

**Performance Data**

Period ending

December 31, 2012



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## Investment Performance Summary

### PERIOD ENDING DECEMBER 31, 2012

#### Systems Performance Summary

All six of the Retirement Systems had positive results for the six months ending December 31, 2012, 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.

Three of the six Retirement Systems have 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. PERS DB had a 10-year return of 8.2% compared to 8.0% for the actuarial rate, STRS returned 8.5% compared to 7.75%, and OP&F returned 8.9% compared to 8.25%. SERS was close to its actuarial rate with a return of 7.6% compared to 7.75%, and HPRS trailed their actuarial rate, 7.3% compared to 8.0%. Below please see the actuarial rates of the various retirement systems:

Plan	Actuarial Rate	Return
<b>PERS DB</b>	8.00 %	8.2 %
<b>PERS HC*</b>	6.70	5.3
<b>STRS</b>	7.75	8.5
<b>OP&amp;F</b>	8.25	8.9
<b>SERS</b>	7.75	7.6
<b>HPRS</b>	8.00	7.3

\*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, 2012**

#### **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 January 1, 2003 and ending December 31, 2012.

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 80% of total assets internally, Ohio Public Employees Retirement System (PERS) manages approximately 60% 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 \$11 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 2012 was a very strong period for the financial markets. As a gauge of the marketplace, the Russell 3000 returned 6.5% and the MSCI EAFE returned 14.0% for the two quarters ending December 31, 2012. Domestic equity markets are still volatile, with concerns remaining about the “fiscal cliff” of automatic spending cuts and tax increases, and the resulting impact on the U.S. economy. Unemployment in the United States remains high, and the Federal Reserve Bank announced its intentions to increase its securities purchases (“QE3”) and keep short-term interest rates low until unemployment falls below 6.5% – the first time it has tied rates to an economic milestone.

- The Ohio Statewide fund returns for the six-month period ranged from 6.4% (HPRS) to 8.0% (PERS DB and SERS). All but one of the six systems outperformed its respective policy index for the six-month period. The best relative performers were SERS (+8.0%) and PERS DB (+8.0%). SERS and PERS DB were also the best absolute performers, with OP&F close behind at +7.9%. PERS HC returned 7.5% and beat its benchmark by 0.4%, STRS returned 6.8% and matched its benchmark, and HPRS returned 6.4% and beat its benchmark by 10 basis points.
- In comparison to a broad universe of other public retirement systems (the InvestorForce All Public Defined Benefit Universe), five of the plans ranked above the median for the six-month period ending December 31, 2012. SERS ranked in the 3<sup>rd</sup> percentile, PERS DB ranked in the 5<sup>th</sup> percentile, and OP&F ranked in the 6<sup>th</sup> percentile. PERS HC ranked in the 16<sup>th</sup> percentile and STRS ranked in the 39<sup>th</sup> percentile, while HPRS ranked just below the median, in the 51<sup>st</sup> percentile.
- For the one-year period ending December 31, 2012, SERS (+14.4%) outperformed its benchmark by 80 basis points. PERS HC (+13.8%) outperformed its benchmark by 30 basis points. OP&F (+14.9%) underperformed its benchmark by 10 basis points, STRS (+13.8%) trailed its benchmark by 10 basis points, PERS DB (+14.8%) trailed its benchmark by 50 basis points, and HPRS (11.9%) underperformed its benchmark by 120 basis points. Against their peers in the InvestorForce All Public Defined Benefit Universe, five of six plans placed above the median, with OP&F and PERS DB placing in the 2<sup>nd</sup> percentile among its peers, and SERS ranked in the 5<sup>th</sup> percentile, and PERS HC ranked in the 11<sup>th</sup> percentile. STRS ranked in the 12<sup>th</sup> percentile, and HPRS ranked in the 51<sup>st</sup> percentile.
- On a three-year basis, OP&F, SERS, and PERS DB were the best relative performers, with OP&F leading its benchmark by 100 basis points, and SERS and PERS DB beating their benchmarks by 90, and 70 basis points, respectively. PERS HC beat its benchmark by 40 basis points, and STRS beat its benchmark by 20 basis points. HPRS was 170 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, only one plan ranked below the median. OP&F ranked in the 1<sup>st</sup> percentile, PERS DB ranked in the 14<sup>th</sup> percentile and STRS ranked in the 16<sup>th</sup> percentile. The PERS HC plan ranked in the 36<sup>th</sup> percentile, SERS ranked in the 40<sup>th</sup> percentile, and HPRS ranked in the 76<sup>th</sup> percentile.
- For the five-year period, only two of the six systems outpaced their respective policy benchmarks, with OP&F outperforming its benchmark by 70 basis points, and PERS DB outperforming its benchmark by 20 basis points. In comparison to the InvestorForce All Public Defined Benefit Universe, PERS HC (+3.6%) ranked in the 47<sup>th</sup> percentile, while OP&F (+3.5%) ranked in the 54<sup>th</sup> percentile. PERS DB (+2.7%), STRS (+2.1%), HPRS (+1.7%), and SERS (+1.6) all ranked in the fourth quartile.
- Over the ten-year period three of the six Retirement Systems beat their actuarial interest rates. PERS DB had a 10-year return of 8.2% compared to 8.0% for the actuarial rate, STRS returned 8.5% compared to 7.75%, and OP&F returned 8.9% compared to 8.25%. SERS was close to its actuarial rate with a return of 7.6% compared to 7.75%, and HPRS trailed their actuarial rate, 7.3% compared to 8.0%. None of the Systems beat their actuarial interest rates over the trailing five-year period, but over the trailing three-

year period, all but one plan was above their respective actuarial interest rates. The actuarial rates for the plans are as follows: PERS DB (8.0%), PERS HC (6.7%), STRS (7.75%), OP&F (8.25%), SERS (7.75%), and HPRS (8.0%). Over the ten-year period, four of the five plans outperformed their policy benchmarks. STRS (+8.5%) exceeded its policy benchmark by 60 basis points, OP&F (+8.9%) was 50 basis points above its benchmark, and PERS DB (+8.2%) was above its benchmark by 30 basis points. SERS (+7.6%) beat its benchmark by 20 basis points, while HPRS (+7.3%) trailed its benchmark by 90 basis points. Relative to the peer group universe, OP&F ranked in the 1<sup>st</sup> percentile, STRS ranked in the 5<sup>th</sup> percentile, and PERS DB ranked in the 12<sup>th</sup> percentile over the trailing ten-year period. SERS ranked in the 44<sup>th</sup> percentile, and HPRS ranked in the 57<sup>th</sup> 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.

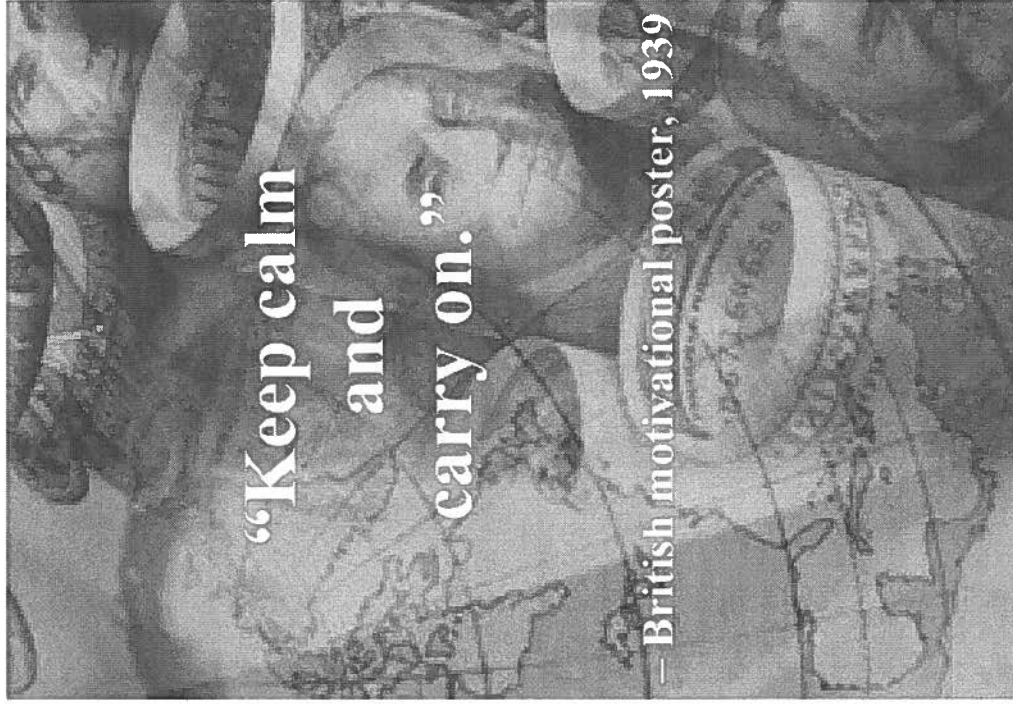
• The following observations are based on a review of the systems' asset allocation in comparison to the InvestorForce All Public Defined Benefit Universe:

1. The actual (39.0%) and target (35.0%) domestic equity allocation of HPRS was above the median plan's allocation to domestic equity (34.3%) in the InvestorForce All Public Defined Benefit Universe. This was also true for STRS actual (34.5%) and target (38.0%) allocation to domestic equities. For OP&F, the target allocation to domestic equities (31.6%) was below the median, as was the actual allocation (27.8%). The actual (23.9%) and target (22.5%) allocation of SERS, the actual (22.5%) and target (23.6%) allocation of PERS DB, as well as the actual (22.6%) and target (24.6%) allocation of PERS HC domestic equity were all below that of the median plan.
2. Five of the six systems' actual asset allocations to fixed income were well below the median plan (34.4%) of the InvestorForce All Public Defined Benefit Universe. PERS HC has a target (34.8%) above the median, but an actual allocation (34.0%) slightly below the median.
3. The median plan allocation of the InvestorForce All Public Defined Benefit Universe to non-U.S. equity as of December 31, 2012 was 14.0%. 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 9.3% as of December 31, 2012. 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. The actual allocations for PERS HC (5.9%) and HPRS (4.7%) were below the median.



5. The universe median allocation to alternatives in the InvestorForce All Public Defined Benefit Universe was 9.3% as of December 31, 2012. The target allocation of each of the systems, with the exception of OP&F (5.3%) and PERS HC (6.4%), is above the median allocation. The actual allocations for OP&F (4.6%) and PERS HC (5.6%) were below the median.
  - 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.

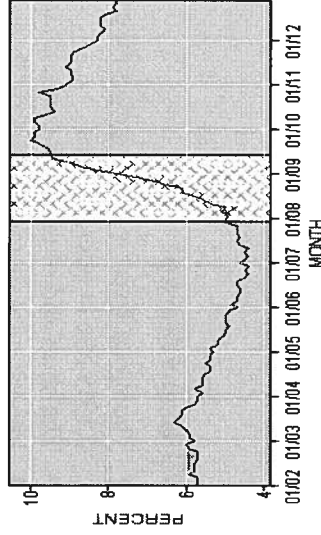
# Market Commentary - 4th Quarter 2012



	Qtr	6 M	1 Yr	3 Yrs	5 Yrs	10 Yrs
S&P 500 Index	-0.38	5.95	16.00	10.87	1.66	7.10
Russell 1000 Index	0.12	6.44	16.42	11.12	1.92	7.52
Russell 1000 Value Index	1.52	8.13	17.51	10.86	0.59	7.38
Russell 1000 Growth Index	-1.32	4.71	15.26	11.35	3.12	7.52
Russell 2000 Index	1.85	7.20	16.35	12.25	3.56	9.72
Russell 2000 Value Index	3.22	9.07	18.05	11.57	3.55	9.50
Russell 2000 Growth Index	0.45	5.31	14.59	12.82	3.49	9.80
MSCI EAFE ND	6.57	13.95	17.32	3.56	-3.69	8.21
MSCI EAFE Small Cap ND	6.01	14.37	20.00	7.17	-0.86	11.93
MSCI Europe ND	7.02	16.33	19.12	3.25	-4.34	8.37
MSCI Japan ND	5.78	4.89	8.18	2.28	-4.25	4.93
MSCI EM ND	5.58	13.75	18.22	4.66	-0.92	16.52
DJ World Real Estate	6.28	13.15	30.61	12.71	0.50	11.53
DJ US Select REIT Index	2.31	1.93	17.12	17.94	5.08	11.48
ML 3-month T-Bill	0.04	0.07	0.11	0.11	0.52	1.78
BC US Gov 1-3Y Bonds	0.07	0.33	0.51	1.49	2.49	2.83
BC US Gov/Corp Bonds	0.37	2.11	4.82	6.70	6.06	5.25
BC US Aggregate Bond	0.21	1.80	4.21	6.19	5.95	5.18
BC US Gov Long Bonds	-0.71	-0.37	3.78	13.62	9.58	7.64
BC US Corp Long Bonds	1.04	6.63	12.41	13.16	10.41	8.10
BC US High Yield Bonds	3.29	7.97	15.81	11.86	10.34	10.62
BC TIPS	0.69	2.82	6.98	8.90	7.04	6.65

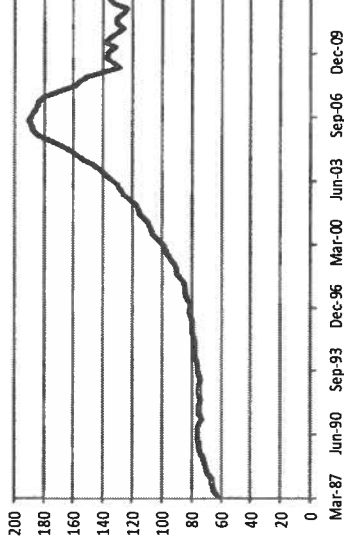
# Market Commentary - 4th Quarter 2012

Unemployment rate (seasonally adjusted)



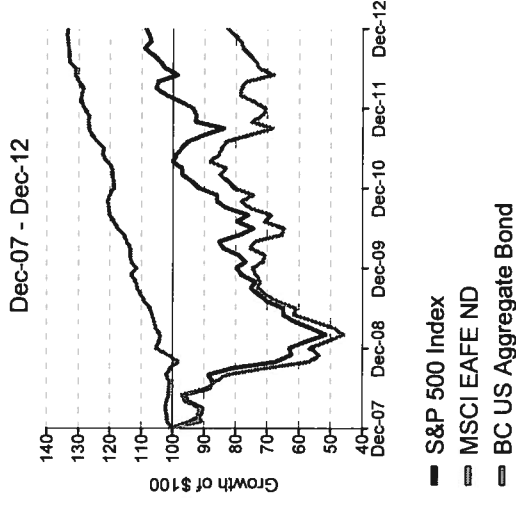
Note: Cross-hatched area represents recession.

S&P/Case-Shiller US National Composite Housing Index



The S&P/Case-Shiller Home Price Indices are calculated monthly using a three-month moving average and published with a two month lag. Base Year 2000 = 100.

Broad Markets - Five Years

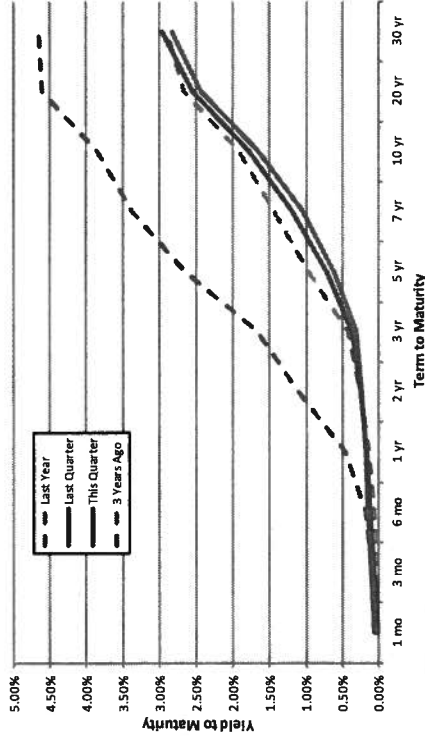


## Market Commentary

- The U.S. stock market was mixed on concerns about the presidential election, the “fiscal cliff” of automatic spending cuts and tax increases, and the resulting impact on the U.S. economy.
- The international equity markets made substantial gains as investors became more confident in the European Central Bank’s ability to address the European debt crisis and China’s economy regained momentum.
- The Federal Reserve Bank announced its intentions to increase its securities purchases (“QE3”) and keep short-term interest rates low until unemployment falls below 6.5% -- the first time it has tied rates to an economic milestone.
- As the quarter ended, mutual fund investors increased their holdings in bonds and decreased their holdings in stocks. For the quarter, bond funds had net inflows of \$68.2 billion, while stock funds had net outflows of \$64.1 billion. Total money market mutual fund assets increased by \$91.1 billion to \$2.667 trillion.
- The unemployment rate was unchanged at 7.8%, as total employment increased by 453,000 jobs.
- The price of oil was unchanged at \$92 per barrel.
- For the three months ending December 31, 2012, annualized seasonally adjusted CPI – U was -0.7%. Falling prices for gasoline drove the decrease.

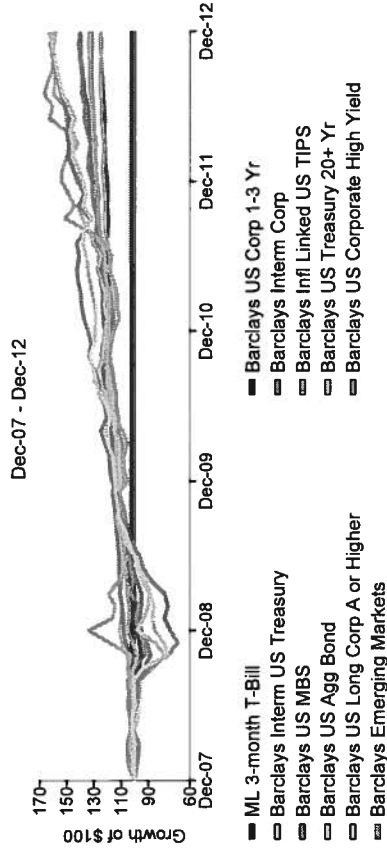
# Market Commentary - 4th Quarter 2012

U.S. Treasury Yield Curve

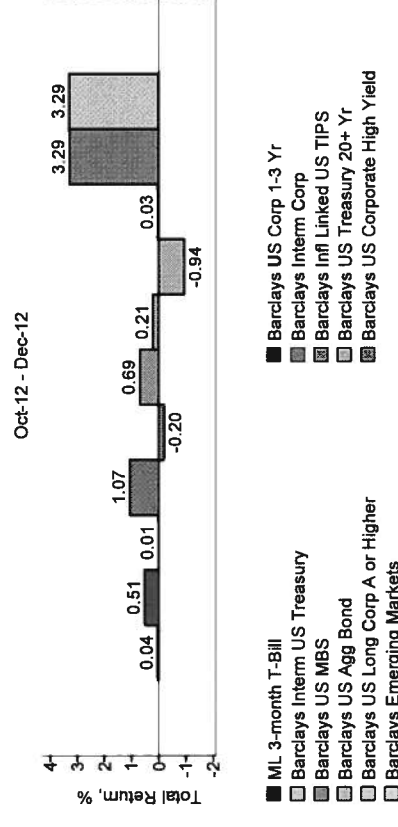


Source: Department of US Treasury

US Fixed Income - Five Years



US Fixed Income Quarterly Returns



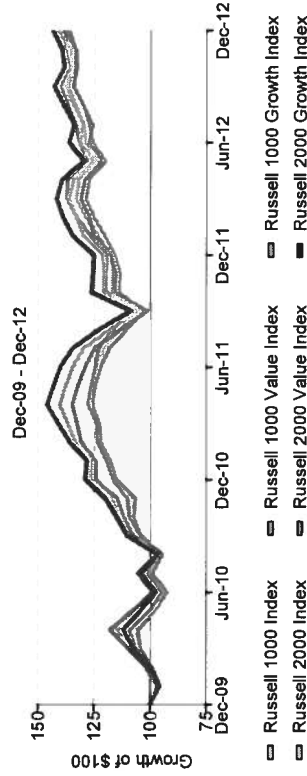
	Qtr	YTD	1 Yr	3 Yrs	5 Yrs
ML 3-month T-Bill	0.04	0.11	0.11	0.11	0.52
Barclays US Corp 1-3 Yr	0.51	4.17	4.17	3.55	4.62
Barclays Intern US Treasury	0.01	1.71	1.71	4.50	4.61
Barclays Intern Corp	1.07	8.84	8.84	7.53	7.01
Barclays US MBS	-0.20	2.59	2.59	4.72	5.67
Barclays Infl Linked US TIPS	0.69	6.98	6.98	8.90	7.04
Barclays US Agg Bond	0.21	4.21	4.21	6.19	5.95
Barclays US Treasury 20+ Yr	-0.94	3.36	3.36	14.81	9.72
Barclays US Long Corp A or Higher	0.03	10.80	10.80	12.86	9.62
Barclays US Corporate High Yield	3.29	15.81	15.81	11.86	10.33
Barclays Emerging Markets	3.29	17.94	17.94	12.49	10.25

## US Bond Market

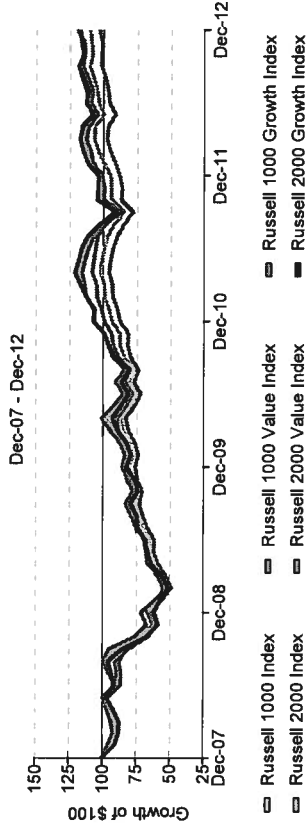
- The broad fixed income market rose 0.21% in the 4<sup>th</sup> quarter, as the coupon return of 0.81% more than offset the negative impact from a 0.13% rise in interest rates.
- The short end of the yield curve remained unchanged as the Fed maintained its near-zero interest rate policy.
- Interest rates increased slightly from the 2- to the 30-year Treasury rates.
- Emerging market bonds and high-yield bonds were the best performing sectors this quarter, up 3.29%, as investors favored bonds with higher yields.
- Long-term corporate bonds were up 0.03%, as corporate credit spreads tightened sharply in response to strong demand from investors.
- Long-term government bonds were the worst performing sector this quarter, down 0.94%, on lower demand for safe-haven assets.
- 91-Day T-Bill returned 0.04% in the fourth quarter as compared with 0.03% in the third quarter.

# Market Commentary - 4th Quarter 2012

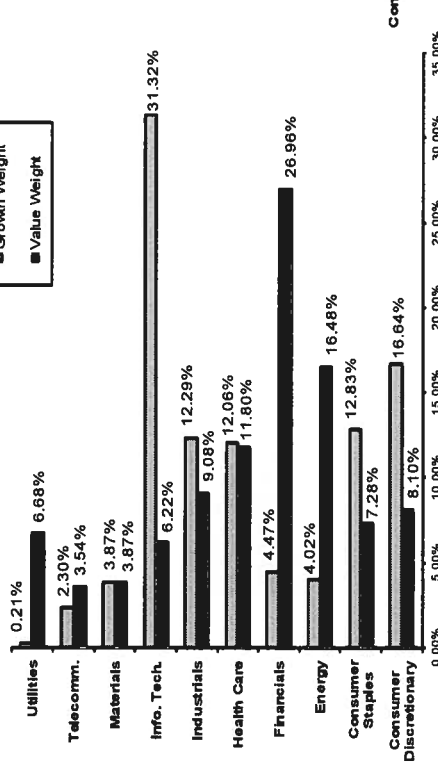
Russell Indices - Three Years



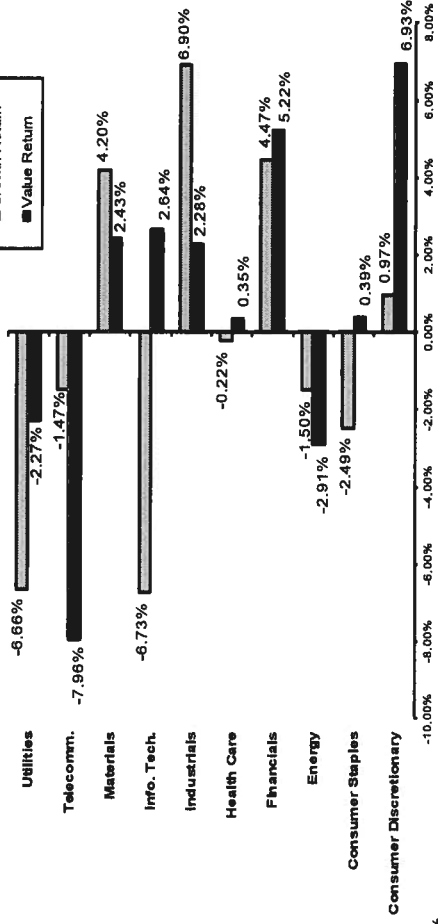
Russell Indices - Five Years



Russell 1000 Index Sector Weights



Russell 1000 Index Sector Quarterly Returns



Source: Russell/Milliman Analytical Services

## US Stock Market

- The major domestic equity indices were mixed for the quarter. The small-cap Russell 2000 Value Index had the best return, up 3.2%.
- Small-cap stocks outperformed large-caps, up 1.9% vs. 0.1%.
- In comparing styles, value stocks did better than growth stocks.
- In a reversal from last quarter, REITs rose 2.31%, due to limited new supply, improving demand, and a low cost of capital. The best performing sectors were industrials and regional malls.
- Financials were the best performing sector, up 5.12%, on continued monetary stimulus by the Fed, an improving housing market, and capital levels that appear to be adequate.
- Telecommunication services were the worst performing sector, down 5.56%, as AT&T reported an unexpectedly large decline in subscriber growth.

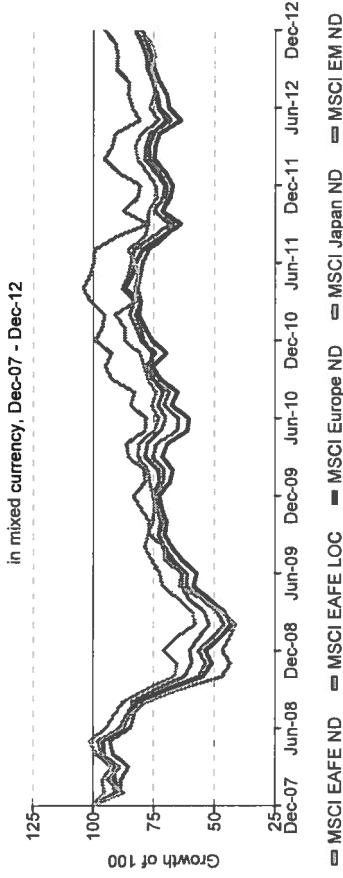
# Market Commentary - 4th Quarter 2012

## Currency Exchange Rates

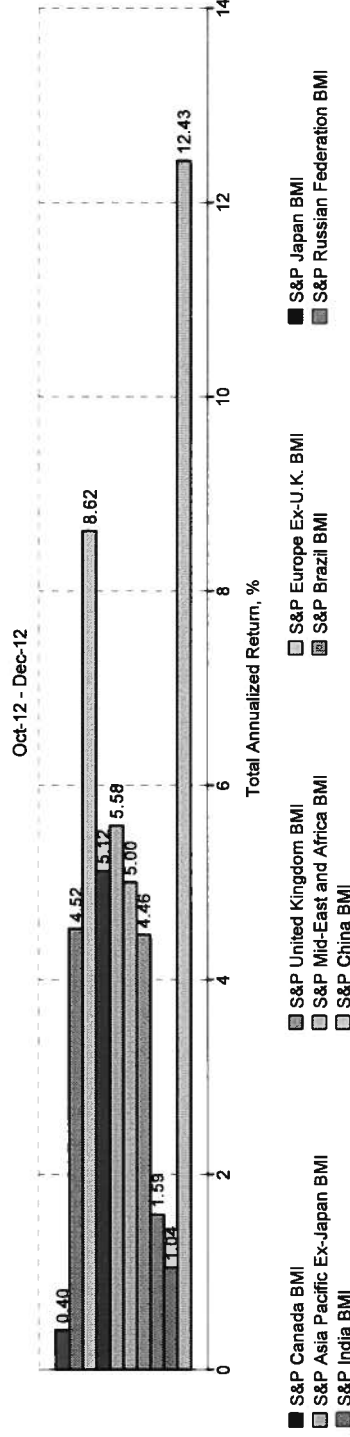
	Units per US Dollar		% Change
	This Quarter	Last Quarter	
Brazil Reals	2.05	2.03	1.00%
Canadian Dollar	1.00	0.98	1.35%
China Yuan Renminbi	6.23	6.29	-0.87%
Euro	0.76	0.78	-2.49%
India Rupees	54.85	52.86	3.77%
Japan Yen	86.58	77.92	11.12%
Mexico Pesos	12.96	12.86	0.78%
Russia Rubles	30.53	31.22	-2.21%
United Kingdom Pounds	0.62	0.62	-0.78%

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 6.57% and Emerging Markets were up 5.58%. Local currency returns for the EAFE Index and Emerging Markets were 7.52% and 5.33%, respectively.
- Among the major international regions, Chinese stocks had the highest return (+12.43%), helped by a more positive economic outlook for China.
- Stocks in Europe (except for the U.K.) also rose substantially (+8.62%), as the European Central Bank provided stimulus and guided recovery efforts in debt-ridden countries.
- Small-cap stocks, up 6.0%, underperformed large-cap stocks, up 6.6%.

# **Index Definitions and Modern Portfolio Theory Definitions**

# Ohio Retirement Study Council

## 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.



# Ohio Retirement Study Council

**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.

# Ohio Retirement Study Council

## 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 12/31/12

Comparison of Actual Asset Allocation						
	Global ex-US			Public/Private		
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash
PERS DB	22.5	24.2	25.5	10.3	14.8	2.7
PERS HC	22.6	28.0	34.8	5.9	5.6	3.0
STRS	34.5	22.6	16.8	10.2	11.0	4.9
OP&F	27.8	23.7	28.6	9.9	4.6	5.4
SERS	23.9	23.9	17.8	10.2	23.4	0.8
HPRS	39.0	16.0	19.7	4.7	19.2	1.4
<b>IF Public DB Median</b>	<b>34.3</b>	<b>14.0</b>	<b>34.4</b>	<b>9.3</b>	<b>9.3</b>	<b>1.1</b>

Comparison of Target Asset Allocation						
	Global ex-US			Public/Private		
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash
PERS DB	23.6	24.0	25.0	10.0	15.4	2.0
PERS HC	24.6	27.0	34.0	6.0	6.4	2.0
STRS	38.0	23.0	18.0	10.0	10.0	1.0
OP&F	31.6	21.7	31.5	10.0	5.3	0.0
SERS	22.5	22.5	19.0	10.0	25.0	1.0
HPRS	35.0	20.0	22.5	5.0	17.5	0.0
<b>IF Public DB Median</b>	<b>34.3</b>	<b>14.0</b>	<b>34.4</b>	<b>9.3</b>	<b>9.3</b>	<b>1.1</b>

Investor Force All Public Defined Benefit Asset Allocation						
	Global ex-US			Public/Private		
	US Equity	Equity	Fixed Income	Real Estate	Alternatives	Cash
5th Percentile	53.0	24.8	49.0	21.4	25.7	8.9
25th Percentile	41.3	18.0	42.8	15.5	13.9	2.4
<b>Median</b>	<b>34.3</b>	<b>14.0</b>	<b>34.4</b>	<b>9.3</b>	<b>9.3</b>	<b>1.1</b>
75th Percentile	23.5	9.6	22.1	5.1	5.4	0.4
95th Percentile	12.3	5.9	10.3	2.8	1.9	0.0

## Systems Total Fund Performance

Ending December 31, 2012

	Since 6/30/12	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>Public Employees Retirement System (DB)</b>										
PERS (DB) Total Fund Benchmark	8.0%	5	14.8%	2	9.6%	14	2.7%	75	8.2%	12
Over/Under	7.2%	24	15.3%	1	8.9%	29	2.5%	78	7.9%	24
	0.8%		-0.5%		0.7%		0.2%		0.3%	
<b>Public Employees Retirement System (HC)</b>										
PERS (HC) Total Fund Benchmark	7.5%	16	13.8%	11	8.8%	36	3.6%	47	-	-
Over/Under	7.1%	25	13.5%	16	8.4%	52	3.7%	41	-	-
	0.4%		0.3%		0.4%		-0.1%			
<b>State Teachers Retirement System</b>										
STRS Total Fund Benchmark	6.8%	39	13.8%	12	9.5%	16	2.1%	82	8.5%	5
Over/Under	6.8%	34	13.9%	11	9.3%	21	2.2%	82	7.9%	26
	0.0%		-0.1%		0.2%		-0.1%		0.6%	
<b>Ohio Police &amp; Fire</b>										
OPF Total Fund Benchmark	7.9%	6	14.9%	2	10.9%	1	3.5%	54	8.9%	1
Over/Under	7.4%	17	15.0%	1	9.9%	9	2.8%	75	8.4%	9
	0.5%		-0.1%		1.0%		0.7%		0.5%	
<b>School Employees Retirement System</b>										
SERS Total Fund Benchmark	8.0%	3	14.4%	5	8.7%	40	1.6%	93	7.6%	44
Over/Under	6.4%	51	13.6%	16	7.8%	69	1.9%	87	7.4%	49
	1.6%		0.8%		0.9%		-0.3%		0.2%	
<b>Highway Patrol Retirement System</b>										
HPRS Total Fund Benchmark	6.4%	51	11.9%	51	7.4%	76	1.7%	91	7.3%	57
Over/Under	6.3%	52	13.1%	26	9.1%	26	3.3%	58	8.2%	13
	0.1%		-1.2%		-1.7%		-1.6%		-0.9%	

All total fund returns are reported gross of fees.

All returns are for periods ending 12/31/2012. Returns for periods longer than one year are annualized. Rankings are derived from placement in the InvestorForce All Public Defined Benefit Universe.

