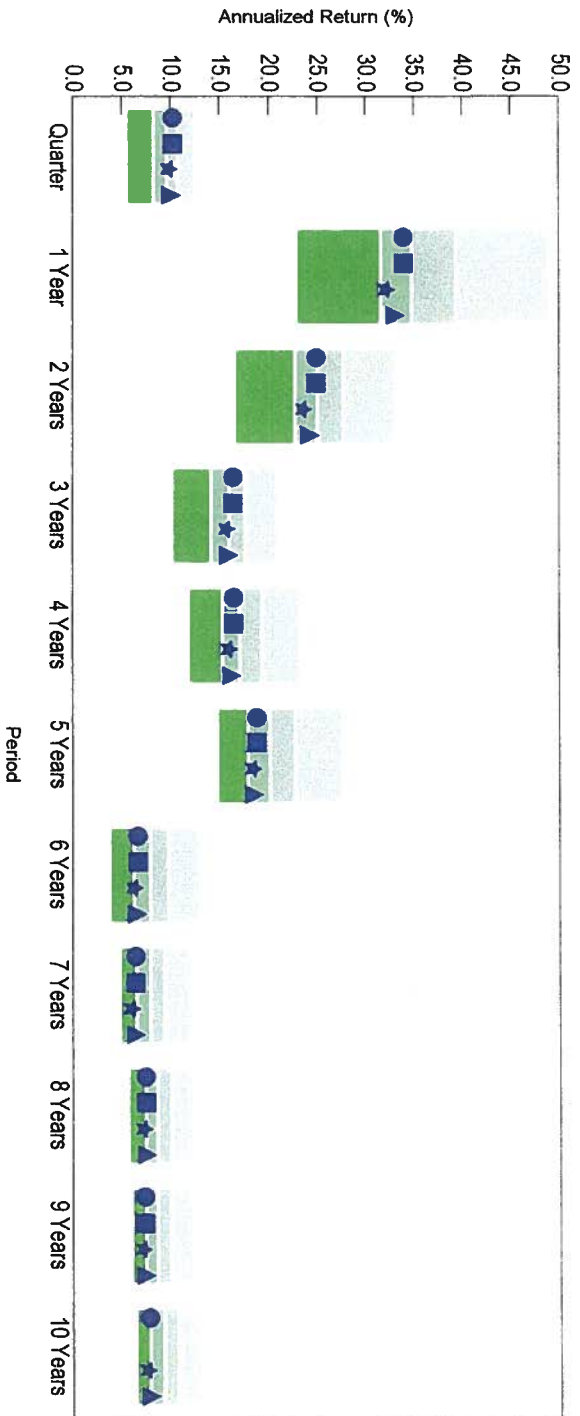


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	20.2	15.1	12.4	16.4	27.8	-3.1	11.2	15.9	10.5	14.2
25th Percentile	17.6	14.0	4.9	14.5	22.3	-22.3	9.6	14.5	8.6	12.4
Median	14.5	13.0	1.7	13.5	19.0	-25.3	8.1	13.3	7.7	11.4
75th Percentile	11.0	12.3	0.3	12.3	15.3	-28.0	7.1	11.7	6.6	10.3
95th Percentile	3.3	9.1	-0.9	10.0	7.1	-31.8	5.0	8.2	4.1	7.5
# of Portfolios	154	137	136	133	135	130	127	101	100	94
Ohio Police & Fire	16.0 (37)	14.9 (8)	2.5 (41)	15.9 (10)	20.7 (37)	-28.1 (76)	10.5 (12)	16.1 (3)	9.1 (15)	13.1 (13)
School Employees Retirement System	16.9 (30)	14.4 (13)	-0.1 (84)	12.4 (75)	16.4 (70)	-27.7 (74)	9.6 (25)	15.4 (14)	10.8 (5)	11.7 (44)
Highway Patrol Retirement System	19.1 (12)	11.5 (85)	-2.9 (99)	13.8 (36)	23.2 (21)	-28.8 (83)	8.3 (46)	14.3 (30)	7.4 (60)	12.2 (32)
60/40 S&P 500/Barclays Aggregate	17.6 (26)	11.3 (86)	4.7 (27)	12.1 (78)	18.4 (55)	-22.1 (25)	6.2 (89)	11.1 (85)	4.0 (96)	8.3 (93)

Total Domestic Equities

InvestorForce All Domestic Equities Universe

US Equity Accounts
Ending December 31, 2013

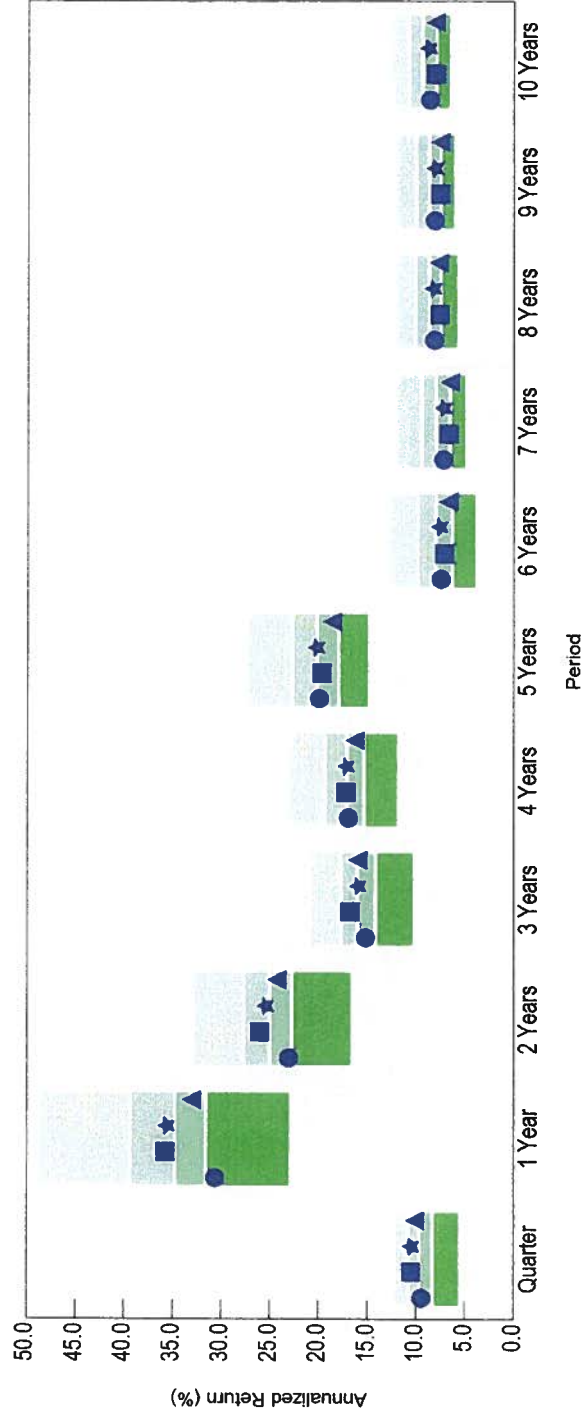


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
Annualized Return (%)	10.0	35.0	25.0	20.0	19.4	27.6	12.9	12.1	12.4	12.3	13.1
Return (Rank)	12.5	48.9	33.1	20.9	23.3	27.6	12.9	12.1	12.4	12.3	13.1
5th Percentile	10.8	39.4	27.8	17.7	19.4	22.8	9.9	9.5	10.1	10.0	10.8
25th Percentile	9.7	34.8	25.1	16.0	17.1	20.2	8.0	8.0	8.7	8.7	9.4
Median	8.3	31.6	22.8	14.2	15.3	18.0	6.3	6.5	7.5	7.5	7.9
75th Percentile	5.5	22.8	16.5	10.1	11.8	14.8	3.8	4.8	5.7	6.0	6.4
95th Percentile	2.763	2.705	2.590	2.492	2.412	2.316	2.206	2.078	1.939	1.792	1.642
# of Portfolios											
Legend:											
●	PERS(IDB) Domestic Equity	33.9 (57)	24.9 (52)	16.4 (42)	16.5 (59)	18.8 (64)	6.7 (70)	6.5 (77)	7.5 (76)	7.4 (77)	7.8 (78)
■	PERS(HC) Domestic Equity	33.9 (57)	24.9 (52)	16.4 (42)	16.5 (59)	18.8 (64)	6.7 (70)	6.5 (77)	7.5 (76)	7.4 (77)	-- (-)
★	STRS Domestic Equity	32.1 (72)	23.6 (69)	15.7 (55)	16.0 (66)	18.4 (69)	6.3 (77)	6.0 (84)	7.2 (82)	7.2 (81)	7.6 (82)
▲	Wilshire 5000	33.1 (64)	24.3 (60)	16.0 (52)	16.3 (62)	18.6 (67)	6.6 (70)	6.5 (77)	7.6 (72)	7.5 (76)	8.0 (75)

Total Domestic Equities

InvestorForce All Domestic Equities Universe

US Equity Accounts
Ending December 31, 2013



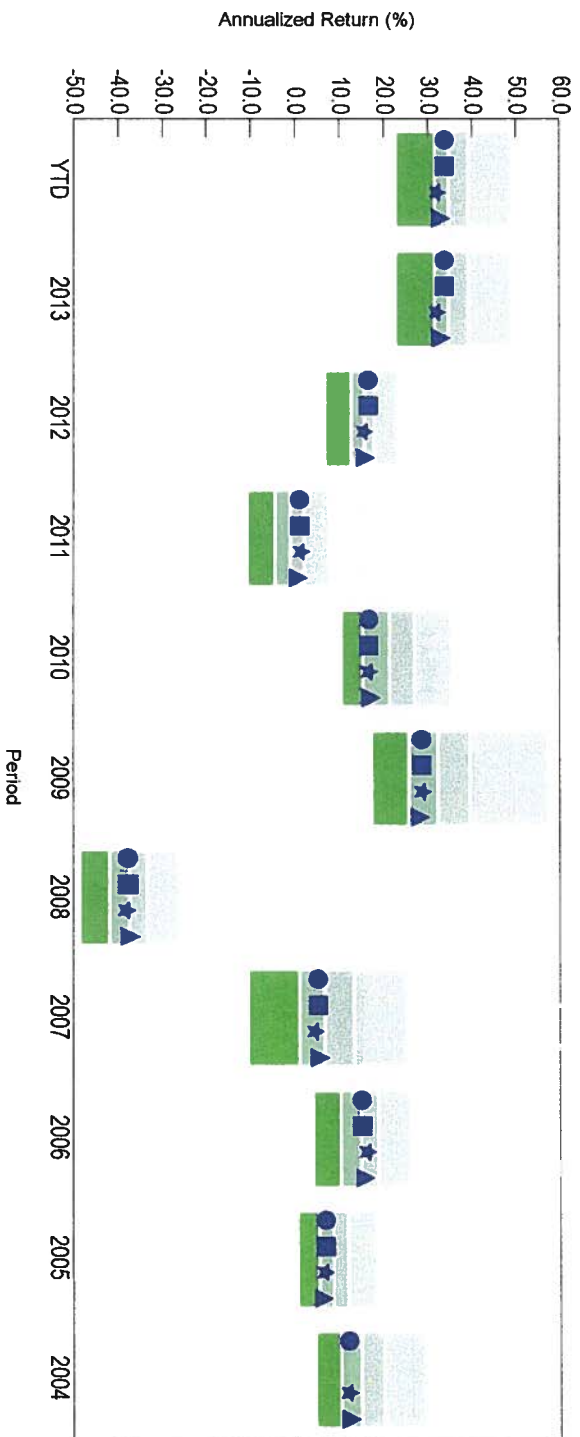
Return (Rank)