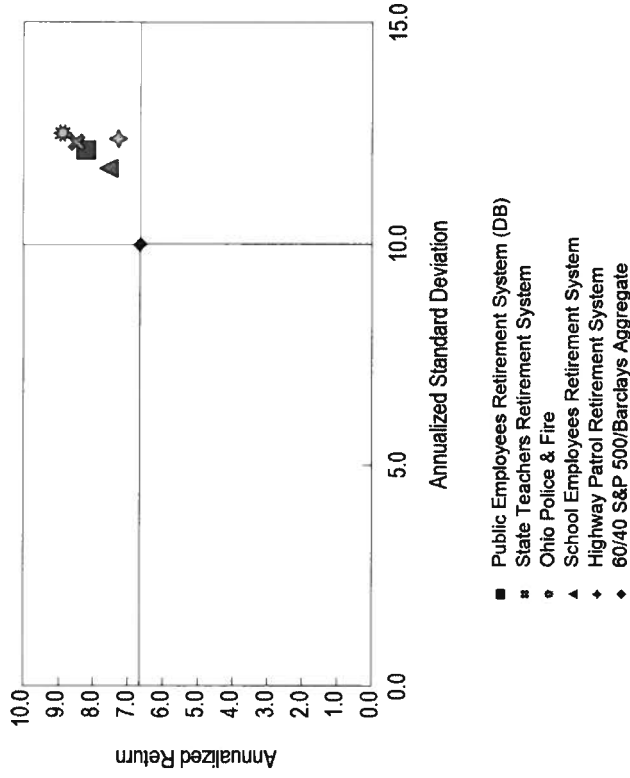
# Systems Total Plans

## Risk Analysis - Last 10 Years

**Statistics Summary**  
10 Years Ending December 31, 2012

	Anlzd Return	Anlzd Standard Deviation	Sharpe Ratio	Information Ratio
Public Employees Retirement System (DB)	8.23%	12.11%	0.54	0.32
<b>PERS (DB) Total Fund Benchmark</b>	<b>7.95%</b>	<b>12.11%</b>	<b>0.52</b>	<b>-</b>
State Teachers Retirement System	8.50%	12.29%	0.56	0.79
<b>STRS Total Fund Benchmark</b>	<b>7.93%</b>	<b>12.25%</b>	<b>0.51</b>	<b>-</b>
Ohio Police & Fire	8.90%	12.50%	0.58	0.50
<b>OPF Total Fund Benchmark</b>	<b>8.42%</b>	<b>12.43%</b>	<b>0.54</b>	<b>-</b>
School Employees Retirement System	7.58%	11.71%	0.51	0.08
<b>SERS Total Fund Benchmark</b>	<b>7.45%</b>	<b>10.73%</b>	<b>0.54</b>	<b>-</b>
Highway Patrol Retirement System	7.31%	12.37%	0.46	-0.55
<b>HPRS Total Fund Benchmark</b>	<b>8.22%</b>	<b>11.50%</b>	<b>0.57</b>	<b>-</b>

**Annualized Return vs. Annualized Standard Deviation**  
10 Years Ending December 31, 2012



On an absolute basis, the PERS DB and SERS Plans outperformed all other Plans in the ORSC for the two quarters ending December 31, 2012. OP&F returned 7.9%, followed by PERS HC (7.5%). On a relative basis, the SERS Plan outperformed all other Plans in the ORSC, beating its benchmark of 6.4% for the two quarters ending December 31, 2012.

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 STRS Plan had the highest information ratio, followed by OP&F, PERS DB, SERS, and HPRS.

## Systems Domestic Equity

	Ending December 31, 2012									
	Since 6/30/12	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
<b>ORSC Domestic Equity</b>										
PERS(DB) Domestic Equity	6.9%	50	16.6%	38	11.2%	56	1.9%	71	7.6%	78
Russell 3000	<u>6.5%</u>	54	<u>16.4%</u>	41	<u>11.2%</u>	56	<u>2.0%</u>	69	<u>7.7%</u>	77
Over/Under	0.4%		0.2%		0.0%		-0.1%		-0.1%	
PERS(HC) Domestic Equity	6.9%	50	16.6%	38	11.2%	56	1.9%	71	--	--
Russell 3000	<u>6.5%</u>	54	<u>16.4%</u>	41	<u>11.2%</u>	56	<u>2.0%</u>	69	<u>7.7%</u>	77
Over/Under	0.4%		0.2%		0.0%		-0.1%			
STRS Domestic Equity	6.1%	61	15.6%	53	11.0%	59	1.7%	74	7.5%	82
STRS Domestic Equity Benchmark	<u>6.5%</u>	54	<u>16.4%</u>	41	<u>11.2%</u>	56	<u>2.0%</u>	69	<u>7.6%</u>	79
Over/Under	-0.4%		-0.8%		-0.2%		-0.3%		-0.1%	
OP&F Domestic Equity	7.2%	45	15.9%	49	12.7%	36	3.3%	49	8.5%	65
Wilshire 5000	<u>6.3%</u>	58	<u>16.1%</u>	45	<u>11.1%</u>	57	<u>2.0%</u>	69	<u>7.9%</u>	74
Over/Under	0.9%		-0.2%		1.6%		1.3%		0.6%	
SERS Domestic Equity	8.2%	34	17.1%	33	11.6%	50	2.1%	68	7.6%	78
Russell 3000	<u>6.5%</u>	54	<u>16.4%</u>	41	<u>11.2%</u>	56	<u>2.0%</u>	69	<u>7.7%</u>	77
Over/Under	1.7%		0.7%		0.4%		0.1%		-0.1%	
HPRS Domestic Equity	6.9%	50	16.0%	45	11.6%	51	2.7%	59	8.8%	62
HPRS Domestic Equity Benchmark	<u>6.5%</u>	54	<u>16.4%</u>	41	<u>11.9%</u>	46	<u>2.7%</u>	59	<u>8.3%</u>	67
Over/Under	0.4%		-0.4%		-0.3%		0.0%		0.5%	

All domestic equity returns are reported gross of fees.

All returns are for periods ending 12/31/2012. 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, 2012. SERS had the best absolute and relative domestic equity returns for the six month period, with a return of 8.2%. Over the trailing year, SERS also led performance on an absolute basis and a relative basis. Over the five- and ten-year periods, OP&F generated the highest relative returns.

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

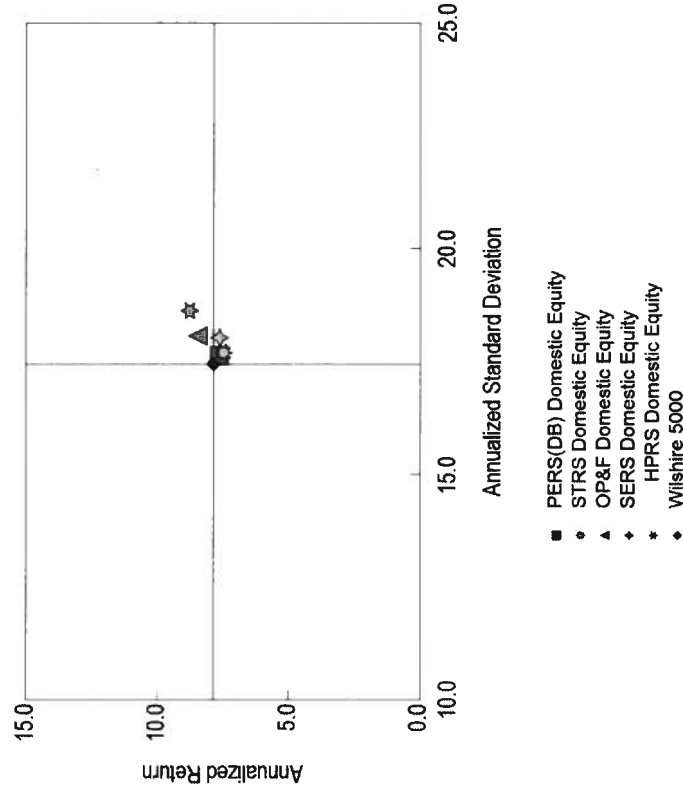
# Systems Domestic Equity

## Statistics Summary

10 Years Ending December 31, 2012

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio	Information Ratio
PERS(DB) Domestic Equity	7.62%	17.63%	0.34	-0.14
Russell 3000	7.68%	17.51%	0.34	-
PERS(HC) Domestic Equity	--	--	--	--
Russell 3000	--	--	--	--
STRS Domestic Equity	7.48%	17.70%	0.33	-0.13
STRS Domestic Equity Benchmark	7.58%	17.47%	0.34	--
OP&F Domestic Equity	8.47%	18.07%	0.38	0.38
Wilshire 5000	7.85%	17.45%	0.35	--
SERS Domestic Equity	7.62%	18.03%	0.33	-0.06
Russell 3000	7.68%	17.51%	0.34	--
HPRS Domestic Equity	8.77%	18.62%	0.38	0.27
HPRS Domestic Equity Benchmark	8.32%	17.97%	0.37	--

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



The analysis above represents a risk/return of the domestic equity portfolios for all of the plans. HPRS and OP&F experienced the highest risk-adjusted equity results over the annualized ten-year period (as measured by the Sharpe Ratio), followed by PERS DB, STRS and SERS. Please note that information ratios in the above tables are specific to the Plans' current policies, and indicate that OP&F and HPRS are adding value relative to the risk in their equity portfolios, while PERS DB, STRS, and SERS 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, 2012

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>PERS Combined (DB+HC) Total Fixed Income</b>					
Barclays U.S. Universal	6.3%	10.4%	—	—	—
Over/Under	2.6%	5.5%	6.7%	6.2%	5.6%
	3.7%	4.9%			
<b>STRS Fixed Income</b>					
Barclays U.S. Universal	2.9%	6.1%	7.0%	7.0%	6.2%
Over/Under	2.6%	5.5%	6.7%	6.2%	5.6%
	0.3%	0.6%	0.3%	0.8%	0.6%
<b>OP&amp;F Fixed Income</b>					
Barclays Aggregate	6.6%	11.7%	12.3%	10.2%	8.4%
Over/Under	1.6%	4.2%	6.2%	5.9%	5.2%
	4.8%	7.5%	6.1%	4.3%	3.2%
<b>SERS Global Fixed</b>					
Barclays Aggregate	4.5%	9.2%	8.7%	8.0%	6.4%
Over/Under	1.8%	4.2%	6.2%	5.9%	5.2%
	2.7%	5.0%	2.5%	2.1%	1.2%
<b>HPRS Global Fixed Income</b>					
Barclays Aggregate	3.3%	6.6%	7.3%	6.7%	6.2%
Over/Under	1.8%	4.2%	6.2%	5.9%	5.2%
	1.5%	2.4%	1.1%	0.8%	1.0%



## Systems Fixed

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All fixed income returns are reported gross of fees.

All returns are for periods ending 12/31/2012. 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, 2012, OP&F had the highest absolute fixed income return, which was 6.6%, and was followed by the combined PERS DB and PERS HC fixed income return of 6.3%. On a relative basis, OP&F had the best fixed income return, outperforming its benchmark by 4.8%, followed by the combined PERS DB and PERS HC fixed income return, which outperformed its benchmark by 3.7%.

# Systems Fixed Income

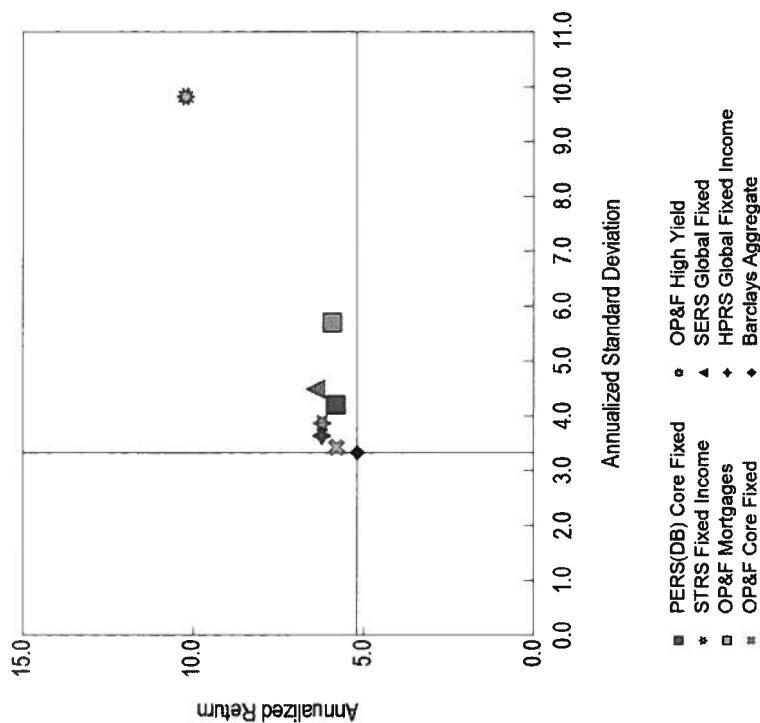
## Statistics Summary

10 Years Ending December 31, 2012

	Anizd Return	Anizd Standard Deviation	Sharpe Ratio	Information Ratio
PERS(DB) Core Fixed	5.81%	4.20%	0.99	0.31
<b>Barclays Aggregate</b>	<b>5.19%</b>	<b>3.33%</b>	<b>1.06</b>	<b>-</b>
STRS Fixed Income	6.21%	3.86%	1.18	0.31
<b>Barclays U.S. Universal</b>	<b>5.59%</b>	<b>3.17%</b>	<b>1.24</b>	<b>-</b>
OP&F Fixed Income	8.35%	4.10%	1.63	0.88
<b>Barclays Aggregate</b>	<b>5.19%</b>	<b>3.33%</b>	<b>1.06</b>	<b>-</b>
OP&F Core Fixed	5.79%	3.42%	1.21	0.38
<b>Barclays Aggregate</b>	<b>5.19%</b>	<b>3.33%</b>	<b>1.06</b>	<b>-</b>
OP&F High Yield	10.21%	9.82%	0.87	0.01
<b>OPF High Yield Benchmark</b>	<b>10.18%</b>	<b>11.64%</b>	<b>0.73</b>	<b>-</b>
SERS Global Fixed	6.40%	4.49%	1.06	0.33
<b>Barclays Aggregate</b>	<b>5.19%</b>	<b>3.33%</b>	<b>1.06</b>	<b>-</b>
HPRS Global Fixed Income	6.22%	3.63%	1.26	0.43
<b>Barclays Aggregate</b>	<b>5.19%</b>	<b>3.33%</b>	<b>1.06</b>	<b>-</b>

The analysis above represents the risk return comparison of the fixed income portfolios for all of the Plans. HPRS experienced the highest risk-adjusted fixed income results over the annualized ten-year period (as measured by the Sharpe Ratio), followed by OP&F, STRS, SERS and PERS DB. 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, 2012



\*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.

## International Equity

	Ending December 31, 2012									
	Since 6/30/12	Rank	1 Yr	Rank	3 Yrs	Rank	5 Yrs	Rank	10 Yrs	Rank
PERS(DB) International Equity	13.8%	76	18.2%	71	4.8%	71	-2.6%	68	10.1%	58
PERS Total International Equity Benchmark	<u>13.7%</u>	76	<u>17.2%</u>	75	<u>4.0%</u>	81	<u>-2.8%</u>	72	<u>9.8%</u>	70
Over/Under	0.1%		1.0%		0.8%		0.2%		0.3%	
PERS(HC) International Equity	13.8%	76	18.1%	71	4.8%	71	-2.6%	68	-	-
PERS Total International Equity Benchmark	<u>13.7%</u>	76	<u>17.2%</u>	75	<u>4.0%</u>	81	<u>-2.8%</u>	72	<u>9.8%</u>	70
Over/Under	0.1%		0.9%		0.8%		0.2%			
STRS International Equity	13.2%	77	17.3%	75	4.7%	72	-2.0%	57	10.5%	46
STRS International Blended Benchmark	<u>13.1%</u>	77	<u>16.9%</u>	76	<u>3.8%</u>	82	<u>-2.7%</u>	69	<u>9.6%</u>	77
Over/Under	0.1%		0.4%		0.9%		0.7%		0.9%	
OP&F International Equity	14.3%	69	20.0%	68	6.6%	48	-1.7%	55	10.7%	45
OPF International Benchmark	<u>13.5%</u>	76	<u>16.9%</u>	76	<u>3.9%</u>	81	<u>-2.9%</u>	72	<u>9.8%</u>	74
Over/Under	0.8%		3.1%		2.7%		1.2%		0.9%	
SERS International Equity	13.7%	76	19.2%	69	5.6%	58	-1.8%	56	10.4%	54
SERS Intl Equity Benchmark	<u>13.2%</u>	77	<u>17.4%</u>	75	<u>4.2%</u>	77	<u>-2.3%</u>	60	<u>9.3%</u>	84
Over/Under	0.5%		1.8%		1.4%		0.5%		1.1%	
HPRS International Equity	13.1%	77	18.1%	72	3.9%	81	-3.0%	75	8.4%	87
HPRS International Benchmark	<u>13.8%</u>	76	<u>17.4%</u>	75	<u>4.3%</u>	75	<u>-2.4%</u>	64	<u>9.5%</u>	81
Over/Under	-0.7%		0.7%		-0.4%		-0.6%		-1.1%	

All international equity returns are reported gross of fees.

All returns are for periods ending 12/31/2012. Returns for periods longer than one year are annualized. Differences may exist due to rounding.

On an absolute basis, as of December 31, 2012, OP&F (+14.3%) had the highest absolute return for the two quarters for international equity, and highest relative performance as well, gaining 0.8% against its benchmark. Over the one-year period, OP&F (+20.0%) led the group with the best absolute and relative performance. OP&F outperformed its benchmark by 3.1% over the trailing year. Over the three-year period, OP&F (6.6%) had the highest absolute returns, and had the highest relative performance. Over the trailing ten-year period, OP&F had the highest absolute returns and SERS had the highest relative returns.

Statistics Summary

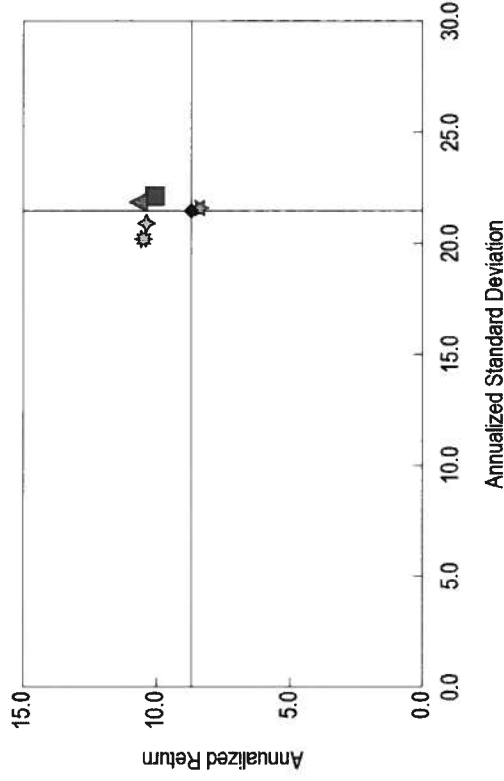
10 Years Ending December 31, 2012

	Annualized Return	Annualized Standard Deviation	Sharpe Ratio	Information Ratio
PERS(DB) International Equity	10.08%	22.13%	0.38	0.39
<b>PERS Total International Equity Benchmark</b>	<b>9.77%</b>	<b>22.07%</b>	<b>0.37</b>	<b>-</b>
STRS International Equity	10.49%	20.19%	0.44	0.85
<b>STRS International Blended Benchmark</b>	<b>9.62%</b>	<b>20.24%</b>	<b>0.39</b>	<b>-</b>
OP&F International Equity	10.70%	21.84%	0.41	0.55
<b>OPF International Benchmark</b>	<b>9.75%</b>	<b>21.99%</b>	<b>0.37</b>	<b>-</b>
SERS International Equity	10.39%	20.90%	0.42	0.59
<b>SERS Intl Equity Benchmark</b>	<b>9.27%</b>	<b>19.98%</b>	<b>0.38</b>	<b>-</b>
HPRS International Equity	8.38%	21.59%	0.31	-0.39
<b>HPRS International Benchmark</b>	<b>9.50%</b>	<b>21.94%</b>	<b>0.36</b>	<b>-</b>

The analysis above represents a risk/return comparison of the international equity portfolios for all of the plans. All plans with the exception of HPRS have demonstrated risk-adjusted results (as measured by their Sharpe Ratios) greater than the non-U.S. equity market as defined by the MSCI EAFE index, over the annualized 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 STRS Plan had the highest information ratio, followed by SERS, OPF, PERS DB, 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, 2012



- 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 Real Estate

Ending December 31, 2012

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>PERS(DB) Real Estate</b>					
PERS(DB) Private RE	5.6%	12.9%	10.8%	0.4%	7.4%
NCREIF Property Index LAG	<u>5.1%</u>	<u>11.0%</u>	<u>10.9%</u>	<u>2.3%</u>	<u>8.3%</u>
Over/Under	0.5%	1.9%	-0.1%	-1.9%	-0.9%
<b>PERS(HC) Real Estate</b>					
PERS(HC) REITs	2.3%	17.2%	18.5%	5.3%	--
PERS (HC) REIT Benchmark	<u>1.9%</u>	<u>17.1%</u>	<u>17.9%</u>	<u>4.9%</u>	--
Over/Under	0.4%	0.1%	0.6%	0.4%	
<b>STRS Real Estate</b>					
STRS RE Blended Benchmark	<b>6.7%</b>	<b>15.8%</b>	<b>15.1%</b>	<b>2.4%</b>	<b>12.2%</b>
Over/Under	<u>4.6%</u>	<u>11.7%</u>	<u>13.7%</u>	<u>3.4%</u>	<u>9.1%</u>
	2.1%	4.1%	1.4%	-1.0%	3.1%
<b>OP&amp;F Real Estate</b>					
OPF Real Estate Benchmark	<b>6.0%</b>	<b>13.1%</b>	<b>11.7%</b>	<b>-2.3%</b>	<b>8.2%</b>
Over/Under	<u>4.9%</u>	<u>10.5%</u>	<u>11.1%</u>	<u>2.4%</u>	<u>8.4%</u>
	1.1%	2.6%	0.6%	-4.7%	-0.2%
<b>SERS Real Estate</b>					
SERS Total Real Estate Benchmark	<b>6.1%</b>	<b>14.0%</b>	<b>10.1%</b>	<b>-3.7%</b>	<b>5.8%</b>
Over/Under	<u>5.1%</u>	<u>11.0%</u>	<u>10.7%</u>	<u>2.9%</u>	<u>9.1%</u>
	1.0%	3.0%	-0.6%	-6.6%	-3.3%
<b>HPRS Real Estate</b>					
NCREIF Property Index	<b>8.9%</b>	<b>7.1%</b>	<b>1.2%</b>	<b>-7.8%</b>	<b>1.4%</b>
Over/Under	<u>4.9%</u>	<u>10.5%</u>	<u>12.6%</u>	<u>2.1%</u>	<u>8.4%</u>
	4.0%	-3.4%	-11.4%	-9.9%	-7.0%

## Systems Real Estate

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All real estate returns are reported gross of fees.

All returns are for periods ending 12/31/2012. 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, 2012, HPRS had the highest returns, gaining 8.9% and STRS (+6.7%) had the second highest performance. PERS HC returned 17.2% over the trailing year, outperforming all other plans. STRS and PERS HC had the highest absolute performance over a five-year period, returning 2.4% and 5.4%, respectively. Please note that PERS HC real estate is composed entirely of REITs, which are equity securities.

# Systems Alternatives

Ending December 31, 2012

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>PERS(DB) Alternatives</b>					
PERS(DB) Private Equity	8.7%	19.1%	18.7%	7.1%	15.5%
PERS Private Equity Benchmark (QTR LAG)	3.9%	33.2%	16.4%	4.2%	11.7%
Over/Under	4.8%	-14.1%	2.3%	2.9%	3.8%
PERS(DB) Hedge Funds	4.0%	6.1%	9.3%	4.6%	-
PERS (DB) Hedge Fund Benchmark	3.5%	7.0%	6.1%	6.6%	-
Over/Under	0.5%	-0.9%	3.2%	-2.0%	-
<b>PERS(HC) Alternatives</b>					
PERS(HC) Private Equity	9.8%	15.4%	4.7%	-	-
PERS Private Equity Benchmark (QTR LAG)	3.9%	33.2%	16.4%	4.2%	11.7%
Over/Under	5.9%	-17.8%	-11.7%	-	-
PERS(HC) Hedge Funds	4.0%	6.1%	9.3%	-	-
PERS (HC) Hedge Benchmark	3.5%	7.0%	6.1%	-	-
Over/Under	0.5%	-0.9%	3.2%	-	-
PERS(HC) Commodities	8.0%	0.3%	2.7%	-	-
<b>STRS Alternatives</b>					
STRS Alternative Benchmark	4.7%	14.6%	13.8%	4.5%	11.3%
Over/Under	6.5%	17.1%	12.6%	3.9%	10.3%
STRS Private Equity	-1.8%	-2.5%	1.2%	0.6%	1.0%
STRS Private Equity Benchmark	4.6%	16.3%	15.2%	4.9%	11.5%
Over/Under	7.0%	18.7%	14.2%	4.9%	10.8%
STRS Hedge Funds	2.1%	5.2%	2.6%	0.5%	-
HFR1 Fund of Funds Composite Index	3.7%	4.7%	1.4%	-1.8%	3.6%
Over/Under	-1.6%	0.5%	1.2%	2.3%	-
STRS Opportunistic	5.0%	12.0%	10.5%	-	-
STRS Opportunistic Benchmark	6.0%	15.3%	10.1%	-	-
Over/Under	-1.0%	-3.3%	0.4%	-	-

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>OP&amp;F Alternatives</b>					
OP&F Private Equity	2.9%	9.6%	13.2%	4.6%	8.6%
OPF Private Equity Benchmark	<u>4.4%</u>	<u>33.8%</u>	<u>16.6%</u>	<u>4.4%</u>	<u>12.5%</u>
Over/Under	-1.5%	-24.2%	-3.4%	0.2%	-3.9%
Timber	2.1%	-	-	-	-
OPF Timber Benchmark	<u>2.5%</u>	-	-	-	-
Over/Under	-0.4%	-	-	-	-

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>SERS Alternatives</b>					
SERS Private Equity	5.5%	13.1%	13.2%	5.2%	6.4%
SERS PE Benchmark	<u>5.8%</u>	<u>33.2%</u>	<u>16.2%</u>	<u>4.1%</u>	<u>11.0%</u>
Over/Under	-0.3%	-20.1%	-3.0%	1.1%	-4.6%
SERS Hedge Funds	5.1%	8.0%	5.0%	-	-
SERS Hedge Fund Benchmark	<u>3.8%</u>	<u>4.9%</u>	<u>1.8%</u>	-	-
Over/Under	1.3%	3.1%	3.2%	-	-

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>HPRS Alternatives</b>					
HPRS Private Equity	2.3%	6.8%	1.9%	0.4%	-
HPRS Private Equity Benchmark	<u>4.2%</u>	<u>33.5%</u>	<u>12.8%</u>	<u>10.3%</u>	-
Over/Under	-1.9%	-26.7%	-10.9%	-9.9%	-
HPRS Hedge Funds	4.2%	7.0%	2.9%	1.2%	-
HFRI Fund of Funds Composite Index	<u>3.7%</u>	<u>4.7%</u>	<u>1.4%</u>	<u>-1.8%</u>	<u>3.6%</u>
Over/Under	0.5%	2.3%	1.5%	3.0%	-

Returns for all alternatives portfolios are shown net of fees.

### Private Equity

PERS HC (+9.8) had the highest private equity return for the six months ending December 31 2012 on an absolute and a relative basis, followed by PERS DB (+8.7%). The SERS private equity was third best with a six month absolute return of 5.5%, followed by STRS (+4.6), OP&F (+2.9) and HPRS (+2.3%).

### Hedge Funds

SERS (+5.1%) had the highest hedge fund return for the six months ending December 31, 2012, followed by HPRS (+4.2%), PERS (HC) and PERS (DB), which both returned +4.0, and STRS (+2.1%).



# Cash

## Ending December 31, 2012

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
PERS(DB) Cash	0.1%	0.2%	0.5%	0.9%	2.1%
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
Over/Under	0.1%	0.1%	0.4%	0.6%	0.4%
PERS(HC) Cash	0.1%	0.2%	0.3%	0.8%	-
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
Over/Under	0.1%	0.1%	0.2%	0.5%	
STRS Liquidity Reserves					
91 Day T-Bills	0.1%	0.1%	0.2%	0.8%	2.0%
Over/Under	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
OP&F Cash	0.1%	0.3%	0.2%	0.7%	1.9%
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
Over/Under	0.1%	0.2%	0.1%	0.4%	0.2%
SERS Cash	0.1%	0.2%	0.2%	1.1%	2.2%
SERS Short-Term Benchmark	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.6%</u>
Over/Under	0.1%	0.1%	0.1%	0.8%	0.6%
HPRS Cash	0.0%	0.0%	0.1%	0.6%	2.2%
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
Over/Under	0.0%	-0.1%	0.0%	0.3%	0.5%

Public Employees Retirement System (DB)  
(PERS DB)

# Public Employees Retirement System (DB)

Actuarial Rate: 8.0%

	Ending December 31, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Public Employees Retirement System (DB)</b>	<b>8.0%</b>	<b>14.8%</b>	<b>9.6%</b>	<b>2.7%</b>	<b>8.2%</b>
<i>PERS (DB) Total Fund Benchmark</i>	<u>7.2%</u>	<u>15.3%</u>	<u>8.9%</u>	<u>2.5%</u>	<u>7.9%</u>
Over/Under	0.8%	-0.5%	0.7%	0.2%	0.3%
PERS(DB) Domestic Equity	6.9%	16.6%	11.2%	1.9%	7.6%
<i>Russell 3000</i>	<u>6.5%</u>	<u>16.4%</u>	<u>11.2%</u>	<u>2.0%</u>	<u>7.7%</u>
Over/Under	0.4%	0.2%	0.0%	-0.1%	-0.1%
PERS(DB) International Equity	13.8%	18.2%	4.8%	-2.6%	10.1%
<i>PERS Total International Equity Benchmark</i>	<u>13.7%</u>	<u>17.2%</u>	<u>4.0%</u>	<u>-2.8%</u>	<u>9.8%</u>
Over/Under	0.1%	1.0%	0.8%	0.2%	0.3%
<b>PERS(DB) Fixed</b>					
PERS(DB) Core Fixed	2.2%	5.0%	7.8%	6.3%	5.8%
<i>Barclays Aggregate</i>	<u>1.8%</u>	<u>4.2%</u>	<u>6.2%</u>	<u>5.9%</u>	<u>5.2%</u>
Over/Under	0.4%	0.8%	1.6%	0.4%	0.6%
PERS(DB) High Yield	7.9%	15.8%	--	--	--
<i>Barclays High Yield</i>	<u>8.0%</u>	<u>15.8%</u>	<u>11.9%</u>	<u>10.3%</u>	<u>10.6%</u>
Over/Under	-0.1%	0.0%			
PERS(DB) EMD	11.0%	18.8%	--	--	--
<i>PERS Emerging Market Debt Benchmark</i>	<u>9.7%</u>	<u>17.7%</u>	--	--	--
Over/Under	1.3%	1.1%			
PERS(DB) Opportunistic	4.0%	4.1%	--	--	--
<i>PERS FI Opportunistic Benchmark</i>	<u>4.4%</u>	<u>5.4%</u>	--	--	--
Over/Under	-0.4%	-1.3%			
PERS(DB) Floating Rate Debt	--	--	--	--	--

# Public Employees Retirement System (DB)

Actuarial Rate: 8.0%

	Ending December 31, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>PERS(DB) Real Estate</b>					
PERS(DB) Private RE	5.6%	12.9%	10.8%	0.4%	7.4%
NCREIF Property Index LAG	5.1%	11.0%	10.9%	2.3%	8.3%
Over/Under	0.5%	1.9%	-0.1%	-1.9%	-0.9%
<b>PERS(DB) Alternatives</b>					
PERS(DB) Hedge Funds	4.0%	6.1%	9.3%	4.6%	-
PERS (DB) Hedge Fund Benchmark	3.5%	7.0%	6.1%	6.6%	-
Over/Under	0.5%	-0.9%	3.2%	-2.0%	-
PERS(DB) Private Equity	8.7%	19.1%	18.7%	7.1%	15.5%
PERS Private Equity Benchmark (QTR LAG)	3.9%	33.2%	16.4%	4.2%	11.7%
Over/Under	4.8%	-14.1%	2.3%	2.9%	3.8%
PERS(DB) Cash	0.1%	0.2%	0.5%	0.9%	2.1%
91 Day T-Bills	0.0%	0.1%	0.1%	0.3%	1.7%
Over/Under	0.1%	0.1%	0.4%	0.6%	0.4%
PERS(DB) Rebalancing	5.3%	9.2%	-	-	-
PERS Rebalancing Benchmark	0.1%	0.1%	-	-	-
Over/Under	5.2%	9.1%	-	-	-

# Public Employees Retirement System (DB)

## Asset Allocation by Segment

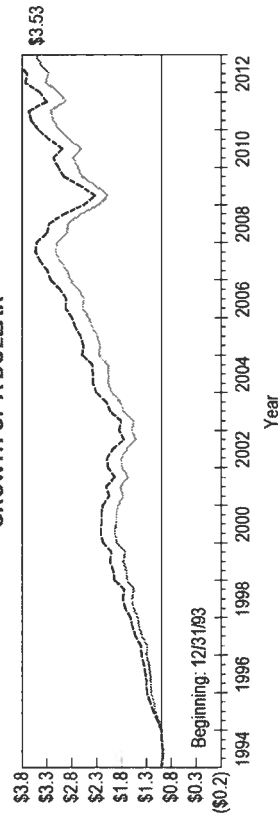
As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash
<b>PERS(DB) Fixed</b>									
PERS(DB) Core Fixed	\$8,776,552,109	13.0%			\$8,776,552,109				
PERS(DB) High Yield	\$3,345,943,638	5.0%			\$3,345,943,638				
PERS(DB) EMD	\$2,026,205,588	3.0%				\$2,026,205,588			
PERS(DB) Opportunistic	\$471,879,747	0.7%			\$471,879,747				
PERS(DB) Securitized Debt	\$705,212,018	1.0%			\$705,212,018				
PERS(DB) Corporate Credit	\$324,238,710	0.5%			\$324,238,710				
PERS(DB) Global High Yield	\$1,061,071,450	1.6%				\$1,061,071,450			
PERS(DB) Floating Rate Debt	\$482,537,660	0.7%			\$482,537,660				
<b>PERS(DB) Real Estate</b>									
PERS(DB) Private RE	\$6,979,687,544	10.3%					\$6,979,687,544		
<b>PERS(DB) Alternatives</b>									
PERS(DB) Hedge Funds	\$3,049,692,488	4.5%					\$3,049,692,488		
PERS(DB) Private Equity	\$6,981,941,755	10.3%					\$6,981,941,755		
PERS(DB) Rebalancing	\$331,350,789	0.5%						\$331,350,789	
<b>Total</b>	<b>\$67,531,039,430</b>	<b>100.0%</b>	<b>\$14,106,363,882</b>	<b>\$3,087,277,036</b>	<b>\$10,031,634,243</b>	<b>\$6,979,687,544</b>	<b>\$331,350,789</b>		

PERS(DB)

	Actual	Target	Difference
US Equity	22.5	23.6	-1.1
Intl Equity	24.2	24.0	0.2
Alternatives	14.8	15.4	-0.6
<b>Total Equity</b>	<b>61.5</b>	<b>63.0</b>	<b>-1.5</b>
Fixed Income	25.5	25.0	0.5
Real Estate	10.3	10.0	0.3
Short Term Investments	2.7	2.0	0.7
<b>Total Debt</b>	<b>38.5</b>	<b>37.0</b>	<b>1.5</b>
	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>

## GROWTH OF A DOLLAR



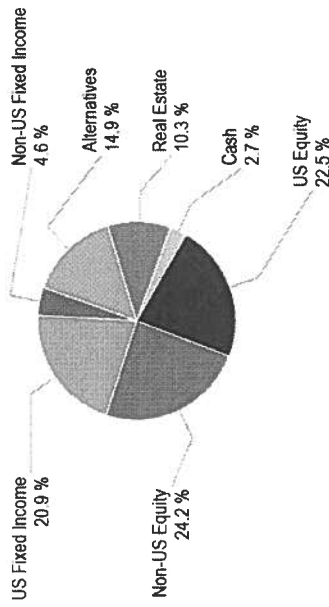
Public Employees Retirement System (DB)  
 — PERS (DB) Total Fund Benchmark

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

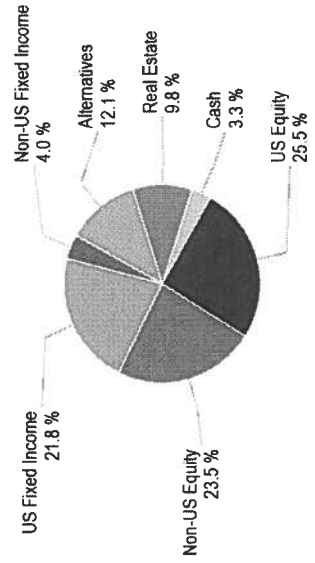
# Public Employees Retirement System (DB)

## Asset Allocation

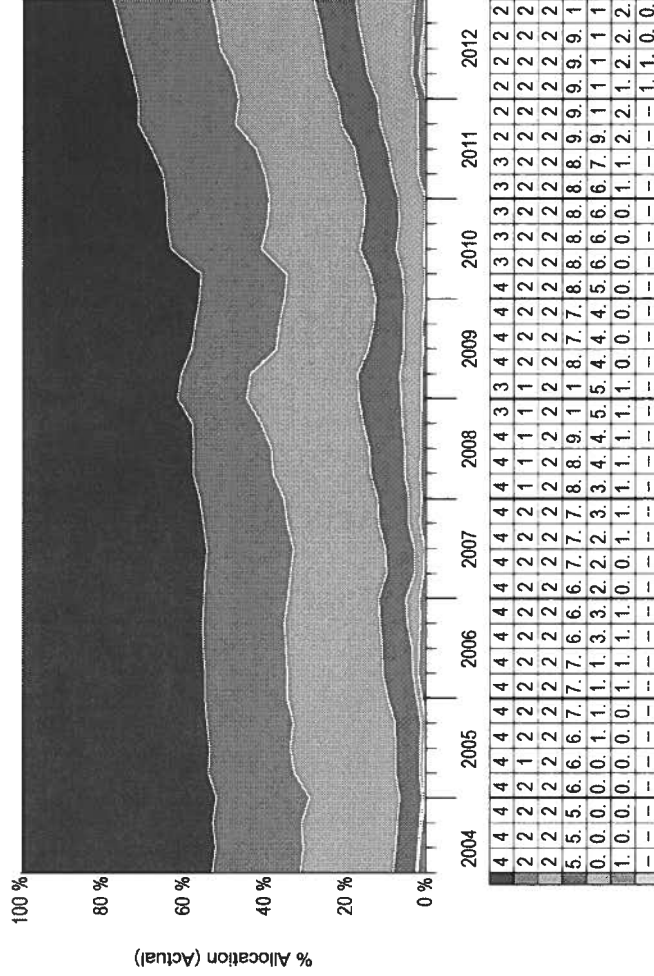
**Current Allocation**  
December 31, 2012



**Previous Allocation**  
June 30, 2012



**Asset Allocation History**  
8 Years 9 Months Ending December 31, 2012



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

# Public Employees Retirement System (DB)

## 10 Year Risk Statistics

### RISK RETURN STATISTICS

January 01, 2003 Through December 31, 2012

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

#### RETURN SUMMARY STATISTICS

Number of Periods	40	40
Maximum Return	12.55	13.12
Minimum Return	-13.81	-13.86
Annualized Return	8.23	7.95
Total Return	120.61	114.82
Annualized Excess Return Over Risk Free	6.58	6.29
Annualized Excess Return	0.29	0.00

#### RISK SUMMARY STATISTICS

Beta	1.00	1.00
Upside Deviation	6.87	7.11
Downside Deviation	8.85	9.08

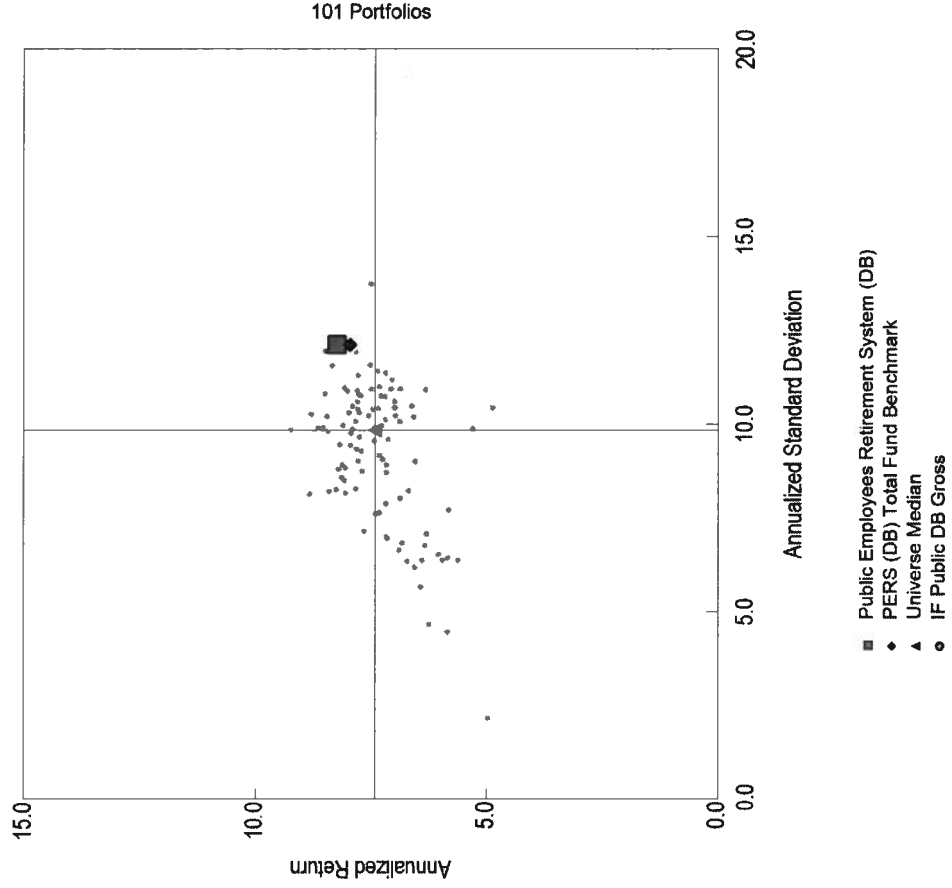
#### RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	12.11	12.11
Alpha	0.07	0.00
Sharpe Ratio	0.54	0.52
Excess Return Over Market / Risk	0.02	0.00
Tracking Error	0.90	0.00
Information Ratio	0.32	-

#### CORRELATION STATISTICS

R-Squared	0.99	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



**Public Employees Retirement System**  
**Defined Benefit Plan**  
**Quarter Ending 12/31/2012**

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
			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
			23.6	Russell 3000
			13.3	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*
			10.0	Russell 3000 + 3% (1 Qtr arrears)
			4.7	NCREIF Property (Quarter lag)
			0.7	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			

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**  
**Defined Benefit Plan**  
**Quarter Ending 12/31/2012**

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)
	Oct-10	Dec-11	5.1	Russell 3000 + 3% (1 Qtr arrears)
			9.0	NCREIF Property (Quarter lag)
	Oct-10	Dec-11	1.1	3 mo. LIBOR + 4% bps (2 mo. lag)
			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
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 12/31/2012**

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 12/31/2012**

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
			20.0	MSCI AC World Ex-US (Net)
5.6			Real Estate	
1.0			Wilshire Resi Full Cap	
1.8	Russell 3000 + 3% (1 Qtr arrears)			
1.0	BC Bellweather 3Mth T-Bill			
Dec-06	Mar-07	46.0	Russell 3000	
		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
			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			
Sep-07	Dec-07	45.1	Russell 3000	
		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 12/31/2012**

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 12/31/2012**

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)
			6.6	NCREIF
			2.2	NAREIT
			2.2	Gilberto-Levy Mortgage
			1.0	BC Bellweather 3Mth T-Bill
			34.3	S&P 1500
			31.8	SB Broad Inv Grade
			18.9	MSCI World Ex-US (Net)
	5.7	NCREIF		
	3.0	Russell 3000		
	2.3	BC Bellweather 3Mth T-Bill		
	1.9	NAREIT		
	1.9	Gilberto-Levy Mortgage		
0.2	Standard & Poors 500			
Jun-02	Sep-02	34.7	S&P 1500	
		29.2	SB Broad Inv Grade	
		19.3	MSCI World Ex-US (Net)	
		5.8	Russell 3000	
		5.6	NCREIF	
1.9	NAREIT			
1.9	Gilberto-Levy Mortgage			
1.5	BC Bellweather 3Mth T-Bill			
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)
			5.5	NCREIF
			1.8	NAREIT
			1.8	Gilberto-Levy Mortgage
			0.7	BC Bellweather 3Mth T-Bill
			0.2	Standard & Poors 500
			47.0	Russell 3000
			23.0	SB Broad Inv Grade
	20.0	MSCI World Ex-US (Net)		
	5.4	NCREIF		
	1.8	NAREIT		
	1.8	Gilberto-Levy Mortgage		
	0.6	BC Bellweather 3Mth T-Bill		
	0.4	Standard & Poors 500		
	Mar-03	Dec-04	46.0	Russell 3000
			23.0	Barclays Universal
			20.0	MSCI AC World Ex-US (Net)
			8.1	NCREIF
0.9			Wishire Real Estate Securities	
1.0			BC Bellweather 3Mth T-Bill	
1.0			Russell 3000 + 3% (1 Qtr arrears)	

**Public Employees Retirement System**  
**Defined Benefit Plan**  
**Quarter Ending 12/31/2012**

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, 2012						
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	7 Yrs		
<b>Public Employees Retirement System (HC)</b>							
PERS (HC) Total Fund Benchmark	7.5%	13.8%	8.8%	3.6%	5.3%		
Over/Under	7.1%	13.5%	8.4%	3.7%	5.4%		
	0.4%	0.3%	0.4%	-0.1%	-0.1%		
PERS(HC) Domestic Equity	6.9%	16.6%	11.2%	1.9%	4.1%		
Russell 3000	6.5%	16.4%	11.2%	2.0%	4.3%		
Over/Under	0.4%	0.2%	0.0%	-0.1%	-0.2%		
PERS(HC) International Equity	13.8%	18.1%	4.8%	-2.6%	3.8%		
PERS Total International Equity Benchmark	13.7%	17.2%	--	--	--		
Over/Under	0.1%	0.9%					
<b>PERS(HC) Fixed</b>							
PERS(HC) Core Fixed	2.2%	5.0%	7.1%	5.2%	5.2%		
Barclays Aggregate	1.8%	4.2%	6.2%	5.9%	5.9%		
Over/Under	0.4%	0.8%	0.9%	-0.7%	-0.7%		
PERS(HC) TIPS	2.9%	7.0%	--	--	--		
Barclays US TIPS	2.8%	7.0%	8.9%	7.0%	6.7%		
Over/Under	0.1%	0.0%					
PERS(HC) High Yield	8.0%	15.8%	--	--	--		
Barclays High Yield	8.0%	15.8%	11.9%	10.3%	9.3%		
Over/Under	0.0%	0.0%					
PERS(HC) EMD	11.0%	18.8%	--	--	--		
PERS Emerging Market Debt Benchmark	9.7%	17.7%	--	--	--		
Over/Under	1.3%	1.1%					
PERS(HC) Opportunistic	4.0%	4.1%	--	--	--		
PERS FI Opportunistic Benchmark	4.4%	5.4%	--	--	--		
Over/Under	-0.4%	-1.3%					
PERS (HC) Floating Rate Debt	--	--	--	--	--		



# Public Employees Retirement System (HC)

Actuarial Rate: 6.7%

	Ending December 31, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	7 Yrs
<b>PERS(HC) Real Estate</b>					
PERS(HC) REITs	2.3%	17.2%	18.5%	5.3%	5.5%
PERS (HC) REIT Benchmark	<u>1.9%</u>	<u>17.1%</u>	<u>17.9%</u>	<u>4.9%</u>	<u>5.1%</u>
Over/Under	0.4%	0.1%	0.6%	0.4%	0.4%
<b>PERS(HC) Alternatives</b>					
PERS(HC) Private Equity	9.8%	15.4%	4.7%	-	-
PERS Private Equity Benchmark (QTR LAG)	<u>3.9%</u>	<u>33.2%</u>	<u>16.4%</u>	<u>4.2%</u>	<u>7.7%</u>
Over/Under	5.9%	-17.8%	-11.7%	-	-
PERS(HC) Hedge Funds	4.0%	6.1%	9.3%	-	-
PERS (HC) Hedge Benchmark	<u>3.5%</u>	<u>7.0%</u>	<u>6.1%</u>	-	-
Over/Under	0.5%	-0.9%	3.2%	-	-
PERS(HC) Commodities	8.0%	0.3%	2.7%	-	-
PERS(HC) Cash	0.1%	0.2%	0.3%	0.8%	2.1%
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.6%</u>
Over/Under	0.1%	0.1%	0.2%	0.5%	0.5%
PERS(HC) Rebalancing	3.6%	16.8%	-	-	-
PERS Rebalancing Benchmark	<u>0.1%</u>	<u>0.1%</u>	-	-	-
Over/Under	3.5%	16.7%	-	-	-

# Public Employees Retirement System (HC)

## Asset Allocation by Segment

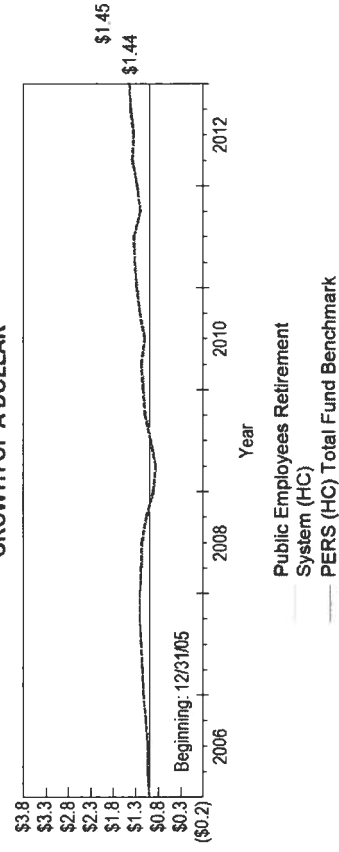
As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash
<b>PERS(HC) Fixed</b>									
PERS(HC) Core Fixed	\$2,360,284,782	18.4%			\$2,360,284,782				
PERS(HC) TIPS	\$442,369,358	3.5%			\$442,369,358				
PERS(HC) High Yield	\$267,182,303	2.1%			\$267,182,303				
PERS(HC) EMD	\$654,603,154	5.1%				\$654,603,154			
PERS(HC) Opportunistic	\$90,602,488	0.7%			\$90,602,488				
PERS(HC) Securitized Debt	\$124,282,290	1.0%			\$124,282,290				
PERS(HC) Corporate Credit	\$131,690,685	1.0%			\$131,690,685				
PERS(HC) Global High Yield	\$265,584,012	2.1%				\$265,584,012			
PERS (HC) Floating Rate Debt	\$120,634,414	0.9%			\$120,634,414				
<b>PERS(HC) Real Estate</b>									
PERS(HC) REITs	\$750,619,337	5.9%					\$750,619,337		
<b>PERS(HC) Alternatives</b>									
PERS(HC) Private Equity	\$73,434,411	0.6%					\$73,434,411		
PERS(HC) Hedge Funds	\$527,980,114	4.1%					\$527,980,114		
PERS(HC) Commodities	\$121,403,148	0.9%					\$121,403,148		
PERS(HC) Rebalancing	\$81,998,832	0.6%						\$81,998,832	
<b>Total</b>	<b>\$12,802,517,213</b>	<b>100.0%</b>			<b>\$3,537,046,320</b>	<b>\$920,187,166</b>	<b>\$722,817,673</b>	<b>\$750,619,337</b>	<b>\$81,998,832</b>

PERS(HC)

	Actual	Target	Difference
US Equity	22.6	24.6	-2.0
Intl Equity	28.0	27.0	1.0
REITs	5.9	6.0	-0.1
Alternatives	5.6	6.4	-0.8
<b>Total Equity</b>	<b>62.1</b>	<b>64.0</b>	<b>-1.9</b>
Fixed Income	34.8	34.0	0.8
Short Term Investments	3.0	2.0	1.0
<b>Total Debt</b>	<b>37.8</b>	<b>36.0</b>	<b>1.8</b>
	<b>99.9</b>	<b>100.0</b>	<b>-0.1</b>

## GROWTH OF A DOLLAR

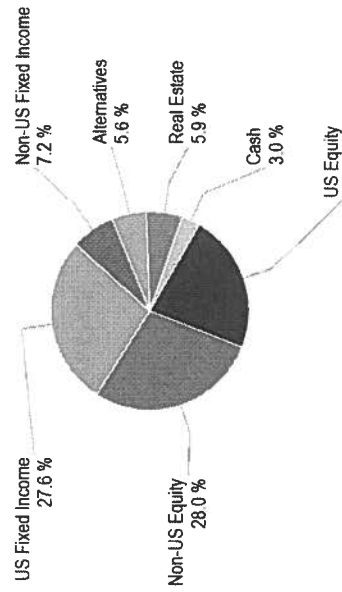


\*Totals may not add up to 100% due to rounding

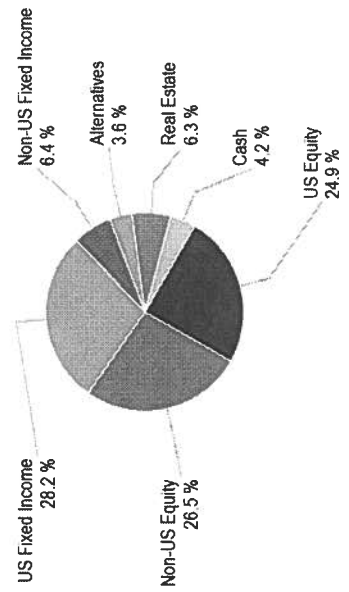
# Public Employees Retirement System (HC)

## Asset Allocation

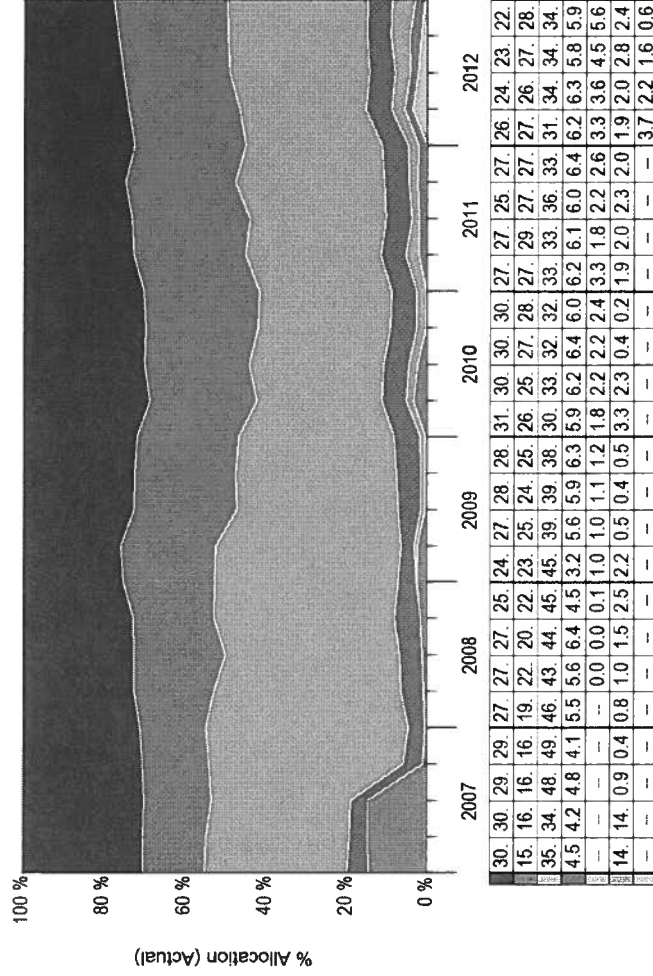
**Current Allocation**  
December 31, 2012



**Previous Allocation**  
June 30, 2012



**Asset Allocation History**  
6 Years Ending December 31, 2012



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

# Public Employees Retirement System (HC) 7 Year Risk Statistics

## RISK RETURN STATISTICS

January 01, 2006 Through December 31, 2012

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

RETURN SUMMARY STATISTICS	Public Employees Retirement System (HC)	PERS (HC) Total Fund Benchmark
Number of Periods	28	28
Maximum Return	12.96	13.93
Minimum Return	-14.68	-14.49
Annualized Return	5.32	5.45
Total Return	43.76	44.96
Annualized Excess Return Over Risk Free	3.75	3.87
Annualized Excess Return	-0.13	0.00

## RISK SUMMARY STATISTICS

Beta	1.00	1.00
Upside Deviation	7.01	7.30
Downside Deviation	9.43	9.64

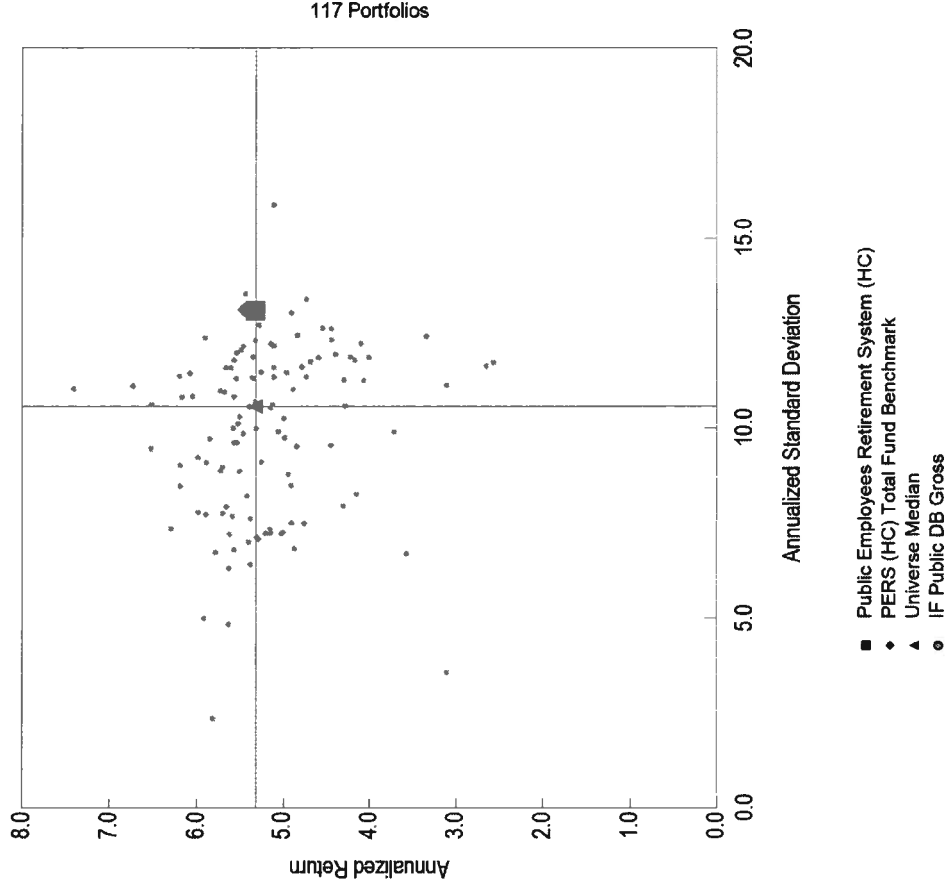
## RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	13.09	13.12
Alpha	-0.02	0.00
Sharpe Ratio	0.29	0.30
Excess Return Over Market / Risk	-0.01	0.00
Tracking Error	0.90	0.00
Information Ratio	-0.14	-

## CORRELATION STATISTICS

R-Squared	1.00	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation  
7 Years Ending December 31, 2012



# Public Employees Retirement System

## Health Care Plan

### Quarter Ending 12/31/2012

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	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 Resl 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

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 12/31/2012

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
			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			
Policy Index	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 ERISA Eligible + 2%
2.0	Barclays Global High Yield			
3.5	Barclays Capital U.S. TIPS			
1.0	S&P GS Commodity Total Return			

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. (standard index), 31% MSCI Emerging Markets (standard index), 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 12/31/2012

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
	Mar-09	Dec-09	11.5	Barclays 1-3 Yr Gov't
			23.0	MSCI ACWI Ex-US (Net)
			6.0	Wilshire Resi Full Cap
	Jan-10	Mar-10	28.4	Russell 3000
			10.0	Barclays Universal
			20.0	Barclays U.S. TIPS
	Jul-10	Sep-10	10.0	Barclays 1-3 Yr Gov't
			24.5	MSCI ACWI Ex-US (Net)
			6.0	Wilshire Resi Full Cap
	Jul-10	Sep-10	0.1	Russell 3000 + 3% (1 Qtr arrears)
1.0			BC Bellweather 3 Mth T-Bill	
30.3			Russell 3000	
Jul-10	Sep-10	17.6	Barclays Capital U.S. Aggregate	
		13.3	Barclays Capital U.S. TIPS	
		0.5	Barclays High Yield	
Jul-10	Sep-10	2.0	91-Day Treasury Bill	
		3.1	Custom Emerging Markets Debt	
		25.0	MSCI ACWI Ex-US (Net)	
Jul-10	Sep-10	0.1	Custom Private Equity	
		6.0	DJ Wilshire Resi Full Cap	
		1.1	LIBOR + 400 bps (2 mo. lag)	
Jul-10	Sep-10	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
	Apr-10	Jun-10	0.6	Barclays High Yield
			2.0	91-Day Treasury Bill
			5.0	Custom Emerging Markets Debt
	Apr-10	Jun-10	28.0	MSCI ACWI Ex-US (Net)
			0.1	Custom Private Equity
			6.0	DJ Wilshire Resi Full Cap
	Apr-10	Jun-10	1.0	LIBOR + 400 bps (2 mo. lag)
			1.0	S&P GS Commodity Total Return
	Jul-10	Sep-10	31.0	Russell 3000
20.5			Barclays Capital U.S. Aggregate	
5.5			Barclays Capital U.S. TIPS	
Jul-10	Sep-10	1.0	Barclays High Yield	
		2.0	91-Day Treasury Bill	
		5.0	Custom Emerging Markets Debt	
Jul-10	Sep-10	26.7	MSCI ACWI Ex-US (Net)	
		0.2	Custom Private Equity	
		6.0	DJ Wilshire Resi Full Cap	
Jul-10	Sep-10	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 12/31/2012

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	
Policy Index	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	
Policy Index	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	
Policy Index	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	
Policy Index	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	
Policy Index	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	
Policy Index	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, 2012

	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>State Teachers Retirement System</b>					
STRS Total Fund Benchmark	6.8%	13.8%	9.5%	2.1%	8.5%
Over/Under	6.8%	13.9%	9.3%	2.2%	7.9%
	0.0%	-0.1%	0.2%	-0.1%	0.6%
STRS Domestic Equity	6.1%	15.6%	11.0%	1.7%	7.5%
STRS Domestic Equity Benchmark	6.5%	16.4%	11.2%	2.0%	7.6%
Over/Under	-0.4%	-0.8%	-0.2%	-0.3%	-0.1%
STRS Fixed Income	2.9%	6.1%	7.0%	7.0%	6.2%
Barclays U.S. Universal	2.6%	5.5%	6.7%	6.2%	5.6%
Over/Under	0.3%	0.6%	0.3%	0.8%	0.6%
STRS International Equity	13.2%	17.3%	4.7%	-2.0%	10.5%
STRS International Blended Benchmark	13.1%	16.9%	3.8%	-2.7%	9.6%
Over/Under	0.1%	0.4%	0.9%	0.7%	0.9%
<b>STRS Real Estate</b>	6.7%	15.8%	15.1%	2.4%	12.2%
STRS RE Blended Benchmark	4.6%	11.7%	13.7%	3.4%	9.1%
Over/Under	2.1%	4.1%	1.4%	-1.0%	3.1%
<b>STRS Alternatives</b>	4.7%	14.6%	13.8%	4.5%	11.3%
STRS Alternative Benchmark	6.5%	17.1%	12.6%	3.9%	10.3%
Over/Under	-1.8%	-2.5%	1.2%	0.6%	1.0%
STRS Private Equity	4.6%	16.3%	15.2%	4.9%	11.5%
STRS Private Equity Benchmark	7.0%	18.7%	14.2%	4.9%	10.8%
Over/Under	-2.4%	-2.4%	1.0%	0.0%	0.7%
STRS Hedge Funds	2.1%	5.2%	2.6%	0.5%	-
HFRI Fund of Funds Composite Index	3.7%	4.7%	1.4%	-1.8%	3.6%
Over/Under	-1.6%	0.5%	1.2%	2.3%	-
STRS Opportunistic	5.0%	12.0%	10.5%	-	-
STRS Opportunistic Benchmark	6.0%	15.3%	10.1%	-	-
Over/Under	-1.0%	-3.3%	0.4%	-	-
STRS Liquidity Reserves	0.1%	0.1%	0.2%	0.8%	2.0%
91 Day T-Bills	0.0%	0.1%	0.1%	0.3%	1.7%
Over/Under	0.1%	0.0%	0.1%	0.5%	0.3%

# State Teachers Retirement System

## Asset Allocation by Segment

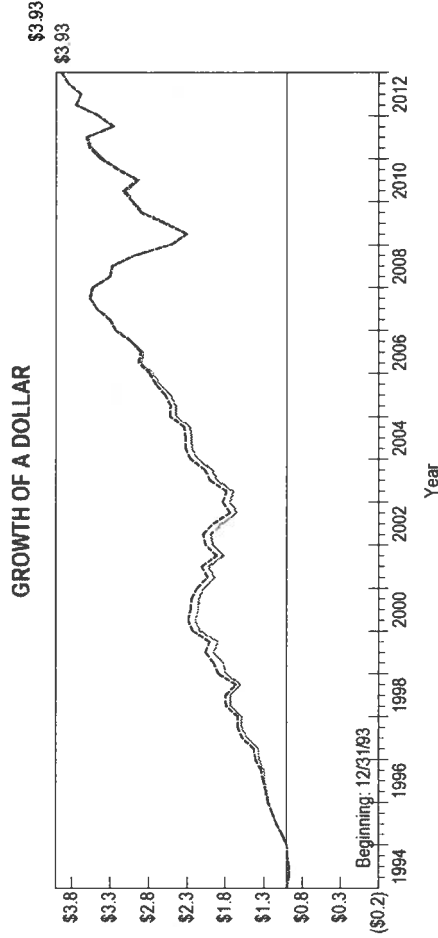
As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
STRS Real Estate								
STRS Real Estate	\$6,701,289,185	10.2%					\$6,701,289,185	
STRS Alternatives								
STRS Private Equity	\$4,321,260,126	6.6%				\$4,321,260,126		
STRS Hedge Funds								
STRS Opportunistic	\$2,908,909,829	4.4%				\$2,908,909,829		
STRS Liquidity Reserves	\$3,229,093,726	4.9%						\$3,229,093,726
<b>Total</b>	<b>\$65,751,129,820</b>	<b>100.0%</b>				<b>\$7,230,169,955</b>	<b>\$6,701,289,185</b>	<b>\$3,229,093,726</b>

STRS

	Actual	Target	Difference
US Equity	34.5	38.0	-3.5
Intl Equity	22.6	23.0	-0.4
Alternatives	11.0	10.0	1.0
<b>Total Equity</b>	<b>68.1</b>	<b>71.0</b>	<b>-2.9</b>
Fixed Income	16.8	18.0	-1.2
Real Estate	10.2	10.0	0.2
Short Term Investments	4.9	1.0	3.9
<b>Total Debt</b>	<b>31.9</b>	<b>29.0</b>	<b>2.9</b>
	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>

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





# State Teachers Retirement System

## 10 Year Risk Statistics

### RISK RETURN STATISTICS

January 01, 2003 Through December 31, 2012

State Teachers Retirement System  
STRS Total Fund Benchmark

RETURN SUMMARY STATISTICS	State Teachers Retirement System	STRS Total Fund Benchmark
Number of Periods	40	40
Maximum Return	12.29	12.72
Minimum Return	-15.96	-15.95
Annualized Return	8.50	7.93
Total Return	126.05	114.55
Annualized Excess Return Over Risk Free	6.84	6.28
Annualized Excess Return	0.57	0.00

### RISK SUMMARY STATISTICS

Beta	1.00	1.00
Upside Deviation	6.62	6.50
Downside Deviation	9.63	9.63

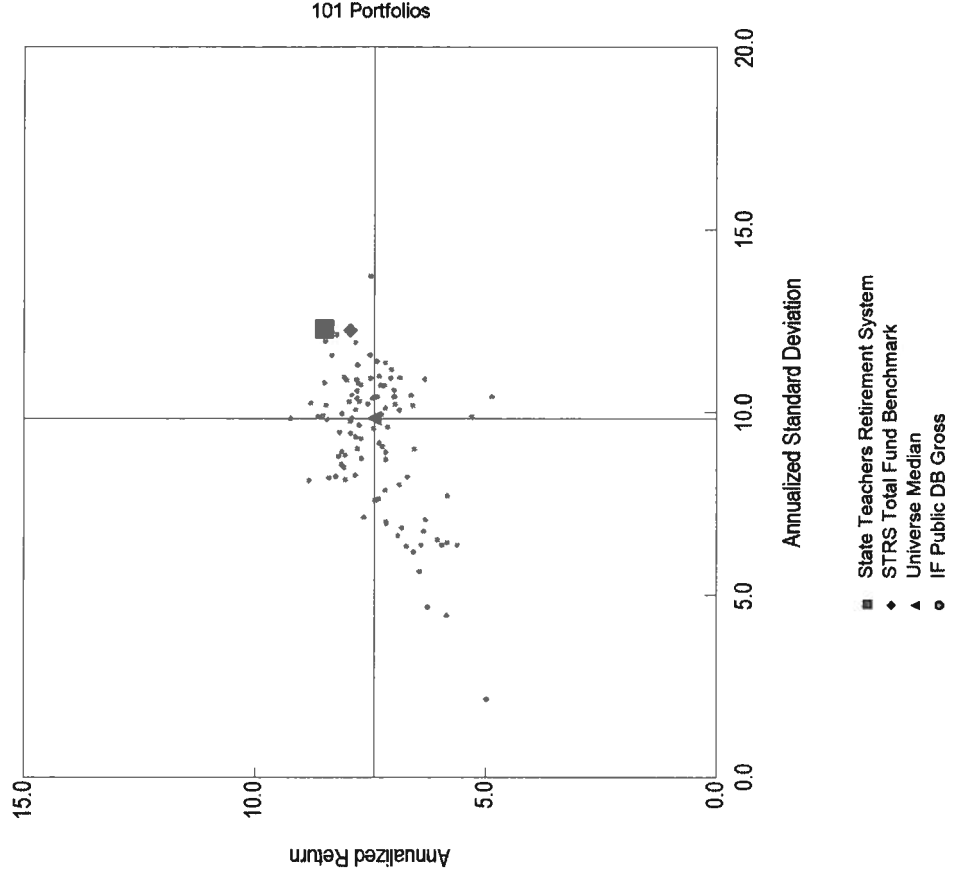
### RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	12.29	12.25
Alpha	0.13	0.00
Sharpe Ratio	0.56	0.51
Excess Return Over Market / Risk	0.05	0.00
Tracking Error	0.72	0.00
Information Ratio	0.79	-