- OP&F Domestic Equity
- SERS Domestic Equity
- ★ HPRS Domestic Equity
- ▲ Wlshire 5000

Total Domestic Equities - Calendar Year Returns

InvestorForce All Domestic Equities Universe

US Equity Accounts
Ending December 31, 2013

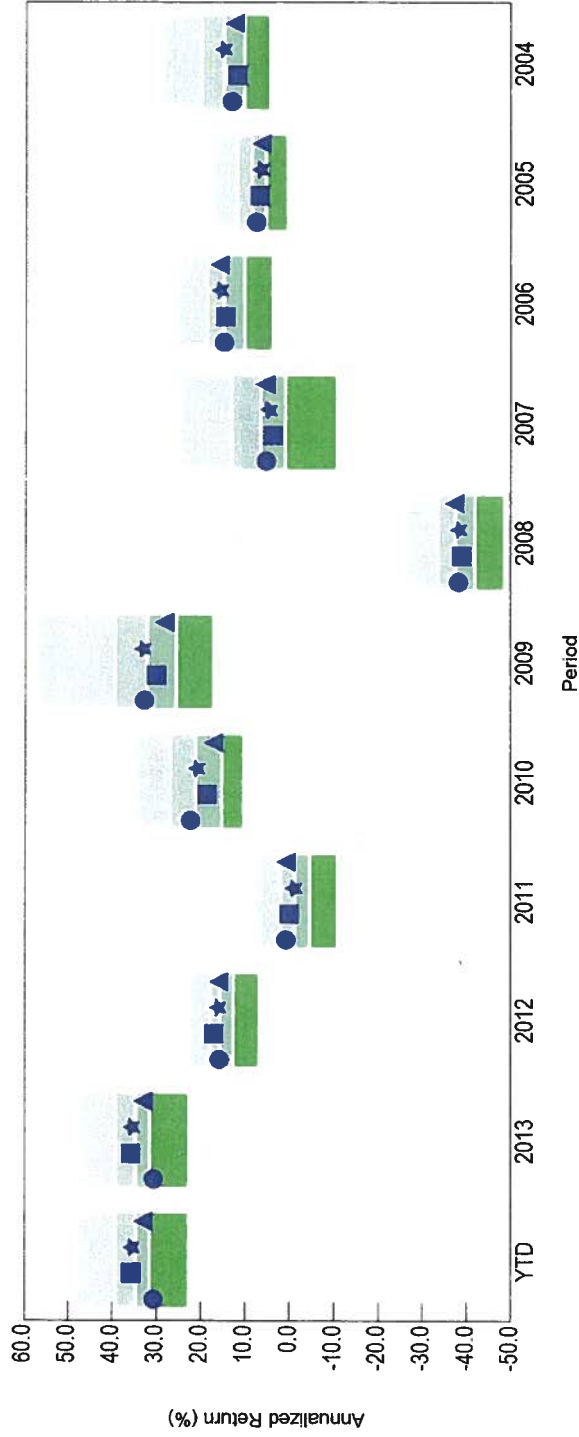


	YTD	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Annualized Return (%)	48.9	48.9	23.0	7.7	35.4	57.2	-26.2	25.1	25.9	18.2	29.1
5th Percentile	39.4	39.4	18.0	2.1	27.0	39.6	-33.4	13.2	18.7	12.1	20.0
25th Percentile	34.8	34.8	15.7	-0.9	21.4	32.3	-37.3	6.7	14.9	8.6	14.9
Median	31.6	31.6	12.7	-4.4	15.4	25.8	-41.7	1.1	10.3	5.4	10.3
75th Percentile	22.8	22.8	6.9	-10.8	10.4	17.2	-48.7	-10.6	4.0	0.5	4.5
95th Percentile	2,705	2,705	2,433	2,168	2,135	2,191	1,661	1,794	1,824	1,782	1,741
# of Portfolios	33.9 (57)	33.9 (57)	16.6 (38)	1.1 (34)	16.7 (68)	28.7 (63)	-37.8 (53)	5.1 (58)	14.9 (51)	6.8 (64)	12.0 (67)
PERS(DB) Domestic Equity	33.9 (57)	33.9 (57)	16.6 (38)	1.1 (34)	16.7 (68)	28.7 (63)	-37.8 (53)	5.1 (58)	14.9 (51)	6.8 (64)	12.0 (67)
PERS(HC) Domestic Equity	32.1 (72)	32.1 (72)	15.6 (53)	1.5 (31)	16.6 (68)	28.8 (62)	-38.1 (54)	4.5 (61)	16.2 (42)	6.7 (66)	11.9 (67)
STRS Domestic Equity	33.1 (64)	33.1 (64)	16.1 (45)	1.0 (36)	17.2 (66)	28.3 (65)	-37.2 (50)	5.6 (56)	15.8 (44)	6.4 (68)	12.5 (63)
Wilshire 5000											

Total Domestic Equities - Calendar Year Returns

InvestorForce All Domestic Equities Universe

US Equity Accounts
Ending December 31, 2013



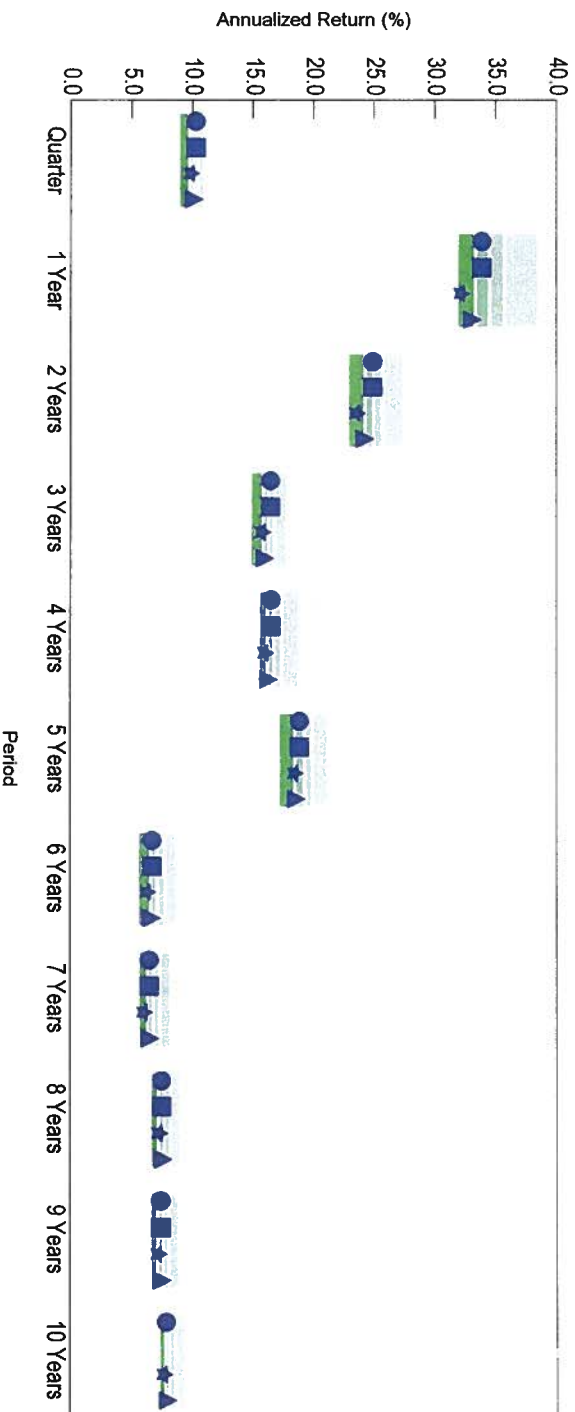
Return (Rank)

- 5th Percentile
- 25th Percentile
- ★ Median
- ▲ 75th Percentile
- ▲ 95th Percentile
- # of Portfolios
- OP&F Domestic Equity
- SERS Domestic Equity
- ★ HPRS Domestic Equity
- ▲ Wilshire 5000