### CORRELATION STATISTICS

R-Squared	1.00	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



# State Teachers Retirement System

## Quarter Ending 12/31/2012

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 EAFE ex US 50% Hedged
			10.0	Real Estate Blended Benchmark
			4.6	MSCI Em Mkts Free (Gross)
	7.0	Alt. Investment Actual Return		
	1.0	91-Day Treasury Bill		
	Jul-10	Jun-11	39.0	Russell 3000
			19.0	Barclays Universal
			18.4	MSCI EAFE ex US 50% Hedged
			10.0	Real Estate Blended Benchmark
			4.6	MSCI Em Mkts Free (Gross)
	8.0	Alt. Investment Actual Return*		
	1.0	91-Day Treasury Bill		
	Sep-11	Jun-12	39.0	Russell 3000
18.0			Barclays Universal	
18.4			MSCI EAFE ex US 50% Hedged	
10.0			Real Estate Blended Benchmark	
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 EAFE ex US 50% Hedged	
		10.0	Real Estate Blended Benchmark	
		4.6	MSCI Em Mkts Free (Gross)	
10.0	Alt. Investment Actual Return*			
1.0	91-Day Treasury Bill			

Label	Quarter Start	Quarter End	Percent	Description

\*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 12/31/2012

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	MSCIEAFE 50% Hedged
			9.0	Real Estate Blended Benchmark
			5.0	MSCI Em Mkts Free (Gross)
	Mar-03	Jun-03	2.0	Alt. Investment Actual Return
			1.0	91-Day Treasury Bill
			45.0	S&P/Russell Hybrid
			23.0	Barclays Universal
			15.0	MSCIEAFE 50% Hedged
	Sep-03	Dec-05	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
			45.0	Russell 3000
Mar-06	Jun-06	23.0	Barclays Universal	
		15.0	MSCI World ex US 50% Hedged	
		9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		2.0	Alt. Investment Actual Return	
Mar-06	Jun-06	1.0	91-Day Treasury Bill	
		42.0	Russell 3000	
		21.0	Barclays Universal	
		20.0	MSCI World ex US 50% Hedged	
		9.0	Real Estate Blended Benchmark	
Mar-06	Jun-06	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
			9.5	Real Estate Blended Benchmark
			5.0	MSCI Em Mkts Free (Gross)
	Sep-07	Sep-07	3.0	Alt. Investment Actual Return
			0.0	91-Day Treasury Bill
			42.0	Russell 3000
			20.0	Barclays Universal
			20.0	MSCI World ex US 50% Hedged
	Dec-07	Mar-09	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
			42.0	Russell 3000
Apr-09	Jun-09	20.0	Barclays Universal	
		20.0	MSCI World ex US 50% Hedged	
		19.2	Real Estate Blended Benchmark	
		10.0	Real Estate Blended Benchmark	
		4.8	MSCI Em Mkts Free (Gross)	
Apr-09	Jun-09	6.0	Alt. Investment Actual Return	
		0.0	91-Day Treasury Bill	

# State Teachers Retirement System

## Quarter Ending 12/31/2012

Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-84	Dec-84	40.0	Standard & Poors 500
			45.0	Barclays Govt./Corp.
			9.0	Real Estate Blended Benchmark
			3.0	MSCI EAFE (Net)
	Mar-85	Dec-85	3.0	91-Day Treasury Bill
			46.0	Standard & Poors 500
			35.0	BC Aggregate
			9.0	Real Estate Blended Benchmark
	Mar-86	Dec-86	6.0	MSCI EAFE (Net)
			2.0	MSCI Em Mkts Free (Gross)
			2.0	91-Day Treasury Bill
			45.0	Standard & Poors 500
Mar-87	Jun-87	35.0	BC Aggregate	
		9.0	Real Estate Blended Benchmark	
		6.8	MSCI EAFE (Net)	
		2.3	MSCI Em Mkts Free (Gross)	
Mar-88	Jun-88	2.0	91-Day Treasury Bill	
		45.0	Standard & Poors 500	
		34.0	BC Aggregate	
		9.0	Real Estate Blended Benchmark	
Mar-89	Jun-89	6.0	MSCI EAFE (Net)	
		4.0	MSCI Em Mkts Free (Gross)	
		2.0	91-Day Treasury Bill	
		2.0	91-Day Treasury Bill	

Label	Quarter Start	Quarter End	Percent	Description
Policy Index (Cont.)	Sep-87	Dec-87	45.0	Standard & Poors 500
			24.0	BC Aggregate
			12.0	MSCI EAFE (Net)
			9.0	Real Estate Blended Benchmark
	Mar-88	Sep-88	8.0	MSCI Em Mkts Free (Gross)
			2.0	91-Day Treasury Bill
			45.0	S&P 1500
			24.0	BC Aggregate
	Dec-88	Sep-89	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-89	Sep-90	45.0	S&P 1500	
		24.0	BC Aggregate	
		14.0	MSCI EAFE 50% Hedged	
		9.0	Real Estate Blended Benchmark	
Dec-90	Jun-91	6.0	MSCI Em Mkts Free (Gross)	
		2.0	91-Day Treasury Bill	
		25.0	S&P 1500	
		15.0	Barclays Universal	
Dec-91	Jun-92	9.0	Real Estate Blended Benchmark	
		5.0	MSCI Em Mkts Free (Gross)	
		1.0	91-Day Treasury Bill	
		1.0	91-Day Treasury Bill	



Ohio Police & Fire  
(OP&F)

# Ohio Police & Fire

Actuarial Rate: 8.25%

	Ending December 31, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Ohio Police &amp; Fire</b>					
OPF Total Fund Benchmark	7.9%	14.9%	10.9%	3.5%	8.9%
Over/Under	7.4%	15.0%	9.9%	2.8%	8.4%
	0.5%	-0.1%	1.0%	0.7%	0.5%
OP&F Domestic Equity	7.2%	15.9%	12.7%	3.3%	8.5%
Wishire 5000	6.3%	16.1%	11.1%	2.0%	7.9%
Over/Under	0.9%	-0.2%	1.6%	1.3%	0.6%
OP&F International Equity	14.3%	20.0%	6.6%	-1.7%	10.7%
OPF International Benchmark	13.5%	16.9%	3.9%	-2.9%	9.8%
Over/Under	0.8%	3.1%	2.7%	1.2%	0.9%
<b>OP&amp;F Fixed Income</b>	6.6%	11.7%	12.3%	10.2%	8.4%
Barclays Aggregate	1.8%	4.2%	6.2%	5.9%	5.2%
Over/Under	4.8%	7.5%	6.1%	4.3%	3.2%
OP&F Core Fixed	3.0%	6.3%	7.5%	6.8%	5.8%
Barclays Aggregate	1.8%	4.2%	6.2%	5.9%	5.2%
Over/Under	1.2%	2.1%	1.3%	0.9%	0.6%
OP&F Mortgages	0.8%	5.3%	8.8%	5.2%	5.9%
OP&F High Yield	8.1%	15.6%	12.1%	10.6%	10.2%
OPF High Yield Benchmark	7.6%	14.8%	11.5%	9.5%	10.2%
Over/Under	0.5%	0.8%	0.6%	1.1%	0.0%
Global Inflation Protected Securities	9.9%	14.9%	21.5%	15.0%	-
OPF GIPS Benchmark	7.7%	13.5%	14.3%	10.6%	-
Over/Under	2.2%	1.4%	7.2%	4.4%	-

# Ohio Police & Fire

Actuarial Rate: 8.25%

	Ending December 31, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>OP&amp;F Real Estate</b>		<b>13.1%</b>	<b>11.7%</b>	<b>-2.3%</b>	<b>8.2%</b>
OPF Real Estate Benchmark	6.0%	10.5%	11.1%	2.4%	8.4%
Over/Under	1.1%	2.6%	0.6%	-4.7%	-0.2%
<b>OP&amp;F Alternatives</b>					
OP&F Private Equity	2.9%	9.6%	13.2%	4.6%	8.6%
OPF Private Equity Benchmark	4.4%	33.8%	16.6%	4.4%	12.5%
Over/Under	-1.5%	-24.2%	-3.4%	0.2%	-3.9%
Timber	2.1%	-	-	-	-
OPF Timber Benchmark	2.5%	-	-	-	-
Over/Under	-0.4%				
OP&F Cash	0.1%	0.3%	0.2%	0.7%	1.9%
91 Day T-Bills	0.0%	0.1%	0.1%	0.3%	1.7%
Over/Under	0.1%	0.2%	0.1%	0.4%	0.2%

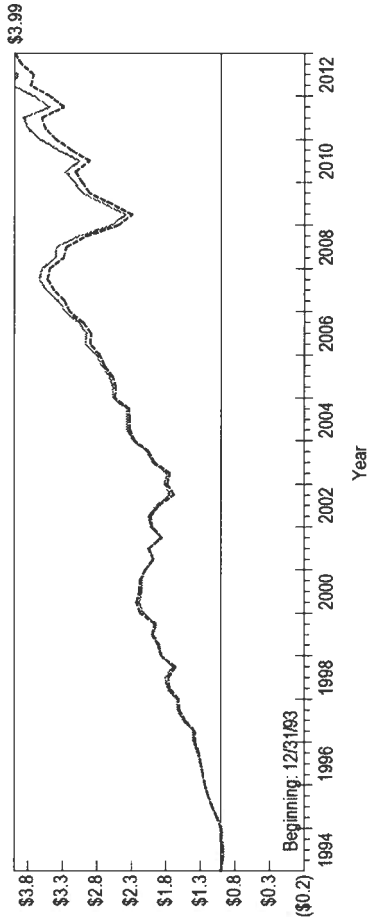
# Ohio Police & Fire

## Asset Allocation by Segment

As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Non-US Fixed Income	Alternatives	Real Estate	Cash	Other
<b>OP&amp;F Fixed Income</b>										
OP&F Core Fixed	\$1,358,174,114	10.8%			\$1,358,174,114					
OP&F Mortgages	\$36,542,250	0.3%			\$36,542,250					
OP&F High Yield	\$1,217,415,620	9.7%			\$1,217,415,620					
Global Inflation Protected Securities	\$978,395,092	7.8%				\$978,395,092				
<b>OP&amp;F Real Estate</b>										
OP&F Real Estate	\$1,250,978,773	9.9%					\$1,250,978,773			
<b>OP&amp;F Alternatives</b>										
OP&F Private Equity	\$508,624,585	4.0%					\$508,624,585			
Timber	\$72,792,341	0.6%					\$72,792,341			
OP&F Cash	\$138,703,127	1.1%						\$138,703,127		
<b>Total</b>	<b>\$12,614,971,008</b>	<b>100.0%</b>			<b>\$2,612,131,984</b>	<b>\$978,395,092</b>	<b>\$581,416,926</b>	<b>\$1,250,978,773</b>		

## GROWTH OF A DOLLAR



	Actual	Target	Difference
US Equity	27.8	31.6	-3.8
Intl Equity	23.7	21.7	2.0
Alternatives	4.6	5.3	-0.7
<b>Total Equity</b>	<b>56.1</b>	<b>58.6</b>	<b>-2.5</b>
Fixed Income	28.6	31.5	-2.9
Real Estate	9.9	10.0	-0.1
Short Term Investments	5.4	0.0	5.4
<b>Total Debt</b>	<b>43.9</b>	<b>41.5</b>	<b>2.5</b>
	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>

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



# Ohio Police & Fire

## 10 Year Risk Statistics

### RISK RETURN STATISTICS

January 01, 2003 Through December 31, 2012

Ohio Police & Fire  
OPF Total Fund  
Benchmark

RETURN SUMMARY STATISTICS	Ohio Police & Fire	OPF Total Fund Benchmark
Number of Periods	40	40
Maximum Return	13.00	12.98
Minimum Return	-15.45	-15.69
Annualized Return	8.90	8.42
Total Return	134.54	124.38
Annualized Excess Return Over Risk Free	7.24	6.76
Annualized Excess Return	0.48	0.00

### RISK SUMMARY STATISTICS

Beta	1.00	1.00
Upside Deviation	6.97	7.21
Downside Deviation	9.76	9.61

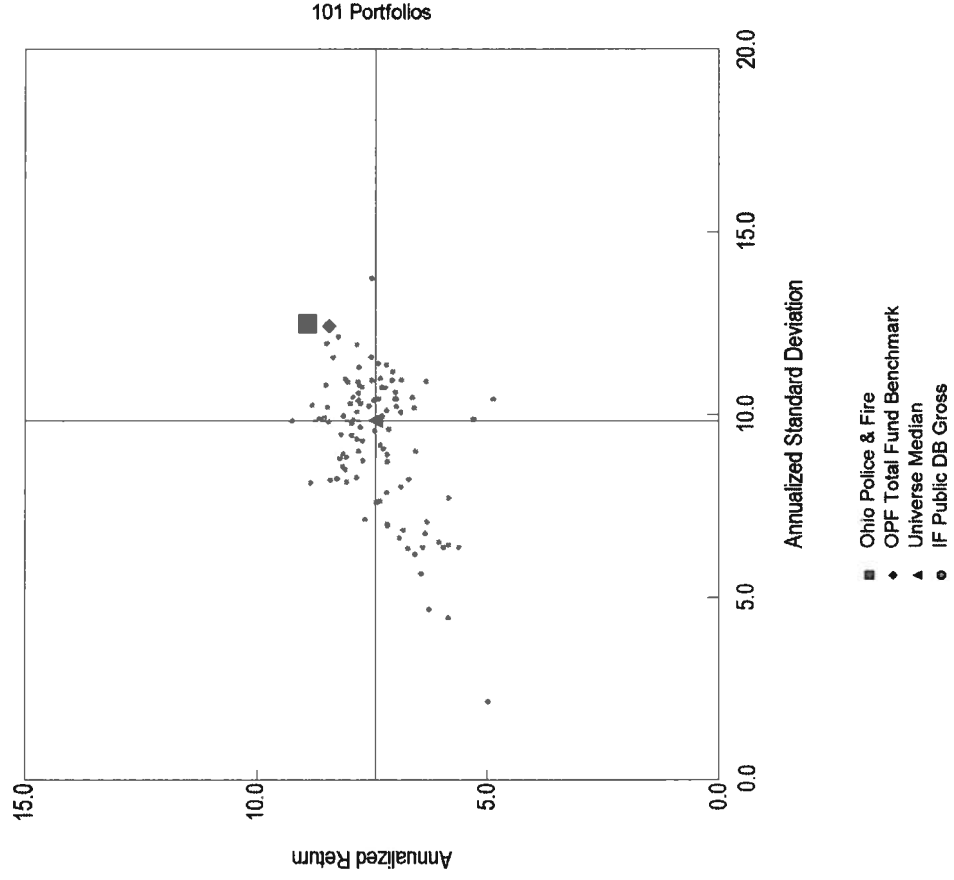
### RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	12.50	12.42
Alpha	0.11	0.00
Sharpe Ratio	0.58	0.54
Excess Return Over Market / Risk	0.04	0.00
Tracking Error	0.96	0.00
Information Ratio	0.50	-

### CORRELATION STATISTICS

R-Squared	0.99	1.00
Correlation	1.00	1.00

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



# Police & Fire Pension Fund

## Quarter Ending 12/31/2012

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
	Jul-12	Sep-12	4.0	Wilshire 5000+3% Qtr. Lagged
			1.0	CPI + 5%
			21.7	OP&F MSCI ex-US I/S Free IMI
	Oct-12	Dec-12	10.0	Barclays Aggregate
			31.9	Wilshire 5000
			15.0	CS Developed Countries HY
	Jul-12	Sep-12	10.0	NCREIF ODCE NOF 1 Mo Lag
			21.7	OP&F MSCI ex-US I/S Free IMI
			1.3	CPI + 5%
	Oct-12	Dec-12	6.5	Bridgewater Custom GIPS
31.6			Wilshire 5000	
4.0			Wilshire 5000+3% Qtr. Lagged	
Oct-12	Dec-12	10.0	Barclays Aggregate	
		21.7	OP&F MSCI ex-US I/S Free IMI	
		15.0	CS Developed Countries HY	
Oct-12	Dec-12	10.0	NCREIF ODCE NOF 1 Mo Lag	
		1.3	CPI + 5%	
		6.5	Bridgewater Custom GIPS	
Oct-12	Dec-12	31.6	Wilshire 5000	
		4.0	Wilshire 5000+3% Qtr. Lagged	
		10.0	Barclays Aggregate	

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 12/31/2012

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
			9.0	NCREIF ODCE NOF 1 Mo Lag
	Apr-09	Jun-09	6.0	Bridgewater Custom GIPS
			42.0	Wilshire 5000
			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
	Jul-09	Sep-09	40.0	Wilshire 5000
		23.0	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	
Oct-09	Jun-10	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
			10.0	NCREIF ODCE NOF 1 Mo Lag
	Jan-11	Jun-11	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)
			36.0	Wilshire 5000
			10.0	NCREIF ODCE NOF 1 Mo Lag
	Jul-11	Dec-11	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 12/31/2012

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, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>School Employees Retirement System</b>	<b>8.0%</b>	<b>14.4%</b>	<b>8.7%</b>	<b>1.5%</b>	<b>7.5%</b>
SERS Total Fund Benchmark	<u>6.4%</u>	<u>13.6%</u>	<u>7.8%</u>	<u>1.9%</u>	<u>7.4%</u>
Over/Under	1.6%	0.8%	0.9%	-0.3%	0.2%
SERS Domestic Equity	8.2%	17.1%	11.6%	2.1%	7.6%
Russell 3000	<u>6.5%</u>	<u>16.4%</u>	<u>11.2%</u>	<u>2.0%</u>	<u>7.7%</u>
Over/Under	1.7%	0.7%	0.4%	0.1%	-0.1%
SERS International Equity	13.7%	19.2%	5.6%	-1.8%	10.4%
SERS Intl Equity Benchmark	<u>13.2%</u>	<u>17.4%</u>	<u>4.2%</u>	<u>-2.3%</u>	<u>9.3%</u>
Over/Under	0.5%	1.8%	1.4%	0.5%	1.1%
SERS Global Fixed	4.5%	9.2%	8.7%	8.0%	6.4%
Barclays Aggregate	<u>1.8%</u>	<u>4.2%</u>	<u>6.2%</u>	<u>5.9%</u>	<u>5.2%</u>
Over/Under	2.7%	5.0%	2.5%	2.1%	1.2%
<b>SERS Real Estate</b>					
SERS Real Estate	6.1%	14.0%	10.1%	-3.7%	5.8%
SERS Total Real Estate Benchmark	<u>5.1%</u>	<u>11.0%</u>	<u>10.7%</u>	<u>2.9%</u>	<u>9.1%</u>
Over/Under	1.0%	3.0%	-0.6%	-6.6%	-3.3%
<b>SERS Alternatives</b>					
SERS Private Equity	5.5%	13.1%	13.2%	5.2%	6.4%
SERS PE Benchmark	<u>5.8%</u>	<u>33.2%</u>	<u>16.2%</u>	<u>4.1%</u>	<u>11.0%</u>
Over/Under	-0.3%	-20.1%	-3.0%	1.1%	-4.6%
SERS Hedge Funds	5.1%	8.0%	5.0%	-	-
SERS Hedge Fund Benchmark	<u>3.8%</u>	<u>4.9%</u>	<u>1.8%</u>	-	-
Over/Under	1.3%	3.1%	3.2%		
SERS Cash	0.1%	0.2%	0.2%	1.1%	2.2%
SERS Short-Term Benchmark	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.6%</u>
Over/Under	0.1%	0.1%	0.1%	0.8%	0.6%

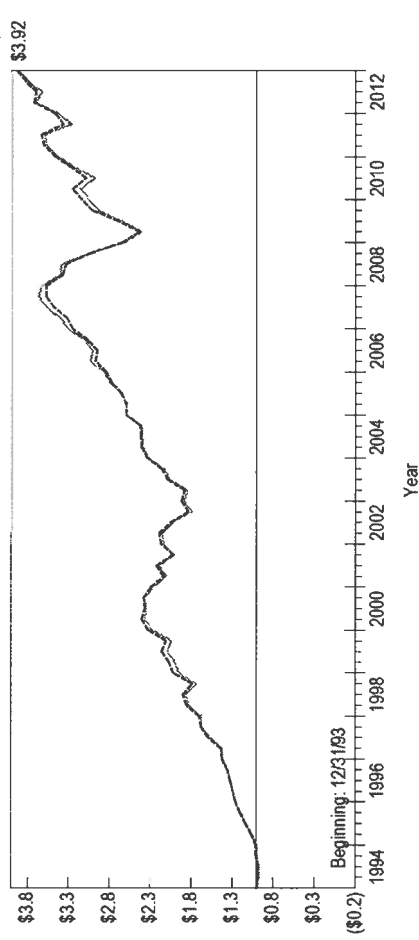
# School Employees Retirement System

## Asset Allocation by Segment

As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
<b>SERS Real Estate</b>								
SERS Real Estate	\$1,114,050,619	10.2%				\$1,114,050,619		
<b>SERS Alternatives</b>								
SERS Private Equity	\$1,031,611,948	9.4%				\$1,031,611,948		
SERS Hedge Funds	\$1,537,601,152	14.0%				\$1,537,601,152		
SERS Cash	\$84,732,823	0.8%						\$84,732,823
<b>Total</b>	<b>\$10,952,064,934</b>	<b>100.0%</b>				<b>\$2,569,213,100</b>	<b>\$1,114,050,619</b>	<b>\$84,732,823</b>

## GROWTH OF A DOLLAR



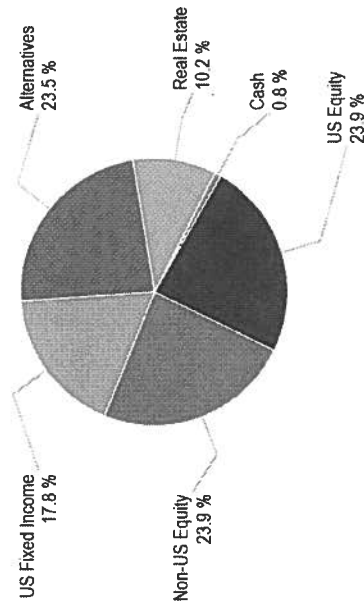
	Actual	Target	Difference
<b>SERS</b>			
US Equity	23.9	22.5	1.4
Intl Equity	23.9	22.5	1.4
Alternatives	23.4	25.0	-1.6
<b>Total Equity</b>	<b>71.2</b>	<b>70.0</b>	<b>1.2</b>
Fixed Income	17.8	19.0	-1.2
Real Estate	10.2	10.0	0.2
Short Term Investments	0.8	1.0	-0.2
<b>Total Debt</b>	<b>28.8</b>	<b>30.0</b>	<b>-1.2</b>
	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>

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

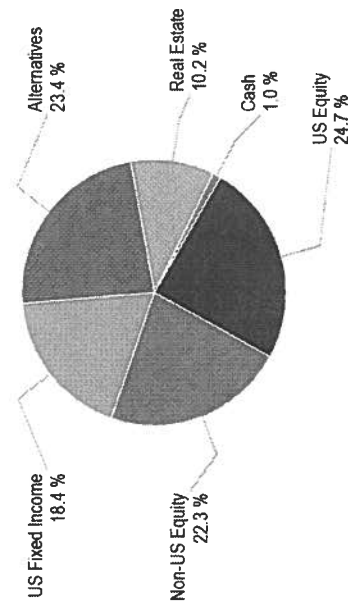
# School Employees Retirement System

## Asset Allocation

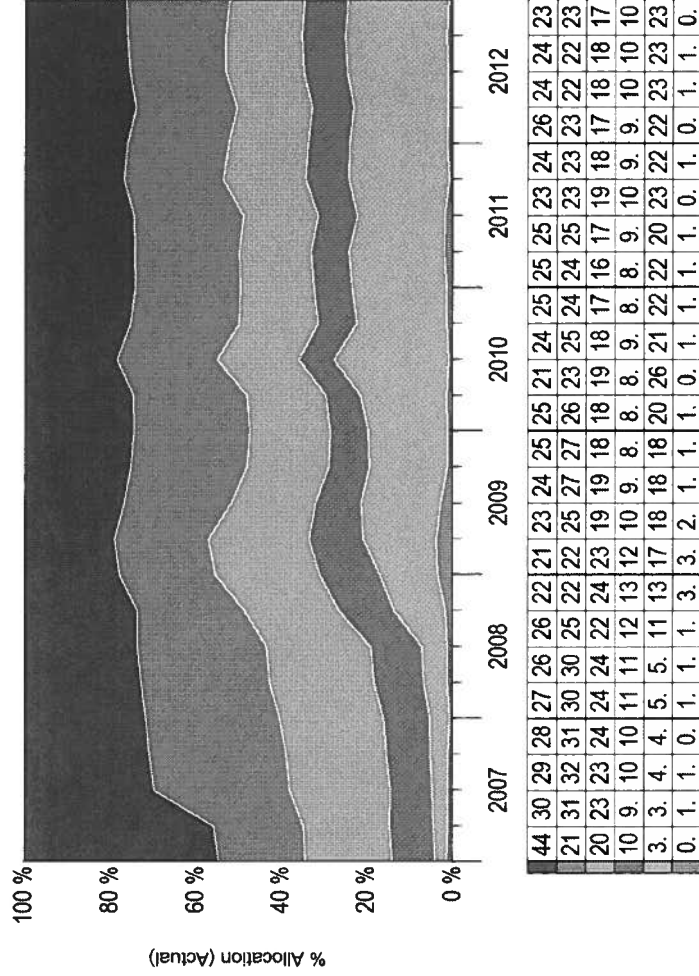
**Current Allocation**  
December 31, 2012



**Previous Allocation**  
June 30, 2012



**Asset Allocation History**  
6 Years Ending December 31, 2012



- SERS Domestic Equity
- SERS International Equity
- SERS Global Fixed
- SERS Real Estate
- SERS Alternatives
- SERS Cash

# School Employees Retirement System

## 10 Year Risk Statistics

### RISK RETURN STATISTICS

January 01, 2003 Through December 31, 2012

School Employees Retirement System      SERS Total Fund Benchmark

#### RETURN SUMMARY STATISTICS

Number of Periods	40	40
Maximum Return	11.82	11.81
Minimum Return	-13.65	-12.85
Annualized Return	7.58	7.45
Total Return	107.72	105.06
Annualized Excess Return Over Risk Free	5.93	5.79
Annualized Excess Return	0.14	0.00

#### RISK SUMMARY STATISTICS

Beta	1.08	1.00
Upside Deviation	6.19	5.96
Downside Deviation	9.00	8.49

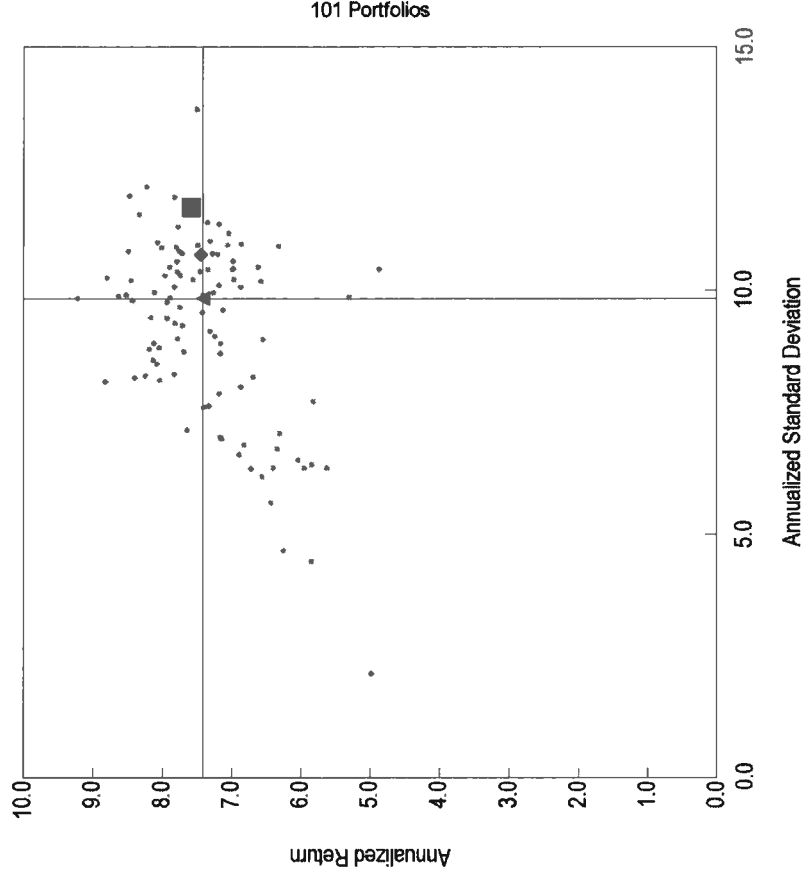
#### RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	11.71	10.73
Alpha	-0.10	0.00
Sharpe Ratio	0.51	0.54
Excess Return Over Market / Risk	0.01	0.00
Tracking Error	1.78	0.00
Information Ratio	0.08	-

#### CORRELATION STATISTICS

R-Squared	0.98	1.00
Correlation	0.99	1.00

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



School Employees Retirement System  
 SERS Total Fund Benchmark  
 Universe Median  
 IF Public DB Gross

# School Employees Retirement System

Quarter Ending 12/31/2012

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	Dec-12	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			

\*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 12/31/2012

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	MSCIEAFE (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	MSCIEAFE 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	MSCIEAFE 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	MSCIEAFE 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	MSCIEAFE 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	MSCIEAFE 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	MSCIEAFE 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, 2012				
	Since 6/30/12	1 Yr	3 Yrs	5 Yrs	10 Yrs
<b>Highway Patrol Retirement System</b>					
HPRS Total Fund Benchmark	<u>6.4%</u>	<u>11.9%</u>	<u>7.4%</u>	<u>1.7%</u>	<u>7.3%</u>
Over/Under	<u>6.3%</u>	<u>13.1%</u>	<u>9.1%</u>	<u>3.3%</u>	<u>8.2%</u>
	0.1%	-1.2%	-1.7%	-1.6%	-0.9%
HPRS Domestic Equity	6.9%	16.0%	11.6%	2.7%	8.8%
HPRS Domestic Equity Benchmark	<u>6.5%</u>	<u>16.4%</u>	<u>11.9%</u>	<u>2.7%</u>	<u>8.3%</u>
Over/Under	0.4%	-0.4%	-0.3%	0.0%	0.5%
HPRS International Equity	13.1%	18.1%	3.9%	-3.0%	8.4%
HPRS International Benchmark	<u>13.8%</u>	<u>17.4%</u>	<u>4.3%</u>	<u>-2.4%</u>	<u>9.5%</u>
Over/Under	-0.7%	0.7%	-0.4%	-0.6%	-1.1%
HPRS Global Fixed Income	3.3%	6.6%	7.3%	6.7%	6.2%
Barclays Aggregate	<u>1.8%</u>	<u>4.2%</u>	<u>6.2%</u>	<u>5.9%</u>	<u>5.2%</u>
Over/Under	1.5%	2.4%	1.1%	0.8%	1.0%
<b>HPRS Real Estate</b>					
NCREIF Property Index	<u>8.9%</u>	<u>7.1%</u>	<u>1.2%</u>	<u>-7.8%</u>	<u>1.4%</u>
Over/Under	4.9%	10.5%	12.6%	2.1%	8.4%
	4.0%	-3.4%	-11.4%	-9.9%	-7.0%
<b>HPRS Alternatives</b>					
HPRS Private Equity	2.3%	6.8%	1.9%	0.4%	-
HPRS Private Equity Benchmark	<u>4.2%</u>	<u>33.5%</u>	<u>12.8%</u>	<u>10.3%</u>	-
Over/Under	-1.9%	-26.7%	-10.9%	-9.9%	-
HPRS Hedge Funds	4.2%	7.0%	2.9%	1.2%	-
HFRI Fund of Funds Composite Index	<u>3.7%</u>	<u>4.7%</u>	<u>1.4%</u>	<u>-1.8%</u>	<u>3.6%</u>
Over/Under	0.5%	2.3%	1.5%	3.0%	-
HPRS Cash	0.0%	0.0%	0.1%	0.6%	2.2%
91 Day T-Bills	<u>0.0%</u>	<u>0.1%</u>	<u>0.1%</u>	<u>0.3%</u>	<u>1.7%</u>
Over/Under	0.0%	-0.1%	0.0%	0.3%	0.5%

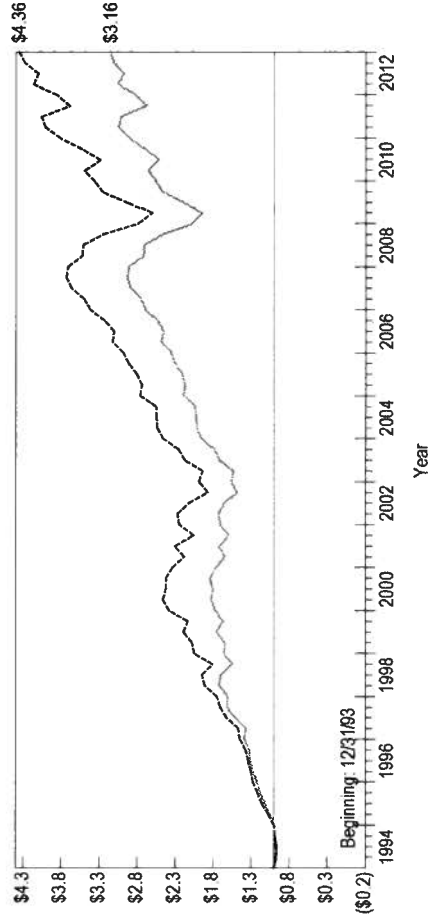
# Highway Patrol Retirement System

## Asset Allocation by Segment

As Of December 31, 2012

	Total Market Value	% of Portfolio	US Equity	Non-US Equity	US Fixed Income	Alternatives	Real Estate	Cash
<b>HPRS Real Estate</b>								
HPRS Real Estate	\$33,646,664	4.7%					\$33,646,664	
<b>HPRS Alternatives</b>								
HPRS Private Equity	\$75,705,809	10.5%				\$75,705,809		
HPRS Hedge Funds	\$63,068,938	8.7%				\$63,068,938		
HPRS Cash	\$9,746,453	1.4%						\$9,746,453
<b>Total</b>	<b>\$721,011,381</b>	<b>100.0%</b>				<b>\$136,774,747</b>	<b>\$33,646,664</b>	<b>\$9,746,453</b>

## GROWTH OF A DOLLAR



	Actual	Target	Difference
<b>HPRS</b>			
US Equity	39.0	35.0	4.0
Intl Equity	16.0	20.0	-4.0
Alternatives	19.2	17.5	1.7
<b>Total Equity</b>	<b>74.2</b>	<b>72.5</b>	<b>1.7</b>
Fixed Income	19.7	22.5	-2.8
Real Estate	4.7	5.0	-0.3
Short Term Investments	1.4	0.0	1.4
<b>Total Debt</b>	<b>25.8</b>	<b>27.5</b>	<b>-1.7</b>
	<b>100.0</b>	<b>100.0</b>	<b>0.0</b>

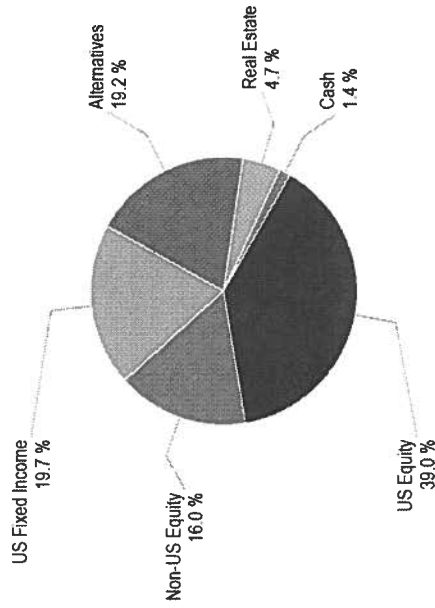
\*Totals may not add up to 100% due to rounding.