Total Domestic Equities

InvestorForce All Public DB Domestic Equities Universe

InvestorForce Public DB US Eq Gross Accounts
Ending December 31, 2013

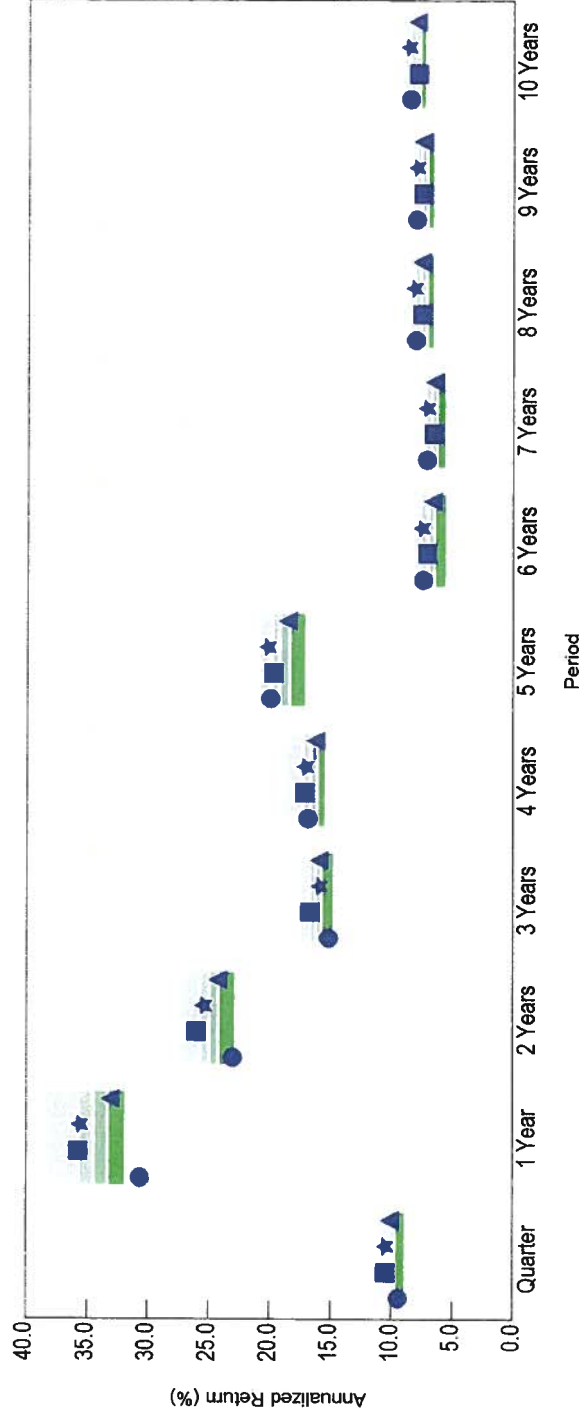


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	10.9	38.5	27.5	17.8	18.8	21.2	8.7	8.2	9.1	8.9	9.4
25th Percentile	10.4	35.7	25.7	16.8	17.4	19.9	7.7	7.3	8.2	8.1	8.6
Median	10.1	34.5	25.0	16.3	16.7	19.3	7.1	6.8	7.7	7.6	8.1
75th Percentile	9.8	33.3	24.3	15.8	16.2	18.5	6.6	6.3	7.2	7.2	7.8
95th Percentile	8.8	31.8	22.8	14.7	15.4	17.1	5.5	5.6	6.5	6.6	7.2
# of Portfolios	142	139	133	120	90	88	84	84	82	75	72
● PERS(DB) Domestic Equity	10.2 (40)	33.9 (67)	24.9 (53)	16.4 (42)	16.5 (62)	18.8 (64)	6.7 (69)	6.5 (72)	7.5 (65)	7.4 (64)	7.8 (73)
■ PERS(HC) Domestic Equity	10.2 (40)	33.9 (67)	24.9 (53)	16.4 (42)	16.5 (62)	18.8 (64)	6.7 (69)	6.5 (72)	7.5 (65)	7.4 (64)	-- (-)
★ STRS Domestic Equity	9.9 (69)	32.1 (92)	23.6 (91)	15.7 (79)	16.0 (83)	18.4 (76)	6.3 (85)	6.0 (88)	7.2 (74)	7.2 (75)	7.6 (80)
▲ Wilshire 5000	10.1 (48)	33.1 (80)	24.3 (76)	16.0 (68)	16.3 (72)	18.6 (69)	6.6 (72)	6.5 (69)	7.6 (55)	7.5 (62)	8.0 (60)

Total Domestic Equities

InvestorForce All Public DB Domestic Equities Universe

InvestorForce Public DB US Eq Gross Accounts
Ending December 31, 2013



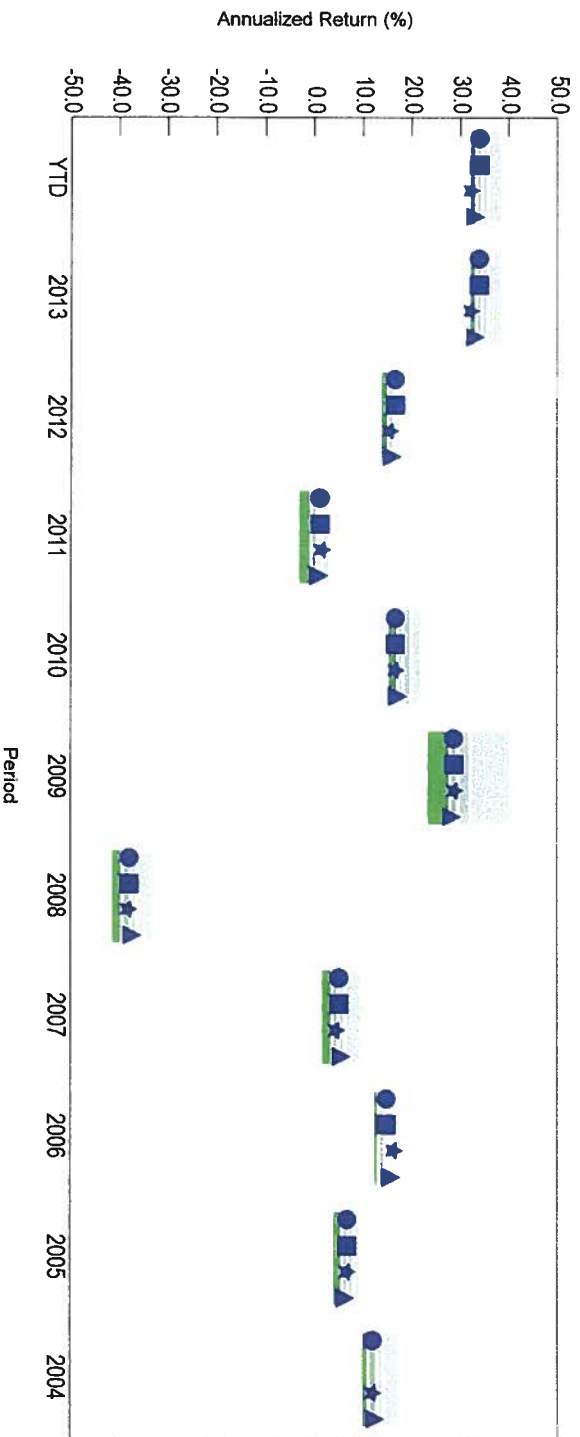
Return (Rank)

- OP&F Domestic Equity
- SERS Domestic Equity
- ★ HPRS Domestic Equity
- ▲ Wilshire 5000

Total Domestic Equities - Calendar Year Returns

InvestorForce All Public DB Domestic Equities Universe

InvestorForce Public DB US Eq Gross Accounts
Ending December 31, 2013

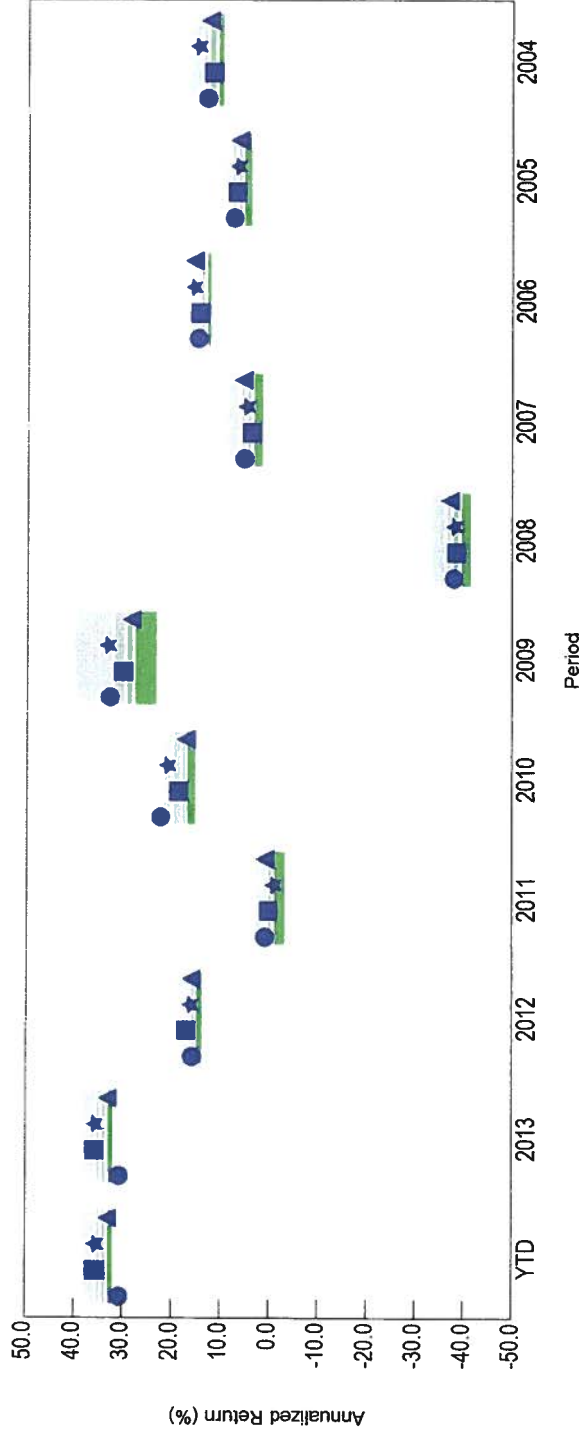


	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	38.5	17.7	3.1	21.9	40.5	-32.9	9.7	16.4	9.5	17.3
25th Percentile	35.7	16.8	1.5	20.0	32.2	-36.3	6.4	15.3	8.2	14.2
Median	34.5	16.2	0.7	18.2	29.6	-37.6	5.0	14.5	6.9	13.0
75th Percentile	33.3	15.3	-0.5	17.2	27.9	-39.3	3.8	13.3	5.8	11.1
95th Percentile	31.8	13.5	-3.5	15.0	23.0	-41.7	1.3	12.0	3.6	9.5
# of Portfolios	139	128	108	90	88	86	84	78	72	67
Return (Rank)	38.5 (67)	17.7 (34)	3.1 (38)	21.9 (85)	40.5 (62)	-32.9 (54)	9.7 (48)	16.4 (33)	9.5 (53)	17.3 (64)
	35.7 (67)	16.6 (34)	1.1 (38)	16.7 (85)	28.7 (62)	-37.8 (54)	5.1 (48)	14.9 (33)	6.8 (53)	14.2 (64)
	34.5 (92)	15.6 (72)	1.5 (25)	16.6 (85)	28.8 (59)	-38.1 (58)	4.5 (68)	16.2 (10)	6.7 (56)	11.9 (66)
	33.3 (80)	16.1 (55)	1.0 (45)	17.2 (78)	28.3 (71)	-37.2 (44)	5.6 (40)	15.8 (13)	6.4 (67)	12.5 (59)

Total Domestic Equities - Calendar Year Returns

InvestorForce All Public DB Domestic Equities Universe

InvestorForce Public DB US Eq Gross Accounts
Ending December 31, 2013



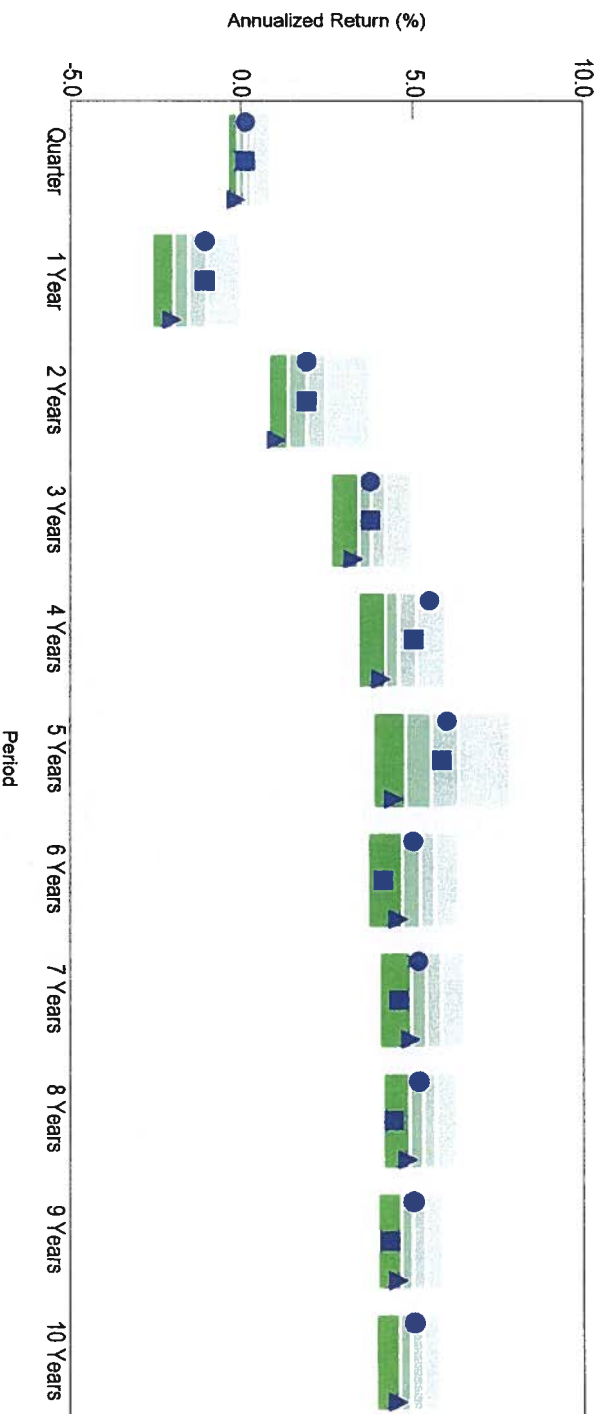
Return (Rank)	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
38.5 (98)	38.5	35.7	34.5	33.3	31.8	139
35.8 (25)	35.8	35.8	34.5	33.3	31.8	139
35.6 (27)	35.6	35.6	34.5	33.3	31.8	139
33.1 (80)	33.1	33.1	34.5	33.3	31.8	139

- OP&F Domestic Equity
- SERS Domestic Equity
- ★ HPRS Domestic Equity
- ▲ Wilshire 5000

Fixed Income

InvestorForce US Core Fixed Income Universe

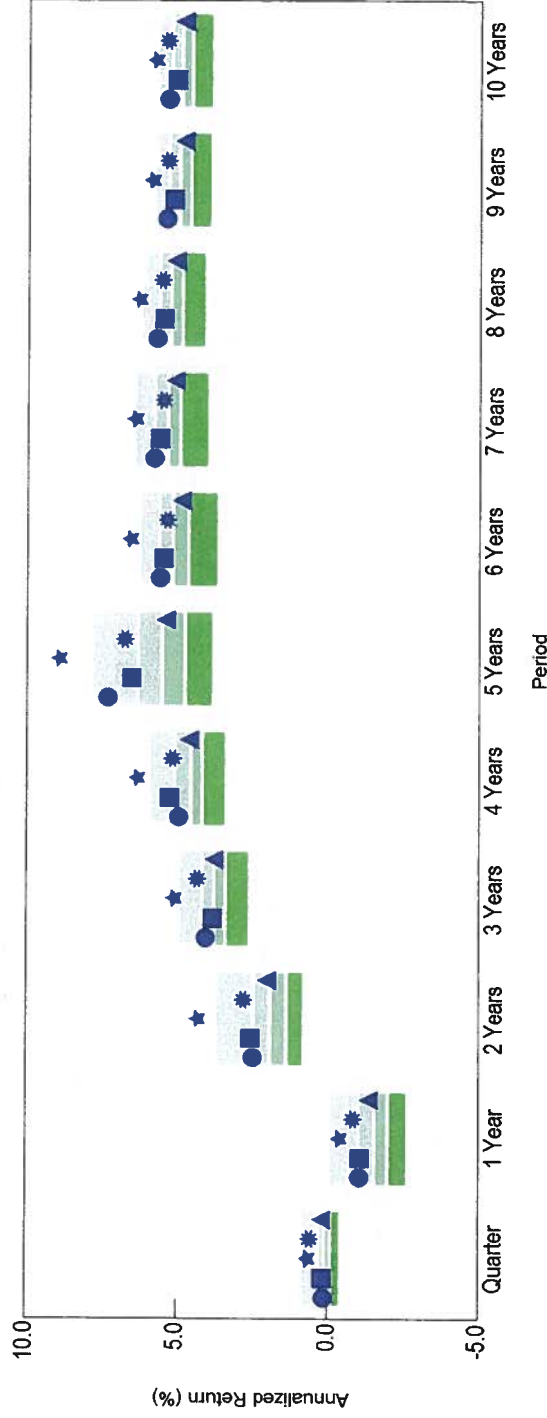
US Core (Gov/Corp/Mktg) Fixed Income Accounts
Ending December 31, 2013



Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	0.9	0.0	3.7	5.0	6.0	7.9	6.3	6.5	6.3	5.8	5.7
25th Percentile	0.3	-1.0	2.5	4.2	5.1	6.3	5.7	5.8	5.7	5.4	5.3
Median	0.1	-1.5	1.9	3.8	4.6	5.5	5.2	5.4	5.3	5.0	4.9
75th Percentile	-0.1	-2.0	1.4	3.4	4.2	4.8	4.7	5.0	4.9	4.7	4.6
95th Percentile	-0.4	-2.6	0.8	2.6	3.4	3.8	3.7	4.0	4.1	3.9	3.9
# of Portfolios	176	175	173	170	167	166	164	160	156	153	150
PERS(DB) Core Fixed	0.1 (49)	-1.0 (27)	1.9 (51)	3.8 (53)	5.5 (12)	6.0 (35)	5.0 (62)	5.2 (67)	5.2 (61)	5.0 (49)	5.0 (41)
PERS(HC) Core Fixed	0.1 (49)	-1.0 (27)	1.9 (51)	3.8 (53)	5.0 (31)	5.9 (39)	4.1 (89)	4.6 (87)	4.4 (90)	4.3 (89)	-- (--)
Barclays Aggregate	-0.1 (81)	-2.0 (79)	1.0 (90)	3.3 (81)	4.1 (80)	4.4 (84)	4.6 (79)	4.9 (78)	4.8 (79)	4.6 (81)	4.5 (77)

Fixed Income
InvestorForce US Core Fixed Income Universe

US Core (Gov/Corp/Mtg) Fixed Income Accounts
 Ending December 31, 2013



Return (Rank)

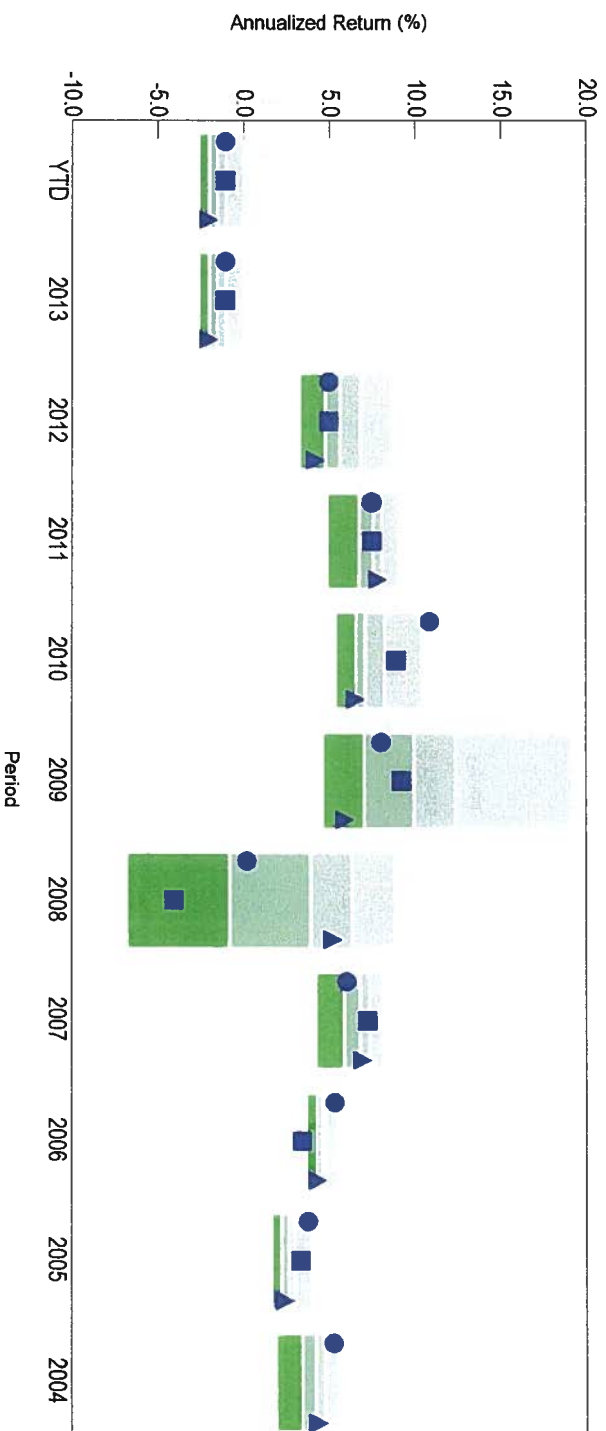
Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
Quarter	0.1 (47)	0.2 (41)	0.7 (8)	0.6 (9)	0.2 (36)	176
1 Year	-1.0 (27)	-1.0 (28)	-0.4 (10)	-0.8 (20)	-1.3 (42)	175
2 Years	2.5 (26)	2.6 (24)	4.3 (3)	2.8 (18)	2.0 (45)	173
3 Years	4.1 (33)	3.8 (49)	5.1 (4)	4.3 (20)	3.8 (51)	170
4 Years	5.0 (32)	5.3 (18)	6.3 (4)	5.2 (22)	4.6 (49)	167
5 Years	7.3 (10)	6.5 (20)	8.9 (3)	6.8 (16)	5.4 (53)	166
6 Years	5.6 (30)	5.5 (33)	6.6 (4)	5.4 (39)	4.9 (68)	164
7 Years	5.8 (26)	5.6 (35)	6.4 (7)	5.5 (41)	5.1 (69)	160
8 Years	5.7 (22)	5.5 (33)	6.3 (4)	5.6 (29)	5.1 (66)	156
9 Years	5.4 (23)	5.2 (34)	5.9 (4)	5.4 (24)	4.8 (66)	153
10 Years	5.4 (22)	5.1 (34)	5.8 (5)	5.4 (19)	4.9 (62)	150

- STRS Fixed Income
- OP&F Core Fixed
- ★ SERS Global Fixed
- * HPRS Global Fixed Income
- ▲ Barclays U.S. Universal