Highway Patrol Retirement System  
 — HPRS Total Fund Benchmark

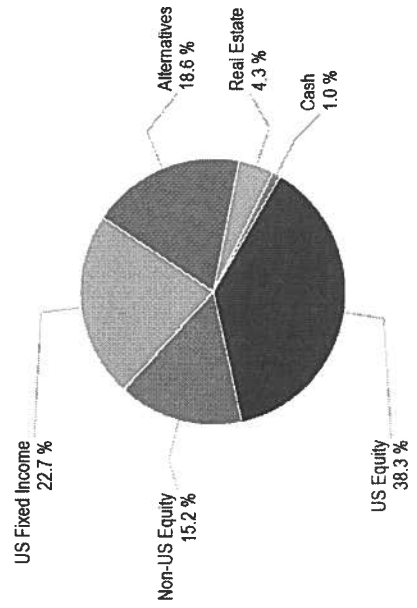
# Highway Patrol Retirement System

## Asset Allocation

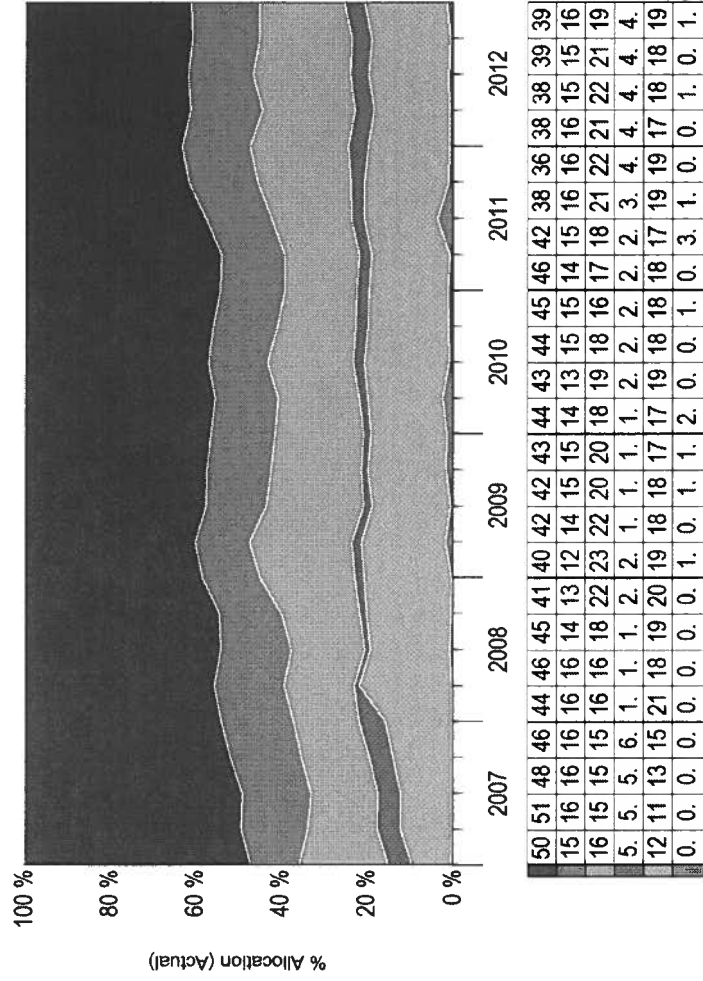
**Current Allocation**  
December 31, 2012



**Previous Allocation**  
June 30, 2012



**Asset Allocation History**  
6 Years Ending December 31, 2012



# Highway Patrol Retirement System

## 10 Year Risk Statistics

### RISK RETURN STATISTICS

January 01, 2003 Through December 31, 2012

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	7.31	8.22
Total Return	102.43	120.39
Annualized Excess Return Over Risk Free	5.65	6.57
Annualized Excess Return	-0.92	0.00

### RISK SUMMARY STATISTICS

Beta	1.07	1.00
Upside Deviation	6.96	6.76
Downside Deviation	9.68	8.69

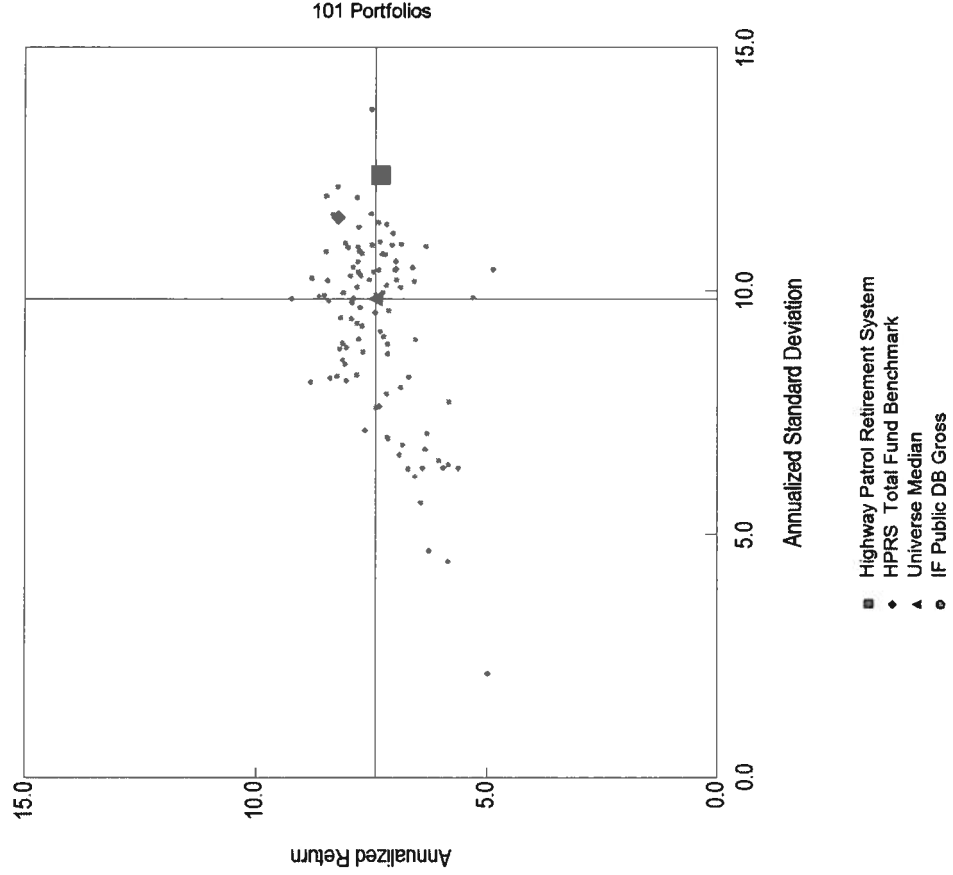
### RISK/RETURN SUMMARY STATISTICS

Annualized Standard Deviation	12.37	11.50
Alpha	-0.34	0.00
Sharpe Ratio	0.46	0.57
Excess Return Over Market / Risk	-0.07	0.00
Tracking Error	1.67	0.00
Information Ratio	-0.55	-

### CORRELATION STATISTICS

R-Squared	0.99	1.00
Correlation	0.99	1.00

Annualized Return vs. Annualized Standard Deviation  
10 Years Ending December 31, 2012



## Highway Patrol Retirement System Quarter Ending 12/31/2012

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

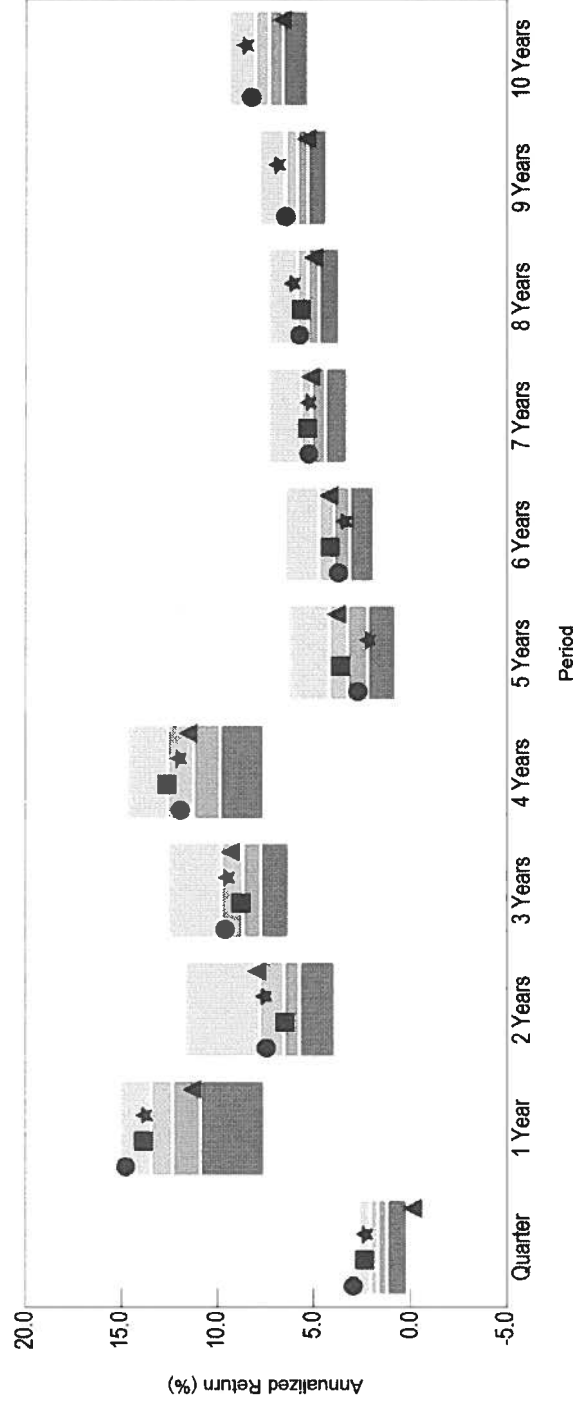
Label	Quarter Start	Quarter End	Percent	Description
Policy Index	Mar-07	Jun-07	32.0	Standard & Poors 500
			18.0	Russell 2500
			15.0	MSCI ACWI ex US
			5.0	NCREIF
			10.0	CPI + 5%
			5.0	HFRI Fund of Funds
			15.0	BC Aggregate
	Sep-07	Jun-10	30.0	Standard & Poors 500
			15.0	Russell 2500
			20.0	BC 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-12	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	

HPRS' custom policy index is shown above.

## Performance Comparisons

**Total Plans**  
**InvestorForce All Defined Benefit Fund Universe**

**IF All DB Gross Accounts**  
**Ending December 31, 2012**



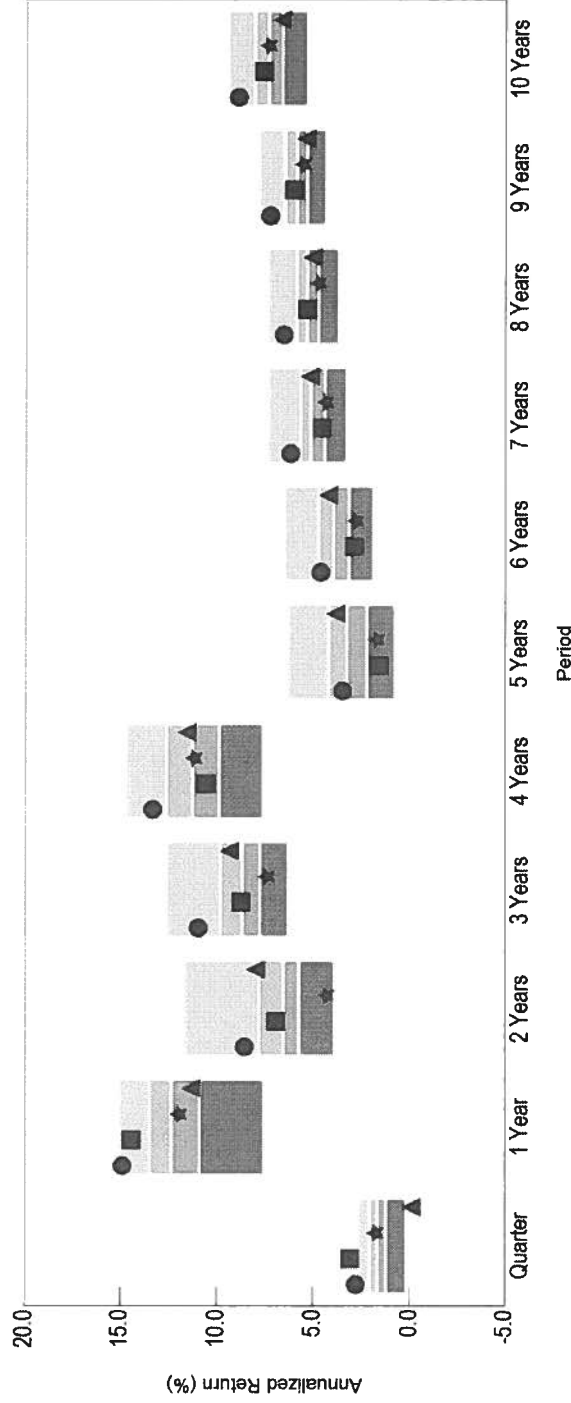
	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	2.6	15.1	11.7	12.6	14.7	6.3	6.5	7.4	7.4	7.8	9.4
<b>5th Percentile</b>	2.1	13.5	7.8	9.8	12.6	4.2	4.7	5.7	5.9	6.5	8.1
<b>25th Percentile</b>	1.7	12.4	6.6	8.7	11.3	3.2	4.0	5.1	5.3	5.9	7.4
<b>Median</b>	1.2	10.9	5.7	7.8	9.9	2.2	3.1	4.4	4.8	5.4	6.6
<b>75th Percentile</b>	0.1	7.5	3.9	6.3	7.6	0.7	1.9	3.3	3.7	4.3	5.3
<b>95th Percentile</b>	766	732	689	664	646	632	608	569	542	510	478
<b># of Portfolios</b>	2.9 (3)	14.8 (8)	7.4 (31)	9.6 (28)	11.9 (39)	2.7 (65)	3.7 (60)	5.3 (46)	5.7 (31)	6.5 (27)	8.2 (21)
● <b>Public Employees Retirement System (DB)</b>	2.3 (14)	13.8 (20)	6.5 (53)	8.8 (47)	12.6 (26)	3.6 (42)	4.1 (44)	5.3 (43)	5.7 (36)	-- (-)	-- (-)
■ <b>Public Employees Retirement System (HC)</b>	2.3 (15)	13.8 (21)	7.5 (29)	9.5 (30)	12.0 (37)	2.1 (77)	3.4 (69)	5.2 (47)	6.1 (21)	6.9 (16)	8.5 (15)
★ <b>State Teachers Retirement System</b>	-0.1 (98)	11.3 (70)	7.9 (24)	9.3 (33)	11.5 (46)	3.8 (35)	4.2 (43)	5.2 (49)	5.0 (65)	5.4 (74)	6.7 (74)
▲ <b>60/40 S&amp;P 500/Barclays Aggregate</b>											



# Total Plans

## InvestorForce All Defined Benefit Fund Universe

IF All DB Gross Accounts  
Ending December 31, 2012

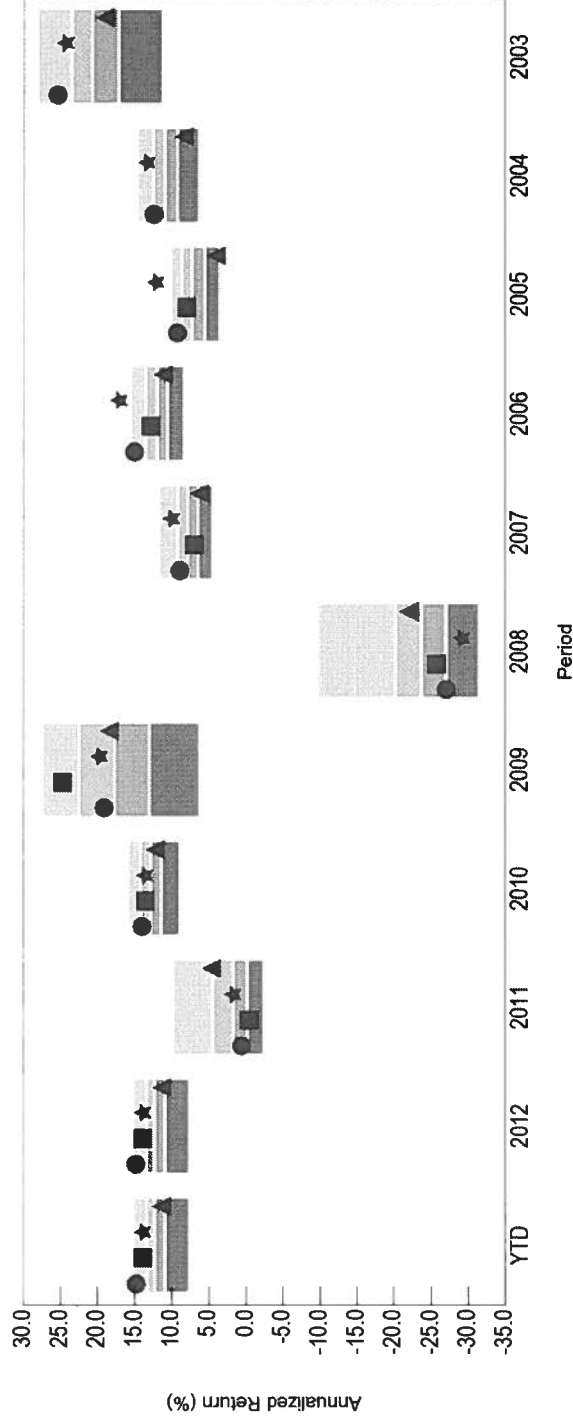


### Return (Rank)

	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	2.6	15.1	11.7	12.6	14.7	6.3	6.5	7.4	7.4	7.8	9.4
25th Percentile	2.1	13.5	7.8	9.8	12.6	4.2	4.7	5.7	5.9	6.5	8.1
Median	1.7	12.4	6.6	8.7	11.3	3.2	4.0	5.1	5.3	5.9	7.4
75th Percentile	1.2	10.9	5.7	7.8	9.9	2.2	3.1	4.4	4.8	5.4	6.6
95th Percentile	0.1	7.5	3.9	6.3	7.6	0.7	1.9	3.3	3.7	4.3	5.3
# of Portfolios	766	732	689	664	646	632	608	569	542	510	478
● Ohio Police & Fire	2.8 (4)	14.9 (7)	8.5 (20)	10.9 (15)	13.3 (16)	3.5 (45)	4.6 (29)	6.2 (16)	6.5 (11)	7.2 (10)	8.9 (9)
■ School Employees Retirement System	3.1 (2)	14.4 (11)	6.9 (41)	8.7 (50)	10.6 (64)	1.6 (88)	2.9 (82)	4.6 (71)	5.3 (51)	6.0 (46)	7.6 (43)
★ Highway Patrol Retirement System	1.7 (47)	11.9 (59)	4.3 (94)	7.4 (83)	11.1 (54)	1.7 (86)	2.7 (86)	4.3 (78)	4.7 (77)	5.5 (68)	7.3 (54)
▲ 60/40 S&P 500/Barclays Aggregate	-0.1 (98)	11.3 (70)	7.9 (24)	9.3 (33)	11.5 (46)	3.8 (35)	4.2 (43)	5.2 (49)	5.0 (65)	5.4 (74)	6.7 (74)

**Total Plans**  
**InvestorForce All Defined Benefit Fund Universe - Calendar Year Performance**

IF All DB Gross Accounts  
 Ending December 31, 2012

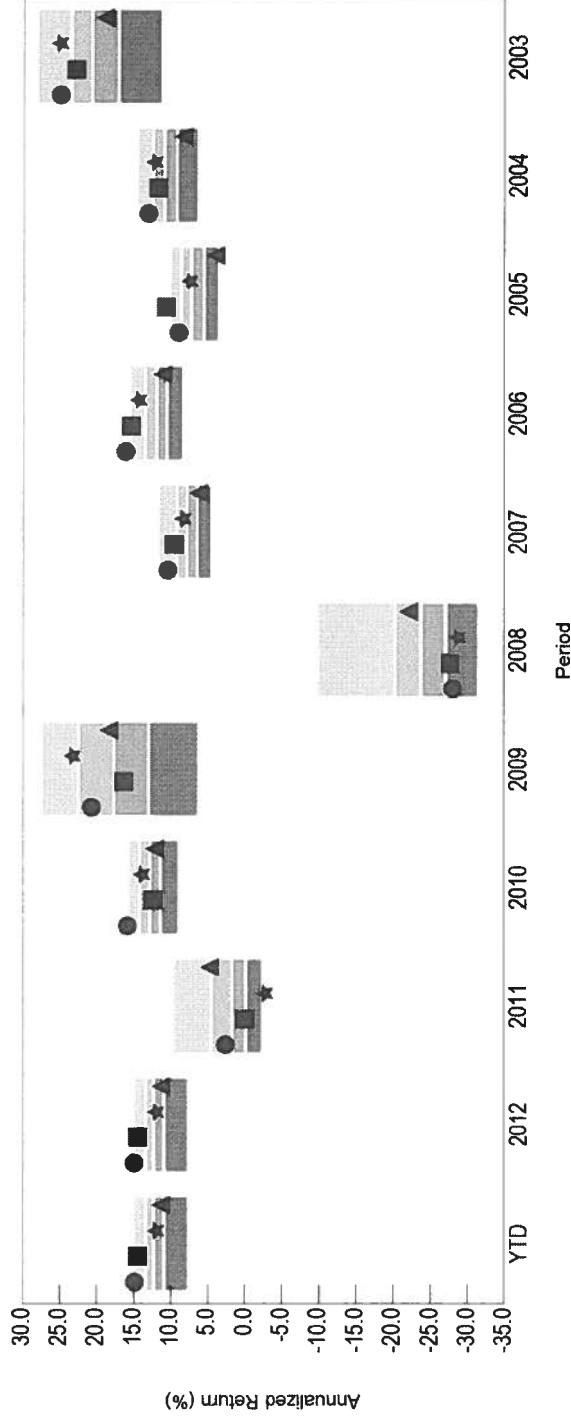


	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>	15.1 (15.1)	9.9 (99)	16.0 (16.0)	27.5 (27.5)	11.8 (11.8)	15.7 (15.7)	10.3 (10.3)	14.8 (14.8)	12.5 (12.5)	20.8 (20.8)	28.2 (28.2)
<b>5th Percentile</b>	13.5 (13.5)	4.5 (4.5)	14.2 (14.2)	22.5 (22.5)	9.3 (9.3)	13.6 (13.6)	8.6 (8.6)	12.5 (12.5)	11.0 (11.0)	23.5 (23.5)	
<b>25th Percentile</b>	12.4 (12.4)	1.7 (1.7)	12.9 (12.9)	17.8 (17.8)	7.9 (7.9)	12.0 (12.0)	7.3 (7.3)	11.0 (11.0)	9.2 (9.2)	20.8 (20.8)	
<b>Median</b>	10.9 (10.9)	-0.2 (-0.2)	11.4 (11.4)	13.0 (13.0)	6.5 (6.5)	10.6 (10.6)	5.6 (5.6)	9.2 (9.2)	6.4 (6.4)	17.2 (17.2)	
<b>75th Percentile</b>	7.5 (7.5)	-2.5 (-2.5)	8.9 (8.9)	6.2 (6.2)	4.5 (4.5)	8.4 (8.4)	3.6 (3.6)	6.4 (6.4)	3.0 (3.0)	11.3 (11.3)	
<b>95th Percentile</b>	732 (732)	389 (389)	367 (367)	354 (354)	347 (347)	332 (332)	315 (315)	279 (279)	262 (262)		
<b># of Portfolios</b>	14.8 (8)	14.8 (8)	14.0 (31)	19.1 (44)	27.1 (77)	8.9 (33)	15.0 (9)	9.2 (16)	12.5 (26)	25.4 (16)	
● <b>Public Employees Retirement System (DB)</b>	13.8 (20)	13.8 (20)	13.5 (39)	24.8 (14)	-25.8 (67)	6.9 (69)	12.7 (40)	8.0 (35)	-- (-)	-- (-)	
■ <b>Public Employees Retirement System (HC)</b>	13.8 (21)	13.8 (21)	13.5 (40)	19.7 (40)	-29.2 (90)	10.0 (17)	17.0 (2)	12.2 (1)	13.4 (14)	24.3 (22)	
★ <b>State Teachers Retirement System</b>	11.3 (70)	11.3 (70)	12.1 (66)	18.4 (47)	-22.1 (37)	6.2 (78)	11.1 (68)	4.0 (92)	8.3 (81)	19.0 (66)	
▲ <b>60/40 S&amp;P 500/Barclays Aggregate</b>											

# Total Plans

## InvestorForce All Defined Benefit Fund Universe - Calendar Year Performance

IF All DB Gross Accounts  
Ending December 31, 2012

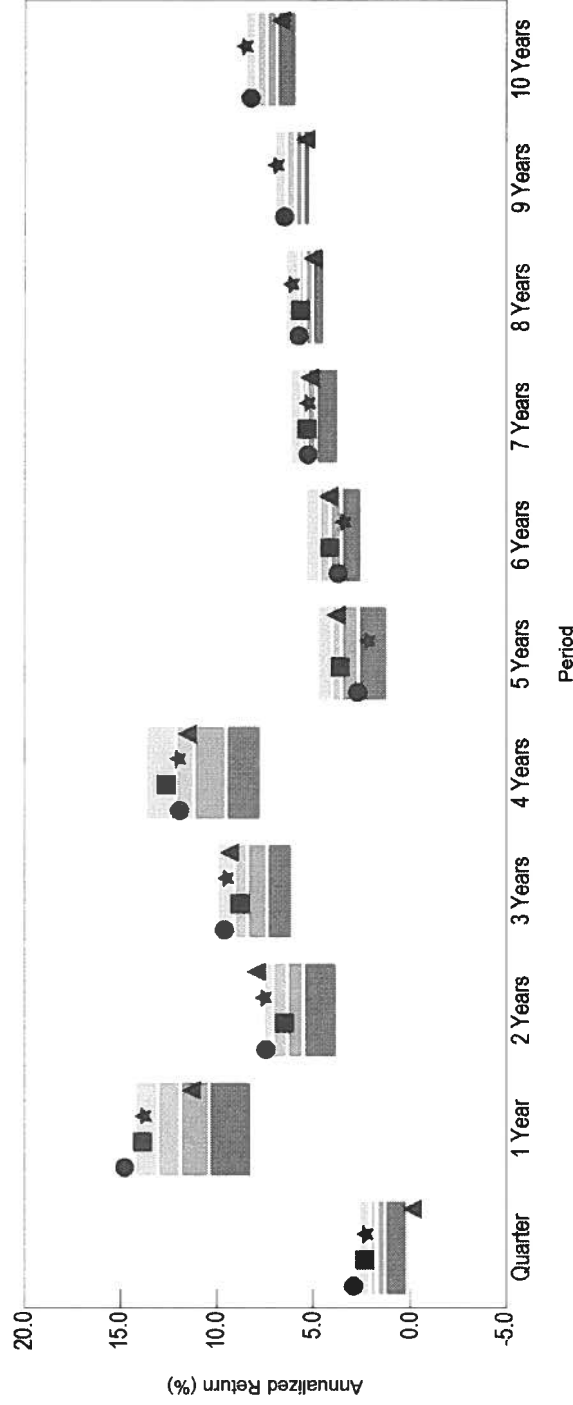


### Return (Rank)

	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
5th Percentile	15.1	15.1	9.9	16.0	27.5	-9.7	11.8	15.7	10.3	14.8	28.2
25th Percentile	13.5	13.5	4.5	14.2	22.5	-20.2	9.3	13.6	8.6	12.5	23.5
Median	12.4	12.4	1.7	12.9	17.8	-23.8	7.9	12.0	7.3	11.0	20.8
75th Percentile	10.9	10.9	-0.2	11.4	13.0	-27.1	6.5	10.6	5.6	9.2	17.2
95th Percentile	7.5	7.5	-2.5	8.9	6.2	-31.6	4.5	8.4	3.6	6.4	11.3
# of Portfolios	732	732	389	367	354	347	332	315	300	279	262
● Ohio Police & Fire	14.9 (7)	14.9 (7)	2.5 (41)	15.9 (7)	20.7 (35)	-28.1 (83)	10.5 (12)	16.1 (4)	9.1 (18)	13.1 (18)	25.0 (17)
■ School Employees Retirement System	14.4 (11)	14.4 (11)	-0.1 (74)	12.4 (62)	16.4 (61)	-27.7 (81)	9.6 (21)	15.4 (7)	10.8 (3)	11.7 (37)	22.9 (31)
★ Highway Patrol Retirement System	11.9 (59)	11.9 (59)	-2.9 (97)	13.8 (35)	23.2 (21)	-28.8 (88)	8.3 (45)	14.3 (17)	7.4 (47)	12.2 (28)	25.0 (17)
▲ 60/40 S&P 500/Barclays Aggregate	11.3 (70)	11.3 (70)	4.7 (25)	12.1 (66)	18.4 (47)	-22.1 (37)	6.2 (78)	11.1 (68)	4.0 (92)	8.3 (81)	19.0 (66)

**Total Plans**  
**InvestorForce All Public Defined Benefit Fund Universe**

**IF Public DB Gross Accounts**  
**Ending December 31, 2012**

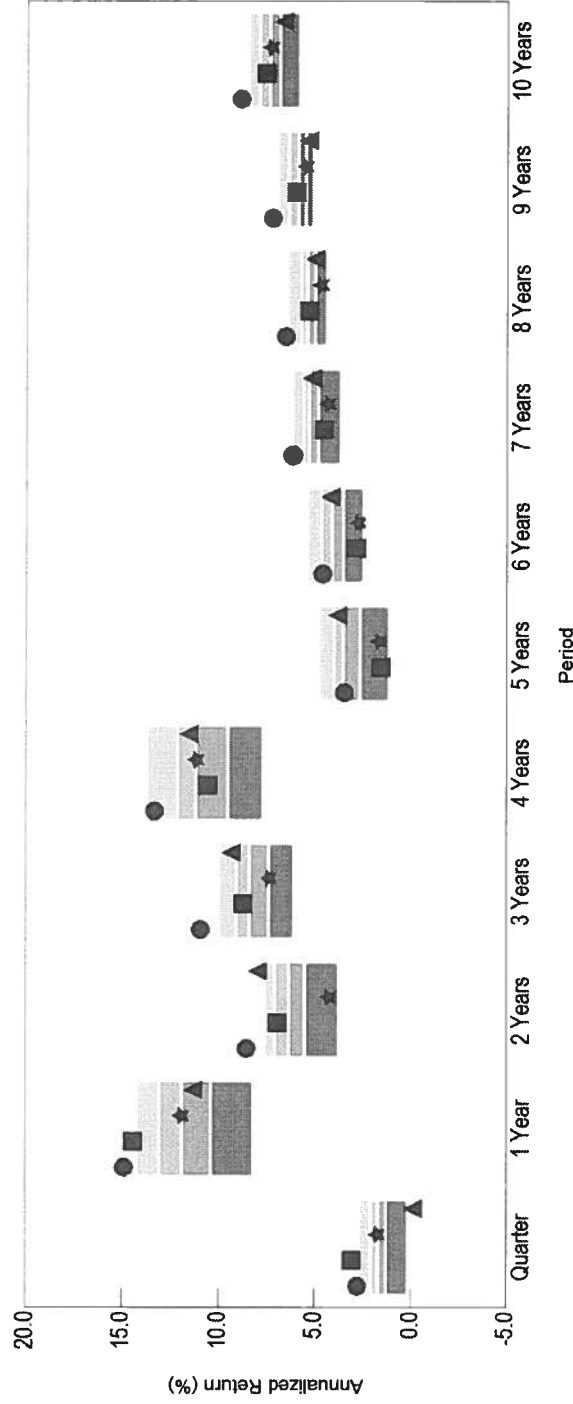


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	2.6 (166)	14.3 (1)	7.6 (143)	10.0 (134)	13.7 (131)	4.8 (127)	5.4 (123)	6.2 (117)	6.4 (111)	7.0 (107)	8.5 (101)
<b>5th Percentile</b>	2.0	13.1	7.1	9.1	12.2	4.0	4.7	5.6	5.8	6.4	7.9
<b>25th Percentile</b>	1.7	11.9	6.3	8.4	11.2	3.5	4.1	5.3	5.4	5.9	7.4
<b>Median</b>	1.3	10.4	5.5	7.4	9.5	2.7	3.6	4.8	5.0	5.5	6.9
<b>75th Percentile</b>	0.1	8.2	3.7	6.1	7.7	1.2	2.5	3.7	4.4	5.1	5.8
<b>95th Percentile</b>	166	162	143	134	131	127	123	117	111	107	101
<b># of Portfolios</b>	2.9 (1)	14.8 (2)	7.4 (10)	9.6 (14)	11.9 (32)	2.7 (75)	3.7 (71)	5.3 (55)	5.7 (30)	6.5 (19)	8.2 (12)
● <b>Public Employees Retirement System (DB)</b>	2.3 (15)	13.8 (11)	6.5 (44)	8.8 (36)	12.6 (18)	3.6 (47)	4.1 (51)	5.3 (50)	5.7 (38)	- (-)	- (-)
■ <b>Public Employees Retirement System (HC)</b>	2.3 (16)	13.8 (12)	7.5 (8)	9.5 (16)	12.0 (29)	2.1 (82)	3.4 (80)	5.2 (56)	6.1 (13)	6.9 (7)	8.5 (5)
★ <b>State Teachers Retirement System</b>	-0.1 (97)	11.3 (65)	7.9 (1)	9.3 (20)	11.5 (44)	3.8 (35)	4.2 (48)	5.2 (57)	5.0 (76)	5.4 (86)	6.7 (82)
▲ <b>60/40 S&amp;P 500/Barclays Aggregate</b>											

# Total Plans

## InvestorForce All Public Defined Benefit Fund Universe

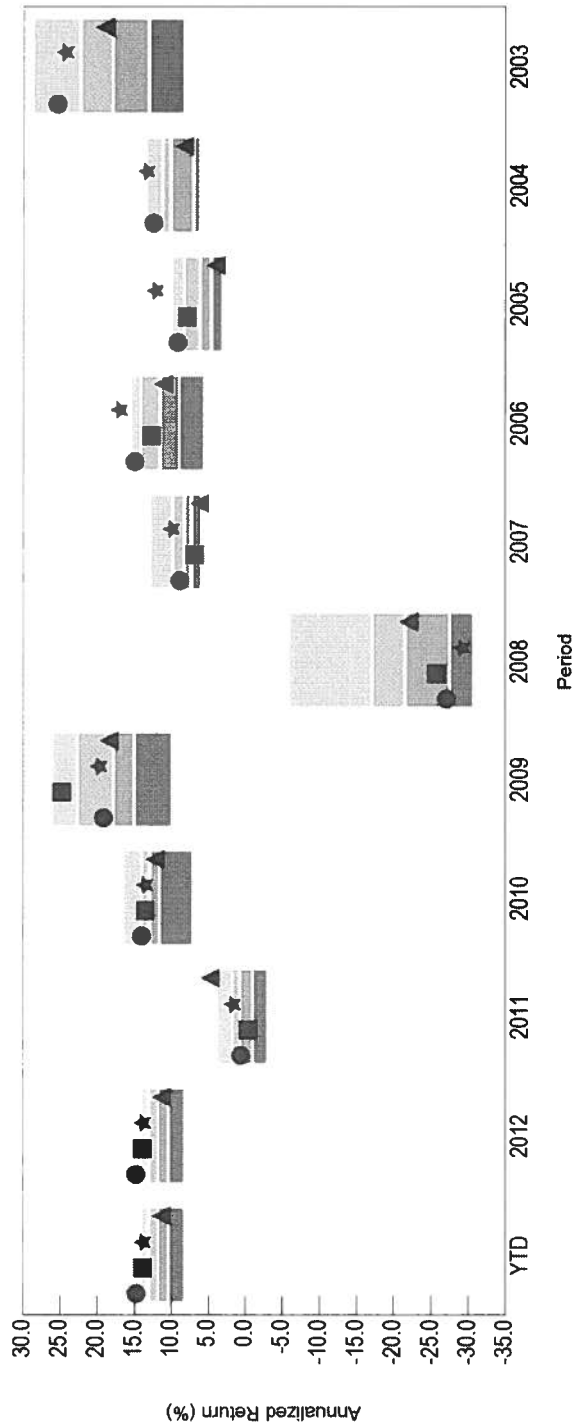
IF Public DB Gross Accounts  
Ending December 31, 2012