Fixed Income

InvestorForce US Core Fixed Income Universe - Calendar Year Returns

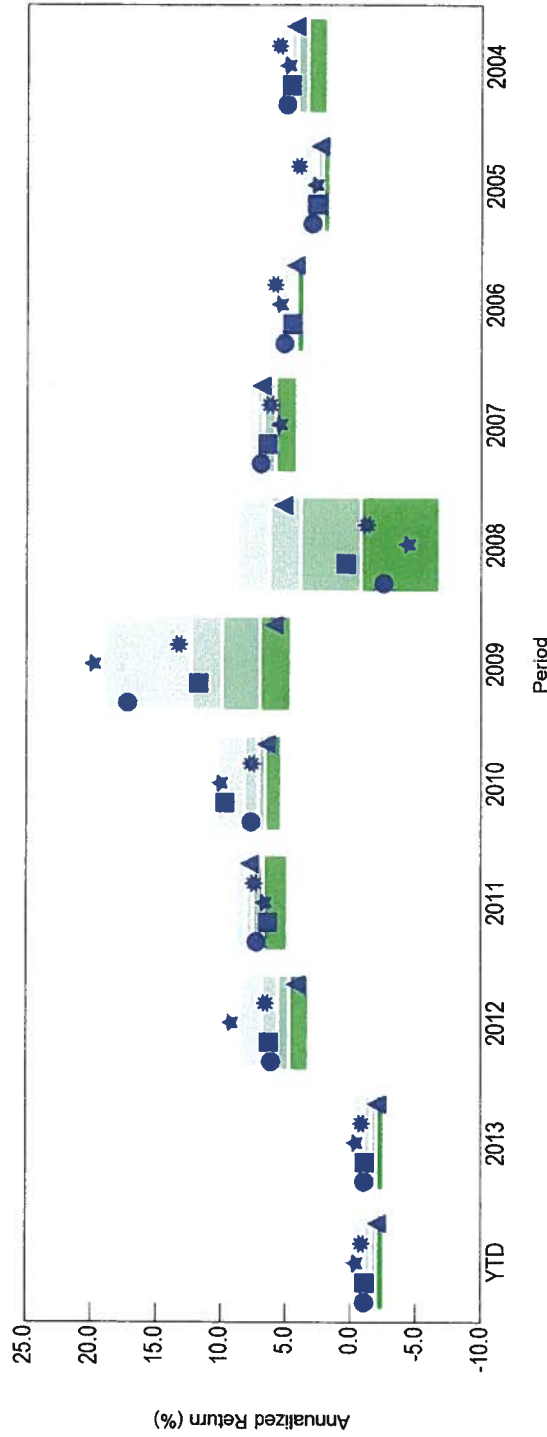
US Core (Gov/Corp/Mtg) Fixed Income Accounts
Ending December 31, 2013



Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	0.0	8.6	9.0	10.4	19.2	8.9	8.1	5.4	3.9	5.5
25th Percentile	-1.0	6.9	8.1	8.3	12.4	6.4	7.4	4.8	3.0	4.8
Median	-1.5	5.6	7.6	7.2	10.0	4.0	6.8	4.6	2.7	4.2
75th Percentile	-2.0	4.8	6.8	6.6	7.1	-0.8	5.9	4.3	2.3	3.4
95th Percentile	-2.6	3.2	4.9	5.4	4.6	-6.8	4.2	3.7	1.6	1.9
# of Portfolios	175	168	160	155	152	183	224	252	263	266
PER(S/DB) Core Fixed	-1.0 (27)	5.0 (71)	7.5 (53)	10.8 (4)	8.0 (68)	0.2 (72)	6.0 (73)	5.3 (7)	3.8 (6)	5.2 (8)
PER(S/HC) Core Fixed	-1.0 (27)	5.0 (71)	7.5 (53)	8.9 (14)	9.2 (59)	-4.0 (89)	7.3 (32)	3.4 (97)	3.4 (9)	-- (-)
Barclays Aggregate	-2.0 (79)	4.2 (88)	7.8 (40)	6.5 (77)	5.9 (85)	5.2 (35)	7.0 (44)	4.3 (71)	2.4 (69)	4.3 (46)

Fixed Income
InvestorForce US Core Fixed Income Universe - Calendar Year Returns

US Core (Gov/Corp/Mtg) Fixed Income Accounts
Ending December 31, 2013

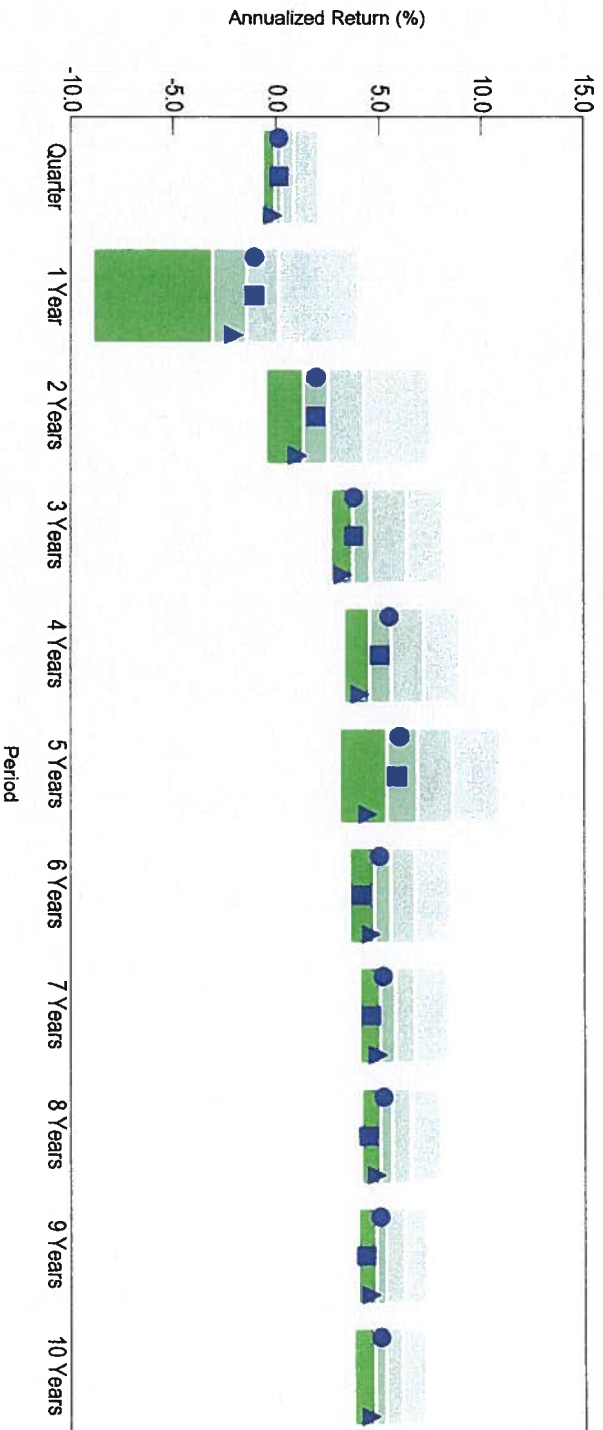


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	0.0	8.6	9.0	10.4	19.2	8.9	8.1	5.4	3.9	5.5
25th Percentile	-1.0	6.9	8.1	8.3	12.4	6.4	7.4	4.8	3.0	4.8
Median	-1.5	5.6	7.6	7.2	10.0	4.0	6.8	4.6	2.7	4.2
75th Percentile	-2.0	4.8	6.8	6.6	7.1	-0.8	5.9	4.3	2.3	3.4
95th Percentile	-2.6	3.2	4.9	5.4	4.6	-6.8	4.2	3.7	1.6	1.9
# of Portfolios	175	168	160	155	152	183	224	252	263	266
STRS Fixed Income	-1.0 (27)	6.1 (40)	7.3 (60)	7.7 (36)	17.2 (9)	-2.5 (84)	7.0 (42)	5.2 (9)	3.0 (20)	5.0 (16)
OP&F Core Fixed	-1.0 (28)	6.3 (33)	6.4 (83)	9.7 (8)	11.8 (32)	0.4 (70)	6.5 (62)	4.6 (48)	2.7 (51)	4.7 (31)
SERS Global Fixed	-0.4 (10)	-0.4 (10)	6.7 (76)	10.1 (7)	19.8 (5)	-4.4 (90)	5.5 (82)	5.5 (4)	2.7 (44)	4.9 (21)
HPRS Global Fixed Income	-0.8 (20)	6.6 (29)	7.5 (54)	7.7 (36)	13.3 (19)	-1.2 (77)	6.3 (66)	5.9 (2)	4.1 (5)	5.6 (5)
Barclays Aggregate	-2.0 (79)	4.2 (88)	7.8 (40)	6.5 (77)	5.9 (85)	5.2 (35)	7.0 (44)	4.3 (71)	2.4 (69)	4.3 (46)

Fixed Income

InvestorForce All Defined Benefit US Core Fixed Income Universe

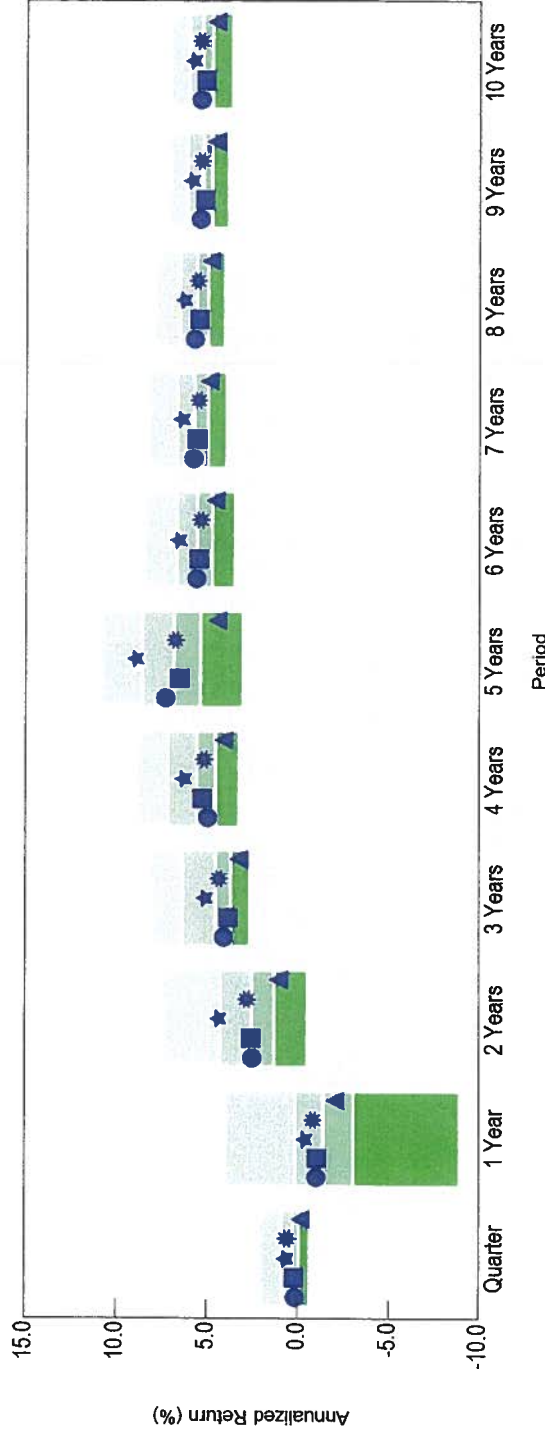
InvestorForce All DB US Fix Inc Gross Accounts
Ending December 31, 2013



Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	2.1	4.0	7.5	8.1	8.9	10.9	8.5	8.3	8.0	7.3	7.3
25th Percentile	0.9	0.1	4.3	6.4	7.2	8.6	6.7	6.7	6.5	6.2	6.1
Median	0.3	-1.4	2.6	4.6	5.6	6.9	5.6	5.8	5.6	5.3	5.3
75th Percentile	0.0	-3.0	1.3	3.7	4.5	5.4	4.8	5.0	5.0	4.8	4.8
95th Percentile	-0.7	-8.9	-0.5	2.6	3.3	3.0	3.5	4.0	4.1	3.9	3.7
# of Portfolios	484	482	465	439	349	341	323	303	286	260	245
● PERS(DB) Core Fixed	0.1 (61)	-1.0 (44)	1.9 (63)	3.8 (73)	5.5 (55)	6.0 (62)	5.0 (69)	5.2 (72)	5.2 (72)	5.0 (67)	5.0 (63)
■ PERS(HC) Core Fixed	0.1 (61)	-1.0 (44)	1.9 (63)	3.8 (73)	5.0 (66)	5.9 (65)	4.1 (87)	4.6 (85)	4.4 (87)	4.3 (87)	-- (--)
▲ Barclays Aggregate	-0.1 (82)	-2.0 (67)	1.0 (82)	3.3 (88)	4.1 (86)	4.4 (86)	4.6 (80)	4.9 (80)	4.8 (82)	4.6 (82)	4.5 (81)

Fixed Income
InvestorForce All Defined Benefit US Core Fixed Income Universe

InvestorForce All DB US Fix Inc Gross Accounts
 Ending December 31, 2013

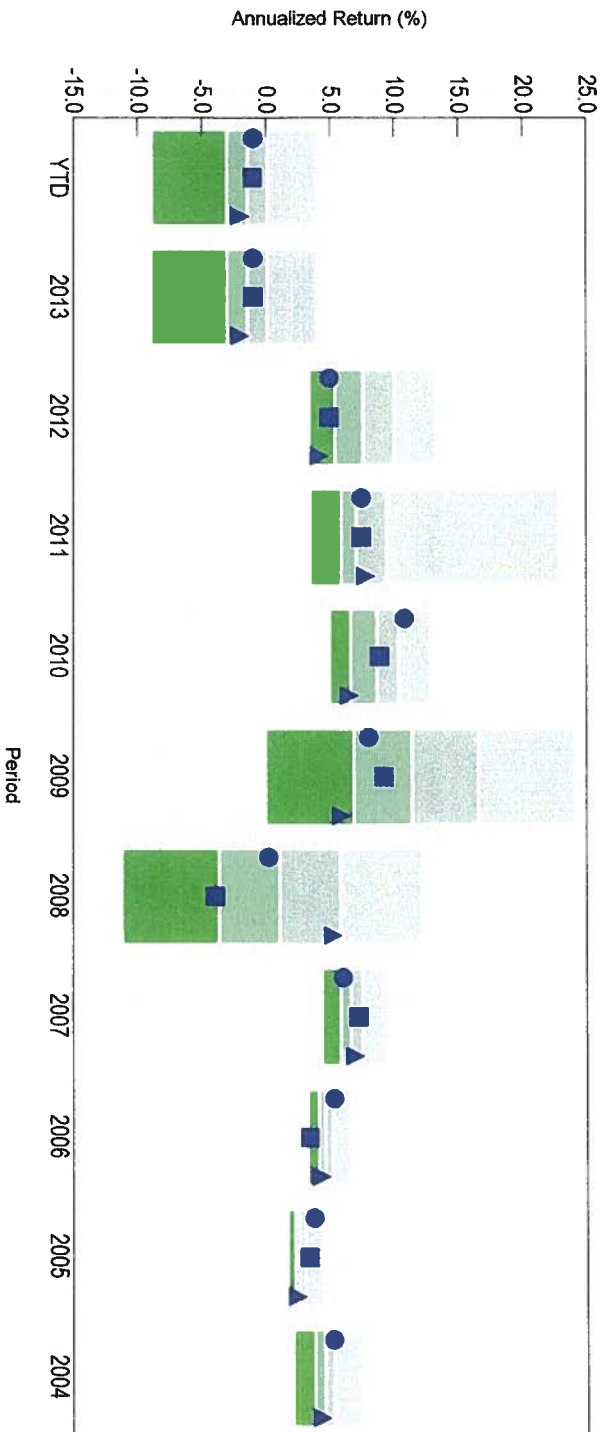


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	2.1	4.0	7.5	8.1	8.9	10.9	8.5	8.3	8.0	7.3	7.3
25th Percentile	0.9	0.1	4.3	6.4	7.2	8.6	6.7	6.7	6.5	6.2	6.1
Median	0.3	-1.4	2.6	4.6	5.6	6.9	5.6	5.8	5.6	5.3	5.3
75th Percentile	0.0	-3.0	1.3	3.7	4.5	5.4	4.8	5.0	5.0	4.8	4.8
95th Percentile	-0.7	-8.9	-0.5	2.6	3.3	3.0	3.5	4.0	4.1	3.9	3.7
# of Portfolios	484	482	465	439	349	341	323	303	286	260	245
● STRS Fixed Income	0.1 (61)	-1.0 (43)	2.5 (52)	4.1 (66)	5.0 (67)	7.3 (42)	5.6 (49)	5.8 (47)	5.7 (47)	5.4 (48)	5.4 (47)
■ OP&F Core Fixed	0.2 (55)	-1.0 (44)	2.6 (50)	3.8 (72)	5.3 (61)	6.5 (55)	5.5 (55)	5.6 (56)	5.5 (57)	5.2 (58)	5.1 (57)
★ SERS Global Fixed	0.7 (32)	-0.4 (32)	4.3 (25)	5.1 (42)	6.3 (37)	8.9 (21)	6.6 (29)	6.4 (31)	6.3 (32)	5.9 (33)	5.8 (35)
✱ HPRS Global Fixed Income	0.6 (34)	-0.8 (39)	2.8 (47)	4.3 (58)	5.2 (64)	6.8 (51)	5.4 (59)	5.5 (62)	5.6 (55)	5.4 (49)	5.4 (45)
▲ Barclays Aggregate	-0.1 (82)	-2.0 (67)	1.0 (82)	3.3 (88)	4.1 (86)	4.4 (86)	4.6 (80)	4.9 (80)	4.8 (82)	4.6 (82)	4.5 (81)

Fixed Income

InvestorForce All Defined Benefit US Core Fixed Income Universe - Calendar Year Returns

InvestorForce All DB US Fix Inc Gross Accounts
Ending December 31, 2013

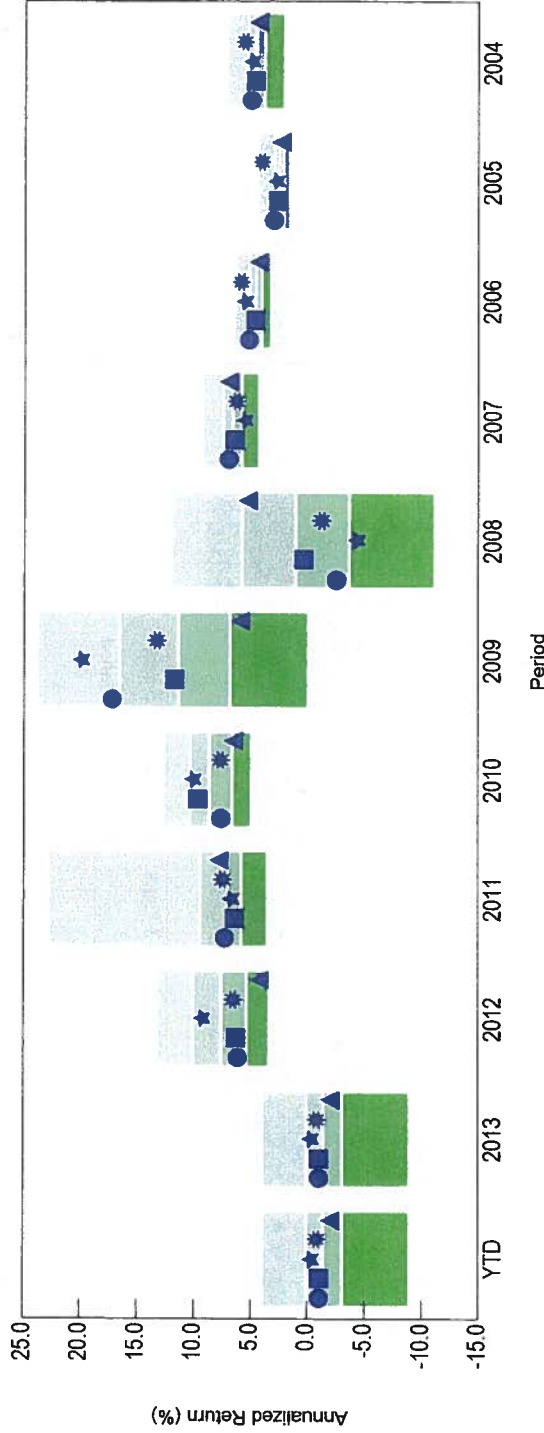


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	4.0	13.2	22.9	12.8	23.9	12.1	9.4	6.6	4.5	7.4
25th Percentile	0.1	10.1	9.5	10.4	16.6	5.9	7.6	5.3	3.0	5.4
Median	-1.4	7.6	7.1	8.7	11.4	1.1	6.7	4.6	2.6	4.6
75th Percentile	-3.0	5.4	5.9	6.7	6.9	-3.6	5.9	4.2	2.3	3.8
95th Percentile	-8.9	3.4	3.5	5.0	0.0	-11.2	4.3	3.3	1.7	2.1
# of Portfolios	482	462	419	332	332	318	291	277	255	242
● PERS(DB) Core Fixed	-1.0 (44)	-1.0 (44)	5.0 (82)	10.8 (22)	8.0 (69)	0.2 (54)	6.0 (70)	5.3 (23)	3.8 (8)	5.2 (28)
■ PERS(HC) Core Fixed	-1.0 (44)	-1.0 (44)	5.0 (82)	8.9 (45)	9.2 (62)	-4.0 (77)	7.3 (33)	3.4 (33)	3.4 (14)	-- (--)
▲ Barclays Aggregate	-2.0 (67)	-2.0 (67)	4.2 (90)	6.5 (78)	5.9 (81)	5.2 (30)	7.0 (43)	4.3 (66)	2.4 (64)	4.3 (60)

Fixed Income

InvestorForce All Defined Benefit US Core Fixed Income Universe - Calendar Year Returns