	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	2.6 (166)	14.3 (4)	7.6 (143)	10.0 (134)	13.7 (131)	4.8 (127)	5.4 (123)	6.2 (117)	6.4 (111)	7.0 (107)	8.5 (101)
<b>5th Percentile</b>	2.6	14.3	7.6	10.0	13.7	4.8	5.4	6.2	6.4	7.0	8.5
<b>25th Percentile</b>	2.0	13.1	7.1	9.1	12.2	4.0	4.7	5.6	5.8	6.4	7.9
<b>Median</b>	1.7	11.9	6.3	8.4	11.2	3.5	4.1	5.3	5.4	5.9	7.4
<b>75th Percentile</b>	1.3	10.4	5.5	7.4	9.5	2.7	3.6	4.8	5.0	5.5	6.9
<b>95th Percentile</b>	0.1	8.2	3.7	6.1	7.7	1.2	2.5	3.7	4.4	5.1	5.8
<b># of Portfolios</b>	166	162	143	134	131	127	123	117	111	107	101
<b>Ohio Police &amp; Fire</b>	2.8 (4)	14.9 (2)	8.5 (1)	10.9 (1)	13.3 (11)	3.5 (54)	4.6 (30)	6.2 (7)	6.5 (4)	7.2 (1)	8.9 (1)
<b>School Employees Retirement System</b>	3.1 (1)	14.4 (5)	6.9 (30)	8.7 (40)	10.6 (62)	1.6 (93)	2.9 (88)	4.6 (83)	5.3 (63)	6.0 (47)	7.6 (44)
<b>Highway Patrol Retirement System</b>	1.7 (52)	11.9 (51)	4.3 (91)	7.4 (76)	11.1 (53)	1.7 (91)	2.7 (92)	4.3 (87)	4.7 (92)	5.5 (78)	7.3 (57)
<b>60/40 S&amp;P 500/Barclays Aggregate</b>	-0.1 (97)	11.3 (65)	7.9 (1)	9.3 (20)	11.5 (44)	3.8 (35)	4.2 (48)	5.2 (57)	5.0 (76)	5.4 (86)	6.7 (82)

**Total Plans**  
**InvestorForce All Public Defined Benefit Fund Universe - Calendar Year Performance**

IF Public DB Gross Accounts  
 Ending December 31, 2012



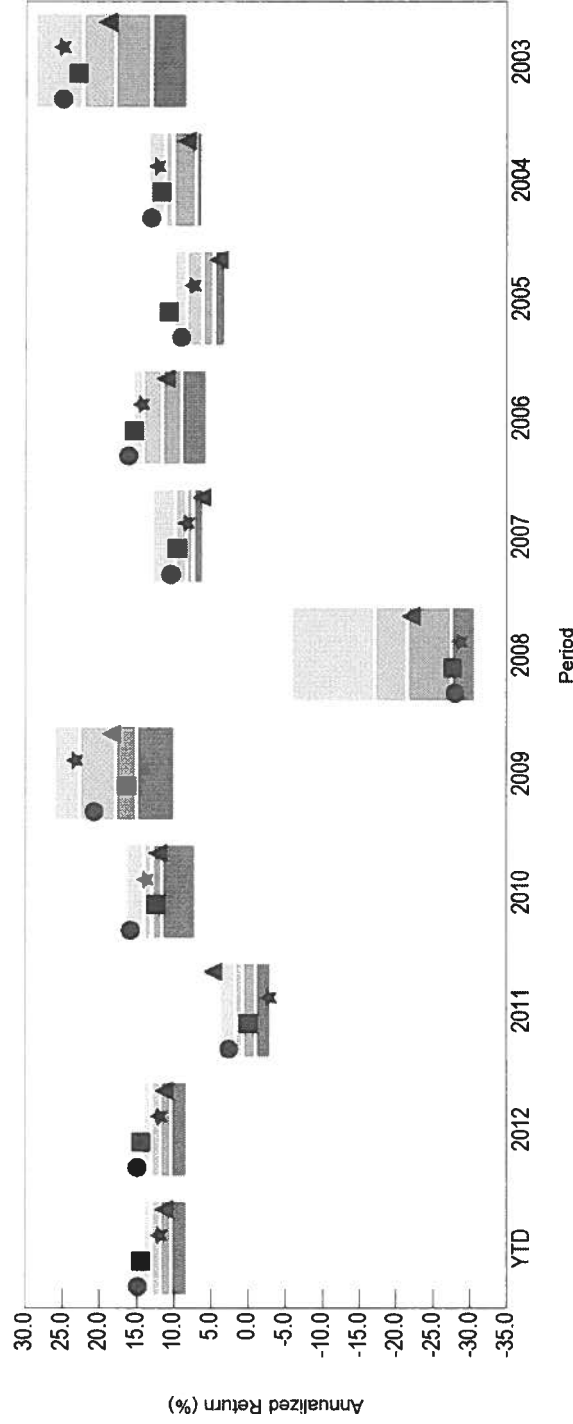
**Return (Rank)**

	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
5th Percentile	14.3	3.9	16.6	26.2	-5.7	13.0	15.6	10.0	13.6	28.7	
25th Percentile	13.1	1.8	14.0	22.7	-17.1	9.9	14.3	8.4	11.2	22.3	
Median	11.9	0.8	13.0	17.9	-21.6	8.4	11.6	6.2	10.2	18.0	
75th Percentile	10.4	-1.0	11.6	15.1	-27.5	7.4	9.0	4.6	7.0	13.1	
95th Percentile	8.2	-3.1	7.0	9.9	-30.7	6.0	5.7	3.0	6.2	8.3	
# of Portfolios	162	39	37	34	34	31	28	27	23	19	
● Public Employees Retirement System (DB)	14.8 (2)	0.6 (51)	14.0 (26)	19.1 (41)	-27.1 (73)	8.9 (38)	15.0 (10)	9.2 (14)	12.5 (8)	25.4 (15)	
■ Public Employees Retirement System (HC)	13.8 (11)	-0.4 (62)	13.5 (33)	24.8 (11)	-25.8 (71)	6.9 (91)	12.7 (35)	8.0 (34)	-- (-)	-- (-)	
★ State Teachers Retirement System	13.8 (12)	13.8 (12)	13.5 (33)	19.7 (39)	-29.2 (91)	10.0 (25)	17.0 (1)	12.2 (1)	13.4 (6)	24.3 (18)	
▲ 60/40 S&P 500/Barclays Aggregate	11.3 (65)	11.3 (65)	12.1 (64)	18.4 (45)	-22.1 (54)	6.2 (95)	11.1 (54)	4.0 (86)	8.3 (63)	19.0 (46)	

# Total Plans

## InvestorForce All Public Defined Benefit Fund Universe - Calendar Year Performance

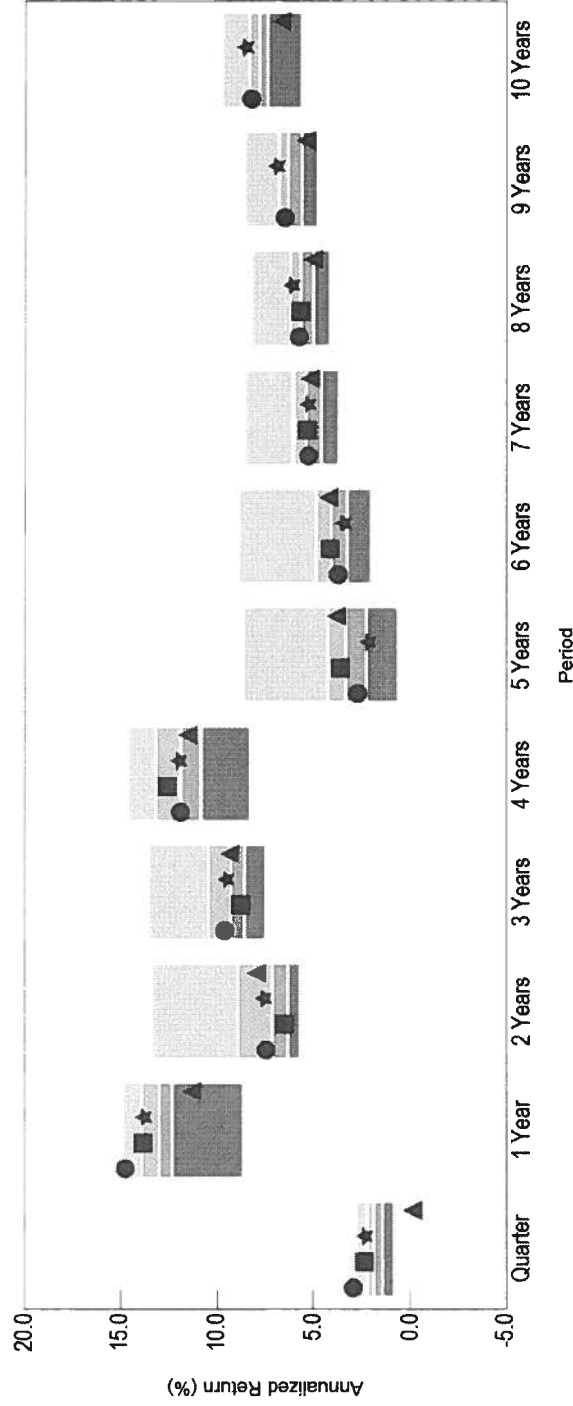
IF Public DB Gross Accounts  
Ending December 31, 2012



	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>	14.3	14.3	3.9	16.6	26.2	-5.7	13.0	15.6	10.0	13.6	28.7
<b>5th Percentile</b>	13.1	13.1	1.8	14.0	22.7	-17.1	9.9	14.3	8.4	11.2	22.3
<b>25th Percentile</b>	11.9	11.9	0.8	13.0	17.9	-21.6	8.4	11.6	6.2	10.2	18.0
<b>Median</b>	10.4	10.4	-1.0	11.6	15.1	-27.5	7.4	9.0	4.6	7.0	13.1
<b>75th Percentile</b>	8.2	8.2	-3.1	7.0	9.9	-30.7	6.0	5.7	3.0	6.2	8.3
<b>95th Percentile</b>	162	162	39	37	34	34	31	28	27	23	19
<b># of Portfolios</b>	14.9 (2)	14.9 (2)	2.5 (17)	15.9 (13)	20.7 (36)	-28.1 (83)	10.5 (21)	16.1 (3)	9.1 (15)	13.1 (7)	25.0 (16)
● Ohio Police & Fire	14.4 (5)	14.4 (5)	-0.1 (53)	12.4 (63)	16.4 (68)	-27.7 (80)	9.6 (29)	15.4 (7)	10.8 (3)	11.7 (16)	22.9 (24)
■ School Employees Retirement System	11.9 (51)	11.9 (51)	-2.9 (93)	13.8 (30)	23.2 (18)	-28.8 (89)	8.3 (54)	14.3 (20)	7.4 (45)	12.2 (9)	25.0 (16)
★ Highway Patrol Retirement System	11.3 (65)	11.3 (65)	4.7 (4)	12.1 (64)	18.4 (45)	-22.1 (54)	6.2 (95)	11.1 (54)	4.0 (86)	8.3 (63)	19.0 (46)
▲ 60/40 S&P 500/Barclays Aggregate											

**Total Plans**  
**InvestorForce All Defined Benefit Fund > \$1 Billion Universe**

IF All DB > \$1B Gross Accounts  
 Ending December 31, 2012



	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	2.8	14.9	13.3	13.6	14.6	8.6	8.9	8.6	8.3	8.6	9.8
25th Percentile	2.3	13.9	9.0	10.5	13.2	4.3	4.8	6.1	6.2	6.8	8.3
Median	1.9	13.0	7.1	9.3	11.9	3.4	4.1	5.4	5.7	6.3	7.8
75th Percentile	1.4	12.3	6.3	8.6	10.8	2.3	3.2	4.6	5.0	5.6	7.4
95th Percentile	0.8	8.6	5.7	7.5	8.3	0.6	2.0	3.7	4.1	4.8	5.6
# of Portfolios	103	96	91	89	89	86	84	84	82	79	78
● Public Employees Retirement System (DB)	2.9 (2)	14.8 (7)	7.4 (43)	9.6 (44)	11.9 (53)	2.7 (70)	3.7 (64)	5.3 (61)	5.7 (46)	6.5 (36)	8.2 (29)
■ Public Employees Retirement System (HC)	2.3 (23)	13.8 (27)	6.5 (73)	8.8 (70)	12.6 (41)	3.6 (43)	4.1 (47)	5.3 (57)	5.7 (51)	-- (-)	-- (-)
★ State Teachers Retirement System	2.3 (24)	13.8 (31)	7.5 (41)	9.5 (46)	12.0 (49)	2.1 (78)	3.4 (74)	5.2 (61)	6.1 (29)	6.9 (21)	8.5 (20)
▲ 60/40 S&P 500/Barclays Aggregate	-0.1 (99)	11.3 (85)	7.9 (34)	9.3 (50)	11.5 (64)	3.8 (34)	4.2 (47)	5.2 (62)	5.0 (74)	5.4 (82)	6.7 (87)

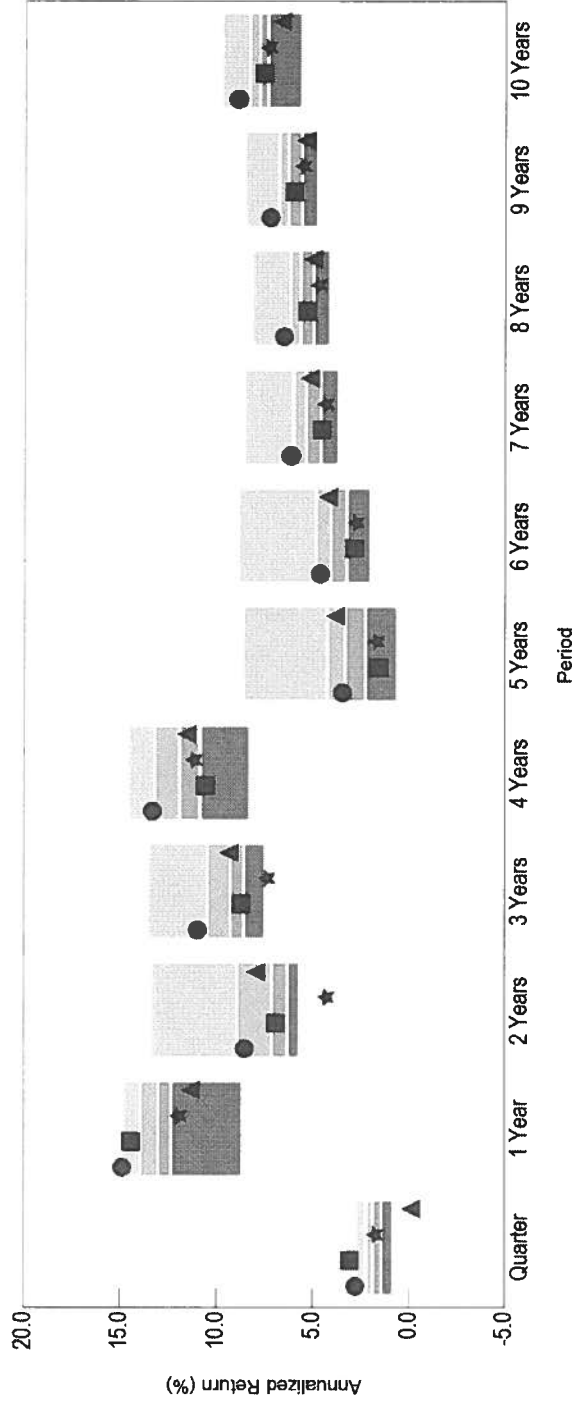
Return (Rank)



# Total Plans

## InvestorForce All Defined Benefit Fund > \$1 Billion Universe

IF All DB > \$1B Gross Accounts  
Ending December 31, 2012

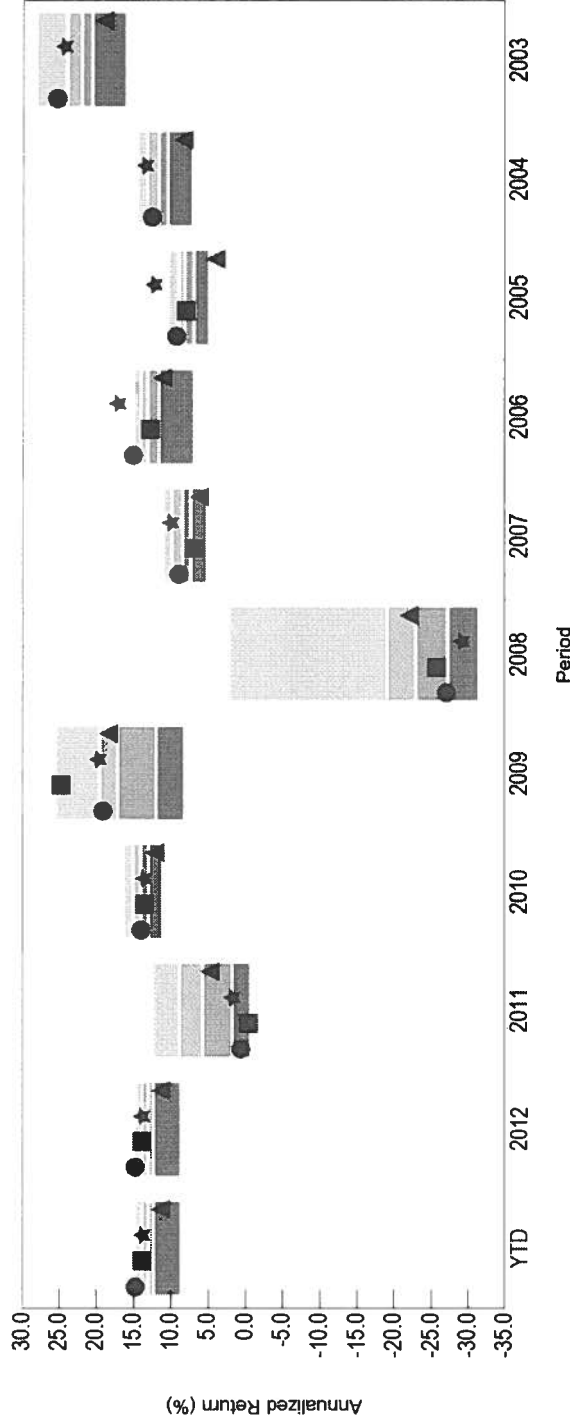


Return (Rank)	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	2.8	14.9	13.3	13.6	14.6	8.6	8.9	8.6	8.3	8.6	9.8
25th Percentile	2.3	13.9	9.0	10.5	13.2	4.3	4.8	6.1	6.2	6.8	8.3
Median	1.9	13.0	7.1	9.3	11.9	3.4	4.1	5.4	5.7	6.3	7.8
75th Percentile	1.4	12.3	6.3	8.6	10.8	2.3	3.2	4.6	5.0	5.6	7.4
95th Percentile	0.8	8.6	5.7	7.5	8.3	0.6	2.0	3.7	4.1	4.8	5.6
# of Portfolios	103	96	91	89	89	86	84	84	82	79	78
● Ohio Police & Fire	2.8 (6)	14.9 (6)	8.5 (30)	10.9 (21)	13.3 (22)	3.5 (47)	4.6 (35)	6.2 (20)	6.5 (14)	7.2 (13)	8.9 (12)
■ School Employees Retirement System	3.1 (1)	14.4 (11)	6.9 (56)	8.7 (72)	10.6 (80)	1.6 (88)	2.9 (83)	4.6 (79)	5.3 (64)	6.0 (65)	7.6 (71)
★ Highway Patrol Retirement System	1.7 (59)	11.9 (81)	4.3 (99)	7.4 (96)	11.1 (70)	1.7 (86)	2.7 (85)	4.3 (86)	4.7 (86)	5.5 (79)	7.3 (80)
▲ 60/40 S&P 500/Barclays Aggregate	-0.1 (99)	11.3 (85)	7.9 (34)	9.3 (50)	11.5 (64)	3.8 (34)	4.2 (47)	5.2 (62)	5.0 (74)	5.4 (82)	6.7 (87)

**Total Plans**

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

IF All DB > \$1B Gross Accounts  
Ending December 31, 2012

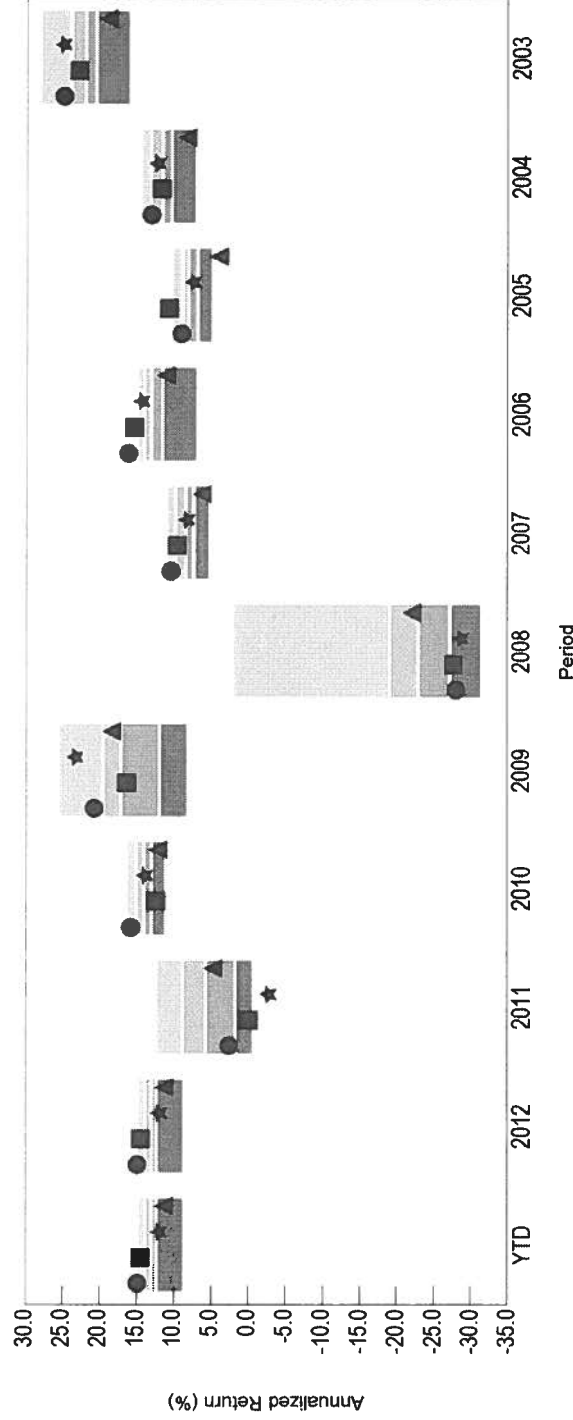


	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>	14.9	14.9	12.5	16.5	25.7	2.2	11.0	15.1	10.4	14.5	28.2
<b>5th Percentile</b>	13.9	13.9	8.9	15.0	19.5	-19.0	9.8	14.1	8.9	13.2	24.0
<b>25th Percentile</b>	13.0	13.0	5.8	14.0	17.2	-22.9	8.5	13.1	8.2	11.7	22.1
<b>Median</b>	12.3	12.3	1.8	13.0	12.0	-27.3	7.4	11.7	6.9	10.4	20.6
<b>75th Percentile</b>	8.6	8.6	-0.7	11.1	8.2	-31.5	5.2	6.9	4.9	7.1	16.1
<b>95th Percentile</b>	96	96	41	34	33	31	30	30	29	28	28
<b># of Portfolios</b>	14.8 (7)	14.8 (7)	0.6 (88)	14.0 (51)	19.1 (31)	-27.1 (75)	8.9 (42)	15.0 (6)	9.2 (20)	12.5 (41)	25.4 (15)
● <b>Public Employees Retirement System (DB)</b>	13.8 (27)	13.8 (27)	-0.4 (92)	13.5 (60)	24.8 (6)	-25.8 (71)	6.9 (82)	12.7 (60)	8.0 (64)	-- (-)	-- (-)
■ <b>Public Employees Retirement System (HC)</b>	13.8 (31)	13.8 (31)	1.6 (78)	13.5 (61)	19.7 (25)	-29.2 (87)	10.0 (21)	17.0 (2)	12.2 (1)	13.4 (23)	24.3 (24)
★ <b>State Teachers Retirement System</b>	11.3 (85)	11.3 (85)	4.7 (61)	12.1 (84)	18.4 (38)	-22.1 (48)	6.2 (90)	11.1 (82)	4.0 (98)	8.3 (90)	19.0 (84)
▲ <b>60/40 S&amp;P 500/Barclays Aggregate</b>											

# Total Plans

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

IF All DB > \$1B Gross Accounts  
Ending December 31, 2012



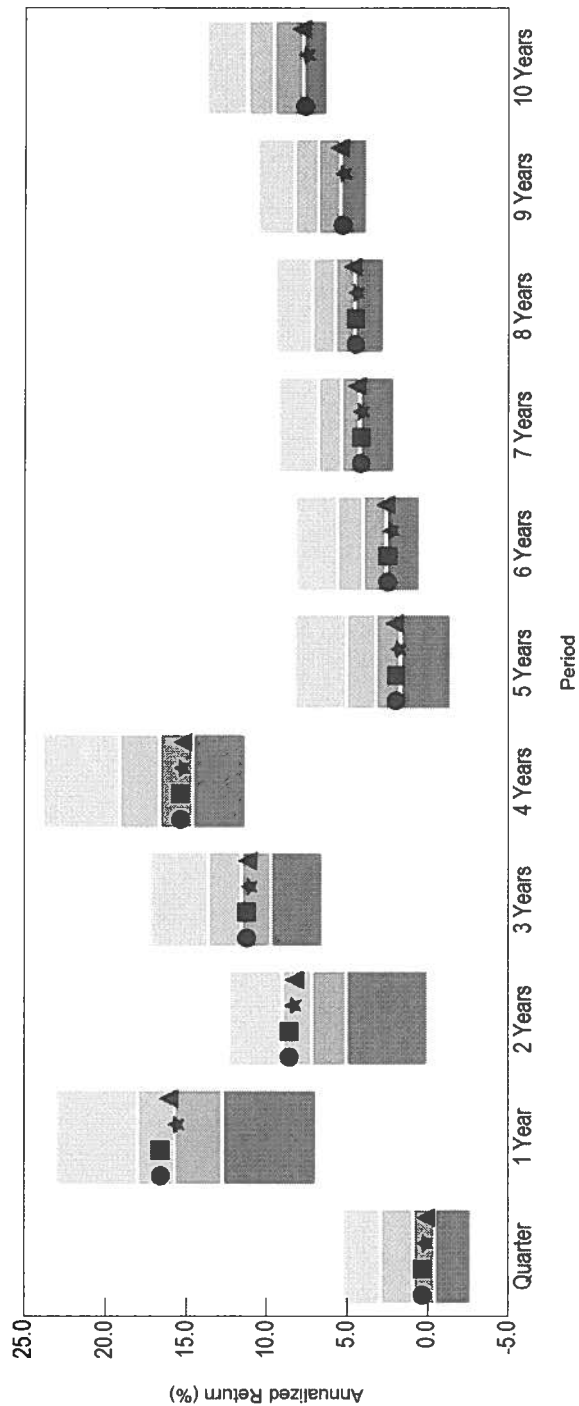
### Return (Rank)

5th Percentile	14.9	14.9	12.5	16.5	25.7	2.2	11.0	15.1	10.4	14.5	28.2
25th Percentile	13.9	13.9	8.9	15.0	19.5	-19.0	9.8	14.1	8.9	13.2	24.0
Median	13.0	13.0	5.8	14.0	17.2	-22.9	8.5	13.1	8.2	11.7	22.1
75th Percentile	12.3	12.3	1.8	13.0	12.0	-27.3	7.4	11.7	6.9	10.4	20.6
95th Percentile	8.6	8.6	-0.7	11.1	8.2	-31.5	5.2	6.9	4.9	7.1	16.1
# of Portfolios	96	96	41	34	33	31	30	30	29	28	28
● Ohio Police & Fire	14.9 (6)	14.9 (6)	2.5 (69)	15.9 (16)	20.7 (21)	-28.1 (84)	10.5 (15)	16.1 (3)	9.1 (22)	13.1 (30)	25.0 (17)
■ School Employees Retirement System	14.4 (11)	14.4 (11)	-0.1 (90)	12.4 (83)	16.4 (63)	-27.7 (80)	9.6 (27)	15.4 (4)	10.8 (3)	11.7 (50)	22.9 (44)
★ Highway Patrol Retirement System	11.9 (81)	11.9 (81)	-2.9 (99)	13.8 (56)	23.2 (9)	-28.8 (86)	8.3 (56)	14.3 (21)	7.4 (74)	12.2 (46)	25.0 (17)
▲ 60/40 S&P 500/Barclays Aggregate	11.3 (85)	11.3 (85)	4.7 (61)	12.1 (84)	18.4 (38)	-22.1 (48)	6.2 (90)	11.1 (82)	4.0 (98)	8.3 (90)	19.0 (84)

# Total Domestic Equities

## InvestorForce All Domestic Equities Universe

US Equity Accounts  
Ending December 31, 2012

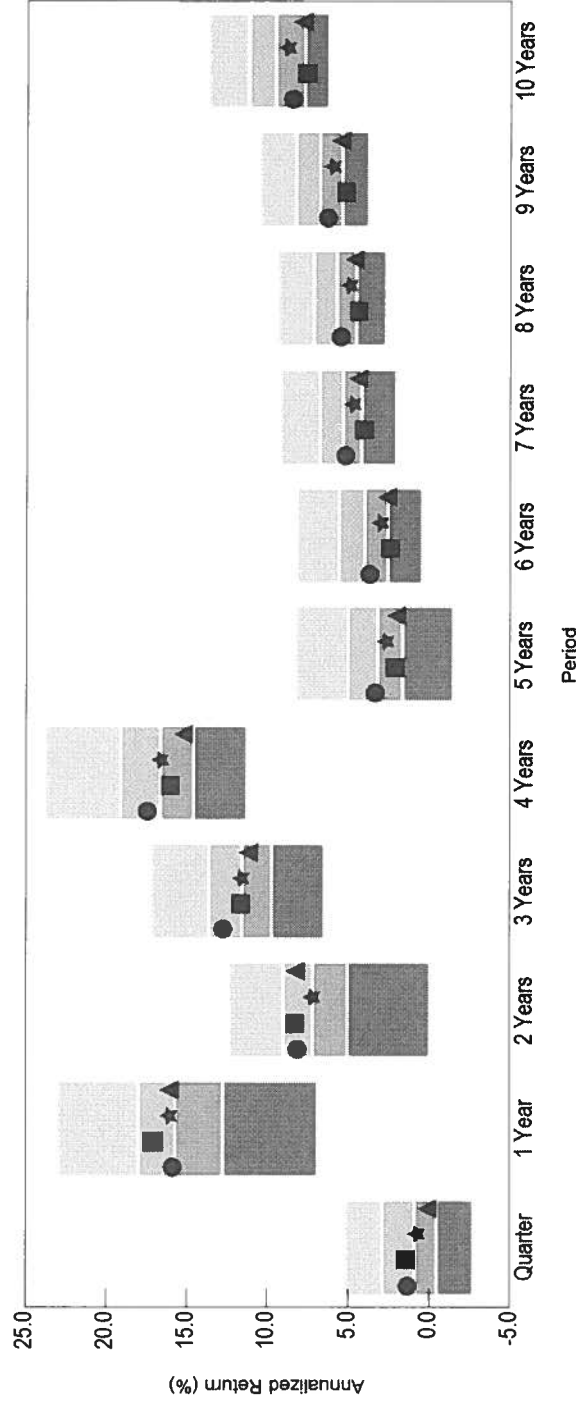


### Return (Rank)

	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
5th Percentile	5.2	23.0	12.4	17.3	23.9	8.4	8.3	9.3	9.5	10.6	13.8
25th Percentile	2.9	18.0	9.0	13.6	19.1	5.1	5.6	6.8	7.2	8.3	11.2
Median	0.9	15.7	7.2	11.6	16.7	3.3	4.0	5.4	5.8	6.8	9.6
75th Percentile	-0.5	12.7	5.0	9.7	14.6	1.7	2.6	4.2	4.6	5.4	7.8
95th Percentile	-2.7	6.9	-0.1	6.5	11.3	-1.5	0.5	2.1	2.7	3.8	6.3
# of Portfolios	2,517	2,433	2,350	2,280	2,200	2,100	1,993	1,864	1,717	1,580	1,448
● PERS(DB) Domestic Equity	0.3 (59)	16.6 (38)	8.6 (32)	11.2 (56)	15.4 (66)	1.9 (71)	2.5 (78)	4.1 (77)	4.5 (77)	5.3 (78)	7.6 (78)
■ PERS(HC) Domestic Equity	0.3 (59)	16.6 (38)	8.6 (32)	11.2 (56)	15.4 (66)	1.9 (71)	2.5 (78)	4.1 (77)	4.5 (77)	- (-)	- (-)
★ STRS Domestic Equity	0.1 (64)	15.6 (53)	8.3 (37)	11.0 (59)	15.2 (68)	1.7 (74)	2.2 (83)	4.1 (78)	4.4 (78)	5.2 (79)	7.5 (82)
▲ Wilshire 5000	0.1 (64)	16.1 (45)	8.3 (37)	11.1 (57)	15.2 (68)	2.0 (69)	2.6 (75)	4.4 (71)	4.6 (73)	5.5 (73)	7.9 (74)

**Total Domestic Equities**  
**InvestorForce All Domestic Equities Universe**

US Equity Accounts  
 Ending December 31, 2012



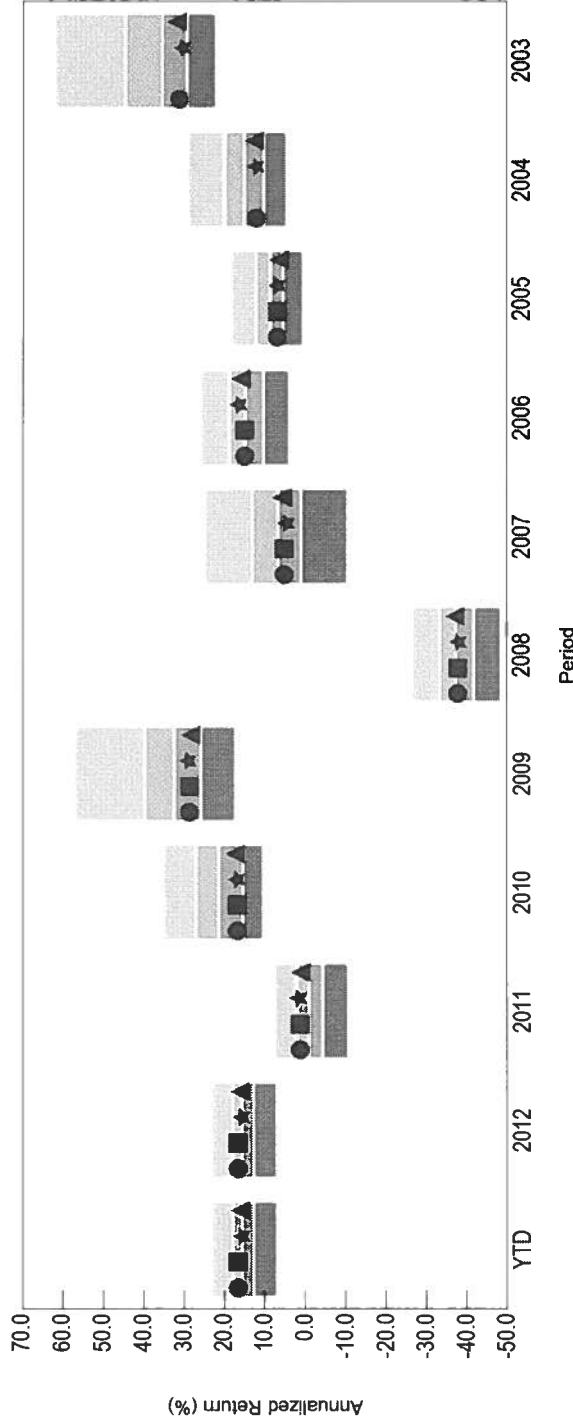
Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
Quarter	5.2	23.0	12.4	17.3	23.9	2,433
1 Year	2.9	18.0	9.0	13.6	19.1	2,350
2 Years	0.9	15.7	7.2	11.6	16.7	2,280
3 Years	-0.5	12.7	5.0	9.7	14.6	2,200
4 Years	-2.7	6.9	-0.1	6.5	11.3	2,100
5 Years						1,993
6 Years						1,864
7 Years						1,717
8 Years						1,580
9 Years						1,448
10 Years						

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

# Total Domestic Equities - Calendar Year Returns

## InvestorForce All Domestic Equities Universe

US Equity Accounts  
Ending December 31, 2012



Return (Rank)

5th Percentile  
25th Percentile  
Median  
75th Percentile  
95th Percentile  
# of Portfolios

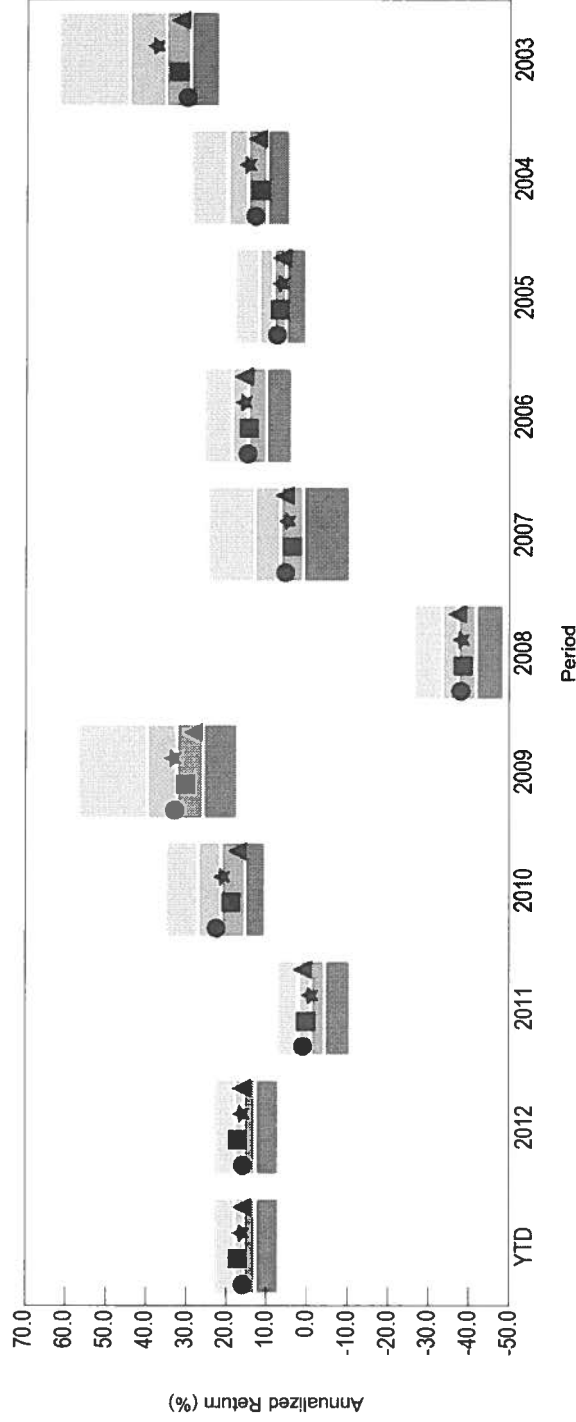
● PERS(DB) Domestic Equity  
■ PERS(HC) Domestic Equity  
★ STRS Domestic Equity  
▲ Wlshire 5000

23.0	18.0	15.7	12.7	6.9	2,433	-26.2	25.1	18.2	29.1	62.2
16.6 (38)	16.6 (38)	15.6 (53)	12.7 (45)	6.9 (36)	2,433	-37.8 (53)	14.9 (51)	8.6 (64)	12.0 (67)	31.1 (67)
16.6 (38)	16.6 (38)	15.6 (53)	16.1 (45)	16.1 (45)	2,433	-37.8 (53)	14.9 (51)	6.8 (64)	-	-
15.6 (53)	15.6 (53)	15.6 (53)	16.1 (45)	16.1 (45)	2,433	-38.1 (54)	16.2 (42)	6.7 (66)	11.9 (67)	30.1 (71)
16.1 (45)	16.1 (45)	16.1 (45)	16.1 (45)	16.1 (45)	2,433	-37.2 (50)	15.8 (44)	6.4 (68)	12.5 (63)	31.6 (64)

# Total Domestic Equities - Calendar Year Returns

## InvestorForce All Domestic Equities Universe

US Equity Accounts  
Ending December 31, 2012



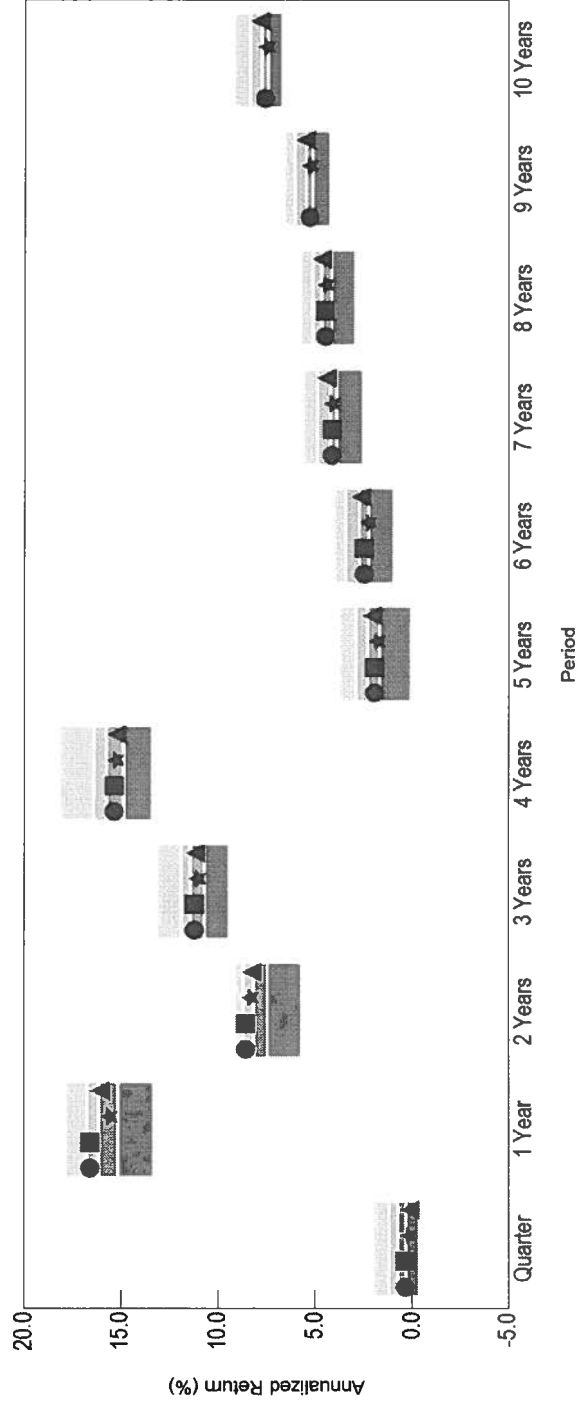
Period	Return (Rank)	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
YTD	23.0	7.7	35.4	57.2	23.0	2,433	2,433
2012	18.0	2.1	27.0	39.6	18.0	2,135	2,135
2011	15.7	-0.9	21.4	32.3	15.7	2,191	2,191
2010	12.7	-4.4	15.4	25.8	12.7	2,168	2,168
2009	6.9	-10.8	10.4	17.2	6.9	2,168	2,168
2008	-26.2	-33.4	-37.3	-41.7	-26.2	1,661	1,661
2007	25.1	13.2	6.7	1.1	25.1	1,794	1,794
2006	18.7	14.9	10.3	4.0	18.7	1,824	1,824
2005	12.1	8.6	5.4	0.5	12.1	1,782	1,782
2004	20.0	14.9	10.3	4.5	20.0	1,741	1,741
2003	44.7	35.5	29.2	22.1	44.7	1,679	1,679

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

# Total Domestic Equities

## InvestorForce All Public DB Domestic Equities Universe

IF Public DB US Eq Gross Accounts  
Ending December 31, 2012



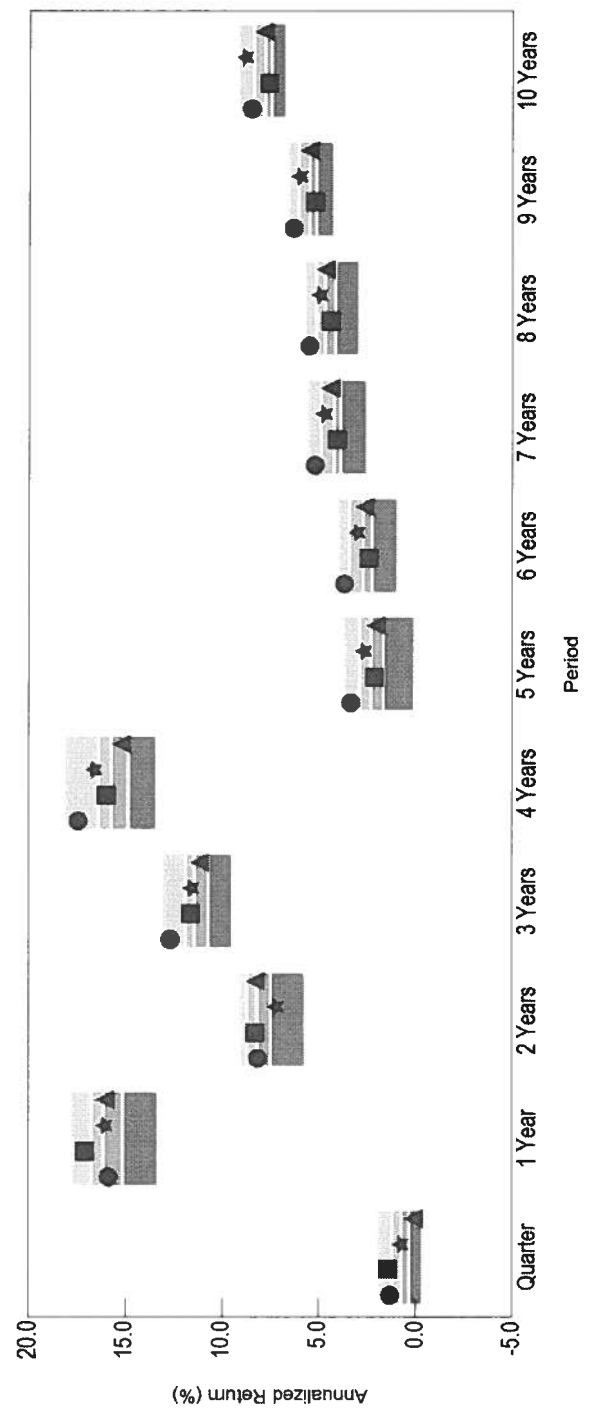
### Return (Rank)

5th Percentile	17.9	9.2	13.2	18.2	3.8	4.1	5.6	6.7	9.3
25th Percentile	1.2	8.7	11.9	16.4	2.9	3.5	4.9	6.1	8.4
Median	0.8	16.1	11.5	15.7	2.3	2.8	4.2	5.5	7.8
75th Percentile	0.3	15.2	10.7	14.9	1.7	2.3	3.9	5.2	7.5
95th Percentile	-0.4	13.3	9.4	13.4	0.0	0.9	2.5	4.2	6.7
# of Portfolios	106	105	87	85	82	81	79	68	63
● PERS(DB) Domestic Equity	0.3 (75)	16.6 (32)	11.2 (60)	15.4 (62)	1.9 (65)	2.5 (67)	4.1 (58)	5.3 (69)	7.6 (70)
■ PERS(HC) Domestic Equity	0.3 (75)	16.6 (32)	11.2 (60)	15.4 (62)	1.9 (65)	2.5 (66)	4.1 (58)	5.3 (69)	7.6 (70)
★ STRS Domestic Equity	0.1 (85)	15.6 (66)	11.0 (68)	15.2 (69)	1.7 (71)	2.2 (78)	4.1 (59)	5.2 (73)	7.5 (76)
▲ Wilshire 5000	0.1 (85)	16.1 (52)	11.1 (63)	15.2 (70)	2.0 (61)	2.6 (57)	4.4 (47)	5.5 (52)	7.9 (50)



**Total Domestic Equities**  
**InvestorForce All Public DB Domestic Equities Universe**

IF Public DB US Eq Gross Accounts  
 Ending December 31, 2012



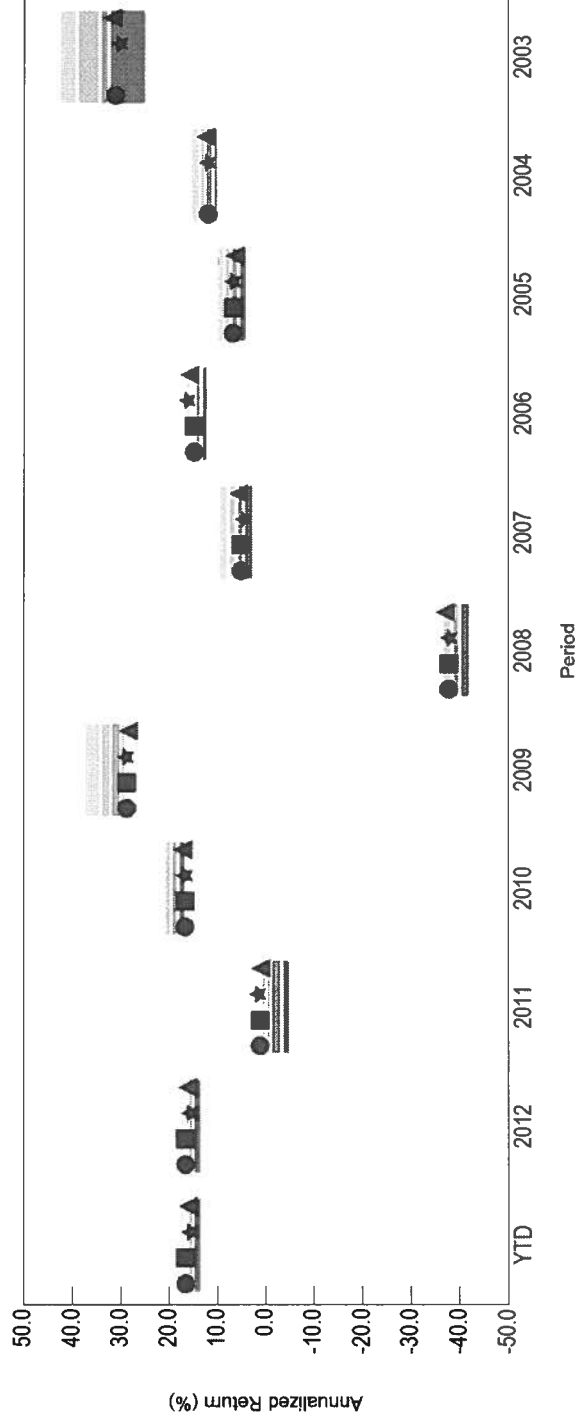
Period	Return (Rank)	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
Quarter	106	105	95	5.7	13.3	13.3	63
1 Year	9.2	17.9	9.2	8.2	15.2	13.3	63
2 Years	8.7	16.8	8.7	8.2	15.2	13.3	63
3 Years	11.9	13.2	11.9	11.5	10.7	9.4	63
4 Years	16.4	18.2	16.4	15.7	14.9	13.4	63
5 Years	2.9	3.8	2.9	2.3	1.7	0.0	63
6 Years	3.5	4.1	3.5	2.8	2.3	0.9	63
7 Years	4.9	5.6	4.9	4.2	3.9	2.5	63
8 Years	5.2	5.8	5.2	4.7	4.2	2.9	63
9 Years	6.1	6.7	6.1	5.5	5.2	4.2	63
10 Years	8.4	9.3	8.4	7.8	7.5	6.7	63

- 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

IF Public DB US Eq Gross Accounts  
Ending December 31, 2012

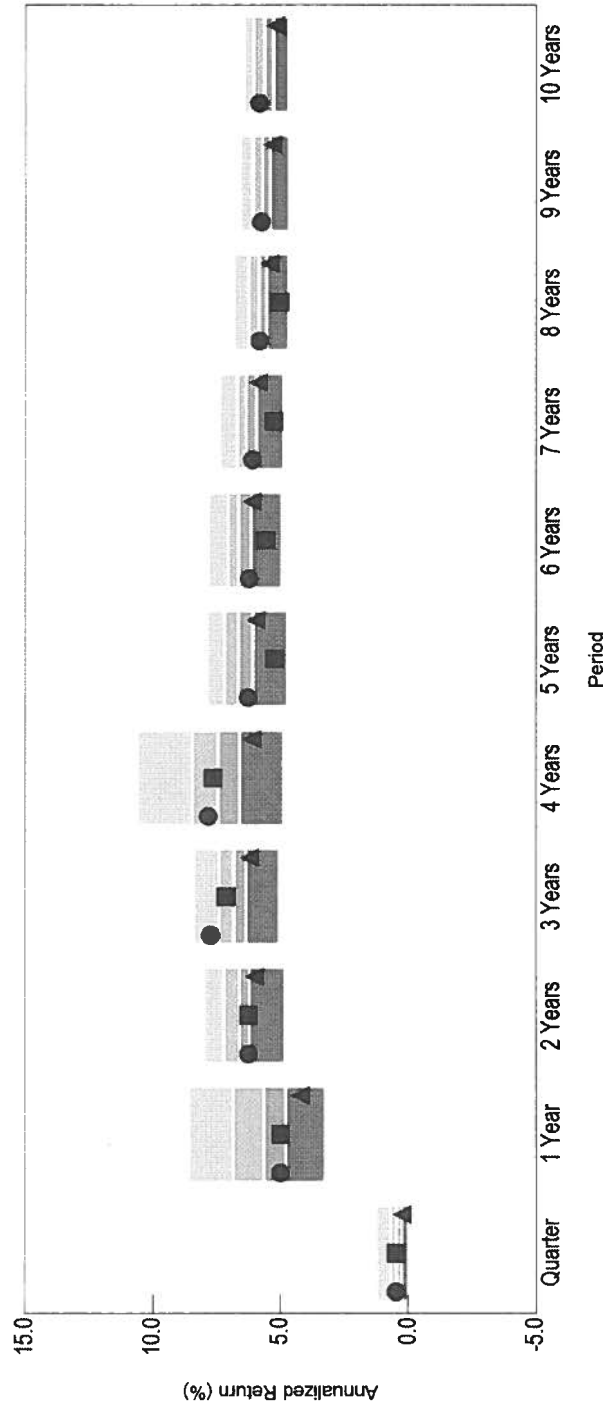


	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>	17.9	17.9	1.1	21.8	37.9	-36.2	10.0	16.9	10.4	15.6	42.9
<b>5th Percentile</b>	16.8	16.8	0.0	21.3	34.2	-36.4	7.7	15.6	8.8	13.8	39.1
<b>25th Percentile</b>	16.1	16.1	-1.0	19.7	32.2	-38.5	6.2	14.7	7.4	12.8	34.4
<b>Median</b>	15.2	15.2	-3.4	18.1	30.0	-40.0	4.7	13.5	5.7	11.1	32.5
<b>75th Percentile</b>	13.3	13.3	-5.0	16.5	29.2	-42.1	2.5	12.0	3.9	9.9	24.8
<b>95th Percentile</b>	105	105	12	10	10	9	9	8	8	7	6
<b># of Portfolios</b>	16.6 (32)	16.6 (32)	1.1 (3)	16.7 (94)	28.7 (99)	-37.8 (43)	5.1 (72)	14.9 (41)	6.8 (62)	12.0 (64)	31.1 (82)
● PERS(DB) Domestic Equity	16.6 (32)	16.6 (32)	1.1 (3)	16.7 (94)	28.7 (99)	-37.8 (43)	5.1 (72)	14.9 (41)	6.8 (63)	-	-
■ PERS(HC) Domestic Equity	15.6 (66)	15.6 (66)	1.5 (1)	16.6 (94)	28.8 (99)	-38.1 (46)	4.5 (82)	16.2 (19)	6.7 (64)	11.9 (65)	30.1 (84)
★ STRS Domestic Equity	16.1 (52)	16.1 (52)	1.0 (10)	17.2 (90)	28.3 (99)	-37.2 (36)	5.6 (67)	15.8 (24)	6.4 (67)	12.5 (56)	31.6 (81)
▲ Wilshire 5000											



**Fixed Income**  
**InvestorForce US Core Fixed Income Universe**

US Core (Gov/Corp/Mtg) Fixed Income Accounts  
 Ending December 31, 2012



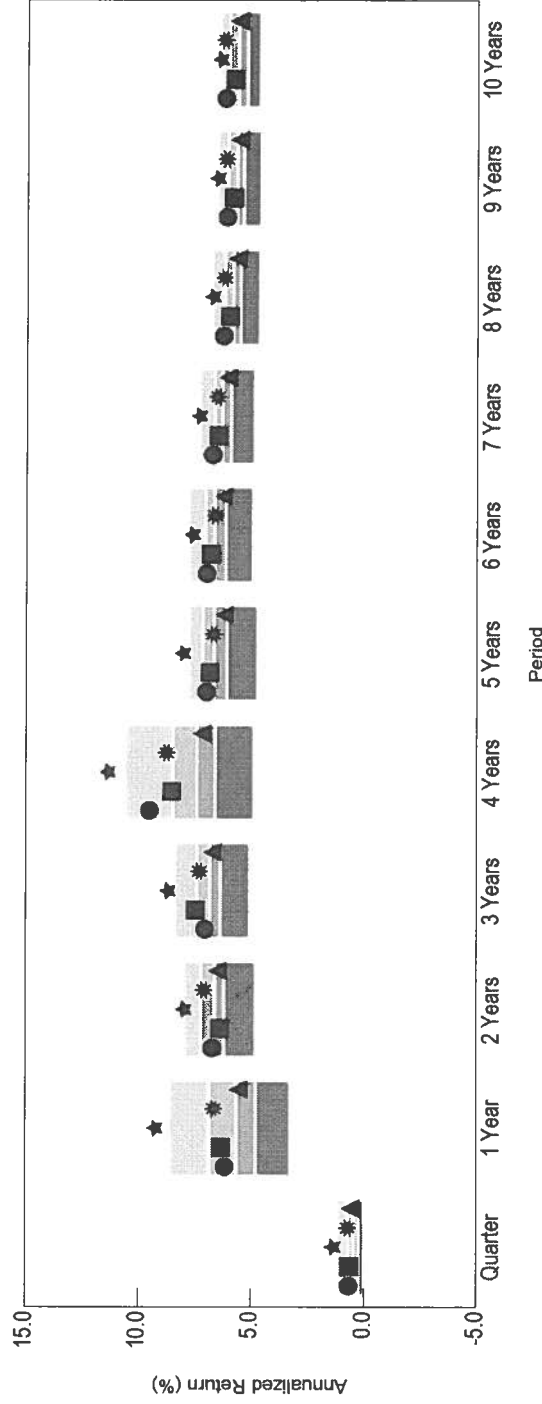
Return (Rank)	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
1.2	8.6	8.0	8.4	10.6	7.9	7.9	7.4	6.8	6.6	6.5
0.7	6.9	7.2	7.4	8.5	7.2	7.1	6.7	6.2	6.1	6.1
0.4	5.6	6.6	6.8	7.4	6.7	6.7	6.3	5.9	5.7	5.6
0.3	4.8	6.2	6.4	6.6	6.1	6.2	5.9	5.5	5.4	5.3
0.0	3.2	4.8	5.0	4.9	4.7	4.9	4.9	4.7	4.6	4.7
170	168	165	162	162	161	158	153	150	147	145

- PERS(DB) Core Fixed
- PERS(HC) Core Fixed
- ▲ Barclays Aggregate

**Fixed Income**

**InvestorForce US Core Fixed Income Universe**

US Core (Gov/Corp/Mtg) Fixed Income Accounts  
Ending December 31, 2012

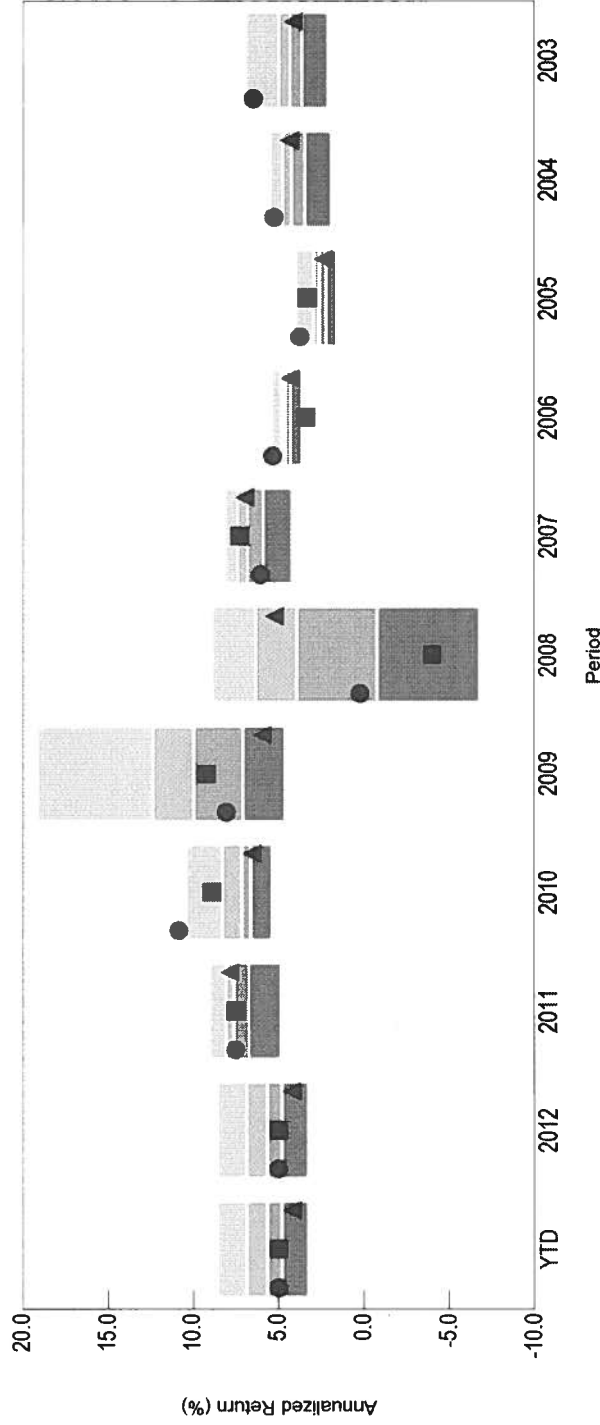


**Return (Rank)**

5th Percentile	1.2	8.6	8.0	8.4	10.6	7.9	7.9	7.4	6.8	6.6	6.5
25th Percentile	0.7	6.9	7.2	7.4	8.5	7.2	7.1	6.7	6.2	6.1	6.1
Median	0.4	5.6	6.6	6.8	7.4	6.7	6.7	6.3	5.9	5.7	5.6
75th Percentile	0.3	4.8	6.2	6.4	6.6	6.1	6.2	5.9	5.5	5.4	5.3
95th Percentile	0.0	3.2	4.8	5.0	4.9	4.7	4.9	4.9	4.7	4.6	4.7
# of Portfolios	170	168	165	162	162	161	158	153	150	147	145
STRS Fixed Income	0.7 (28)	6.1 (40)	6.7 (46)	7.0 (45)	9.5 (11)	7.0 (33)	7.0 (29)	6.7 (24)	6.3 (24)	6.1 (22)	6.2 (14)
OP&F Core Fixed	0.6 (29)	6.3 (33)	6.4 (65)	7.5 (23)	8.5 (25)	6.8 (40)	6.8 (41)	6.5 (42)	6.0 (42)	5.8 (42)	5.8 (39)
SERS Global Fixed	1.3 (3)	9.2 (3)	7.9 (6)	8.7 (4)	11.3 (2)	8.0 (4)	7.6 (11)	7.3 (6)	6.7 (7)	6.5 (7)	6.4 (7)
HPRS Global Fixed Income	0.7 (25)	6.6 (26)	7.1 (32)	7.3 (31)	8.8 (23)	6.7 (50)	6.6 (53)	6.5 (37)	6.2 (28)	6.1 (22)	6.2 (13)
Barclays U.S. Universal	0.6 (31)	5.5 (53)	6.5 (62)	6.7 (56)	7.2 (56)	6.2 (72)	6.2 (73)	6.1 (71)	5.6 (71)	5.6 (69)	5.6 (54)

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

US Core (Gov/Corp/Mtg) Fixed Income Accounts  
Ending December 31, 2012



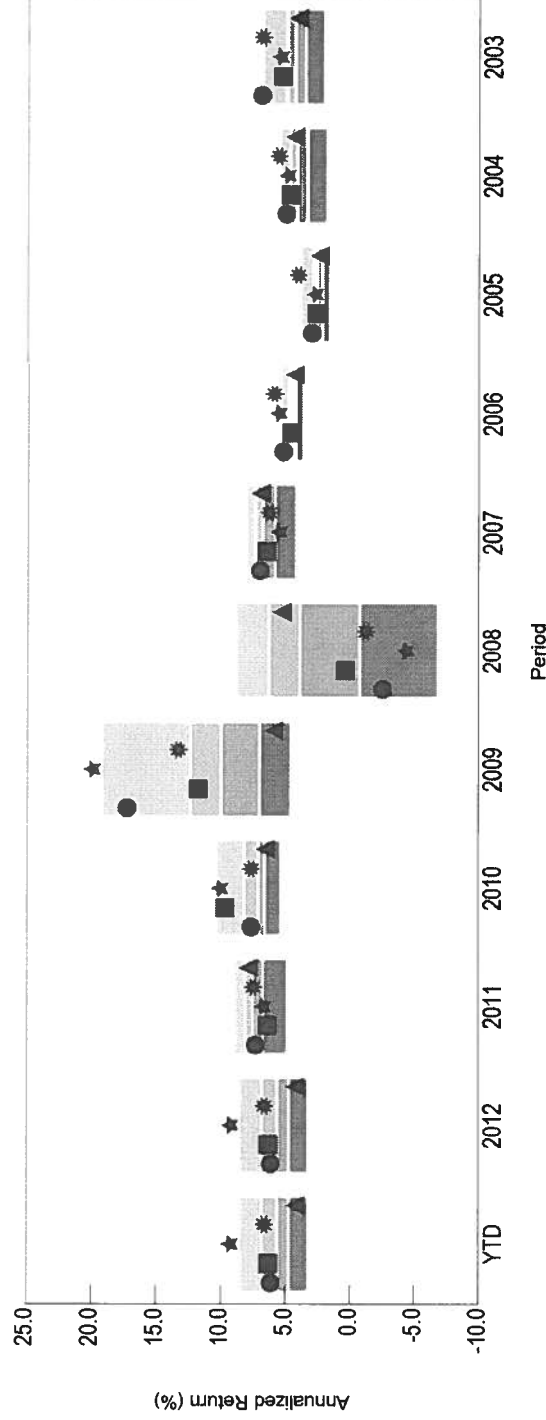
Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios
YTD	8.6	6.9	5.6	4.8	3.2	168
2012	9.0	8.1	7.6	6.8	4.9	160
2011	10.4	8.3	7.2	6.6	5.4	155
2010	19.2	12.4	10.0	7.1	4.6	152
2009	8.9	6.4	4.0	-0.8	-6.8	183
2008	8.1	7.4	6.8	5.9	4.2	224
2007	5.4	4.8	4.6	4.3	3.7	252
2006	3.9	3.0	2.7	2.3	1.6	263
2005	5.5	4.8	4.2	3.4	1.9	266
2004	6.9	5.0	4.3	3.6	2.1	261
2003	6.5	5.0	4.3	3.6	2.1	261

- PERS(DB) Core Fixed
- PERS(HC) Core Fixed
- ▲ Barclays Aggregate

# Fixed Income

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

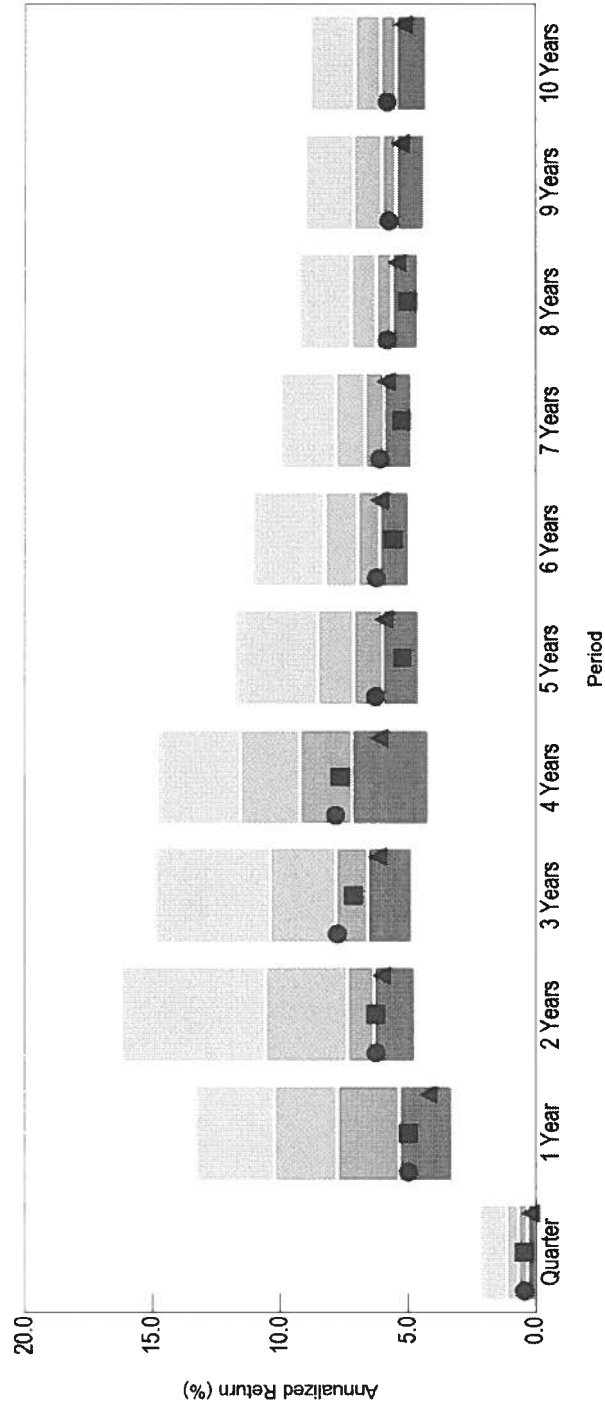
US Core (Gov/Corp/Mtg) Fixed Income Accounts  
Ending December 31, 2012