InvestorForce All DB US Fix Inc Gross Accounts
Ending December 31, 2013

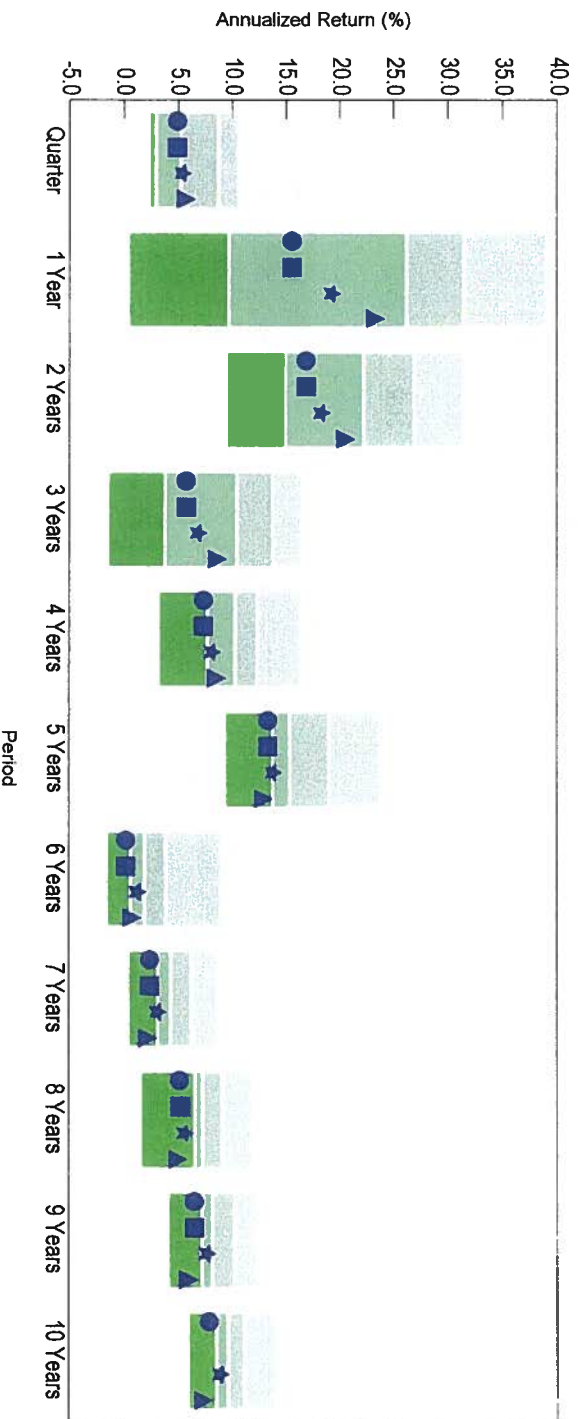


Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	4.0	13.2	22.9	12.8	23.9	12.1	9.4	6.6	4.5	7.4
25th Percentile	0.1	10.1	9.5	10.4	16.6	5.9	7.6	5.3	3.0	5.4
Median	-1.4	7.6	7.1	8.7	11.4	1.1	6.7	4.6	2.6	4.6
75th Percentile	-3.0	5.4	5.9	6.7	6.9	-3.6	5.9	4.2	2.3	3.8
95th Percentile	-8.9	3.4	3.5	5.0	0.0	-11.2	4.3	3.3	1.7	2.1
# of Portfolios	482	462	419	332	332	318	291	277	255	242
STRS Fixed Income	-1.0 (43)	6.1 (68)	7.3 (47)	7.7 (62)	17.2 (23)	-2.5 (69)	7.0 (42)	5.2 (27)	3.0 (25)	5.0 (37)
OP&F Core Fixed	-1.0 (44)	6.3 (66)	6.4 (63)	9.7 (34)	11.8 (49)	0.4 (53)	6.5 (56)	4.6 (50)	2.7 (45)	4.7 (48)
SERS Global Fixed	-0.4 (32)	9.2 (34)	6.7 (56)	10.1 (29)	19.8 (14)	-4.4 (78)	5.5 (80)	5.5 (20)	2.7 (41)	4.9 (41)
HPRS Global Fixed Income	-0.8 (39)	6.6 (64)	7.5 (45)	7.7 (62)	13.3 (41)	-1.2 (63)	6.3 (63)	5.9 (12)	4.1 (7)	5.6 (23)
Barclays Aggregate	-2.0 (67)	4.2 (90)	7.8 (37)	6.5 (78)	5.9 (81)	5.2 (30)	7.0 (43)	4.3 (66)	2.4 (64)	4.3 (60)

Total International Equities

InvestorForce Global Developed ex-USA Equities Universe

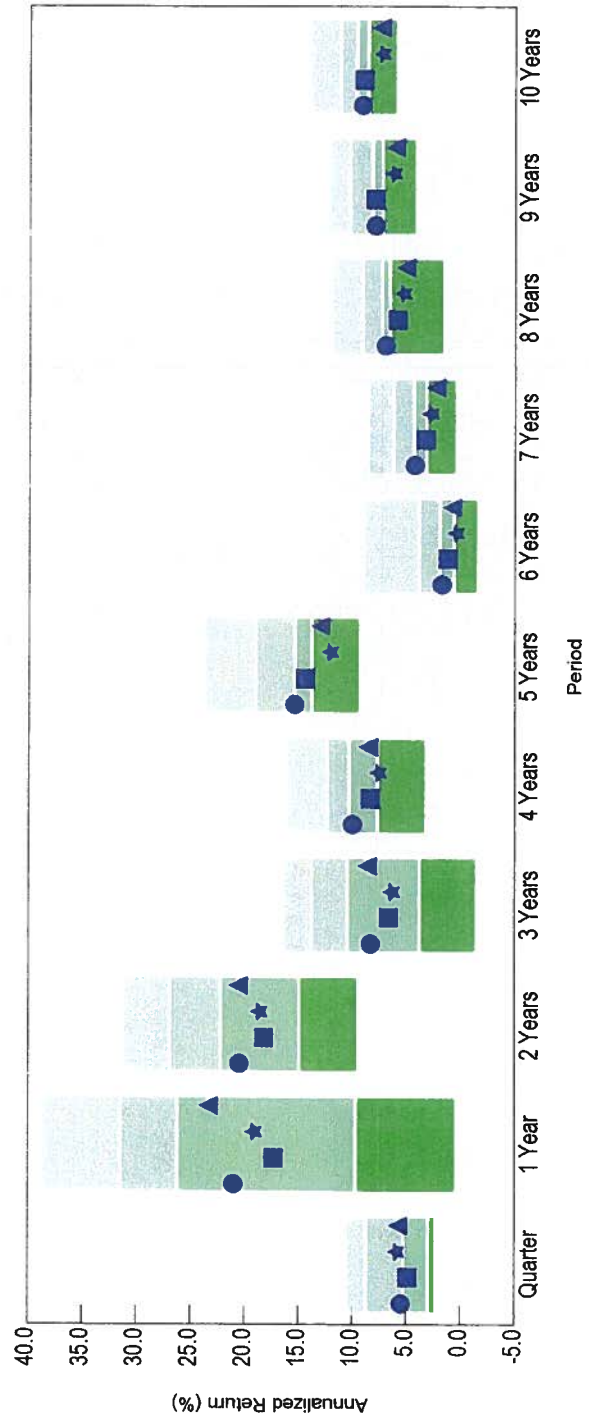
Global Developed xUS Equity Accounts
Ending December 31, 2013



	Return (Rank)	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	10.5	39.0	31.4	16.5	16.3	23.7	9.0	8.6	11.9	12.3	14.2
25th Percentile	8.8	31.5	27.0	13.8	12.4	19.0	3.9	6.3	9.2	10.3	11.2
Median	5.3	26.2	22.2	10.5	10.3	15.4	2.0	4.4	7.4	8.2	9.7
75th Percentile	3.0	9.7	14.9	3.8	7.8	13.8	0.7	3.2	6.6	7.3	8.7
95th Percentile	2.3	0.4	9.5	-1.4	3.2	9.3	-1.5	0.5	1.6	4.1	5.9
# of Portfolios	61	59	59	59	57	57	54	50	49	43	42
● PERS(DB) International Equity	4.9 (52)	15.6 (69)	16.9 (70)	5.8 (69)	7.4 (79)	13.3 (79)	0.2 (81)	2.4 (83)	5.2 (85)	6.5 (83)	7.9 (85)
■ PERS(HC) International Equity	4.9 (52)	15.6 (69)	16.9 (70)	5.8 (69)	7.4 (79)	13.3 (79)	0.2 (81)	2.4 (83)	5.2 (85)	6.5 (83)	-- (--)
★ STRS International Equity	5.4 (48)	19.2 (66)	18.3 (68)	6.8 (68)	8.1 (72)	13.8 (76)	1.2 (66)	3.1 (78)	5.6 (83)	7.7 (63)	8.9 (65)
▲ MSCI EAFE Gross	5.7 (47)	23.3 (62)	20.6 (66)	8.7 (62)	8.5 (68)	13.0 (82)	0.8 (73)	2.3 (84)	5.0 (85)	6.0 (91)	7.4 (90)

Total International Equities
InvestorForce Global Developed ex-USA Equities Universe

Global Developed xUS Equity Accounts
 Ending December 31, 2013



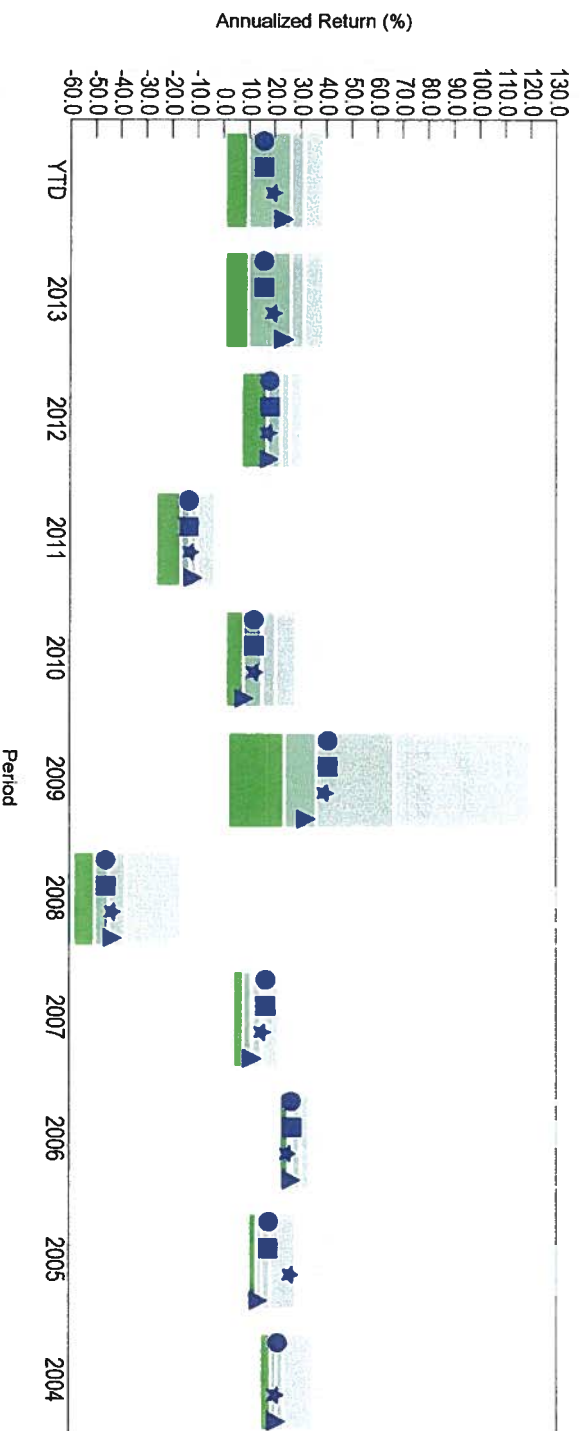
Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
10.5	39.0	31.4	16.5	16.3	23.7	9.0	8.6	11.9	12.3	14.2	
8.8	31.5	27.0	13.8	12.4	19.0	3.9	6.3	9.2	10.3	11.2	
5.3	26.2	22.2	10.5	10.3	15.4	2.0	4.4	7.4	8.2	9.7	
3.0	9.7	14.9	3.8	7.8	13.8	0.7	3.2	6.6	7.3	8.7	
2.3	0.4	9.5	-1.4	3.2	9.3	-1.5	0.5	1.6	4.1	5.9	
# of Portfolios	61	59	59	57	57	54	50	49	43	42	
5th Percentile	5.5 (48)	21.0 (65)	20.5 (58)	8.4 (63)	10.0 (53)	15.4 (51)	1.7 (61)	4.2 (52)	7.0 (63)	7.9 (59)	9.1 (59)
25th Percentile	4.9 (52)	17.3 (68)	18.2 (68)	6.7 (68)	8.4 (70)	14.4 (70)	1.2 (66)	3.2 (75)	5.8 (82)	7.9 (59)	9.0 (61)
Median	5.8 (47)	19.1 (66)	18.6 (67)	6.3 (69)	7.5 (79)	12.0 (87)	0.3 (80)	2.7 (81)	5.2 (85)	6.1 (88)	7.2 (90)
75th Percentile	5.7 (47)	23.3 (62)	20.6 (56)	8.7 (62)	8.5 (68)	13.0 (82)	0.8 (73)	2.3 (84)	5.0 (85)	6.0 (91)	7.4 (90)
95th Percentile											