	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>											
5th Percentile	8.6	9.0	10.4	19.2	8.9	8.1	5.4	3.9	5.5	6.9	
25th Percentile	6.9	8.1	8.3	12.4	6.4	7.4	4.8	3.0	4.8	5.0	
Median	5.6	7.6	7.2	10.0	4.0	6.8	4.6	2.7	4.2	4.3	
75th Percentile	4.8	6.8	6.6	7.1	-0.8	5.9	4.3	2.3	3.4	3.6	
95th Percentile	3.2	4.9	5.4	4.6	-6.8	4.2	3.7	1.6	1.9	2.1	
<b># of Portfolios</b>	168	160	155	152	183	224	252	263	266	261	
<b>STRS Fixed Income</b>	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)	6.9 (5)	
<b>OP&amp;F Core Fixed</b>	6.3 (33)	6.3 (33)	9.7 (8)	11.8 (32)	0.4 (70)	6.5 (62)	4.6 (48)	2.7 (51)	4.7 (31)	5.3 (19)	
<b>SERS Global Fixed</b>	9.2 (3)	9.2 (3)	6.7 (76)	10.1 (7)	-4.4 (90)	5.5 (82)	5.5 (4)	2.7 (44)	4.9 (21)	5.4 (18)	
<b>HPRS Global Fixed Income</b>	6.6 (26)	6.6 (26)	7.5 (54)	13.3 (19)	-1.2 (77)	6.3 (66)	5.9 (2)	4.1 (5)	5.6 (5)	6.9 (6)	
<b>Barclays Aggregate</b>	4.2 (88)	4.2 (88)	6.5 (77)	5.9 (85)	5.2 (35)	7.0 (44)	4.3 (71)	2.4 (69)	4.3 (46)	4.1 (59)	

**Fixed Income**  
**InvestorForce All Defined Benefit US Core Fixed Income Universe**

IF All DB US Fix Inc Gross Accounts  
 Ending December 31, 2012



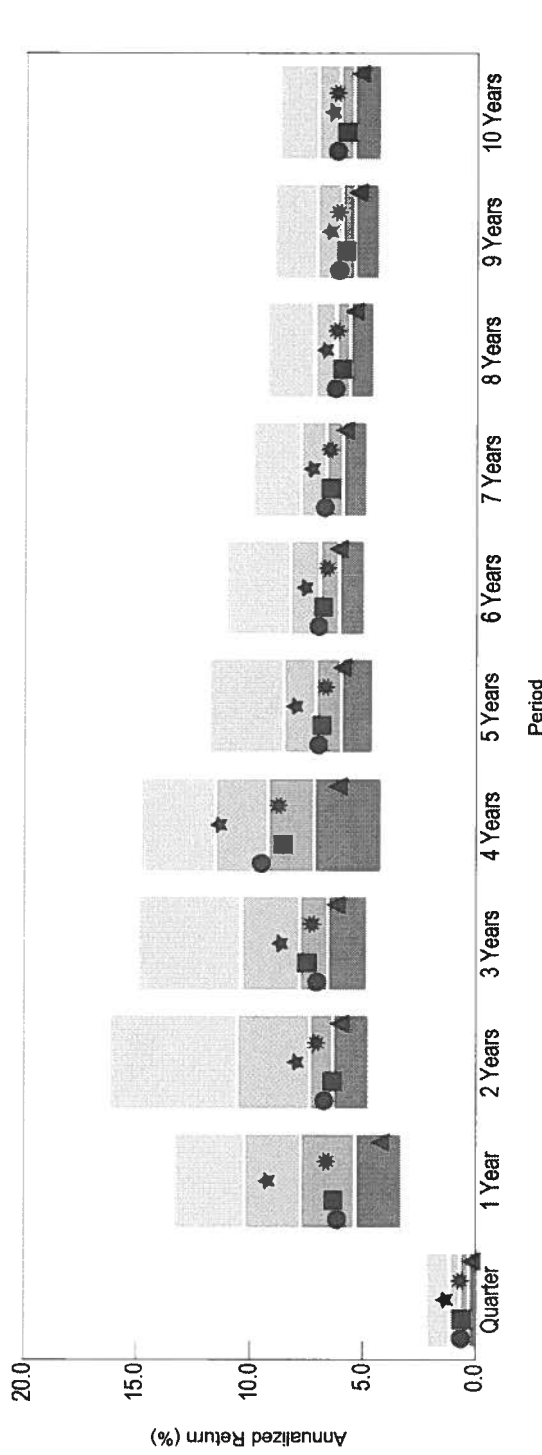
	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	2.2	13.4	16.2	14.9	14.8	11.8	11.1	10.0	9.3	9.0	8.8
<b>5th Percentile</b>	1.2	10.3	10.6	10.4	11.6	8.6	8.3	7.8	7.2	7.1	7.1
<b>25th Percentile</b>	0.7	7.8	7.4	7.8	9.2	7.1	7.0	6.7	6.3	6.0	6.1
<b>Median</b>	0.3	5.4	6.3	6.6	7.2	6.0	6.1	5.9	5.6	5.5	5.5
<b>75th Percentile</b>	0.0	3.3	4.7	4.8	4.2	4.6	4.9	4.9	4.6	4.4	4.3
<b>95th Percentile</b>	427	414	381	332	326	313	283	272	255	242	224
<b># of Portfolios</b>	0.5 (68)	5.0 (81)	6.2 (77)	7.8 (54)	7.8 (66)	6.3 (71)	6.2 (72)	6.1 (73)	5.8 (69)	5.7 (66)	5.8 (58)
● PERS(DB) Core Fixed	0.5 (68)	5.0 (81)	6.2 (77)	7.1 (65)	7.6 (67)	5.2 (86)	5.6 (86)	5.2 (88)	5.0 (89)	-- (-)	-- (-)
■ PERS(HC) Core Fixed	0.2 (85)	4.2 (90)	6.0 (81)	6.2 (81)	6.1 (85)	5.9 (76)	6.1 (74)	5.9 (78)	5.4 (81)	5.3 (80)	5.2 (83)
▲ Barclays Aggregate											



**Fixed Income**

**InvestorForce All Defined Benefit US Core Fixed Income Universe**

IF All DB US Fix Inc Gross Accounts  
Ending December 31, 2012

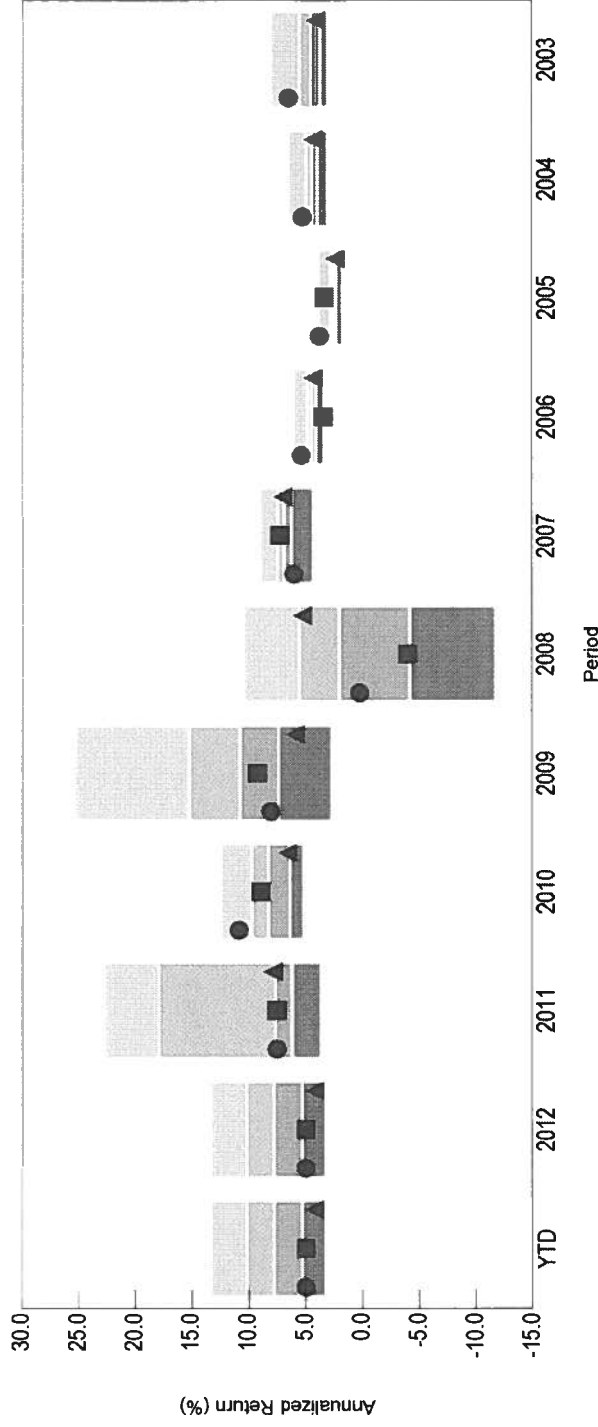


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>											
5th Percentile	2.2	13.4	16.2	14.9	14.8	11.8	11.1	10.0	9.3	9.0	8.8
25th Percentile	1.2	10.3	10.6	10.4	11.6	8.6	8.3	7.8	7.2	7.1	7.1
Median	0.7	7.8	7.4	7.8	9.2	7.1	7.0	6.7	6.3	6.0	6.1
75th Percentile	0.3	5.4	6.3	6.6	7.2	6.0	6.1	5.9	5.6	5.5	5.5
95th Percentile	0.0	3.3	4.7	4.8	4.2	4.6	4.9	4.9	4.6	4.4	4.3
<b># of Portfolios</b>	427	414	381	332	326	313	283	272	255	242	224
<b>● STRS Fixed Income</b>	0.7 (54)	6.1 (68)	6.7 (66)	7.0 (67)	9.5 (48)	7.0 (52)	7.0 (50)	6.7 (50)	6.3 (50)	6.1 (49)	6.2 (47)
<b>■ OP&amp;F Core Fixed</b>	0.6 (55)	6.3 (67)	6.4 (75)	7.5 (60)	8.5 (60)	6.8 (55)	6.8 (58)	6.5 (59)	6.0 (60)	5.8 (59)	5.8 (60)
<b>★ SERS Global Fixed</b>	1.3 (19)	9.2 (36)	7.9 (38)	8.7 (36)	11.3 (27)	8.0 (37)	7.6 (39)	7.3 (41)	6.7 (41)	6.5 (42)	6.4 (41)
<b>* HPRS Global Fixed Income</b>	0.7 (52)	6.6 (63)	7.1 (57)	7.3 (63)	8.8 (57)	6.7 (59)	6.6 (64)	6.5 (57)	6.2 (51)	6.1 (48)	6.2 (47)
<b>▲ Barclays Aggregate</b>	0.2 (85)	4.2 (90)	6.0 (81)	6.2 (81)	6.1 (85)	5.9 (76)	6.1 (74)	5.9 (78)	5.4 (81)	5.3 (80)	5.2 (83)

**Fixed Income**

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

IF All DB US Fix Inc Gross Accounts  
Ending December 31, 2012

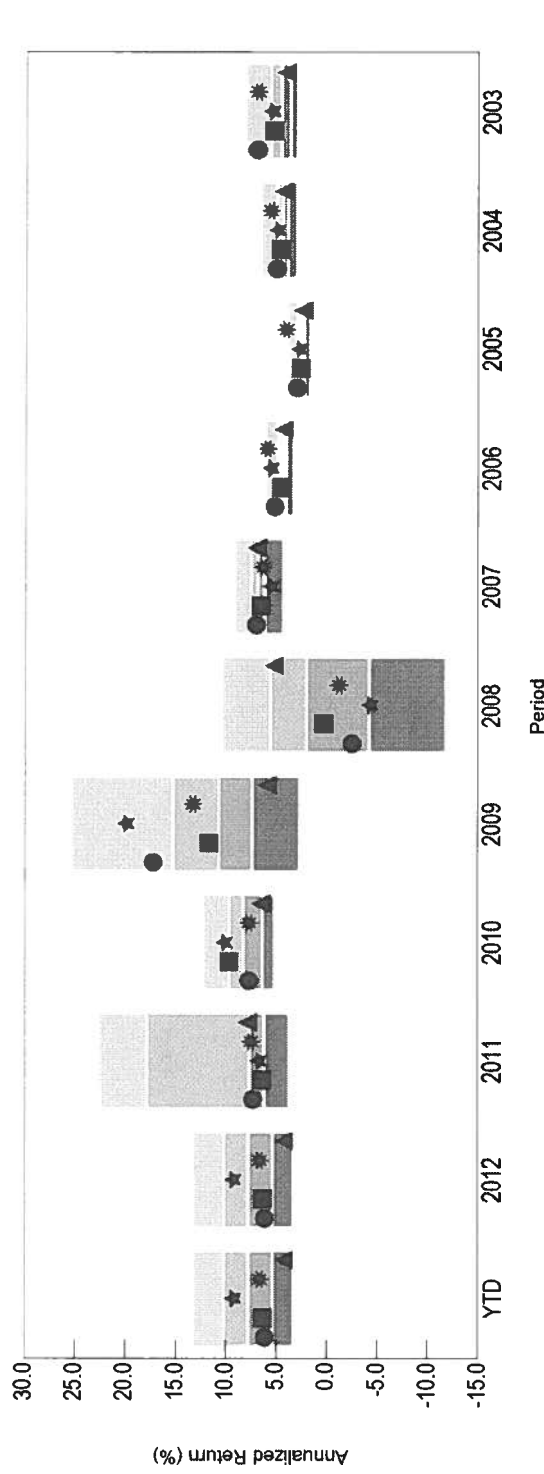


Return (Rank)	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
5th Percentile	13.4	22.7	12.4	25.3	10.4	10.4	9.1	6.1	3.9	6.6	8.1
25th Percentile	10.3	17.9	9.7	15.3	5.6	5.6	7.5	4.8	2.9	5.0	5.6
Median	7.8	7.7	8.3	10.8	2.0	2.0	6.9	4.5	2.7	4.5	4.6
75th Percentile	5.4	6.2	6.4	7.4	-4.2	-4.2	6.2	4.1	2.4	4.0	3.7
95th Percentile	3.3	3.7	5.2	2.7	-11.8	-11.8	4.3	3.4	1.8	3.1	3.1
# of Portfolios	414	225	128	124	121	121	101	96	93	89	86
● PERS(DB) Core Fixed	5.0 (81)	7.5 (55)	10.8 (15)	8.0 (72)	0.2 (58)	0.2 (58)	6.0 (81)	5.3 (16)	3.8 (7)	5.2 (16)	6.5 (13)
■ PERS(HC) Core Fixed	5.0 (81)	7.5 (55)	8.9 (35)	9.2 (60)	-4.0 (74)	-4.0 (74)	7.3 (35)	3.4 (95)	3.4 (14)	--	--
▲ Barclays Aggregate	4.2 (90)	7.8 (49)	6.5 (71)	5.9 (84)	5.2 (28)	5.2 (28)	7.0 (50)	4.3 (64)	2.4 (69)	4.3 (60)	4.1 (64)

Fixed Income

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

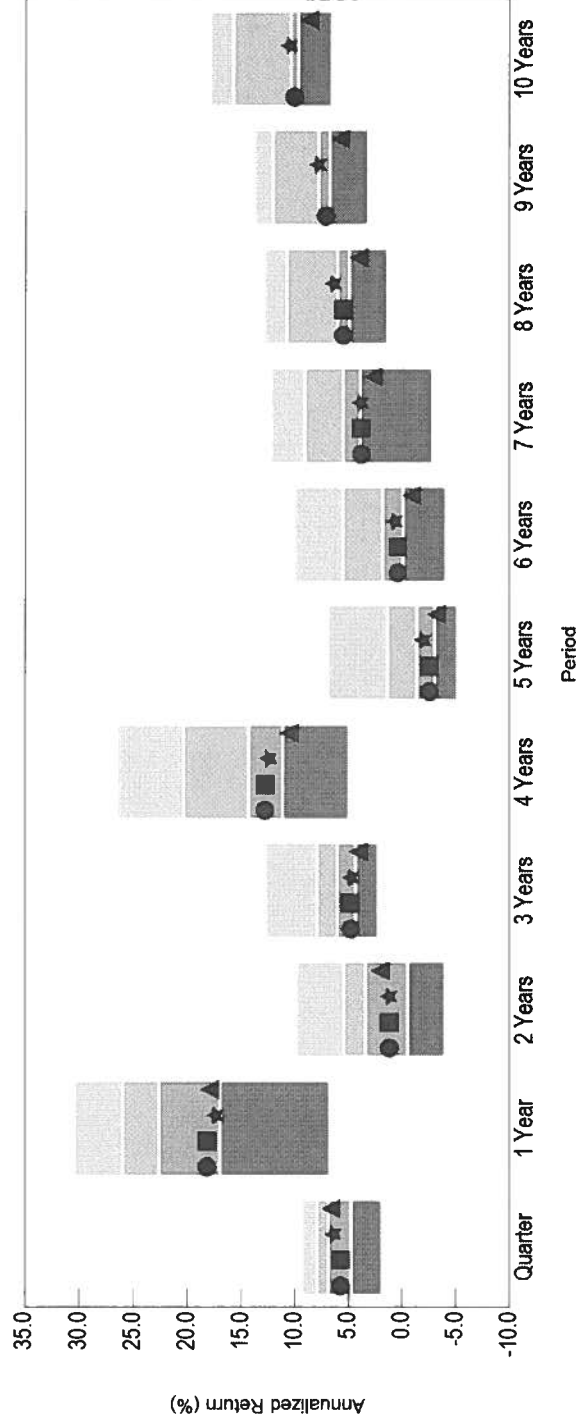
IF All DB US Fix Inc Gross Accounts  
Ending December 31, 2012



Period	5th Percentile	25th Percentile	Median	75th Percentile	95th Percentile	# of Portfolios	STRS Fixed Income	OP&F Core Fixed	SERS Global Fixed	HPRS Global Fixed Income	Barclays Aggregate
YTD	13.4	10.3	7.8	5.4	3.3	414	6.1 (68)	6.3 (67)	9.2 (36)	6.6 (63)	4.2 (90)
2012	13.4	10.3	7.8	5.4	3.3	414	6.1 (68)	6.3 (67)	9.2 (36)	6.6 (63)	4.2 (90)
2011	22.7	17.9	7.7	6.2	3.7	225	7.3 (58)	6.4 (72)	6.7 (67)	7.5 (55)	7.8 (49)
2010	12.4	9.7	8.3	6.4	5.2	128	7.7 (55)	9.7 (25)	10.1 (21)	7.7 (55)	6.5 (71)
2009	25.3	15.3	10.8	7.4	2.7	124	17.2 (22)	11.8 (48)	19.8 (14)	13.3 (37)	5.9 (84)
2008	10.4	5.6	2.0	-4.2	-11.8	121	-2.5 (69)	0.4 (57)	-4.4 (77)	-1.2 (64)	5.2 (28)
2007	9.1	7.5	6.9	6.2	4.3	101	7.0 (49)	6.5 (65)	5.5 (88)	6.3 (74)	7.0 (50)
2006	6.1	4.8	4.5	4.1	3.4	96	5.2 (17)	4.6 (47)	5.5 (12)	5.9 (8)	4.3 (64)
2005	3.9	2.9	2.7	2.4	1.8	93	3.0 (22)	2.7 (53)	2.7 (42)	4.1 (4)	2.4 (69)
2004	6.6	5.0	4.5	4.0	3.1	89	5.0 (25)	4.7 (37)	4.9 (29)	5.6 (12)	4.3 (60)
2003	8.1	5.6	4.6	3.7	3.1	86	6.9 (9)	5.3 (33)	5.4 (30)	6.9 (9)	4.1 (64)

**Total International Equities**  
**InvestorForce Global Developed ex-USA Equities Universe**

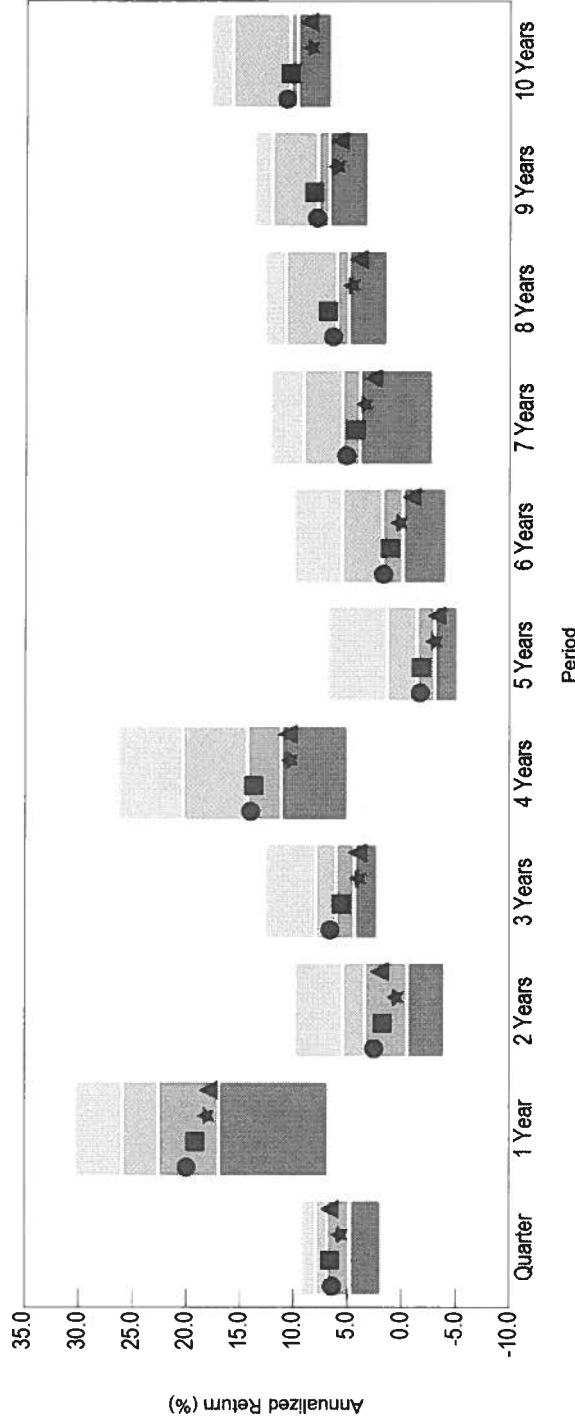
Global Developed xUS Equity Accounts  
 Ending December 31, 2012



	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	9.3 (69)	30.5 (71)	9.9 (66)	12.7 (65)	26.4 (59)	6.9 (68)	10.1 (64)	12.2 (79)	12.9 (65)	13.8 (71)	17.9 (58)
<b>5th Percentile</b>	7.9 (69)	26.0 (71)	5.5 (66)	7.9 (65)	20.3 (59)	1.4 (68)	5.5 (64)	9.1 (79)	10.8 (65)	12.1 (71)	15.8 (58)
<b>25th Percentile</b>	6.9 (63)	22.6 (75)	3.4 (66)	6.1 (61)	14.3 (59)	-1.4 (68)	1.8 (64)	5.5 (79)	6.0 (65)	7.8 (71)	10.4 (51)
<b>Median</b>	4.8 (63)	17.0 (75)	-0.5 (66)	4.3 (61)	11.2 (59)	-3.0 (68)	-0.1 (64)	3.9 (79)	4.9 (65)	6.8 (71)	9.7 (51)
<b>75th Percentile</b>	1.8 (58)	6.8 (72)	-4.0 (66)	2.2 (58)	4.9 (81)	-5.1 (68)	-4.1 (64)	-2.9 (79)	1.4 (65)	3.2 (71)	6.6 (46)
<b>95th Percentile</b>	66 (66)	66 (72)	66 (66)	65 (65)	65 (59)	62 (68)	57 (64)	55 (79)	47 (65)	46 (71)	42 (51)
<b># of Portfolios</b>	5.7 (69)	18.2 (71)	1.2 (66)	4.8 (71)	12.8 (59)	-2.6 (68)	0.4 (64)	3.8 (79)	5.5 (65)	7.1 (71)	10.1 (58)
● <b>PERS(DB) International Equity</b>	5.7 (69)	18.1 (71)	1.2 (66)	4.8 (71)	12.8 (59)	-2.6 (68)	0.4 (64)	3.8 (79)	5.5 (65)	-- (71)	-- (58)
■ <b>PERS(HC) International Equity</b>	6.3 (63)	17.3 (75)	1.1 (66)	4.7 (72)	12.5 (61)	-2.0 (68)	0.7 (64)	3.8 (79)	6.4 (47)	7.8 (51)	10.5 (46)
★ <b>STRS International Equity</b>	6.6 (58)	17.9 (72)	2.0 (58)	4.0 (81)	10.5 (80)	-3.2 (77)	-0.9 (82)	2.7 (83)	4.0 (84)	5.8 (86)	8.7 (86)
▲ <b>MSCI EAFE Gross</b>											

**Total International Equities**  
**InvestorForce Global Developed ex-USA Equities Universe**

Global Developed xUS Equity Accounts  
 Ending December 31, 2012

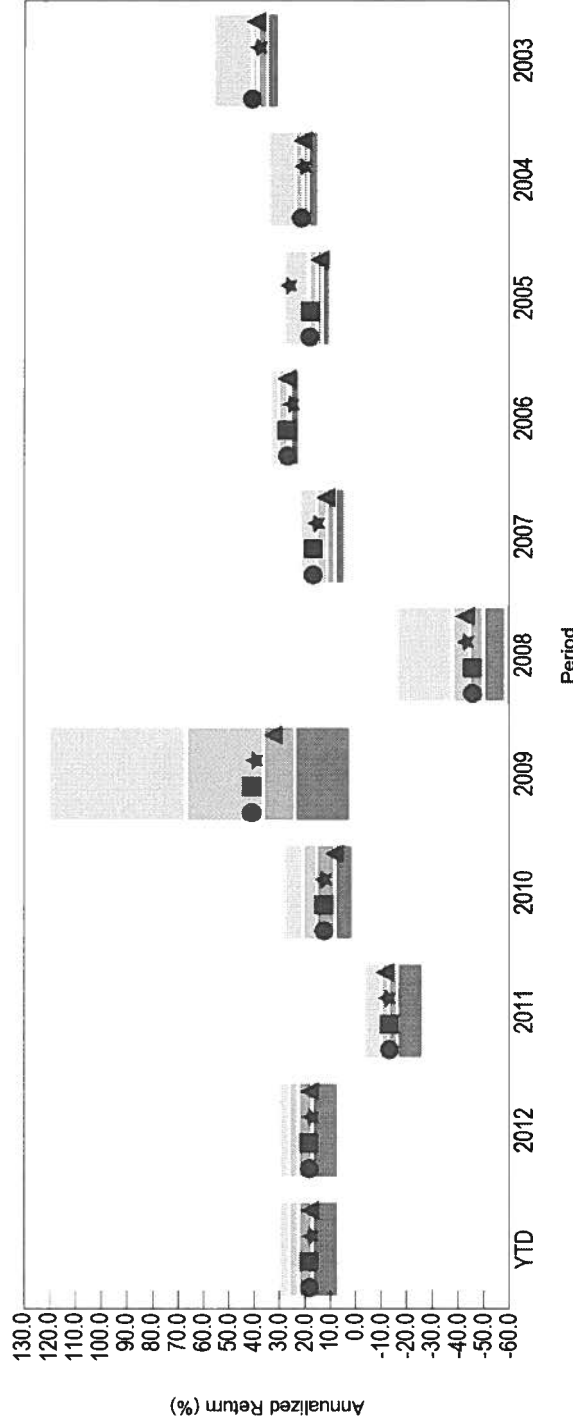


	Quarter	1 Year	2 Years	3 Years	4 Years	5 Years	6 Years	7 Years	8 Years	9 Years	10 Years
<b>Return (Rank)</b>	9.3	30.5	9.9	12.7	26.4	6.9	10.1	12.2	12.9	13.8	17.9
<b>5th Percentile</b>	7.9	26.0	5.5	7.9	20.3	1.4	5.5	9.1	10.8	12.1	15.8
<b>25th Percentile</b>	6.9	22.6	3.4	6.1	14.3	-1.4	1.8	5.5	6.0	7.8	10.4
<b>Median</b>	4.8	17.0	-0.5	4.3	11.2	-3.0	-0.1	3.9	4.9	6.8	9.7
<b>75th Percentile</b>	1.8	6.8	-4.0	2.2	4.9	-5.1	-4.1	-2.9	1.4	3.2	6.6
<b>95th Percentile</b>	66	66	66	65	65	62	57	55	47	46	42
<b># of Portfolios</b>	64 (62)	20.0 (68)	2.5 (56)	6.6 (48)	14.0 (56)	-1.7 (55)	1.7 (52)	5.1 (55)	6.4 (47)	7.9 (50)	10.7 (45)
● <b>OP&amp;F International Equity</b>	6.6 (59)	19.2 (69)	1.7 (59)	5.6 (58)	13.7 (57)	-1.8 (56)	1.1 (55)	4.3 (72)	6.8 (45)	8.1 (48)	10.4 (54)
■ <b>SERS International Equity</b>	5.6 (70)	18.1 (72)	0.5 (72)	3.9 (81)	10.3 (80)	-3.0 (75)	0.2 (67)	3.4 (82)	4.6 (82)	6.0 (85)	8.4 (87)
★ <b>HPRS International Equity</b>	6.6 (58)	17.9 (72)	2.0 (58)	4.0 (81)	10.5 (80)	-3.2 (77)	-0.9 (82)	2.7 (83)	4.0 (84)	5.8 (86)	8.7 (86)
▲ <b>MSCI EAFE Gross</b>											

# Total International Equities - Calendar Year Returns

## InvestorForce Global Developed ex-USA Equities Universe

Global Developed xUS Equity Accounts  
Ending December 31, 2012

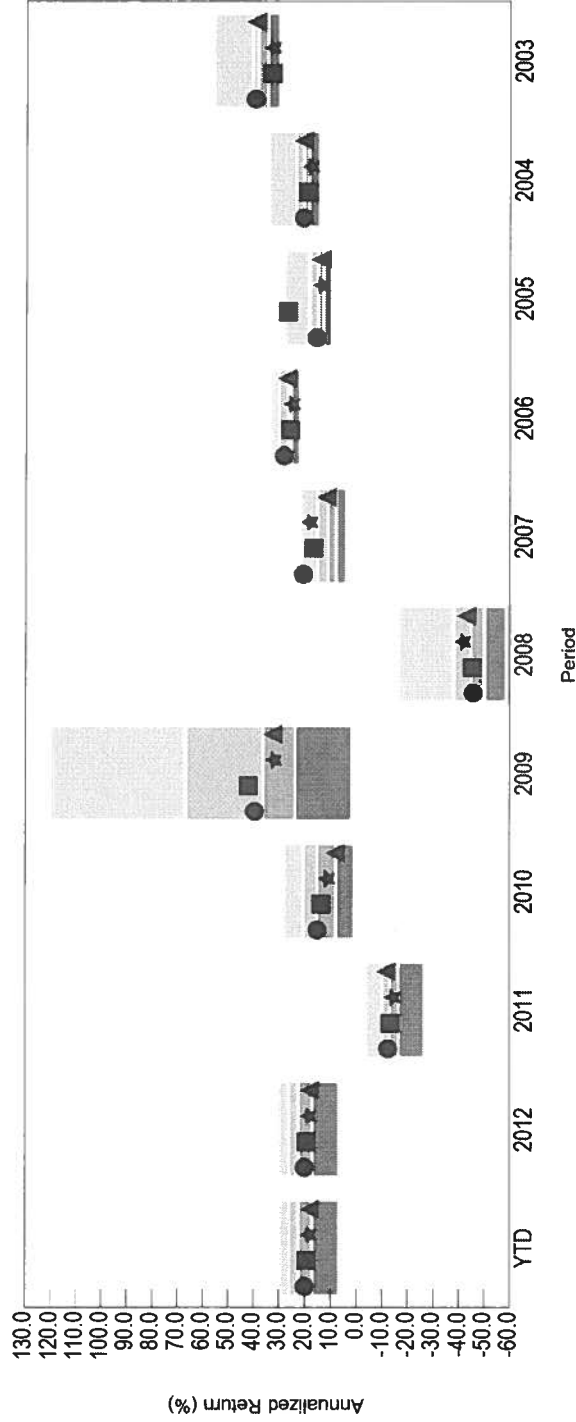


**Return (Rank)**

5th Percentile	30.5	-3.2	28.4	120.3	-15.9	22.0	33.6	28.4	34.8	56.3
25th Percentile	26.0	-9.9	20.7	66.8	-38.0	15.4	30.4	18.4	23.6	40.8
Median	22.6	-12.9	15.5	36.6	-44.6	11.3	27.1	15.1	20.9	38.6
75th Percentile	17.0	-16.3	8.0	23.9	-49.9	8.0	25.6	13.2	18.7	34.9
95th Percentile	6.8	-26.6	0.9	1.8	-58.5	3.9	22.0	10.0	14.5	30.2
# of Portfolios	66	72	72	73	83	89	88	94	96	96
● PERS(DB) International Equity	18.2 (71)	-13.4 (53)	12.3 (62)	40.8 (43)	-45.8 (54)	16.7 (17)	26.8 (54)	18.0 (28)	21.3 (46)	40.7 (27)
■ PERS(HC) International Equity	18.1 (71)	-13.4 (53)	12.3 (62)	40.8 (43)	-45.8 (54)	16.7 (17)	26.9 (53)	17.8 (29)	-	-
★ STRS International Equity	17.3 (75)	-12.8 (49)	12.2 (62)	39.4 (44)	-43.5 (43)	15.1 (29)	25.0 (83)	25.9 (7)	20.3 (59)	37.7 (58)
▲ MSCI EAFE Gross	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)	39.2 (44)

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

Global Developed xUS Equity Accounts  
 Ending December 31, 2012



	YTD	2012	2011	2010	2009	2008	2007	2006	2005	2004	2003
<b>Return (Rank)</b>	30.5	30.5	-3.2	28.4	120.3	-15.9	22.0	33.6	28.4	34.8	56.3
<b>5th Percentile</b>	26.0	26.0	-9.9	20.7	66.8	-38.0	15.4	30.4	18.4	23.6	40.8
<b>25th Percentile</b>	22.6	22.6	-12.9	15.5	36.6	-44.6	11.3	27.1	15.1	20.9	38.6
<b>Median</b>	17.0	17.0	-16.3	8.0	23.9	-49.9	8.0	25.6	13.2	18.7	34.9
<b>75th Percentile</b>	6.8	6.8	-26.6	0.9	1.8	-58.5	3.9	22.0	10.0	14.5	30.2
<b>95th Percentile</b>	66	66	72	72	73	83	89	88	94	96	96
<b># of Portfolios</b>											
● <b>OP&amp;F International Equity</b>	20.0 (68)	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)	39.6 (37)
■ <b>SERS International Equity</b>	19.2 (69)	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)	33.0 (83)
★ <b>HPRS International Equity</b>	18.1 (72)	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)	32.5 (87)
▲ <b>MSCI EAFE Gross</b>	17.9 (72)	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)	39.2 (44)