- OP&F International Equity
- SERS International Equity
- ★ HPRS International Equity
- ▲ MSCI EAFE Gross

Total International Equities - Calendar Year Returns

InvestorForce Global Developed ex-USA Equities Universe

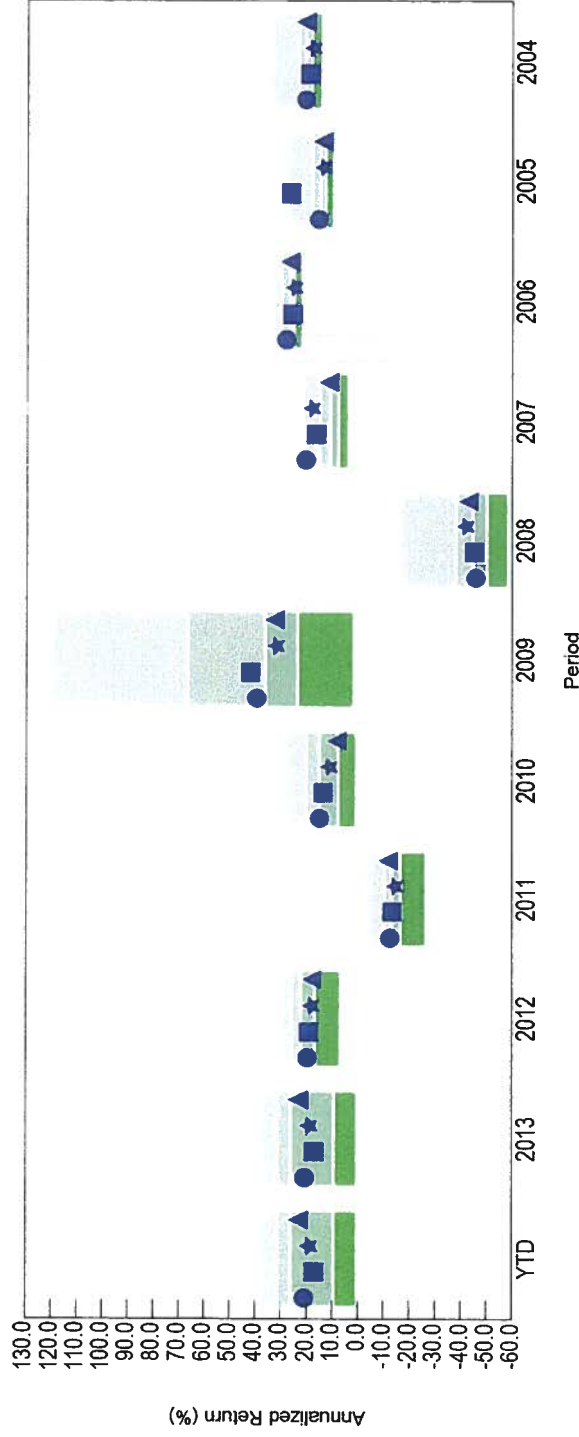
Global Developed xUS Equity Accounts
Ending December 31, 2013



Return (Rank)	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
5th Percentile	31.5	26.0	-9.9	20.7	120.3	-15.9	22.0	33.6	28.4	34.8
25th Percentile	31.5	26.0	-9.9	20.7	66.8	-38.0	15.4	30.4	18.4	23.6
Median	26.2	22.6	-12.9	15.5	36.6	-44.6	11.3	27.1	15.1	20.9
75th Percentile	9.7	17.0	-16.3	8.0	23.9	-49.9	8.0	25.6	13.2	18.7
95th Percentile	0.4	6.8	-26.6	0.9	1.8	-58.5	3.9	22.0	10.0	14.5
# of Portfolios	59	66	72	72	73	83	89	88	94	96

Total International Equities - Calendar Year Returns
InvestorForce Global Developed ex-USA Equities Universe

Global Developed xUS Equity Accounts
 Ending December 31, 2013



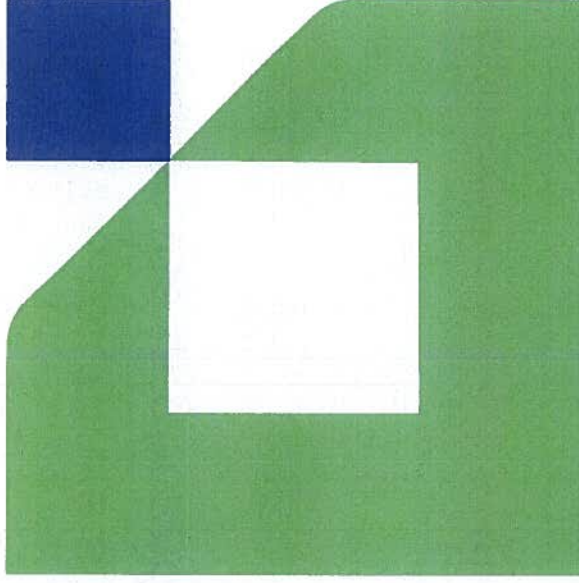
	YTD	2013	2012	2011	2010	2009	2008	2007	2006	2005	2004
Return (Rank)	39.0 (65)	39.0 (65)	30.5 (68)	-3.2 (45)	28.4 (52)	120.3 (44)	-15.9 (53)	22.0 (6)	33.6 (37)	28.4 (44)	34.8 (52)
5th Percentile	31.5 (68)	31.5 (68)	26.0 (69)	-9.9 (53)	20.7 (59)	66.8 (38)	-38.0 (51)	15.4 (17)	30.4 (72)	18.4 (7)	23.6 (72)
25th Percentile	26.2 (66)	26.2 (66)	22.6 (72)	-12.9 (62)	15.5 (67)	36.6 (35)	-44.6 (35)	11.3 (14)	27.1 (83)	15.1 (75)	20.9 (82)
Median	9.7 (62)	9.7 (62)	17.0 (72)	-16.3 (72)	8.0 (75)	23.9 (60)	-49.9 (60)	8.0 (43)	25.6 (53)	13.2 (61)	18.7 (61)
75th Percentile	0.4 (59)	0.4 (59)	6.8 (72)	-26.6 (72)	0.9 (75)	1.8 (75)	-58.5 (75)	3.9 (88)	22.0 (88)	10.0 (94)	14.5 (94)
95th Percentile	59	59	66	72	72	73	83	89	88	94	96
# of Portfolios	21.0 (65)	21.0 (65)	20.0 (68)	-12.4 (45)	15.1 (52)	39.6 (44)	-45.7 (53)	20.6 (6)	28.2 (37)	15.6 (44)	20.7 (52)
● OP&F International Equity	17.3 (68)	17.3 (68)	19.2 (69)	-13.2 (53)	13.7 (59)	41.9 (38)	-45.3 (51)	16.6 (17)	25.9 (72)	26.5 (7)	19.0 (72)
■ SERS International Equity	19.1 (66)	19.1 (66)	18.1 (72)	-14.5 (62)	11.2 (67)	31.7 (61)	-42.0 (35)	18.0 (14)	24.9 (83)	13.6 (75)	17.6 (82)
★ HPRS International Equity	23.3 (62)	23.3 (62)	17.9 (72)	-11.7 (44)	8.2 (75)	32.5 (60)	-43.1 (40)	11.6 (43)	26.9 (53)	14.0 (61)	20.7 (52)
▲ MSCIEAFE Gross											



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Presented by
Marty Dirks
Investment Consultant

November 14, 2012



Policy Benchmark

The total fund policy benchmark is the return of the asset class benchmark indexes weighted by asset class benchmark allocation targets.

This is the return we should receive if the asset allocation exactly matches the target and all assets are invested in the indexes.

Policy Benchmark

For example:

	Target Asset Allocation	Benchmark Return	Contribution
Stocks	60%	10%	6%
Bonds	40%	5%	2%

		Policy Benchmark Portfolio Return	8%

Actual Portfolio Return

The actual return generated by the investment portfolio.

Actual Portfolio vs. Policy Benchmark Returns

The actual return generated by the investment portfolio differs from the benchmark return due to:

- Asset allocation differing from the target asset allocation

Actual Portfolio Return

For example: Asset allocation differing from the target asset allocation

	Asset Allocation	Actual Return	Contribution
Stocks	<u>70%</u>	10%	7%
Bonds	<u>30%</u>	5%	1.5%

		Actual Portfolio Return	8.5%

Actual Portfolio vs. Policy Benchmark Returns

The actual return generated by the investment portfolio differs from the benchmark return due to:

- Asset allocation differing from the target asset allocation
- Manager performance differing from its benchmark performance

Actual Portfolio Return

For example: Manager performance differing from their benchmark performance

	Asset Allocation	Actual Return	Contribution
Stocks	60%	<u>15%</u>	9%
Bonds	40%	<u>5%</u>	2%

		Actual Portfolio Return	11%

Actual Portfolio vs. Policy Benchmark Returns

Answers the questions:

Did we do better or worse than we should expect?

Did we allocate assets differently from our target allocation?

If so, did it help or hurt performance?

Did our managers do better or worse than their benchmarks?

Did they help or hurt performance?

Actuarial Discount Rate Assumed Rate of Return

The expected long-term rate of return. This is calculated based on expected price inflation, the expected real rate of return for each asset class and the allocation to each asset class.

Actuarial Discount Rate

The long-term expected plan return on investment as determined by the board of trustees. The board considers inputs from the actuaries, consultants, staff and others and comes to its own conclusion.

The Actuarial Discount Rate is used by the actuaries to determine now much money we need today to meet all the pension payments in the future. If the assumed rate of return changes, so will how much money we need today to fulfill all liabilities changes.

Actuarial Discount Rate

The Actuarial Discount Rate, which is the assumed rate of return, will differ from the actual rate of return. The Actuarial Discount Rate is a long-term projection. Actual results are measured over various time spans.

Also, things happen we cannot anticipate. For example:

- Recession
- Inflation
- Good (or poor) performance by managers